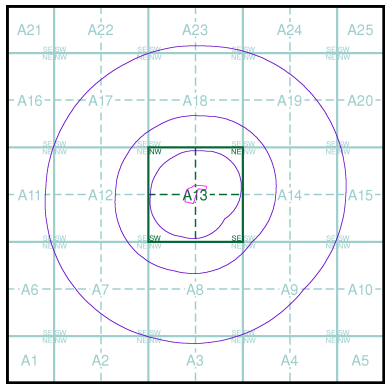
Agency and Hydrological

Source Protection Zones - Slice A

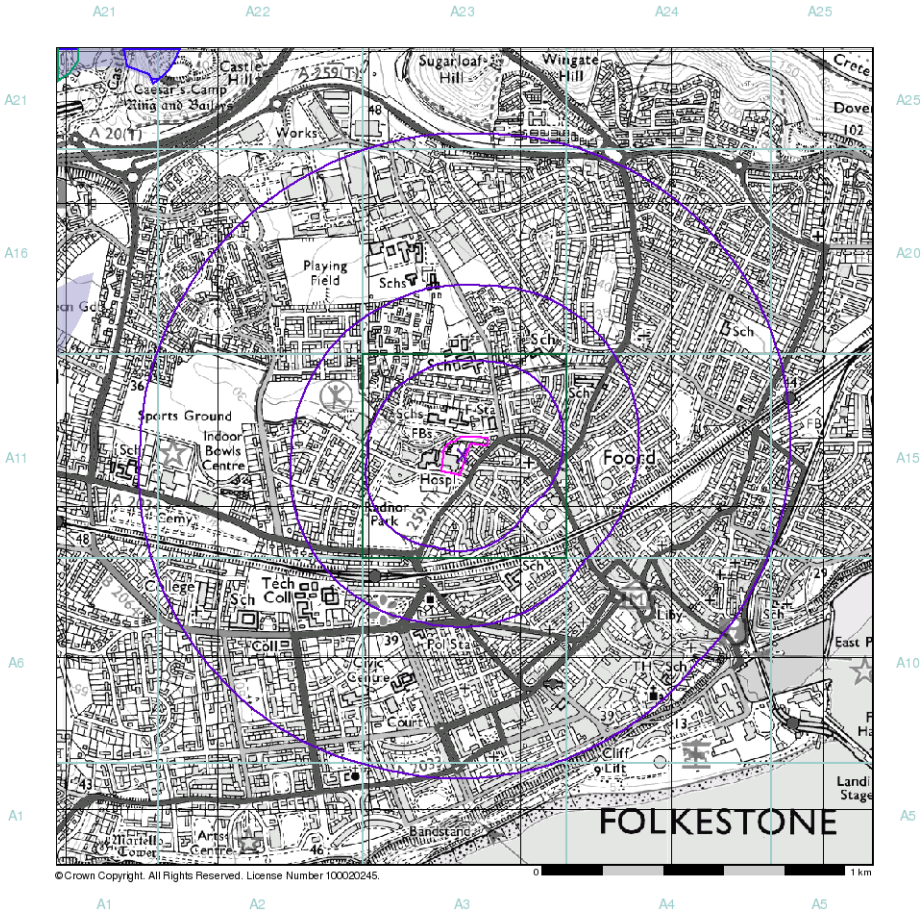


Order Details

Order Number:	21152466_1_1
Customer Ref:	C07060
National Grid Reference:	622310, 136670
Sheet:	A
Site Area (Ha):	0.96
Search Buffer (m):	1000

Site Details

Staff Accommodation, Royal Victoria Hospital, Radnor Park Avenue, FOLKESTONE, Kent, CT19 5BL



Background

- Footpath
- Bridleway
- Byway open to all traffic
- Road Used as a Public Path
- Other routes with Public Access
- National Trail or Long Distance Route
- Contour
- Fishing
- Nature Reserve

General

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

Agency and Hydrological

- Source Protection Zone I
- Source Protection Zone II
- Source Protection Zone III
- Zone of Special Interest
- Source Protection Zone Borehole

Sensitive Land Uses

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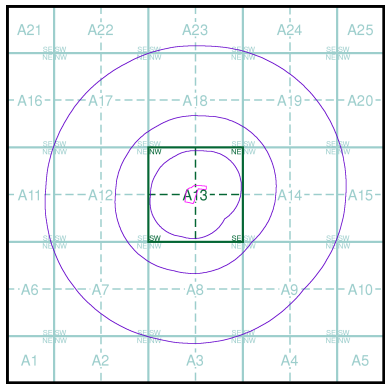
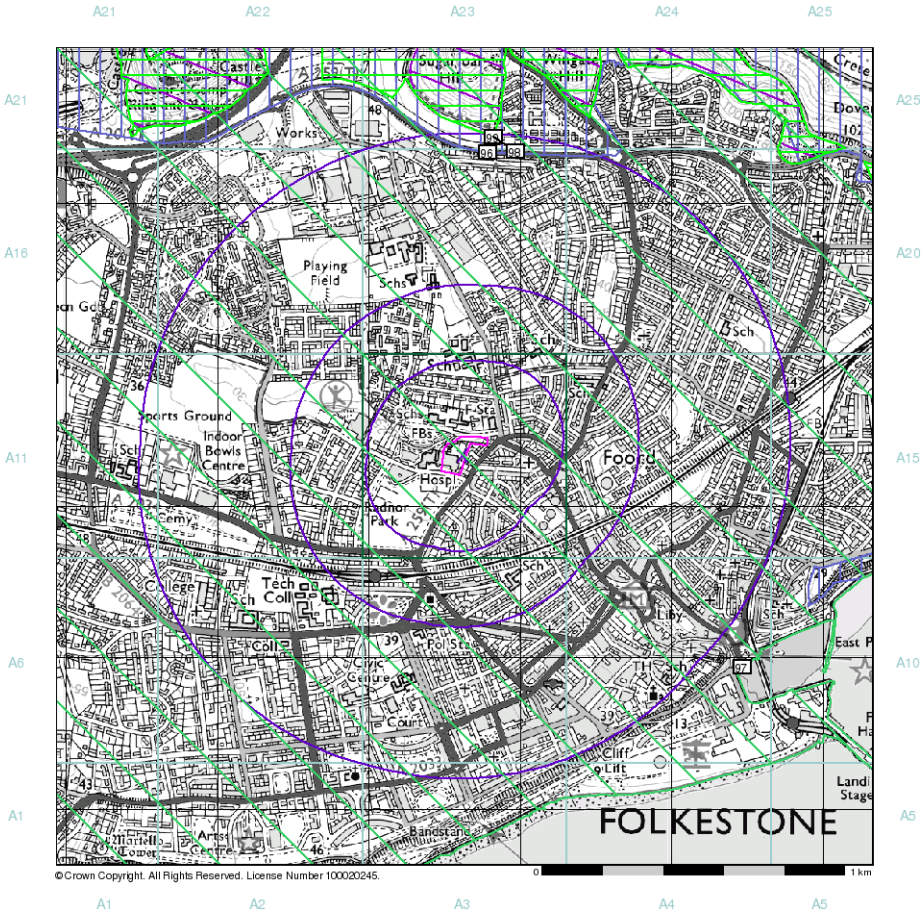
Site Details

Staff Accommodation, Royal Victoria Hospital, Radnor Park Avenue, FOLKESTONE, Kent, CT19 5BL

Sensitive Land Uses - Slice A





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- Footpath
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General

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

Sensitive Land Uses

- 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

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
21152466_1_1

Customer Reference:
C07060

National Grid Reference:
622310, 136670

Sheet:
A

Site Area (Ha):
0.96

Search Buffer (m):
1000

Site Details:

Staff Accommodation, Royal Victoria Hospital
Radnor Park Avenue
FOLKESTONE
Kent
CT19 5BL

Client Details:

Ms S Frost
Hydrock Consultants
3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

Envirocheck®
A Landmark service

Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v25.0

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
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Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 1			2	1
Local Authority Pollution Prevention and Control Enforcements					
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Pollution Incidents to Controlled Waters	pg 1	1	2	1	
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances	pg 2				2
River Quality					
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
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Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 5	Yes		n/a	n/a
Flooding from Rivers or Sea without Defences	pg 5		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
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Integrated Pollution Control Registered Waste Sites					
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Registered Landfill Sites					
Registered Waste Transfer Sites	pg 6				1
Registered Waste Treatment or Disposal Sites					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
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Planning Hazardous Substance Enforcements					
Geological					
BGS Recorded Mineral Sites					
BGS 1:625,000 Solid Geology	pg 8	Yes	n/a	n/a	n/a
Brine Compensation Areas			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability	pg 8	Yes	n/a	n/a	n/a
Natural and Mining Cavities					
Potential for Collapsible Ground Stability Hazards		Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 8		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards		Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 8	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 8	Yes	Yes	n/a	n/a
Radon Affected Areas		Yes	n/a	n/a	n/a
Radon Protection Measures			n/a	n/a	n/a
Shallow Mining Hazards	pg 8	Yes		n/a	n/a
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Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
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Marine Nature Reserves					
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National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 20	1			
Ramsar Sites					
Sites of Special Scientific Interest	pg 20				1
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Special Protection Areas					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Integrated Pollution Prevention And Control** Name: Silver Spring Mineral Water Co. Ltd Location: Silver Spring Mineral Water Co Ltd., Park Farm Road, Park Farm Industrial Estate, FOLKESTONE, Kent, CT19 5EA Authority: Environment Agency, Southern Region Permit Reference: Ep3432sa Original Permit Ref: Ep3432sa Effective Date: 17th March 2006 **Status: Effective** Application Type: Application App. Sub Type: New Positional Accuracy: Automatically positioned to the address Activity Code: 6.8 A(1) (D) (II) Activity Description: Animal, Vegetable & Food; Treating Etc. Vegetable Raw Materials For Food Greater Than 300T/Day Primary Activity: Y Activity Code: 0.0 Associated Process Activity Description: Associated Process Primary Activity: N	A18NW (N)	843	1	622069 137537
2	**Local Authority Pollution Prevention and Controls** Name: Invicta Motors Location: 104 Foord Road, FOLKESTONE, Kent, CT19 5AA Authority: Shepway District Council, Environmental Health Department Permit Reference: Mrc/113 Dated: 24th September 1996 Process Type: Local Authority Air Pollution Control Description: PG6/34 Respraying of road vehicles **Status: Authorisation has varied** Positional Accuracy: Manually positioned to the address or location	A14SW (SE)	362	2	622682 136487
3	**Local Authority Pollution Prevention and Controls** Name: Totalfinaelf (Uk) Ltd Location: 88-90 Cheriton Road, FOLKESTONE, Kent, CT20 2QH Authority: Shepway District Council, Environmental Health Department Permit Reference: Ptl/025 Dated: 27th August 1998 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorisation revoked|Revoked** Positional Accuracy: Automatically positioned to the address	A8NW (S)	446	2	622300 136155
4	**Local Authority Pollution Prevention and Controls** Name: Tram Road Filling Station Location: Tram Road, FOLKESTONE, Kent, CT20 1TE Authority: Shepway District Council, Environmental Health Department Permit Reference: PTL/038 Dated: 22nd January 1999 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A9NE (SE)	989	2	623248 136209
	Nearest Surface Water Feature	A13NE (N)	4	-	622320 136732
5	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Foul Sewer Location: Pent Stream At, Radnor Park, FOLKESTONE Authority: Environment Agency, Southern Region Pollutant: Crude Sewage Note: Stream White And Foaming Incident Date: 10th April 1996 Incident Reference: 296124 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Sewage Works Effluent Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	0	1	622300 136700
6	**Pollution Incidents to Controlled Waters** Property Type: Road (Road Traffic Accident) Location: Radnor, Park Road, FOLKESTONE, Kent Authority: Environment Agency, Southern Region Pollutant: Oils - Unknown Note: Very Small Oil Spillage Incident Date: 22nd May 1997 Incident Reference: 297191 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Oils/Related Products Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SW (S)	101	1	622300 136500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: Pavilion Road, FOLKESTONE Authority: Environment Agency, Southern Region Pollutant: Chemicals - Paints / Dyes Note: Discharge Of Cherryade To Pent Stream Incident Date: 18th February 1997 Incident Reference: 297067 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Organic Industrial Waste Incident Severity: Category 3 - Minor Incident Positional Accuracy: Unknown	A13SE (E)	232	1	622600 136600
8	**Pollution Incidents to Controlled Waters** Property Type: Other General Premises Location: Blackbull Road, FOLKESTONE Authority: Environment Agency, Southern Region Pollutant: Miscellaneous - Unknown Note: 4 Pump Fire At Disused Shop; Miscellaneous Premises: Other Incident Date: 30th April 1995 Incident Reference: 295026 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (E)	325	1	622700 136600
9	**Registered Radioactive Substances** Name: Bg Electrical Ltd Location: Arlen House, Park Farm Road, FOLKESTONE, Kent, CT19 5EF Authority: Environment Agency, Southern Region Permit Reference: AT4007 Dated: 3rd January 1996 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Discretionary authorisation under RSA **Status: Authorisation either revoked or cancelled|Cancelled** Positional Accuracy: Manually positioned to the address or location	A18NW (N)	831	1	622171 137548
9	**Registered Radioactive Substances** Name: Fwm Plastics Ltd Location: Arlen House, Park Farm Road, FOLKESTONE, Kent, CT19 5EF Authority: Environment Agency, Southern Region Permit Reference: AB8368 Dated: 19th April 1992 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation either revoked or cancelled|Cancelled** Positional Accuracy: Manually positioned to the address or location	A18NW (N)	831	1	622172 137548
10	**Water Abstractions** Operator: Shepway District Council Licence Number: 14/028 Permit Version: 100 Location: Point A, Pent Stream At Radnor Park, Folkestone Authority: Environment Agency, Southern Region Abstraction: Municipal Grounds: Make-Up or Top Up Water Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Two Ponds As Boldly Outlined On Map Authorised Start: 01 March Authorised End: 31 October Permit Start Date: 25th October 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A13NW (W)	111	1	622140 136710

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
11	**Water Abstractions** Operator: N I C Finishes Ltd Licence Number: 14/031 Permit Version: 100 Location: Point A, Borehole At Gladstone Road, Folkestone Authority: Environment Agency, Southern Region Abstraction: Machinery and Electronics: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: As Boldly Outlined On Map Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 19th October 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14NE (E)	763	1	623150 136820
	Water Abstractions Operator: Unigate Dairies Ltd Licence Number: 4/0070/ /GR Permit Version: Not Supplied Location: CHERITON Authority: Environment Agency, Southern Region Abstraction: General Industrial Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 205 Yearly Rate (m3): 50233 Details: H2D Folkestone Beds; Licence Status: Revoked; Lapsed Or Cancelled Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Manually corrected supplier location	A11NE (W)	1028	1	621270 137000
	Water Abstractions Operator: Folkestone & Dover Water Services Ltd Licence Number: 4/0062/B/GR Permit Version: Not Supplied Location: Terlingham Tunnel Authority: Environment Agency, Southern Region Abstraction: Public Water Supply Abstraction Type: Not Supplied Source: Pond or Lake Daily Rate (m3): 15911 Yearly Rate (m3): 1068310 Details: Additional Purpose: Public Water Supply Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A21NE (NW)	1766	1	621150 138075
	Water Abstractions Operator: Folkestone & Dover Water Services Ltd Licence Number: 9/40/04/0062/Gr Permit Version: 100 Location: Adit Known As Terlingham Tunnel Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a river or stream reach, or a row of wellpoints Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: N/A Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 2nd November 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A21NE (NW)	1790	1	621130 138090

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Folkestone & Dover Water Services Ltd Licence Number: 4/0062/A/GR Permit Version: Not Supplied Location: Cherry Garden Springs Authority: Environment Agency, Southern Region Abstraction: Public Water Supply Abstraction Type: Not Supplied Source: Pond or Lake Daily Rate (m3): 15911 Yearly Rate (m3): 1068310 Details: Additional Purpose: Public Water Supply Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A21NE (NW)	1826	1	621080 138095
	Water Abstractions Operator: Folkestone & Dover Water Services Ltd Licence Number: 9/40/04/0062/Gr Permit Version: 100 Location: Cherry Garden Springs Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from any point within an area Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: N/A Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 2nd November 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A21NE (NW)	1851	1	621079 138127
	Water Abstractions Operator: Folkestone & Dover Water Services Ltd Licence Number: 9/40/04/0062/Gr Permit Version: 100 Location: Boreholes At Shearway Ps Authority: Environment Agency, Southern Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from any point within an area Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: N/A Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 2nd November 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(NW)	1953	1	620600 137730
12	**Water Industry Act Referrals** Name: Nic Finishes Ltd Location: Gladstone Road, Folkestone, Kent, CT19 5NF Authority: Environment Agency, Southern Region Permit Reference: AE9476 Dated: 27th March 1992 Process Type: Permissions or amendments to discharge under the Water Industry Act 1991 Description: Processes which result in the discharge of Special Category effluents under The Trade Effluents (Prescribed Processes and Substances) Regulations **Status: Application has been authorised and any conditions apply to the operator|Authorised** Positional Accuracy: Automatically positioned to the address	A14NE (E)	729	1	623115 136822
	Groundwater Vulnerability Geological Classification: Major Aquifer (Highly permeable) - These are highly permeable formations usually with a known or probable presence of significant fracturing. They may be highly productive and able to support large abstractions for public water supply and other purposes Soil Classification: Soils of High Leaching Potential (U) - Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst case vulnerability classification (H) assumed, until proved otherwise Map Sheet: Sheet 47 East Kent Scale: 1:100,000	A13NE (N)	0	1	622330 136966
	Drift Deposits Drift Deposit: Low permeability drift deposits occuring at the surface and overlying Major and Minor Aquifers are head, clay-with-flints, brickearth, peat, river terrace deposits and marine and estuarine alluvium Map Sheet: Sheet 47 East Kent Scale: 1:100,000	A13SW (S)	0	1	622297 136607

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Boundary Accuracy: As Supplied	A13NE (NE)	0	1	622350 136730
	Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Boundary Accuracy: As Supplied	A13NE (N)	4	1	622340 136745
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	**Licensed Waste Management Facilities (Locations)** Licence Number: 19562 Location: Rear Of Century House, Park Farm Road, Folkestone, Kent, CT19 5DW Operator Name: Jenner Plant Hire Company Limited Operator Location: Century House, Park Farm Road, Folkestone, Kent, CT19 5DW Authority: Environment Agency - Southern Region, Kent Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Modified** Issued: 12th June 1998 Last Modified: 18th December 2003 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A18NW (N)	786	1	622198 137507
	Local Authority Landfill Coverage Name: Shepway District Council - Has no landfill data to supply		0	2	623835 138527
	Local Authority Landfill Coverage Name: Kent County Council - Had landfill data but passed it to the relevant environment agency		0	10	623280 136080
14	**Registered Waste Transfer Sites** Licence Holder: Jenner Plant Hire Co Ltd T/A Hythe Plant Licence Reference: P/14/30 Site Location: Century House (Rear Of), Park Farm Road, FOLKESTONE, Kent, CT19 5DW Operator Location: Century House, Park Farm Road, FOLKESTONE, Kent, CT19 3DW Authority: Environment Agency - Southern Region, Kent Area Site Category: Transfer - with treatment 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 known|Operational Dated: 12th June 1998 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: Kent Cat. A - Non (V.Slow)-Degrading W Kent Cat. B1 - Slowly Degradable Waste Max.Waste Permitted By Licence Prohibited Waste: Waste N.O.S.	A18NW (N)	817	1	622150 137530

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
15	**Notification of Installations Handling Hazardous Substances (NIHHS)** Name: Transco Location: Ship Street, FOLKESTONE, Kent, CT19 5BE **Status: Active** Positional Accuracy: Automatically positioned to postcode unit of the address	A13SE (SE)	236	3	622569 136547
16	**Notification of Installations Handling Hazardous Substances (NIHHS)** Name: Transco Location: Eastfields, FOLKSTONE, Kent, CT19 5R **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	326	3	622596 136449
17	**Planning Hazardous Substance Consents** Name: British Gas Plc Location: Gas Holder No 4, Eastfield, FOLKESTONE, Kent, CT20 2AB Authority: Shepway District Council Application Ref: 92/0825/5h Hazardous Substance: Part C, Flammable Substance (Not in Parts A&B), Gas or gases flammable in air, when held as a gas, where amount held is >= 15tonnes Maximum Quantity: 43.96 Application date: 29th October 1992 **Decision: Unknown at time of report|Unknown** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	298	4	622586 136478
17	**Planning Hazardous Substance Consents** Name: British Gas Plc Location: Folkestone Gas Holder Station, Ship Street, FOLKESTONE, Kent, CT20 2AB Authority: Shepway District Council Application Ref: 92/0825/5h Hazardous Substance: Part C, Flammable Substance (Not in Parts A&B), Gas or gases flammable in air, when held as a gas, where amount held is >= 15tonnes Maximum Quantity: 39.22 Application date: 29th October 1992 **Decision: Unknown at time of report|Unknown** Positional Accuracy: Manually positioned to the address or location	A13SE (SE)	322	4	622613 136470

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Lower Greensand	A13NW (NE)	0	5	622317 136677
	BGS 1:625,000 Solid Geology Description: Upper Greensand and Gault	A13NW (NE)	0	5	622317 136677
	Coal Mining Affected Areas In an area which may not be affected by coal mining				
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A4NE (SE)	0	-	623000 135500
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	5	622275 136625
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	0	5	622125 136775
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	154	5	622125 136775
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	188	5	622100 136800
	Potential for Ground Dissolution Stability Hazards No Hazard				
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A8NW (SW)	0	5	622100 136300
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	5	622275 136625
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	5	622275 136625
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	197	5	622313 136925
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	5	622275 136625
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	5	622275 136625
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	154	5	622125 136775
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	188	5	622100 136800
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	197	5	622313 136925
	Radon Affected Areas Description: Between 1% and 3% of homes are above the Action Level Source: Health Protection Agency	A13NW (W)	0	6	622000 136672
	Radon Protection Measures Type: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A4NW (SE)	0	5	622844 135550
	Shallow Mining Hazards Risk: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	0	5	622272 136871

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	**Contemporary Trade Directory Entries** Name: Royal Victoria Hospital Location: Radnor Park Avenue, Folkestone, Kent, CT19 5BN Classification: Hospitals **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	7	-	622238 136639
19	**Contemporary Trade Directory Entries** Name: Pavilion Auto Repair Centre Location: 54-56, Pavilion Road, Folkestone, Kent, CT19 5RL Classification: Brake & Clutch Service Centres **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13NE (E)	153	-	622541 136763
19	**Contemporary Trade Directory Entries** Name: A J Pearson Location: 54-56, Pavilion Road, Folkestone, Kent, CT19 5RL Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13NE (E)	153	-	622541 136763
19	**Contemporary Trade Directory Entries** Name: Meriden Motor Services Location: 54-56, Pavilion Road, Folkestone, Kent, CT19 5RL Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13NE (E)	153	-	622541 136763
20	**Contemporary Trade Directory Entries** Name: Auto Electrical Services Location: 81-83 Radnor Pk Rd, Folkestone, Kent, CT19 5BU Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NE (E)	196	-	622585 136671
21	**Contemporary Trade Directory Entries** Name: Boscombe Garage Location: 2b, Boscombe Road, Folkestone, Kent, CT19 5BD Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	203	-	622498 136530
22	**Contemporary Trade Directory Entries** Name: B D N Manufacturing Location: 7, Bournemouth Road, Folkestone, Kent, CT19 5BA Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	229	-	622464 136441
23	**Contemporary Trade Directory Entries** Name: Medical Engineering Technologies Location: Webster House, 24, Jesmond Street, Folkestone, Kent, CT19 5QW Classification: Engineering Materials **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	245	-	622638 136738
23	**Contemporary Trade Directory Entries** Name: Ri & Cj Light Cargo Location: Webster House, 24, Jesmond Street, Folkestone, Kent, CT19 5QW Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13NE (E)	245	-	622638 136738
23	**Contemporary Trade Directory Entries** Name: Medical Engineering Technologies Ltd Location: Webster House, Jesmond Street, Folkestone, Kent, CT19 5QW Classification: Industrial Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	255	-	622646 136753
24	**Contemporary Trade Directory Entries** Name: G M Frake Location: 22, Albert Road, Folkestone, Kent, CT19 5RF Classification: Boilers - Servicing, Replacements & Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	255	-	622614 136852
25	**Contemporary Trade Directory Entries** Name: Fine-Wood Finishers Location: 140-142, Foord Road, Folkestone, Kent, CT19 5AB Classification: French Polishing **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	278	-	622646 136591

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
26	**Contemporary Trade Directory Entries** Name: Delmaines Location: 37-39, Black Bull Road, Folkestone, Kent, CT19 5QP Classification: Washing Machines - Servicing & Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (E)	296	-	622688 136705
26	**Contemporary Trade Directory Entries** Name: Cinque Ports Water Ltd Location: 4, Walton Road, Folkestone, Kent, CT19 5QR Classification: Water Coolers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (E)	302	-	622694 136754
27	**Contemporary Trade Directory Entries** Name: Vehicle Valuations Location: 53, Bradstone Avenue, Folkestone, Kent, CT19 5AG Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (E)	299	-	622675 136607
28	**Contemporary Trade Directory Entries** Name: Homeguard Building Protection Services Ltd Location: 19, Broadmead Road, Folkestone, Kent, CT19 5AN Classification: Damp & Dry Rot Control **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	302	-	622522 136396
28	**Contemporary Trade Directory Entries** Name: D J Baker Location: 17, Broadmead Road, Folkestone, Kent, CT19 5AL Classification: Jewellery Manufacturers & Repairers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	308	-	622530 136396
29	**Contemporary Trade Directory Entries** Name: Invicta Motors Ltd Location: 104 Foord Rd, Folkestone, Kent, CT19 5AA Classification: Car Dealers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A14SW (SE)	361	-	622686 136494
29	**Contemporary Trade Directory Entries** Name: Rapid Fit Location: 94, Foord Road, Folkestone, Kent, CT19 5AA Classification: Exhaust & Shock Absorber Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	362	-	622687 136494
30	**Contemporary Trade Directory Entries** Name: Valet Sure Location: A, 33, Brockman Road, Folkestone, Kent, CT20 1DJ Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (S)	368	-	622388 136243
31	**Contemporary Trade Directory Entries** Name: Mini Man Location: 124-128, Guildhall Street, Folkestone, Kent, CT20 1ES Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	429	-	622629 136326
32	**Contemporary Trade Directory Entries** Name: Barretts Of Folkestone Location: Foord Road, Folkestone, Kent, CT19 5AE Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	429	-	622736 136448
32	**Contemporary Trade Directory Entries** Name: Wilmoths Citroen Folkestone Location: Foord Road, Folkestone, Kent, CT19 5AE Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	429	-	622736 136448
33	**Contemporary Trade Directory Entries** Name: M T S Damp Proofing Location: 32, Linden Crescent, Folkestone, Kent, CT19 5RP Classification: Damp & Dry Rot Control **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (E)	430	-	622821 136769

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
34	**Contemporary Trade Directory Entries** Name: Total Location: Central Service Station, 88-90, Cheriton Road, Folkestone, Kent, CT20 2QH Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	446	-	622301 136155
35	**Contemporary Trade Directory Entries** Name: Boomerang Printing Services Location: 131, Black Bull Road, Folkestone, Kent, CT19 5NU Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	501	-	622814 136997
36	**Contemporary Trade Directory Entries** Name: Chessington Tyres Location: 12-14, Bradstone Road, Folkestone, Kent, CT20 1HS Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	599	-	622857 136327
37	**Contemporary Trade Directory Entries** Name: Ashley Light Engineering Location: Forge Yard, Bradstone Road, Folkestone, Kent, CT20 1HS Classification: Sheet Metal Work **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	618	-	622830 136268
37	**Contemporary Trade Directory Entries** Name: Bradstone Garage Location: Bradstone Road, Folkestone, Kent, CT20 1HS Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	640	-	622863 136271
37	**Contemporary Trade Directory Entries** Name: J J Auto Services Location: 8-8a, Foord Road South, Folkestone, Kent, CT20 1HJ Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	659	-	622864 136244
38	**Contemporary Trade Directory Entries** Name: Johnsons Location: The Yard,St. Johns St, Folkestone, Kent, CT20 1JB Classification: Scrap Metal Merchants **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A14SW (E)	628	-	622968 136453
39	**Contemporary Trade Directory Entries** Name: John Scoble Location: 116, Canterbury Road, Folkestone, Kent, CT19 5NW Classification: Domestic Appliances - Servicing, Repairs & Parts **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	633	-	622971 136984
40	**Contemporary Trade Directory Entries** Name: Look-In Location: 142a, Canterbury Road, Folkestone, Kent, CT19 5PH Classification: Hardware **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	637	-	622893 137119
41	**Contemporary Trade Directory Entries** Name: Pullens Crash Repairs Ltd Location: Unit 1,Park Farm Rd, Park Farm Ind Est, Folkestone, Kent, CT19 5DS Classification: Car Body Repairs **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A18NW (N)	640	-	622216 137362
42	**Contemporary Trade Directory Entries** Name: Mark'S Motors Location: 21a, Marshall Street, Folkestone, Kent, CT19 6EN Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	661	-	622963 137059
43	**Contemporary Trade Directory Entries** Name: Southern Consultants Ltd Location: 16, Grace Hill, Folkestone, Kent, CT20 1HE Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	666	-	622846 136216

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	**Contemporary Trade Directory Entries** Name: Copy Link Location: 19, Grace Hill, Folkestone, Kent, CT20 1HA Classification: Copying & Duplicating Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	712	-	622868 136172
43	**Contemporary Trade Directory Entries** Name: Copy Link Location: 19, Grace Hill, Folkestone, Kent, CT20 1HA Classification: Photocopiers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	712	-	622868 136172
44	**Contemporary Trade Directory Entries** Name: Brady Cleaning Consultancy Location: Ingles Manor, Castle Hill Avenue, Folkestone, Kent, CT20 2RD Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	675	-	622029 135973
45	**Contemporary Trade Directory Entries** Name: Good As New Location: 42, Dover Road, Folkestone, Kent, CT20 1JX Classification: Domestic Appliances - Servicing, Repairs & Parts **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	694	-	622971 136321
45	**Contemporary Trade Directory Entries** Name: Cinquport Minerals Location: 40, Dover Road, Folkestone, Kent, CT20 1JX Classification: Mineral Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	694	-	622969 136317
45	**Contemporary Trade Directory Entries** Name: Autorite Finishers Ltd Location: 86-88, Tontine Street, Folkestone, Kent, CT20 1JW Classification: Car Body Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	725	-	622986 136288
45	**Contemporary Trade Directory Entries** Name: R M R Engineering Ltd Location: 90-92, Tontine Street, Folkestone, Kent, CT20 1JW Classification: Sheet Metal Work **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	725	-	622986 136288
45	**Contemporary Trade Directory Entries** Name: Measurement Aids Ltd Location: 90-92, Tontine Street, Folkestone, Kent, CT20 1JW Classification: Electronic Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	725	-	622986 136288
46	**Contemporary Trade Directory Entries** Name: Saga Group Ltd Location: The Saga Building, Middelburg Square, Folkestone, Kent, CT20 1AZ Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	711	-	622541 135932
47	**Contemporary Trade Directory Entries** Name: B4b Ltd Location: 4, Jointon Road, Folkestone, Kent, CT20 2RF Classification: Brewers' Equipment & Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	714	-	621934 135969
47	**Contemporary Trade Directory Entries** Name: Firex Location: 4, Jointon Road, Folkestone, Kent, CT20 2RF Classification: Firefighting Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	714	-	621934 135969
47	**Contemporary Trade Directory Entries** Name: G. M. Fire Protection Location: 4, Jointon Road, Folkestone, Kent, CT20 2RF Classification: Firefighting Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	714	-	621934 135969

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	**Contemporary Trade Directory Entries** Name: Firex (Uk) Ltd Location: 4, Jointon Road, Folkestone, Kent, CT20 2RF Classification: Firefighting Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	714	-	621934 135969
48	**Contemporary Trade Directory Entries** Name: Nic Finishes Ltd Location: Gladstone Road, Folkestone, Kent, CT19 5NF Classification: Metal Finishing Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	728	-	623115 136822
48	**Contemporary Trade Directory Entries** Name: Crystal Clear Location: 57-59, Canterbury Road, Folkestone, Kent, CT19 5NJ Classification: Glass Engravers & Decorators **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	734	-	623118 136840
48	**Contemporary Trade Directory Entries** Name: Crystal Clear Uk Ltd Location: 57-59, Canterbury Road, Folkestone, Kent, CT19 5NJ Classification: Glass Engravers & Decorators **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NE (E)	734	-	623118 136840
49	**Contemporary Trade Directory Entries** Name: Saturn Solution Ltd Location: Ingles Yard, Jointon Road, Folkestone, Kent, CT20 2RY Classification: Electronic Equipment - Manufacturers & Assemblers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	732	-	622002 135921
50	**Contemporary Trade Directory Entries** Name: Merok Marine International Location: Drellingore Works, Park Farm Close, Park Farm Industrial Estate, Folkestone, Kent, CT19 5DU Classification: Marine Equipment & Supplies **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NW (N)	739	-	622266 137466
51	**Contemporary Trade Directory Entries** Name: Town & Around (Folkestone) Ltd Location: The Channel Business Centre, 11, Bouverie Square, Folkestone, Kent, CT20 1BD Classification: Bus & Coach Operators & Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	749	-	622657 135942
52	**Contemporary Trade Directory Entries** Name: Griffin Vehicle Services Location: 4, Victoria Mews, Christ Church Road, Folkestone, Kent, CT20 2ST Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	752	-	622312 135849
52	**Contemporary Trade Directory Entries** Name: C M C Motor Co Location: Victoria Mews,Christ Church Rd, Folkestone, Kent, CT20 2ST Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	753	-	622312 135848
52	**Contemporary Trade Directory Entries** Name: Caffyns Plc Location: 8-10, Bouverie Road West, Folkestone, Kent, CT20 2SY Classification: Car Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	773	-	622358 135830
53	**Contemporary Trade Directory Entries** Name: Zanchi Motors Location: 56, Dover Road, Folkestone, Kent, CT20 1LD Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (E)	763	-	623074 136361

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
54	**Contemporary Trade Directory Entries** Name: John Boardman Associates Location: 69, Tontine Street, Folkestone, Kent, CT20 1JR Classification: Engineers - General **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	781	-	622992 136203
55	**Contemporary Trade Directory Entries** Name: Shepway Childrens Fund Location: 1, Bouverie Road West, Folkestone, Kent, CT20 2RX Classification: Charcoal Suppliers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8SE (S)	786	-	622528 135848
56	**Contemporary Trade Directory Entries** Name: Chameleon Home Location: Mill Bay, Folkestone, Kent, CT20 1JS Classification: Ceramic Manufacturers, Supplies & Services **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A9NW (SE)	788	-	622990 136191
56	**Contemporary Trade Directory Entries** Name: Taylors Decorators Location: 62 Tontine St, Folkestone, Kent, CT20 1JP Classification: Painting & Decorating Supplies **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A9NE (SE)	830	-	623044 136190
56	**Contemporary Trade Directory Entries** Name: Paint & Decor Centre Location: 62, Tontine Street, Folkestone, Kent, CT20 1JP Classification: Painting & Decorating Supplies **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	830	-	623044 136191
56	**Contemporary Trade Directory Entries** Name: Screen South Ltd Location: The Wedge,Tontine St, Folkestone, Kent, CT20 1JR Classification: Screen Manufacturers & Suppliers **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A9NE (SE)	833	-	623036 136176
56	**Contemporary Trade Directory Entries** Name: Kent Health & Hygiene Supplies Location: 56, Tontine Street, Folkestone, Kent, CT20 1JP Classification: Cleaning Materials & Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	845	-	623052 136176
57	**Contemporary Trade Directory Entries** Name: Vertex Moulding Ltd Location: Park Farm Cl, Park Farm Ind Est, Folkestone, Kent, CT19 5DU Classification: Plastics - Injection Moulding **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A18NW (N)	791	-	622213 137514
58	**Contemporary Trade Directory Entries** Name: Town & Around (Folkestone) Ltd Location: 37, Bouverie Square, Folkestone, Kent, CT20 1BA Classification: Bus & Coach Operators & Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	791	-	622593 135866
59	**Contemporary Trade Directory Entries** Name: A Y S Location: 47 Charlotte St, Folkestone, Kent, CT20 1LF Classification: Car Body Repairs **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A14SE (E)	802	-	623136 136403
60	**Contemporary Trade Directory Entries** Name: Argon (Uk) Spit Roast Ltd Location: 61, Earls Avenue, Folkestone, Kent, CT20 2HA Classification: Catering Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A7SE (SW)	806	-	621751 135974

