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Supplement of

Airborne emission measurements of SO₂, NO_x and particles from individual ships using a sniffer technique

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IMO	Date	mean EF(SO ₂)		mean EF(NO _x)		NO _x Source (0:measurement, 1:STEAM, 2:default)	SOG [kn]	Number of traverses
		[g/kg_fuel] ± [%]		[g/kg_fuel] ± [%]				
7016474	29 September 2011	3.33	± 0.00	7.04	± 0.00	0		1
7225922	30 September 2011	22.86	± 4.36	73.52	± 24.06	0	10.0	2
7360162	11 June 2011	1.88	± 0.00	55.82	± 0.00	1	12.5	1
7420223	30 May 2012	3.14	± 53.87	65.68	± 36.38	0	10.6	3
7500451	30 May 2012	26.84	± 21.29	44.13	± 28.91	0		7
7637448	30 May 2012	2.95	± 121.12	66.96	± 35.28	0	12.2	8
7703259	15 June 2011	10.15	± 0.00	57.77	± 0.00	1	9.6	1
7721249	28 June 2011	11.32	± 36.64	80.04	± 0.21	1	12.2	4
7803190	13 June 2011	19.17	± 0.10	63.24	± 0.00	1	19.0	2
7928158	30 September 2011	25.73	± 0.00	46.26	± 0.00	0	8.6	1
8020599	29 June 2011	20.64	± 22.21	66.93	± 0.00	1	16.3	3
8131893	04 September 2012	32.87	± 26.23	46.00	± 12.66	0	8.2	4
8202381	30 May 2012	19.01	± 7.34	113.36	± 16.58	0	13.1	6
8207795	31 May 2012	22.28	± 6.14	93.87	± 6.25	0	13.2	4
8225498	11 June 2011	17.30	± 26.96	79.20	± 0.31	1	11.9	4
8302246	31 August 2012	16.74	± 0.00	93.95	± 0.00	1	14.6	1
8306981	29 September 2011	23.47	± 16.28	69.61	± 40.64	0	11.7	4
8312057	29 June 2011	14.86	± 24.25	91.86	± 0.63	1	12.3	6
8312100	11 June 2011	11.38	± 0.00	81.84	± 0.00	1	10.5	1
8401444	10 June 2011	14.29	± 21.12	69.81	± 0.21	1	17.6	2
8422034	15 June 2011	19.22	± 0.00	63.33	± 0.00	1	12.3	1
8512401	29 June 2011	16.58	± 40.91	96.14	± 1.17	1	17.9	10
8521804	30 September 2011	27.80	± 57.76	55.81	± 67.03	1	16.1	4
8608195	30 September 2011	25.05	± 5.03	95.34	± 15.92	0		3
8618358	04 September 2012	21.32	± 21.48	69.78	± 22.65	0	14.1	7
8618358	06 September 2012	15.92	± 20.72	101.62	± 29.57	0	16.8	2
8703232	13 June 2011	18.78	± 0.00	71.78	± 0.00	1	17.5	1
8705383	29 June 2011	16.25	± 0.00	72.30	± 0.00	1	16.3	1
8903155	13 June 2011	19.69	± 0.00	72.42	± 0.00	1	15.0	1
8917596	29 August 2012	16.26	± 22.39	78.98	± 3.85	0	15.8	3
8993887	02 October 2011	20.62	± 0.00	26.12	± 0.00	0		1

