



Analytical Report Number : 18-73092

Project / Site name: Burrows Yard

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
TO - Gases C1-C4	Determination of volatile hydrocarbons by GC-MS Headspace.	In-house method		W	NONE
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ABH02S		W	18-73092	890222	bc	BTEX and MTBE in water (Monoaromatics)	L073B-PL	bc
ABH02S		W	18-73092	890222	bc	Boron in water	L039-PL	c
ABH02S		W	18-73092	890222	bc	Dissolved Carbon Dioxide in water	L025-PL	b
ABH02S		W	18-73092	890222	bc	Dissolved Oxygen in water	L086-PL	c
ABH02S		W	18-73092	890222	bc	Iron (II) and Iron (III) in water	L079-PL	c
ABH02S		W	18-73092	890222	bc	Metals in water by ICP-MS (dissolved)	L012-PL	c
ABH02S		W	18-73092	890222	bc	Metals in water by ICP-OES (dissolved)	L039-PL	c
ABH02S		W	18-73092	890222	bc	Metals in water by ICP-OES (total)	L039-PL	c
ABH02S		W	18-73092	890222	bc	Nitrate as N in water	L078-PL	c
ABH02S		W	18-73092	890222	bc	Nitrate in water	L078-PL	c
ABH02S		W	18-73092	890222	bc	Nitrite as N in water	L082-PL	c
ABH02S		W	18-73092	890222	bc	Nitrite in water	L082-PL	c
ABH02S		W	18-73092	890222	bc	PRO (Waters)	L088-PL	bc
ABH02S		W	18-73092	890222	bc	Speciated EPA-16 PAHs in water	L102B-PL	b
ABH02S		W	18-73092	890222	bc	Sulphate in water	L039-PL	c
ABH02S		W	18-73092	890222	bc	Sulphide in water	L029-PL	c
ABH02S		W	18-73092	890222	bc	TO - Gases C1-C4		bc
ABH02S		W	18-73092	890222	bc	TPHCWG (Waters)	L070-PL	b
ABH02S		W	18-73092	890222	bc	pH at 20oC in water (automated)	L099-PL	c

**Laura Cohu**

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Analytical Report Number : 18-73301

Project / Site name:	Burrows Yard	Samples received on:	19/01/2018
Your job number:	10013618	Samples instructed on:	19/01/2018
Your order number:		Analysis completed by:	29/01/2018
Report Issue Number:	1	Report issued on:	29/01/2018
Samples Analysed:	3 water samples		

Signed:

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-73301

Project / Site name: Burrows Yard

Lab Sample Number				891579	891580	891581		
Sample Reference				ABH03S	ABH03D	ABH04		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				17/01/2018	17/01/2018	17/01/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

General Inorganics

pH	pH Units	N/A	ISO 17025	6.9	6.8	7.1		
Sulphate as SO ₄	µg/l	45	ISO 17025	99000	118000	42300		
Sulphate as SO ₄	mg/l	0.045	ISO 17025	99.0	118	42.3		
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0		
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	1.81	1.48	3.37		
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	2.01	1.61	3.50		
Nitrate as N	mg/l	0.01	ISO 17025	0.99	2.02	0.10		
Nitrate as NO ₃	mg/l	0.05	ISO 17025	4.40	8.96	0.43		
Nitrite as N	µg/l	1	ISO 17025	39	11	17		
Nitrite as NO ₂	µg/l	5	ISO 17025	130	36	54		
Alkalinity	mgCaCO ₃ /l	3	ISO 17025	160	94	390		
Carbonate	mgCaCO ₃ /l	10	NONE	160	94	390		
Dissolved Carbon Dioxide	mg/l	1	NONE	42	30	69		
Dissolved Oxygen	mg/l	1	NONE	9.3	9.7	9.2		

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16		
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0	1.0	< 1.0		
Boron (dissolved)	µg/l	10	ISO 17025	140	120	220		
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08		
Chromium (dissolved)	µg/l	0.4	ISO 17025	< 0.4	< 0.4	< 0.4		
Copper (dissolved)	µg/l	0.7	ISO 17025	3.1	2.4	1.7		
Iron (dissolved)	mg/l	0.004	ISO 17025	0.15	0.040	1.2		
Fe ²⁺	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20		
Fe ³⁺	mg/l	0.2	NONE	< 0.20	< 0.20	1.22		
Lead (dissolved)	µg/l	1	ISO 17025	1.9	1.6	< 1.0		
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5		
Nickel (dissolved)	µg/l	0.3	ISO 17025	4.2	8.2	1.8		
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0		
Zinc (dissolved)	µg/l	0.4	ISO 17025	52	140	19		