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
61	**Contemporary Trade Directory Entries** Name: Park Farm Joinery Location: Century House, Park Farm Road, Park Farm Industrial Estate, Folkestone, Kent, CT19 5DW Classification: Joinery Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NW (N)	807	-	622143 137518
62	**Contemporary Trade Directory Entries** Name: Johnson Cleaners Uk Ltd Location: 3, Guildhall Street, Folkestone, Kent, CT20 1EA Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	808	-	622849 136007
63	**Contemporary Trade Directory Entries** Name: Roger West Ltd Location: 96, Dover Road, Folkestone, Kent, CT20 1LA Classification: Boilers - Servicing, Replacements & Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (E)	814	-	623167 136453
64	**Contemporary Trade Directory Entries** Name: Milbrooke Printers Ltd Location: E-F, Unit, Kingsmead, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EU Classification: Printers **Status: Active** Positional Accuracy: Manually positioned to the address or location	A17NE (NW)	826	-	621812 137396
64	**Contemporary Trade Directory Entries** Name: R B Print Services Location: E-F, Unit, Kingsmead, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EU Classification: Printers **Status: Active** Positional Accuracy: Manually positioned to the address or location	A17NE (NW)	826	-	621812 137396
64	**Contemporary Trade Directory Entries** Name: 4 6 4 Brands Ltd Location: Unit 4, Kingsmead, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EU Classification: Soft Drinks - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	874	-	621786 137436
65	**Contemporary Trade Directory Entries** Name: Kent Shirts Ltd Location: 25-27, Bouverie Road West, Folkestone, Kent, CT20 2SZ Classification: Shirt Makers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	827	-	622376 135777
66	**Contemporary Trade Directory Entries** Name: Automotive Express Radiators Ltd Location: A, 60, Sidney Street, Folkestone, Kent, CT19 6HG Classification: Car Radiator Servicing & Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SE (NE)	831	-	623152 137065
67	**Contemporary Trade Directory Entries** Name: A S V The Caring Shop Location: 34, Rendezvous Street, Folkestone, Kent, CT20 1EZ Classification: Disability Equipment - Manufacturers & Suppliers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	833	-	622949 136079
68	**Contemporary Trade Directory Entries** Name: Silver Spring Mineral Water Co Ltd Location: Park Farm Road, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EA Classification: Soft Drinks - Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NW (N)	843	-	622069 137537
69	**Contemporary Trade Directory Entries** Name: Carter Wallace Ltd Location: Folkestone, Kent, CT19 6PG Classification: Toiletries **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	845	-	622649 135831

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
70	**Contemporary Trade Directory Entries** Name: P D C Copyprint Location: 1, Town Walk, Folkestone, Kent, CT20 2AD Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	846	-	622572 135800
70	**Contemporary Trade Directory Entries** Name: Alpha Blinds Location: 4, Radnor Chambers, Cheriton Place, Folkestone, Kent, CT20 2BB Classification: Blinds, Awnings & Canopies **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	861	-	622609 135797
71	**Contemporary Trade Directory Entries** Name: Ellison Location: 113, Dolphins Road, Folkestone, Kent, CT19 5QB Classification: Commercial Vehicle Bodybuilders & Repairers **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NE (N)	847	-	622648 137533
72	**Contemporary Trade Directory Entries** Name: Roadrunner Transport Services Location: Edmonton House, Park Farm Close, Park Farm Industrial Estate, Folkestone, Kent, CT19 5DU Classification: Road Haulage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NW (N)	849	-	622214 137572
73	**Contemporary Trade Directory Entries** Name: Sandgate Motors (T A T A) Location: Unit 5/7, Kingsmead, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EU Classification: Mot Testing Centres **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A17NE (NW)	875	-	621812 137454
73	**Contemporary Trade Directory Entries** Name: Sandgate Motors Location: Unit 5/7, Kingsmead, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EU Classification: Car Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	909	-	621802 137488
73	**Contemporary Trade Directory Entries** Name: Ciranova Location: Unit 11, Kingsmead, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EU Classification: Wood Products, Except Furniture - Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	927	-	621756 137479
74	**Contemporary Trade Directory Entries** Name: Take One Media Ltd Location: Kingsmead Warehouse, Kingsmead, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EU Classification: Distribution Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	882	-	621876 137499
75	**Contemporary Trade Directory Entries** Name: The Lantern Launderette Location: 9, The Old High Street, Folkestone, Kent, CT20 1RJ Classification: Laundries & Launderettes **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	887	-	622993 136047
76	**Contemporary Trade Directory Entries** Name: Dixons Location: Europa House, 49, Sandgate Road, Folkestone, Kent, CT20 1RX Classification: Electrical Goods Sales, Manufacturers & Wholesalers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	891	-	622803 135865
77	**Contemporary Trade Directory Entries** Name: B Gunn Location: 80, Harbour Way, Folkestone, Kent, CT20 1NA Classification: Woodworm Control **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SE (E)	891	-	623218 136371

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
78	**Contemporary Trade Directory Entries** Name: Pharmeurope Location: 4, Rendezvous Street, Folkestone, Kent, CT20 1EX Classification: Pharmaceutical Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	893	-	622940 135978
78	**Contemporary Trade Directory Entries** Name: Art Of Candles Location: 6, Rendezvous Street, Folkestone, Kent, CT20 1EX Classification: Candle Manufacturers & Suppliers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	893	-	622940 135978
78	**Contemporary Trade Directory Entries** Name: Alpha Male Location: 7, George Lane, Folkestone, Kent, CT20 1RH Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	902	-	622964 135989
79	**Contemporary Trade Directory Entries** Name: Barky Instrument International Location: 6, Ash Tree Road, Folkestone, Kent, CT19 6ED Classification: Precision Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NE (E)	902	-	623284 136868
80	**Contemporary Trade Directory Entries** Name: A F Commercials Location: Park Farm Close, Park Farm Industrial Estate, Folkestone, Kent, CT19 5DU Classification: Commercial Vehicle Bodybuilders & Repairers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18NW (N)	904	-	622147 137618
81	**Contemporary Trade Directory Entries** Name: Abbey Preservation Location: 194, Dover Road, Folkestone, Kent, CT20 1NX Classification: Damp & Dry Rot Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NE (E)	905	-	623298 136719
82	**Contemporary Trade Directory Entries** Name: Zoom Photos Location: 91, Sandgate Road, Folkestone, Kent, CT20 2BQ Classification: Photographic Processors **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	909	-	622654 135763
82	**Contemporary Trade Directory Entries** Name: Johnson'S Location: 89, Sandgate Road, Folkestone, Kent, CT20 2AF Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A9SW (S)	910	-	622658 135764
83	**Contemporary Trade Directory Entries** Name: Builder Center Location: Park Farm Road, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EB Classification: Builders' Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A18NW (N)	910	-	622069 137607
83	**Contemporary Trade Directory Entries** Name: Bensons Bed Centres Ltd Location: Park Farm Rd, Park Farm Ind Est, Folkestone, Kent, CT19 5DS Classification: Bed & Mattress Manufacturers **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A18NW (N)	932	-	622088 137634
84	**Contemporary Trade Directory Entries** Name: Lea'S Launderette Location: 6, Majestic Parade, Sandgate Road, Folkestone, Kent, CT20 2BZ Classification: Laundries & Launderettes **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	912	-	622349 135690
85	**Contemporary Trade Directory Entries** Name: Quality Air Uk Ltd Location: Austin House, 137-139, Sandgate Road, Folkestone, Kent, CT20 2BL Classification: Vacuum Cleaners - Sales & Service **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A8SE (S)	915	-	622539 135718

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
86	**Contemporary Trade Directory Entries** Name: Reflective Moods Location: 18-24, The Old High Street, Folkestone, Kent, CT20 1RL Classification: Mirrors & Decorative Glass **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	927	-	623046 136047
86	**Contemporary Trade Directory Entries** Name: Easthope Studios Location: 78, The Bayle, FOLKESTONE, Kent, CT20 1SJ Classification: Stained Glass Designers & Producers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	933	-	623046 136038
87	**Contemporary Trade Directory Entries** Name: B G Electrical Location: Park Farm Road, Park Farm Industrial Estate, Folkestone, Kent, CT19 5EF Classification: Electrical Goods - Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (N)	965	-	621977 137636
88	**Contemporary Trade Directory Entries** Name: J E J Lack Location: 1, Albion Villas, Folkestone, Kent, CT20 1RP Classification: Electrolysis **Status: Active** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	966	-	622837 135797
89	**Contemporary Trade Directory Entries** Name: Luminessence Location: 48, The Old High Street, Folkestone, Kent, CT20 1RN Classification: Candle Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NE (SE)	971	-	623107 136048
90	**Contemporary Trade Directory Entries** Name: Reznor (Uk) Ltd Location: Park Farm Road, Park Farm Industrial Estate, Folkestone, Kent, CT19 5DR Classification: Heating Equipment - Sales & Service **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	978	-	622147 137693
90	**Contemporary Trade Directory Entries** Name: Reznor (Uk) Ltd Location: Park Farm Road, Park Farm Industrial Estate, Folkestone, Kent, CT19 5DR Classification: Heating Equipment - Sales & Service **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A23SW (N)	978	-	622147 137693
91	**Contemporary Trade Directory Entries** Name: Henwood Church Supplies Ltd Location: The Bayle, Folkestone, Kent, CT20 1SQ Classification: Metal Products - Fabricated **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A9SE (SE)	990	-	623043 135946
92	**Fuel Station Entries** Name: Cheriton Road Service Station Location: 88-90 Cheriton Road, FOLKESTONE, Kent, CT20 2QH Brand: Closed Premises Type: Petrol Station **Status: Closed** Positional Accuracy: Automatically positioned to the address	A8NW (S)	451	-	622301 136150
93	**Fuel Station Entries** Name: Former Garage Location: Canterbury Road, FOLKESTONE, Kent, CT18 Brand: OBSOLETE Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the address or location	A14NE (E)	684	-	623054 136900
94	**Fuel Station Entries** Name: Former Garage Location: Bouverie Road, FOLKESTONE, Kent, CT18 Brand: OBSOLETE Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the address or location	A8SE (S)	778	-	622377 135826

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
95	**Fuel Station Entries** Name: Tram Road Filling Station Location: The Tram Road, FOLKESTONE, Kent, CT20 1TE Brand: Jet Premises Type: Petrol Station **Status: Open** Positional Accuracy: Located by supplier to within 100m	A9NE (E)	984	-	623280 136280

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
96	**Areas of Outstanding Natural Beauty** Name: Kent Downs Multiple Area: Y Area (m2): 607620928 Designation Date: 31st July 1968 Source: The Countryside Agency	A18NE (N)	941	7	622393 137668
97	**Nitrate Vulnerable Zones** Name: Not Supplied Description: Groundwater Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	A9SE (SE)	0	8	623234 135967
98	**Sites of Special Scientific Interest** Name: Folkestone To Etchinghill Escarpment Multiple Area: N Area (m2): 2674641.06 Source: Natural England Reference: 1003661 Designation Details: Geological Conservation Review Designation Date: 17th April 1984 Date Type: Notified Designation Details: Nature Conservation Review Designation Date: 17th April 1984 Date Type: Notified Designation Details: Special Area Of Conservation Designation Date: 17th April 1984 Date Type: Notified	A23SE (N)	993	9	622413 137718
99	**Special Areas of Conservation** Name: Folkestone To Etchinghill Escarpment Multiple Area: N Area (m2): 1870220.62 Source: Natural England Reference: UK0012835 **Status: Candidate**	A23SE (N)	993	9	622413 137718

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Shepway District Council - Environmental Health, Planning and Building Control	December 2006	Annual Rolling Update
Discharge Consents Environment Agency - Southern Region	January 2007	Quarterly
Enforcement and Prohibition Notices Environment Agency - Southern Region	March 2007	As notified
Integrated Pollution Controls Environment Agency - Southern Region	January 2007	Quarterly
Integrated Pollution Prevention And Control Environment Agency - Southern Region	January 2007	Quarterly
Local Authority Integrated Pollution Prevention And Control Shepway District Council - Environmental Health Department	April 2006	Annual Rolling Update
Local Authority Pollution Prevention and Controls Shepway District Council - Environmental Health Department	April 2006	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements Shepway District Council - Environmental Health Department	April 2006	Annual Rolling Update
Nearest Surface Water Feature Ordnance Survey	October 2006	Quarterly
Pollution Incidents to Controlled Waters Environment Agency - Southern Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - Southern Region	March 2007	As notified
Prosecutions Relating to Controlled Waters Environment Agency - Southern Region	March 2007	As notified
Registered Radioactive Substances Environment Agency - Southern Region	January 2007	Quarterly
River Quality Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points Environment Agency - Head Office	October 2006	Annually
River Quality Chemistry Sampling Points Environment Agency - Head Office	October 2006	Annually
Substantiated Pollution Incident Register Environment Agency - Southern Region - Kent Area	January 2007	Quarterly
Water Abstractions Environment Agency - Southern Region	January 2007	Quarterly
Water Industry Act Referrals Environment Agency - Southern Region	January 2007	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	January 1999	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Source Protection Zones Environment Agency - Head Office	April 2005	Variable
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	January 2007	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	January 2007	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	January 2007	Quarterly

Agency & Hydrological	Version	Update Cycle
Flood Water Storage Areas		
Environment Agency - Head Office	January 2007	Quarterly
Flood Defences		
Environment Agency - Head Office	January 2007	Quarterly
Waste	**Version**	**Update Cycle**
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Southern Region	January 2007	Quarterly
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Southern Region - Kent Area	November 2006	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Southern Region - Kent Area	February 2007	Quarterly
Local Authority Landfill Coverage		
Kent County Council - Waste Management Group	May 2000	Not Applicable
Shepway District Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Kent County Council - Waste Management Group	May 2000	Not Applicable
Shepway District Council - Environmental Health Department	May 2000	Not Applicable
Registered Landfill Sites		
Environment Agency - Southern Region - Kent Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Southern Region - Kent Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Southern Region - Kent Area	March 2003	Not Applicable
Hazardous Substances	**Version**	**Update Cycle**
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	October 2006	Bi-Annually
Explosive Sites		
Health and Safety Executive	February 2007	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Shepway District Council	December 2006	Annual Rolling Update
Kent County Council	May 2006	Annual Rolling Update
Planning Hazardous Substance Consents		
Shepway District Council	December 2006	Annual Rolling Update
Kent County Council	May 2006	Annual Rolling Update

Geological	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	October 2006	Bi-Annually
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
Brine Compensation Areas Cheshire Brine Subsidence Compensation Board	November 2002	As notified
Coal Mining Affected Areas The Coal Authority - Mining Report Service	January 2006	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Natural and Mining Cavities Peter Brett Associates	December 2005	Variable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	November 2006	Annually
Radon Affected Areas Health Protection Agency	January 2003	Not Applicable
Radon Protection Measures British Geological Survey - National Geoscience Information Service	August 2002	Variable
Shallow Mining Hazards British Geological Survey - National Geoscience Information Service	August 2002	Not Applicable
Industrial Land Use	**Version**	**Update Cycle**
Contemporary Trade Directory Entries Thomson Directories	November 2006	Quarterly
Fuel Station Entries Catalist Ltd - (Fuel Station Data)	December 2006	Quarterly

Sensitive Land Use	Version	Update Cycle
Areas of Outstanding Natural Beauty The Countryside Agency	November 2006	Annually
Environmentally Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	June 2006	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Shepway District Council	January 2000	Variable
Marine Nature Reserves Natural England	November 2006	Bi-Annually
National Nature Reserves Natural England	November 2006	Bi-Annually
National Parks The Countryside Agency	October 2006	Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2003	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	May 2006	Annually
Ramsar Sites Natural England	November 2006	Bi-Annually
Sites of Special Scientific Interest Natural England	November 2006	Bi-Annually
Special Areas of Conservation Natural England	November 2006	Bi-Annually
Special Protection Areas Natural England	November 2006	Bi-Annually

A selection of organisations who provide data within this report

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

Useful Contacts

Contact	Name and Address	Contact Details
1	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	**Shepway District Council - Environmental Health Department** Civic Centre, Castle Hill Avenue, Folkestone, Kent, CT20 2QY	Telephone: 01303 850388 Fax: 01303 245978 Website: www.shepway.gov.uk
3	**Health and Safety Executive** HSE Infoline, Caerphilly Business Park, Caerphilly, CF83 3GG	Telephone: 08701 545500 Fax: 02920 859260 Email: hseinformationservices@natbrit.com Website: www.hse.gov.uk
4	**Shepway District Council** Civic Centre, Castle Hill Avenue, Folkestone, Kent, CT20 2QY	Telephone: 01303 850388 Website: www.shepway.gov.uk
5	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
6	**Health Protection Agency** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 831600 Fax: 01235 833891
7	**The Countryside Agency** John Dower House, Crescent Place, Cheltenham, Gloucestershire, GL50 3RA	Telephone: 01242 533311 Fax: 01242 584270 Email: info@countryside.gov.uk Website: www.countryside.gov.uk
8	**Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)** Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
9	**Natural England** Northminster House, Northminster Road, Peterborough, Cambridgeshire, PE1 1UA	Telephone: 01733 455000 Fax: 01733 568834 Website: www.naturalengland.org.uk
10	**Kent County Council - Waste Management Group** Block H, The Forstal, Beddow Way, Aylesford, Kent, ME20 7BT	Telephone: 01622 605976 Website: www.kent.gov.uk
-	**Landmark Information Group Limited** The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB	Telephone: 0870 850 6670 Fax: 0870 850 6671 Email: customerservices@landmarkinfo.co.uk Website: www.landmark-information.co.uk

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

LANDMARK TERMS AND CONDITIONS

Version 6.02 10 Oct 2006

Definitions

"Authorised Reseller" means an agent or reseller of Landmark whom Landmark has duly appointed to resell its Reports and Services.

"Content" means any data, computing and information services and software, and other content and documentation or support materials and updates included in and/or supplied by or through the Websites, in Reports or Services or in any other way by Landmark and shall include Landmark developed and Third Party Content.

"First Purchaser" means the first person, or legal entity to purchase the Property Site following provision of a Report.

"First Purchaser's Lender" means the funding provider for the First Purchaser

"Information Pack" means a pack compiled by or on behalf of the owner or prospective buyer of the Property Site, designed to aid the marketing or purchase of the Property Site and containing information provided by or on behalf of the owner or prospective buyer of the Property Site.

"Intellectual Property Rights" means copyright, patent, design right (registered or unregistered), service or trade mark (registered or unregistered), database right or other data right, moral right or know how or any other intellectual property right.

"Order" means the request for Services from Landmark by You.

"Property Site" means a land site on which Landmark provides a Service.

References to **"We"**, **"Us"** and **"Our"** are references to Landmark Information Group Limited ("Landmark"), whose registered office is 7 Abbey Court, Eagle Way, Exeter, EX2 7HY. Where You are not ordering the Services directly from Landmark, but from an Authorised Reseller, references to "Landmark" or "We", "Us" and "Our" shall be construed so as to mean either Landmark and/or the Authorised Reseller as the context shall indicate.

References to **"You/Your/Yourself"** refer to the contracting party who accesses the Website or places an Order with Landmark.

"Report" includes any information that Landmark supplies to You including all reports, services, datasets, software or information contained in them.

"Services" means the provision of any service by Landmark pursuant to these Terms, including without limitation, any Report.

"Landmark Fees" means any charges levied by Landmark for Services provided to You.

"Suppliers" means any organisation who provides data or information of any form to Landmark.

"Terms" means these Terms & Conditions.

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"Websites" means websites hosted by Landmark and includes the Content and any report, service, document, data-set, software or information contained therein, derived there from or thereby.

1. Terms & Conditions

a. These Terms govern the relationship between You and Landmark whether You are an unregistered visitor to the Website or are purchasing Services. Where these Terms are not expressly accepted by You they will be deemed to have been accepted by You, and You agree to be bound by these Terms when You place any Order, or pay for any Services provided

b. If the person communicating with Landmark is an Authorised Reseller, they must ensure that You agree to these Terms.

c. The headings in these Terms are for convenience only and shall not affect the meaning or interpretation of any part of these Terms.

d. Landmark may modify these Terms, and may discontinue or revise any or all other aspects of the Services at our sole discretion, with immediate effect and without prior notice, including without limitation changing the Services available at any given time. Any amendment or variation to these Terms shall be posted on our Websites. Continued use of the Services by You shall be deemed an acceptance by You to be bound by any such amendments to the Terms.

e. These Terms, together with the prices and delivery details set out on our Websites, Landmark's Privacy Policy and Your Order comprise the whole agreement relating to the supply of Services to You by Landmark. No prior stipulation, agreement, promotional material or statement whether written or oral made by any sales or other person or representative on our behalf should be understood as a variation of these Terms. Save for fraud or misrepresentation, Landmark shall have no liability for any such representation being untrue or misleading.

f. These Terms shall prevail at all times to the exclusion of all other terms and conditions including any terms and conditions which You may purport to apply even if such other provisions are submitted in a later document or purport to exclude or override these Terms and neither the course of conduct between parties nor trade practice shall act to modify these Terms.

2. Services

a. Landmark will use reasonable care and skill in providing the Services to You, however, the Services are provided on the express basis that the information and data supplied in the Services are derived from third party sources and Landmark does not warrant the accuracy or completeness of such information or data. Such information is derived solely from those sources specifically cited in the Services and Landmark does not claim that these sources represent an exhaustive or comprehensive list of all sources that might be consulted.

3. Intellectual Property

a. You acknowledge that all Intellectual Property Rights in the Services are and shall remain owned by either Landmark or our Suppliers and nothing in these Terms purports to transfer, assign or grant any rights to You in respect of the Intellectual Property Rights.

b. Subject always to these Terms You may, without further charge, make the Services available to;
   i. the owner of the Property at the date of the Report,
   ii. any person who purchases the whole of the Property Site,
   iii. any person who provides funding secured on the whole of the Property Site,
   iv. any person for whom You act in a professional or commercial capacity,
   v. any person who acts for You in a professional or commercial capacity; and
   vi. prospective buyers of the Property Site as part of an Information Pack but for the avoidance of doubt, Landmark shall have no liability to such prospective buyer unless the prospective buyer subsequently purchases the Property Site, and the prospective (or actual) buyer shall not be entitled to make the Service available to any other third party.
   Accordingly Landmark shall have the same duties and obligations to those persons in respect of the Services as it has to You.

c. Each of those persons referred to in clause 3.b. shall have the benefit and the burden of Your rights and obligations under these Terms. The limitations of Landmark's liability as set out in clause 6 shall apply to all users of the Service in question in aggregate and Landmark shall not be liable to any other person.

d. All parties given access to the Services agree that they will treat as strictly private and confidential the Services and all information which they obtain from the Services and shall restrict any disclosure to employees or professional advisors to enable the relevant party to conduct its internal business. The requirement in this clause to treat the Services as confidential shall include a requirement to maintain adequate security measures to safeguard the Services from unauthorised access, use or copying.

e. Each recipient of the Services agrees (and agrees it will cause its employees, agents or contractors who may from time to time have access to the Services to agree) it will not, except as permitted herein or by separate agreement with Landmark:-
   i. effect or attempt to effect any modification, merger or change to the Service, nor permit any other person to do so; or
   ii. copy, use, market, re-sell, distribute, merge, alter, add to or carry on any redistribution, reproduction, translation, publication, reduction to any electronic medium or machine readable form or commercially exploit or in any other way deal with or utilise or (except as expressly permitted by applicable law) reverse engineer, decompile or disassemble the Services, Content or Website; or
   iii. remove, alter or in any way change any trademark or proprietary marking in any element of the Services and You shall acknowledge the ownership of the Content, where such Content is incorporated or used into Your own documents, reports, systems or services whether or not these are supplied to any third party.
   iv. create any product which is derived directly or indirectly from the data contained in the Services

f. The mapping contained in any Services is protected by Crown Copyright and must not be used for any purpose outside the context of the Services or as specifically provided by these Terms.

g. You are permitted to make five copies of any Report, but are not authorised to re-sell the Report, any part thereof or any copy thereof unless you are an Authorised Reseller. Further copies may not be made in whole or in part without the prior written permission of Landmark who shall be entitled to make a charge for each additional copy.

4. Charges

a. VAT at the prevailing rate shall be payable in addition to the Landmark Fees. You shall pay any other applicable indirect taxes related to Your use of the Services.

b. An individual or a monthly invoice showing all Orders created by You will be generated subject to these Terms. You will pay the Landmark Fees at the rates set out in Landmark's or its Authorised Reseller's invoice. The Landmark Fees are payable in full within 30 days without deduction, counterclaim or set off. You acknowledge that time is of the essence with respect to the payment of such invoices. Landmark reserve the right to amend the Landmark Fees from time to time and the Services will be charged at the Landmark Fee applicable at the date on which the Service is ordered.

c. We may charge interest on late payment at a rate equal to 3% per annum above the base lending rate of National Westminster Bank plc.

d. Landmark or its Authorised Reseller shall not be obliged to invoice any party other than You for the provision of Services, but where Landmark or its Authorised Reseller does so invoice any third party at Your request, and such invoice is not accepted or remains unpaid, Landmark or its Authorised Reseller shall have the option at any time to cancel such invoice and invoice You direct for such Services. Where Your order comprises a number of Services or severable elements within any one or more Services, any failure by Landmark or its Authorised Reseller to provide an element or elements of the Services shall not prejudice Landmark's or its Authorised Reseller's ability to require payment in respect of the Services delivered to You.

5. Termination

a. Landmark may suspend or terminate Your rights under these Terms without any liability to You with immediate effect if at any time:-
   i. You fail to make any payment due in accordance with clause 4;
   ii. You repeatedly breach or commit or cause to be committed any material breach of these Terms; or
   iii. You commit a breach and You fail to remedy the breach within 7 days of receipt of a written notice to do so; additionally, without prejudice to the foregoing, Landmark may remedy the breach and recover the costs thereof from You.

b. If Your rights are terminated under this clause and You have made an advance payment We will refund You a reasonable proportion of the balance as determined by Us in relation to the value of Services previously purchased.

c. Landmark reserves the right to refuse to supply any or all Services to You without notice or reason.

6. Liability

a. We provide warranties and accept liability only to the extent stated in this clause 6 and clause 7.

b. Nothing in these Terms excludes either party's liability for death or personal injury caused by that party's negligence or wilful default, and the remainder of this clause 6 is subject to this provision and Your statutory rights.

c. As most of the information contained in the Services is provided to Landmark by others, Landmark cannot control its accuracy or completeness, nor is it within the scope of Landmark's Services to check the information on the ground. Accordingly, Landmark will only be liable to You for any loss or damage caused by its negligence or willful default and neither Landmark nor any person providing information contained in any Services shall in any other circumstances be liable for any inaccuracies, faults or omissions in the Services nor shall Landmark have any liability if the Services are used otherwise than in accordance with these Terms.

d. Save as precluded by law, Landmark shall not be liable for any indirect or consequential loss, damage or expenses (including loss of profits, loss of contracts, business or goodwill) howsoever arising out of any problem, event, action or default by Landmark.

e. In any event, and notwithstanding anything contained in these Terms, Landmark's liability in contract, tort (including negligence or breach of statutory duty) or otherwise howsoever arising by reason or in connection with this Contract (except in relation to death or personal injury) shall be limited to an aggregate amount not exceeding £1 million if the complaint is in relation to a Report on residential property and an aggregate amount not exceeding £10 million in respect of any other Report or Service purchased from Landmark.

f. Landmark will not be liable for any defect, failure or omission relating to Services that is not notified to Landmark within six months of the date of the issue becoming apparent and in any event, within twelve years of the date of the Service.

g. You acknowledge that:-
   i. You shall have no claim or recourse against any Third Party Content supplier nor any of our other Suppliers. You will not in any way hold us responsible for any selection or retention of, or the acts of omissions of Third Party Content suppliers or other Suppliers (including those with whom We have contracted to operate various aspects or parts of the Service) in connection with the Services (for the avoidance of doubt Landmark is not a Third Party Content supplier). Landmark does not promise that the supply of the Services will be uninterrupted or error free or provide any particular facilities or functions, or that the Content will always be complete, accurate, precise, free from defects of any other kind, computer viruses, software locks or other similar code although Landmark will use reasonable efforts to correct any inaccuracies within a reasonable period of them becoming known to us;
   ii. Landmark's only obligation is to exercise reasonable skill and care in providing environmental property risk information to persons acting in a professional or commercial capacity who are skilled in the use of property and environmental information and You hereby acknowledge that You are such a person;
   iii. no physical inspection of the Property Site reported on is carried out as part of any Services offered by Landmark and Landmark do not warrant that all land uses or features whether past or current will be identified in the Services. The Services do not include any information relating to the actual state or condition of any Property Site nor should they be used or taken to indicate or exclude actual fitness or unfitness of a Property Site for any particular purpose nor should it be relied upon for determining saleability or value or used as a substitute for any physical investigation or inspection. Landmark recommends that You inspect and take other advice in relation to the Property Site and not rely exclusively on the Services.
   iv. Landmark shall not be responsible for error or corruption in the Services resulting from inaccuracy or omission in primary or secondary information and data, inaccurate processing of information and data by third parties, computer malfunction or corruption of data whilst in the course of conversion, geo-coding, processing by computer or electronic means, or in the course of transmission by telephone or other communication link, or printing.
   v. Landmark will not be held liable in any way if a Report on residential property is used for commercial property or more than the one residential property for which it was ordered.
   vi. the Services have not been prepared to meet Your or anyone else's individual requirements; that You assume the entire risk as to the suitability of the Services and waive any claim of detrimental reliance upon the same; and You confirm You are solely responsible for the selection or omission of any specific part of the Content;
   vii. Landmark offer no warranty for the performance of any linked internet service not operated by Landmark;
   viii. You will on using the Services make a reasonable inspection of any results to satisfy Yourself that there are no defects or failures. In the event that there is a material defect You will notify us in writing of such defect within seven days of its discovery;
   ix. Any support or assistance provided to You in connection with these Terms is at Your risk;

h. All liability for any insurance products purchased by You rests solely with the insurer. Landmark does not endorse any particular product or insurer and no information contained within the Services should be deemed to imply otherwise. You acknowledge that if You Order any such insurance Landmark will deem such as Your consent to forward a copy of the Report to the insurers. Where such policy is purchased, all liability remains with the insurers and You are entirely responsible for ensuring that the insurance policy offered is suitable for Your needs and should seek independent advice. Landmark does not guarantee that an insurance policy will be available on a Property Site. All decisions with regard to the offer of insurance policies for any premises will be made solely at the discretion of the insurers and Landmark accepts no liability in this regard. The provision of a Report does not constitute any indication by Landmark that insurance will be available on the property.

i. If Landmark provides You with any additional service obtained from a third party, including but not limited to any professional opinion, interpretation or conclusion, risk assessment or environmental report or search carried out in relation to a Report on Your Property Site, Landmark will not be liable in any way for any information contained therein or any issues arising out of the provision of those additional services to You. Landmark will be deemed to have acted as an agent in these circumstances and the supply of these additional services will be governed by the terms and conditions of those Third Parties. For the avoidance of doubt, those parties providing assessments or professional opinions on Landmark products include RPS Plc & Wilbourn Associates Limited. Copies of their terms and conditions are available on request from Landmark.

j. In any event no person may rely on a Service more than 12 months after its original date.

k. If You wish to vary any limitation of liability as set out in these Terms, You must request such variation prior to ordering the Service. Landmark shall use its reasonable endeavours to agree such variation but shall not be obliged to do so.

l. Time shall not be of the essence with respect to the provision of the Services.

m. Ordnance Survey have undertaken a positional accuracy improvement programme which may result in discrepancies between the positioning of features used in datasets in the Services and the updated Ordnance Survey mapping. Landmark and its Suppliers exclude all and any liability incurred as a result of the implementation of such positional accuracy improvement programme.

n. Where Landmark provides its own risk assessment in connection with any Report, Landmark shall carry out such assessment with all reasonable skill and care but shall have no liability for any such risk assessment conclusion which is provided for information only, save where Landmark conducted the same negligently, in which case the provisions of clause 6 shall apply. Notwithstanding the provision of any such risk assessment conclusion you should carefully examine the remainder of the Report and should not take or refrain from taking any action based solely on the basis of the risk assessment. For the avoidance of doubt, the provisions of this clause 6n apply solely to risk assessments conducted by Landmark, and the provision of any other risk assessment by a third party shall be governed by such third party's terms in accordance with the provisions of clause 6i above.

7. Contribution

a. Save where expressly provided, this clause 7 shall apply solely to Envirosearch Residential Reports (regardless of the result of such Report). Nothing in this clause 7 shall operate to override or vary the provisions of clause 6.

b. Landmark are prepared to offer, at their sole discretion, and without any admission or inference of liability a contribution towards the costs of any remediation works required under a Notice (as defined below) on the terms of this clause 7 ("the Contribution")

c. In the event that a Remediation Notice is served on the First Purchaser or First Purchaser's Lender of a Property Site under Part II(A) of the Environmental Protection Act 1990 ("the Notice") Landmark will contribute to the cost of such works as either the First Purchaser or First Purchaser's Lender (but not both) are required to carry out under the Notice subject to the provisions of this clause 7 and on the following terms:
   i. the Contribution shall only apply to contamination or a pollution incident present or having occurred prior to the date of the Report;
   ii. the Contribution shall only apply where the Property Site is a single residential dwelling house or a single residential flat within a block of flats. For the avoidance of doubt, this obligation does not apply to any commercial property, nor to any Property Site being developed or redeveloped whether for residential purposes or otherwise;
   iii. the Contribution is strictly limited to the cost of works at the Property Site and at no other site.
   iv. the Contribution will not be paid in respect of any of the following:
   Radioactive contamination of whatsoever nature, directly or indirectly caused by or contributed to or arising from ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel or the radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.
   Asbestos arising out of or related in any way to asbestos or asbestos-containing materials on or in structures or services serving the structures.
   Naturally occurring materials arising from the presence or required removal of naturally occurring materials except in circumstances where such materials are present in concentrations which are in excess of their natural concentration.
   Intentional non-compliance arising from the intentional disregard of or knowing wilful or deliberate non-compliance by any owner or occupier of the Property Site with any statute, regulation, administrative complaint, notice of violation, or notice letter of any Regulatory Authority.
   Any condition which is known or ought reasonably to have been known to the First Purchaser or the First Purchaser's Lender prior to the purchase of the Report.
   Any condition which is caused by acts of War or an Act of Terrorism.
   Any property belonging to or in the custody or control of the First Purchaser which does not form a fixed part of the Property Site or the structure.
   Any fines liquidated damages punitive or exemplary damages.
   Any bodily injury including without limitation, death, illness or disease, mental injury, anguish or nervous shock.
   Any financial loss in respect of any loss of any rental, profit, revenue, savings or business or any consequential indirect or economic loss damage or expense including the cost of rent of temporary premises or business interruption.
   Any losses incurred following a material change in use of, alteration or development of the Property Site.

d. The maximum sum that shall be contributed by Landmark in respect of any Contribution shall be limited to £50,000. In the event that more than one Report is purchased on the Property Site the Contribution will only be payable under the first Report purchased by or on behalf of any First Purchaser or First Purchaser's Lender and no Contribution will be made in respect of subsequent Reports purchased by or on behalf of such First Purchaser, First Purchaser's Lender or any person connected to them.

e. Landmark shall only pay a Contribution where the Notice is served within 36 months of the date of the Report.

f. Any rights to a Contribution under this Clause 7 are not assignable in the event of a sale of the Property Site and Landmark will not make any Contribution after the date of completion of such sale.

g. In the event the First Purchaser or First Purchaser's Lender wishes to claim any Contribution, it shall notify Landmark in writing within 2 months of the date of the Notice. The First Purchaser or First Purchaser's Lender (as applicable) shall comply with all reasonable requirements of Landmark with regard to the commission and conduct of the remediation works to be carried out under the Notice, and in the event the First Purchaser or First Purchaser's Lender (as applicable) does not do so, including without limitation, obtaining Landmark's prior written consent to any estimates for such works or complying with any other reasonable request by Landmark, Landmark shall not be required to pay any Contribution. Notwithstanding the payment of the Contribution by Landmark the First Purchaser or First Purchaser's Lender as applicable shall take all reasonable steps to mitigate any costs incurred in connection with the conduct of works required under the terms of any Notice.

h. In the event that the First Purchaser or First Purchaser's Lender receives any communication from a statutory authority to the effect that there is an intent to serve a notice received under PartII(A) of the Environmental Protection Act 1990 they will advise Landmark within a maximum period of two months from receipt of such communication. This clause 7h and the service of any notice under it shall not affect the provisions of clauses 7 e and g, and any such communications, even if advised to Landmark will not operate as notice under clause 7e.

i. Landmark reserve the right at any time prior to a claim for Contribution being made in accordance with clause 7 g) above, to withdraw the offer of payment of Contributions without further notice.

