



**M5 East Motorway**  
**Report 5: In-Stack Air Quality Monitoring**  
June 2021

**Document Control**

**Revision History**

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<b>Version</b>	<b>Issue date</b>	<b>By</b>	<b>Comments</b>
001	5.06.2021	K.Guven	V1

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**References**

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<b>Document name</b>	<b>Version</b>	<b>Abbreviation</b>

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## Summary

- This report displays data as received directly from the monitoring instruments for PM10, NO, NO2, NOx, temperature and volumetric flow rate as per the requirements of the Minister's Conditions of Approval #72 and Schedule 1.7 (operational stage). Measurements for NO and NO<sub>2</sub> are displayed for information purposes only.
- No ventilation stack related exceedances occurred during June 2021.
- NO, NO<sub>2</sub>, and PM<sub>10</sub> results from the 8th June 3 AM to 29th June 1 PM, recorded negative values therefore data is erroneous and is invalid.
- PM<sub>10</sub> results from 1<sup>st</sup> June 12 AM to 3 PM were zero values therefore data is erroneous and is invalid.



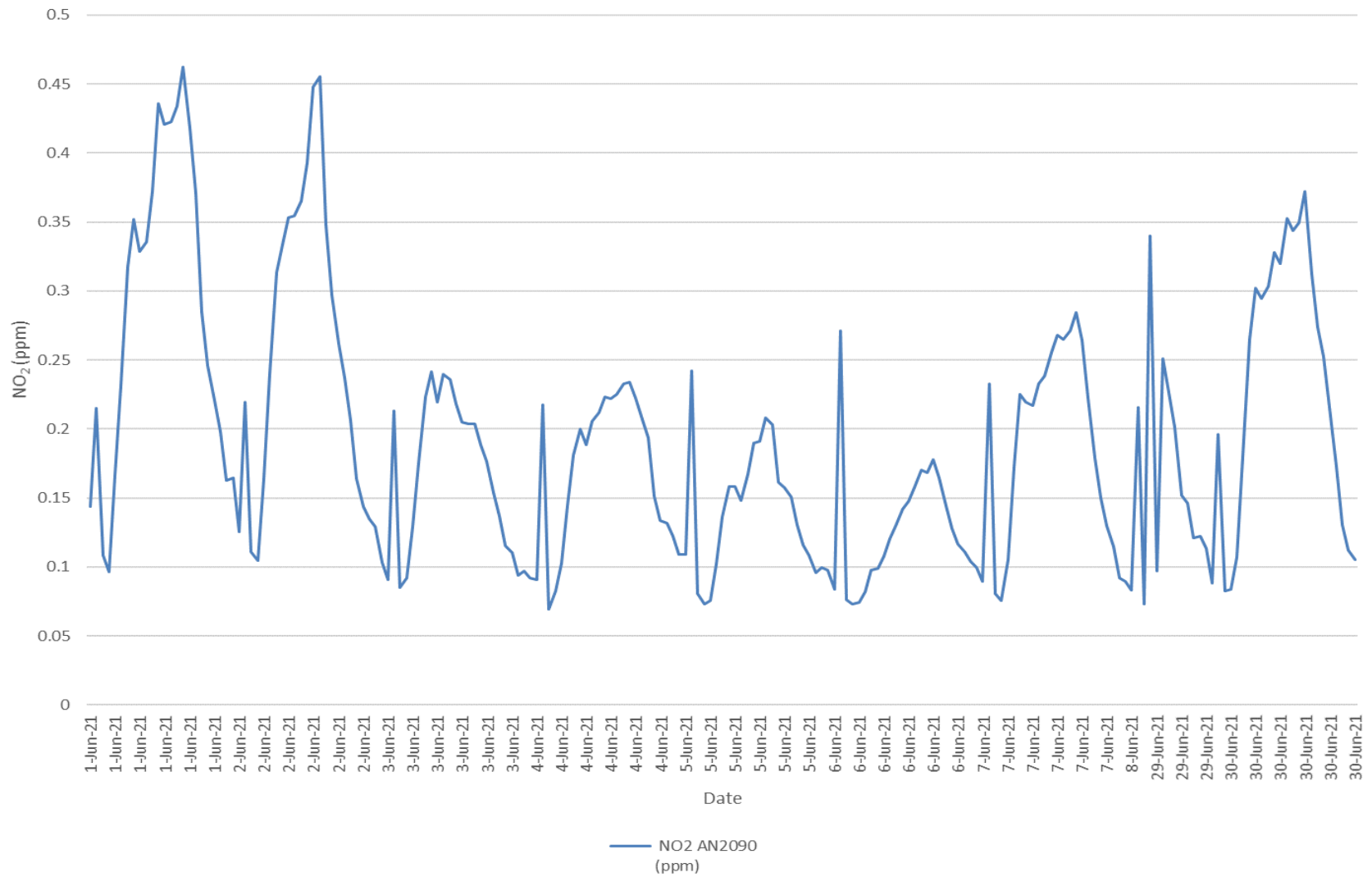


Figure 2: In-stack monitoring, NO<sub>2</sub> results for June 2021 (60min time-weighted average)



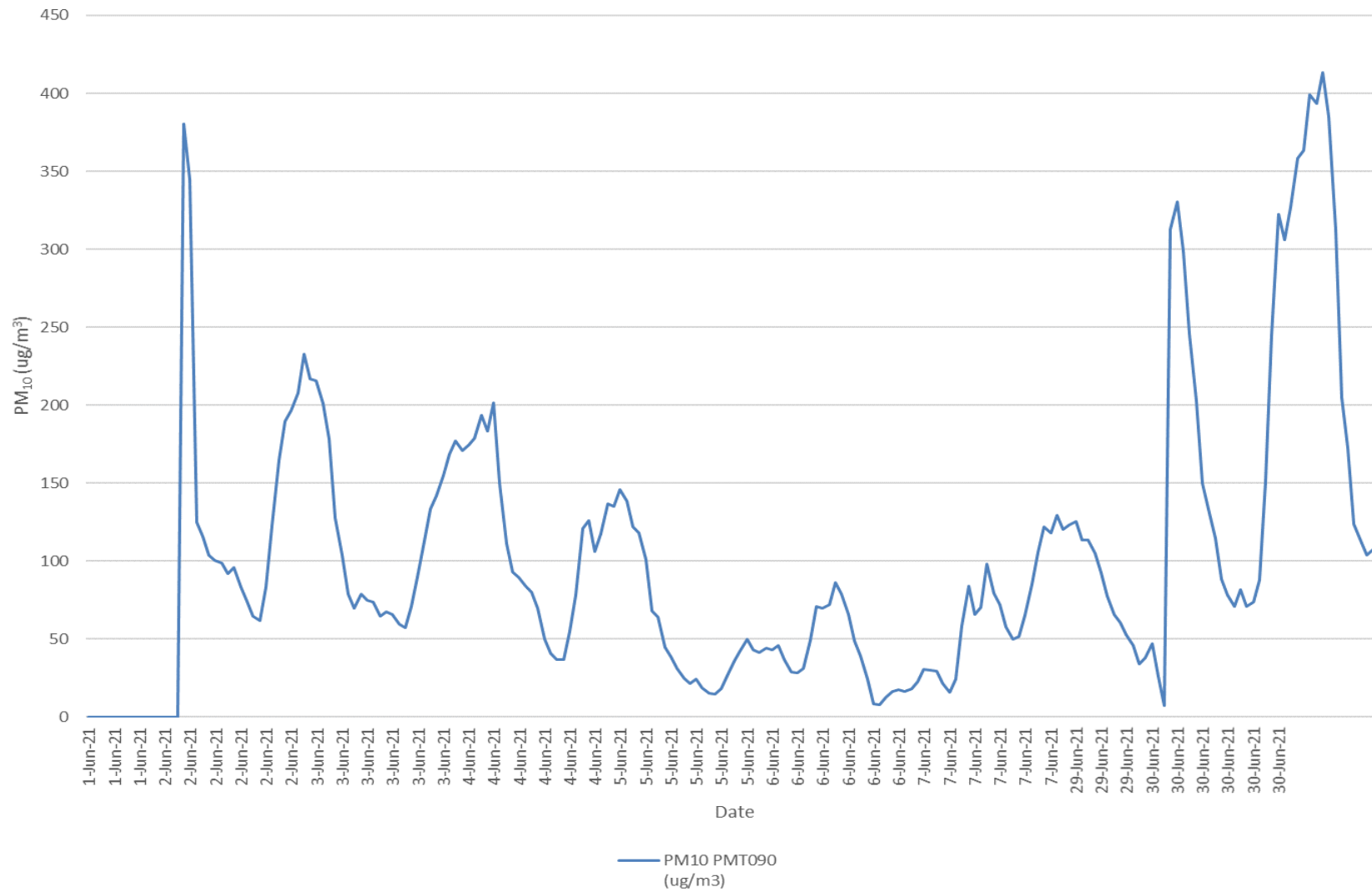


Figure 4: In-stack monitoring, PM<sub>10</sub> results for June 2021 (60min time-weighted average)





