

state
of
the
air
2023



technical
appendix

2023 BC Lung State of the Air Report -- Technical Appendix

Data Source:

B.C. Ministry of Environment and Climate Change Strategy, Metro Vancouver, Prince Rupert Port Authority, BC Hydro

Units:

All data presented in ppb except PM_{2.5}, which is presented in micrograms per cubic metre

Monitoring sites:

Monitoring is often conducted to address various objectives that may include measuring concentrations representative of: community exposure, industrial impacts, background concentrations, etc. For the State of Air Report, monitoring sites immediately adjacent to industrial facilities were not included unless these sites were also near areas of high population density.

Data completeness:

Data completeness criteria have been relaxed relative to previous reports to enable reporting of data from more stations.

In this report, a valid day has data for at least 18 hours (75%).

A valid year has data for at least 60% of days in each quarter and 75% of of hours over an entire year, with the following exceptions.

For peak (4th highest) 8-hour ozone levels, a valid 8-hour period has data for at least 6 hours, a valid day has data for at least 18 hours, and a valid year has at least 75% of days in the second and third quarters (April 1 to September 30).

For peak (1-hour) SO₂ and NO₂ levels, a valid daily maximum includes those days where less than 18 hours are available in a day but the maximum concentration exceeds the objective level.

Annual mean PM_{2.5} levels are based on the annual mean of daily PM_{2.5} concentrations.

Where data completeness requirements are not met, only number of hours per year, maximum value and number of exceedances are shown.

Collocated monitors:

Where more than one PM_{2.5} monitor is operating at a single site, data are shown for the monitor currently considered the primary reporting monitor and/or the monitor reporting a complete year of data.

Disclaimer:

While the information in these data summaries is believed to be accurate, the data summaries are provided "as is" without any warranty, and are subject to change as part of an ongoing data validation process. For updates on data validation and changes to this summary, visit the latest news and updates on gov.bc.ca/airquality.

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2022 Fine Particulate Matter (continued)

