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-06

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0406								**ng m-3**
	Naphthalene	27/04/2006	10:25	10/05/2006	11:30	256.23	52	0.20
	Acenaphthylene	27/04/2006	10:25	10/05/2006	11:30	256.23	12	0.05
	Acenaphthene	27/04/2006	10:25	10/05/2006	11:30	256.23	25	0.10
	Fluorene	27/04/2006	10:25	10/05/2006	11:30	256.23	120	0.47
	Phenanthrene	27/04/2006	10:25	10/05/2006	11:30	256.23	1300	5.07
	Anthracene	27/04/2006	10:25	10/05/2006	11:30	256.23	28	0.11
	Fluoranthene	27/04/2006	10:25	10/05/2006	11:30	256.23	530	2.07
	Pyrene	27/04/2006	10:25	10/05/2006	11:30	256.23	320	1.25
	Benz(a)anthracene	27/04/2006	10:25	10/05/2006	11:30	256.23	18	0.07
	Chrysene	27/04/2006	10:25	10/05/2006	11:30	256.23	48	0.19
	Benzo(b)fluoranthene	27/04/2006	10:25	10/05/2006	11:30	256.23	51	0.20
	Benzo(k)fluoranthene	27/04/2006	10:25	10/05/2006	11:30	256.23	15	0.06
	Benzo(a)pyrene	27/04/2006	10:25	10/05/2006	11:30	256.23	16	**0.06**
	Indeno(1,2,3-cd)pyrene	27/04/2006	10:25	10/05/2006	11:30	256.23	33	0.13
	Dibenz(a,h)anthracene	27/04/2006	10:25	10/05/2006	11:30	256.23	2.5	0.01
	Benzo(g,h,i)perylene	27/04/2006	10:25	10/05/2006	11:30	256.23	28	0.11
	Total PAH (ng m3)							**10.14**

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

May-06

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0506								**ng m-3**
	Naphthalene	25/05/2006	10:40	06/06/2006	14:17	238.66	<20	
	Acenaphthylene	25/05/2006	10:40	06/06/2006	14:17	238.66	3.5	0.01
	Acenaphthene	25/05/2006	10:40	06/06/2006	14:17	238.66	12	0.05
	Fluorene	25/05/2006	10:40	06/06/2006	14:17	238.66	67	0.28
	Phenanthrene	25/05/2006	10:40	06/06/2006	14:17	238.66	1100	4.61
	Anthracene	25/05/2006	10:40	06/06/2006	14:17	238.66	15	0.06
	Fluoranthene	25/05/2006	10:40	06/06/2006	14:17	238.66	430	1.80
	Pyrene	25/05/2006	10:40	06/06/2006	14:17	238.66	250	1.05
	Benz(a)anthracene	25/05/2006	10:40	06/06/2006	14:17	238.66	14	0.06
	Chrysene	25/05/2006	10:40	06/06/2006	14:17	238.66	36	0.15
	Benzo(b)fluoranthene	25/05/2006	10:40	06/06/2006	14:17	238.66	40	0.17
	Benzo(k)fluoranthene	25/05/2006	10:40	06/06/2006	14:17	238.66	7.9	0.03
	Benzo(a)pyrene	25/05/2006	10:40	06/06/2006	14:17	238.66	12	**0.05**
	Indeno(1,2,3-cd)pyrene	25/05/2006	10:40	06/06/2006	14:17	238.66	19	0.08
	Dibenz(a,h)anthracene	25/05/2006	10:40	06/06/2006	14:17	238.66	2	0.01
	Benzo(g,h,i)perylene	25/05/2006	10:40	06/06/2006	14:17	238.66	24	0.10
	Total PAH (ng m3)							**8.52**