Iron (total)	mg/l	0.004	ISO 17025	2.8	0.17	4.8		
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Analytical Report Number: 18-73301

Project / Site name: Burrows Yard

Lab Sample Number				891579	891580	891581		
Sample Reference				ABH03S	ABH03D	ABH04		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				17/01/2018	17/01/2018	17/01/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status		

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0		
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	-		
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	-		
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	-		
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	-		
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	-		
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	-		
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	-		
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	-		
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	-		
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	-		

Environmental Forensics

Gases

Methane	mg/l	0.1	NONE	< 0.1	< 0.1	0.7		
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U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 18-73301

Project / Site name: Burrows Yard

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Alkalinity in Water	Determination of Alkalinity by discrete analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Carbonate in water	Determination of Carbonate by titration using 0.1M HCl by discrete analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Dissolved Oxygen in water	Determination of dissolved oxygen.	In-house method	L086-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron II in water by coloration with phenanthroline.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-OES (total)	Determination of metals in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW (Al, Fe, Cu, Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
PRO (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW. GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025

Iss No 18-73301-1 Burrows Yard 10013618

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

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Analytical Report Number : 18-73301

Project / Site name: Burrows Yard

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
TO - Gases C1-C4	Determination of volatile hydrocarbons by GC-MS Headspace.	In-house method		W	NONE
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ABH03D		W	18-73301	891580	c	Dissolved Oxygen in water	L086-PL	c
ABH03S		W	18-73301	891579	c	Dissolved Oxygen in water	L086-PL	c
ABH04		W	18-73301	891581	c	Dissolved Oxygen in water	L086-PL	c

**Maxime Peyre**

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Analytical Report Number : 18-76165

Project / Site name:	Burrows Yard	Samples received on:	15/02/2018
Your job number:	10013618	Samples instructed on:	15/02/2018
Your order number:		Analysis completed by:	23/02/2018
Report Issue Number:	1	Report issued on:	23/02/2018
Samples Analysed:	6 water samples		

Signed:

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-76165

Project / Site name: Burrows Yard

Lab Sample Number				908897	908898	908899	908900	908901
Sample Reference				ABH01S	ABH01D	ABH02S	ABH02D	ABH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.50	7.00	4.50	7.00	4.00
Date Sampled				13/02/2018	13/02/2018	13/02/2018	13/02/2018	13/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	7.4	6.8	6.8	6.5	6.9
Sulphate as SO ₄	µg/l	45	ISO 17025	16900	48000	119000	59300	49200
Sulphate as SO ₄	mg/l	0.045	ISO 17025	16.9	48.0	119	59.3	49.2
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	< 0.10	0.37	0.33	< 0.10	< 0.10
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	0.86	0.90	0.37	< 0.10	0.29
Nitrate as N	mg/l	0.01	ISO 17025	0.07	2.46	2.73	4.63	0.09
Nitrate as NO ₃	mg/l	0.05	ISO 17025	0.33	10.9	12.1	20.5	0.38
Nitrite as N	µg/l	1	ISO 17025	20	23	< 1.0	< 1.0	38
Nitrite as NO ₂	µg/l	5	ISO 17025	64	75	< 5.0	< 5.0	130
Alkalinity	mgCaCO ₃ /l	3	ISO 17025	240	130	110	50	400
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	12	4.6	< 2.0	5.0	9.9
Carbonate	mgCaCO ₃ /l	10	NONE	240	130	110	50	400
Dissolved Carbon Dioxide	mg/l	1	NONE	17	40	34	35	100
Dissolved Oxygen	mg/l	1	NONE	9.0	6.9	7.3	7.6	6.5

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
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Analytical Report Number: 18-76165