8. Events Beyond Our Control

a. You acknowledge that Landmark shall not be liable for any delay, interruption or failure in the provision of the Services which are caused or contributed to by any circumstance which is outside our reasonable control including but not limited to, lack of power, telecommunications failure or overload, computer malfunction, inaccurate processing of data, or delays in receiving, loading or checking data, corruption of data whilst in the course of conversion, geo-coding, processing by computer in the course of electronic communication, or printing.

9. Severability

a. If any provision of these Terms are found by either a court or other competent authority to be void, invalid, illegal or unenforceable, that provision shall be deemed to be deleted from these Terms and never to have formed part of these Terms and the remaining provisions shall continue in full force and effect.

10. Governing Law

a. These terms shall be governed by and construed in accordance with English law and each party agrees irrevocably submit to the exclusive jurisdiction of the English courts If any dispute arises out of or in connection with this agreement (a "Dispute") the parties undertake that, prior to the commencement of Court proceedings, they will seek to have the Dispute resolved amicably by use of an alternative dispute resolution procedure acceptable to both parties with the assistance of the Centre for Dispute Resolution (CEDR) if required, by written notice initiating that procedure. If the Dispute has not been resolved to the satisfaction of either party within 60 days of initiation of the procedure or if either party fails or refuses to participate in or withdraws from participating in the procedure then either party may refer the Dispute to the Court.

11. General

a. Landmark may assign its rights and obligations under these Terms without prior notice or any limitation.

b. Landmark may authorise or allow our contractors and other third parties to provide to Landmark and/or to You services necessary or related to the Services and to perform Landmark's obligations and exercise Landmark's rights under these Terms, which may include collecting payment on Landmark's behalf.

c. No waiver on Landmark's part to exercise, and no delay in exercising, any right, power or provision hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or provision hereunder preclude the exercise of that or any other right, power or provision.

d. Unless otherwise stated in these Terms, all notices from You to Landmark must be in writing and sent to the Landmark registered office (or in the case of an Authorised Reseller, to its registered office address) and all notices from Landmark to You will be displayed on our Websites from time to time.

e. A person who is not a party to any contract made pursuant to these Terms shall have no right under the Contract (Right of Third Parties) Act 1999 to enforce any terms of such contract and Landmark shall not be liable to any such third party in respect of any Services supplied.

f. Landmark's Privacy Policy as displayed on the Website governs the use made of any information You supply to Landmark.

Appendix E

SITE ZONATION PLAN

Notes:

Key

- Approximate Location of Exploratory Hole
- Area of interest
- Area of known contamination

Rev	Date	Description	By	Ckd
A	26/04/07	First Issue	DM	AB

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E-Mail: northampton@hydrock.com
or visit www.hydrock.com

Client: EAST KENT HOSPITALS NHS TRUST

Project: ROYAL VICTORIA HOSPITAL, FOLKESTONE

Title: Site Zonation Plan

Drawing Status: INFORMATION

Job No.: C/07060

Drawn	Checked	Scale at A3	Date	Issue Date
DM	AB	1:750	26/04/07	26/04/07

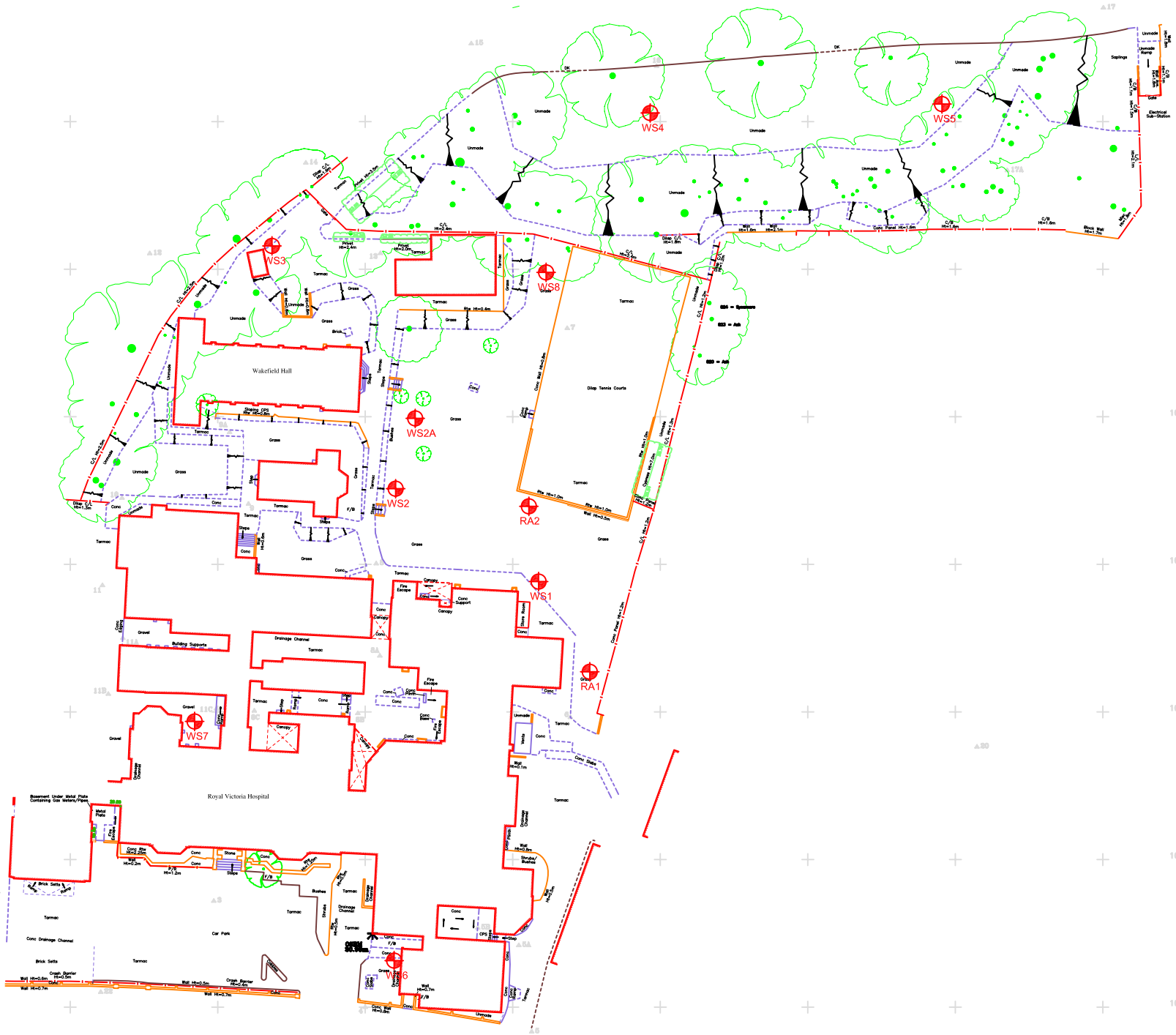
Drawing No.: 07060/D004

Revision: A

Notes:
All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications. This drawing is copyright.

Appendix F

GROUND INVESTIGATION PLAN, EXPLORATORY HOLE LOGS & FALLING HEAD PERMEABILITY TEST RESULTS



Notes:

Key

Approximate Location of Exploratory Hole

Rev	Date	Description	By	Ckd
A	26/04/07	First Issue	DM	AB

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FAX: 01604 842 666
E-Mail: northampton@hydrock.com
or visit www.hydrock.com

Client
EAST KENT HOSPITALS NHS TRUST

Project
ROYAL VICTORIA HOSPITAL, FOLKESTONE

Title
Exploratory Hole Location Plan

Drawing Status
INFORMATION

Job No.
C/07060

Drawn	Checked	Scale at A3	Date	Issue Date
DM	AB	1:750	26/04/07	26/04/07

Drawing No.
07060/D005

Revision
A

Notes:
All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

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Borehole No
RA1
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 1030E - 1045N	Hole Type Rotary
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 28.86 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 21/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20	28.66		Brown sandy CLAY. (MADE GROUND)
		0.40	AJ/D					
					0.70	28.16		Brown slightly gravelly SAND with occasional cobbles of brick. Gravel is subangular to subrounded fine to coarse sandstone, flint, quartzite, brick and concrete. (MADE GROUND)
		0.80	AJ/D					
		1.50	AJ/D					Brown slightly gravelly SAND with occasional cobbles of sandstone and occasional gravel sized pockets of light grey clay. Gravel is subangular to subrounded fine to coarse sandstone, flint, quartzite and chalk. (MADE GROUND)
		1.70	AJ/D		1.70	27.16		...at 1.50m bgl with brick fragments.
		2.00	SPT	N=18 (2,3/4,4,4,6)				Medium dense green brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular fine to coarse granite. (MADE GROUND)
		2.40	AJ/D		2.40	26.46		Dense green brown slightly gravelly medium to coarse SAND. Gravel is subrounded to rounded fine to coarse quartzite. (MADE GROUND)
		3.00	SPT	N=32 (2,4/4,8,10,10)				
		3.40	D		3.45	25.41		Concrete.
					3.65	25.21		(MADE GROUND)
		4.00	SPT	N=36 (3,4/6,8,10,12)				Dense green brown slightly gravelly medium to coarse SAND. Gravel is subangular fine to coarse quartzite.
								...at 5.00m bgl becoming moist.
		5.50	SPT	50 (3,5/50 for 10mm)				...at 5.50m bgl SPT sample includes breeze block fragments and granite (probable debris from higher in the borehole).
		6.50	D					...between 6.50m and 7.00m bgl sand with rock chips of granite expelled during open hole drilling (probable debris from higher in the borehole).
								...at 7.00m green brown sand with lumps of very weakly cemented sandstone.
		9.00	D		9.00	19.86		End of Borehole at 9.00 m
			Type	Results				

Remarks: Inspection pit to 1.20m bgl. No groundwater encountered.
Dynamic sample refused at 3.50m bgl. Rotary coring from 3.50 to 5.00m bgl - no recovery.
Open hole drilling to 9.00m bgl. The last run from dynamic sample shows concrete at 3.45m bgl. Driller notes hard coring until 3.65m bgl. Hospital estates worker confirms concrete at approx 3.50m bgl due to retaining wall to east.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

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Borehole No **RA2**
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 1022E - 1068N	Hole Type Rotary
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 28.10 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 22/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20	27.90		Brown sandy CLAY. (MADE GROUND)
		0.40	AJ/D					Soft brown and dark grey brown sandy gravelly CLAY with cobbles of brick and concrete. Gravel is subangular to subrounded fine to coarse brick, porcelain, concrete, flint, quartzite, sandstone and clinker. (MADE GROUND)
		1.30	AJ/D		1.30	26.80		Firm brown very sandy slightly gravelly CLAY with occasional gravel sized pockets of sand. Gravel is subangular to subrounded fine to medium brick, flint and quartzite. (MADE GROUND)
		1.80	AJ/D		1.80	26.30		
		2.00	SPT	N=12 (2,2/2,3,3,4)				Medium dense brown slightly clayey gravelly fine to coarse SAND. Gravel is subangular fine to coarse very weakly cemented sandstone.
		2.40	AJ/D		2.40	25.70		Medium dense green brown medium to coarse SAND.
		3.00	SPT	N=24 (3,4/4,6,6,8) 0.1 0.1 5				
		3.40	D					
		3.00-4.50	40	3 0 >30				
		4.30	D		4.30	23.80		
					4.35	23.75		Moderatly strong to strong yellow brown medium to coarse grained SANDSTONE.
					4.50	23.60		Medium dense green brown medium to coarse SAND.
								End of Borehole at 4.50 m
			TCR	SCR RQD FI				

Remarks: Inspection pit to 1.20m bgl.
No groundwater encountered.
Dynamic sampling refused at 3.00m bgl. Rotary core from 3.00 to 4.50m bgl. Hole collapsing from 4.30 to 4.50m bgl - No advance possible.
Backfilled with arisings on completion.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows
Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

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Borehole No
WS1
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 1024E - 1058N	Hole Type WS
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 28.84 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 20/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
		0.20	AJ/D		0.20	28.64		Brown sandy CLAY. (MADE GROUND)
		0.80	AJ/D		0.70	28.14		Soft grey sandy gravelly CLAY with occasional cobbles of brick. Gravel is subangular to subrounded fine to coarse brick, concrete, flint and quartzite. (MADE GROUND)
		1.00	SPT	N=12 (1,1/2,2,4,4)				Soft becoming firm brown very sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to medium brick and quartzite. (MADE GROUND)
		1.60	AJ/D		1.50	27.34		Medium dense brown fine to coarse SAND.
		2.00	SPT	N=31 (3,6/6,8,8,9)				...at 2.00m bgl becoming dense.
		2.60	D					
		3.00	SPT	69 (5,6/9,10,50)				...at 3.00m bgl becoming very dense.
					3.50	25.34		End of Borehole at 3.50 m

Type Results

Remarks: Inspection pit to 1.20m bgl.
Borehole refused at 3.50m bgl.
Backfilled with arisings on completion.
No groundwater encountered.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

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Borehole No
WS2
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 1004E - 1070N	Hole Type WS
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 27.96 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 20/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20	27.76		Brown sandy CLAY (MADE GROUND)
		0.40	AJ/D					Soft dark grey very sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse brick, concrete, flint and quartzite. (MADE GROUND)
					0.90	27.06		...at 0.80m bgl with rare bone fragments.
								End of Borehole at 0.90 m
			Type	Results				

Remarks: Inspection pit to 0.90m blg.
Borehole refused at 0.90m bgl on concrete - moved 10m North.
Backfilled with arisings on completion.
No groundwater encountered.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

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Borehole No
WS2A
Sheet 1 of 1

Project Name:	Project No. :	Co-ords:	Hole Type
Royal Victoria Hospital, Folkestone.	C07060	1007E - 1080N	WS
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 26.42 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 20/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20	26.22		Brown sandy CLAY. (MADE GROUND)
		0.40	AJ/D		0.40	26.02		Soft dark grey very sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse brick, concrete, flint and quartzite. (MADE GROUND)
		1.00	SPT	N=28 (10,27/11,6,5,6)				
					1.20	25.22		Medium dense brown fine to coarse SAND. (MADE GROUND)
		1.30	AJ/D		1.30	25.12		Concrete. (MADE GROUND)
								Medium dense grey occasionally brown fine to coarse SAND.
		2.00	SPT	N=22 (2,3/5,5,5,7)				
		2.50	D					
		3.00	SPT	N=28 (3,5/6,6,8,8)				
		3.50	D					
		4.00	SPT	N=26 (1,1/2,3,8,13)	4.00	22.42		End of Borehole at 4.00 m
			Type	Results				

Remarks: Inspection pit to 1.20m bgl.
No groundwater encountered.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

Hydrock Consultants (Northampton)
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Borehole No
WS3
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 987E - 1103N	Hole Type WS
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 24.22 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 20/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.10	24.12		Tarmac. (MADE GROUND)
		0.40	AJ/D		0.30	23.92		Black tarmac gravel. (MADE GROUND)
		0.80	AJ/D		0.70	23.52		Cream/white slighly silty slightly sandy GRAVEL. Gravel is subrounded to subangular fine to coarse chalk. (MADE GROUND)
		1.00	SPT	N=13 (1,2/3,3,3,4)				
		1.40	AJ/D		1.30	22.92		Medium dense brown slightly gravelly clayey fine to medium SAND. Gravel is subangular fine to medium brick. (MADE GROUND)
		2.00	SPT	N=18 (3,4/4,5,4,5)				Medium dense brown clayey SAND with occasional roots and occasional subangular fine to coarse flint gravel. Earthy organic odour.
		2.50	D					...at 2.50m bgl becoming clayey sand in places. ...at 2.70m bgl with occasional gravel of sandstone.
		3.00	SPT	N=32 (9,11/10,7,7,8)				...at 3.00m bgl becoming green grey occasionally brown.
		3.40	D		3.40	20.82		Medium dense brown occasionally grey slightly clayey, slightly gravelly SAND. Gravel is subangular fine to medium sandstone.
		4.00	SPT	N=29 (8,9/11,6,6,6)	4.00	20.22		End of Borehole at 4.00 m

Type Results

Remarks: Inspection pit to 1.20m bgl.
Backfilled with arisings on completion.
No groundwater encountered.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

Hydrock Consultants (Northampton)
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Borehole No
WS4
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 1039E - 1121N	Hole Type WS
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 19.90 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 20/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.05	19.85		Tarmac. (MADE GROUND)
					0.20	19.70		Type 1 roadstone. (MADE GROUND)
		0.40	AJ/D					
					0.70	19.20		Soft dark grey/black very sandy slightly gravelly CLAY with occasional gravel sized pockets of sand and occasional roots. Gravel is subangular to subrounded fine to coarse brick, sandstone, flint and quartzite. (MADE GROUND)
		0.80	AJ/D					
		1.00	SPT	N=5 (1,1/1,1,2,2,1)	1.10	18.80		Soft grey brown very sandy slightly gravelly CLAY with occasional gravel sized pockets of sand. Gravel is subangular to subrounded fine to coarse flint, sandstone and chert.
		1.40	AJ/D					
		2.00	SPT	50/75mm - Abandoned	2.00	17.90		Loose becoming medium dense brown occasionally grey clayey slightly gravelly SAND with rare cobbles of sandstone. Gravel is subangular fine to coarse sandstone.
								End of Borehole at 2.00 m

Type Results

Remarks: Inspection pit to 1.20m bgl.
Borehole refused at 2.00m bgl.
Groundwater encountered at 1.10m bgl.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

Hydrock Consultants (Northampton)
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Borehole No
WS5
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 1078E - 1122N	Hole Type WS
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 19.95 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 20/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
		0.40	AJ/D		0.80	19.15		Soft dark grey/black very sandy slightly gravelly CLAY with occasional gravel sized pockets of sand and occasional roots. Gravel is subangular to subrounded fine to coarse brick, sandstone, flint and quartzite. (MADE GROUND)
		0.90 1.00	AJ/D SPT	N=6 (2,2/2,1,2,1)				Soft grey brown very sandy slightly gravelly CLAY with occasional gravel sized pockets of sand. Gravel is subangular to subrounded fine to coarse flint, sandstone and chert.
		1.30	AJ/D		1.30	18.65		Medium dense brown occasionally grey and green brown slightly clayey slightly gravelly SAND with rare cobbles of sandstone. Gravel is subangular fine to coarse sandstone.
		2.00	SPT	N=24 (1,5/5,7,7,5)	2.20	17.75		Medium dense green brown medium to coarse SAND.
		2.40	D					
		2.80	SPT	50/75mm - Abandoned	2.80	17.15		End of Borehole at 2.80 m
			Type	Results				

Remarks: Inspection pit to 1.20m bgl.
Borehole refused at 2.80m bgl.
Water encountered at 1.80m bgl.
Backfilled with arisings on completion.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

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Borehole No
WS6
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 1004E - 1006N	Hole Type WS
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 30.80 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 21/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20	30.60		Brown sandy CLAY. (MADE GROUND)
		0.40	AJ/D					Soft brown occasionally dark grey sandy slightly gravelly CLAY with occasional roots. Gravel is subangular to subrounded fine to coarse flint, granite, brick and sandstone. Earthy organic odour. (MADE GROUND)
		1.00	SPT	N=18	0.90	29.90		
		1.00	AJ/D	(2,2/3,4,6,5)				Medium dense brown slightly clayey fine to coarse SAND with roots.
		1.60	AJ/D		1.50	29.30		Medium dense yellow brown medium to coarse SAND.
		2.00	SPT	N=43 (4,8/9,11,12,12,11)				...at 2.00m bgl becoming dense.
		2.60	D					
		3.00	SPT	N=54 (5,10/14,14,14,12)				...at 3.00m bgl becoming very dense. ...at 3.20m bgl becoming green grey.
		3.60	D					
		4.00	SPT	N=24 (1,1/4,4,5,11)	4.00	26.80		End of Borehole at 4.00 m
			Type	Results				

Remarks: Inspection pit to 1.20m bgl.
No groundwater encountered.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

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Borehole No
WS7
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 977E - 1039N	Hole Type WS
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 29.53 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 21/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.03	29.50		Pea gravel/Shingle. (MADE GROUND)
					0.06	29.47		
		0.40	AJ/D		0.15	29.38		Concrete. (MADE GROUND)
		0.70	AJ/D		0.60	28.93		Tarmac. (MADE GROUND)
		1.00	SPT	N=15 (2,3/4,3,4,4)				Soft brown very sandy slightly gravelly CLAY with occasional cobbles of brick. Gravel is subangular to subrounded fine to coarse brick, sandstone, flint and quartzite. (MADE GROUND)
		1.40	AJ/D		1.30	28.23		Medium dense orange brown slightly clayey slightly gravelly SAND with rare bone fragments. Gravel is subangular to subrounded sandstone and quartzite.
		2.00	SPT	N=10 (1,2/3,2,3,2)				Medium dense green brown occasionally orange brown medium to coarse SAND. ...between 2.50m and 2.54m bgl band of quartzite gravel.
		2.50	D					
		3.00	SPT	N=18 (3,5/5,4,4,5)				
		3.50	D					
		4.00	SPT	N=27 (3,4/5,6,7,9)	4.00	25.53		End of Borehole at 4.00 m
			Type	Results				

Remarks: Inspection pit to 1.20m bgl.
No groundwater encountered.
Backfilled with arisings on completion.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

Hydrock Consultants (Northampton)
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Borehole No
WS8
Sheet 1 of 1

Project Name: Royal Victoria Hospital, Folkestone.	Project No. : C07060	Co-ords: 1025E - 1100N	Hole Type WS
Location: Royal Victoria Hospital, Radnor Park Avenue, Folkestone.		Level: 26.10 m AOD	Scale 1:50
Client: East Kent Hospitals NHS Trust.		Dates: 22/03/2007	Logged By DM

Well	Water Strikes	Samples & In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m AOD)	Legend	Stratum Description
					0.20	25.90		Brown sandy CLAY. (MADE GROUND)
		0.40	AJ/D					Soft brown and dark grey brown very sandy slightly gravelly CLAY with occasional roots and rare metal. Gravel is subangular to subrounded fine to coarse brick, flint, quartzite, concrete and sandstone. (MADE GROUND)
		1.20	AJ/D					
		1.40	AJ/D		1.40	24.70		Soft to firm brown occasionally dark grey brown very sandy CLAY with occasional roots.
		1.80	AJ/D		1.80	24.30		Brown slightly clayey slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite, flint and very weakly cemented sandstone.
		2.30	D		2.30	23.80		Brown, green brown and grey banded medium to coarse SAND with areas of very weakly cemented sandstone.
		3.00	D					
					3.20	22.90		End of Borehole at 3.20 m
			Type	Results				

Remarks: Inspection pit to 1.20m bgl.
Borehole refused at 3.20m bgl.
No groundwater encountered.
Backfilled with arisings on completion.

In-situ Testing
SPT Standard Penetration Test (Split Spoon)
CPT Standard Penetration Test (Solid Cone)
HSV Hand Shear Vane
U Undisturbed Sample and number of blows

Borehole Types
DP Dynamic Sampling
Cable Cable Percussion
Rotary Rotary Core
RO Rotary Openhole

Sample Types
D Disturbed Sample
LB Large Bulk Sample
B Bulk Sample
AJ Amber Jar Sample
W Water Sample
V Vial
SPTLS SPT Sample

Falling head in situ permeability test record

Client: East Kent Hospitals NHS Trust

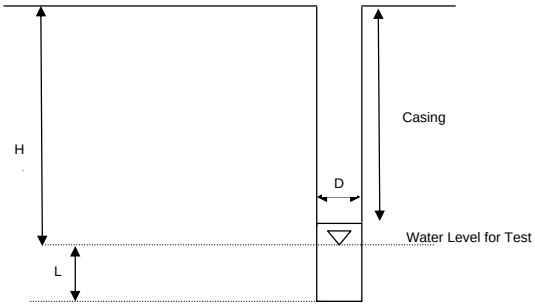
Project: Royal Victoria Hospitals

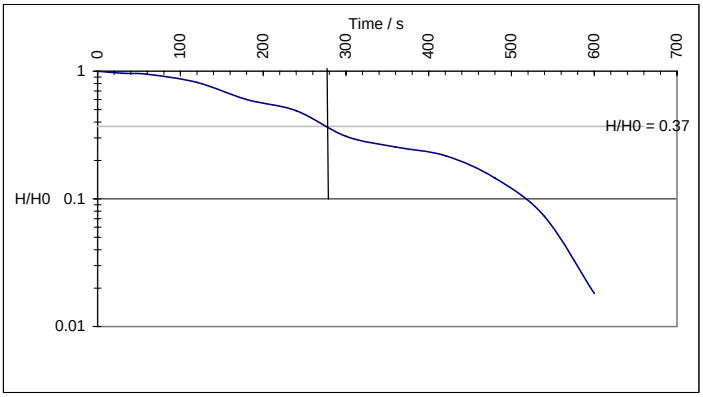
Sheet: **Contract No.** C07060

Borehole: RA1 Test 1

Base of borehole:	5.95 mbgl
Diametre of borehole (D):	0.105 m
Length of Water Head (L):	0.55 m
Time for Graph:	660 s

Elapsed Time minutes	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0
0	0	5.4	0.55	1.000
30	30	5.42	0.53	0.964
60	60	5.43	0.52	0.945
120	120	5.5	0.45	0.818
180	180	5.62	0.33	0.600
240	240	5.68	0.27	0.491
300	300	5.78	0.17	0.309
360	360	5.81	0.14	0.255
420	420	5.83	0.12	0.218
480	480	5.87	0.08	0.145
540	540	5.91	0.04	0.073
600	600	5.94	0.01	0.018
660	660	5.95	0	0.000





A = Pi x r^2

= 0.0087

$$F = \frac{2 \times \text{pi} \times \text{length}}{\log\left[(\text{length/diametre}) + \sqrt{(1+(\text{length/diametre})^2}\right]}$$

= 3.4558 / 1.02411

= 3.37441

T= read from Graph H/H_0 = 0.37

= 275 Seconds

= 4.58 Minutes

$$\textbf{K (Permeability)} = \frac{A \text{ (Cross Sectional Area of Borehole)}}{F \text{ (Intake Factor)} \times T \text{ (Time Factor)}}$$

$$K = \frac{0.0087}{3.37441 \times 4.58}$$

K = 5.60E-04

General Comments:

Date: 22.03.07
Test performed by: DM
Checked: AB
Job No: C07060

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Falling head in situ permeability test record

Client: East Kent Hospitals NHS Trust

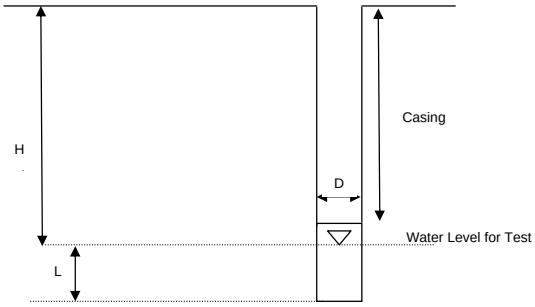
Project: Royal Victoria Hospitals

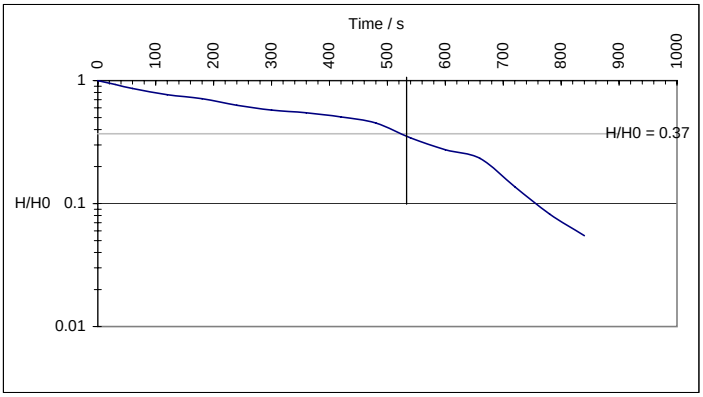
Sheet: **Contract No.** C07060

Borehole: RA1 Test 2

Base of borehole: 5.95 mbgl
Diametre of borehole (D): 0.105 m
Length of Water Head (L): 0.55 m
Time for Graph: 900 s

Elapsed Time minutes	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0
	0	5.22	0.73	1.000
	30	5.27	0.68	0.932
	60	5.32	0.63	0.863
	120	5.39	0.56	0.767
	180	5.43	0.52	0.712
	240	5.49	0.46	0.630
	300	5.53	0.42	0.575
	360	5.55	0.4	0.548
	420	5.58	0.37	0.507
	480	5.62	0.33	0.452
	540	5.7	0.25	0.342
	600	5.75	0.2	0.274
	660	5.78	0.17	0.233
	720	5.85	0.1	0.137
	780	5.89	0.06	0.082
	840	5.91	0.04	0.055
	900	5.95	0	0.000





$A = Pi \times r^2$
$= 0.0087$

$$F = \frac{2 \times pi \times length}{\log\left[(length/diametre) + \sqrt{(1+(length/diametre)^2}\right]}$$

$= \frac{3.4558}{1.02411}$
$= 3.37441$

T= read from Graph $H/H_0 = 0.37$
= 520 Seconds
= 8.67 Minutes

K (Permeability) = $\frac{A \text{ (Cross Sectional Area of Borehole)}}{F \text{ (Intake Factor)} \times T \text{ (Time Factor)}}$

$K = \frac{0.0087}{3.37441 \times 8.67}$

K = 2.96E-04

General Comments:

Date: 22.03.07
Test performed by: DM
Checked: AB
Job No: C07060

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Falling head in situ permeability test record

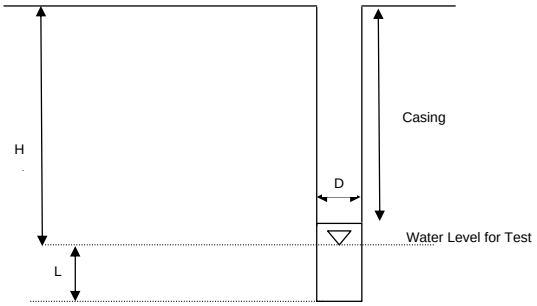
Client: East Kent Hospitals NHS Trust

Project: Royal Victoria Hospitals

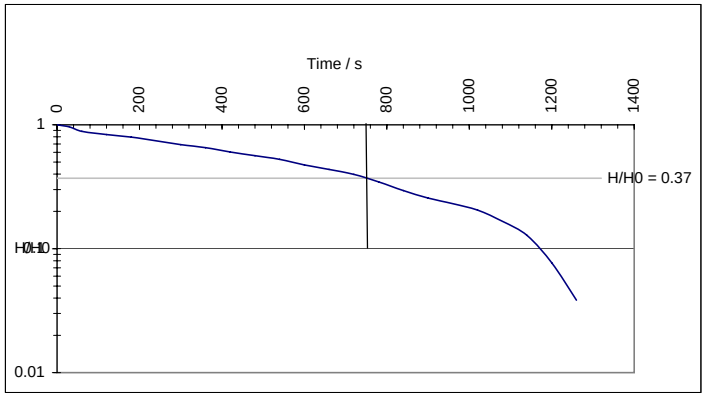
Sheet: **Contract No.** C07060

Borehole: RA1 Test 3

Base of borehole: 5.95 mbgl
Diametre of borehole (D): 0.105 m
Length of Water Head (L): 0.55 m
Time for Graph: 1320 s



Elapsed Time minuites	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0
	0	5.17	0.78	1.000
	30	5.2	0.75	0.962
	60	5.26	0.69	0.885
	120	5.3	0.65	0.833
	180	5.33	0.62	0.795
	240	5.37	0.58	0.744
	300	5.41	0.54	0.692
	360	5.44	0.51	0.654
	420	5.48	0.47	0.603
	480	5.51	0.44	0.564
	540	5.54	0.41	0.526
	600	5.58	0.37	0.474
	660	5.61	0.34	0.436
	720	5.64	0.31	0.397
	780	5.68	0.27	0.346
	840	5.72	0.23	0.295
	900	5.75	0.2	0.256
	960	5.77	0.18	0.231
	1020	5.79	0.16	0.205
	1080	5.82	0.13	0.167
	1140	5.85	0.1	0.128
	1200	5.89	0.06	0.077
	1260	5.92	0.03	0.038
	1320	5.95	0	0.000



$A = Pi \times r^2$
$= 0.0087$

$$F = \frac{2 \times pi \times length}{\log[(length/diametre) + \sqrt{(1+(length/diametre)^2}]}$$

$= \frac{3.4558}{1.02411}$
$= 3.37441$

T= read from Graph $H/H_0 = 0.37$
= 745 Seconds
= 12.42 Minutes

K (Permeability) = $\frac{A \text{ (Cross Sectional Area of Borehole)}}{F \text{ (Intake Factor)} \times T \text{ (Time Factor)}}$

$K = \frac{0.0087}{3.37441 \times 12.42}$

K = 2.07E-04

General Comments:

Date: 22.03.07
Test performed by: DM
Checked: AB
Job No: C07060

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Falling head in situ permeability test record

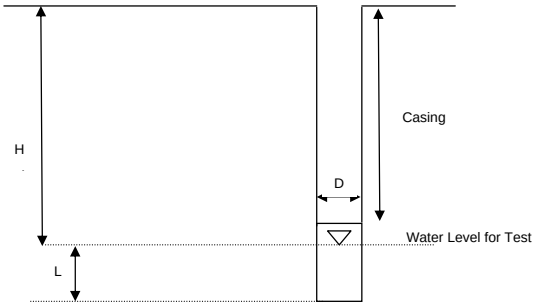
Client: East Kent Hospitals NHS Trust

Project: Royal Victoria Hospitals

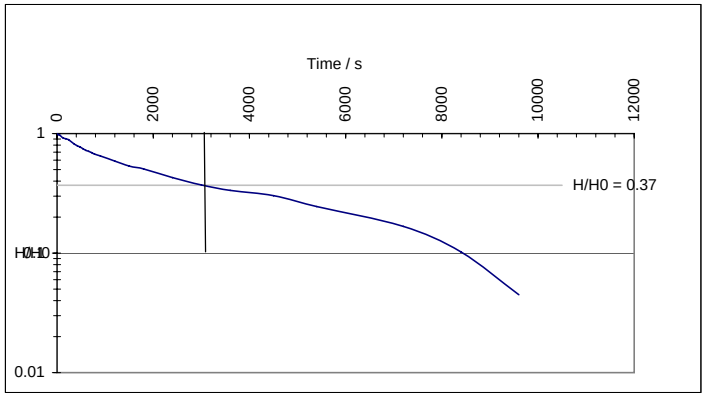
Sheet: **Contract No.** C07060

Borehole: WS2A Test 1

Base of borehole: 4.00 mbgl
Diametre of borehole (D): 0.090 m
Length of Water Head (L): 2.45 m
Time for Graph: 10500 s



Elapsed Time minuites	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0
	0	1.55	2.45	1.000
	30	1.6	2.4	0.980
	60	1.63	2.37	0.967
	120	1.74	2.26	0.922
	180	1.78	2.22	0.906
	240	1.82	2.18	0.890
	300	1.91	2.09	0.853
	360	2	2	0.816
	420	2.06	1.94	0.792
	480	2.11	1.89	0.771
	540	2.17	1.83	0.747
	600	2.23	1.77	0.722
	660	2.26	1.74	0.710
	720	2.3	1.7	0.694
	780	2.35	1.65	0.673
	840	2.38	1.62	0.661
	900	2.41	1.59	0.649
	1200	2.56	1.44	0.588
	1500	2.69	1.31	0.535
	1800	2.76	1.24	0.506
	2400	2.95	1.05	0.429
	3000	3.09	0.91	0.371
	3600	3.18	0.82	0.335
	4500	3.26	0.74	0.302
	5400	3.4	0.6	0.245
	7200	3.59	0.41	0.167
	8400	3.75	0.25	0.102
	9600	3.89	0.11	0.045
	10500	4	0	0.000



$A = Pi \times r^2$
$= 0.0064$

$$F = \frac{2 \times pi \times length}{\log[(length/diametre) + \sqrt{(1+(length/diametre)^2}]}$$

$= \frac{15.3938}{1.73610}$
$= 8.86691$

T= read from Graph $H/H_0 = 0.37$
= 3000 Seconds
= 50.00 Minutes

K (Permeability) = $\frac{A \text{ (Cross Sectional Area of Borehole)}}{F \text{ (Intake Factor)} \times T \text{ (Time Factor)}}$

$K = \frac{0.0064}{8.86691 \times 50.00}$

K = 1.43E-05

General Comments:

Date: 20.03.07
Test performed by: DM
Checked: AB
Job No: C07060

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Falling head in situ permeability test record

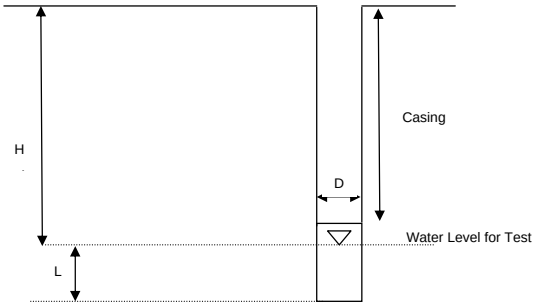
Client: East Kent Hospitals NHS Trust

Project: Royal Victoria Hospitals

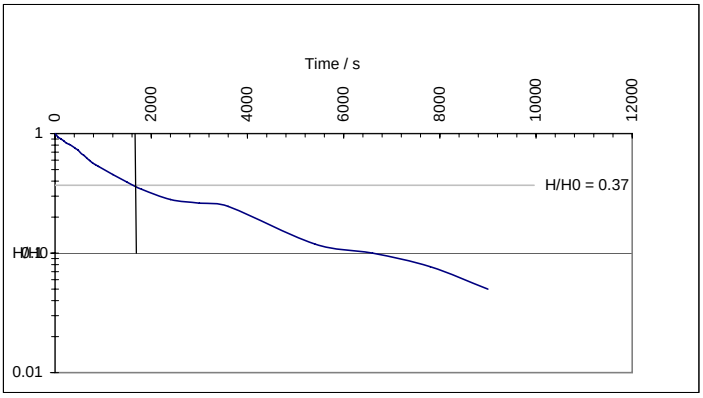
Sheet: **Contract No.** C07060

Borehole: WS2A Test 2

Base of borehole: 3.85 mbgl
Diametre of borehole (D): 0.090 m
Length of Water Head (L): 2.60 m
Time for Graph: 9960 s



Elapsed Time minuites	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0
	0	1.25	2.60	1.000
	30	1.34	2.51	0.965
	60	1.42	2.43	0.935
	120	1.5	2.35	0.904
	180	1.59	2.26	0.869
	240	1.69	2.16	0.831
	300	1.74	2.11	0.812
	360	1.81	2.04	0.785
	420	1.89	1.96	0.754
	480	1.96	1.89	0.727
	540	2.07	1.78	0.685
	600	2.14	1.71	0.658
	660	2.23	1.62	0.623
	720	2.3	1.55	0.596
	780	2.37	1.48	0.569
	840	2.42	1.43	0.550
	900	2.47	1.38	0.531
	1200	2.67	1.18	0.454
	1500	2.83	1.02	0.392
	1800	2.96	0.89	0.342
	2400	3.12	0.73	0.281
	3000	3.17	0.68	0.262
	3600	3.21	0.64	0.246
	5400	3.54	0.31	0.119
	6600	3.59	0.26	0.100
	7800	3.65	0.2	0.077
	9000	3.72	0.13	0.050
	9960	3.85	0	0.000



$A = Pi \times r^2$
$= 0.0064$

$$F = \frac{2 \times pi \times length}{\log[(length/diametre) + \sqrt{(1+(length/diametre)^2}]}$$

$= \frac{16.3363}{1.76189}$
$= 9.27204$

T= read from Graph $H/H_0 = 0.37$
= 1600 Seconds
= 26.67 Minutes

K (Permeability) = $\frac{A \text{ (Cross Sectional Area of Borehole)}}{F \text{ (Intake Factor)} \times T \text{ (Time Factor)}}$

$K = \frac{0.0064}{9.27204 \times 26.67}$

K = 2.57E-05

General Comments:
Borehole silted up to 3.85m bgl after second run.