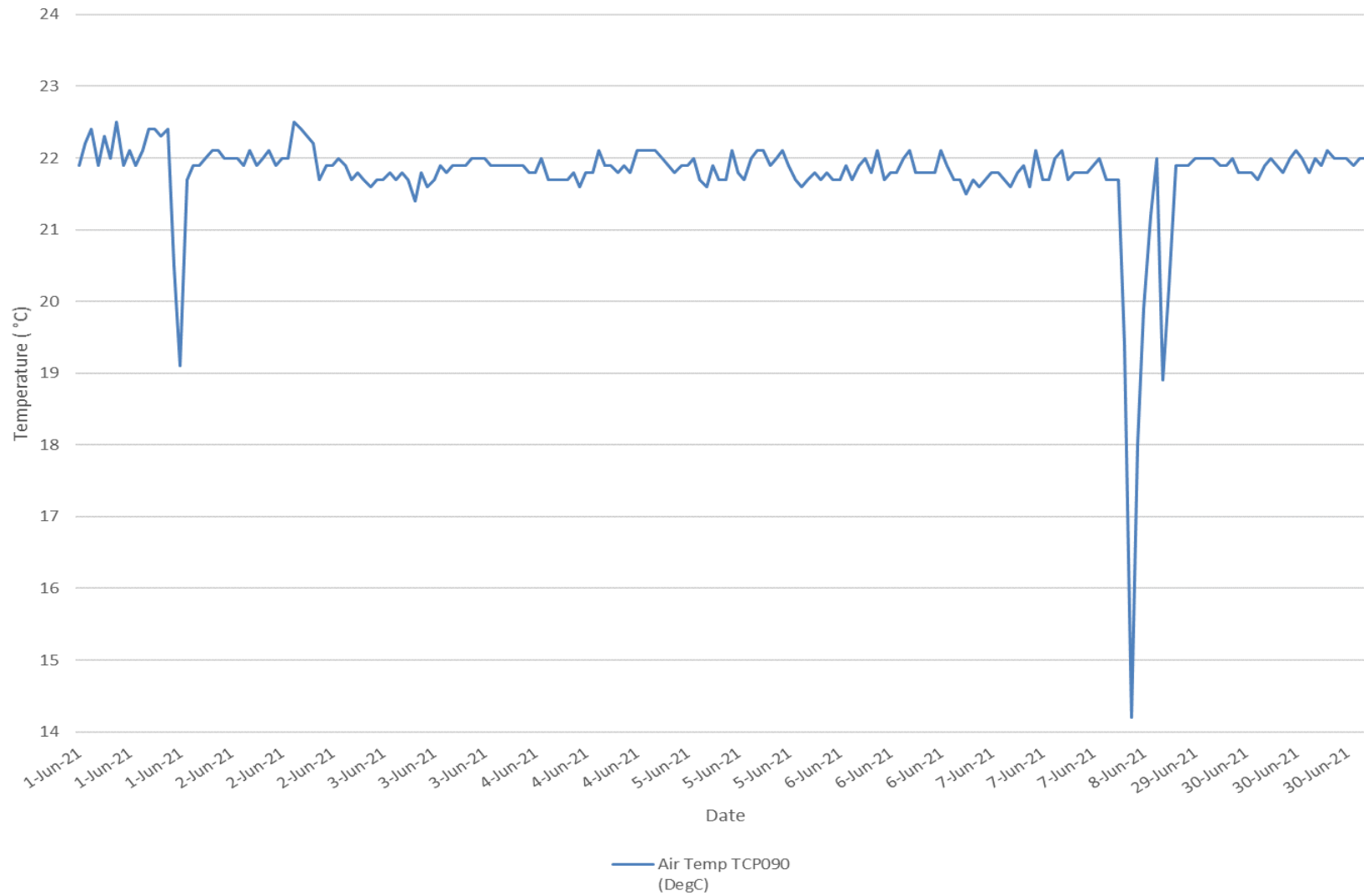


Figure 6: In-stack monitoring, temperature results for June 2021 (60min time-weighted average)