Project / Site name: Burrows Yard

Lab Sample Number				908897	908898	908899	908900	908901
Sample Reference				ABH01S	ABH01D	ABH02S	ABH02D	ABH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.50	7.00	4.50	7.00	4.00
Date Sampled				13/02/2018	13/02/2018	13/02/2018	13/02/2018	13/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	3.86	< 0.15	0.39	0.56	0.23
Boron (dissolved)	µg/l	10	ISO 17025	160	100	100	73	250
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.02	0.02	0.02	0.05
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.6	0.9	0.7	1.2	0.9
Copper (dissolved)	µg/l	0.5	ISO 17025	1.8	2.9	6.6	10	2.8
Fe ²⁺	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fe ³⁺	mg/l	0.2	NONE	< 0.20	0.23	< 0.20	< 0.20	< 0.20
Iron (dissolved)	mg/l	0.004	ISO 17025	0.044	0.23	0.034	0.062	0.048
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	1.9	3.6	0.3
Manganese (dissolved)	µg/l	0.05	ISO 17025	2600	1200	950	820	1100
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Mn (II)	mg/l	0.02	NONE	3.60	6.24	1.34	1.16	1.88
Mn (IV)	mg/l	0.02	NONE	25.9	3.96	9.59	6.51	11.9
Nickel (dissolved)	µg/l	0.5	ISO 17025	1.3	3.8	2.0	2.3	2.9
Phosphorus (dissolved)	µg/l	20	ISO 17025	< 20.0	51.2	< 20.0	< 20.0	< 20.0
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	0.7	< 0.6	< 0.6	0.7
Zinc (dissolved)	µg/l	0.5	ISO 17025	< 0.5	6.6	16	19	3.7
Iron (total)	mg/l	0.004	ISO 17025	1.0	0.69	0.12	0.56	0.50

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10



Analytical Report Number: 18-76165

Project / Site name: Burrows Yard

Lab Sample Number				908897	908898	908899	908900	908901
Sample Reference				ABH01S	ABH01D	ABH02S	ABH02D	ABH04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.50	7.00	4.50	7.00	4.00
Date Sampled				13/02/2018	13/02/2018	13/02/2018	13/02/2018	13/02/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Environmental Forensics

Gases

Methane	mg/l	0.1	NONE	0.5	< 0.1	< 0.1	< 0.1	0.1
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U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 18-76165

Project / Site name: Burrows Yard

Lab Sample Number				908902				
Sample Reference				DUP				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				13/02/2018				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	6.8				
Sulphate as SO ₄	µg/l	45	ISO 17025	46500				
Sulphate as SO ₄	mg/l	0.045	ISO 17025	46.5				
Sulphide	µg/l	5	NONE	< 5.0				
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	0.25				
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	0.31				
Nitrate as N	mg/l	0.01	ISO 17025	2.41				
Nitrate as NO ₃	mg/l	0.05	ISO 17025	10.7				
Nitrite as N	µg/l	1	ISO 17025	4.3				
Nitrite as NO ₂	µg/l	5	ISO 17025	14				
Alkalinity	mgCaCO ₃ /l	3	ISO 17025	140				
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	6.1				
Carbonate	mgCaCO ₃ /l	10	NONE	140				
Dissolved Carbon Dioxide	mg/l	1	NONE	46				
Dissolved Oxygen	mg/l	1	NONE	7.5				

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01				
Fluorene	µg/l	0.01	ISO 17025	< 0.01				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01				

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16				
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Analytical Report Number: 18-76165

Project / Site name: Burrows Yard

Lab Sample Number				908902				
Sample Reference				DUP				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				13/02/2018				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.24				
Boron (dissolved)	µg/l	10	ISO 17025	100				
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.05				
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.8				
Copper (dissolved)	µg/l	0.5	ISO 17025	16				
Fe ²⁺	mg/l	0.2	NONE	< 0.20				
Fe ³⁺	mg/l	0.2	NONE	< 0.20				
Iron (dissolved)	mg/l	0.004	ISO 17025	0.035				
Lead (dissolved)	µg/l	0.2	ISO 17025	0.6				
Manganese (dissolved)	µg/l	0.05	ISO 17025	1200				
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05				
Mn (II)	mg/l	0.02	NONE	2.33				
Mn (IV)	mg/l	0.02	NONE	8.05				
Nickel (dissolved)	µg/l	0.5	ISO 17025	3.4				
Phosphorus (dissolved)	µg/l	20	ISO 17025	38.1				
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.6				
Zinc (dissolved)	µg/l	0.5	ISO 17025	10				
Iron (total)	mg/l	0.004	ISO 17025	0.38				

