Data set on soil CO_2 flux and air concentration of CO_2 and H_2S measured in the zone of 9 June 2020 Ciampino blowout (Rome)

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On June 2020, five soil CO_2 flux surveys were carried out in Ciampino, near to the boundary with Rome municipality (Fig. 1), where a gas blowout from a drilling occurred on 9 June 2020. In addition, in the late afternoon of 9 June and in the morning of 10 June, the CO_2 and H_2S air concentration was continuously recorded in two sites at 30 cm height from the ground.

Figure 1. The zone at the limit between Rome and Ciampino municipalities, where the June 2020 gas blowout occurred (red star) and where the data included in the present report were collected.

Soil CO_2 flux was measured with the accumulation chamber method time "0", by a portable fluxmeter manufactured by West Systems. The device is equipped with a CO_2 IR Licor-Li820 detector (single-beam dual-wavelength NDIR; range 0-2 vol.%; accuracy: 3 % of reading). The recorded dataset is reported in Table 1.

For air gas concentration measurements we used a Draeger X-am 7000 equipped with an IR CO_2 detector (0-100 vol. %; accuracy: 3 %) and an H_2S electrochemical cell sensor (range 0-1.000 ppm; accuracy 5 %). The data acquisition frequency was of 1 minute. The recorded dataset is reported in Table 2. First site is located 5 m east of the well; second site is located 6 m northwest of the well.

Table 1. Dataset of soil CO_2 flux measurements carried out at Ciampino on June 2020

X	Y	10 June	11 June	13 June	15 June	22 June
m	*m*	$g*m^{-2}day^{-1}$	$g*m^{-2}day^{-1}$	$g*m^{-2}day^{-1}$	$g*m^{-2}day^{-1}$	$g*m^{-2}day^{-1}$
302793	4630988	66528.0	6.3	6.6	3.8	21.4
302794	4630986	66794.0	7.0	4.2	7.7	11.5
302776	4630983	1127.0	11.2	9.9	10.4	10.2
302777	4630980	136.4	9.5	16.8	14.3	11.9
302774	4630988	861.0	43.4	35.6	19.0	15.5
302772	4630994	738.8	33.2	25.6	21.0	16.9
302779	4630997	439.2	36.4	21.4	25.2	18.8
302781	4630993	635.5	53.5	31.2	49.0	45.1
302784	4630987	2051.0	27.3	12.7	28.6	61.3
302786	4631001	177.7	11.3	12.6	53.8	21.4
302788	4630996	1002.1	58.9	53.1	14.7	39.6
302796	4630992	4986.7	239.4	110.0	77.6	26.3
302798	4630989	n.m.	405.3	77.7	73.2	22.4
302802	4630989	n.m.	218.8	68.0	60.3	38.4
302801	4630992	n.m.	117.9	76.2	84.8	84.3
302799	4630996	n.m.	267.7	116.2	82.6	35.1
302798	4630998	1330.7	57.4	63.6	26.2	14.6
302796	4631004	737.4	54.3	68.5	32.6	15.0
302803	4631008	513.5	168.7	67.6	51.2	39.6
302807	4631009	n.m.	n.m.	63.1	19.0	24.9
302812	4631012	n.m.	n.m.	43.4	24.2	22.8
302806	4631004	n.m.	72.1	15.4	21.7	17.2
302808	4630999	n.m.	111.4	56.0	41.3	26.2
302811	4630993	n.m.	63.0	30.8	35.0	22.7
302808	4631006	4.7	14.4	13.7	14.4	14.6
302809	4631003	4.5	29.4	15.1	15.1	13.2
302812	4630998	150.9	15.7	15.4	17.4	11.6
302814	4630994	994.3	16.4	11.3	17.6	11.8
302819	4630997	3.4	15.5	15.8	16.5	12.6
302817	4631000	6.5	18.3	16.8	13.3	15.4
302815	4631005	5.0	20.3	14.0	18.5	14.4
302814	4631009	3.5	23.8	14.0	17.9	11.6
302820	4631012	3.5	13.0	14.7	18.8	10.9
302824	4631006	1.5	11.2	12.7	12.5	11.3
302827	4631000	1.8	17.2	11.6	12.6	9.8
302834	4631002	1.5	44.2	18.2	16.0	11.2
302831	4631009	1.4	102.2	18.9	15.0	10.8
302828	4631015	1.9	71.4	25.6	19.0	9.2
302837	4631019	2.0	66.5	12.7	11.8	13.2
302840	4631012	1.0	39.2	9.2	15.4	15.7
302843	4631006	1.2	21.3	13.7	16.2	10.1
302853	4631010	0.9	21.0	18.8	14.4	10.5
302850	4631016	0.7	26.6	15.3	13.3	12.5
302846	4631023	0.9	25.2	16.5	11.2	13.7