**Ventilation Stack Air monitoring results:**

Date	Time	Number Exhaust Fans	Air Flow ASS094 (m3/s)	Air Temp PCS090 (°C)	NO ANO090 (ppm)	NO2 AN2090 (ppm)	NOx ANA090 (ppm)	PM10 PMT090 (µg/m3)
1-Jun-21	0:00:00	2	323.5	21.9	0.9491	0.1439	1.1292	0
1-Jun-21	1:00:00	2	320.1	22.2	2.1324	0.2151	1.9473	0
1-Jun-21	2:00:00	2	321.9	22.4	0.6829	0.1086	0.9667	0
1-Jun-21	3:00:00	2	323.3	21.9	0.7825	0.0966	1.1088	0
1-Jun-21	4:00:00	2	321.4	22.3	1.6919	0.1666	2.108	0
1-Jun-21	5:00:00	2	321.2	22	2.5635	0.2312	2.9649	0
1-Jun-21	6:00:00	2	320.2	22.5	3.2132	0.3171	3.6477	0
1-Jun-21	7:00:00	2	319.4	21.9	3.4355	0.3518	3.9317	0
1-Jun-21	8:00:00	2	318.4	22.1	3.4183	0.3285	3.9142	0
1-Jun-21	9:00:00	2	317.6	21.9	3.3392	0.3357	3.8318	0
1-Jun-21	10:00:00	1	302.4	22.1	3.4094	0.3719	3.9203	0
1-Jun-21	11:00:00	2	293.9	22.4	3.3501	0.4356	3.9451	0
1-Jun-21	12:00:00	1	300.7	22.4	3.3669	0.4206	3.9557	0
1-Jun-21	13:00:00	2	320.9	22.3	3.362	0.4226	3.9648	0
1-Jun-21	14:00:00	2	318.2	22.4	3.3355	0.434	3.948	0
1-Jun-21	15:00:00	2	322.3	20.5	3.4469	0.4625	4.0723	380.3
1-Jun-21	16:00:00	2	322.1	19.1	3.0408	0.4185	3.598	344.4
1-Jun-21	17:00:00	2	318.5	21.7	2.4099	0.3709	2.9655	124.8
1-Jun-21	18:00:00	2	321	21.9	2.1915	0.2853	2.6905	115.9
1-Jun-21	19:00:00	2	319.6	21.9	1.9191	0.2457	2.3377	103.9
1-Jun-21	20:00:00	2	323.7	22	1.8361	0.2207	2.2445	100.1
1-Jun-21	21:00:00	2	321.9	22.1	1.6294	0.1981	1.9624	98.7
1-Jun-21	22:00:00	2	324.2	22.1	1.3021	0.1625	1.638	91.8
1-Jun-21	23:00:00	2	322.7	22	1.2892	0.1643	1.6126	95.7
2-Jun-21	0:00:00	2	322.9	22	0.898	0.1251	1.2331	83.6
2-Jun-21	1:00:00	2	320.8	22	2.07	0.2194	1.946	74.2

