SUPPLEMENTARY MATERIALS

Relating SARS-CoV-2 shedding rate in wastewater to daily positive tests data: A consistent model based approach

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Table 1. Physical-chemical characteristics of wastewater samples

Date	Unit	2/10/20	5/10/20	9/10/20	12/10/20	14/10/20	16/10/20	19/10/20	21/10/20	23/10/20
Flow	m3/d	143,850	140,900	141,650	147,850	157,750	158,000	147,450	142,000	139,800
SS	mg/L	400	679	637	616	892	835	1,083	1,084	1,019
COD	mg/L	582	1,042	1,278	938	1,284	1,144	1,509	1,480	1,518
BOD5	mg/L	255	429	515	383	492	446	574	583	564
NH4-N (Δ)	mg/L	33.5	32.7	29.6	27.8	29.3	24.5	27.8	31.5	36.3
NO3-N (Δ)	mg/L	0.92	0.92	0.99	1.36	2.33	0.92	0.66	0.87	0.23
TN	mg/L	64	64.4	61.5	63.9	93.7	59.4	76.2	71.8	89.4
TOTAL-P	mg/L				8.99	8.92			13.10	
Conductivity	mS/cm	7.42	7.77	8.26	7.99	4.67	3.83	7.25	6.73	5.69
pH	-	7.74	7.56	7.63	7.57	7.59	7.52	7.60	7.48	7.65
DO	mg/L	0.80	1.10	0.85	1.10	1.20	0.90	1.10	0.90	1.00
UV254 nm	cm-1	0.35	0.53	0.53	0.54	0.42	0.59	0.48	0.60	0.56
DOC	mg/L	40.00	48.00	50.76	55.50	50.00	53.14	37.20	38.90	47.20

Date	Unit	26/10/20	28/10/20	30/10/20	2/11/20	4/11/20	6/11/20	9/11/20	11/11/20	13/11/20
Flow	m3/d	127,350	142,400	136,350	112,200	155,500	130,500	131,950	133,600	134,400
SS	mg/L	1,180	1,009	1,094	1,139	1,149	1,362	1,252	1,038	1,287
COD	mg/L	1,593	1,651	1,438	1,667	1,750	1,788	1,870	1,600	1,520
BOD5	mg/L	656	629	521	573	560	824	689	692	690
NH4-N (Δ)	mg/L	32.8	30.0	31.4	29.8	29	29.8	29	30.7	30.8
NO3-N (Δ)	mg/L	0.65	0.92	0.77	0.93	1.6	0.9	0.75	1.38	0.66
TN	mg/L	87.3	74.3	73.0	68.7	68.6	80.2	88.5	73.2	79
TOTAL-P	mg/L		12.20			13			11.7	
Conductivity	mS/cm	7.15	7.52	7.90	5.96	5.20	5.18	5.21	5.17	5.46
pH	-	7.66	7.61	7.77	7.69	7.72	7.70	7.80	7.82	7.68
DO	mg/L	2.20	2.17	0.45	0.51	3.15	0.40	0.74	0.53	0.46
UV254 nm	cm-1	0.55	0.37	0.46	0.45	0.36	0.44	0.51	0.35	0.42
DOC	mg/L	48.70	32.70	46.80	46.90	36.04	40.50	46.70	41.43	57.90

Date	Unit	16/11/20	18/11/20	20/11/20	23/11/20	25/11/20	27/11/20	30/11/20	2/12/20	4/12/20
Flow	m3/d	140,050	131,050	130,800	136,350	138,650	127,850	177,200	139,300	171,050
SS	mg/L	1,121	1,074	1,117	1,131	1,106	957	864	1,055	836
COD	mg/L	1,554	1,460	1,367	1,752	1,536	1,316	1,273	1,297	1,187
BOD5	mg/L	612	634	682	715	648	608	596	571	487
NH4-N (Δ)	mg/L	32.6	29.5	30.7	29.4	30.2	30.9	25.8	31.3	28.4
NO3-N (Δ)	mg/L	1.1	1.47	0.6	1.4	1.44	0.54	1.07	1.05	0.66
TN	mg/L	80.1	69.4	72.2	72.1	76.7	74.5	69.4	70.3	58
TOTAL-P	mg/L		13.7			13.3			10.4	
Conductivity	mS/cm	5.24	5.56	5.49	4.86	4.83	5.23	5.63	6.40	6.98
pH	-	7.70	7.68	7.65	7.53	7.73	7.64	7.87	8.01	7.50
DO	mg/L	1.75	3.09	1.40	1.78	3.37	0.94	3.77	4.50	2.22
UV254 nm	cm-1	0.40	0.47	0.45	0.69	0.48	0.50	0.85	0.83	0.41
DOC	mg/L	62.40	51.07	44.52	52.61	46.83	52.63	46.87	62.50	32.76