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0				
Toluene	µg/l	1	ISO 17025	< 1.0				
Ethylbenzene	µg/l	1	ISO 17025	< 1.0				
p & m-xylene	µg/l	1	ISO 17025	< 1.0				
o-xylene	µg/l	1	ISO 17025	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0				

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	µg/l	10	ISO 17025	< 10.0				
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TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10				

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10				



Analytical Report Number: 18-76165

Project / Site name: Burrows Yard

Lab Sample Number				908902				
Sample Reference				DUP				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				13/02/2018				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Environmental Forensics

Gases

Methane	mg/l	0.1	NONE	< 0.1				
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U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 18-76165

Project / Site name: Burrows Yard

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Alkalinity in Water	Determination of Alkalinity by discrete analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Carbonate in water	Determination of Carbonate by titration using 0.1M HCl by discrete analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Dissolved Oxygen in water	Determination of dissolved oxygen.	In-house method	L086-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron II in water by coloration with phenanthroline.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-OES (total)	Determination of metals in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW (Al, Fe, Cu, Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025

Iss No 18-76165-1 Burrows Yard 10013618

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

Page 8 of 10



Analytical Report Number : 18-76165

Project / Site name: Burrows Yard

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
PRO (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW, GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
TO - Gases C1-C4	Determination of volatile hydrocarbons by GC-MS Headspace.	In-house method		W	NONE
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ABH01D		W	18-76165	908898	c	Dissolved Oxygen in water	L086-PL	c
ABH01S		W	18-76165	908897	c	Dissolved Oxygen in water	L086-PL	c
ABH02D		W	18-76165	908900	c	Dissolved Oxygen in water	L086-PL	c
ABH02S		W	18-76165	908899	c	Dissolved Oxygen in water	L086-PL	c
ABH04		W	18-76165	908901	c	Dissolved Oxygen in water	L086-PL	c
DUP		W	18-76165	908902	c	Dissolved Oxygen in water	L086-PL	c

**Maxime Peyre**

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Analytical Report Number : 18-76166

Project / Site name:	Burrows Yard	Samples received on:	15/02/2018
Your job number:	10013618	Samples instructed on:	15/02/2018
Your order number:		Analysis completed by:	23/02/2018
Report Issue Number:	1	Report issued on:	23/02/2018
Samples Analysed:	2 water samples		

Signed:

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-76166

Project / Site name: Burrows Yard

Lab Sample Number				908903	908904			
Sample Reference				ABH03S	ABH03D			
Sample Number				None Supplied	None Supplied			
Depth (m)				5.50	8.00			
Date Sampled				14/02/2018	14/02/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	6.8	6.6			
Sulphate as SO ₄	µg/l	45	ISO 17025	120000	122000			
Sulphate as SO ₄	mg/l	0.045	ISO 17025	120	122			
Sulphide	µg/l	5	NONE	< 5.0	< 5.0			
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	1.56	0.49			
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	1.56	0.54			
Nitrate as N	mg/l	0.01	ISO 17025	1.31	2.45			
Nitrate as NO ₃	mg/l	0.05	ISO 17025	5.80	10.8			
Nitrite as N	µg/l	1	ISO 17025	5.6	30			
Nitrite as NO ₂	µg/l	5	ISO 17025	19	98			
Alkalinity	mgCaCO ₃ /l	3	ISO 17025	30	120			
Chemical Oxygen Demand (Total)	mg/l	2	ISO 17025	14	13			
Carbonate	mgCaCO ₃ /l	10	NONE	30	120			
Dissolved Carbon Dioxide	mg/l	1	NONE	9.2	62			
Dissolved Oxygen	mg/l	1	NONE	7.6	7.7			

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01			

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16			
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Analytical Report Number: 18-76166