2-Jun-21	2:00:00	2	320.4	21.9	0.8231	0.111	1.0794	64.8
2-Jun-21	3:00:00	2	320.7	22.1	1.0219	0.1044	1.2682	62
2-Jun-21	4:00:00	2	320.4	21.9	1.5388	0.1642	1.8677	83.2
2-Jun-21	5:00:00	2	319.5	22	2.6115	0.2397	2.9299	122.8
2-Jun-21	6:00:00	2	317.1	22.1	3.1425	0.3137	3.6034	164.8
2-Jun-21	7:00:00	2	318.3	21.9	3.2757	0.3334	3.7691	189.7
2-Jun-21	8:00:00	2	318.8	22	3.4826	0.3532	3.9759	196.5
2-Jun-21	9:00:00	1	210.6	22	3.4185	0.3544	3.9427	207.9
2-Jun-21	10:00:00	2	371.5	22.5	3.3743	0.3654	3.968	232.8
2-Jun-21	11:00:00	2	360.7	22.4	3.2856	0.3931	3.8721	216.8
2-Jun-21	12:00:00	1	155.1	22.3	3.5957	0.4476	4.2718	215.7
2-Jun-21	13:00:00	1	192.9	22.2	3.3138	0.4557	3.9404	200.8
2-Jun-21	14:00:00	1	309.1	21.7	2.4481	0.3482	2.9296	178.1
2-Jun-21	15:00:00	2	334.1	21.9	2.0004	0.2973	2.5106	127.6
2-Jun-21	16:00:00	2	291.5	21.9	1.7312	0.2618	2.173	103.8
2-Jun-21	17:00:00	1	287.2	22	1.5791	0.237	1.9657	78.6
2-Jun-21	18:00:00	2	304	21.9	1.363	0.2063	1.7417	69.7
2-Jun-21	19:00:00	2	307.4	21.7	1.1563	0.1642	1.5145	78.5
2-Jun-21	20:00:00	2	306	21.8	1.1074	0.144	1.4427	74.8
2-Jun-21	21:00:00	2	307.5	21.7	1.1162	0.1351	1.4056	73.5
2-Jun-21	22:00:00	2	308.3	21.6	0.8439	0.1291	1.1905	64.4
2-Jun-21	23:00:00	2	311.5	21.7	0.5625	0.1032	0.8335	67.7
3-Jun-21	0:00:00	2	310.1	21.7	0.6459	0.0905	0.9218	65.5
3-Jun-21	1:00:00	2	312.4	21.8	2.2411	0.2129	1.8553	59.2
3-Jun-21	2:00:00	2	311.9	21.7	0.3429	0.0847	0.6012	57.3
3-Jun-21	3:00:00	2	309.4	21.8	0.9566	0.0917	1.2131	70.7
3-Jun-21	4:00:00	2	306.2	21.7	1.3139	0.1289	1.6039	89.3
3-Jun-21	5:00:00	2	305.7	21.4	1.9015	0.175	2.1887	112.9
3-Jun-21	6:00:00	2	302.3	21.8	2.2733	0.223	2.7131	133.3
3-Jun-21	7:00:00	2	302	21.6	2.3007	0.2414	2.7203	142
3-Jun-21	8:00:00	2	302.5	21.7	2.2673	0.2197	2.6694	154.8
3-Jun-21	9:00:00	1	246.5	21.9	2.3212	0.2398	2.7469	168.4
3-Jun-21	10:00:00	2	306.2	21.8	2.2413	0.2358	2.6952	177.1
3-Jun-21	11:00:00	2	310.3	21.9	2.1914	0.2183	2.605	171

3-Jun-21	12:00:00	2	310.1	21.9	2.1057	0.205	2.4925	174.4
3-Jun-21	13:00:00	2	313.5	21.9	2.0097	0.2039	2.3858	178.8
3-Jun-21	14:00:00	2	309.1	22	2.093	0.2035	2.4819	193.7
3-Jun-21	15:00:00	2	311.6	22	1.8793	0.1884	2.2321	183.5
3-Jun-21	16:00:00	2	313.2	22	1.8024	0.1765	2.1795	201.3
3-Jun-21	17:00:00	2	316.1	21.9	1.2838	0.1535	1.6265	149.5
3-Jun-21	18:00:00	1	281.1	21.9	1.1508	0.1368	1.477	111.3
3-Jun-21	19:00:00	2	291.5	21.9	1.023	0.1153	1.339	92.7
3-Jun-21	20:00:00	2	291.1	21.9	1.0045	0.1105	1.2917	89.4
3-Jun-21	21:00:00	2	293.5	21.9	0.9263	0.0941	1.1979	84
3-Jun-21	22:00:00	2	291.3	21.9	0.8838	0.0971	1.185	79.8
3-Jun-21	23:00:00	2	294.4	21.8	0.8702	0.0917	1.1128	69.9
4-Jun-21	0:00:00	2	292.4	21.8	0.5831	0.0907	0.8583	49.7
4-Jun-21	1:00:00	2	293.7	22	2.2103	0.2177	1.7674	41
4-Jun-21	2:00:00	2	295.8	21.7	0.6287	0.0694	0.8933	36.6
4-Jun-21	3:00:00	2	294.8	21.7	0.8244	0.0824	1.078	36.5
4-Jun-21	4:00:00	2	290.9	21.7	1.2478	0.1029	1.545	55
4-Jun-21	5:00:00	2	289.8	21.7	1.6294	0.1442	1.9812	78.3
4-Jun-21	6:00:00	2	285	21.8	2.0301	0.181	2.4192	120.7
4-Jun-21	7:00:00	2	285.3	21.6	2.0546	0.2001	2.428	125.8
4-Jun-21	8:00:00	2	286.8	21.8	2.1016	0.1883	2.4603	106.3
4-Jun-21	9:00:00	2	286.6	21.8	2.158	0.2055	2.5384	117.6
4-Jun-21	10:00:00	2	284.2	22.1	2.2323	0.2116	2.6478	136.6
4-Jun-21	11:00:00	2	286.2	21.9	2.0869	0.2235	2.5172	135.1
4-Jun-21	12:00:00	2	283.6	21.9	2.1719	0.2217	2.5464	145.6
4-Jun-21	13:00:00	2	285.1	21.8	2.0461	0.2253	2.464	138.4
4-Jun-21	14:00:00	2	286.1	21.9	1.9566	0.2325	2.3726	121.8
4-Jun-21	15:00:00	2	287.3	21.8	2.0101	0.234	2.4	117.7
4-Jun-21	16:00:00	2	285.4	22.1	1.7166	0.2224	2.1242	101.2
4-Jun-21	17:00:00	2	288.7	22.1	1.5036	0.2066	1.8913	67.9
4-Jun-21	18:00:00	2	291.2	22.1	1.4439	0.1938	1.8372	63.8
4-Jun-21	19:00:00	2	289.8	22.1	1.0599	0.1515	1.386	44.8
4-Jun-21	20:00:00	2	292.1	22	0.9781	0.1333	1.2619	38.7
4-Jun-21	21:00:00	2	291.8	21.9	0.8054	0.1319	1.103	30.8