Date: 20.03.07
Test performed by: DM
Checked: AB
Job No: C07060

Hydrock Consultants Ltd, Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF
Tel: +44 (0)1454 619 533, Fax: +44 (0)1454 614 125

Falling head in situ permeability test record

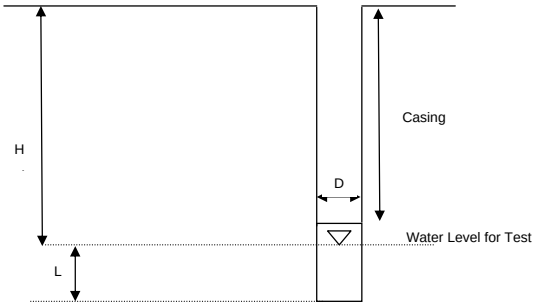
Client: East Kent Hospitals NHS Trust

Project: Royal Victoria Hospitals

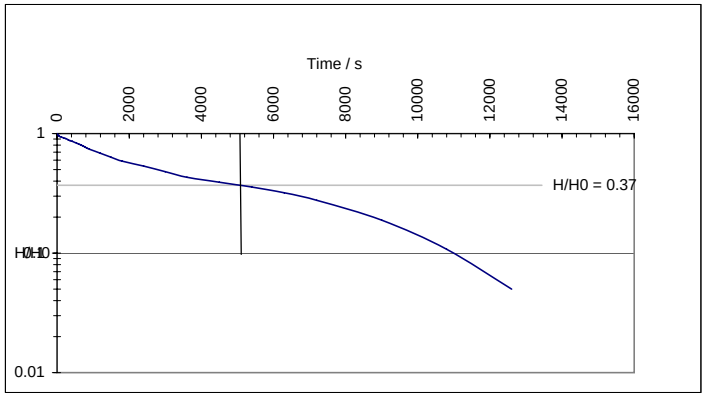
Sheet: **Contract No.** C07060

Borehole: WS2A Test 3

Base of borehole: 3.85 mbgl
Diametre of borehole (D): 0.090 m
Length of Water Head (L): 2.60 m
Time for Graph: 13440 s



Elapsed Time minutes	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0
	0	1.25	2.60	1.000
	30	1.32	2.53	0.973
	60	1.38	2.47	0.950
	120	1.42	2.43	0.935
	180	1.46	2.39	0.919
	240	1.49	2.36	0.908
	300	1.54	2.31	0.888
	360	1.58	2.27	0.873
	420	1.61	2.24	0.862
	480	1.65	2.2	0.846
	540	1.69	2.16	0.831
	600	1.72	2.13	0.819
	660	1.76	2.09	0.804
	720	1.8	2.05	0.788
	780	1.85	2	0.769
	840	1.89	1.96	0.754
	900	1.93	1.92	0.738
	1200	2.07	1.78	0.685
	1500	2.2	1.65	0.635
	1800	2.32	1.53	0.588
	2400	2.46	1.39	0.535
	3000	2.6	1.25	0.481
	3600	2.73	1.12	0.431
	4500	2.83	1.02	0.392
	5400	2.92	0.93	0.358
	6300	3.02	0.83	0.319
	7200	3.13	0.72	0.277
	9000	3.36	0.49	0.188
	10800	3.57	0.28	0.108
	12600	3.72	0.13	0.050
	13440	3.85	0	0.000



$A = Pi \times r^2$
$= 0.0064$

$$F = \frac{2 \times pi \times length}{\log[(length/diametre) + \sqrt{(1+(length/diametre)^2}]}$$

$= \frac{16.3363}{1.76189}$
$= 9.27204$

T= read from Graph $H/H_0 = 0.37$
= 5000 Seconds
= 83.33 Minutes

K (Permeability) = $\frac{\text{A (Cross Sectional Area of Borehole)}}{\text{F (Intake Factor)} \times \text{T (Time Factor)}}$

$K = \frac{0.0064}{9.27204 \times 83.33}$

K = 8.23E-06

General Comments:
Borehole silted up to 3.85m bgl after second run.

Date: 20.03.07
Test performed by: DM
Checked: AB
Job No: C07060

Hydrock Consultants Ltd, Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF
Tel: +44 (0)1454 619 533, Fax: +44 (0)1454 614 125

Falling head in situ permeability test record

Client: East Kent Hospitals NHS Trust

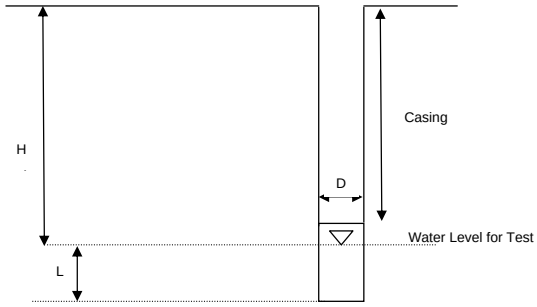
Project: Royal Victoria Hospitals

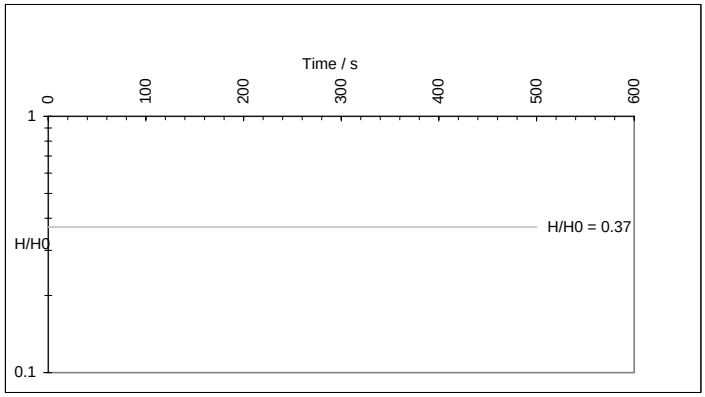
Sheet: **Contract No.** C07060

Borehole: WS4 Test 1

Base of borehole:	2.00 mbgl
Diametre of borehole (D):	0.090 m
Length of Water Head (L):	0.00 m
Time for Graph:	500 s

Elapsed Time minuites	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0





$A = Pi \times r^2$

$= 0.0064$

$$F = \frac{2 \times pi \times length}{\log\left[(length/diametre) + \sqrt{(1+(length/diametre)^2}\right]}$$

K (Permeability) $= \frac{A \text{ (Cross Sectional Area of Borehole)}}{F \text{ (Intake Factor)}} \times T \text{ (Time Factor)}$

UNABLE TO BE UNDERTAKEN GROUNDWATER ENCOUNTERED AT 0.73m bgl

General Comments:

Date: 22.03.07
Test performed by: DM
Checked: AB
Job No: C07060

Hydrock Consultants Ltd, Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF
Tel: +44 (0)1454 619 533, Fax: +44 (0)1454 614 125

Falling head in situ permeability test record

Client: East Kent Hospitals NHS Trust

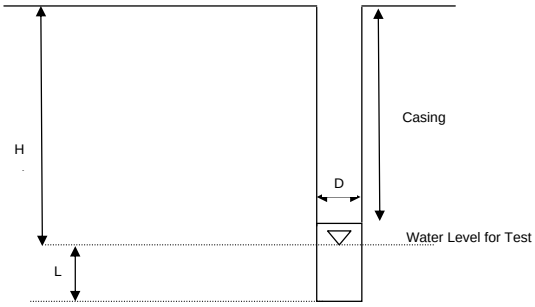
Project: Royal Victoria Hospitals

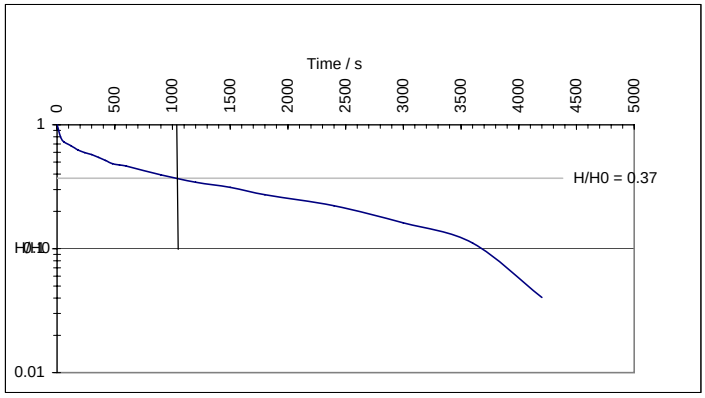
Sheet: **Contract No.** C07060

Borehole: WS6 Test 1

Base of borehole: 3.94 mbgl
Diametre of borehole (D): 0.090 m
Length of Water Head (L): 0.99 m
Time for Graph: 4380 s

Elapsed Time minutes	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0
	0	2.95	0.99	1.000
	30	3.15	0.79	0.798
	60	3.22	0.72	0.727
	120	3.27	0.67	0.677
	180	3.32	0.62	0.626
	240	3.35	0.59	0.596
	300	3.37	0.57	0.576
	360	3.4	0.54	0.545
	420	3.43	0.51	0.515
	480	3.46	0.48	0.485
	540	3.47	0.47	0.475
	600	3.48	0.46	0.465
	900	3.55	0.39	0.394
	1200	3.6	0.34	0.343
	1500	3.63	0.31	0.313
	1800	3.67	0.27	0.273
	2400	3.72	0.22	0.222
	3000	3.78	0.16	0.162
	3600	3.83	0.11	0.111
	4200	3.9	0.04	0.040
	4380	3.94	0	0.000





$A = Pi \times r^2$
$= 0.0064$

$$F = \frac{2 \times pi \times length}{\log[(length/diametre) + \sqrt{(1+(length/diametre)^2}]}$$

$= \frac{6.2204}{1.34332}$
$= 4.63060$

T= read from Graph $H/H_0 = 0.37$
= 1000 Seconds
= 16.67 Minutes

K (Permeability) = $\frac{A \text{ (Cross Sectional Area of Borehole)}}{F \text{ (Intake Factor)} \times T \text{ (Time Factor)}}$

$K = \frac{0.0064}{4.63060 \times 16.67}$

K = 8.24E-05

General Comments:

Date: 21.03.07
Test performed by: DM
Checked: AB
Job No: C07060

Hydrock Consultants Ltd, Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF
Tel: +44 (0)1454 619 533, Fax: +44 (0)1454 614 125

Falling head in situ permeability test record

Client: East Kent Hospitals NHS Trust

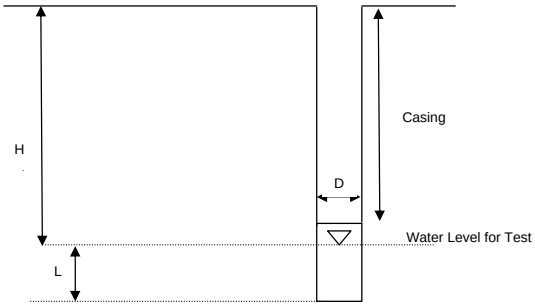
Project: Royal Victoria Hospitals

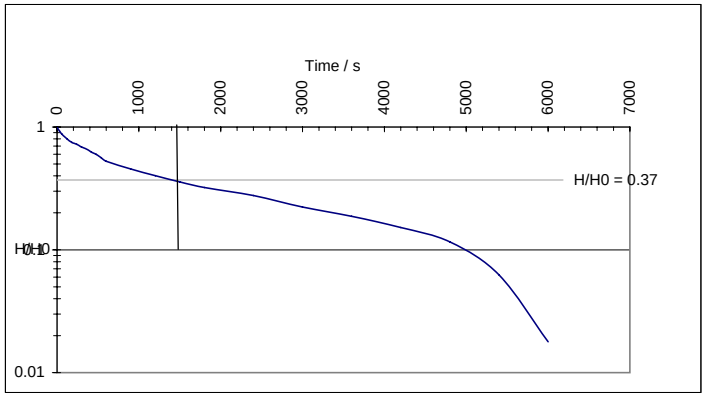
Sheet: **Contract No.** C07060

Borehole: WS6 Test 2

Base of borehole: 3.94 mbgl
Diametre of borehole (D): 0.090 m
Length of Water Head (L): 1.12 m
Time for Graph: 6180 s

Elapsed Time minutes	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0
0	2.82	1.12	1.000
30	2.9	1.04	0.929
60	2.96	0.98	0.875
120	3.04	0.9	0.804
180	3.1	0.84	0.750
240	3.13	0.81	0.723
300	3.17	0.77	0.688
360	3.2	0.74	0.661
420	3.24	0.7	0.625
480	3.27	0.67	0.598
540	3.31	0.63	0.563
600	3.35	0.59	0.527
900	3.43	0.51	0.455
1200	3.49	0.45	0.402
1500	3.54	0.4	0.357
1800	3.58	0.36	0.321
2400	3.63	0.31	0.277
3000	3.69	0.25	0.223
3600	3.73	0.21	0.188
4200	3.77	0.17	0.152
4800	3.81	0.13	0.116
5400	3.87	0.07	0.062
6000	3.92	0.02	0.018
6180	3.94	0	0.000





$A = Pi \times r^2$
$= 0.0064$

$$F = \frac{2 \times pi \times length}{\log[(length/diametre) + \sqrt{(1+(length/diametre)^2}]}$$

$= \frac{7.0372}{1.39670}$
$= 5.03842$

T= read from Graph $H/H_0 = 0.37$
= 1400 Seconds
= 23.33 Minutes

K (Permeability) = $\frac{A \text{ (Cross Sectional Area of Borehole)}}{F \text{ (Intake Factor)} \times T \text{ (Time Factor)}}$

$K = \frac{0.0064}{5.03842 \times 23.33}$

K = 5.41E-05

General Comments:

Date: 21.03.07
Test performed by: DM
Checked: AB
Job No: C07060

Hydrock Consultants Ltd, Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF
Tel: +44 (0)1454 619 533, Fax: +44 (0)1454 614 125

Falling head in situ permeability test record

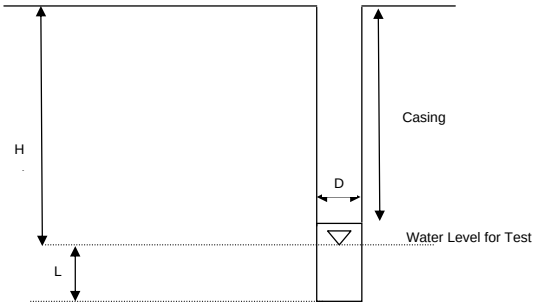
Client: East Kent Hospitals NHS Trust

Project: Royal Victoria Hospitals

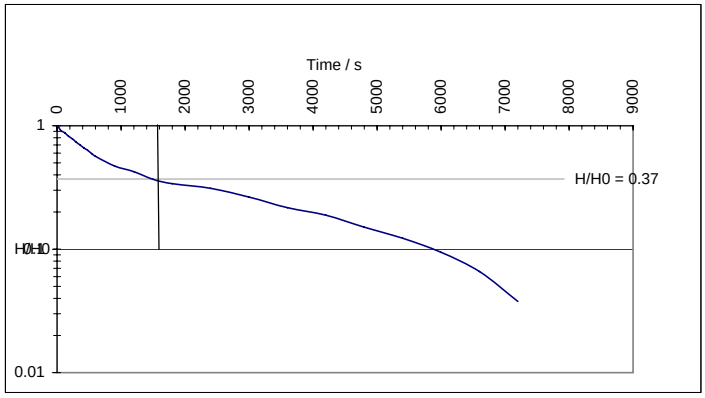
Sheet: **Contract No.** C07060

Borehole: WS6 Test 3

Base of borehole: 3.94 mbgl
Diametre of borehole (D): 0.090 m
Length of Water Head (L): 1.06 m
Time for Graph: 7920 s



Elapsed Time minutes	Elapsed Time seconds	Depth to Water (m) (H)	Head of water (m) (H0)	H/H_0
	0	2.88	1.06	1.000
	30	2.92	1.02	0.962
	60	2.97	0.97	0.915
	120	3.01	0.93	0.877
	180	3.07	0.87	0.821
	240	3.11	0.83	0.783
	300	3.16	0.78	0.736
	360	3.2	0.74	0.698
	420	3.24	0.7	0.660
	480	3.27	0.67	0.632
	540	3.31	0.63	0.594
	600	3.34	0.6	0.566
	900	3.44	0.5	0.472
	1200	3.49	0.45	0.425
	1500	3.55	0.39	0.368
	1800	3.58	0.36	0.340
	2400	3.61	0.33	0.311
	3000	3.66	0.28	0.264
	3600	3.71	0.23	0.217
	4200	3.74	0.2	0.189
	4800	3.78	0.16	0.151
	5400	3.81	0.13	0.123
	6000	3.84	0.1	0.094
	6600	3.87	0.07	0.066
	7200	3.9	0.04	0.038
	7920	3.94	0	0.000



$A = Pi \times r^2$
$= 0.0064$

$$F = \frac{2 \times pi \times length}{\log[(length/diametre) + \sqrt{(1+(length/diametre)^2}]}$$

$= \frac{6.6602}{1.37287}$
$= 4.85128$

T= read from Graph $H/H_0 = 0.37$
= 1550 Seconds
= 25.83 Minutes

K (Permeability) = $\frac{A \text{ (Cross Sectional Area of Borehole)}}{F \text{ (Intake Factor)} \times T \text{ (Time Factor)}}$

$K = \frac{0.0064}{4.85128 \times 25.83}$

K = 5.08E-05

General Comments:

Date: 21.03.07
Test performed by: DM
Checked: AB
Job No: C07060

Hydrock Consultants Ltd, Over Court Barns, Over Lane, Almondsbury, Bristol, BS32 4DF
Tel: +44 (0)1454 619 533, Fax: +44 (0)1454 614 125

Appendix G

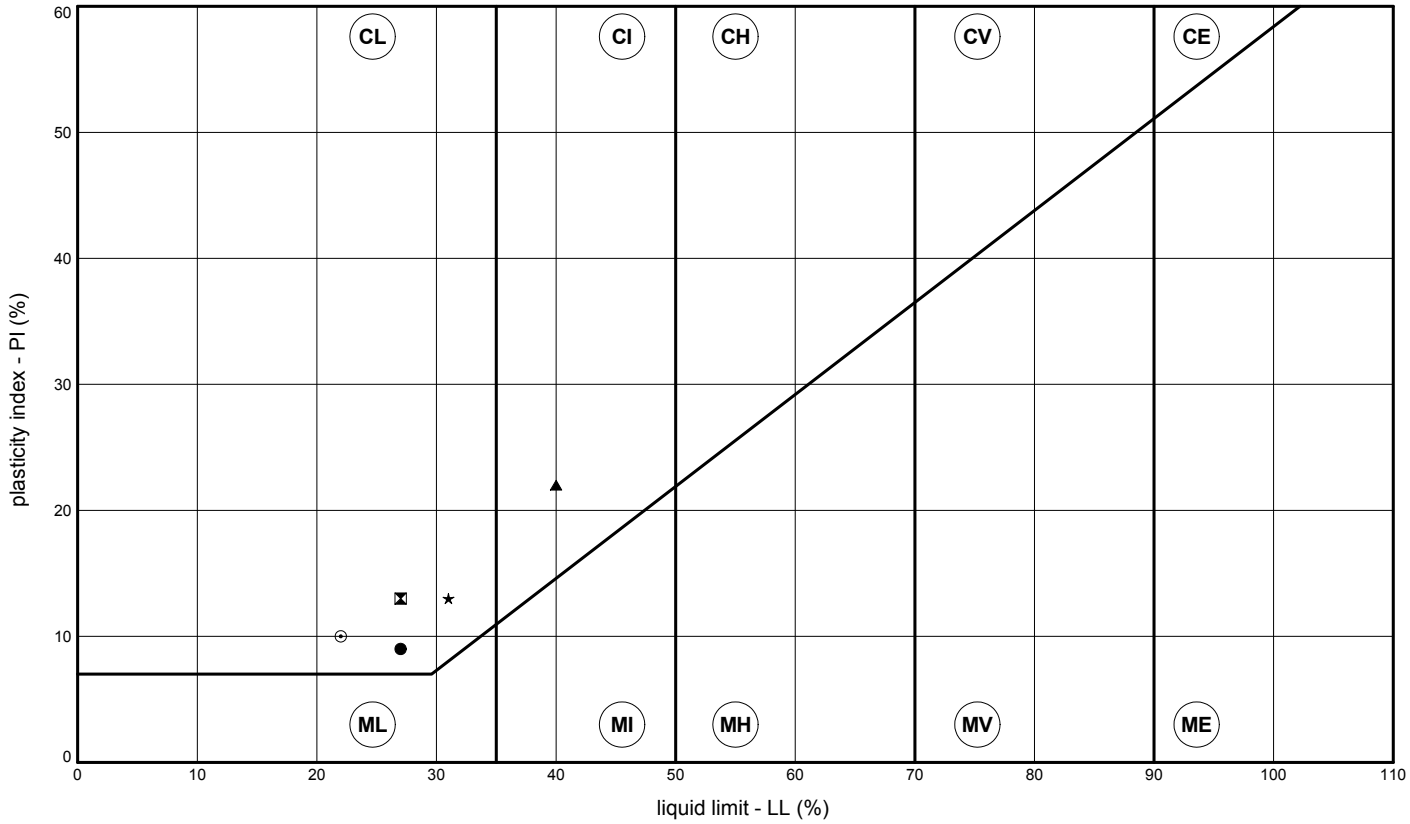
GEOTECHNICAL TEST RESULTS & SPT DEPTH PLOTS

Geotechnical Engineering Limited

ATTERBERG LINE PLOT

CLIENT HYDROCK CONSULTANTS

SITE ROYAL VICTORIA HOSPITAL



	BH/TP No.	depth (m)	LL	PL	PI	remarks
●	RA01	9.00	27	18	9	
⊠	WS01	0.80	27	14	13	
▲	WS04	0.80	40	18	22	
★	WS05	0.90	31	18	13	
⊙	WS08	1.40	22	12	10	

CONTRACT	ORIGINATOR	CHECKED
20290		

Geotechnical Engineering Ltd, Rock House, Lower Tuffley Lane, Gloucester. GL2 5DT. Tel. 01452 527743 20290.GPJ 12/04/2007 12:17:55

Geotechnical Engineering Limited

LIQUID AND PLASTIC LIMITS

BS.1377 : Part 2 : 1990 : 4 and 5

CLIENT HYDROCK CONSULTANTS

SITE ROYAL VICTORIA HOSPITAL

borehole /trial pit no.	sample		specimen depth (m)	natural moisture content (%)	specimen preparation and test method	fraction >0.425 mm (%)	liquid limit (%)	plastic limit (%)	plasticity index (%)	description and remarks
	no./type	depth (m)								
RA01	D	3.40	3.40	9.2						Yellow-brown silty SAND
RA01	D	9.00	9.00	6.9	BX	34	27	18	9	Yellow-brown slightly sandy CLAY with a little f-m gravel
WS01	D	0.80	0.80	16	AX	2	27	14	13	Brown slightly sandy CLAY with a little fine gravel
WS04	D	0.80	0.80	24	BX	31	40	18	22	Brown slightly sandy CLAY with a little f-m gravel
WS05	D	0.90	0.90	19	BX	26	31	18	13	Brown slightly sandy CLAY with a little f-m gravel
WS06	D	1.60	1.60	6.1						Yellow-brown silty SAND
WS07	D	1.40	1.40	7.5						Yellow-brown silty SAND
WS08	D	1.40	1.40	15	AX	3	22	12	10	Brown slightly sandy CLAY with a little fine gravel

general remarks:
natural moisture content determined in accordance with BS1377 : Part 2 : 1990 : 3.2 (unless specified)
NP denotes non-plastic
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

ORIGINATOR

specimen preparation:
A - as received
B - washed on 0.425mm sieve
C - air dried
D - oven dried (50°C)
E - oven dried (105°C)
F - not known

test method:
X - cone penetrometer (test 4.3)
Y - one point cone penetrometer (test 4.4)
Z - Casagrande apparatus (test 4.5)

CONTRACT
20290

CHECKED

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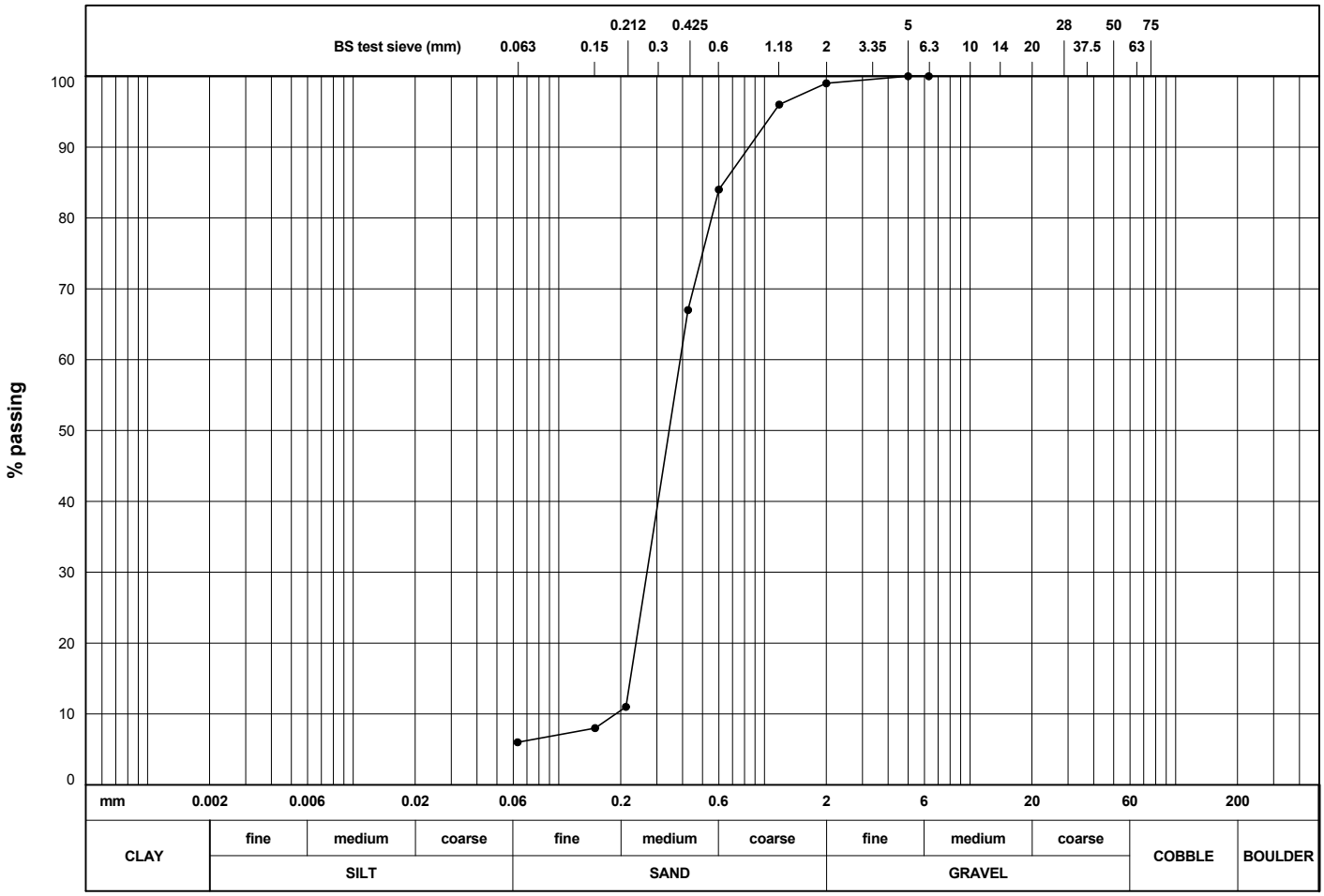
Geotechnical Engineering Limited

PARTICLE SIZE DISTRIBUTION

BS.1377 : Part 2 : 1990 : 9

CLIENT	HYDROCK CONSULTANTS	BH/TP No.	RA02
SITE	ROYAL VICTORIA HOSPITAL	SAMPLE No./TYPE	D
		SAMPLE DEPTH (m)	2.40
DESCRIPTION	Yellow-brown silty SAND with a little fine gravel	SPECIMEN DEPTH (m)	2.40



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	6
SAND	93
GRAVEL	1
COBBLE & BOULDER	0
test method(s)	9.2

BS test sieve (mm)	% passing
150	
75	
63	
50	
37.5	
28	
20	
14	
10	
6.3	100

BS test sieve (mm)	% passing
5	100
3.35	
2	99
1.18	96
0.6	84
0.425	67
0.3	
0.212	11
0.15	8
0.063	6

particle size (μm)	% finer
20	
6	
2	

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

ORIGINATOR

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377
Combined with RA02 @ 3.40m

CONTRACT **20290**

CHECKED

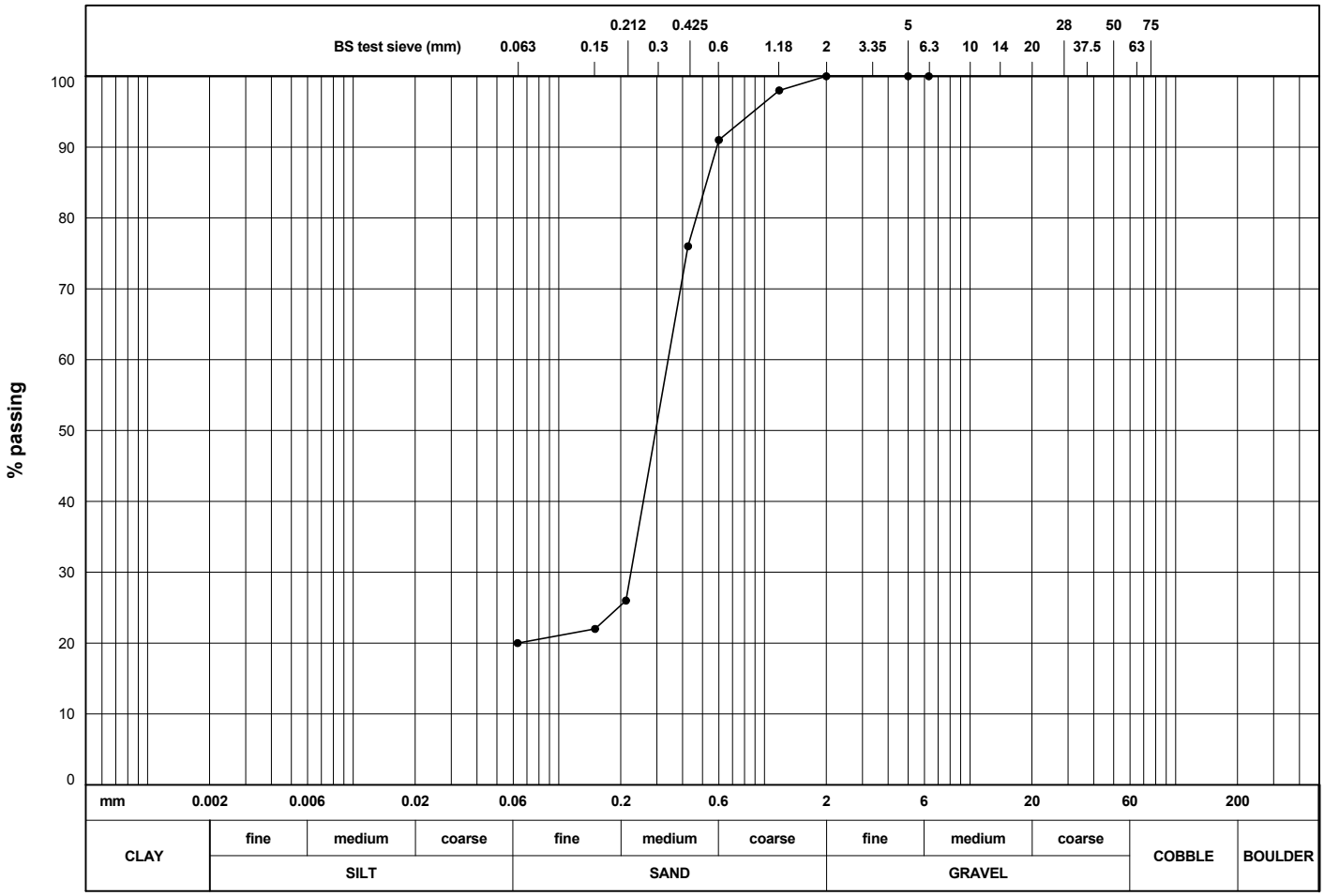
Geotechnical Engineering Ltd, Rock House, Lower Tuffley Lane, Gloucester. GL2 5DT. Tel. 01452 527743 20290.GPJ 12/04/2007 12:19:48

Geotechnical Engineering Limited

PARTICLE SIZE DISTRIBUTION

BS.1377 : Part 2 : 1990 : 9

CLIENT	HYDROCK CONSULTANTS	BH/TP No.	WS03
SITE	ROYAL VICTORIA HOSPITAL	SAMPLE No./TYPE	D
		SAMPLE DEPTH (m)	2.50
DESCRIPTION	Orange-brown very clayey SAND	SPECIMEN DEPTH (m)	2.50