302767	4630990	2.0	29.0	22.8	20.9	12.9
302756	4630987	2.4	27.0	20.4	22.4	12.6
302747	4630984	1.0	19.2	18.5	21.6	13.7
302740	4630982	0.8	n.m.	22.0	19.2	14.4
302743	4630974	1.2	n.m.	21.6	20.7	16.5
302746	4630968	1.9	n.m.	15.8	15.0	15.7
302753	4630971	1.4	n.m.	35.0	19.0	9.4
302751	4630977	1.3	n.m.	14.1	14.7	15.8
302759	4630980	1.3	n.m.	9.4	17.1	13.0
302761	4630973	2.0	n.m.	16.4	19.9	10.2
302772	4630978	2.9	n.m.	5.0	11.6	9.2
302857	4631007	1.5	n.m.	16.5	14.0	9.5
302852	4631004	0.8	n.m.	8.1	14.4	13.2
302843	4631001	1.4	n.m.	20.7	16.4	14.1
302834	4630997	2.8	n.m.	23.4	20.7	19.2
302829	4630995	2.8	n.m.	14.4	18.3	17.1
302822	4630992	6.5	n.m.	13.6	15.4	30.2
302813	4630989	12.9	n.m.	15.5	22.0	14.1
302805	4630985	7.9	n.m.	15.4	51.5	19.3
302801	4630984	17.1	n.m.	91.1	68.2	21.4
302797	4630982	12.3	n.m.	46.3	30.2	10.6
302791	4630980	3.4	n.m.	24.8	34.7	17.9
302786	4630975	1.3	n.m.	10.9	16.9	13.6
302781	4630973	2.0	n.m.	16.2	13.9	16.2
302774	4630972	1.8	n.m.	19.2	21.1	16.5
302765	4630967	1.2	n.m.	21.6	25.2	17.2
302768	4630959	1.2	n.m.	15.4	15.5	21.1
302776	4630962	2.8	n.m.	16.2	16.4	13.0
302784	4630965	1.4	n.m.	18.2	18.9	12.2
302791	4630967	1.4	n.m.	11.5	21.3	16.7
302798	4630970	2.3	n.m.	18.3	22.5	8.1
302806	4630975	1.1	n.m.	6.3	54.3	10.8
302814	4630978	2.3	n.m.	14.8	15.8	16.1
302820	4630981	2.1	n.m.	5.7	21.6	15.7
302828	4630985	1.4	n.m.	15.0	15.7	15.5
302836	4630989	1.4	n.m.	42.0	16.7	20.7
302846	4630992	0.7	n.m.	16.2	15.7	10.6
302812	4631015	n.m.	n.m.	44.8	24.1	13.2
302807	4631013	n.m.	n.m.	32.9	19.7	15.3
302802	4631011	n.m.	n.m.	29.4	20.6	12.3
302795	4631008	n.m.	n.m.	51.1	25.2	14.0
302786	4631005	n.m.	n.m.	25.9	17.9	15.7
302779	4631001	n.m.	n.m.	49.4	23.8	11.2
302772	4630998	n.m.	n.m.	19.3	14.6	12.7
302765	4630995	n.m.	n.m.	41.7	23.5	17.9
302763	4631001	n.m.	n.m.	35.6	22.8	15.8
302769	4631004	n.m.	n.m.	37.7	23.0	15.4