9010163	15 June 2011	19.88 ± 15.00	72.43 ± 1.69	1	17.5	4
9010163	29 June 2011	26.42 ± 93.88	70.90 ± 3.21	1	16.6	2
9010163	05 September 2012	16.58 ± 6.29	64.94 ± 12.40	0	17.1	3
9010917	15 June 2011	27.88 ± 0.00	66.19 ± 0.00	1	14.1	1
9016923	15 June 2011	20.37 ± 0.00	64.57 ± 0.00	1	11.9	1
9031260	28 September 2011	8.68 ± 87.54	34.19 ± 76.40	1	9.6	3
9046368	29 August 2012	16.17 ± 7.09	74.39 ± 12.00	0	13.2	3
9073086	01 June 2012	23.63 ± 26.63	48.77 ± 44.99	0	7.3	7
9077587	01 October 2011	21.28 ± 14.91	58.59 ± 12.99	0	10.8	3
9082879	01 October 2011	19.47 ± 27.77	74.94 ± 26.29	0	13.0	5
9104902	29 September 2011	-0.59 ± 84.55	83.68 ± 0.20	1	15.2	2
9106986	31 May 2012	40.55 ± 17.96	70.59 ± 1.20	1	9.1	6
9114737	30 September 2011	2.80 ± 139.93	22.80 ± 133.41	1	10.1	3
9115975	28 September 2011	13.69 ± 0.00	51.23 ± 0.00	0	11.7	1
9124471	01 June 2012	24.85 ± 11.42	55.89 ± 17.65	0		4
9131797	13 June 2011	19.03 ± 13.47	72.37 ± 0.00	1	15.1	3
9131797	27 June 2011	8.54 ± 0.00	72.37 ± 0.00	1	15.3	1
9131797	28 August 2012	18.63 ± 15.27	65.36 ± 22.49	0	15.4	4
9131797	06 September 2012	21.97 ± 3.57	66.97 ± 8.04	0	16.3	2
9133915	01 September 2012	17.61 ± 13.49	56.53 ± 9.10	0	16.1	4
9137997	04 September 2012	16.93 ± 9.65	52.45 ± 24.93	0	18.0	4
9144419	31 August 2012	14.54 ± 19.43	70.52 ± 0.14	1	14.7	4
9144512	05 September 2012	21.38 ± 0.00	69.38 ± 0.00	0	10.9	1
9158458	13 June 2011	20.64 ± 0.00	65.00 ± 0.00	2		1
9166845	01 June 2012	19.17 ± 15.15	70.54 ± 14.04	0	5.7	4
9168946	02 October 2011	13.75 ± 7.52	20.72 ± 13.76	0	0.4	2
9173329	30 June 2011	15.82 ± 0.00	67.09 ± 0.00	1	15.6	1
9177959	01 June 2012	21.83 ± 31.05	63.81 ± 26.72	0	13.9	4
9181077	01 September 2012	13.61 ± 0.00	73.23 ± 0.00	0	18.1	1
9182368	30 May 2012	25.13 ± 28.89	160.86 ± 24.95	0	17.1	5
9184029	01 June 2012	22.84 ± 34.10	79.67 ± 19.27	0	17.5	4
9187916	13 June 2011	18.05 ± 0.00	61.41 ± 0.00	1	11.9	1
9187916	28 September 2011	26.31 ± 19.52	74.01 ± 46.77	0	13.9	2
9188427	10 June 2011	12.98 ± 0.00	71.27 ± 0.00	1	19.4	1
9188518	03 September 2012	14.24 ± 9.97	49.93 ± 1.76	0	17.5	2

9194000	13 June 2011	17.24 ± 9.99	65.00 ± 0.00	2		4
9194012	13 June 2011	18.75 ± 18.08	65.00 ± 0.00	2		2
9194074	30 September 2011	22.70 ± 11.92	97.84 ± 25.57	0	11.9	4
9197521	31 August 2012	18.78 ± 7.47	66.93 ± 0.00	1	14.9	2
9198941	15 June 2011	42.42 ± 31.34	68.81 ± 0.23	1	17.3	3
9198941	29 June 2011	40.69 ± 12.51	76.92 ± 0.01	1	23.4	5
9202546	06 September 2012	21.94 ± 0.00	77.45 ± 0.00	0	15.3	1
9205964	31 May 2012	27.69 ± 5.28	61.79 ± 63.66	0	19.3	3
9207883	06 September 2012	17.15 ± 0.00	77.60 ± 0.00	0	18.1	1
9212589	11 June 2011	16.75 ± 0.00	64.85 ± 0.00	1	12.9	1
9217230	03 September 2012	20.51 ± 22.85	65.30 ± 20.65	0	16.3	9
9217230	06 September 2012	21.69 ± 0.62	69.21 ± 13.24	0	17.1	2
9217242	15 June 2011	17.36 ± 9.50	78.86 ± 0.00	1	18.1	2
9217242	27 June 2011	15.27 ± 0.00	78.85 ± 0.00	1	18.3	1
9217242	03 September 2012	16.84 ± 11.29	48.90 ± 10.65	0	17.2	6
9218014	31 May 2012	28.51 ± 8.47	60.63 ± 19.48	0	16.0	7
9222118	02 October 2011	8.07 ± 62.49	21.95 ± 28.82	0	7.4	2
9227326	31 May 2012	23.49 ± 8.68	83.34 ± 0.44	1	16.4	6
9230098	04 September 2012	21.31 ± 0.00	55.69 ± 0.00	0		1
9231846	30 September 2011	17.87 ± 16.49	38.47 ± 34.96	0		3
9233234	29 August 2012	26.95 ± 22.11	51.75 ± 14.07	0	10.4	3
9235892	16 June 2011	11.24 ± 19.52	74.44 ± 0.00	1	16.2	2
9244192	28 September 2011	19.03 ± 73.11	68.52 ± 10.55	1	15.7	4
9244295	01 October 2011	20.18 ± 35.73	28.53 ± 21.58	0	6.8	2
9250373	01 June 2012	5.55 ± 110.40	59.50 ± 59.84	0	10.6	4
9251652	11 June 2011	17.82 ± 0.00	75.64 ± 0.00	1	13.3	1
9256078	01 October 2011	20.31 ± 1.30	76.43 ± 2.81	0	13.6	3
9259599	10 June 2011	12.52 ± 15.55	101.94 ± 0.11	1	12.7	3
9259599	27 June 2011	16.53 ± 0.00	100.50 ± 0.00	1	12.0	1
9261401	01 October 2011	17.33 ± 17.23	58.00 ± 11.30	0	13.8	4
9265756	01 October 2011	22.28 ± 0.00	74.50 ± 0.00	0		1
9266853	13 June 2011	17.69 ± 0.00	104.37 ± 0.00	1	14.4	1
9268837	01 June 2012	21.88 ± 17.32	48.21 ± 14.49	0	10.7	3
9276561	11 June 2011	20.28 ± 0.00	91.47 ± 0.00	1	10.3	1
9276561	30 June 2011	15.06 ± 24.14	101.36 ± 0.19	1	12.9	7