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	20
SAND	80
GRAVEL	0
COBBLE & BOULDER	0
test method(s)	9.2

BS test sieve (mm)	% passing
150	
75	
63	
50	
37.5	
28	
20	
14	
10	
6.3	100

BS test sieve (mm)	% passing
5	100
3.35	
2	100
1.18	98
0.6	91
0.425	76
0.3	
0.212	26
0.15	22
0.063	20

particle size (μm)	% finer
20	
6	
2	

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

ORIGINATOR

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377

CONTRACT **20290**

CHECKED

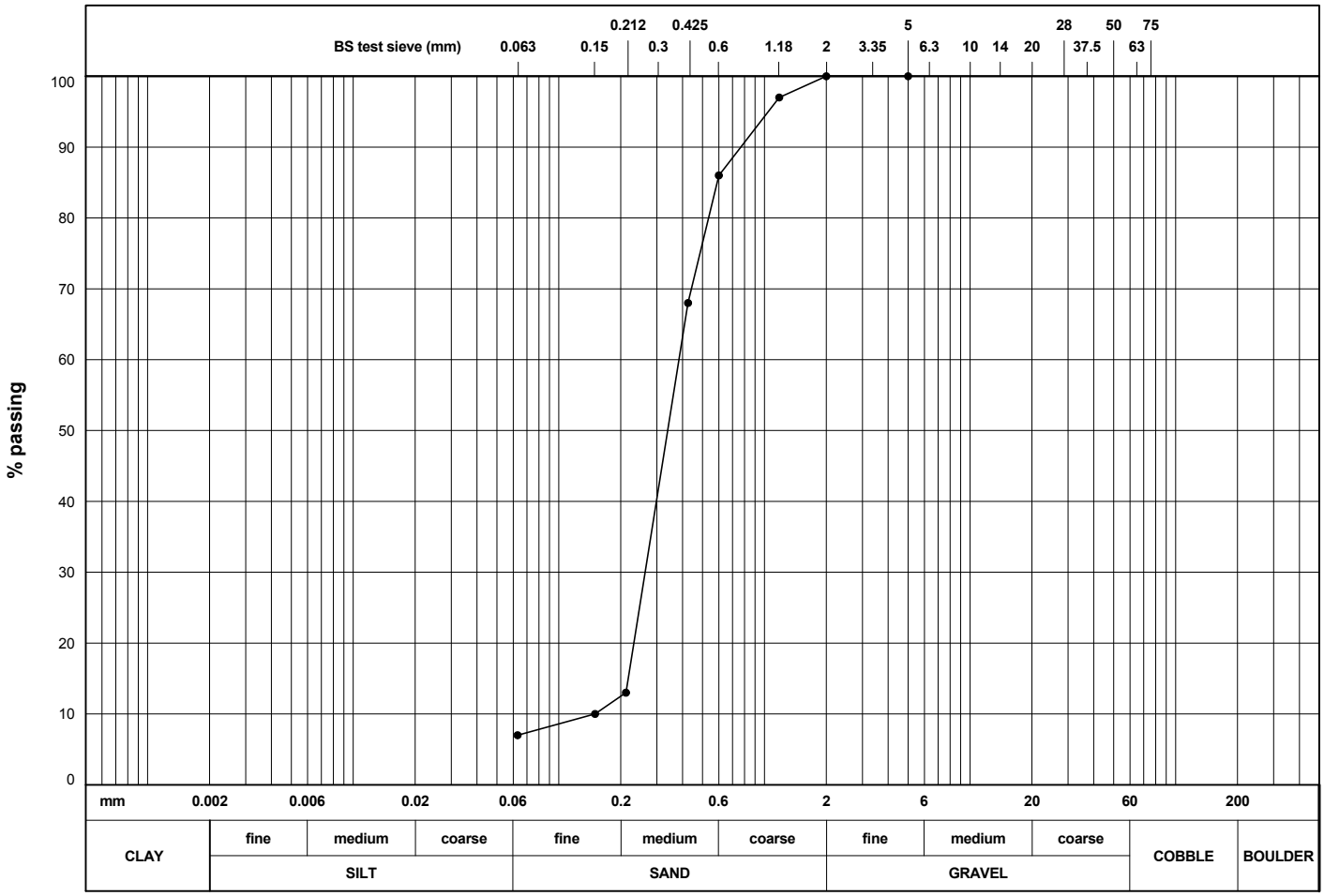
Geotechnical Engineering Ltd, Rock House, Lower Tuffley Lane, Gloucester. GL2 5DT. Tel. 01452 527743 20290.GPJ 12/04/2007 12:22:07

Geotechnical Engineering Limited

PARTICLE SIZE DISTRIBUTION

BS.1377 : Part 2 : 1990 : 9

CLIENT	HYDROCK CONSULTANTS	BH/TP No.	WS06
SITE	ROYAL VICTORIA HOSPITAL	SAMPLE No./TYPE	D
		SAMPLE DEPTH (m)	2.60
DESCRIPTION	Yellow-brown silty SAND	SPECIMEN DEPTH (m)	2.60



soil type	% fraction
CLAY	
SILT	
SILT & CLAY	7
SAND	93
GRAVEL	0
COBBLE & BOULDER	0
test method(s)	9.2

BS test sieve (mm)	% passing	BS test sieve (mm)	% passing	particle size (μm)	% finer
150		5	100	20	
75		3.35		6	
63		2	100	2	
50		1.18	97		
37.5		0.6	86		
28		0.425	68		
20		0.3			
14		0.212	13		
10		0.15	10		
6.3		0.063	7		

test method:
9.2 - wet sieving
9.3 - dry sieving
9.4 - sedimentation by pipette
9.5 - sedimentation by hydrometer

ORIGINATOR

remarks:
# denotes sample tested is smaller than that which is recommended in accordance with BS1377
Combined with WS06 @ 3.60m

CONTRACT
20290

CHECKED

Geotechnical Engineering Ltd, Rock House, Lower Tuffley Lane, Gloucester. GL2 5DT. Tel. 01452 527743 20290.GPJ 12/04/2007 12:22:19

RegenIQ
Analytical Services Ltd

CLIENT Geotechnical Engineering Ltd
Rock House
Lower Tuffley Lane
Gloucester
GL2 5DT

LAB REF. 07/091
ISSUE NO. 2
DATE SCHEDULED 29/03/07
DATE TESTED 29/3-11/4/07
DATE REPORTED 24/04/07

CONTACT Adrian Rose
JOB NAME Royal Victoria Hospital
JOB REF. 20290
ORDER NO.

						Lab sample ID	07/091/1	07/091/2	07/091/3
						Client sample ID	WS02	WS06	WS08
							0.40	1.60	1.40
						Date sampled	28/03/07	28/03/07	28/03/07
						Sample type	Soil	Soil	Soil
						Matrix code	6A	1	5
Analyte		LOD	Units	ISO 17025	MCERTS	Method ref.			
pH	D			Y	Y	4	7.8	8.1	7.8
Sulphate (2:1 water soluble)	D	0.02	g/l	Y	Y	12	<0.02	<0.02	<0.02
Chloride (2:1 water soluble)	D	0.05	g/l	Y	Y	12	<0.05	0.18	<0.05
Nitrate (2:1 water soluble)	D	0.002	g/l	Y	N/A	12	0.010	0.060	0.015
Magnesium (water soluble)	D	0.5	g/l			2	<0.5	<0.5	<0.5
Sulphate (total)	D	0.01	% m/m			25	0.07	<0.01	0.03
Sulphur (total)	D	0.01	% m/m			2	0.05	0.01	0.03

NOTES:

1. All results are reported as dry weight (35°C) and have not been corrected for recovery.
2. Results have been corrected for any stones or extraneous material removed from the sample prior to analysis.
3. Analyses suffixed "A" were performed on the sample as submitted.
4. Analyses suffixed "D" were performed on the sample dried at 35°C.
5. # indicates separate report appended, * indicates subcontracted analyses.
6. Results relate only to the sample aliquot tested.
7. Sampling was performed by others and is outwith the scope of our accreditation.

AUTHORISED BY

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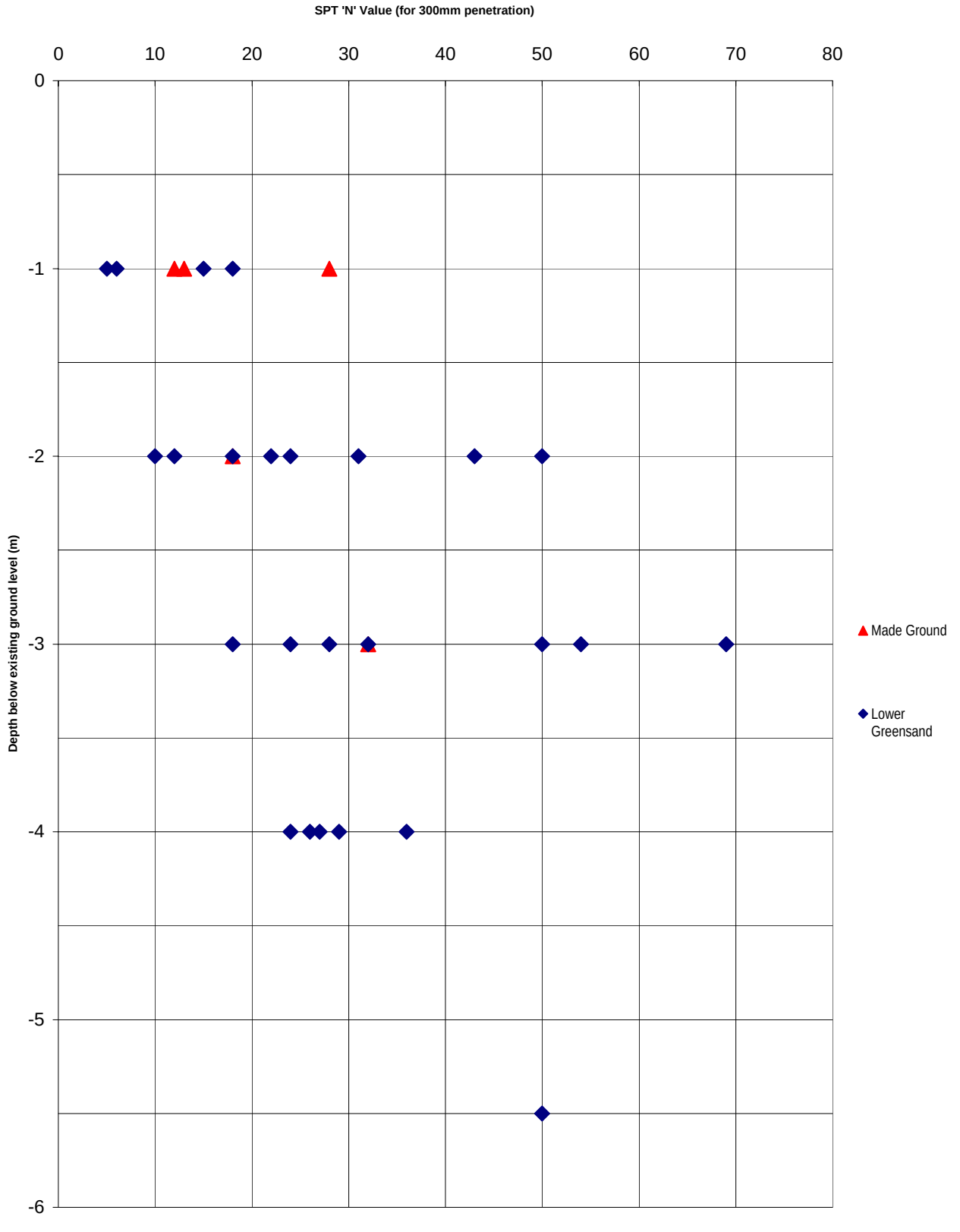
Hydrock Consultants

SPT 'N' VALUES vs DEPTH

Site:	Client:	Contract No. C07060
Royal Victoria Hospital, Folkestone	East Kent Hospitals NHS Trust	Hydrock Data Only



Appendix H

RISK ASSESSMENT RATIONALE

RISK ASSESSMENT RATIONALE

The work presented in this report has been carried out in general accordance with recognised best practice as detailed in guidance documents such as in the CLR 11 Model Procedures (Environment Agency 2004), BS5930:1999 and BS10175:2001. Important aspects of the risk assessment process are transparency and justification. The particular rationale behind the risk assessments presented is given in this appendix.

Preliminary Risk Assessment

In line with the CLR 11 Model Procedures (Environment Agency 2004), the Preliminary Risk Assessment includes a geo-environmental Hazard Identification, which seeks to list all the suspected contaminant **sources**, the **receptors** that might be harmed by those sources and the **pathways** via which the sources might reach the receptors to cause the harm. The source-pathway-receptor concept is known as a pollution linkage, and only when a linkage is complete is there any possibility of risk of harm.

The Hazard Identification evaluates all the **possible** pollution linkages in tabular form. Professional judgement is then used to evaluate which of these pollution linkages may be considered as **plausible**. Plausible pollution linkages are unacceptable risks in terms of the current contaminated land regime legal framework and require either remediation or further assessment. These are normally addressed via intrusive ground investigation and the chemical analysis of soil and water samples.

Contaminant Analysis of Samples

The Model Procedures of CLR 11 provide guidance on key information sources with respect to potential contamination arising from past land uses of a site. In particular, CLR 8 (Environment Agency 2002b), the DoE Industry Profile documents and ISO10381-5 provide good summaries of priority pollutants for UK sites. Additionally, the Environment Agency has produced a list of priority pollutants for ecological risk assessment in a consultation document (Environment Agency 2003a). These documents have been used, with the findings of the Phase 1 investigation, to scope the analyses of chemicals of potential concern.

Hydrock considers there to be a minimum requirement for soil chemical analysis, even for greenfield sites, in order to satisfy the ‘suitable for use’ criterion of the planning regime. This is represented by the ‘Hydrock default list of determinands for solids’. The default list is derived from the guidance given in Tables 2.1 and 2.2 of CLR 8, listing potential inorganic and organic contaminants on typical former **industrial** land in the UK.

Since not all redevelopment sites have former industrial land uses, the default list designed to screen for unacceptable risks to property development and future occupiers comprises those substances with human, vegetation and construction materials receptors. The list includes common metals, metaloids and inorganic species, pH, asbestos fibres and

screening tests for common organic compound groups which are deemed chemicals of potential concern. Sulfate is a contaminant whose principal receptor is concrete in the ground and is not considered toxic except in extreme conditions. Sulfate analysis is included in the list of geotechnical tests (for historic reasons). Sulfide is included in the list but it is not considered a toxic substance *per se* and is not compared to any criteria during risk assessment. Its presence is determined to help predict acidification arising from the oxidation of soils from a reduced state.

Similarly, the 'Hydrock default list of determinands for leaching' is based on CLR 8 guidance for substances for which Controlled Waters are the receptors. These represent soluble chemicals of potential concern which could leach from site soils. Beryllium is not included in the Hydrock default list because, according to the World Health Organisation, there are no adequate data to permit recommendation of a health-based guideline value for water.

The two Hydrock default lists of determinands are used as a minimum requirement whatever the findings of the Phase 1 investigation. Added to this may be other suites of determinands based on the findings and review of the aforementioned documents.

Assessment is made of all chemicals of potential concern recorded on the site above the laboratory detection limit.

Generic Risk Assessment Criteria for Human Health

Generic assessment criteria (GAC) are criteria derived using largely generic assumptions about the characteristics and behaviour of sources, pathways and receptors. These assumptions will be conservative in a defined range of conditions. The Contaminated Land Exposure Assessment (CLEA) framework uses Soil Guideline Values (SGV) in assessing risks to human health from exposure to soils contaminated with selected contaminants. It has been assumed in this report that the exposure conditions are within the generic conditions used to derive the SGVs.

It should be noted that exceedance of GACs does not automatically mean that the soil is "contaminated". The derivation of GACs includes a number of precautionary assumptions such that non-exceedance will indicate that risk to human health is acceptable and that the land is suitable for use, with regard to the contaminant in question. The Environment Agency (2002b) in its CLR 7 document states that SGVs "are not binding standards, but may be used to inform judgments about the need for action" and "can also be used to inform the selection of remediation standards or target values for individual sites."

However, the legal test for land contamination under the statutory guidance of Part IIA of the Environmental Protection Act 1990 (i.e. "significant possibility of significant hard") is **unacceptable** intake or direct bodily contact. DEFRA (2005) has made it clear that exceedance of a GAC does not necessarily meet this legal test, i.e. exceedance of a GAC does not necessarily equate to unacceptable risk. Consequently, the GACs must be considered as screening values only.

Exceedance requires careful consideration. The SGV Task Force commissioned by the Cabinet Office Better Regulation Team is currently exploring the role of SGVs, their derivation, and the need for improved and/or additional technical guidance that will support the necessary judgements to be made about “unacceptable intake”. CLEA Update Bulletin 3 states that no further SGV or TOX reports will be published whilst the review is under way. The Contaminated Land Advice Note (CLAN4-06, 10 April 2006) also states that the existing publications and other technical guidance remain valid.

In the meantime, Hydrock will use its professional judgement to make recommendations in this report, in line with the statement in CLEA Update Bulletin 4, issued in October 2006 and formally withdrawing the CLEA 2002 software and recommending the beta version of CLEA UK be used for risk assessment in conjunction with other advice on the Agency web site.

Where it is judged that significant uncertainties remain following assessment against generic criteria, there are two options for the developer: either the implementation of an agreed remedial strategy, or to undertake additional testing and/or a detailed quantifiable risk assessment to determine whether remediation is indeed necessary.

In accordance with the CLR 7 (Environment Agency 2002b) guidance document, the sample analyses are divided into representative data sets for the assessment, based on the conceptual model and taking into account such characteristics as variation in soil properties or historical, existing or proposed land uses. CLR 7 defines an ‘averaging area’ as the area of soil to which a receptor is exposed or which otherwise contributes to the creation of hazardous conditions, and goes on to say that in some circumstances this might be as small as an individual garden area. The guidance given in CRL7 is not always consistent with that given in the Soil Sampling Secondary Model Procedures document P5-066/TR (Environment Agency 2000), as discussed by Nathanail (2004).

Paragraph 4.10 of CRL7 states on one hand that contaminant concentrations should be averaged across each averaging area, and on the other hand cites P5-066/TR as containing methods of defining sampling grids to allow detection of given areas of interest (i.e. averaging areas). There are two concepts being mixed here. The first is: within any designated averaging area of the site, what is the ‘average’ concentration that might be compared to a GAC? The second is: how many samples are required to know that there is a given chance of detecting contamination above a GAC in an area equivalent in size to an averaging area?

The determination of averaging areas is clarified in the CLEA Frequently Asked Questions (30 January 2006) document available from the Agency CLEA web pages. In applying the CLR7 statistical tests, the risk assessor is asking the question “are mean (95 percentile upper confidence limit) soil concentrations within the averaging area above the SGV/GAC?” If a garden lies within a larger averaging area, but that averaging area is representative of conditions within the garden, then this is the average concentration a receptor using the garden will be exposed to. An averaging area can, therefore, be larger than a single garden and part of a larger zoned area if:

- contaminant concentrations are within the same statistical population as determined using the maximum value test. The sample data being representative of the averaging area and the mean concentration of the averaging area;

- hot spots are treated as separate zones or averaging areas (as defined by the maximum value test); and

- the sampling strategy takes into account uncertainty (spatial heterogeneity) in contaminant concentration.

The approach taken in this report is to characterize the materials that are likely to form the ground cover in garden areas by zoning the site. Each averaging area has been chosen to describe the area(s) of the site, zoned according to material type and existing conditions, within which assessment (including the CRL7 statistical tests, where appropriate) against GACs has taken place. As pointed out in P5-066/TR and by Nathanail (2004), this is a logical way of investigating a large plot of land that is intended for residential use, particularly if the development layout may not have been finalised.

Currently there are 10 published generic criteria, the Soil Guideline Values for As, Cd, Cr, Hg, Pb, Ni, Se, phenol, toluene and ethylbenzene, plus draft SGVs for benzene and xylenes. Where no generic criteria are published, The Model Procedures give guidance for deriving site specific assessment criteria (SSAC) from using models such as CLEA and SNIFFER, amongst others.

CRL11 is ambiguous. Figure 2B asks “can GAC be developed using generic assumptions?”, whilst Section 2.4 indicates that a Detailed Quantitative Risk Assessment (Tier 3) is required, using SSAC, “if GAC are not available or appropriate given the actual circumstances of the site.” The interpretation of Section 2.4 is that if GAC are not available, i.e. published SGVs for human health, then the assessor must move to Tier 3. However, the interpretation of Figure 2B is that if the assessor judges the answer to the question to be “yes”, than he/she can derive such generic criteria.

There is clarification in the CLEA Frequently Asked Questions document on the Agency web site, which states that if the conceptual exposure model for the site being assessed is consistent with one of the standard land uses published in CLR 10 then assessment criteria should be derived using the algorithms set out in CLR 10 and will be Generic Assessment Criteria. If on the other hand the conceptual exposure model for the site being assessed is not consistent with any of the standard land uses included in CLR 10, it is advisable to conduct a detailed quantitative risk assessment (DQRA) and generate appropriate Site-Specific Assessment Criteria. The latest version of the CLEA UK software uses this protocol and allows the calculation of GACs and SSACs accordingly.

Hydrock has retained the term “Generic Quantitative Risk Assessment” for use in circumstances where assessment criteria are based on generic assumptions and are used as screening values in a Tier 2 assessment. Hydrock uses the term “Detailed Quantitative Risk Assessment” to mean one where site specific conditions are considered in more detail than in the generic case (i.e. Tier 3). Examples of these might be where bioaccessible

fractions of contaminants are considered or where soil conditions or linkages are very specific.

The absence of published SGVs for certain chemicals of potential concern has been addressed by the derivation of GAC using generic assumptions about the characteristics and behaviour of sources, pathways and receptors. Assumptions made in the derivation of these "generic criteria" are summarised in the following tables for the standard CLEA land uses, further details including data sources can be obtained on request. It is Hydrock's policy to continually review GACs and updates are made in response to the latest Government guidance or as more data on the substances becomes available. The date of the last update each table is indicated.

Hydrock has identified an error in the SNIFFER organics worksheet concerning the soil organic matter content. This error has been acknowledged by SNIFFER as so a correction has been applied by Hydrock in the calculation of GACs given below.

Table A: Derivation of Generic Criteria for the Residential Without Plant Uptake Standard Land Use

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
Be	100	Exposure route: residential without vegetable consumption. CLEA UK plus data from WWW.
S	1000	There is currently not enough data on elemental sulfur to derive a generic criterion so the ICRCL 18/79 threshold trigger values of 1,000 mg/kg for all land uses has been adopted as a screening value.
V	168	Exposure route: residential without vegetable consumption. CLEA UK plus data from WWW.
CN (free)	183	Exposure route: residential without vegetable consumption. CLEA UK plus TOX5
Acenaphthene	127 (1%) 290 (2.5%) 508 (5%)	Exposure route: residential without vegetable consumption. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $5.1x10^{-3}$). Index dose based on 10^{-5} lifetime excess cancer risk. SNIFFER using input defaults from CLEA plus data from WWW.
Acenaphthylene	1.2(1%) 13 (2.5%) 23 (5%)	Exposure route: residential without vegetable consumption. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $7.4x10^{-3}$). SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Anthracene	27989 (1%) 29102 (2.5%) 29492 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
Benz[a]anthracene	20	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzo[a]pyrene	2	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus TOX2. Based on Index Dose at 10^{-5} lifetime excess cancer risk.
Benzo[b]fluoranthene	20	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzo[ghi]perylene	24	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
Benzo[k]fluoranthene	20	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Chrysene	203	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Dibenz[a,h]anthracene	2	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Fluoranthene	203	Exposure route: residential without vegetable consumption.

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
		SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Fluorene	4000	Exposure route: residential without vegetable consumption. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $3.9x10^{-3}$). SNIFFER using input defaults from CLEA plus data from WWW.
Indo[1,2,3cd]pyrene	20	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Naphthalene	66 (1%) 157 (2.5%) 290 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus TOX20.
Phenanthrene	2029	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
Pyrene	2030	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzene	0.038 (1%) 0.087 (2.5%) 0.168 (5%)	Exposure route: residential without vegetable consumption. Index dose based on 10^{-5} lifetime excess cancer risk. SGV 12 (draft). Confirmed by CLEA UK using TOX 11 data.
Xylenes	8 (1%) 19 (2.5%) 38 (5%)	Exposure route: residential without vegetable consumption. SGV 18 (draft). Confirmed by CLEA UK using TOX 19 data.
1,1,1-trichloroethane	153 (1%) 335 (2.5%) 687 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus TOX25.
TPH aliphatic C5-C6	119 (1%) 195 (2.5%) 321 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C6-C8	235 (1%) 485 (2.5%) 901 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C8-C10	9.8 (1%) 23 (2.5%) 45 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C10-C12	48 (1%) 116 (2.5%) 219 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C12-C16	725 (1%) 1180 (2.5%) 1492 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C16-C35	161135	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C35-C44	161135	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic C5-C7	41 (1%) 102 (2.5%) 201 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C7-C8	214 (1%) 521 (2.5%) 1012 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C8-C10	70 (1%) 168 (2.5%) 321 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C10-C12	76 (1%) 166 (2.5%) 276 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C12-C16	594 (1%) 708 (2.5%) 756 (5%)	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C16-C21	609	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C21-C35	609	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C35-C44	609	Exposure route: residential without vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
Dioxins, furans & dioxin-	2.90E-5	Exposure route: residential without vegetable consumption. CLEA UK plus TOX12 and data from WWW.

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
like PCBs		
Last update 05/02/07		

Table B: Derivation of Generic Criteria for the Residential With Plant Uptake Standard Land Use

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
Be	72	Exposure route: residential with vegetable consumption. CLEA UK plus data from WWW.
S	1000	There is currently not enough data on elemental sulfur to derive a generic criterion so the ICRCL 18/79 threshold trigger values of 1,000 mg/kg for all land uses has been adopted as a screening value.
V	118	Exposure route: residential with vegetable consumption. CLEA UK plus data from WWW.
CN (free)	176	Exposure route: residential with vegetable consumption. CLEA UK plus TOX5.
Acenaphthene	77 (1%) 181 (2.5%) 329 (5%)	Exposure route: residential with vegetable consumption. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $5.1x10^{-3}$). Index dose based on 10^{-5} lifetime excess cancer risk. SNIFFER using input defaults from CLEA plus data from WWW.
Acenaphthylene	3.9 (1%) 9.5 (2.5%) 18 (5%)	Exposure route: residential with vegetable consumption. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $7.4x10^{-3}$). SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Anthracene	6737 (1%) 12232 (2.5%) 16801 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
Benz[a]anthracene	11	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzo[a]pyrene	1.2	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus TOX2. Based on Index Dose at 10^{-5} lifetime excess cancer risk.
Benzo[b]fluoranthene	10	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzo[ghi]perylene	17	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
Benzo[k]fluoranthene	11	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Chrysene	93	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Dibenz[a,h]anthracene	1.5	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Fluoranthene	67	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Fluorene	1717	Exposure route: residential with vegetable consumption. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $3.9x10^{-3}$). SNIFFER using input defaults from CLEA plus data from WWW.
Indo[1,2,3cd]pyrene	15	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Naphthalene	30 (1%) 72 (2.5%) 137 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus TOX20.

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
Phenanthrene	355	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
Pyrene	644	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzene	0.024 (1%) 0.056 (2.5%) 0.109 (5%)	Exposure route: residential with vegetable consumption. Index dose based on 10^{-5} lifetime excess cancer risk. SGV 12 (draft). Confirmed by CLEA UK using TOX 11 data.
Xylenes	6 (1%) 15 (2.5%) 30 (5%)	Exposure route: residential with vegetable consumption. SGV 18 (draft). Confirmed by CLEA UK using TOX 19 data.
1,1,1-trichloroethane	214 (1%) 288 (2.5%) 516 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus TOX25.
TPH aliphatic C5-C6	118 (1%) 193 (2.5%) 318 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C6-C8	233 (1%) 481 (2.5%) 894 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C8-C10	9.8 (1%) 23 (2.5%) 42 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C10-C12	47 (1%) 108 (2.5%) 192 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C12-C16	645 (1%) 974 (2.5%) 1186 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C16-C35	142743	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C35-C44	142743	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic C5-C7	40 (1%) 99 (2.5%) 196 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C7-C8	182 (1%) 444 (2.5%) 863 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C8-C10	49 (1%) 119 (2.5%) 230 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C10-C12	25 (1%) 60 (2.5%) 110 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C12-C16	52 (1%) 116 (2.5%) 200 (5%)	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C16-C21	122	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C21-C35	355	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C35-C44	355	Exposure route: residential with vegetable consumption. SNIFFER using input defaults from CLEA plus data from WWW.
Dioxins, furans & dioxin-like PCBs	2.70E-5	Exposure route: residential without vegetable consumption. CLEA UK plus TOX12 and data from WWW.
Last update 05/02/07		

Table C: Derivation of Generic Criteria for the Allotments Standard Land Use

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
Be	75	Exposure route: allotments. CLEA UK plus data from WWW.
S	1000	There is currently not enough data on elemental sulfur to derive a generic criterion so the ICRCL 18/79 threshold trigger values of 1,000 mg/kg for all land uses has been adopted as a screening value.
V	118	Exposure route: allotments. CLEA UK plus data from WWW.
CN (free)	175	Exposure route: allotments. CLEA UK plus TOX5.
Acenaphthene	178 (1%) 387 (2.5%) 639 (5%)	Exposure route: allotments. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $5.1x10^{-3}$). Index dose based on 10^{-5} lifetime excess cancer risk. SNIFFER using input defaults from CLEA plus data from WWW.
Acenaphthylene	15 (1%) 33 (2.5%) 56 (5%)	Exposure route: allotments. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $7.4x10^{-3}$). SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Anthracene	6842 (1%) 12369 (2.5%) 16930 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
Benz[a]anthracene	11	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzo[a]pyrene	1.2	Exposure route: allotments. SNIFFER using input defaults from CLEA plus TOX2. Based on Index Dose at 10^{-5} lifetime excess cancer risk.
Benzo[b]fluoranthene	10	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzo[ghi]perylene	17	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
Benzo[k]fluoranthene	11	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Chrysene	95	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Dibenz[a,h]anthracene	1.5	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Fluoranthene	67	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Fluorene	1282	Exposure route: allotments. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $3.9x10^{-3}$). SNIFFER using input defaults from CLEA plus data from WWW.
Indo[1,2,3cd]pyrene	15	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Naphthalene	52 (1%) 124 (2.5%) 230 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus TOX20.
Phenanthrene	355	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
Pyrene	644	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzene	0.068 (1%) 0.154 (2.5%) 0.300 (5%)	Exposure route: allotments. Index dose based on 10^{-5} lifetime excess cancer risk. SGV 12 (draft). Confirmed by CLEA UK using TOX 11 data.
Xylenes	30 (1%) 70 (2.5%) 144 (5%)	Exposure route: allotments. SGV 18 (draft). Confirmed by CLEA UK using TOX 19 data.
1,1,1-trichloroethane	616 (1%) 1448 (2.5%) 2778 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus TOX25.
TPH aliphatic C5-C6	4866 (1%)	Exposure route: allotments.

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
	9671 (2.5%) 16983 (5%)	SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C6-C8	11628 (1%) 25208 (2.5%) 45894 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C8-C10	302 (1%) 374 (2.5%) 409 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C10-C12	717 (1%) 791 (2.5%) 819 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C12-C16	1481 (1%) 1494 (2.5%) 1498 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C16-C35	142743	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C35-C44	142743	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic C5-C7	986 (1%) 2258 (2.5%) 4007 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic C7-C8	1304 (1%) 2484 (2.5%) 4362 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C8-C10	155 (1%) 361 (2.5%) 655 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C10-C12	36 (1%) 83 (2.5%) 149 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C12-C16	53 (1%) 119 (2.5%) 204 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C16-C21	514 (1%) 533 (2.5%) 540 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C21-C35	114 (1%) 216 (2.5%) 310 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C35-C44	114 (1%) 216 (2.5%) 310 (5%)	Exposure route: allotments. SNIFFER using input defaults from CLEA plus data from WWW.
Dioxins, furans & dioxin-like PCBs	2.70E-5	Exposure route: residential without vegetable consumption. CLEA UK plus TOX12 and data from WWW.
Last update 10/11/06		

Table D: Derivation of Generic Criteria for the Commercial / Industrial Standard Land Use

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
Be	2550	Exposure route: commercial / industrial. CLEA UK plus data from WWW.
S	1000	There is currently not enough data on elemental sulfur to derive a generic criterion so the ICRCL 18/79 threshold trigger values of 1,000 mg/kg for all land uses has been adopted as a screening value.
V	4910	Exposure route: commercial / industrial. CLEA UK plus data from WWW.
CN (free)	13600	Exposure route: commercial / industrial. CLEA UK plus TOX5

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
Acenaphthene	861 (1%) 2077 (2.5%) 3931 (5%)	Exposure route: commercial / industrial. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $5.1x10^{-3}$). Index dose based on 10^{-5} lifetime excess cancer risk. SNIFFER using input defaults from CLEA plus data from WWW.
Acenaphthylene	4 (1%) 10 (2.5%) 20 (5%)	Exposure route: commercial / industrial. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $7.4x10^{-3}$). SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Anthracene	458724 (1%) 508042 (2.5%) 526934 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
Benz[a]anthracene	368	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzo[a]pyrene	37	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus TOX2. Based on Index Dose at 10^{-5} lifetime excess cancer risk.
Benzo[b]fluoranthene	368	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzo[ghi]perylene	484	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
Benzo[k]fluoranthene	368	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Chrysene	3682	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Dibenz[a,h]anthracene	37	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Fluoranthene	3682	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Fluorene	73104	Exposure route: commercial / industrial. Oral pathway only, there are no reliable data for inhalation. Henry's Law constant is less than 1 order above the 10^{-3} threshold (at $3.9x10^{-3}$). SNIFFER using input defaults from CLEA plus data from WWW.
Indo[1,2,3cd]pyrene	368	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Naphthalene	453 (1%) 1105 (2.5%) 2140 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus TOX20.
Phenanthrene	36804	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
Pyrene	36817	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW. Index dose based on 10^{-5} lifetime excess cancer risk.
Benzene	1.66 (1%) 3.80 (2.5%) 7.32 (5%)	Exposure route: commercial / industrial. Index dose based on 10^{-5} lifetime excess cancer risk. SGV 12 (draft). Confirmed by CLEA UK using TOX 11 data.
Xylenes	340 (1%) 825 (2.5%) 1650 (5%)	Exposure route: commercial / industrial. SGV 18 (draft). Confirmed by CLEA UK using TOX 19 data.
1,1,1-trichloroethane	1015 (1%) 2352 (2.5%) 4572 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus TOX25.
TPH aliphatic C5-C6	797 (1%) 1302 (2.5%) 2144 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C6-C8	1572 (1%) 3244 (2.5%) 6028 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C8-C10	65 (1%) 155 (2.5%) 305 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C10-C12	326 (1%) 769 (2.5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.

Chemical of Potential Concern	Derived Generic Criterion (mg/kg) Percentages refer to SOM	Summary of Methodology and Assumptions
	1556 (5%)	
TPH aliphatic >C12-C16	6220 (1%) 12390 (2.5%) 18535 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C16-C35	no limit	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aliphatic >C35-C44	no limit	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic C5-C7	274 (1%) 676 (2.5%) 1342 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic C7-C8	1440 (1%) 3538 (2.5%) 6982 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C8-C10	483 (1%) 1183 (2.5%) 2319 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C10-C12	537 (1%) 1268 (2.5%) 2332 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C12-C16	7341 (1%) 10495 (2.5%) 12254 (5%)	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C16-C21	11045	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C21-C35	11045	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
TPH aromatic >C35-C44	11045	Exposure route: commercial / industrial. SNIFFER using input defaults from CLEA plus data from WWW.
Dioxins, furans & dioxin-like PCBs	7.00E-4	Exposure route: residential without vegetable consumption. CLEA UK plus TOX12 and data from WWW.
Last update 05/02/07		

Note on Beryllium

Beryllium is both a threshold and non-threshold substance. Inhalation can cause lung cancer and ingestion is toxic. The Australians have derived risk-based criteria (HIL) for beryllium. Their NEP Schedule B(7A) (1999b) states that whilst the main effect is from inhalation it is not considered a major pathway and so the HIL is based on oral and dermal pathways.