Project / Site name: Burrows Yard

Lab Sample Number				908903	908904			
Sample Reference				ABH03S	ABH03D			
Sample Number				None Supplied	None Supplied			
Depth (m)				5.50	8.00			
Date Sampled				14/02/2018	14/02/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.44	0.28			
Boron (dissolved)	µg/l	10	ISO 17025	140	120			
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.14			
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.9	1.1			
Copper (dissolved)	µg/l	0.5	ISO 17025	4.8	4.3			
Fe ²⁺	mg/l	0.2	NONE	< 0.20	< 0.20			
Fe ³⁺	mg/l	0.2	NONE	< 0.20	< 0.20			
Iron (dissolved)	mg/l	0.004	ISO 17025	0.006	0.005			
Lead (dissolved)	µg/l	0.2	ISO 17025	1.6	1.9			
Manganese (dissolved)	µg/l	0.05	ISO 17025	2800	3000			
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05			
Mn (II)	mg/l	0.02	NONE	6.53	5.41			
Mn (IV)	mg/l	0.02	NONE	17.1	20.7			
Nickel (dissolved)	µg/l	0.5	ISO 17025	3.4	8.1			
Phosphorus (dissolved)	µg/l	20	ISO 17025	< 20.0	< 20.0			
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	< 0.6			
Zinc (dissolved)	µg/l	0.5	ISO 17025	57	140			
Iron (total)	mg/l	0.004	ISO 17025	0.054	0.015			

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0			
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0			
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0			
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0			



Analytical Report Number: 18-76166

Project / Site name: Burrows Yard

Lab Sample Number				908903	908904			
Sample Reference				ABH03S	ABH03D			
Sample Number				None Supplied	None Supplied			
Depth (m)				5.50	8.00			
Date Sampled				14/02/2018	14/02/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	µg/l	10	ISO 17025	< 10.0	< 10.0			
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TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10			

TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0			
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10			
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10			

Environmental Forensics

Gases

Methane	mg/l	0.1	NONE	< 0.1	< 0.1			
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U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 18-76166

Project / Site name: Burrows Yard

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Alkalinity in Water	Determination of Alkalinity by discrete analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Carbonate in water	Determination of Carbonate by titration using 0.1M HCl by discrete analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B-PL	W	NONE
Chemical Oxygen Demand in Water (Total)	Determination of total COD in water by reflux oxidation with acidified K ₂ Cr ₂ O ₇ followed by colorimetry. Accredited matrices: SW, PW, GW.	HACH DR/890 Colorimeter Procedures Manual (48470-22) (Ref 0170.2)	L065-PL	W	ISO 17025
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Dissolved Oxygen in water	Determination of dissolved oxygen.	In-house method	L086-PL	W	NONE
Iron (II) and Iron (III) in water	Determination of Iron II and Iron II in water by coloration with phenanthroline.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Manganese II and IV in Water	Analysis of manganese compounds by periodate oxidation method.	In house method and calculation based on standard methods for the examination of water and waste water.	L090-PL	W	NONE
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-OES (total)	Determination of metals in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW (Al, Fe, Cu, Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025

Iss No 18-76166-1 Burrows Yard 10013618

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

Page 5 of 6



Analytical Report Number : 18-76166

Project / Site name: Burrows Yard

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
PRO (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW, GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
TO - Gases C1-C4	Determination of volatile hydrocarbons by GC-MS Headspace.	In-house method		W	NONE
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

**Maxime Peyre**

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Analytical Report Number : 18-79033

Replaces Analytical Report Number : 18-79033, issue no. 1

Project / Site name:	Burrows Yard	Samples received on:	15/03/2018
Your job number:	10013618	Samples instructed on:	15/03/2018
Your order number:		Analysis completed by:	03/04/2018
Report Issue Number:	2	Report issued on:	03/04/2018
Samples Analysed:	8 water samples		

Signed:

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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Analytical Report Number: 18-79033

Project / Site name: Burrows Yard

Lab Sample Number				925329	925330	925331	925332	925333
Sample Reference				ABH01S	ABH01D	ABH02S	ABH02D	ABH03S
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.50	7.00	4.50	7.00	5.50
Date Sampled				12/03/2018	12/03/2018	13/03/2018	13/03/2018	12/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

