

London Borough of Richmond PAH Survey

Annual Mean B[a]P Concentration: **0.18** ng m⁻³

N.D = None detected

UKAS Analysis of USEPA-16 BY GC-MS

Apr-04

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0404								ng m⁻³
	Naphthalene	27/04/2004	09:50	06/05/2004	09:30	176.37	140	0.79
	Acenaphthylene	27/04/2004	09:50	06/05/2004	09:30	176.37	38	0.22
	Acenaphthene	27/04/2004	09:50	06/05/2004	09:30	176.37	51	0.29
	Fluorene	27/04/2004	09:50	06/05/2004	09:30	176.37	210	1.19
	Phenanthrene	27/04/2004	09:50	06/05/2004	09:30	176.37	2900	16.44
	Anthracene	27/04/2004	09:50	06/05/2004	09:30	176.37	130	0.74
	Fluoranthene	27/04/2004	09:50	06/05/2004	09:30	176.37	720	4.08
	Pyrene	27/04/2004	09:50	06/05/2004	09:30	176.37	520	2.95
	Benz(a)anthracene	27/04/2004	09:50	06/05/2004	09:30	176.37	20	0.11
	Chrysene	27/04/2004	09:50	06/05/2004	09:30	176.37	48	0.27
	Benzo(b)fluoranthene	27/04/2004	09:50	06/05/2004	09:30	176.37	26	0.15
	Benzo(k)fluoranthene	27/04/2004	09:50	06/05/2004	09:30	176.37	25	0.14
	Benzo(a)pyrene	27/04/2004	09:50	06/05/2004	09:30	176.37	20	0.11
	Indeno(1,2,3-cd)pyrene	27/04/2004	09:50	06/05/2004	09:30	176.37	30	0.17
	Dibenz(a,h)anthracene	27/04/2004	09:50	06/05/2004	09:30	176.37	1.4	0.01
	Benzo(g,h,i)perylene	27/04/2004	09:50	06/05/2004	09:30	176.37	44	0.25
	Total PAH (ng m³)							27.91

May-04

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0504								ng m⁻³
	Naphthalene	20/05/2004	10:05	03/06/2004	10:10	274.85	26	0.09
	Acenaphthylene	20/05/2004	10:05	03/06/2004	10:10	274.85	7.2	0.03
	Acenaphthene	20/05/2004	10:05	03/06/2004	10:10	274.85	16	0.06
	Fluorene	20/05/2004	10:05	03/06/2004	10:10	274.85	79	0.29
	Phenanthrene	20/05/2004	10:05	03/06/2004	10:10	274.85	860	3.13
	Anthracene	20/05/2004	10:05	03/06/2004	10:10	274.85	20	0.07
	Fluoranthene	20/05/2004	10:05	03/06/2004	10:10	274.85	470	1.71

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UKAS Analysis of USEPA-16 BY GC-MS

Jul-04

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0704								ng m-3
	Naphthalene	22/07/2004	11:09	03/08/2004	17:00	258.29	110	0.43
	Acenaphthylene	22/07/2004	11:09	03/08/2004	17:00	258.29	15	0.06
	Acenaphthene	22/07/2004	11:09	03/08/2004	17:00	258.29	42	0.16
	Fluorene	22/07/2004	11:09	03/08/2004	17:00	258.29	120	0.46
	Phenanthrene	22/07/2004	11:09	03/08/2004	17:00	258.29	1100	4.26
	Anthracene	22/07/2004	11:09	03/08/2004	17:00	258.29	17	0.07
	Fluoranthene	22/07/2004	11:09	03/08/2004	17:00	258.29	930	3.60
	Pyrene	22/07/2004	11:09	03/08/2004	17:00	258.29	470	1.82
	Benz(a)anthracene	22/07/2004	11:09	03/08/2004	17:00	258.29	14	0.05
	Chrysene	22/07/2004	11:09	03/08/2004	17:00	258.29	45	0.17
	Benzo(b)fluoranthene	22/07/2004	11:09	03/08/2004	17:00	258.29	36	0.14
	Benzo(k)fluoranthene	22/07/2004	11:09	03/08/2004	17:00	258.29	8.3	0.03
	Benzo(a)pyrene	22/07/2004	11:09	03/08/2004	17:00	258.29	9.8	0.04
	Indeno(1,2,3-cd)pyrene	22/07/2004	11:09	03/08/2004	17:00	258.29	13	0.05
	Dibenz(a,h)anthracene	22/07/2004	11:09	03/08/2004	17:00	258.29	2.4	0.01
	Benzo(g,h,i)perylene	22/07/2004	11:09	03/08/2004	17:00	258.29	22	0.09
	Total PAH (ng m3)							11.44