The 10th Report on Carcinogens (USDHHS 2003) states that only 1% of beryllium ingested actually enters the blood stream, so oral intake is not considered an important mode of exposure. This is also stated by ECO-USA and the GTZ, a sustainable development organisation working with the German government.

The current level of understanding is, therefore, that the worst effects are from inhalation but oral intake is far more likely and is the “risk driver”, but even then, oral intake is not that important because only 1% gets into the blood. The Danish EPA states that beryllium has low usage so exposure will be low and they would not expect to see adverse health effects outside the workplace (where people are subject to beryllium from industrial processes. It is interesting to note that beryllium did not appear on the Environment Agency timetable for the

derivation of SGVs and perhaps this explains why. It is toxic, but exposure is rare and this gives it low priority.

The background concentration of beryllium in natural soils is also problematical. The Canadians report background concentrations of 4 mg/kg, the Australians 2.8-5, the Danish EPA 0.01-40, the WHO 0.35-3.52. UK values up to 3 have been experienced by Hydrock.

If the Index Dose is used in the derivation of a GAC, the resulting concentration is very low, typically a fraction of a mg/kg. The WHO (2001) has calculated a trigger value of 0.2 mg/kg for sewage sludge re-use. They do not actually know what to do with this figure, saying it needs "careful evaluation and refinement" because it is in the range of soil background values and suggesting a judgmental approach such as considering whether or not concentrations exceed 2 or 3 standard deviations above background.

It is Hydrock's assessment that if beryllium really were as dangerous as an Index Dose based GAC would suggest, then it would be at the top of the Environment Agency priority list and not off it altogether. The Danish approach is considered realistic and so the GACs adopted by Hydrock are based on the Tolerable Daily Input from the ingestion and dermal pathways plus the Index Dose for inhalation.

Note on PAHs

The Dutch National Institute of Public Health and the Environment (RIVM) has carried out extensive research into the carcinogenicity of PAHs (Baars *et al,* 2001). Naphthalene, anthracene, benzo(ghi)pyrene and fluorene are not considered carcinogenic. Of the others listed in the above tables, some are considered to be carcinogenic beyond reasonable doubt and the remainder are suspect and so are treated as being carcinogenic for the purposes of risk assessment. As such, all are treated as being non-threshold substances. The only exception is phenanthrene, which is said to be carcinogenic, but with such a low potency factor that the toxic effects dominate and it is, therefore, treated as a threshold substance.

RIVM (Baars *et al.* 2001, Lijzen *et al.* 2001) concludes that benzo(a)pyrene has the strongest carcinogenic effect and uses equivalency factors relative to benzo(a)pyrene as 1.0 "in full agreement with recent international developments regarding characterizing and evaluating PAH mixtures." The most conservative value from two authoritative studies is taken (see Table 4 in Baars *et al.* 2001). Index Doses are then calculated from the benzo(a)pyrene index dose by applying the relevant factor.

A number of other organisations (such as Health Canada and the USEPA (RAIS database)) have also published carcinogenic slope factors. Close inspection reveals that these are also derived by applying factors to benzo(a)pyrene data, there being a lack of studies on the other PAHs which could give independent slope factors or index doses.

Consequently, the approach to PAHs adopted by Hydrock is:-

1. Use the RIVM list of non-threshold PAHs;

2. Use the RIVM list of cancer potency factors;
3. The most authoritative source of toxicological data available under the CLEA guidelines is the Index Dose for benzo(a)pyrene in the TOX 2 report.
4. Use the RIVM cancer potency factors with the TOX 2 ID to calculate IDs for the remaining non-threshold PAHs.
5. Source TDIs for threshold PAHs in the same way as for other substances.

Note on Petroleum Hydrocarbons

Petroleum hydrocarbon contamination is complex. The type of crude oil, its distillation, processing and blending, and the subsequent weathering in the environment all result in the development of petroleum residues of extreme chemical complexity (Environment Agency, 2003). The laboratory analysis of petroleum hydrocarbons is highly method dependent. In addition to contaminants such as fuels and lubricating oils, the analyses also pick up a range of other chemicals such as PAHs and phenols, together with naturally occurring substances like humic and fulvic matter in organic soils. For example, TPH determination on dried oak leaves can give a result of 18,000 mg/kg of TPH.

TPH can only be used as a surrogate for estimating the petroleum load of a soil if a spill is well defined but is generally not a sound basis for risk management and regulatory control. International approaches for assessing risks from petroleum hydrocarbons focus on dividing the components into groups and assigning toxicologically potency and fate-transport to each group.

Approaches have been developed internationally, one such proposal is discussed by the Dutch National Institute of Public Health and the Environment (RIVM) (Franken *et al* 1999). The approach is broadly to sub-divide the TPH into fractions based on equivalent carbon length for aliphatic (straight chain) and aromatic (cyclic) compounds. The choice of the fractions is based on work carried out by, amongst others, the Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG). The Working Group is guided by a steering committee consisting of representatives from industry, government and academia, with the remit *to develop scientifically defensible information for establishing soil cleanup levels that are protective of human health at petroleum contaminated sites.*

Generic assessment criteria can be developed for each TPH fraction in the same way as they can be for named substances, providing certain assumptions are made regarding the applicability of the data to all the compounds in each fraction. A significant part of the TPHCWG activity has been in determining fraction boundaries to maximize confidence in the eventual criteria.

A modified TPHCWG approach has been adopted in a framework developed by the Environment Agency (2005) for use within the UK. The 13 original TPHCWG fractions have been adopted, with the addition of >C35-C44. An undifferentiated (i.e. without aliphatic – aromatic split) fraction of >C44-C70 has also been suggested but the Agency will be reviewing the need for this in due course, once research has been carried out into the toxicity of these heavy-end products like resins and asphaltenes.

The UK suggested approach to petroleum hydrocarbon risk assessment is summarised as follows:

- Measure indicator chemicals and compare with their GAC – these are chemicals which are considered as key risk drivers at petroleum hydrocarbon contaminated sites. The chemicals of potential concern depend on the type of hydrocarbon product, but a (non-exhaustive) list has been suggested by the Environment Agency (2005):

  Non-threshold: benzene, benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3,cd)pyrene.

  Threshold: toluene, ethylbenzene, xylene, naphthalene, fluoranthene, phenanthrene, pyrene.

- Measure TPH fractions and compare with their GAC, based on threshold toxicity only.

  Aliphatic fractions: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C35, >C35-44.

  Aromatic fractions: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44.

  Undifferentiated: >C44-C77 (subject to review and confirmation by Agency. Currently, laboratories are unable to analyse for this fraction.).

- Carry out an additivity check on the TPH fractions if none of the individual fractions exceed their GAC. A Hazard Quotient is calculated for each fraction by dividing the measured concentration by the GAC and these are summed to give the Hazard Index. Where the Hazard Index exceeds unity, this can indicate a potentially significant risk to human health and consideration should proceed to the next stage (remediation or further assessment). Including all the fractions in a Hazard Index is conservative as it assumes all fractions add together in acting on the same target organ within the critical receptor. The Environment Agency (2005) has stated that fractions exhibiting different toxicological properties might be excluded from this process in due course, once research has been completed and further guidance published. The Louisiana Department of Environmental Quality (LDEQ) (2003) has published more detailed guidance, suggesting the following fractions be grouped: (a) aliphatic >C8-C10, >C10-C12 & >C12-C16, (b) aromatic >C8-C10, >C10-C12 & >C12-C16 and (c) aromatic >C16-C21 & >C21-C35.

Hydrock has adopted the first two points from above approach and has developed generic assessment criteria for the TPH fractions up to C35 (because it is beyond current laboratory capability to report beyond about C40, and there are no toxicological data available for these heavier fractions with which to calculate GACs). These are used for assessment where an appropriate level of sampling and laboratory analysis has been carried out, but cannot be used where more generalised TPH analysis has been scheduled (such as DRO/GRO only).

There is, however, some uncertainty concerning the validity of the additivity check. The Environment Agency (2002e) stated in CLR 9, Section 4.4, “that it is not valid to simply calculate the sum of the fractions ‘soil concentration divided by SGV’, and compare this with 1.”, because total intake, not just intake from soil, needs to be included. It is assumed that the 2005 document takes this into account and that it is erring on the side of conservatism. Until this is formally resolved, Hydrock will report the additivity check for information, using the LDEQ groupings, but will caution against its use in setting remedial goals without further study or publication of definitive guidance. It is more realistic to carry

out the additivity test on individual samples rather than on US_{95} values for the whole population, because it is unlikely that the TPH profile of the averaging area will be represented by the US_{95}s of every fraction. More likely, a sample high in one fraction will be low in another, particularly where a mixture of products is present in the ground.

The analysis required for the above methodology, using the aliphatic / aromatic split of TPH fractions, is referred to by Hydrock its "**TPH Level 2 suite**" of determinands. In instances where a full numerical risk assessment is not required, Hydrock carries out a screening analysis known as its "**TPH Level 1 suite**" of determinands. The TPH is divided into fractions, but without the aliphatic / aromatic split. This allows a semi-quantitative risk assessment on the basis of taking a worst case condition. The fraction split with the lowest GAC is deemed to apply to the whole fraction. For example, if the Level 1 analysis indicates the presence of >C8-C10, the result is compared to the GACs for the aliphatic >C8-C10 and the aromatic >C8-C10 fractions. The worst case would be to assume the whole fraction is aliphatic because this is the lower of the two GACs. This is a conservative approach, and if the test is passed, there is no need to proceed further. However, if the test is failed this does not necessarily indicate unacceptable risks and a more detailed risk assessment is required, with the full TPH Level 2 analysis suite.

Note on Cyanide

Cyanide toxicity is complicated but it is generally accepted that cyanide species exist in 'free' and 'complex' forms. Free cyanide species are toxic it is generally agreed that free cyanide provides a more scientifically correct basis for the establishment of generic criteria. This approach has been followed in this report.

Metal-cyanide complexes (complex cyanide) are generally not considered toxic but in certain environmental fate reactions it is possible that dissociation may release toxic free cyanide into the water environment. This might occur where complex cyanides are exposed to direct sunlight and photolysis takes place. Such circumstances are considered very rare.

The default Hydrock list includes total cyanide as a screening test for cyanides on site. Free cyanide analysis is a dependent option and is reported where the total cyanide exceeds the derived generic criterion for free cyanide. The difference between total and free is considered to be complex cyanide.

Note on the Use of Non-UK Assessment Criteria

In some instances reference to assessment criteria or other trigger values published by other authoritative bodies (other than those concerned with the UK contaminated land regime) may provide background information on the likely degree of contamination of a substance. Trigger levels indicative of naturally occurring concentrations or risk-based guidance from other countries often help place site analysis results into context. It must be remembered that use of non-UK assessment criteria is not in compliance with the UK contaminated land assessment regime given in the Model Procedures. However, these criteria can be of use as

an aid to professional judgement and can help in determining a cost-effective and sustainable remedial strategy for a site, in consultation with the regulatory authorities.

Sulfur (elemental)

In the absence of UK guidelines or derived generic or site specific criteria, a measure of the degree of potential contamination of the site by phenols with respect to residential and open space land use scenarios can be gained by reference to the former ICRCL 18/79 threshold trigger values of 1,000 mg/kg for all land uses.

Generic Risk Assessment Criteria for Risk to Plants

Soil contaminants, if present at sufficient concentrations, can have an adverse effect on the plant population. Phytotoxic effects can be manifested by a variety of responses, such as growth inhibition, interference with plant processes, contaminant-induced nutrient deficiencies and chlorosis (yellowing of leaves). All chemicals are probably capable of causing phytotoxic effects. Thus the phytotoxic potential of substances is dependent on the concentrations capable of having adverse effects on plants and the concentrations likely to be found at contaminated sites. Phytotoxicity is a difficult parameter to quantify given that experimental techniques vary widely and variations exist in plant tolerances, soil effects and synergistic/antagonistic reactions between chemicals.

Contaminants may be taken up and accumulated by plants through a range of mechanisms. The principal pathways are active and/or passive uptake through the plant root, adsorption to root surfaces and volatilisation from the soil surface followed by foliar uptake. After plant uptake, contaminants may be metabolised or excreted, or they may be bioaccumulated.

Many of the substances capable of adversely affecting vegetation exert this effect due to their water solubility, a characteristic that could result in their transport from contaminated sites into adjacent locations where the chemical may generate a phytotoxic response. This could be important if, for example, the adjacent site has important conservation status.

Whilst many contaminants may be phytotoxic, data are limited. Some heavy metals are essential as trace elements for plant growth but may become toxic at higher concentrations. Toxicity may be displayed in many forms, including signs of stress such as reduction in growth or yellowing of the tissue. The concentration in soil at which substances become phytotoxic depend on a range of factors including plant type, soil type, pH, the form and availability of the contaminant and other vegetation stress factors that may be present (such as drought).

Hydrock has carried out a review of a number of current and former guidance documents and other texts on phytotoxicity. It is not possible to produce a definitive list of phytotoxic substances on account of the variables mentioned above. However, a number of metals are repeatedly cited as commonly occurring priority pollutants. As a result, the following list is adopted as Hydrock's indicators of the potential for phytotoxicity: As, B, Cr, Cu, Ni and Zn.

As the CLEA framework is a risk based approach, applied to humans, an alternative strategy is required to assess the risk to plants from substances that are phytotoxic. Reference to published criteria and background concentrations can help put site data into context.

Published assessment criteria for the protection of plant life from a number of countries are given in Table E. Also included in the table are some measures of natural background concentrations in typical soils.

CLR 11 states that the ICRCL Guidance Note 70/90 can be used for initial screening criteria. This approach has been adopted by Hydrock but where an ICRCL 70/90 criterion is lacking, the lowest criterion in Table E from, firstly MAFF, and, secondly, another country has been adopted. The adopted criteria are highlighted in Table E. The MAFF value of 250 mg/kg has been chosen for As over the ICRCL value of 50 mg/kg as MAFF explains the 50 is applicable to vegetables and human health, whereas 250 is applicable to the plant themselves.

Table E: Published Assessment Criteria and Natural Background Concentrations for Phytotoxic Elements (mg/kg)

Reference	As	B	Cr (total)	Cr (III)	Cr (VI)	Cu	Ni	Zn
Published Assessment Criteria (mg/kg)								
MAFF Code of Good Agricultural Practice for the Protection of Soil (1998)	250			unlikely to be toxic except in v low pH. 400 for sites containing sewage sludge		500 (grass) but may fall to 250 for clover and sensitive species (at pH≥6)	110 (pH>7) 75 (pH 6-7) 60 pH(5.5-6.0)	1000 (clover & grass at pH 6), may fall to 300 for sensitive species (at pH 6-7)
Australian Guideline B(1) (1999), Interim Urban Ecological Investigation Level (EIL). Soils not generally considered phytotoxic below these EILs.	20			400	1	100	60	200
Considered toxic to plants - Ponnamperuma *et al* (1979)		5 (hot water soluble)						
Dutch ecotoxicological intervention value (Swartjes 1993 & 1994) *	40	7	230			190		
Alberta Environment (1990) Tier 1 (draft) *	10 acid sandy soils			600 acid sandy soils	25 acid sandy soils	130 acid sandy soils		
Ontario MoE (1989) *	20 acid sandy soils 25 clay soils							

Reference	As	B	Cr (total)	Cr (III)	Cr (VI)	Cu	Ni	Zn
ICRCL 59/83 (1987) now withdrawn for human health assessment		3 (hot water soluble)				130	70	300
ICRCL 70/90 (1990) threshold trigger value	50				25	250		1000
New Zealand guidelines for timber treatment sites (1997), estimated based on Cu bioavailability *						500-1000 clay soils		
New Zealand guidelines for timber treatment sites (1997), soil criteria for protection of plant life (residential/agricultural setting)	10-20	3 (soluble)		600	25	130		
Natural Background Concentrations (mg/kg)								
Dutch background level (target value) (2000)	29		100			36	35	140
UK ICRCL 42/80 (2nd ed. 1983) - Normal conc. In agricultural soil	0.1-40	2-100	5-500			2-100	5-500	10-300
UK ICRCL 70/90 (1st ed. 1990) - Typical range (and mean) in agricultural soils	2.3 - 53 (11.0)					5.8-62 (19) [1.2-19 4.9) extracta ble]		29-210 (78.1) [1.5-21 (5.6) extracta ble]
Canadian assessment criteria (i.e. background) (1991)	5	1(hot water soluble)	20		2.5	30		60
New Zealand timber sites (1997) – background	2-30							
Australian Guideline B(1) (1999), typical background levels	1-50		5-1000			2-100	5-500	10-300
* cited in New Zealand Ministry for the Environment (1997) timber treatment chemicals guidelines.								

Generic Risk Assessment Criteria for Controlled Waters

G Generic criteria for contaminated soils which might result in groundwater contamination can be derived from generic assumptions using the Environment Agency (2006) Remedial Targets Methodology. A tiered approach is detailed in this document. In accordance with CLR 11, environmental quality standards (EQS) and drinking water standards can be used as generic water quality criteria with respect to contamination of controlled waters. Criteria are published by the Environment Agency (2002c) in its technical advice to third parties on pollution of Controlled Waters. This document makes reference to the Water Supply (Water Quality) Regulations 1989 and 2000, but has been superseded by the 2001 Regulations. Hydrock uses the Agency document as a guide, but with reference to the latest drinking water standards in the 2001 Regulations, to assess the risks to Controlled Waters. Where no UK or EU drinking water standard exists, reference is made to the World Health Organization (2004). The EQS (freshwater or saltwater, as appropriate) and the lower of the UK or EU drinking water standards are used.

The Level 1 soil zone assessment considers whether the contaminant concentrations in the soil moisture are sufficient to impact the water receptor(s). It is a conservative model and compares soil leachate concentrations with the above criteria, taking no account of dilution, dispersion or attenuation.

The Level 2 groundwater assessment is applicable where groundwater quality data are available and compares these with the above criteria, again taking no account of dilution, dispersion or attenuation.

The remedial targets methodology also allows for more detailed assessment (soil Level 2, 3 or 4, or groundwater Level 3 or 4) for substances which fail the above-mentioned assessments. These are progressively more complex assessments and do take into account attenuation and/or dilution, as applicable to the conceptual exposure model. Such assessment is beyond the scope of this report.

CLR 7 Statistical Tests of Contamination Results

As discussed above, the sample analyses are divided into representative data sets for the assessment, based on the conceptual model, and are referred to as 'averaging areas'. In this case it has been chosen to characterize materials that are likely to form the ground cover in critical receptor areas (e.g. gardens), on a material by material basis. The critical part of the soil column is the upper metre in terms of contact with end users of a development site.

In accordance with the CLR 7, the '**Maximum Value Test**' is performed on the data set(s) to investigate the presence of statistical outliers. If the maximum value of a set of results from a given averaging area passes the test, it is "reasonable to treat it as belonging to the same underlying distribution as the other values".

The results of the 'Maximum Value Test' for the site are tabulated in Appendix I. Where a maximum value fails the test, the data point is removed from the data set and a second iteration of the Maximum Value Test is performed to see if the second highest value is also an outlier. Further iterations are continued until no outliers are determined.

If test is failed, the implication is that the maximum value measured may be part of another statistical population, i.e. part of a different contaminative incident. If this occurs, further assessment is required. For example, the outlier may represent leakage from a fuel tank not otherwise identified by the sampling, or it may represent a 'hotspot' of contamination within a generally uncontaminated area. Further assessment may involve additional sampling and analysis to increase the number of data points for assessment, or it may involve specific remedial actions (such as hotspot removal).

In instances where there is a statistical outlier (Maximum Value Test failed) and the outlier exceeds the generic criterion, the population it represents is likely to exceed the generic criterion at the US_{95} level and so it is assumed to be a hotspot.

In instances where there is a statistical outlier (Maximum Value Test failed) but the outlier is below the generic criterion that outlier poses no unacceptable risk and is not normally considered further. However, there may be special circumstances where such a condition might require further assessment. It is conceivable that the outlier lies at the edge of an otherwise undetected contamination spill, and that closer spaced sampling would reveal other data from the same statistical population, and that that population fails the Mean Value Test. This is most likely to occur with mobile contaminants from discrete sources such as leaking fuel tanks. Such an eventuality will be taken into account by Hydrock in making recommendations about outliers.

The '**Mean Value Test**' is undertaken on the data following removal of the statistical outliers identified above. The 95% upper bound level (US_{95}) of the data set for each substance is each averaging area is compared to the generic criterion for each receptor and standard land use scenario.

The area passes the Mean Value Test if the US_{95} is less than the generic criterion. In which case, there is no unacceptable risk (the degree of confidence in this statement is controlled by the number of samples in the averaging area and the sampling statistics thereof).

Further assessment, or remediation, is required for any substance which fails the test.

The calculation tables are presented in Appendix I as supporting information. The text of the report contains a summary table of the outliers deemed to be hotspots (i.e. exceeding the generic criterion) and summary table(s) of the Mean Value Test (for each exposure pathway) on the revised population for those substances which fail the test. These two tables form the basis for assessing unacceptable risks to human health and plant life.

Note on Clustered Data Sets

The assumption behind the CLR 7 statistical tests is that each sample represents an equal fraction of the averaging area, although this is not stated in CLR 7 (Nathanail, 2004). If the data are clustered, i.e. the sampling points are not equally spaced, the calculated US_{95} would be too high if targeted sampling has taken place around suspected high concentration areas to determine the extent of the high contamination. Conversely, the calculated US_{95} would be too low if there is a high density of sampling in an area of low contaminant concentration.

The sampling pattern used in this report has been reviewed to determine if clustering of data points is likely to affect the statistical tests significantly. In cases where the area represented by each sample is judged to be similar, the tests have been carried out without modification. The error in this approach is likely to be conservative to human health because the Hydrock approach to targeted sampling is more likely to produce more closely spaced higher concentrations than more closely spaced lower concentrations.

Erring on the conservative side is, however, counter productive when it would indicate unnecessary remediation, i.e. remediation triggered by a US_{95} which is skewed by clustered

data. This is taken into consideration in the risk evaluation part of the risk assessment exercise and can take the form of professional judgement, the modification of the averaging area datasets to decluster them, or the weighting of sample results to decluster the data set. The latter method involves weighting the measured concentrations according the proportion of the area they represent, giving greater weight to samples representative of a larger area.

Statistical Tests and Risk to Controlled Waters

Where only a few leachate tests are available, the maximum concentrations are compared with the standards because the 95 percentile will be close to the maximum value. However, where a larger population is available, the 95 percentile is compared with the standards, as recommended by the Environment Agency.

Note on Laboratory Reporting Limits

In order to compare contaminant concentrations with the assessment criteria it is necessary for the laboratory reporting limit to be less than the criterion, ideally significantly less.

Potential difficulties arise where the assessment criteria are very low and standard laboratory reporting limits are not low enough. In some cases, more sophisticated analytical techniques can provide the data, but in others this is not possible, for example none of the laboratories used by Hydrock can attain the freshwater EQS for sulfide in water. Potential problems are likely with speciated PAHs and phenols. The rationale behind the contamination testing for this report is to screen for substances likely to be present on account of prior use of the land. Consequently, the results quoted are for the "standard" reporting level since it is not viable to test every sample at the highest level of precision in the first instance.

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Appendix I

CONTAMINATION TEST RESULTS & STATISTICAL ANALYSIS

Report Summary

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SEVERN TRENT ENVIRONMENTAL LEADERSHIP STL

Mr Doug Mayer
Hydrock (Northampton)
3 Hawthorn Park
Holdenbury Road

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NN 8LD

Date of Issue : 27 April 2007

Report Number : LL/416606/2007 *Issue* 2

Number of Samples included in report **16**

Number of Test Results included in report **841**

Site Name : **Royal Victoria Hospital Folkestone**

Job Received : **28 March 2007**

Analysis Commenced : **28 March 2007**

Order Number : **C07060**

Signed : Name : **G. Smith** Date : 27 April 2007

Title : **Licensed Chemistry Manager**

STL was not responsible for sampling unless otherwise stated. Sampling is not covered by our UKAS accreditation.
Information on the methods of analysis and performance characteristics are available on request
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory

Certificate of Analysis

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Leachate 966078 WS4 0.40m	Leachate 966080 WS5 1.30m	Leachate 966109 WS3 0.80m	Soil 966069 RA1 0.80m	Soil 966070 RA1 1.50m	Soil 966071 RA1 1.70m	Soil 966072 WS1 0.20m	Soil 966073 WS1 0.80m	Soil 966074 WS2A 0.40m	Soil 966075 WS3 0.40m	Soil 966076 WS3 0.80m
Sample Preparation	NRA Leachate *	NRA Leachate L N	Y	Y	Y	-	-	-	-	-	-	-	-
Metals	Arsenic as As, dry weight mg/kg	30/30C L Y	-	-	-	4.4	-	4.7	26	-	1.6	-	-
	Beryllium as Be,dry weight mg/kg	30 L Y	-	-	-	0.36	-	0.54	0.70	-	0.38	-	-
	Arsenic (Soluble) ug/l	56 L N	1.3	<1.0	<1.0	-	-	-	-	-	-	-	-
	Barium (Soluble) mg/l	54F L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	Boron as B, hot water sol dw mg/kg	6 L Y	-	-	-	0.46	-	0.40	0.92	-	0.46	-	-
	Cadmium as Cd, dry weight mg/kg	30 L Y	-	-	-	<0.50	-	<0.50	<0.50	-	<0.50	-	-
	Boron (Soluble) mg/l	56 L N	<0.050	<0.050	<0.050	-	-	-	-	-	-	-	-
	Cadmium (Soluble) ug/l	56 L N	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-
	Chromium as Cr, dry weight mg/kg	30 L Y	-	-	-	12	-	12	17	-	16	-	-
	Copper (Total BG Spec) mg/kg	30 L Y	-	-	-	5.1	-	93	15	-	<5.0	-	-
	Chromium (Soluble) ug/l	56 L N	<2.0	<2.0	<2.0	-	-	-	-	-	-	-	-
	Lead (Total BG Spec) mg/kg	30 L Y	-	-	-	12	-	41	120	-	<10	-	-
	Copper (Soluble) ug/l	56 L N	<5.0	5.3	<5.0	-	-	-	-	-	-	-	-
	Mercury as Hg, dry weight mg/kg	30C L Y	-	-	-	<0.25	-	<0.25	0.52	-	<0.25	-	-
	Lead (Soluble) ug/l	56 L N	<1.0	<1.0	<1.0	-	-	-	-	-	-	-	-
	Nickel as Ni, dry weight mg/kg	30 L Y	-	-	-	23	-	27	18	-	40	-	-
	Selenium as Se, dry weight mg/kg	30C L Y	-	-	-	<0.30	-	<0.30	<0.30	-	<0.30	-	-
	Mercury (Soluble) ug/l	56 L N	<0.20	<0.20	<0.20	-	-	-	-	-	-	-	-
	Vanadium, Total as dry weight mg/kg	30 L Y	-	-	-	18	-	11	27	-	19	-	-
	Nickel (Soluble) ug/l	56 L N	<2.0	<2.0	<2.0	-	-	-	-	-	-	-	-

Accreditation Codes : * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted

For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. I/S = Insufficient Sample

Certificate of Analysis

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Leachate 966078 WS4 0.40m	Leachate 966080 WS5 1.30m	Leachate 966109 WS3 0.80m	Soil 966069 RA1 0.80m	Soil 966070 RA1 1.50m	Soil 966071 RA1 1.70m	Soil 966072 WS1 0.20m	Soil 966073 WS1 0.80m	Soil 966074 WS2A 0.40m	Soil 966075 WS3 0.40m	Soil 966076 WS3 0.80m
Metals	Nickel (Soluble) ug/l	53F L N	-	-	-	-	-	-	-	-	-	-	-
	Zinc as Zn, dry weight mg/kg	30 L Y	-	-	-	27	-	320	76	-	19	-	-
	Selenium (Soluble) ug/l	56 L N	0.36	<0.30	0.40	-	-	-	-	-	-	-	-
	Hardness, BG 2.6/3.0 mg/l *	CALC L N	19	9.6	18	-	-	-	-	-	-	-	-
	Vanadium (Soluble) mg/l	54F L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	Zinc (Soluble) ug/l	56 L N	<5.0	<5.0	<5.0	-	-	-	-	-	-	-	-
Inorganics	Cyanide (Total) mg/l *	14c L N	<0.050	<0.050	<0.050	-	-	-	-	-	-	-	-
	Tot.Steam Dist.Phenols(Mono) mg/l	32A L N	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as SO3 g/l	60 L N	<0.020	<0.020	<0.020	-	-	-	-	-	-	-	-
	Cyanide (Total) mg/kg	14 L Y	-	-	-	<2.5	-	<2.5	7.7	-	4.3	-	-
	Tot. Steam Dist. Monophenols mg/kg	40A L Y	-	-	-	<0.75	-	<0.75	<0.75	-	<0.75	-	-
	Sulphate (Total) as SO3 %	45 L Y	-	-	-	<0.020	-	<0.020	0.038	-	<0.020	-	-
	Sulphide mg/kg	47 L N	-	-	-	<5.0	-	<5.0	<5.0	-	<5.0	-	-
	Fraction Of Organic Carbon *	27 L N	-	-	-	0.021	-	0.0097	0.024	-	0.010	-	-
	pH pH Units	39 L N	-	-	-	8.5	-	8.8	8.7	-	8.1	-	-
	Nitrate as NO3 mg/l	60 L N	<2.2	<2.2	<2.2	-	-	-	-	-	-	-	-
	Sulphide as S ug/l	38A L N	<10	<10	<10	-	-	-	-	-	-	-	-
	pH pH units	31 L N	7.1	7.6	7.5	-	-	-	-	-	-	-	-
	Sulphur (Elemental) mg/kg	51 L Y	-	-	-	<100	-	<100	<100	-	<100	-	-
Phenols	Total Phenol ug/l *	PHOHLOW1 L N	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-
TPH	>C6 to C8 Aliphatics mg/kg	304 L N	-	-	-	<0.10	<0.10	-	-	<0.10	-	<0.10	-

Accreditation Codes : * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted

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TPH	>C8 to C10 Aliphatics mg/kg	304 L N	-	-	-	<0.10	<0.10	-	-	<0.10	-	<0.10	-
	>C10 to C12 Aliphatics mg/kg	317EPH L N	-	-	-	<1.0	<1.0	-	-	<1.0	-	<1.0	-
	>C12 to C16 Aliphatics mg/kg	317EPH L N	-	-	-	<1.0	<1.0	-	-	<1.0	-	2.8	-
	>C16 to C21 Aliphatics mg/kg	317EPH L N	-	-	-	<1.0	4.3	-	-	<1.0	-	3.3	-
	>C21 to C40 Aliphatics mg/kg	317EPH L N	-	-	-	<1.0	17	-	-	<1.0	-	3.1	-
	Total Aliphatics (>C6 to C40) mg/kg	304/317EPH L N	-	-	-	<5.0	21	-	-	<5.0	-	9.1	-
	>C5 to C7 Aromatics mg/kg	304 L N	-	-	-	<0.010	<0.010	-	-	<0.010	-	<0.010	-
	>C7 to C8 Aromatics mg/kg	304 L N	-	-	-	<0.010	<0.010	-	-	<0.010	-	<0.010	-
	>C8 to C10 Aromatics mg/kg	304 L N	-	-	-	<0.10	<0.10	-	-	<0.10	-	<0.10	-
	>C10 to C12 Aromatics mg/kg	317EPH L N	-	-	-	<1.0	<1.0	-	-	<1.0	-	<1.0	-
	>C12 to C16 Aromatics mg/kg	317EPH L N	-	-	-	<1.0	<1.0	-	-	4.8	-	47	-
	>C16 to C21 Aromatics mg/kg	317EPH L N	-	-	-	<1.0	8.6	-	-	33	-	240	-
	>C21 to C40 Aromatics mg/kg	317EPH L N	-	-	-	<1.0	37	-	-	75	-	520	-
	Total Aromatics (>C6 to C40) mg/kg	304/317EPH L N	-	-	-	<5.0	46	-	-	110	-	810	-
	Total EPH (>C6 to C40) mg/kg	304/317EPH L N	-	-	-	<5.0	67	-	-	110	-	820	-
	>C6 to C8 Aliphatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C8 to C10 Aliphatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C10 to C12 Aliphatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C12 to C16 Aliphatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C16 to C21 Aliphatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C21 TO C40 Aliphatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Leachate 966078 WS4 0.40m	Leachate 966080 WS5 1.30m	Leachate 966109 WS3 0.80m	Soil 966069 RA1 0.80m	Soil 966070 RA1 1.50m	Soil 966071 RA1 1.70m	Soil 966072 WS1 0.20m	Soil 966073 WS1 0.80m	Soil 966074 WS2A 0.40m	Soil 966075 WS3 0.40m	Soil 966076 WS3 0.80m
TPH	Total Aliphatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C5 to C7 Aromatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C7 to C8 Aromatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C8 to C10 Aromatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C10 to C12 Aromatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C12 to C16 Aromatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C16 to C21 Aromatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	>C21 TO C40 Aromatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	Total Aromatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
	Total EPH aliphatic/Aromatic ug/l *	318WR L N	-	-	-	-	-	-	-	-	-	-	-
PAH	naphthalene ug/l	331 L N	2.8	2.2	0.32	-	-	-	-	-	-	-	-
	acenaphthene ug/l	331 L N	0.76	0.57	0.051	-	-	-	-	-	-	-	-
	naphthalene ug/kg *	LPH307 L N	-	-	-	960	-	350	860	-	530	-	-
	acenaphthylene ug/kg *	LPH307 L N	-	-	-	24	-	27	250	-	36	-	-
	acenaphthylene ug/l *	331 L N	0.079	0.12	0.024	-	-	-	-	-	-	-	-
	fluorene ug/l	331 L N	0.12	0.11	0.024	-	-	-	-	-	-	-	-
	acenaphthene ug/kg *	LPH307 L N	-	-	-	<10	-	22	43	-	16	-	-
	fluorene ug/kg *	LPH307 L N	-	-	-	<10	-	29	110	-	35	-	-
	phenanthrene ug/l	331 L N	0.055	0.061	0.028	-	-	-	-	-	-	-	-
	anthracene ug/l	331 L N	0.022	0.025	0.012	-	-	-	-	-	-	-	-
	phenanthrene ug/kg *	LPH307 L N	-	-	-	56	-	64	1100	-	56	-	-

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PAH	anthracene ug/kg *	LPH307 L N	-	-	-	27	-	21	460	-	14	-	-
	fluoranthene ug/l	331 L N	0.14	0.073	0.058	-	-	-	-	-	-	-	-
	pyrene ug/l	331 L N	0.047	0.029	0.019	-	-	-	-	-	-	-	-
	fluoranthene ug/kg *	LPH307 L N	-	-	-	220	-	83	2600	-	94	-	-
	pyrene ug/kg *	LPH307 L N	-	-	-	180	-	80	2100	-	82	-	-
	benzo(a)anthracene ug/l	331 L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	chrysene ug/l	331 L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	benzo(a)anthracene ug/kg *	LPH307 L N	-	-	-	110	-	43	1200	-	58	-	-
	chrysene ug/kg *	LPH307 L N	-	-	-	110	-	55	1300	-	58	-	-
	benzo(b)fluoranthene ug/l	331 L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	cyclopenta(cd)pyrene ug/kg *	LPH307 L N	-	-	-	<10	-	<10	110	-	<10	-	-
	benzo(b)fluoranthene ug/kg *	LPH307 L N	-	-	-	95	-	38	1400	-	70	-	-
	benzo(k)fluoranthene ug/l	331 L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	benzo(a)pyrene ug/l	331 L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	benzo(k)fluoranthene ug/kg *	LPH307 L N	-	-	-	95	-	45	700	-	53	-	-
	benzo(e)pyrene ug/kg *	LPH307 L N	-	-	-	81	-	36	850	-	53	-	-
	benzo(a)pyrene ug/kg *	LPH307 L N	-	-	-	110	-	37	1200	-	60	-	-
	dibenzo(ah)anthracene ug/l	331 L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	benzo(ghi)perylene ug/l	331 L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	dibenzo(ah)anthracene ug/kg *	LPH307 L N	-	-	-	17	-	<10	150	-	<10	-	-
	benzo(ghi)perylene ug/kg *	LPH307 L N	-	-	-	91	-	<10	1100	-	52	-	-