	pH Units	N/A	ISO 17025	7.1	6.6	6.7	6.3	6.8
Sulphate as SO ₄	µg/l	45	ISO 17025	16900	44600	96500	48500	91500
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ammonium as NH ₄	µg/l	15	ISO 17025	2300	< 15	400	22	600
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	2.62	1.11	0.94	0.42	1.74
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	2.82	1.18	0.97	0.57	1.88
Nitrate as N	mg/l	0.01	ISO 17025	0.04	2.27	2.90	4.75	1.27
Nitrate as NO ₃	mg/l	0.05	ISO 17025	0.16	10.0	12.9	21.0	5.63
Nitrite as N	µg/l	1	ISO 17025	2.4	2.5	< 1.0	< 1.0	1.0
Nitrite as NO ₂	µg/l	5	ISO 17025	7.8	8.2	< 5.0	< 5.0	< 5.0
Alkalinity	mgCaCO ₃ /l	3	ISO 17025	240	120	92	42	160
Carbonate	mgCaCO ₃ /l	10	NONE	240	120	92	42	160
Dissolved Carbon Dioxide	mg/l	1	NONE	43	64	38	44	52
Dissolved Oxygen	mg/l	1	NONE	9.3	9.3	9.5	9.5	11

Speciated PAHs

	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16
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Analytical Report Number: 18-79033

Project / Site name: Burrows Yard

Lab Sample Number				925329	925330	925331	925332	925333
Sample Reference				ABH01S	ABH01D	ABH02S	ABH02D	ABH03S
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.50	7.00	4.50	7.00	5.50
Date Sampled				12/03/2018	12/03/2018	13/03/2018	13/03/2018	12/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Iron (total)	mg/l	0.004	ISO 17025	17	0.82	1.5	1.3	2.6
Arsenic (dissolved)	µg/l	0.15	ISO 17025	3.94	0.18	0.16	< 0.15	0.30
Boron (dissolved)	µg/l	10	ISO 17025	160	110	94	76	160
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.05	< 0.02	0.03	< 0.02
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	0.4	< 0.2	< 0.2	0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	0.8	2.0	1.6	2.7	1.2
Iron (dissolved)	mg/l	0.004	ISO 17025	0.78	0.17	0.005	< 0.004	0.082
Fe ²⁺	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Fe ³⁺	mg/l	0.2	NONE	0.78	< 0.20	< 0.20	< 0.20	< 0.20
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.06	ISO 17025	3200	1300	1000	630	2300
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	< 0.5	2.3	1.9	1.2	3.7
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.0	1.3	1.3	1.7	0.9
Zinc (dissolved)	µg/l	0.5	ISO 17025	< 0.5	3.8	21	7.7	44

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
TPH1 (C10 - C40)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10



Analytical Report Number: 18-79033

Project / Site name: Burrows Yard

Lab Sample Number				925329	925330	925331	925332	925333
Sample Reference				ABH01S	ABH01D	ABH02S	ABH02D	ABH03S
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				5.50	7.00	4.50	7.00	5.50
Date Sampled				12/03/2018	12/03/2018	13/03/2018	13/03/2018	12/03/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Environmental Forensics

Gases

Methane	mg/l	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
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U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 18-79033

Project / Site name: Burrows Yard

Lab Sample Number				925334	925335	925336		
Sample Reference				ABH03D	ABH04	DUP		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				8.00	4.00	None Supplied		
Date Sampled				12/03/2018	12/03/2018	12/03/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

General Inorganics

pH	pH Units	N/A	ISO 17025	6.5	6.9	7.1		
Sulphate as SO ₄	µg/l	45	ISO 17025	117000	45000	96500		
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0		
Ammonium as NH ₄	µg/l	15	ISO 17025	410	310	130		
Dissolved Organic Carbon (DOC)	mg/l	0.1	NONE	1.24	3.55	1.62		
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	1.26	3.79	1.72		
Nitrate as N	mg/l	0.01	ISO 17025	2.48	< 0.01	1.26		
Nitrate as NO ₃	mg/l	0.05	ISO 17025	11.0	< 0.05	5.57		
Nitrite as N	µg/l	1	ISO 17025	2.6	9.1	< 1.0		
Nitrite as NO ₂	µg/l	5	ISO 17025	8.5	30	< 5.0		
Alkalinity	mgCaCO ₃ /l	3	ISO 17025	110	380	160		
Carbonate	mgCaCO ₃ /l	10	NONE	110	380	160		
Dissolved Carbon Dioxide	mg/l	1	NONE	71	100	27		
Dissolved Oxygen	mg/l	1	NONE	11	9.6	11		

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01		

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16		
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Analytical Report Number: 18-79033