Aug-04

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0804								ng m-3
	Naphthalene	26/08/2004	10:00	13/09/2004	10:55	380.53	78	0.20
	Acenaphthylene	26/08/2004	10:00	13/09/2004	10:55	380.53	25	0.07
	Acenaphthene	26/08/2004	10:00	13/09/2004	10:55	380.53	15	0.04
	Fluorene	26/08/2004	10:00	13/09/2004	10:55	380.53	52	0.14
	Phenanthrene	26/08/2004	10:00	13/09/2004	10:55	380.53	1300	3.42

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	Anthracene	26/08/2004	10:00	13/09/2004	10:55	380.53	67	0.18
	Fluoranthene	26/08/2004	10:00	13/09/2004	10:55	380.53	1700	4.47
	Pyrene	26/08/2004	10:00	13/09/2004	10:55	380.53	1200	3.15
	Benzo(a)anthracene	26/08/2004	10:00	13/09/2004	10:55	380.53	62	0.16
	Chrysene	26/08/2004	10:00	13/09/2004	10:55	380.53	140	0.37
	Benzo(b)fluoranthene	26/08/2004	10:00	13/09/2004	10:55	380.53	150	0.39
	Benzo(k)fluoranthene	26/08/2004	10:00	13/09/2004	10:55	380.53	36	0.09
	Benzo(a)pyrene	26/08/2004	10:00	13/09/2004	10:55	380.53	23	0.06
	Indeno(1,2,3-cd)pyrene	26/08/2004	10:00	13/09/2004	10:55	380.53	73	0.19
	Dibenz(a,h)anthracene	26/08/2004	10:00	13/09/2004	10:55	380.53	12	0.03
	Benzo(g,h,i)perylene	26/08/2004	10:00	13/09/2004	10:55	380.53	91	0.24
	Total PAH (ng m3)							13.20

Sep-04

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour ng m ⁻³
RIC0904								
	Naphthalene	30/09/2004	10:15	13/10/2004	09:30	273.59	120	0.44
	Acenaphthylene	30/09/2004	10:15	13/10/2004	09:30	273.59	42	0.15
	Acenaphthene	30/09/2004	10:15	13/10/2004	09:30	273.59	29	0.11
	Fluorene	30/09/2004	10:15	13/10/2004	09:30	273.59	110	0.40
	Phenanthrene	30/09/2004	10:15	13/10/2004	09:30	273.59	1100	4.02
	Anthracene	30/09/2004	10:15	13/10/2004	09:30	273.59	930	3.40
	Fluoranthene	30/09/2004	10:15	13/10/2004	09:30	273.59	750	2.74
	Pyrene	30/09/2004	10:15	13/10/2004	09:30	273.59	570	2.08
	Benzo(a)anthracene	30/09/2004	10:15	13/10/2004	09:30	273.59	16	0.06
	Chrysene	30/09/2004	10:15	13/10/2004	09:30	273.59	39	0.14
	Benzo(b)fluoranthene	30/09/2004	10:15	13/10/2004	09:30	273.59	76	0.28
	Benzo(k)fluoranthene	30/09/2004	10:15	13/10/2004	09:30	273.59	13	0.05
	Benzo(a)pyrene	30/09/2004	10:15	13/10/2004	09:30	273.59	21	0.08
	Indeno(1,2,3-cd)pyrene	30/09/2004	10:15	13/10/2004	09:30	273.59	0.15	0.00
	Dibenz(a,h)anthracene	30/09/2004	10:15	13/10/2004	09:30	273.59	<0.1	

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	Benzo(g,h,i)perylene	30/09/2004	10:15	13/10/2004	09:30	273.59	40	0.15
	Total PAH (ng m3)							14.09

Oct-04

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC1004								ng m-3
	Naphthalene	26/10/2004	09:35	09/11/2004	11:25	296.96	140	0.47
	Acenaphthylene	26/10/2004	09:35	09/11/2004	11:25	296.96	39	0.13
	Acenaphthene	26/10/2004	09:35	09/11/2004	11:25	296.96	20	0.07
	Fluorene	26/10/2004	09:35	09/11/2004	11:25	296.96	110	0.37
	Phenanthrene	26/10/2004	09:35	09/11/2004	11:25	296.96	2000	6.74
	Anthracene	26/10/2004	09:35	09/11/2004	11:25	296.96	190	0.64
	Fluoranthene	26/10/2004	09:35	09/11/2004	11:25	296.96	830	2.80
	Pyrene	26/10/2004	09:35	09/11/2004	11:25	296.96	680	2.29
	Benzo(a)anthracene	26/10/2004	09:35	09/11/2004	11:25	296.96	82	0.28
	Chrysene	26/10/2004	09:35	09/11/2004	11:25	296.96	140	0.47
	Benzo(b)fluoranthene	26/10/2004	09:35	09/11/2004	11:25	296.96	220	0.74
	Benzo(k)fluoranthene	26/10/2004	09:35	09/11/2004	11:25	296.96	68	0.23
	Benzo(a)pyrene	26/10/2004	09:35	09/11/2004	11:25	296.96	81	0.27
	Indeno(1,2,3-cd)pyrene	26/10/2004	09:35	09/11/2004	11:25	296.96	120	0.40
	Dibenz(a,h)anthracene	26/10/2004	09:35	09/11/2004	11:25	296.96	22	0.07
	Benzo(g,h,i)perylene	26/10/2004	09:35	09/11/2004	11:25	296.96	170	0.57
	Total PAH (ng m3)							16.54