Site	Instrument	Year	No. Valid Hrs	Percentiles (1h)					Max 1h	No. Valid Days	24h Average			No. of Days		% of Valid Days Per Quarter				CAAQS Metrics for PM _{2.5} *	
				25th	50th	75th	98th	99th			Annual Avg	Annual 98th Percentile*	Annual Max	>25 µg/m ³	>27 µg/m ³	Q1	Q2	Q3	Q4	Annual	24-Hour
Abbotsford-Airport	PM25 SHARP5030	2022	8552	2.5	4.5	7.8	29.4	49.6	320.3	355	7.2	30.2	162.4	8	8	100	100	99	90	6.2	22
Abbotsford-Mill Lake	PM25 SHARP5030	2022	8701	2.4	4.3	7.6	25.5	47.3	345.8	361	6.9	20.5	160.4	7	7	98	99	99	100	5.8	17
Agassiz	PM25_SHARP5030i	2022	8252	2.9	4.9	8	47	97.7	213.3	342	8.3	48.4	168.6	10	10	96	93	100	86	7	38
Burnaby-Kensington Park	PM25 SHARP5030	2022	8704	1.7	3.3	6.4	21.8	32.1	115.3	363	5.3	18.7	61.5	5	4	99	99	100	100	5.3	27
Burnaby-South	PM25 SHARP5030	2022	8663	2.2	4	7	20.6	30.6	212.2	360	5.8	19.3	65.5	3	3	100	99	96	100	5.4	16
Burns Lake	PM25 SHARP5030	2022	8718	2.4	4.6	9.3	27.4	32.5	116.2	363	7.1	18.9	29.2	1	1	100	100	100	98	7.1	19
Castlegar	SHARP	2022	8718	2.9	5.7	10.6	31.2	40.5	125.6	365	8.2	24.1	76	7	6	100	100	100	100	12.8	107
Chilliwack	PM25 SHARP5030	2022	8700	2.4	4.3	7.9	48.8	80.2	271.8	361	8.3	51.5	208.6	12	11	98	100	98	100	6.5	28
Colwood	BAM1020	2022	8263	2	4	7	22	26	73	341	5.6	18.8	44.4	3	2	99	90	95	90	6.3	26
Courtenay	BAM1020	2022	8699	3	5	8	31	37	56	362	7.2	20.8	34	3	3	98	99	100	100	8	24
Cranbrook	PM25_SHARP5030i	2022	8705	2.4	5.3	11.2	39.9	51	115.1	362	8.7	32.9	66.3	17	15	100	100	99	98	8.1	35
Crofton-Elementary	BAM1020	2022	8520	1	3	6	20	26	96	357	4.3	18.4	61	3	2	100	96	100	96	4.4	29
Crofton-Substation	BAM1020	2022	8449	2	4	6	19	25	91	360	4.8	16.5	50.2	1	1	99	100	100	96	5.2	23
Duncan	BAM1020	2022	8587	3	7	11	29	34	112	361	8.5	22.2	66	5	3	100	97	100	99	7.7	26
Duncan-Deykin	BAM1020	2022	8633	2	4	8	21	24	227	360	5.9	16.4	58.7	2	2	98	100	98	99	6.2	23
Campbell River	BAM1020	2022	7674	2.1	4.3	7	23.6	27.5	86.8	317	5.6	18.2	31.9	2	2	100	95	53	100	7.2	23
Elkford	PM25 SHARP5030	2022	8451	2.1	3.7	6.7	27.3	49.8	435.7	350	5.9	32.6	64.2	10	10	99	88	98	99		
FortSt.John-85th Avenue	PM25_SHARP5030i	2022	8537	2	4.1	7.6	31.7	48.8	115.8	353	6.4	28.6	54.5	12	11	100	93	99	95	5.2	22
FortSt.John	PM25 SHARP5030	2022	8724	2.3	4	7.1	30.3	49.8	149.2	363	6.3	26.8	49.6	13	6	100	100	99	99	5.6	23
Fort St.John-N.CampC	PM25 SHARP5030	2022	8437	2.1	4	7.2	28.7	44.5	172.2	347	6.1	27.6	44.9	9	7	97	98	98	88	5.1	22
FortSt.John-OldFort	PM25 SHARP5030	2022	8693	1.4	3	6.5	31.3	43.1	132.8	364	5.5	27.8	41.9	10	8	100	99	100	100	4.6	22
Golden	PM25_SHARP5030i	2022	8718	3.6	7	12.7	42.2	50.8	112.3	364	10	29.1	45.6	19	14	100	100	100	99	11	50
Grand Forks	TEOM/SHARP	2022	8699	3.5	6.9	12.2	37.9	45.1	91.8	363	9.6	28.5	55.6	13	12	100	100	98	100	11.6	50
Harmac-Cedar Woobank	BAM1020	2022	8528	2	5	9	32	40	98	363	7.1	21.3	56.5	3	3	100	99	99	100	7.4	29
Hope	PM25 SHARP5030	2022	8518	2.4	4.5	8	51.8	127	355.6	352	8.7	60.9	165.1	14	13	98	98	96	95	6.9	32
Horseshoe Bay	PM25 SHARP5030	2022	8710	2	3.3	5.6	18.2	28.9	99.8	364	4.8	17.6	46.4	4	4	100	100	99	100	5.1	31
Houston	PM25 SHARP5030	2022	8693	2.3	4.6	9.7	48.3	61.4	143	360	8.8	26.8	53.8	11	7	100	99	100	96	8.3	29
Hudson's Hope	PM25 SHARP5030	2022	8645	1.4	3.4	7.8	61.6	87.5	417.2	362	8.4	61.4	202.6	21	19	99	100	100	98	6.8	44
Kamloops	BAM1020/SHARP	2022	8736	3.8	6.6	10.9	28.6	38.2	66.9	364	8.4	21.1	48.5	5	5	100	99	100	100	9.7	49
Kelowna	PM25 SHARP5030	2022	8745	2.5	4.7	8.5	20.7	30.9	98.8	365	6.3	18.8	47.5	4	3	100	100	100	100	8.5	47
Kitimat-Haisla Village	BAM1020/TEOM	2022	8351	0	2	4	13	16	98	353	2.8	10.2	13.9	0	0	99	100	90	98	3.1	8
Kitimat-Haul Rd	BAM1020	2022	8310	0	2	5	18	22	120	353	3.4	12.8	20.6	0	0	98	98	93	98	4.1	13
Kitimat-Riverlodge	BAM1020	2022	8486	1	2	4	12	14	38	356	3.1	10.9	16.5	0	0	99	100	95	97	3.1	9
Kitimat-Whitesail	BAM1020/TEOM	2022	8418	2	4	6	15	17	174	348	4.6	13.5	16.5	0	0	99	99	92	91	3.3	10
Langdale	PM25_T640	2022	8642	3.3	4.3	6	25	41.8	122.2	359	6	23.1	69.9	7	6	100	96	100	98		
Langley	PM25 SHARP5030	2022	8638	2	3.5	6.2	26.7	38	156.5	361	5.6	21.6	90.7	6	6	100	100	96	100	5.5	25
Merritt-NicolaAve	PM25 SHARP5030	2022	4479	2.4	4.5	8.4	42.1	64.8	108.3	173	7	28.8	71.4	4	4	21	59	57	52		
Mission	PM25_SHARP5030i	2022	8057	2.4	4.7	8.8	29.3	45.6	258.2	335	7.4	33	104.5	8	8	100	68	99	100	6.8	33
Nanaimo	BAM1020	2022	8671	2	4	7	18	23	98	362	5.2	16	51.5	3	2	100	99	98	100	5.8	24
New Westminster	PM25_SHARP5030i	2022	8631	2.9	4.9	8.2	25.5	35.4	252.9	359	7	22.9	59	6	5	99	97	98	100	6.4	18
North Delta	PM25 SHARP5030	2022	8637	2.6	4.3	7.1	20.7	31.1	147.1	359	5.9	17.8	64.1	3	3	100	100	95	99	6.2	21
N.Vancouver-Mahon Park	PM25 SHARP5030	2022	8714	2.1	3.6	6	20.8	31.4	136.1	364	5.3	18.9	78.4	5	4	100	100	99	100	5.1	30