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

Jun-06

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0606								**ng m-3**
	Naphthalene	20/06/2006	14:10	08/07/2006	13:50	353.28	100	0.28
	Acenaphthylene	20/06/2006	14:10	08/07/2006	13:50	353.28	6.4	0.02
	Acenaphthene	20/06/2006	14:10	08/07/2006	13:50	353.28	18	0.05
	Fluorene	20/06/2006	14:10	08/07/2006	13:50	353.28	66	0.19
	Phenanthrene	20/06/2006	14:10	08/07/2006	13:50	353.28	1100	3.11
	Anthracene	20/06/2006	14:10	08/07/2006	13:50	353.28	26	0.07
	Fluoranthene	20/06/2006	14:10	08/07/2006	13:50	353.28	770	2.18
	Pyrene	20/06/2006	14:10	08/07/2006	13:50	353.28	390	1.10
	Benz(a)anthracene	20/06/2006	14:10	08/07/2006	13:50	353.28	14	0.04
	Chrysene	20/06/2006	14:10	08/07/2006	13:50	353.28	33	0.09
	Benzo(b)fluoranthene	20/06/2006	14:10	08/07/2006	13:50	353.28	76	0.22
	Benzo(k)fluoranthene	20/06/2006	14:10	08/07/2006	13:50	353.28	8.2	0.02
	Benzo(a)pyrene	20/06/2006	14:10	08/07/2006	13:50	353.28	11	**0.03**
	Indeno(1,2,3-cd)pyrene	20/06/2006	14:10	08/07/2006	13:50	353.28	17	0.05
	Dibenz(a,h)anthracene	20/06/2006	14:10	08/07/2006	13:50	353.28	1.9	0.01
	Benzo(g,h,i)perylene	20/06/2006	14:10	08/07/2006	13:50	353.28	25	0.07
	Total PAH (ng m3)							**7.54**

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

Jul-06

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0706								**ng m-3**
	Naphthalene	26/07/2006	11:25	08/08/2006	14:35	257.93	31	0.12
	Acenaphthylene	26/07/2006	11:25	08/08/2006	14:35	257.93	7.6	0.03
	Acenaphthene	26/07/2006	11:25	08/08/2006	14:35	257.93	14	0.05
	Fluorene	26/07/2006	11:25	08/08/2006	14:35	257.93	85	0.33
	Phenanthrene	26/07/2006	11:25	08/08/2006	14:35	257.93	1500	5.82
	Anthracene	26/07/2006	11:25	08/08/2006	14:35	257.93	49	0.19
	Fluoranthene	26/07/2006	11:25	08/08/2006	14:35	257.93	720	2.79
	Pyrene	26/07/2006	11:25	08/08/2006	14:35	257.93	340	1.32
	Benz(a)anthracene	26/07/2006	11:25	08/08/2006	14:35	257.93	14	0.05
	Chrysene	26/07/2006	11:25	08/08/2006	14:35	257.93	28	0.11
	Benzo(b)fluoranthene	26/07/2006	11:25	08/08/2006	14:35	257.93	70	0.27
	Benzo(k)fluoranthene	26/07/2006	11:25	08/08/2006	14:35	257.93	8.6	0.03
	Benzo(a)pyrene	26/07/2006	11:25	08/08/2006	14:35	257.93	10	**0.04**
	Indeno(1,2,3-cd)pyrene	26/07/2006	11:25	08/08/2006	14:35	257.93	18	0.07
	Dibenz(a,h)anthracene	26/07/2006	11:25	08/08/2006	14:35	257.93	2	0.01
	Benzo(g,h,i)perylene	26/07/2006	11:25	08/08/2006	14:35	257.93	28	0.11
	Total PAH (ng m3)							**11.34**

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

Aug-06

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0806								**ng m-3**
	Naphthalene	16/08/2006	12:28	31/08/2006	10:40	293.15	120	0.41
	Acenaphthylene	16/08/2006	12:28	31/08/2006	10:40	293.15	4.7	0.02
	Acenaphthene	16/08/2006	12:28	31/08/2006	10:40	293.15	15	0.05
	Fluorene	16/08/2006	12:28	31/08/2006	10:40	293.15	49	0.17
	Phenanthrene	16/08/2006	12:28	31/08/2006	10:40	293.15	790	2.69
	Anthracene	16/08/2006	12:28	31/08/2006	10:40	293.15	18	0.06
	Fluoranthene	16/08/2006	12:28	31/08/2006	10:40	293.15	650	2.22
	Pyrene	16/08/2006	12:28	31/08/2006	10:40	293.15	380	1.30
	Benz(a)anthracene	16/08/2006	12:28	31/08/2006	10:40	293.15	15	0.05
	Chrysene	16/08/2006	12:28	31/08/2006	10:40	293.15	27	0.09
	Benzo(b)fluoranthene	16/08/2006	12:28	31/08/2006	10:40	293.15	32	0.11
	Benzo(k)fluoranthene	16/08/2006	12:28	31/08/2006	10:40	293.15	7	0.02
	Benzo(a)pyrene	16/08/2006	12:28	31/08/2006	10:40	293.15	6.9	**0.02**
	Indeno(1,2,3-cd)pyrene	16/08/2006	12:28	31/08/2006	10:40	293.15	18	0.06
	Dibenz(a,h)anthracene	16/08/2006	12:28	31/08/2006	10:40	293.15	1.8	0.01
	Benzo(g,h,i)perylene	16/08/2006	12:28	31/08/2006	10:40	293.15	25	0.09
	Total PAH (ng m3)							**7.37**