4-Jun-21	22:00:00	2	294.5	21.8	0.8075	0.1222	1.0931	24.9
4-Jun-21	23:00:00	2	297.1	21.9	0.7991	0.1091	1.0915	21.5
5-Jun-21	0:00:00	2	297.7	21.9	0.7066	0.1089	0.9527	24.1
5-Jun-21	1:00:00	2	295.8	22	2.2508	0.2422	1.8966	18.7
5-Jun-21	2:00:00	2	298.1	21.7	0.4816	0.0803	0.7189	15.4
5-Jun-21	3:00:00	2	297	21.6	0.408	0.0733	0.6435	14.8
5-Jun-21	4:00:00	2	295.6	21.9	0.5364	0.0756	0.7967	17.9
5-Jun-21	5:00:00	2	294	21.7	0.9379	0.1021	1.1968	27.6
5-Jun-21	6:00:00	2	294.6	21.7	1.1803	0.1364	1.4974	35.6
5-Jun-21	7:00:00	2	290.3	22.1	1.2886	0.1584	1.6354	42.4
5-Jun-21	8:00:00	2	291.5	21.8	1.3096	0.158	1.6499	50
5-Jun-21	9:00:00	2	289.3	21.7	1.2104	0.1483	1.5194	43.1
5-Jun-21	10:00:00	2	288.8	22	1.2152	0.1668	1.5543	41.2
5-Jun-21	11:00:00	2	289	22.1	1.2259	0.1899	1.5902	43.9
5-Jun-21	12:00:00	2	287.6	22.1	1.1891	0.1908	1.5615	42.9
5-Jun-21	13:00:00	2	289.4	21.9	1.2051	0.2079	1.5975	45.9
5-Jun-21	14:00:00	2	292.4	22	1.0357	0.2028	1.3979	36.6
5-Jun-21	15:00:00	2	289.5	22.1	0.8954	0.1611	1.2293	28.8
5-Jun-21	16:00:00	2	291.6	21.9	0.9092	0.1579	1.2501	28.3
5-Jun-21	17:00:00	2	291.4	21.7	0.7557	0.1509	1.0757	31.3
5-Jun-21	18:00:00	2	292.9	21.6	0.7728	0.1302	1.0882	49.2
5-Jun-21	19:00:00	2	296.5	21.7	0.6428	0.1158	0.9494	70.8
5-Jun-21	20:00:00	2	296.1	21.8	0.5518	0.1083	0.8747	69.7
5-Jun-21	21:00:00	2	294.8	21.7	0.5282	0.0957	0.7991	71.9
5-Jun-21	22:00:00	2	295.2	21.8	0.5697	0.0998	0.8372	86.2
5-Jun-21	23:00:00	2	297.7	21.7	0.498	0.0978	0.7481	78.8
6-Jun-21	0:00:00	2	300.2	21.7	0.306	0.0838	0.5567	65.9
6-Jun-21	1:00:00	2	298.2	21.9	2.2124	0.2714	2.4441	48.5
6-Jun-21	2:00:00	2	297.3	21.7	0.0709	0.0764	0.2967	39
6-Jun-21	3:00:00	2	299.7	21.9	0.0192	0.0732	0.2506	24.3
6-Jun-21	4:00:00	2	297.4	22	0.0352	0.074	0.2677	8.2
6-Jun-21	5:00:00	2	296.1	21.8	0.2575	0.0819	0.5189	7.8
6-Jun-21	6:00:00	2	295.7	22.1	0.6129	0.0977	0.856	12.1
6-Jun-21	7:00:00	2	293.2	21.7	0.5283	0.0989	0.8091	16.1