Nov-04

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC1104								ng m-3
	Naphthalene	24/11/2004	11:45	08/12/2004	11:30	295.12	190	0.64
	Acenaphthylene	24/11/2004	11:45	08/12/2004	11:30	295.12	190	0.64
	Acenaphthene	24/11/2004	11:45	08/12/2004	11:30	295.12	110	0.37

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	Fluorene	24/11/2004	11:45	08/12/2004	11:30	295.12	300	1.02
	Phenanthrene	24/11/2004	11:45	08/12/2004	11:30	295.12	2900	9.83
	Anthracene	24/11/2004	11:45	08/12/2004	11:30	295.12	330	1.12
	Fluoranthene	24/11/2004	11:45	08/12/2004	11:30	295.12	940	3.19
	Pyrene	24/11/2004	11:45	08/12/2004	11:30	295.12	880	2.98
	Benz(a)anthracene	24/11/2004	11:45	08/12/2004	11:30	295.12	200	0.68
	Chrysene	24/11/2004	11:45	08/12/2004	11:30	295.12	250	0.85
	Benzo(b)fluoranthene	24/11/2004	11:45	08/12/2004	11:30	295.12	390	1.32
	Benzo(k)fluoranthene	24/11/2004	11:45	08/12/2004	11:30	295.12	140	0.47
	Benzo(a)pyrene	24/11/2004	11:45	08/12/2004	11:30	295.12	240	0.81
	Indeno(1,2,3-cd)pyrene	24/11/2004	11:45	08/12/2004	11:30	295.12	240	0.81
	Dibenz(a,h)anthracene	24/11/2004	11:45	08/12/2004	11:30	295.12	37	0.13
	Benzo(g,h,i)perylene	24/11/2004	11:45	08/12/2004	11:30	295.12	320	1.08
	Total PAH (ng m3)							25.95

Dec-04

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC1204								ng m-3
	Naphthalene	05/01/2005	11:20	11/01/2005	11:35	126.80	83	0.65
	Acenaphthylene	05/01/2005	11:20	11/01/2005	11:35	126.80	27	0.21
	Acenaphthene	05/01/2005	11:20	11/01/2005	11:35	126.80	26	0.21
	Fluorene	05/01/2005	11:20	11/01/2005	11:35	126.80	90	0.71
	Phenanthrene	05/01/2005	11:20	11/01/2005	11:35	126.80	880	6.94
	Anthracene	05/01/2005	11:20	11/01/2005	11:35	126.80	82	0.65
	Fluoranthene	05/01/2005	11:20	11/01/2005	11:35	126.80	280	2.21
	Pyrene	05/01/2005	11:20	11/01/2005	11:35	126.80	280	2.21
	Benz(a)anthracene	05/01/2005	11:20	11/01/2005	11:35	126.80	8.4	0.07
	Chrysene	05/01/2005	11:20	11/01/2005	11:35	126.80	29	0.23
	Benzo(b)fluoranthene	05/01/2005	11:20	11/01/2005	11:35	126.80	26	0.21
	Benzo(k)fluoranthene	05/01/2005	11:20	11/01/2005	11:35	126.80	6.3	0.05
	Benzo(a)pyrene	05/01/2005	11:20	11/01/2005	11:35	126.80	8.9	0.07

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UKAS Analysis of USEPA-16 BY GC-MS

	Indeno(1,2,3-cd)pyrene	05/01/2005	11:20	11/01/2005	11:35	126.80	7.7	0.06
	Dibenz(a,h)anthracene	05/01/2005	11:20	11/01/2005	11:35	126.80	< 0.06	
	Benzo(g,h,i)perylene	05/01/2005	11:20	11/01/2005	11:35	126.80	20	0.16
	Total PAH (ng m3)							14.62