Project / Site name: Burrows Yard

Lab Sample Number				925334	925335	925336		
Sample Reference				ABH03D	ABH04	DUP		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				8.00	4.00	None Supplied		
Date Sampled				12/03/2018	12/03/2018	12/03/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Iron (total)	mg/l	0.004	ISO 17025	0.65	11	1.3		
Arsenic (dissolved)	µg/l	0.15	ISO 17025	< 0.15	1.08	0.19		
Boron (dissolved)	µg/l	10	ISO 17025	120	240	170		
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.11	< 0.02	0.03		
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0		
Chromium (III)	µg/l	1	NONE	< 1.0	< 1.0	< 1.0		
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.4	< 0.2	0.2		
Copper (dissolved)	µg/l	0.5	ISO 17025	1.1	1.9	2.4		
Iron (dissolved)	mg/l	0.004	ISO 17025	0.12	0.38	0.069		
Fe ²⁺	mg/l	0.2	NONE	< 0.20	< 0.20	< 0.20		
Fe ³⁺	mg/l	0.2	NONE	< 0.20	0.38	< 0.20		
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2		
Manganese (dissolved)	µg/l	0.06	ISO 17025	3200	1800	2200		
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05		
Nickel (dissolved)	µg/l	0.5	ISO 17025	7.5	1.5	3.3		
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.2	1.0	1.1		
Zinc (dissolved)	µg/l	0.5	ISO 17025	140	6.0	46		

Monoaromatics

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
o-xylene	µg/l	1	ISO 17025	< 1.0	3.4	< 1.0		
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	µg/l	10	ISO 17025	< 10.0	< 10.0	< 10.0		
TPH1 (C10 - C40)	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0		
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	3.4	< 1.0		
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10		
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10		



Analytical Report Number: 18-79033

Project / Site name: Burrows Yard

Lab Sample Number				925334	925335	925336		
Sample Reference				ABH03D	ABH04	DUP		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				8.00	4.00	None Supplied		
Date Sampled				12/03/2018	12/03/2018	12/03/2018		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status					

Environmental Forensics

Gases

Methane	mg/l	0.1	NONE	< 0.1	< 0.1	< 0.1		
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U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 18-79033

Project / Site name: Burrows Yard

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Alkalinity in Water	Determination of Alkalinity by discrete analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025
Ammonium as NH ₄ in water	Determination of Ammonium/Ammonia/Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Carbonate in water	Determination of Carbonate by titration using 0.1M HCl by discrete analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082B-PL	W	NONE
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Dissolved Carbon Dioxide in water	Determination of dissolved carbon dioxide in water by colorimetry and calculation.	In house method - based on Alkalinity	L025-PL	W	NONE
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Dissolved Oxygen in water	Determination of dissolved oxygen.	In-house method	L086-PL	W	NONE
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Iron (II) and Iron (III) in water	Determination of Iron II and Iron III in water by coloration with phenanthroline and calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L079-PL	W	NONE
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in water by ICP-OES (total)	Determination of metals in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW (Al, Fe, Cu, Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025

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

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Analytical Report Number : 18-79033

Project / Site name: Burrows Yard

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
PRO (Waters)	Determination of hydrocarbons C6-C10 by headspace GC-MS. Accredited Matrices SW, PW, GW.	In-house method based on USEPA8260	L088-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
TO - Gases C1-C4	Determination of volatile hydrocarbons by GC-MS Headspace.	In-house method		W	NONE
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	NONE
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Sample Deviation Report



Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
ABH01D		W	18-79033	925330	c	Dissolved Oxygen in water	L086-PL	c
ABH01S		W	18-79033	925329	c	Dissolved Oxygen in water	L086-PL	c
ABH02D		W	18-79033	925332	c	Dissolved Oxygen in water	L086-PL	c
ABH02S		W	18-79033	925331	c	Dissolved Oxygen in water	L086-PL	c
ABH03D		W	18-79033	925334	c	Dissolved Oxygen in water	L086-PL	c
ABH03S		W	18-79033	925333	c	Dissolved Oxygen in water	L086-PL	c
ABH04		W	18-79033	925335	c	Dissolved Oxygen in water	L086-PL	c
DUP		W	18-79033	925336	c	Dissolved Oxygen in water	L086-PL	c

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