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

Sep-06

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0906								**ng m-3**
	Naphthalene	20/09/2006	14:35	03/10/2006	16:20	256.77	39	0.15
	Acenaphthylene	20/09/2006	14:35	03/10/2006	16:20	256.77	8.1	0.03
	Acenaphthene	20/09/2006	14:35	03/10/2006	16:20	256.77	15	0.06
	Fluorene	20/09/2006	14:35	03/10/2006	16:20	256.77	71	0.28
	Phenanthrene	20/09/2006	14:35	03/10/2006	16:20	256.77	860	3.35
	Anthracene	20/09/2006	14:35	03/10/2006	16:20	256.77	41	0.16
	Fluoranthene	20/09/2006	14:35	03/10/2006	16:20	256.77	670	2.61
	Pyrene	20/09/2006	14:35	03/10/2006	16:20	256.77	470	1.83
	Benz(a)anthracene	20/09/2006	14:35	03/10/2006	16:20	256.77	18	0.07
	Chrysene	20/09/2006	14:35	03/10/2006	16:20	256.77	61	0.24
	Benzo(b)fluoranthene	20/09/2006	14:35	03/10/2006	16:20	256.77	81	0.32
	Benzo(k)fluoranthene	20/09/2006	14:35	03/10/2006	16:20	256.77	8.2	0.03
	Benzo(a)pyrene	20/09/2006	14:35	03/10/2006	16:20	256.77	10	**0.04**
	Indeno(1,2,3-cd)pyrene	20/09/2006	14:35	03/10/2006	16:20	256.77	20	0.08
	Dibenz(a,h)anthracene	20/09/2006	14:35	03/10/2006	16:20	256.77	2.3	0.01
	Benzo(g,h,i)perylene	20/09/2006	14:35	03/10/2006	16:20	256.77	34	0.13
	Total PAH (ng m3)							**9.38**

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

Oct-06

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC1006								**ng m-3**
	Naphthalene	23/10/2006	12:25	06/11/2006	13:40	276.01	90	0.33
	Acenaphthylene	23/10/2006	12:25	06/11/2006	13:40	276.01	50	0.18
	Acenaphthene	23/10/2006	12:25	06/11/2006	13:40	276.01	24	0.09
	Fluorene	23/10/2006	12:25	06/11/2006	13:40	276.01	250	0.91
	Phenanthrene	23/10/2006	12:25	06/11/2006	13:40	276.01	2900	10.51
	Anthracene	23/10/2006	12:25	06/11/2006	13:40	276.01	270	0.98
	Fluoranthene	23/10/2006	12:25	06/11/2006	13:40	276.01	900	3.26
	Pyrene	23/10/2006	12:25	06/11/2006	13:40	276.01	720	2.61
	Benz(a)anthracene	23/10/2006	12:25	06/11/2006	13:40	276.01	240	0.87
	Chrysene	23/10/2006	12:25	06/11/2006	13:40	276.01	340	1.23
	Benzo(b)fluoranthene	23/10/2006	12:25	06/11/2006	13:40	276.01	540	1.96
	Benzo(k)fluoranthene	23/10/2006	12:25	06/11/2006	13:40	276.01	110	0.40
	Benzo(a)pyrene	23/10/2006	12:25	06/11/2006	13:40	276.01	210	**0.76**
	Indeno(1,2,3-cd)pyrene	23/10/2006	12:25	06/11/2006	13:40	276.01	310	1.12
	Dibenz(a,h)anthracene	23/10/2006	12:25	06/11/2006	13:40	276.01	33	0.12
	Benzo(g,h,i)perylene	23/10/2006	12:25	06/11/2006	13:40	276.01	260	0.94
	Total PAH (ng m3)							**26.26**