302777	4631007	n.m.	n.m.	55.2	23.7	13.7
302784	4631010	n.m.	n.m.	37.7	19.7	12.7
302792	4631013	n.m.	n.m.	28.1	20.7	10.8
302799	4631016	n.m.	n.m.	39.6	14.6	8.5
302804	4631018	n.m.	n.m.	30.2	10.2	11.6
302809	4631020	n.m.	n.m.	32.5	13.7	14.8

Coordinates in WGS-84; *n.m.= not measured*

Table 2. Dataset of air gas concentration continuously recorded at Ciampino on 9 and 10 June 2020

Site 1	CO_2	O_2	H_2S	**Site 1**	CO_2	O_2	H_2S	**Site 2**	CO_2	O_2	H_2S
d/m/y h:m	*vol.%*	*vol.%*	*ppm*	*d/m/y h:m*	*vol.%*	*vol.%*	*ppm*	*d/m/y h:m*	*vol.%*	*vol.%*	*ppm*
09/06/20 19:59	10.6	19.3	304	10/06/20 08:27	14.0	19.0	486	10/06/20 09:50	24.0	17.0	930
09/06/20 20:00	11.6	18.9	356	10/06/20 08:28	15.4	18.9	535	10/06/20 09:51	18.2	15.7	965
09/06/20 20:01	11.8	18.8	406	10/06/20 08:29	13.8	18.9	505	10/06/20 09:52	17.0	15.8	965
09/06/20 20:02	12.6	18.7	422	10/06/20 08:30	13.2	18.9	424	10/06/20 09:53	16.6	15.8	835
09/06/20 20:03	12.8	18.6	420	10/06/20 08:31	14.4	18.4	545	10/06/20 09:54	16.6	15.5	925
09/06/20 20:04	13.8	18.3	520	10/06/20 08:32	14.4	18.4	555	10/06/20 09:55	17.0	15.3	945
09/06/20 20:05	12.4	18.6	398	10/06/20 08:33	13.6	18.3	490	10/06/20 09:56	17.0	15.4	855
09/06/20 20:06	13.0	18.4	434	10/06/20 08:34	13.8	18.6	482	10/06/20 09:57	16.6	15.5	925
09/06/20 20:07	14.0	18.0	520	10/06/20 08:35	12.8	18.8	414	10/06/20 09:58	17.2	15.3	950
09/06/20 20:08	12.2	18.4	398	10/06/20 08:36	12.8	19.1	344	10/06/20 09:59	16.6	15.3	875
09/06/20 20:09	11.8	18.5	370	10/06/20 08:37	13.8	18.9	450	10/06/20 10:00	17.2	15.1	935
09/06/20 20:10	12.6	18.4	412	10/06/20 08:38	13.2	18.7	424	10/06/20 10:01	17.4	15.1	920
09/06/20 20:11	13.0	18.4	432	10/06/20 08:39	14.6	18.5	580	10/06/20 10:02	17.4	14.9	930
09/06/20 20:12	12.4	18.4	410	10/06/20 08:40	15.0	18.3	585	10/06/20 10:03	16.6	15.1	830
09/06/20 20:13	12.0	18.5	390	10/06/20 08:41	15.2	18.7	525	10/06/20 10:04	17.0	15.2	920
09/06/20 20:14	11.8	18.4	402	10/06/20 08:42	16.2	17.6	665	10/06/20 10:05	17.0	15.2	945
09/06/20 20:15	12.2	18.5	386	10/06/20 08:43	14.6	18.1	565	10/06/20 10:06	17.2	15.0	960
09/06/20 20:16	13.0	18.2	438	10/06/20 08:44	15	18.3	525	10/06/20 10:07	16.8	15.1	870
09/06/20 20:17	13.4	18.0	476	10/06/20 08:45	14.8	18.3	530	10/06/20 10:08	16.8	15.0	885
09/06/20 20:18	13.4	18.0	486	10/06/20 08:46	15.0	18.3	535	10/06/20 10:09	17.2	14.7	940
09/06/20 20:19	13.8	18.0	486	10/06/20 08:47	12.0	18.4	352	10/06/20 10:10	17.0	14.6	920
09/06/20 20:20	13.6	18.1	478	10/06/20 08:48	15.2	18.5	560	10/06/20 10:11	16.6	14.8	905
09/06/20 20:21	13.8	17.9	520	10/06/20 08:49	14.8	18.4	390	10/06/20 10:12	16.6	14.8	885
09/06/20 20:22	13.2	17.9	474	10/06/20 08:50	16.8	17.6	635	10/06/20 10:13	17.0	15.0	900
09/06/20 20:23	14.0	17.8	535	10/06/20 08:51	15.2	18.0	545	10/06/20 10:14	16.6	15.1	860
09/06/20 20:24	13.8	17.9	498	10/06/20 08:52	14.0	18.5	476	10/06/20 10:15	16.6	14.9	875
09/06/20 20:25	13.8	17.8	500	10/06/20 08:53	15.6	18.0	550	10/06/20 10:16	16.6	14.8	905
09/06/20 20:26	13.4	17.8	500	10/06/20 08:54	14.8	18.4	500	10/06/20 10:17	17	14.8	955
09/06/20 20:27	3.499	19	101	10/06/20 08:55	13.0	19.0	370				
09/06/20 20:28	3.749	19.6	101	10/06/20 08:56	14.6	19.0	404				
09/06/20 20:29	3.799	19.7	93.0	10/06/20 08:57	15.4	18.9	470				
09/06/20 20:30	3.549	19.8	76	10/06/20 08:58	14.6	18.8	456				
09/06/20 20:31	3.249	19.9	60	10/06/20 08:59	15.2	18.7	505				
09/06/20 20:32	0.859	20.2	17	10/06/20 09:00	14.8	18.8	482				
				10/06/20 09:01	14.2	18.7	416				
				10/06/20 09:02	14.6	18.8	444				
				10/06/20 09:03	8.6	19.6	246				
				10/06/20 09:04	13.6	19.3	394				
				10/06/20 09:05	11.2	19.3	320				