9278234	28 September 2011	20.27	± 15.47	79.20	± 22.39	0	18.7	7
9278234	30 September 2011	15.00	± 24.78	61.92	± 30.67	0	20.5	4
9286554	31 May 2012	24.86	± 19.26	68.55	± 12.86	0	15.4	6
9288722	27 June 2011	15.14	± 25.45	104.41	± 0.00	1	14.4	3
9290684	27 June 2011	22.33	± 0.00	63.53	± 0.00	1	11.4	1
9290842	02 October 2011	20.99	± 55.28	89.24	± 67.35	0	14.4	5
9292101	15 June 2011	14.87	± 14.42	99.41	± 0.42	1	14.2	3
9294288	01 June 2012	19.07	± 36.17	51.02	± 50.27	0	12.4	5
9296195	31 August 2012	30.34	± 36.46	65.00	± 0.00	2		5
9297591	01 October 2011	19.37	± 0.00	45.44	± 0.00	0	17.0	1
9299733	01 September 2012	19.49	± 38.82	77.46	± 53.70	1	14.5	7
9301926	31 August 2012	13.80	± 38.59	83.02	± 0.17	1	15.1	4
9307671	31 August 2012	18.49	± 30.34	77.15	± 54.80	0	13.2	5
9312195	15 June 2011	17.32	± 25.78	72.14	± 0.30	1	16.7	3
9313216	01 October 2011	17.88	± 41.25	47.89	± 44.86	0		6
9317755	31 May 2012	18.59	± 13.37	98.54	± 0.18	1	13.1	4
9318486	05 September 2012	21.53	± 0.00	97.19	± 0.00	0	15.3	1
9319466	05 September 2012	15.76	± 16.73	78.89	± 14.60	0	20.2	4
9320556	28 June 2011	15.57	± 25.71	78.34	± 0.01	1	22.9	3
9321677	27 June 2011	15.73	± 8.52	104.46	± 0.03	1	15.3	4
9328637	03 September 2012	10.16	± 0.00	72.57	± 0.00	0	17.5	1
9332066	31 May 2012	23.60	± 9.49	99.08	± 0.15	1	14.2	3
9332157	02 October 2011	16.93	± 3.14	60.45	± 15.84	0	10.9	2
9336256	15 June 2011	18.72	± 0.15	77.38	± 0.00	1	21.5	2
9336505	30 September 2011	14.76	± 10.59	110.98	± 11.21	0	14.9	2
9340453	01 October 2011	22.33	± 14.65	64.23	± 17.31	0	14.0	4
9346689	15 June 2011	18.88	± 0.00	53.51	± 0.00	1	9.4	1
9349863	29 September 2011	23.43	± 18.38	63.42	± 3.84	0	18.6	4
9350721	30 September 2011	22.70	± 32.51	58.66	± 38.24	0	17.6	5
9352298	01 September 2012	12.92	± 84.93	45.77	± 41.60	0	12.7	5
9363027	31 May 2012	24.06	± 36.07	111.73	± 47.29	0	12.6	5
9366287	03 September 2012	18.34	± 0.00	77.39	± 0.00	0	13.1	1
9369007	15 June 2011	19.18	± 3.24	61.82	± 0.10	1	16.9	2
9376828	04 September 2012	22.72	± 0.89	133.92	± 2.04	0	11.3	2
9382190	31 May 2012	19.96	± 9.07	52.80	± 0.07	1	11.1	5