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

Nov-06

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC1106								**ng m-3**
	Naphthalene	16/11/2006	16:50	01/12/2006	13:30	291.90	<20	
	Acenaphthylene	16/11/2006	16:50	01/12/2006	13:30	291.90	17	0.06
	Acenaphthene	16/11/2006	16:50	01/12/2006	13:30	291.90	10	0.03
	Fluorene	16/11/2006	16:50	01/12/2006	13:30	291.90	57	0.20
	Phenanthrene	16/11/2006	16:50	01/12/2006	13:30	291.90	890	3.05
	Anthracene	16/11/2006	16:50	01/12/2006	13:30	291.90	40	0.14
	Fluoranthene	16/11/2006	16:50	01/12/2006	13:30	291.90	740	2.54
	Pyrene	16/11/2006	16:50	01/12/2006	13:30	291.90	610	2.09
	Benz(a)anthracene	16/11/2006	16:50	01/12/2006	13:30	291.90	30	0.10
	Chrysene	16/11/2006	16:50	01/12/2006	13:30	291.90	78	0.27
	Benzo(b)fluoranthene	16/11/2006	16:50	01/12/2006	13:30	291.90	92	0.32
	Benzo(k)fluoranthene	16/11/2006	16:50	01/12/2006	13:30	291.90	11	0.04
	Benzo(a)pyrene	16/11/2006	16:50	01/12/2006	13:30	291.90	24	**0.08**
	Indeno(1,2,3-cd)pyrene	16/11/2006	16:50	01/12/2006	13:30	291.90	43	0.15
	Dibenz(a,h)anthracene	16/11/2006	16:50	01/12/2006	13:30	291.90	5.9	0.02
	Benzo(g,h,i)perylene	16/11/2006	16:50	01/12/2006	13:30	291.90	60	0.21
	Total PAH (ng m3)							**9.28**

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

Dec-06

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC1206								**ng m-3**
	Naphthalene	20/12/2006	12:57	05/01/2007	15:10	316.08	100	0.32
	Acenaphthylene	20/12/2006	12:57	05/01/2007	15:10	316.08	11	0.03
	Acenaphthene	20/12/2006	12:57	05/01/2007	15:10	316.08	11	0.03
	Fluorene	20/12/2006	12:57	05/01/2007	15:10	316.08	46	0.15
	Phenanthrene	20/12/2006	12:57	05/01/2007	15:10	316.08	680	2.15
	Anthracene	20/12/2006	12:57	05/01/2007	15:10	316.08	26	0.08
	Fluoranthene	20/12/2006	12:57	05/01/2007	15:10	316.08	1000	3.16
	Pyrene	20/12/2006	12:57	05/01/2007	15:10	316.08	800	2.53
	Benz(a)anthracene	20/12/2006	12:57	05/01/2007	15:10	316.08	100	0.32
	Chrysene	20/12/2006	12:57	05/01/2007	15:10	316.08	200	0.63
	Benzo(b)fluoranthene	20/12/2006	12:57	05/01/2007	15:10	316.08	210	0.66
	Benzo(k)fluoranthene	20/12/2006	12:57	05/01/2007	15:10	316.08	44	0.14
	Benzo(a)pyrene	20/12/2006	12:57	05/01/2007	15:10	316.08	49	**0.16**
	Indeno(1,2,3-cd)pyrene	20/12/2006	12:57	05/01/2007	15:10	316.08	97	0.31
	Dibenz(a,h)anthracene	20/12/2006	12:57	05/01/2007	15:10	316.08	17	0.05
	Benzo(g,h,i)perylene	20/12/2006	12:57	05/01/2007	15:10	316.08	160	0.51
	Total PAH (ng m3)							**11.23**