10/06/20 09:06	10.0	19.5	236
10/06/20 09:07	7.5	19.6	222
10/06/20 09:08	8.4	19.5	248
10/06/20 09:09	12.6	19.2	326
10/06/20 09:10	11.6	19.2	310
10/06/20 09:11	11.0	19.0	396
10/06/20 09:12	16.6	18.9	486
10/06/20 09:13	13.6	19.3	386
10/06/20 09:14	16.6	18.7	492
10/06/20 09:15	13.8	18.4	476
10/06/20 09:16	11	19.4	300
10/06/20 09:17	10.6	19.4	256
10/06/20 09:18	10.8	19.6	282
10/06/20 09:19	5.9	19.6	183
10/06/20 09:20	9.2	19.7	280
10/06/20 09:21	7	19.7	216
10/06/20 09:22	10.6	19.6	310
10/06/20 09:23	10.4	19.5	274
10/06/20 09:24	8.8	19.5	250
10/06/20 09:25	12.2	19.5	302
10/06/20 09:26	8.6	19.5	338
10/06/20 09:27	14.6	19	444
10/06/20 09:28	12.4	19.6	274
10/06/20 09:29	8.4	19.6	272
10/06/20 09:30	9.8	19.6	294
10/06/20 09:31	11	19.4	334
10/06/20 09:32	15.4	19.2	400
10/06/20 09:33	12.8	19.3	344
10/06/20 09:34	9.2	19.3	154
10/06/20 09:35	11.6	19.5	296
10/06/20 09:36	8.8	19.6	262
10/06/20 09:37	10.4	19.6	290
10/06/20 09:38	12.8	19.1	380
10/06/20 09:39	9.2	19.1	244
10/06/20 09:40	10	19.6	284
10/06/20 09:41	10.6	19.5	264
10/06/20 09:42	9	19.5	246
10/06/20 09:43	8	19.7	276
10/06/20 09:44	9.4	19.7	268
10/06/20 09:45	10.2	19.6	298
10/06/20 09:46	10.8	19.6	302
10/06/20 09:47	8.4	19.6	240
10/06/20 09:48	7.6	19.9	206
10/06/20 09:49	10.8	19.7	272