6-Jun-21	8:00:00	2	291.6	21.8	0.6425	0.108	0.913	17.6
6-Jun-21	9:00:00	2	289.4	21.8	0.6606	0.1201	0.9729	16.2
6-Jun-21	10:00:00	2	291.5	22	0.7546	0.1298	1.0462	18.1
6-Jun-21	11:00:00	1	293.3	22.1	0.7724	0.1417	1.079	22.4
6-Jun-21	12:00:00	2	304.5	21.8	0.8349	0.1478	1.1663	30.3
6-Jun-21	13:00:00	2	307.5	21.8	0.7755	0.1576	1.1009	29.8
6-Jun-21	14:00:00	2	307	21.8	0.7817	0.1704	1.125	29.3
6-Jun-21	15:00:00	2	306.4	21.8	0.7395	0.1681	1.0727	21.6
6-Jun-21	16:00:00	2	307.8	22.1	0.6891	0.178	1.0296	15.6
6-Jun-21	17:00:00	2	305.2	21.9	0.7095	0.1643	1.0635	24.5
6-Jun-21	18:00:00	2	306.6	21.7	0.7311	0.1444	1.069	58.2
6-Jun-21	19:00:00	2	306.2	21.7	0.6974	0.1279	1.0214	84.1
6-Jun-21	20:00:00	2	307.4	21.5	0.722	0.1168	1.0213	65.7
6-Jun-21	21:00:00	2	310.1	21.7	0.6853	0.1107	0.9554	70
6-Jun-21	22:00:00	2	308.6	21.6	0.6573	0.1038	0.9506	98.1
6-Jun-21	23:00:00	2	309.2	21.7	0.5666	0.0996	0.8417	79.5
7-Jun-21	0:00:00	2	309.9	21.8	0.5203	0.0897	0.7682	72.2
7-Jun-21	1:00:00	2	310.6	21.8	2.2354	0.233	2.0113	57.6
7-Jun-21	2:00:00	2	313.6	21.7	0.4131	0.0809	0.6943	50
7-Jun-21	3:00:00	2	309.5	21.6	0.6281	0.0754	0.924	51.8
7-Jun-21	4:00:00	2	308.7	21.8	1.1652	0.105	1.4622	65
7-Jun-21	5:00:00	2	304.3	21.9	1.7596	0.1722	2.1204	85.2
7-Jun-21	6:00:00	2	303.9	21.6	2.3201	0.2251	2.7533	105.2
7-Jun-21	7:00:00	2	302.8	22.1	2.2469	0.2192	2.7016	121.8
7-Jun-21	8:00:00	2	300.9	21.7	2.2698	0.2169	2.6927	118
7-Jun-21	9:00:00	2	300.7	21.7	2.4469	0.2328	2.8677	129.5
7-Jun-21	10:00:00	2	302	22	2.3372	0.2381	2.7425	120
7-Jun-21	11:00:00	2	301.6	22.1	2.3248	0.2552	2.7533	122.9
7-Jun-21	12:00:00	2	303.7	21.7	2.3802	0.2683	2.8069	125.2
7-Jun-21	13:00:00	1	184.6	21.8	2.2558	0.2646	2.7378	113.2
7-Jun-21	14:00:00	2	302.8	21.8	2.1698	0.2713	2.6189	113.4
7-Jun-21	15:00:00	2	303	21.8	1.9451	0.2847	2.4409	105
7-Jun-21	16:00:00	2	304.9	21.9	1.7295	0.2641	2.1389	92.4
7-Jun-21	17:00:00	2	304.7	22	1.5154	0.2225	1.92	77.7