9382750	31 May 2012	43.86 ± 5.29	81.62 ± 0.00	1	10.7	5
9384095	16 June 2011	18.80 ± 14.68	73.13 ± 0.00	1	13.5	3
9384095	29 June 2011	14.78 ± 47.33	70.56 ± 0.22	1	12.6	4
9387425	29 June 2011	18.97 ± 6.60	84.60 ± 0.08	1	19.2	2
9388522	31 May 2012	21.12 ± 5.81	57.66 ± 0.60	1	13.4	3
9390305	29 September 2011	15.11 ± 67.93	43.36 ± 9.14	0	12.5	3
9396696	31 August 2012	16.95 ± 28.56	67.71 ± 0.15	1	15.2	4
9398448	02 October 2011	18.78 ± 0.00	53.41 ± 0.00	0		1
9399480	13 June 2011	22.40 ± 26.73	85.56 ± 0.41	1	12.5	4
9406582	11 June 2011	6.26 ± 0.00	53.85 ± 0.00	1	8.5	1
9407093	29 September 2011	27.06 ± 11.01	70.78 ± 69.68	0		3
9413420	15 June 2011	18.07 ± 24.08	84.45 ± 0.00	1	12.8	2
9417799	01 June 2012	21.85 ± 17.61	44.88 ± 4.42	0	13.1	4
9423449	30 June 2011	15.83 ± 18.20	61.37 ± 0.00	1	14.6	9
9430193	06 September 2012	18.93 ± 8.39	62.10 ± 40.70	0	14.3	3
9432220	01 October 2011	21.38 ± 28.24	73.68 ± 21.30	0	15.3	3
9440796	31 May 2012	21.95 ± 14.49	100.13 ± 16.75	0	13.4	5
9440801	01 June 2012	17.80 ± 12.61	39.92 ± 53.40	0	18.0	5
9447902	01 June 2012	22.87 ± 14.71	107.02 ± 56.74	0		4
9448035	06 September 2012	20.44 ± 9.19	57.17 ± 13.62	0		3
9451991	31 May 2012	26.28 ± 9.71	81.14 ± 10.27	0	16.4	7
9458080	02 October 2011	25.07 ± 21.34	57.71 ± 59.72	0		3
9458535	31 August 2012	15.40 ± 0.00	65.00 ± 0.00	2		1
9460241	29 June 2011	19.24 ± 30.71	61.37 ± 0.19	1	13.4	4
9461350	01 October 2011	15.04 ± 30.84	58.73 ± 36.59	0	9.4	5
9466350	31 August 2012	19.53 ± 9.66	76.86 ± 29.41	2		4
9480980	01 June 2012	21.34 ± 28.59	62.19 ± 41.08	0	11.8	4
9483499	31 August 2012	9.66 ± 4.99	65.00 ± 0.00	2		2
9483516	05 September 2012	17.07 ± 8.18	71.79 ± 23.01	0	12.7	2
9511533	13 June 2011	15.08 ± 40.92	88.95 ± 0.43	1	13.6	3
9511533	27 June 2011	18.66 ± 2.84	89.00 ± 0.00	1	15.3	2
9525900	31 May 2012	26.17 ± 8.86	65.00 ± 0.00	2		4
9536935	10 June 2011	17.81 ± 0.00	54.76 ± 0.00	1	13.1	1
9558907	30 September 2011	14.70 ± 0.00	73.69 ± 0.00	0	13.6	1
9567453	16 June 2011	18.75 ± 18.49	85.92 ± 0.24	1	13.1	2

9569994	<i>27 June 2011</i>	17.05	±	4.94	87.29	±	0.00	1	13.7	2
9591571	<i>01 October 2011</i>	16.71	±	15.67	52.49	±	18.86	0	15.4	3
9592288	<i>31 August 2012</i>	8.51	±	0.00	48.88	±	0.00	0		1