Date	Unit	7/12/20	9/12/20	11/12/20	14/12/20	16/12/20	18/12/20	21/12/20
Flow	m3/d	196,150	175,350	180,400	198,250	157,450	153,600	148,800
SS	mg/L	633	924	767	413	557	639	600
COD	mg/L	900	1,108	918	788	824	1,029	943
BOD5	mg/L	422	472	368	335	342	391	436
NH4-N (Δ)	mg/L	18.5	40.8	18.1	17.1	24	26.9	29.4
NO3-N (Δ)	mg/L	0.99	2.3	1.15	1.25	1.15	0.92	2.05
TN	mg/L	40.3	67.8	45	35.1	57.3	56.9	53.6
TOTAL-P	mg/L	7.63	8.42		5.76	16.8	9.65	8.55
Conductivity	mS/cm	8.07	15.45	16.52	16.52	11.20	8.16	6.85
pH	-	7.35	7.95	7.51	7.43	7.50	7.80	7.80
DO	mg/L	6.00	4.51	2.97	5.70	4.30	2.81	4.02

UV254 nm	cm-1	0.30	0.48	0.39	0.53	0.34	0.33	0.38
DOC	mg/L	30.43	35.40	31.91	30.30	34.41	38.10	39.10

Date	**Unit**	**23/12/20**	**25/12/20**	**28/12/20**	**30/12/20**	**1/1/21**	**1/4/21**	**1/6/21**
Flow	m3/d	135,180	141,000	135,150	135,600	145,850	175,700	151,470
SS	mg/L	608	511	835	686	596	635	507
COD	mg/L	979	868	1,177	1,023	1,189	869	880
BOD5	mg/L	482	349	395	459	533	326	355
NH4-N (Δ)	mg/L	30.2	33.3	33.5	32.1	39.5	19.5	38.0
NO3-N (Δ)	mg/L	0.7	0.23	0.99	0.53	0.23	1.60	0.75
TN	mg/L	56.4	57.9	65.7		70.7	41.5	88.5
TOTAL-P	mg/L	11.5	13.30	13.10	15.6	10.40	12.1	10.5
Conductivity	mS/cm	6.45	7	7.13	8.21	9	5.5	9.05
pH	-	7.78	7.6	7.77	7.68	7.4	7.27	7.64
DO	mg/L	2.90	2.04	3.3	3.2	1.66	5.9	3.12
UV254 nm	cm-1	0.420	0.296	0.422	0.675	0.364	0.288	0.437
DOC	mg/L	47.60	37	57	58.3	43.1	32.6	38.7

Table 2. Daily numbers of COVID-19 infected people reported in the city of Thessaloniki, adjusted to specimen collection date.

Date	**Reported cases**	**Date**	**Reported cases**	**Date**	**Reported cases**
2020-10-05	17	2020-11-06	706	2020-12-08	237
2020-10-06	20	2020-11-07	696	2020-12-09	224
2020-10-07	23	2020-11-08	684	2020-12-10	213
2020-10-08	27	2020-11-09	671	2020-12-11	202
2020-10-09	32	2020-11-10	656	2020-12-12	190
2020-10-10	38	2020-11-11	639	2020-12-13	181
2020-10-11	45	2020-11-12	621	2020-12-14	172
2020-10-12	54	2020-11-13	605	2020-12-15	163
2020-10-13	66	2020-11-14	587	2020-12-16	155
2020-10-14	80	2020-11-15	569	2020-12-17	148
2020-10-15	97	2020-11-16	551	2020-12-18	142
2020-10-16	117	2020-11-17	534	2020-12-19	136
2020-10-17	140	2020-11-18	517	2020-12-20	130
2020-10-18	168	2020-11-19	499	2020-12-21	125
2020-10-19	199	2020-11-20	484	2020-12-22	121
2020-10-20	234	2020-11-21	469	2020-12-23	117
2020-10-21	273	2020-11-22	454	2020-12-24	113
2020-10-22	314	2020-11-23	438	2020-12-25	110
2020-10-23	358	2020-11-24	423	2020-12-26	106

2020-10-24	404	2020-11-25	410	2020-12-27	103
2020-10-25	449	2020-11-26	396	2020-12-28	99
2020-10-26	494	2020-11-27	383	2020-12-29	96
2020-10-27	538	2020-11-28	370	2020-12-30	93
2020-10-28	579	2020-11-29	356	2020-12-31	90
2020-10-29	616	2020-11-30	343	2021-01-01	86
2020-10-30	648	2020-12-01	330	2021-01-02	83
2020-10-31	675	2020-12-02	316	2021-01-03	80
2020-11-01	696	2020-12-03	303	2021-01-04	76
2020-11-02	715	2020-12-04	289	2021-01-05	73
2020-11-03	710	2020-12-05	276	2021-01-06	70
2020-11-04	713	2020-12-06	263		
2020-11-05	711	2020-12-07	249		