7-Jun-21	18:00:00	2	304.1	21.7	1.2712	0.179	1.6088	66
7-Jun-21	19:00:00	2	305.2	21.7	1.1495	0.1501	1.4876	60.8
7-Jun-21	20:00:00	2	306.6	21.7	0.9596	0.1298	1.264	52.4
7-Jun-21	21:00:00	2	305.3	19.4	1.0228	0.1147	1.3314	45.6
7-Jun-21	22:00:00	1	153	14.2	0.4777	0.0922	0.8038	34
7-Jun-21	23:00:00	0	71.6	18	0.4862	0.0893	0.6994	38.1
8-Jun-21	0:00:00	0	13.4	19.9	0.3292	0.0833	0.5971	46.7
8-Jun-21	1:00:00	0	11.2	21.2	2.1047	0.2156	2.8627	26.1
8-Jun-21	2:00:00	0	7.6	22	0.0134	0.0729	0.2329	7.2
29-Jun-21	14:00:00	2	302.6	18.9	3.0919	0.3397	3.8704	312.7
29-Jun-21	15:00:00	2	304.8	20.2	1.5587	0.0973	2.9524	330.4
29-Jun-21	16:00:00	2	303.5	21.9	2.7593	0.2507	3.1902	298.7
29-Jun-21	17:00:00	2	303.6	21.9	2.5115	0.2261	2.9003	245.8
29-Jun-21	18:00:00	2	304.3	21.9	2.0294	0.201	2.4445	202.5
29-Jun-21	19:00:00	2	303.4	22	1.3563	0.1522	1.673	149.9
29-Jun-21	20:00:00	2	304.3	22	1.4244	0.1464	1.7238	133.5
29-Jun-21	21:00:00	2	305.2	22	1.1795	0.1213	1.4884	114.7
29-Jun-21	22:00:00	2	305.2	22	1.0836	0.1222	1.3948	88.7
29-Jun-21	23:00:00	2	304.6	21.9	0.9678	0.1136	1.2655	78.4
30-Jun-21	0:00:00	2	306.1	21.9	0.8039	0.0882	1.0651	71
30-Jun-21	1:00:00	2	306.9	22	2.1221	0.1958	1.6861	81.8
30-Jun-21	2:00:00	2	306.2	21.8	0.8545	0.0827	1.0749	70.6
30-Jun-21	3:00:00	2	307	21.8	0.9829	0.0838	1.2139	73.4
30-Jun-21	4:00:00	2	303.5	21.8	1.3768	0.1073	1.642	87.7
30-Jun-21	5:00:00	2	302.6	21.7	2.7321	0.1918	3.0895	150.8
30-Jun-21	6:00:00	2	302.6	21.9	3.2552	0.2648	3.6986	244.4
30-Jun-21	7:00:00	2	303.9	22	3.6995	0.302	4.2085	322.6
30-Jun-21	8:00:00	2	302.6	21.9	3.8069	0.2945	4.3144	305.9
30-Jun-21	9:00:00	2	301.2	21.8	3.6457	0.3036	4.1183	327.1
30-Jun-21	10:00:00	2	301.2	22	3.704	0.3281	4.2467	358.5
30-Jun-21	11:00:00	2	303.6	22.1	3.5918	0.3195	4.1195	363.2
30-Jun-21	12:00:00	2	302.7	22	3.7605	0.3527	4.3049	399.2
30-Jun-21	13:00:00	2	304.3	21.8	3.569	0.3437	4.0613	393.4
30-Jun-21	14:00:00	2	303.9	22	3.574	0.3496	4.1315	413.3

30-Jun-21	15:00:00	2	305.7	21.9	3.6491	0.3724	4.1986	384.9
30-Jun-21	16:00:00	2	304	22.1	2.9182	0.3119	3.4833	312
30-Jun-21	17:00:00	2	301.6	22	2.3783	0.2737	2.8552	204.9
30-Jun-21	18:00:00	2	304.4	22	2.1166	0.2522	2.5455	172.3
30-Jun-21	19:00:00	2	302	22	1.4762	0.2092	1.8844	123.8
30-Jun-21	20:00:00	2	302.9	21.9	1.5894	0.1727	1.9106	113
30-Jun-21	21:00:00	2	304.1	22	1.132	0.1303	1.4508	103.8
30-Jun-21	22:00:00	2	306	22	1.0015	0.1124	1.3027	107.1
30-Jun-21	23:00:00	2	304.6	21.9	1.0231	0.1055	1.3229	103.5