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PAH	indeno(123cd)pyrene ug/l	331 L N	<0.010	<0.010	<0.010	-	-	-	-	-	-	-	-
	indeno(123cd)pyrene ug/kg *	LPH307 L N	-	-	-	96	-	27	1000	-	67	-	-
	anthanthrene ug/kg *	LPH307 L N	-	-	-	39	-	<10	360	-	<10	-	-
	PAH (Total) ug/kg *	LPH307 L N	-	-	-	2300	-	960	17000	-	1300	-	-
	PAH (Total) ug/l	331 L N	4.0	3.2	0.53	-	-	-	-	-	-	-	-
VOC	vinyl chloride mg/kg	327 L N	-	-	-	-	-	-	-	-	-	-	<0.10
	vinyl chloride ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,1-dichloroethene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,1-dichloroethene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	dichloromethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	dichloromethane mg/kg	327 L N	-	-	-	-	-	-	-	-	-	-	<0.10
	trans-1,2-dichloroethene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	trans-1,2-dichloroethene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,1-dichloroethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,1-dichloroethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	2,2-dichloropropane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	2,2-dichloropropane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	cis-1,2-dichloroethene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	cis-1,2-dichloroethene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	bromochloromethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	bromochloromethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10

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VOC	chloroform mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	chloroform ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,1,1-trichloroethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,1,1-trichloroethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	carbon tetrachloride mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	carbon tetrachloride ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,1-dichloropropene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,1-dichloropropene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	benzene mg/kg	327 L Y	-	-	-	<0.10	<0.10	-	-	<0.10	-	<0.10	<0.10
	benzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,2-dichloroethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,2-dichloroethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	trichloroethylene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	trichloroethylene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,2-dichloropropane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2-dichloropropane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	dibromomethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	dibromomethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	bromodichloromethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	bromodichloromethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	trans-1,3-dichloropropene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10

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VOC	trans-1,3-dichloropropene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	toluene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	toluene mg/kg	327 L Y	-	-	-	<0.10	<0.10	-	-	<0.10	-	<0.10	<0.10
	cis-1,3-dichloropropene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	cis-1,3-dichloropropene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,1,2-trichloroethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,1,2-trichloroethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	tetrachloroethylene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	tetrachloroethylene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,3-dichloropropane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,3-dichloropropane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	dibromochloromethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	dibromochloromethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2-dibromoethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2-dibromoethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	chlorobenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	chlorobenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,1,1,2-tetrachloroethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,1,1,2-tetrachloroethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	ethylbenzene mg/kg	327 L Y	-	-	-	<0.10	<0.10	-	-	<0.10	-	<0.10	<0.10
	ethylbenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-

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VOC	mp-xylene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	mp-xylene mg/kg	327 L Y	-	-	-	<0.20	<0.20	-	-	<0.20	-	<0.20	<0.20
	o-xylene mg/kg	327 L Y	-	-	-	<0.10	<0.10	-	-	<0.10	-	<0.10	<0.10
	o-xylene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	styrene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	styrene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	bromoform mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	bromoform ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	isopropylbenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	isopropylbenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	bromobenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	bromobenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,2,3-trichloropropane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,2,3-trichloropropane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,1,2,2-tetrachloroethane mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,1,2,2-tetrachloroethane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	n-propylbenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	n-propylbenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	2-chlorotoluene mg/kg	327 L N	-	-	-	-	-	-	-	-	-	-	<0.10
	2-chlorotoluene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	4-chlorotoluene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-

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VOC	4-chlorotoluene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,3,5-trimethylbenzene mg/kg	327 L N	-	-	-	-	-	-	-	-	-	-	<0.10
	1,3,5-trimethylbenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	tert-butylbenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	tert-butylbenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	sec-butylbenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2,4-trimethylbenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,3-dichlorobenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	sec-butylbenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,4-dichlorobenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,3-dichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,4-dichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	p-isopropyltoluene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2-dichlorobenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	p-isopropyltoluene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	n-butylbenzene mg/kg	327 L N	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2-dichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	n-butylbenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,2-dibromo3chloropropane mg/kg	327 L N	-	-	-	-	-	-	-	-	-	-	<0.10
	1,3,5-trichlorobenzene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2-dibromo3chloropropane ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-

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Certificate of Analysis

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Leachate 966078 WS4 0.40m	Leachate 966080 WS5 1.30m	Leachate 966109 WS3 0.80m	Soil 966069 RA1 0.80m	Soil 966070 RA1 1.50m	Soil 966071 RA1 1.70m	Soil 966072 WS1 0.20m	Soil 966073 WS1 0.80m	Soil 966074 WS2A 0.40m	Soil 966075 WS3 0.40m	Soil 966076 WS3 0.80m
VOC	1,2,4-trichlorobenzene mg/kg	327 L N	-	-	-	-	-	-	-	-	-	-	<0.10
	1,3,5-trichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	1,2,4-trimethylbenzene mg/kg	327 L N	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2,4-trichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	hexachlorobutadiene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
	hexachlorobutadiene mg/kg	327 L Y	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2,3-trichlorobenzene mg/kg	327 L N	-	-	-	-	-	-	-	-	-	-	<0.10
	1,2,3-trichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	-	-	-	-	-	-	-
SVOC	phenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	aniline ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	analine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-picoline mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-picoline ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2-chlorophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	1,3-dichlorobenzene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	phenol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	o-toluidine mg/kg *	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	bis(2-chloroethyl)ether mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-chlorophenol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	1,4-dichlorobenzene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	1,3-dichlorobenzene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0

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SVOC	1,4-dichlorobenzene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	benzyl alcohol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	benzyl alcohol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-methylphenol mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	3&4-methylphenol mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	1,2-dichlorobenzene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	Dibenzofuran mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	1,2-dichlorobenzene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	2-methylphenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	bis(2-chloroisopropyl)ether mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	n-nitroso-di-n-propylamine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	bis(2-chloroisopropyl)ether ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	hexachloroethane mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	3&4-methylphenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	nitrobenzene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	isophorone mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	2,4-dimethylphenol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	acetophenone ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	acetophenone mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-nitrophenol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	bis(2-chloroethoxy)methane mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0

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SVOC	n-nitrosodi-n-propylamine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2,4-dichlorophenol mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	1,2,4-trichlorobenzene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	o-toluidine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2,4-dinitrophenol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	naphthalene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	hexachloroethane ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	hexachlorobutadiene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	4-chloro-3-methylphenol mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	nitrobenzene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2-methylnaphthalene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	2,4,6-trichlorophenol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	n-nitrosopiperidine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	n-nitrosopiperidine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2,4,5-trichlorophenol mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	isophorone ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2-chloronaphthalene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	dimethylphthalate mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	2-nitrophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2,6-dinitrotoluene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	acenaphthylene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0

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SVOC	benzoic acid ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	benzoic acid mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	acenaphthene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	2,4-dinitrotoluene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	2,4-dimethylphenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	diethylphthalate mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	4-nitrophenol mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	bis(2-chloroethoxy)methane ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	bis(2-chloroethyl)ether ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2,4-dichlorophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-chlorophenyl-phenylether mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	fluorene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	1,2,4-trichlorobenzene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	carbazole mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	naphthalene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-bromophenyl-phenylether mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	hexachlorobenzene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	4-chloroaniline ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-chloroaniline mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	pentachlorophenol mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	phenanthrene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	1.6

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SVOC	2,6-dichlorophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2,6-dichlorophenol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	anthracene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	di-n-butylphthalate mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	hexachlorobutadiene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	fluoranthene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	1.8
	n-nitrosodibutylamine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	n-nitrosodibutylamine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	pyrene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	1.5
	4-chloro-3-methylphenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	butylbenzylphthalate mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	2-methylnaphthalene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	benzo(a)anthracene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	1.0
	chrysene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	bis(2-ethylhexyl)phthalate mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	1,2,4,5-tetrachlorobenzene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	1,2,4,5-tetrachlorobenzene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	di-n-octylphthalate mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	benzo(b)fluoranthene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	hexachlorocyclopentadiene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	hexachlorocyclopentadien mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0

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SVOC	benzo(k)fluoranthene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	benzo(a)pyrene mg/kg	316 L Y	-	-	-	-	-	-	-	-	-	-	<1.0
	2,4,6-trichlorophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	indeno(1,2,3-cd)pyrene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	dibenzo(ah)anthracene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2,4,5-trichlorophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	benzo(ghi)perylene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-fluorophenol % *	316 L N	-	-	-	-	-	-	-	-	-	-	100
	2-chloronaphthalene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	phenol-d6 % *	316 L N	-	-	-	-	-	-	-	-	-	-	110
	nitrobenzene-d5 % *	316 L N	-	-	-	-	-	-	-	-	-	-	100
	2-nitroaniline ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2-nitroaniline mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-fluorobiphenyl % *	316 L N	-	-	-	-	-	-	-	-	-	-	88
	2,4,6-tribromophenol % *	316 L N	-	-	-	-	-	-	-	-	-	-	84
	dimethyl phthalate ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	terphenyl-d14 % *	316 L N	-	-	-	-	-	-	-	-	-	-	83
	2,4-dinitrotoluene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	acenaphthylene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	3-nitroaniline ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	3-nitroaniline mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0

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SVOC	acenaphthene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-nitrophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	dibenzofuran ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2,6-dinitrotoluene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2,4-dinitrophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	pentachlorobenzene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	pentachlorobenzene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	1,2-diphenylhydrazine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	1,2-diphenylhydrazine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	1-naphthylamine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	1-naphthylamine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-naphthylamine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-naphthylamine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2,3,4,6-tetrachlorophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	2,3,4,6-tetrachlorophenol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	diethyl phthalate ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-chlorophenyl phenyl ether ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	fluorene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-nitroaniline ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-nitroaniline mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	2-methyl-4,6-dinitrophenol mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0

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Certificate of Analysis

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Leachate 966078 WS4 0.40m	Leachate 966080 WS5 1.30m	Leachate 966109 WS3 0.80m	Soil 966069 RA1 0.80m	Soil 966070 RA1 1.50m	Soil 966071 RA1 1.70m	Soil 966072 WS1 0.20m	Soil 966073 WS1 0.80m	Soil 966074 WS2A 0.40m	Soil 966075 WS3 0.40m	Soil 966076 WS3 0.80m
SVOC	2-methyl-4,6-dinitrophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	diphenylamin&diphenylnitrosam mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	diphenylamine&diphenylnitrosam ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	phenacetin mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	phenacetin ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-bromophenyl phenyl ether ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	hexachlorobenzene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-aminobiphenyl ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	4-aminobiphenyl mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	pentachlorophenol ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	phenanthrene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	anthracene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	carbazole ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	di-n-butyl phthalate ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	fluoranthene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	benzidine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	benzidine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	pyrene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	dimethylaminoazobenzene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	dimethylaminoazobenzene mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	n-nitrosodimethylamine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Leachate 966078 WS4 0.40m	Leachate 966080 WS5 1.30m	Leachate 966109 WS3 0.80m	Soil 966069 RA1 0.80m	Soil 966070 RA1 1.50m	Soil 966071 RA1 1.70m	Soil 966072 WS1 0.20m	Soil 966073 WS1 0.80m	Soil 966074 WS2A 0.40m	Soil 966075 WS3 0.40m	Soil 966076 WS3 0.80m
SVOC	n-nitrosodimethylamine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	butyl benzyl phthalate ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	3,3-dichlorobenzidine ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	3,3-dichlorobenzidine mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	benzo(a)anthracene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	chrysene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	bis(2-ethylhexyl)phthalate ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	di-n-octyl phthalate ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	benzo(b)fluoranthene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	benzo(k)fluoranthene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anth mg/kg	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	benzo(a)pyrene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene mg/kg *	316 L N	-	-	-	-	-	-	-	-	-	-	<1.0
	indeno(1,2,3-cd)pyrene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	dibenzo(ah)anthracene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
	benzo(ghi)perylene ug/l	326 L N	-	-	-	-	-	-	-	-	-	-	-
Asbestos	Description of Sample TEXT *	70 L N	-	-	-	Analyst Comment	-	Analyst Comment	Analyst Comment	-	Analyst Comment	-	-
	Asbestos Identification Text	70 L N	-	-	-	Analyst Comment	-	Analyst Comment	Analyst Comment	-	Analyst Comment	-	-

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
Sample Preparation	NRA Leachate *	NRA Leachate L N	-	-	-	-	-
Metals	Arsenic as As, dry weight mg/kg	30/30C L Y	3.4	-	7.2	7.4	-
	Beryllium as Be,dry weight mg/kg	30 L Y	0.48	-	0.61	1.2	-
	Arsenic (Soluble) ug/l	56 L N	-	-	-	-	1.6
	Barium (Soluble) mg/l	54F L N	-	-	-	-	0.025
	Boron as B, hot water sol dw mg/kg	6 L Y	0.30	-	0.68	0.71	-
	Cadmium as Cd, dry weight mg/kg	30 L Y	<0.50	-	<0.50	<0.50	-
	Boron (Soluble) mg/l	56 L N	-	-	-	-	0.42
	Cadmium (Soluble) ug/l	56 L N	-	-	-	-	<0.50
	Chromium as Cr, dry weight mg/kg	30 L Y	15	-	19	23	-
	Copper (Total BG Spec) mg/kg	30 L Y	<5.0	-	7.9	18	-
	Chromium (Soluble) ug/l	56 L N	-	-	-	-	21
	Lead (Total BG Spec) mg/kg	30 L Y	<10	-	31	58	-
	Copper (Soluble) ug/l	56 L N	-	-	-	-	21
	Mercury as Hg, dry weight mg/kg	30C L Y	<0.25	-	<0.25	<0.25	-
	Lead (Soluble) ug/l	56 L N	-	-	-	-	63
	Nickel as Ni, dry weight mg/kg	30 L Y	16	-	18	26	-
	Selenium as Se, dry weight mg/kg	30C L Y	<0.30	-	<0.30	<0.30	-
	Mercury (Soluble) ug/l	56 L N	-	-	-	-	<0.20
	Vanadium, Total as dry weight mg/kg	30 L Y	22	-	30	49	-

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil 966077 WS3 1.40m	Soil 966079 WS4 0.80m	Soil 966081 WS6 0.40m	Soil 966082 WS7 0.40m	Water 966083 WS4
Metals	Nickel (Soluble) ug/l	56 L N	-	-	-	-	-
	Nickel (Soluble) ug/l	53F L N	-	-	-	-	<20
	Zinc as Zn, dry weight mg/kg	30 L Y	24	-	36	51	-
	Selenium (Soluble) ug/l	56 L N	-	-	-	-	8.8
	Hardness, BG 2.6/3.0 mg/l *	CALC L N	-	-	-	-	700
	Vanadium (Soluble) mg/l	54F L N	-	-	-	-	<0.010
	Zinc (Soluble) ug/l	56 L N	-	-	-	-	26
Inorganics	Cyanide (Total) mg/l *	14c L N	-	-	-	-	<0.050
	Tot.Steam Dist.Phenols(Mono) mg/l	32A L N	-	-	-	-	<0.050
	Sulphate as SO3 g/l	60 L N	-	-	-	-	0.12
	Cyanide (Total) mg/kg	14 L Y	<2.5	-	<2.5	<2.5	-
	Tot. Steam Dist. Monophenols mg/kg	40A L Y	<0.75	-	<0.75	<0.75	-
	Sulphate (Total) as SO3 %	45 L Y	<0.020	-	0.041	0.046	-
	Sulphide mg/kg	47 L N	<5.0	-	<5.0	<5.0	-
	Fraction Of Organic Carbon *	27 L N	0.0089	-	0.012	0.036	-
	pH pH Units	39 L N	7.9	-	8.3	8.3	-
	Nitrate as NO3 mg/l	60 L N	-	-	-	-	6.4
	Sulphide as S ug/l	38A L N	-	-	-	-	<10
	pH pH units	31 L N	-	-	-	-	7.4
	Sulphur (Elemental) mg/kg	51 L Y	<100	-	<100	<100	-
Phenols	Total Phenol ug/l *	PHOHLOW1 L N	-	-	-	-	-

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Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
TPH	>C6 to C8 Aliphatics mg/kg	304 L N	-	<0.10	-	-	-
	>C8 to C10 Aliphatics mg/kg	304 L N	-	<0.10	-	-	-
	>C10 to C12 Aliphatics mg/kg	317EPH L N	-	<1.0	-	-	-
	>C12 to C16 Aliphatics mg/kg	317EPH L N	-	<1.0	-	-	-
	>C16 to C21 Aliphatics mg/kg	317EPH L N	-	<1.0	-	-	-
	>C21 to C40 Aliphatics mg/kg	317EPH L N	-	<1.0	-	-	-
	Total Aliphatics (>C6 to C40) mg/kg	304/317EPH L N	-	<5.0	-	-	-
	>C5 to C7 Aromatics mg/kg	304 L N	-	<0.010	-	-	-
	>C7 to C8 Aromatics mg/kg	304 L N	-	<0.010	-	-	-
	>C8 to C10 Aromatics mg/kg	304 L N	-	<0.10	-	-	-
	>C10 to C12 Aromatics mg/kg	317EPH L N	-	<1.0	-	-	-
	>C12 to C16 Aromatics mg/kg	317EPH L N	-	3.0	-	-	-
	>C16 to C21 Aromatics mg/kg	317EPH L N	-	28	-	-	-
	>C21 to C40 Aromatics mg/kg	317EPH L N	-	130	-	-	-
	Total Aromatics (>C6 to C40) mg/kg	304/317EPH L N	-	160	-	-	-
	Total EPH (>C6 to C40) mg/kg	304/317EPH L N	-	160	-	-	-
	>C6 to C8 Aliphatic ug/l *	318WR L N	-	-	-	-	<5.0
	>C8 to C10 Aliphatic ug/l *	318WR L N	-	-	-	-	<5.0
	>C10 to C12 Aliphatic ug/l *	318WR L N	-	-	-	-	<5.0
	>C12 to C16 Aliphatic ug/l *	318WR L N	-	-	-	-	<5.0
	>C16 to C21 Aliphatic ug/l *	318WR L N	-	-	-	-	<8.0

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Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
TPH	>C21 TO C40 Aliphatic ug/l *	318WR L N	-	-	-	-	<22
	Total Aliphatic ug/l *	318WR L N	-	-	-	-	<50
	>C5 to C7 Aromatic ug/l *	318WR L N	-	-	-	-	<2.5
	>C7 to C8 Aromatic ug/l *	318WR L N	-	-	-	-	<2.5
	>C8 to C10 Aromatic ug/l *	318WR L N	-	-	-	-	<5.0
	>C10 to C12 Aromatic ug/l *	318WR L N	-	-	-	-	<5.0
	>C12 to C16 Aromatic ug/l *	318WR L N	-	-	-	-	<5.0
	>C16 to C21 Aromatic ug/l *	318WR L N	-	-	-	-	<8.0
	>C21 TO C40 Aromatic ug/l *	318WR L N	-	-	-	-	<22
	Total Aromatic ug/l *	318WR L N	-	-	-	-	<50
	Total EPH aliphatic/Aromatic ug/l *	318WR L N	-	-	-	-	<100
PAH	naphthalene ug/l	331 L N	-	-	-	-	1.2
	acenaphthene ug/l	331 L N	-	-	-	-	0.33
	naphthalene ug/kg *	LPH307 L N	410	-	2200	2200	-
	acenaphthylene ug/kg *	LPH307 L N	26	-	3700	3400	-
	acenaphthylene ug/l *	331 L N	-	-	-	-	0.077
	fluorene ug/l	331 L N	-	-	-	-	0.067
	acenaphthene ug/kg *	LPH307 L N	16	-	<1000	<1000	-
	fluorene ug/kg *	LPH307 L N	19	-	3300	2500	-
	phenanthrene ug/l	331 L N	-	-	-	-	0.060
	anthracene ug/l	331 L N	-	-	-	-	0.025

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Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
PAH	phenanthrene ug/kg *	LPH307 L N	29	-	22000	18000	-
	anthracene ug/kg *	LPH307 L N	<10	-	8300	6400	-
	fluoranthene ug/l	331 L N	-	-	-	-	0.10
	pyrene ug/l	331 L N	-	-	-	-	0.12
	fluoranthene ug/kg *	LPH307 L N	22	-	34000	32000	-
	pyrene ug/kg *	LPH307 L N	23	-	27000	26000	-
	benzo(a)anthracene ug/l	331 L N	-	-	-	-	0.025
	chrysene ug/l	331 L N	-	-	-	-	0.060
	benzo(a)anthracene ug/kg *	LPH307 L N	16	-	16000	15000	-
	chrysene ug/kg *	LPH307 L N	14	-	16000	16000	-
	benzo(b)fluoranthene ug/l	331 L N	-	-	-	-	0.059
	cyclopenta(cd)pyrene ug/kg *	LPH307 L N	<10	-	1500	1500	-
	benzo(b)fluoranthene ug/kg *	LPH307 L N	10	-	14000	16000	-
	benzo(k)fluoranthene ug/l	331 L N	-	-	-	-	0.030
	benzo(a)pyrene ug/l	331 L N	-	-	-	-	0.072
	benzo(k)fluoranthene ug/kg *	LPH307 L N	16	-	10000	12000	-
	benzo(e)pyrene ug/kg *	LPH307 L N	<10	-	9400	11000	-
	benzo(a)pyrene ug/kg *	LPH307 L N	12	-	13000	15000	-
	dibenzo(ah)anthracene ug/l	331 L N	-	-	-	-	0.016
	benzo(ghi)perylene ug/l	331 L N	-	-	-	-	0.043
	dibenzo(ah)anthracene ug/kg *	LPH307 L N	<10	-	2500	2500	-

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Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
PAH	benzo(ghi)perylene ug/kg *	LPH307 L N	<10	-	9400	11000	-
	indeno(123cd)pyrene ug/l	331 L N	-	-	-	-	0.15
	indeno(123cd)pyrene ug/kg *	LPH307 L N	<10	-	9000	11000	-
	anthanthrene ug/kg *	LPH307 L N	<10	-	5000	5400	-
	PAH (Total) ug/kg *	LPH307 L N	610	-	200000	210000	-
	PAH (Total) ug/l	331 L N	-	-	-	-	2.4
VOC	vinyl chloride mg/kg	327 L N	-	-	-	-	-
	vinyl chloride ug/l *	VOCW1 L N	-	-	-	-	<10
	1,1-dichloroethene mg/kg	327 L Y	-	-	-	-	-
	1,1-dichloroethene ug/l *	VOCW1 L N	-	-	-	-	<10
	dichloromethane ug/l *	VOCW1 L N	-	-	-	-	<10
	dichloromethane mg/kg	327 L N	-	-	-	-	-
	trans-1,2-dichloroethene mg/kg	327 L Y	-	-	-	-	-
	trans-1,2-dichloroethene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,1-dichloroethane mg/kg	327 L Y	-	-	-	-	-
	1,1-dichloroethane ug/l *	VOCW1 L N	-	-	-	-	<10
	2,2-dichloropropane ug/l *	VOCW1 L N	-	-	-	-	<10
	2,2-dichloropropane mg/kg	327 L Y	-	-	-	-	-
	cis-1,2-dichloroethene mg/kg	327 L Y	-	-	-	-	-
	cis-1,2-dichloroethene ug/l *	VOCW1 L N	-	-	-	-	<10
	bromochloromethane ug/l *	VOCW1 L N	-	-	-	-	<10

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For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. I/S = Insufficient Sample

Certificate of Analysis

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil 966077 WS3 1.40m	Soil 966079 WS4 0.80m	Soil 966081 WS6 0.40m	Soil 966082 WS7 0.40m	Water 966083 WS4
VOC	bromochloromethane mg/kg	327 L Y	-	-	-	-	-
	chloroform mg/kg	327 L Y	-	-	-	-	-
	chloroform ug/l *	VOCW1 L N	-	-	-	-	<10
	1,1,1-trichloroethane mg/kg	327 L Y	-	-	-	-	-
	1,1,1-trichloroethane ug/l *	VOCW1 L N	-	-	-	-	<10
	carbon tetrachloride mg/kg	327 L Y	-	-	-	-	-
	carbon tetrachloride ug/l *	VOCW1 L N	-	-	-	-	<10
	1,1-dichloropropene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,1-dichloropropene mg/kg	327 L Y	-	-	-	-	-
	benzene mg/kg	327 L Y	-	<0.10	-	-	-
	benzene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,2-dichloroethane ug/l *	VOCW1 L N	-	-	-	-	<10
	1,2-dichloroethane mg/kg	327 L Y	-	-	-	-	-
	trichloroethylene mg/kg	327 L Y	-	-	-	-	-
	trichloroethylene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,2-dichloropropane mg/kg	327 L Y	-	-	-	-	-
	1,2-dichloropropane ug/l *	VOCW1 L N	-	-	-	-	<10
	dibromomethane ug/l *	VOCW1 L N	-	-	-	-	<10
	dibromomethane mg/kg	327 L Y	-	-	-	-	-
	bromodichloromethane mg/kg	327 L Y	-	-	-	-	-
	bromodichloromethane ug/l *	VOCW1 L N	-	-	-	-	<10

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
VOC	trans-1,3-dichloropropene mg/kg	327 L Y	-	-	-	-	-
	trans-1,3-dichloropropene ug/l *	VOCW1 L N	-	-	-	-	<10
	toluene ug/l *	VOCW1 L N	-	-	-	-	<10
	toluene mg/kg	327 L Y	-	<0.10	-	-	-
	cis-1,3-dichloropropene mg/kg	327 L Y	-	-	-	-	-
	cis-1,3-dichloropropene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,1,2-trichloroethane ug/l *	VOCW1 L N	-	-	-	-	<10
	1,1,2-trichloroethane mg/kg	327 L Y	-	-	-	-	-
	tetrachloroethylene mg/kg	327 L Y	-	-	-	-	-
	tetrachloroethylene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,3-dichloropropane mg/kg	327 L Y	-	-	-	-	-
	1,3-dichloropropane ug/l *	VOCW1 L N	-	-	-	-	<10
	dibromochloromethane ug/l *	VOCW1 L N	-	-	-	-	<10
	dibromochloromethane mg/kg	327 L Y	-	-	-	-	-
	1,2-dibromoethane mg/kg	327 L Y	-	-	-	-	-
	1,2-dibromoethane ug/l *	VOCW1 L N	-	-	-	-	<10
	chlorobenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	chlorobenzene mg/kg	327 L Y	-	-	-	-	-
	1,1,1,2-tetrachloroethane mg/kg	327 L Y	-	-	-	-	-
	1,1,1,2-tetrachloroethane ug/l *	VOCW1 L N	-	-	-	-	<10
	ethylbenzene mg/kg	327 L Y	-	<0.10	-	-	-

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
VOC	ethylbenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	mp-xylene ug/l *	VOCW1 L N	-	-	-	-	<20
	mp-xylene mg/kg	327 L Y	-	<0.20	-	-	-
	o-xylene mg/kg	327 L Y	-	<0.10	-	-	-
	o-xylene ug/l *	VOCW1 L N	-	-	-	-	<10
	styrene ug/l *	VOCW1 L N	-	-	-	-	<10
	styrene mg/kg	327 L Y	-	-	-	-	-
	bromoform mg/kg	327 L Y	-	-	-	-	-
	bromoform ug/l *	VOCW1 L N	-	-	-	-	<10
	isopropylbenzene mg/kg	327 L Y	-	-	-	-	-
	isopropylbenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	bromobenzene mg/kg	327 L Y	-	-	-	-	-
	bromobenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,2,3-trichloropropane ug/l *	VOCW1 L N	-	-	-	-	<10
	1,2,3-trichloropropane mg/kg	327 L Y	-	-	-	-	-
	1,1,2,2-tetrachloroethane mg/kg	327 L Y	-	-	-	-	-
	1,1,2,2-tetrachloroethane ug/l *	VOCW1 L N	-	-	-	-	<10
	n-propylbenzene mg/kg	327 L Y	-	-	-	-	-
	n-propylbenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	2-chlorotoluene mg/kg	327 L N	-	-	-	-	-
	2-chlorotoluene ug/l *	VOCW1 L N	-	-	-	-	<10

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
VOC	4-chlorotoluene ug/l *	VOCW1 L N	-	-	-	-	<10
	4-chlorotoluene mg/kg	327 L Y	-	-	-	-	-
	1,3,5-trimethylbenzene mg/kg	327 L N	-	-	-	-	-
	1,3,5-trimethylbenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	tert-butylbenzene mg/kg	327 L Y	-	-	-	-	-
	tert-butylbenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	sec-butylbenzene mg/kg	327 L Y	-	-	-	-	-
	1,2,4-trimethylbenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,3-dichlorobenzene mg/kg	327 L Y	-	-	-	-	-
	sec-butylbenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,4-dichlorobenzene mg/kg	327 L Y	-	-	-	-	-
	1,3-dichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,4-dichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	p-isopropyltoluene mg/kg	327 L Y	-	-	-	-	-
	1,2-dichlorobenzene mg/kg	327 L Y	-	-	-	-	-
	p-isopropyltoluene ug/l *	VOCW1 L N	-	-	-	-	<10
	n-butylbenzene mg/kg	327 L N	-	-	-	-	-
	1,2-dichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	n-butylbenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,2-dibromo3chloropropane mg/kg	327 L N	-	-	-	-	-
	1,3,5-trichlorobenzene mg/kg	327 L Y	-	-	-	-	-

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Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
VOC	1,2-dibromo3chloropropane ug/l *	VOCW1 L N	-	-	-	-	<10
	1,2,4-trichlorobenzene mg/kg	327 L N	-	-	-	-	-
	1,3,5-trichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	1,2,4-trimethylbenzene mg/kg	327 L N	-	-	-	-	-
	1,2,4-trichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	<10
	hexachlorobutadiene ug/l *	VOCW1 L N	-	-	-	-	<10
	hexachlorobutadiene mg/kg	327 L Y	-	-	-	-	-
	1,2,3-trichlorobenzene mg/kg	327 L N	-	-	-	-	-
	1,2,3-trichlorobenzene ug/l *	VOCW1 L N	-	-	-	-	<10
SVOC	phenol ug/l	326 L N	-	-	-	-	<1.0
	aniline ug/l	326 L N	-	-	-	-	<1.0
	analine mg/kg	316 L N	-	-	-	-	-
	2-picoline mg/kg	316 L N	-	-	-	-	-
	2-picoline ug/l	326 L N	-	-	-	-	<1.0
	2-chlorophenol ug/l	326 L N	-	-	-	-	<1.0
	1,3-dichlorobenzene ug/l	326 L N	-	-	-	-	<1.0
	phenol mg/kg	316 L N	-	-	-	-	-
	o-toluidine mg/kg *	316 L N	-	-	-	-	-
	bis(2-chloroethyl)ether mg/kg	316 L N	-	-	-	-	-
	2-chlorophenol mg/kg	316 L N	-	-	-	-	-
	1,4-dichlorobenzene ug/l	326 L N	-	-	-	-	<1.0

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
SVOC	1,3-dichlorobenzene mg/kg	316 L N	-	-	-	-	-
	1,4-dichlorobenzene mg/kg	316 L Y	-	-	-	-	-
	benzyl alcohol ug/l	326 L N	-	-	-	-	<1.0
	benzyl alcohol mg/kg	316 L N	-	-	-	-	-
	2-methylphenol mg/kg	316 L Y	-	-	-	-	-
	3&4-methylphenol mg/kg	316 L Y	-	-	-	-	-
	1,2-dichlorobenzene ug/l	326 L N	-	-	-	-	<1.0
	Dibenzofuran mg/kg	316 L Y	-	-	-	-	-
	1,2-dichlorobenzene mg/kg	316 L Y	-	-	-	-	-
	2-methylphenol ug/l	326 L N	-	-	-	-	<1.0
	bis(2-chloroisopropyl)ether mg/kg	316 L N	-	-	-	-	-
	n-nitroso-di-n-propylamine mg/kg	316 L N	-	-	-	-	-
	bis(2-chloroisopropyl)ether ug/l	326 L N	-	-	-	-	<1.0
	hexachloroethane mg/kg	316 L Y	-	-	-	-	-
	3&4-methylphenol ug/l	326 L N	-	-	-	-	<1.0
	nitrobenzene mg/kg	316 L Y	-	-	-	-	-
	isophorone mg/kg	316 L Y	-	-	-	-	-
	2,4-dimethylphenol mg/kg	316 L N	-	-	-	-	-
	acetophenone ug/l	326 L N	-	-	-	-	<1.0
	acetophenone mg/kg	316 L N	-	-	-	-	-
	2-nitrophenol mg/kg	316 L N	-	-	-	-	-

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil 966077 WS3 1.40m	Soil 966079 WS4 0.80m	Soil 966081 WS6 0.40m	Soil 966082 WS7 0.40m	Water 966083 WS4
SVOC	bis(2-chloroethoxy)methane mg/kg	316 L N	-	-	-	-	-
	n-nitrosodi-n-propylamine ug/l	326 L N	-	-	-	-	<1.0
	2,4-dichlorophenol mg/kg	316 L Y	-	-	-	-	-
	1,2,4-trichlorobenzene mg/kg	316 L N	-	-	-	-	-
	o-toluidine ug/l	326 L N	-	-	-	-	<1.0
	2,4-dinitrophenol mg/kg	316 L N	-	-	-	-	-
	naphthalene mg/kg	316 L N	-	-	-	-	-
	hexachloroethane ug/l	326 L N	-	-	-	-	<1.0
	hexachlorobutadiene mg/kg	316 L Y	-	-	-	-	-
	4-chloro-3-methylphenol mg/kg	316 L Y	-	-	-	-	-
	nitrobenzene ug/l	326 L N	-	-	-	-	<1.0
	2-methylnaphthalene mg/kg	316 L Y	-	-	-	-	-
	2,4,6-trichlorophenol mg/kg	316 L N	-	-	-	-	-
	n-nitrosopiperidine ug/l	326 L N	-	-	-	-	<1.0
	n-nitrosopiperidine mg/kg	316 L N	-	-	-	-	-
	2,4,5-trichlorophenol mg/kg	316 L Y	-	-	-	-	-
	isophorone ug/l	326 L N	-	-	-	-	<1.0
	2-chloronaphthalene mg/kg	316 L Y	-	-	-	-	-
	dimethylphthalate mg/kg	316 L Y	-	-	-	-	-
	2-nitrophenol ug/l	326 L N	-	-	-	-	<1.0
	2,6-dinitrotoluene mg/kg	316 L Y	-	-	-	-	-

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
SVOC	acenaphthylene mg/kg	316 L Y	-	-	-	-	-
	benzoic acid ug/l	326 L N	-	-	-	-	<1.0
	benzoic acid mg/kg	316 L N	-	-	-	-	-
	acenaphthene mg/kg	316 L Y	-	-	-	-	-
	2,4-dinitrotoluene mg/kg	316 L Y	-	-	-	-	-
	2,4-dimethylphenol ug/l	326 L N	-	-	-	-	<1.0
	diethylphthalate mg/kg	316 L Y	-	-	-	-	-
	4-nitrophenol mg/kg	316 L Y	-	-	-	-	-
	bis(2-chloroethoxy)methane ug/l	326 L N	-	-	-	-	<1.0
	bis(2-chloroethyl)ether ug/l	326 L N	-	-	-	-	<1.0
	2,4-dichlorophenol ug/l	326 L N	-	-	-	-	<1.0
	4-chlorophenyl-phenylether mg/kg	316 L Y	-	-	-	-	-
	fluorene mg/kg	316 L Y	-	-	-	-	-
	1,2,4-trichlorobenzene ug/l	326 L N	-	-	-	-	<1.0
	carbazole mg/kg	316 L N	-	-	-	-	-
	naphthalene ug/l	326 L N	-	-	-	-	<1.0
	4-bromophenyl-phenylether mg/kg	316 L Y	-	-	-	-	-
	hexachlorobenzene mg/kg	316 L Y	-	-	-	-	-
	4-chloroaniline ug/l	326 L N	-	-	-	-	<1.0
	4-chloroaniline mg/kg	316 L N	-	-	-	-	-
	pentachlorophenol mg/kg	316 L Y	-	-	-	-	-

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Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
SVOC	phenanthrene mg/kg	316 L Y	-	-	-	-	-
	2,6-dichlorophenol ug/l	326 L N	-	-	-	-	<1.0
	2,6-dichlorophenol mg/kg	316 L N	-	-	-	-	-
	anthracene mg/kg	316 L N	-	-	-	-	-
	di-n-butylphthalate mg/kg	316 L Y	-	-	-	-	-
	hexachlorobutadiene ug/l	326 L N	-	-	-	-	<1.0
	fluoranthene mg/kg	316 L Y	-	-	-	-	-
	n-nitrosodibutylamine ug/l	326 L N	-	-	-	-	<1.0
	n-nitrosodibutylamine mg/kg	316 L N	-	-	-	-	-
	pyrene mg/kg	316 L Y	-	-	-	-	-
	4-chloro-3-methylphenol ug/l	326 L N	-	-	-	-	<1.0
	butylbenzylphthalate mg/kg	316 L Y	-	-	-	-	-
	2-methylnaphthalene ug/l	326 L N	-	-	-	-	<1.0
	benzo(a)anthracene mg/kg	316 L Y	-	-	-	-	-
	chrysene mg/kg	316 L Y	-	-	-	-	-
	bis(2-ethylhexyl)phthalate mg/kg	316 L Y	-	-	-	-	-
	1,2,4,5-tetrachlorobenzene ug/l	326 L N	-	-	-	-	<1.0
	1,2,4,5-tetrachlorobenzene mg/kg	316 L N	-	-	-	-	-
	di-n-octylphthalate mg/kg	316 L Y	-	-	-	-	-
	benzo(b)fluoranthene mg/kg	316 L N	-	-	-	-	-
	hexachlorocyclopentadiene ug/l	326 L N	-	-	-	-	<1.0