Jan-05

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0105								ng m-3
	Naphthalene	27/01/2005	11:20	09/02/2005	10:45	273.74	260	0.95
	Acenaphthylene	27/01/2005	11:20	09/02/2005	10:45	273.74	37	0.14
	Acenaphthene	27/01/2005	11:20	09/02/2005	10:45	273.74	25	0.09
	Fluorene	27/01/2005	11:20	09/02/2005	10:45	273.74	170	0.62
	Phenanthrene	27/01/2005	11:20	09/02/2005	10:45	273.74	2700	9.86
	Anthracene	27/01/2005	11:20	09/02/2005	10:45	273.74	170	0.62
	Fluoranthene	27/01/2005	11:20	09/02/2005	10:45	273.74	1000	3.65
	Pyrene	27/01/2005	11:20	09/02/2005	10:45	273.74	840	3.07
	Benz(a)anthracene	27/01/2005	11:20	09/02/2005	10:45	273.74	90	0.33
	Chrysene	27/01/2005	11:20	09/02/2005	10:45	273.74	150	0.55
	Benzo(b)fluoranthene	27/01/2005	11:20	09/02/2005	10:45	273.74	240	0.88
	Benzo(k)fluoranthene	27/01/2005	11:20	09/02/2005	10:45	273.74	52	0.19
	Benzo(a)pyrene	27/01/2005	11:20	09/02/2005	10:45	273.74	90	0.33
	Indeno(1,2,3-cd)pyrene	27/01/2005	11:20	09/02/2005	10:45	273.74	140	0.51
	Dibenz(a,h)anthracene	27/01/2005	11:20	09/02/2005	10:45	273.74	14	0.05
	Benzo(g,h,i)perylene	27/01/2005	11:20	09/02/2005	10:45	273.74	180	0.66
	Total PAH (ng m3)							22.50

Feb-05

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0205								ng m-3
	Naphthalene	24/02/2005	11:35	09/03/2005	10:44	273.50	130	0.48

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UKAS Analysis of USEPA-16 BY GC-MS

	Acenaphthylene	24/02/2005	11:35	09/03/2005	10:44	273.50	32	0.12
	Acenaphthene	24/02/2005	11:35	09/03/2005	10:44	273.50	38	0.14
	Fluorene	24/02/2005	11:35	09/03/2005	10:44	273.50	150	0.55
	Phenanthrene	24/02/2005	11:35	09/03/2005	10:44	273.50	1700	6.22
	Anthracene	24/02/2005	11:35	09/03/2005	10:44	273.50	90	0.33
	Fluoranthene	24/02/2005	11:35	09/03/2005	10:44	273.50	680	2.49
	Pyrene	24/02/2005	11:35	09/03/2005	10:44	273.50	540	1.97
	Benz(a)anthracene	24/02/2005	11:35	09/03/2005	10:44	273.50	69	0.25
	Chrysene	24/02/2005	11:35	09/03/2005	10:44	273.50	130	0.48
	Benzo(b)fluoranthene	24/02/2005	11:35	09/03/2005	10:44	273.50	200	0.73
	Benzo(k)fluoranthene	24/02/2005	11:35	09/03/2005	10:44	273.50	59	0.22
	Benzo(a)pyrene	24/02/2005	11:35	09/03/2005	10:44	273.50	75	0.27
	Indeno(1,2,3-cd)pyrene	24/02/2005	11:35	09/03/2005	10:44	273.50	110	0.40
	Dibenz(a,h)anthracene	24/02/2005	11:35	09/03/2005	10:44	273.50	16	0.06
	Benzo(g,h,i)perylene	24/02/2005	11:35	09/03/2005	10:44	273.50	150	0.55
	Total PAH (ng m3)							15.24

Mar-05

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0305								ng m-3
	Naphthalene	31/03/2005	10:15	12/04/2005	09:50	252.79	88	0.35
	Acenaphthylene	31/03/2005	10:15	12/04/2005	09:50	252.79	16	0.06
	Acenaphthene	31/03/2005	10:15	12/04/2005	09:50	252.79	32	0.13
	Fluorene	31/03/2005	10:15	12/04/2005	09:50	252.79	130	0.51
	Phenanthrene	31/03/2005	10:15	12/04/2005	09:50	252.79	1100	4.35
	Anthracene	31/03/2005	10:15	12/04/2005	09:50	252.79	19	0.08
	Fluoranthene	31/03/2005	10:15	12/04/2005	09:50	252.79	540	2.14
	Pyrene	31/03/2005	10:15	12/04/2005	09:50	252.79	360	1.42
	Benz(a)anthracene	31/03/2005	10:15	12/04/2005	09:50	252.79	22	0.09
	Chrysene	31/03/2005	10:15	12/04/2005	09:50	252.79	58	0.23
	Benzo(b)fluoranthene	31/03/2005	10:15	12/04/2005	09:50	252.79	56	0.22
	Benzo(k)fluoranthene	31/03/2005	10:15	12/04/2005	09:50	252.79	16	0.06