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

Jan-07

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0107								**ng m-3**
	Naphthalene						Invalid	*
	Acenaphthylene							*
	Acenaphthene							*
	Fluorene							*
	Phenanthrene							*
	Anthracene							*
	Fluoranthene							*
	Pyrene							*
	Benz(a)anthracene							*
	Chrysene							*
	Benzo(b)fluoranthene							*
	Benzo(k)fluoranthene							*
	Benzo(a)pyrene							*
	Indeno(1,2,3-cd)pyrene							*
	Dibenz(a,h)anthracene							*
	Benzo(g,h,i)perylene							*
	Total PAH (ng m3)							

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

Feb-07

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0207								**ng m-3**
	Naphthalene	01/02/2007	12:21	12/02/2007	14:30	217.82	92	0.42
	Acenaphthylene	01/02/2007	12:21	12/02/2007	14:30	217.82	14	0.06
	Acenaphthene	01/02/2007	12:21	12/02/2007	14:30	217.82	10	0.05
	Fluorene	01/02/2007	12:21	12/02/2007	14:30	217.82	52	0.24
	Phenanthrene	01/02/2007	12:21	12/02/2007	14:30	217.82	1400	6.43
	Anthracene	01/02/2007	12:21	12/02/2007	14:30	217.82	140	0.64
	Fluoranthene	01/02/2007	12:21	12/02/2007	14:30	217.82	950	4.36
	Pyrene	01/02/2007	12:21	12/02/2007	14:30	217.82	810	3.72
	Benz(a)anthracene	01/02/2007	12:21	12/02/2007	14:30	217.82	120	0.55
	Chrysene	01/02/2007	12:21	12/02/2007	14:30	217.82	250	1.15
	Benzo(b)fluoranthene	01/02/2007	12:21	12/02/2007	14:30	217.82	350	1.61
	Benzo(k)fluoranthene	01/02/2007	12:21	12/02/2007	14:30	217.82	110	0.51
	Benzo(a)pyrene	01/02/2007	12:21	12/02/2007	14:30	217.82	110	**0.51**
	Indeno(1,2,3-cd)pyrene	01/02/2007	12:21	12/02/2007	14:30	217.82	170	0.78
	Dibenz(a,h)anthracene	01/02/2007	12:21	12/02/2007	14:30	217.82	29	0.13
	Benzo(g,h,i)perylene	01/02/2007	12:21	12/02/2007	14:30	217.82	270	1.24
	Total PAH (ng m3)							**22.39**

Mar-07

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

Sample No	Compound	Date On	Time On	Date Off	Time Off	Volume	Conc (ng)	Combined Particulate and Vapour
RIC0307								**ng m-3**
	Naphthalene	07/03/2007	15:50	21/03/2007	15:36	274.79	220	0.80
	Acenaphthylene	07/03/2007	15:50	21/03/2007	15:36	274.79	11	0.04
	Acenaphthene	07/03/2007	15:50	21/03/2007	15:36	274.79	24	0.09
	Fluorene	07/03/2007	15:50	21/03/2007	15:36	274.79	64	0.23
	Phenanthrene	07/03/2007	15:50	21/03/2007	15:36	274.79	900	3.28
	Anthracene	07/03/2007	15:50	21/03/2007	15:36	274.79	26	0.09
	Fluoranthene	07/03/2007	15:50	21/03/2007	15:36	274.79	690	2.51
	Pyrene	07/03/2007	15:50	21/03/2007	15:36	274.79	470	1.71
	Benz(a)anthracene	07/03/2007	15:50	21/03/2007	15:36	274.79	54	0.20
	Chrysene	07/03/2007	15:50	21/03/2007	15:36	274.79	120	0.44
	Benzo(b)fluoranthene	07/03/2007	15:50	21/03/2007	15:36	274.79	160	0.58
	Benzo(k)fluoranthene	07/03/2007	15:50	21/03/2007	15:36	274.79	39	0.14
	Benzo(a)pyrene	07/03/2007	15:50	21/03/2007	15:36	274.79	51	**0.19**
	Indeno(1,2,3-cd)pyrene	07/03/2007	15:50	21/03/2007	15:36	274.79	76	0.28
	Dibenz(a,h)anthracene	07/03/2007	15:50	21/03/2007	15:36	274.79	13	0.05
	Benzo(g,h,i)perylene	07/03/2007	15:50	21/03/2007	15:36	274.79	130	0.47
	Total PAH (ng m3)							**11.09**