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Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
SVOC	hexachlorocyclopentadien mg/kg	316 L N	-	-	-	-	-
	benzo(k)fluoranthene mg/kg	316 L N	-	-	-	-	-
	benzo(a)pyrene mg/kg	316 L Y	-	-	-	-	-
	2,4,6-trichlorophenol ug/l	326 L N	-	-	-	-	<1.0
	indeno(1,2,3-cd)pyrene mg/kg	316 L N	-	-	-	-	-
	dibenzo(ah)anthracene mg/kg	316 L N	-	-	-	-	-
	2,4,5-trichlorophenol ug/l	326 L N	-	-	-	-	<1.0
	benzo(ghi)perylene mg/kg	316 L N	-	-	-	-	-
	2-fluorophenol % *	316 L N	-	-	-	-	-
	2-chloronaphthalene ug/l	326 L N	-	-	-	-	<1.0
	phenol-d6 % *	316 L N	-	-	-	-	-
	nitrobenzene-d5 % *	316 L N	-	-	-	-	-
	2-nitroaniline ug/l	326 L N	-	-	-	-	<1.0
	2-nitroaniline mg/kg	316 L N	-	-	-	-	-
	2-fluorobiphenyl % *	316 L N	-	-	-	-	-
	2,4,6-tribromophenol % *	316 L N	-	-	-	-	-
	dimethyl phthalate ug/l	326 L N	-	-	-	-	<1.0
	terphenyl-d14 % *	316 L N	-	-	-	-	-
	2,4-dinitrotoluene ug/l	326 L N	-	-	-	-	<1.0
	acenaphthylene ug/l	326 L N	-	-	-	-	<1.0
	3-nitroaniline ug/l	326 L N	-	-	-	-	<1.0

Accreditation Codes : * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted

For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. I/S = Insufficient Sample

Certificate of Analysis

1314
0897
1229
1510

Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
SVOC	3-nitroaniline mg/kg	316 L N	-	-	-	-	-
	acenaphthene ug/l	326 L N	-	-	-	-	<1.0
	4-nitrophenol ug/l	326 L N	-	-	-	-	<1.0
	dibenzofuran ug/l	326 L N	-	-	-	-	<1.0
	2,6-dinitrotoluene ug/l	326 L N	-	-	-	-	<1.0
	2,4-dinitrophenol ug/l	326 L N	-	-	-	-	<1.0
	pentachlorobenzene ug/l	326 L N	-	-	-	-	<1.0
	pentachlorobenzene mg/kg	316 L N	-	-	-	-	-
	1,2-diphenylhydrazine mg/kg	316 L N	-	-	-	-	-
	1,2-diphenylhydrazine ug/l	326 L N	-	-	-	-	<1.0
	1-naphthylamine ug/l	326 L N	-	-	-	-	<1.0
	1-naphthylamine mg/kg	316 L N	-	-	-	-	-
	2-naphthylamine mg/kg	316 L N	-	-	-	-	-
	2-naphthylamine ug/l	326 L N	-	-	-	-	<1.0
	2,3,4,6-tetrachlorophenol ug/l	326 L N	-	-	-	-	<1.0
	2,3,4,6-tetrachlorophenol mg/kg	316 L N	-	-	-	-	-
	diethyl phthalate ug/l	326 L N	-	-	-	-	<1.0
	4-chlorophenyl phenyl ether ug/l	326 L N	-	-	-	-	<1.0
	fluorene ug/l	326 L N	-	-	-	-	<1.0
	4-nitroaniline ug/l	326 L N	-	-	-	-	<1.0
	4-nitroaniline mg/kg	316 L N	-	-	-	-	-

Accreditation Codes : * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted

For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. I/S = Insufficient Sample

Certificate of Analysis

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
SVOC	2-methyl-4,6-dinitrophenol mg/kg	316 L N	-	-	-	-	-
	2-methyl-4,6-dinitrophenol ug/l	326 L N	-	-	-	-	<1.0
	diphenylamin&diphenylnitrosam mg/kg	316 L N	-	-	-	-	-
	diphenylamine&diphenylnitrosam ug/l	326 L N	-	-	-	-	<1.0
	phenacetin mg/kg	316 L N	-	-	-	-	-
	phenacetin ug/l	326 L N	-	-	-	-	<1.0
	4-bromophenyl phenyl ether ug/l	326 L N	-	-	-	-	<1.0
	hexachlorobenzene ug/l	326 L N	-	-	-	-	<1.0
	4-aminobiphenyl ug/l	326 L N	-	-	-	-	<1.0
	4-aminobiphenyl mg/kg	316 L N	-	-	-	-	-
	pentachlorophenol ug/l	326 L N	-	-	-	-	<1.0
	phenanthrene ug/l	326 L N	-	-	-	-	<1.0
	anthracene ug/l	326 L N	-	-	-	-	<1.0
	carbazole ug/l	326 L N	-	-	-	-	<1.0
	di-n-butyl phthalate ug/l	326 L N	-	-	-	-	<1.0
	fluoranthene ug/l	326 L N	-	-	-	-	<1.0
	benzidine ug/l	326 L N	-	-	-	-	<1.0
	benzidine mg/kg	316 L N	-	-	-	-	-
	pyrene ug/l	326 L N	-	-	-	-	<1.0
	dimethylaminoazobenzene ug/l	326 L N	-	-	-	-	<1.0
	dimethylaminoazobenzene mg/kg	316 L N	-	-	-	-	-

Accreditation Codes : * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted

For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. I/S = Insufficient Sample

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Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4
SVOC	n-nitrosodimethylamine mg/kg	316 L N	-	-	-	-	-
	n-nitrosodimethylamine ug/l	326 L N	-	-	-	-	<1.0
	butyl benzyl phthalate ug/l	326 L N	-	-	-	-	<1.0
	3,3-dichlorobenzidine ug/l	326 L N	-	-	-	-	<1.0
	3,3-dichlorobenzidine mg/kg	316 L N	-	-	-	-	-
	benzo(a)anthracene ug/l	326 L N	-	-	-	-	<1.0
	chrysene ug/l	326 L N	-	-	-	-	<1.0
	bis(2-ethylhexyl)phthalate ug/l	326 L N	-	-	-	-	<1.0
	di-n-octyl phthalate ug/l	326 L N	-	-	-	-	<1.0
	benzo(b)fluoranthene ug/l	326 L N	-	-	-	-	<1.0
	benzo(k)fluoranthene ug/l	326 L N	-	-	-	-	<1.0
	7,12-dimethylbenz(a)anthracene ug/l	326 L N	-	-	-	-	<1.0
	7,12-dimethylbenz(a)anth mg/kg	316 L N	-	-	-	-	-
	benzo(a)pyrene ug/l	326 L N	-	-	-	-	<1.0
	3-methylcholanthrene ug/l	326 L N	-	-	-	-	<1.0
	3-methylcholanthrene mg/kg *	316 L N	-	-	-	-	-
	indeno(1,2,3-cd)pyrene ug/l	326 L N	-	-	-	-	<1.0
	dibenzo(ah)anthracene ug/l	326 L N	-	-	-	-	<1.0
	benzo(ghi)perylene ug/l	326 L N	-	-	-	-	<1.0
Asbestos	Description of Sample TEXT *	70 L N	Analyst Comment	-	Analyst Comment	Analyst Comment	-
	Asbestos Identification Text	70 L N	Analyst Comment	-	Analyst Comment	Analyst Comment	-

Accreditation Codes : * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted

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Certificate of Analysis

1314
0897
1229
1510

SEVERN TRENT ENVIRONMENTAL LEADERSHIP STL

Report Number : **LL /416606/2007** **Issue 2**

Site Name : **Royal Victoria Hospital Folkestone**

Group	Determinand	Method/Accreditation	Soil	Soil	Soil	Soil	Water
			966077	966079	966081	966082	966083
			WS3 1.40m	WS4 0.80m	WS6 0.40m	WS7 0.40m	WS4

Signed : Name : **G. Smith** Date : 27 April 2007

Title : **Licensed Chemistry Manager**

Accreditation Codes : * = Not UKAS accredited, B = Analysed at STL Bridgend, C = Analysed at STL Coventry, R = Analysed at STL Runcorn, L = Analysed at STL Midlands, S = Sub-contracted

For Microbiological determinands 0 or ND = Not Detected, DET = Detected, For Legionella ND=Not detected in volume of sample filtered. I/S = Insufficient Sample

DETERMINAND COMMENTS FOR REPORT LL */416606/2007*

Sample No	Description	Determinand	Comments
966069	RA1 0.80m	Asbestos Identification	Non Detected
966069	RA1 0.80m	Description of Sample	Soil
966071	RA1 1.70m	Asbestos Identification	Non Detected
966071	RA1 1.70m	Description of Sample	Soil
966072	WS1 0.20m	Asbestos Identification	Non Detected
966072	WS1 0.20m	Description of Sample	Soil
966074	WS2A 0.40m	Asbestos Identification	Non Detected
966074	WS2A 0.40m	Description of Sample	Soil
966077	WS3 1.40m	Asbestos Identification	Non Detected
966077	WS3 1.40m	Description of Sample	Soil
966081	WS6 0.40m	Asbestos Identification	Non Detected
966081	WS6 0.40m	Description of Sample	Soil
966082	WS7 0.40m	Asbestos Identification	Non Detected
966082	WS7 0.40m	Description of Sample	Soil

Signed : .

Name : **G. Smith** Date : 27 April 2007

Title : **Licensed Chemistry Manager**

Assessment of Chemicals of Potential Concern to Human Health

Hydrock Consultants

All values in mg/kg unless otherwise stated							MG	MG	MG	MG	NAT	MG	MG	0	0	0	0	0
Generic Criterion in Use (mg/kg)	Chemical of Potential Concern	Lab. Reporting Limit (mg/kg)	No. Samples	Minimum Value	Maximum Value	No. Exceedences	RA1 0.80m	RA1 1.70m	WS1 0.20m	WS2A 0.40m	WS3 1.40m	WS6 0.40m	WS7 0.40m	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00
20	Arsenic	0.5	7	1.6	26	1	4.4	4.7	26	1.6	3.4	7.2	7.4	0	0	0	0	0
72	Beryllium	1	7	0.36	1.2	0	0.36	0.54	0.7	0.38	0.48	0.61	1.2	0	0	0	0	0
8	Cadmium	0.5	7	0.5	0.5	0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0
130	Chromium (Total)	0.5	7	12	23	0	12	12	17	16	15	19	23	0	0	0	0	0
130	Chromium (VI)	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Mercury	0.25	7	0.25	0.52	0	0.25	0.25	0.52	0.25	0.25	0.25	0.25	0	0	0	0	0
50	Nickel	0.5	7	16	40	0	23	27	18	40	16	18	26	0	0	0	0	0
450	Lead	10	7	10	120	0	12	41	120	10	10	31	58	0	0	0	0	0
1000	Sulfur	100	7	100	100	0	100	100	100	100	100	100	100	0	0	0	0	0
35	Selenium	0.3	7	0.3	0.3	0	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0	0	0	0	0
118	Vanadium	2	7	11	49	0	18	11	27	19	22	30	49	0	0	0	0	0
176	Cyanide (free)	2.5	7	2.5	7.7	0	2.5	2.5	7.7	4.3	2.5	2.5	2.5	0	0	0	0	0
150	Phenol (total)	0.75	7	0.75	0.75	0	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0	0	0	0	0
	Soil Organic Matter (%)	n/a	7	1.5%	6.2%	n/a	3.6%	1.7%	4.1%	1.7%	1.5%	2.1%	6.2%					
181	Acenaphthene	0.01	5	0.01	0.043	0	0.01	0.022	0.043	0.016	0.016	0	0	0	0	0	0	0
9.5	Acenaphthylene	0.01	5	0.024	0.25	0	0.024	0.027	0.25	0.036	0.026	0	0	0	0	0	0	0
12232	Anthracene	0.01	5	0.01	0.46	0	0.027	0.021	0.46	0.014	0.01	0	0	0	0	0	0	0
11	Benz(a)anthracene	0.01	5	0.016	1.2	0	0.11	0.043	1.2	0.058	0.016	0	0	0	0	0	0	0
1.2	Benzo[a]pyrene	0.01	5	0.012	1.2	0	0.11	0.037	1.2	0.06	0.012	0	0	0	0	0	0	0
10	Benzo(b)fluoranthene	0.01	5	0.01	1.4	0	0.095	0.038	1.4	0.07	0.01	0	0	0	0	0	0	0
17	Benzo(ghi)perylene	0.01	5	0.01	1.1	0	0.091	0.01	1.1	0.052	0.01	0	0	0	0	0	0	0
11	Benzo(k)fluoranthene	0.01	5	0.016	0.7	0	0.095	0.045	0.7	0.053	0.016	0	0	0	0	0	0	0
93	Chrysene	0.01	5	0.014	1.3	0	0.11	0.055	1.3	0.058	0.014	0	0	0	0	0	0	0
1.5	Dibenz(a,h)anthracene	0.01	5	0.01	0.15	0	0.017	0.01	0.15	0.01	0.01	0	0	0	0	0	0	0
67	Fluoranthene	0.01	5	0.022	2.6	0	0.22	0.083	2.6	0.094	0.022	0	0	0	0	0	0	0
1717	Fluorene	0.01	5	0.01	0.11	0	0.01	0.029	0.11	0.035	0.019	0	0	0	0	0	0	0
15	Indeno(1,2,3,cd)pyrene	0.01	5	0.01	1	0	0.096	0.027	1	0.067	0.01	0	0	0	0	0	0	0
72	Naphthalene	0.01	5	0.35	0.96	0	0.96	0.35	0.86	0.53	0.41	0	0	0	0	0	0	0
355	Phenanthrene	0.01	5	0.029	1.1	0	0.056	0.064	1.1	0.056	0.029	0	0	0	0	0	0	0
664	Pyrene	0.01	5	0.023	2.1	0	0.18	0.08	2.1	0.082	0.023	0	0	0	0	0	0	0
n/a	pH (SU)	n/a	7	7.9	8.8	n/a	8.5	8.8	8.7	8.1	7.9	8.3	8.3	0	0	0	0	0

Data Set: All Data

Risk Parameters: Human health - residential with vegetable consumption 2.5% SOM

Client: East Kent Hospitals NHS Trust

Site: Royal Victoria Hospital

Job No: C07060

Legend: Values in red are at or below the laboratory detection limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, in line with CLR guidelines.

Yellow background denotes value exceeds the generic criterion

MG	Made Ground
NAT	Natural Ground

n/a = not applicable

Human Health Maximum Value Test (1st iteration)

Chemical of Potential Concern	Arithmetic sample mean (of log data)	Unbiased standard deviation (of log data)	Ymax (of log data)	T value	T Critical	Value being Tested	Outcome
Arsenic	0.742	0.372	1.415	1.809	1.828	26.00	
Beryllium	-0.249	0.178	0.079	1.842	1.828	1.20	Beryllium concentration of 1.2 mg/kg in WS7 at 0.40m is AN OUTLIER
Cadmium							
Chromium (Total)	1.201	0.103	1.362	1.564	1.828	23.00	
Mercury	-0.557	0.120	-0.284	2.268	1.828	0.52	Mercury concentration of 0.52 mg/kg in WS1 at 0.20m is AN OUTLIER
Nickel	1.361	0.137	1.602	1.759	1.828	40.00	
Lead	1.432	0.421	2.079	1.537	1.828	120.00	
Sulfur							
Selenium							
Vanadium	1.360	0.203	1.690	1.629	1.828	49.00	
Cyanide (free)	0.501	0.191	0.886	2.015	1.828	7.70	Cyanide (free) concentration of 7.7 mg/kg in WS1 at 0.20m is AN OUTLIER
Phenol (total)							
Acenaphthene	-1.723	0.234	-1.367	1.525	1.602	0.043	
Acenaphthylene	-1.364	0.431	-0.602	1.767	1.602	0.250	Acenaphthylene concentration of 0.25 mg/kg in WS1 at 0.20m is AN OUTLIER
Anthracene	-1.488	0.664	-0.337	1.733	1.602	0.460	Anthracene concentration of 0.46 mg/kg in WS1 at 0.20m is AN OUTLIER
Benz(a)anthracene	-1.056	0.703	0.079	1.615	1.602	1.200	Benz(a)anthracene concentration of 1.2 mg/kg in WS1 at 0.20m is AN OUTLIER
Benzo[a]pyrene	-1.091	0.743	0.079	1.574	1.602	1.200	
Benzo(b)fluoranthene	-1.090	0.786	0.146	1.572	1.602	1.400	
Benzo(ghi)perylene	-1.257	0.842	0.041	1.541	1.602	1.100	
Benzo(k)fluoranthene	-1.119	0.607	-0.155	1.589	1.602	0.700	
Chrysene	-1.039	0.722	0.114	1.596	1.602	1.300	
Dibenz(a,h)anthracene	-1.719	0.510	-0.824	1.754	1.602	0.150	Dibenz(a,h)anthracene concentration of 0.15 mg/kg in WS1 at 0.20m is AN OUTLIER
Fluoranthene	-0.802	0.768	0.415	1.583	1.602	2.600	
Fluorene	-1.535	0.384	-0.959	1.501	1.602	0.110	
Indeno(1,2,3,cd)pyrene	-1.152	0.748	0.000	1.540	1.602	1.000	
Naphthalene	-0.240	0.193	-0.018	1.152	1.602	0.960	
Phenanthrene	-1.039	0.619	0.041	1.746	1.602	1.100	Phenanthrene concentration of 1.1 mg/kg in WS1 at 0.20m is AN OUTLIER
Pyrene	-0.849	0.729	0.322	1.607	1.602	2.100	Pyrene concentration of 2.1 mg/kg in WS1 at 0.20m is AN OUTLIER
pH (SU)	0.923	0.017	0.944	1.320	1.828	8.80	

If T value is > T Critical = Outlier

Data Set: All Data

Risk Parameters: Human health - residential with vegetable consumption 2.5% SOM

Client: East Kent Hospitals NHS Trust

Site: Royal Victoria Hospital

Job No: C07060

BLUE ouliers are below the generic criterion and are not considered further

RED outliers are above the generic criterion and require additional consideration

Human Health Maximum Value Test (2nd iteration)

Chemical of Potential Concern	Arithmetic sample mean (of log data)	Unbiased standard deviation (of log data)	Ymax (of log data)	T value	T Critical	Value being Tested	Outcome
Arsenic							
Beryllium	-0.303	0.114	-0.155	1.304	1.729	0.70	
Cadmium							
Chromium (Total)							
Mercury		0.000					
Nickel							
Lead							
Sulfur							
Selenium							
Vanadium							
Cyanide (free)	0.437	0.096	0.633	2.041	1.729	4.30	Cyanide (free) concentration of 4.3 mg/kg in WS2A at 0.40m is AN OUTLIER
Phenol (total)							
Acenaphthene							
Acenaphthylene	-1.554	0.077	-1.444	1.441	1.425	0.036	Acenaphthylene concentration of 0.036 mg/kg in WS2A at 0.40m is AN OUTLIER
Anthracene	-1.775	0.191	-1.569	1.084	1.425	0.027	
Benz(a)anthracene	-1.339	0.349	-0.959	1.092	1.425	0.110	
Benzo[a]pyrene							
Benzo(b)fluoranthene							
Benzo(ghi)perylene							
Benzo(k)fluoranthene							
Chrysene							
Dibenz(a,h)anthracene	-1.942	0.115	-1.770	1.500	1.425	0.017	Dibenz(a,h)anthracene concentration of 0.017 mg/kg in RA1 at 0.80m is AN OUTLIER
Fluoranthene							
Fluorene							
Indeno(1,2,3,cd)pyrene							
Naphthalene							
Phenanthrene	-1.309	0.155	-1.194	0.742	1.425	0.064	
Pyrene	-1.142	0.369	-0.745	1.074	1.425	0.180	
pH (SU)							

If T value is > T Critical = Outlier

Data Set: All Data

Risk Parameters: Human health - residential with vegetable consumption 2.5% SOM

Client: East Kent Hospitals NHS Trust

Site: Royal Victoria Hospital

Job No: C07060

BLUE ouliers are below the generic criterion and are not considered further

RED outliers are above the generic criterion and require additional consideration

Mean Value Test for Human Health

Chemical of Potential Concern	Mean (mg/kg)	Standard Deviation (mg/kg)	US_{95} (mg/kg)	Generic Criterion (mg/kg)	Pass/Fail
Arsenic	7.81	8.27	13.89	20	Pass
Beryllium	0.51	0.13	0.62	72	Pass
Cadmium	0.50	0.00	0.50	8	Pass
Chromium (Total)	16.29	3.90	19.15	130	Pass
Mercury	0.25	0.00	0.25	8	Pass
Nickel	24.00	8.23	30.04	50	Pass
Lead	27.06	39.56	56.11	450	Pass
Sulfur	100.00	0.00	100.00	1000	Pass
Selenium	0.30	0.00	0.30	35	Pass
Vanadium	25.14	12.21	34.11	118	Pass
Cyanide (free)	2.50	0.00	2.50	176	Pass
Phenol (total)	0.75	0.00	0.75	150	Pass
Acenaphthene	0.021	0.013	0.034	181	Pass
Acenaphthylene	0.026	0.002	0.028	9.5	Pass
Anthracene	0.018	0.008	0.027	12232	Pass
Benz(a)anthracene	0.057	0.040	0.103	11	Pass
Benzo[a]pyrene	0.284	0.513	0.773	1.2	Pass
Benzo(b)fluoranthene	0.323	0.603	0.898	10	Pass
Benzo(ghi)perylene	0.253	0.475	0.705	17	Pass
Benzo(k)fluoranthene	0.182	0.291	0.459	11	Pass
Chrysene	0.307	0.556	0.837	93	Pass
Dibenz(a,h)anthracene	0.010	0.000	0.010	1.5	Pass
Fluoranthene	0.604	1.118	1.670	67	Pass
Fluorene	0.041	0.040	0.079	1717	Pass
Indeno(1,2,3,cd)pyrene	0.240	0.426	0.646	15	Pass
Naphthalene	0.622	0.273	0.882	72	Pass
Phenanthrene	0.051	0.015	0.069	355	Pass
Pyrene	0.091	0.065	0.168	664	Pass
pH (SU)	8.37	0.32	8.61	n/a	n/a

(outliers removed)

Data Set: **All Data**

Risk Parameters: **Human health - residential with vegetable consumption 2.5% SOM**

Client: **East Kent Hospitals NHS Trust**

Site: **Royal Victoria Hospital**

Job No: **C07060**

Where a Mean Value Test is failed, there may be a significant possibility of significant harm, further consideration is required.

Chemicals of Potential Concern to Plant Life

Generic Criterion in Use (mg/kg)	Chemical of Potential Concern	Lab. Detection Limit (mg/kg)	No. Samples	Minimum Value	Maximum Value	No. Exceedences	MG RA1 0.80m	MG RA1 1.70m	MG WS1 0.20m	MG WS2A 0.40m	NAT WS3 1.40m	MG WS6 0.40m	MG WS7 0.40m	0 0 0.00	0 0 0.00	0 0 0.00	0 0 0.00	0 0 0.00
250	Arsenic	0.5	7	1.6	26	0	4.4	4.7	26	1.6	3.4	7.2	7.4	0	0	0	0	0
3	Boron	0.5	7	0.3	0.92	0	0.46	0.4	0.92	0.46	0.3	0.68	0.71	0	0	0	0	0
400	Chromium (Total)	0.5	7	12	23	0	12	12	17	16	15	19	23	0	0	0	0	0
25	Chromium (VI)	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250	Copper	0.5	7	5	93	0	5.1	93	15	5	5	7.9	18	0	0	0	0	0
110	Nickel	0.5	7	16	40	0	23	27	18	40	16	18	26	0	0	0	0	0
1000	Zinc	3	7	19	320	0	27	320	76	19	24	36	51	0	0	0	0	0

Legend: **Values in red are at or below the laboratory detection limit and are considered as being at the detection limit for the purposes of statistical analysis, in line with CLR guidelines.**

Yellow background denotes value exceeds the generic criterion

MG	Made Ground
NAT	Natural Ground

n/a = not applicable

Data Set: All Data

Risk Parameters: Plant life

Client: East Kent Hospitals NHS Trust

Site: Royal Victoria Hospital

Job No: C07060

Plant Life Maximum Value Test (1st iteration)

Chemical of Potential Concern	Arithmetic sample mean (of log data)	Unbiased standard deviation (of log data)	Ymax (of log data)	T value	T Critical	Value being Tested	Outcome
Arsenic	0.742	0.372	1.415	1.809	1.828	26.00	
Boron	-0.278	0.168	-0.036	1.443	1.828	0.92	
Chromium (Total)	1.201	0.103	1.362	1.564	1.828	23.00	
Chromium (VI)							#N/A #N/A
Copper	1.058	0.463	1.968	1.966	1.828	93.00	Copper concentration of 93 mg/kg in RA1 at 1.70m is AN OUTLIER
Nickel	1.361	0.137	1.602	1.759	1.828	40.00	
Zinc	1.677	0.418	2.505	1.979	1.828	320.00	Zinc concentration of 320 mg/kg in RA1 at 1.70m is AN OUTLIER

If T value is > T Critical = Outlier

Data Set: All Data

Risk Parameters: Plant life

Client: East Kent Hospitals NHS Trust

Site: Royal Victoria Hospital

Job No: C07060

BLUE ouliers are below the generic criterion and are not considered further

RED outliers are above the generic criterion and require additional consideration

Final Mean Value Test for Plant Life

Chemical of Potential Concern	Mean (mg/kg)	Standard Deviation (mg/kg)	US_{95} (mg/kg)	Generic Criterion (mg/kg)	Pass/Fail
Arsenic	7.81	8.27	13.89	250	Pass
Boron	0.56	0.22	0.72	3	Pass
Chromium (Total)	16.29	3.90	19.15	400	Pass
Chromium (VI)				25	
Copper	9.33	5.74	14.06	250	Pass
Nickel	24.00	8.23	30.04	110	Pass
Zinc	38.83	21.40	56.44	1000	Pass

(outliers removed)

Data Set: **All Data**

Risk Parameters: **Plant life**

Client: **East Kent Hospitals NHS Trust**

Site: **Royal Victoria Hospital**

Job No: **C07060**

Where a Mean Value Test is failed, there may be a significant possibility of significant harm, further consideration is required.

Assessment of Chemicals of Potential Concern to Human Health

Generic Criterion in Use (mg/kg)	Chemical of Potential Concern	Lab. Reporting Limit (mg/kg)	No. Samples	Minimum Value	Maximum Value	No. Exceedences	MG RA1 0.80m	MG RA1 1.50m	MG WS1 0.80m	MG WS3 0.40m	MG WS4 0.80m	0 0 0.00	0 0 0.00	0 0 0.00	0 0 0.00	0 0 0.00	0 0 0.00	0 0 0.00	0 0 0.00
193	Aliphatics C5-C6	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
481	Aliphatics >C6-C8	0.01	5	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0
23	Aliphatics >C8-C10	0.01	5	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0
108	Aliphatics >C10-C12	0.01	5	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0
974	Aliphatics >C12-C16	0.1	5	1	2.8	0	1	1	1	2.8	1	0	0	0	0	0	0	0	0
142743	Aliphatics >C16-C35	0.1	5	2	21.3	0	2	21.3	2	6.4	2	0	0	0	0	0	0	0	0
99	Aromatics C5-C7	0.01	5	0.01	0.01	0	0.01	0.01	0.01	0.01	0.01	0	0	0	0	0	0	0	0
444	Aromatics >C7-C8	0.01	5	0.01	0.01	0	0.01	0.01	0.01	0.01	0.01	0	0	0	0	0	0	0	0
119	Aromatics >C8-C10	0.01	5	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0
60	Aromatics >C10-C12	0.01	5	1	1	0	1	1	1	1	1	0	0	0	0	0	0	0	0
116	Aromatics >C12-C16	0.1	5	1	47	0	1	1	4.8	47	3	0	0	0	0	0	0	0	0
122	Aromatics >C16-C21	0.1	5	1	240	1	1	8.6	33	240	28	0	0	0	0	0	0	0	0
355	Aromatics >C21-C35	0.1	5	1	520	1	1	37	75	520	130	0	0	0	0	0	0	0	0

Data Set: All Data

Risk Parameters: Human health - residential with vegetable consumption 2.5% SOM

Client: East Kent Hospitals NHS Trust

Site: Royal Victoria Hospital

Job No: C07060

Legend: Values in red are at or below the laboratory detection limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, in line with CLR guidelines.

Yellow background denotes value exceeds the generic criterion

MG	Made Ground
NAT	Natural Ground

n/a = not applicable

Appendix J

WASTE MANAGEMENT

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Establishing if Substances are Wastes

Any material excavated on site may be classified as waste and, as such, its handling, re-use or disposal is regulated by the Environment Agency. Generic advice is available from the Environment Agency (April 2006) in the form of a guidance note, but it is *recommended that site-specific advice be sought from the local Agency staff at the earliest opportunity*, particularly as the guide refers to work in progress and developing case law.

The guide mentions that it does not take into account the European Court of Justice judgement on 4 September 2004 in the Van der Walle case (C-1/03) as the UK Government is considering the implications of this judgement.

It is the responsibility of the holder of a substance or object to decide whether or not they are handling waste. The Agency guide gives examples of whether or not materials are likely to be considered as waste, having regard to the tests that the Courts have used and to the aims of the Waste Framework Directive.

Uncontaminated Material

Construction activities such as lime stabilisation and virbroflotation for the purposes of producing a suitably engineered soil are not generally regarded as a waste management activity.

Where uncontaminated materials produced on site during construction works (including excavated soils and materials resulting from demolition) are used on site, particularly where the use is in accordance with the planning permission, the Environment Agency would not generally regard them as being discarded, *provided* (i) they are suitable for that use and require no further treatment, (ii) only the quantity necessary for the specified works is used (otherwise it becomes a disposal activity), and (iii) their use is a not a mere possibility but a certainty. Examples include site re-grading or contouring, foundation excavation arisings leveled locally or under ground floor slabs and the construction of retaining structures.

Recovered aggregates produced in accordance with the WRAP protocol are not likely to be waste. Note: pulverised fuel ash and blast furnace slag are both considered as waste.

Contaminated Material

The Agency now accepts that contaminated soils not requiring treatment or containment could be considered as suitable for use in the same way as uncontaminated soils, provided that there is no risk of pollution of the environment. The same provisions (i-iii above) apply, in addition planning permission must authorise the use of the material as part of the site

development. Examples include site re-grading and the use of materials beneath covers, capping layers, buildings and hardstanding.

Contaminated or Uncontaminated Material

Any material (e.g. soil) taken off site is currently considered as a waste and should be carried by registered carriers (to appropriately licensed facilities if it is being disposed of), accompanied by the relevant waste transfer documents. Temporary storage on site prior to disposal will require a waste management permit or an exemption from the need for a permit.

Contaminated or uncontaminated soils and materials that require treatment before it is suitable for use will be considered to be a waste at the point that it is excavated, or is treated *in situ* and would need to be controlled through the waste regulatory regime.

If waste material is treated to make it fit for purpose then it will only cease to be a waste when it has been completely recovered. This state of complete recovery can be reached when the treatment process is complete and the recovered material is suitable for an agreed use and can be used without posing a risk to the environment. On the other hand, if un-recovered or partially recovered waste is used in the construction of the works, and it is used in compliance with a WML or an exemption, complete recovery is achieved when the waste has been fully and permanently incorporated into the works.

Key Legal Requirements

If the material is considered to be waste then the legislation will apply up to the point that it ceases to be waste.

Duty of Care: It is necessary to ensure all waste is handled, recovered and disposed of responsibly, and that the waste is only handled by individuals, companies or groups that are authorised to deal with it. For example, waste can only be collected by registered carriers or transporters. Regular checks must be made on the destination of all wastes leaving site to ensure they are only being taken to an appropriately authorised waste management facility. Records (Waste Transfer Notes) must be kept of all wastes received or transferred.

Characteristics of waste received from a third party must be checked its to ensure that companies are licensed or have an exemption under which they can receive it and that it complies with the classification set out in the Waste Transfer Notes.

Waste Carrier or Transporter: Registration is require to transport waste.

Waste Framework Directive Permits: It is normally an offence to undertake waste disposal or recovery operations without being in possession of a WFD permit which can be a WML or PPC permit. However there are a number of exemptions from waste management licensing, mainly for small-scale storage and waste recovery operations, but these are subject to certain limitations. These limitations are general rules under which the waste activity can take

place and cover such details as the types and quantities of waste permitted, the methods of disposal or recovery and pollution control measures.

The specific limitations for exempt waste activities are detailed in some 46 exemptions paragraphs prescribed in Schedule 3 to the Waste Management Licensing Regulations 1994 (as amended). Establishments or undertakings should normally register exempt activities with the Environment Agency. Typical Schedule 3 exemptions used by the construction sector include:

- Schedule 3 Paragraph 9A– Land reclamation;
- Schedule 3 Paragraph 13 – Manufacture of construction and soil materials;
- Schedule 3 Paragraph 19A – Storage and use of waste for construction; and
- Schedule 3 Paragraph 24 – Crushing, grinding, or size reduction of bricks, tiles or concrete.

Waste Classification

With respect to the possible waste streams from a site, it is recommended that a phased approach is implemented. In the first instance, the groundwork's contractor or specialist remediation contractor appointed by the developer should approach the landfill site with the available chemical data and seek a waste characterisation. Should the waste be classified as hazardous, it would be necessary to undertake the Waste Acceptance Criteria (WAC) testing to determine whether the receiving landfill could accept the hazardous waste. This would require additional soil sampling and chemical testing.

The two stages are explained below.

Waste Characterisation

All wastes going to landfill must be classified as 'inert', 'non-hazardous' or 'hazardous'. There is a sub-category of hazardous waste known as 'stable non-reactive hazardous waste'. Individual landfill sites have permits to take these classes of waste. Hazardous and non-hazardous wastes cannot be disposed of at the same site, apart from stable non-reactive hazardous waste which can go to specially constructed cells in certain non-hazardous landfill sites.

Contaminated soil is a 'mirror entry' in the Consolidated European Waste Catalogue, and is not necessarily a hazardous waste. It is only classified as hazardous if it contains dangerous substances above certain threshold concentrations. The Environment Agency Briefing Note on Hazardous Waste and Contaminated Soil (V.1 July 2004) suggests that waste holders should use the information collected as part of the contaminated land risk assessment to inform decisions as to the concentrations that might reasonably be expected to be present in the contaminated soil, given the past and current uses of the site.

The waste must be assessed against all the appropriate hazards in accordance with the Environment Agency Technical Guidance WM2. This makes certain worst case assumptions about the chemical composition if specific compounds are not analysed for.

Waste Acceptance Criteria

Waste classified as hazardous must be subject to WAC testing to determine if it can go to a hazardous landfill site. The WAC are a list of limit values for certain parameters obtained from standard leaching tests and total content tests (different from those used with respect to risk to Controlled Waters). If the limit values are exceeded, the waste is not suitable for disposal at that class of landfill site and alternative disposal methods have to be found. Maximum permissible limit values are determined by the EU (part of what is known as 'full waste acceptance criteria') but individual landfills may have more stringent values to take into account the environmental setting, liner system or additional nature of specific waste streams.

There are WAC limit values for inert, stable non-reactive hazardous and hazardous wastes, but not for non-hazardous wastes. Note that if hazardous waste contains inorganic substances that are not listed in the WAC limit values, but present a risk of pollution or harm, then an upflow percolation test must be carried out, followed by risk assessment of the results with respect to the intended landfill site.

Hazardous wastes require pre-treatment prior to disposal at landfill, unless pre-treatment does not further the objectives of the EU Landfill Directive. This is defined as physical, thermal, chemical or biological processing, including sorting, that changes the characteristics of the waste, and does so in order to reduce its mass, reduce its hazardous nature, facilitate its handling or enhance its recovery.

WAC testing should be carried out following pre-treatment.