2022 Fine Particulate Matter (continued)

Site	Instrument	Year	No. Valid Hrs	Percentiles (1h)					Max 1h	No. Valid Days	24h Average			No. of Days		% of Valid Days Per Quarter				CAAQS Metrics for PM _{2.5} *	
				25th	50th	75th	98th	99th			Annual Avg	Annual 98th Percentile*	Annual Max	>25 µg/m ³	>27 µg/m ³	Q1	Q2	Q3	Q4	Annual	24-Hour
N.Vancouver-2nd Narrows	PM25 SHARP5030	2022	8682	3.2	5	7.8	23.3	33.1	102.3	363	6.7	22.6	57.6	6	5	100	98	100	100	6.6	20
Peace Valley	PM25 SHARP5030	2022	8536	1.8	3.7	7.1	41.4	65.8	300.6	361	6.6	42.8	61.6	12	12	99	99	99	99	5	25
Penticton	BAM1020	2022	8487	1.8	4.8	8.4	26	37.5	101.7	364	6.3	20.4	47	5	5	100	100	99	100		
Pitt Meadows	PM25 SHARP5030	2022	8492	1.7	3.6	6.7	20.5	28.8	138.2	349	5.2	19.4	48.9	3	2	97	93	100	92	5.3	26
Port Alberni-Elem.School	BAM1020	2022	8691	3	5	9	33	39	240.7	362	7.4	25.3	35.3	8	7	100	100	100	97	7.8	24
Port Edward-Sunset Drive	PM25_SHARP5030i	2022	6721	0.6	1.4	2.9	9	11.3	49.3	272	2.2	6.7	8	0	0	16	96	88	98		
Port Moody	PM25 SHARP5030	2022	8541	2	3.7	6.6	22.2	31.9	119.6	357	5.6	18.9	58.3	4	4	100	100	99	92	5.6	28
Powell River-J Thomson	PM25_T640	2022	4649	2.2	3.3	4.5	13.1	17.9	47.6	193	3.9	8.6	12	0	0	100	97		16	6.1	24
Prince George-Plaza 400	PM25 SHARP5030	2022	6115	3	4.9	8.9	24.9	30	59.5	252	6.9	17.4	27.1	2	1	97	98	35	48		
Prince Rupert-Fairview	PM25_SHARP5030i	2022	8014	1	2	3.5	9.6	11.5	34.3	334	2.7	7.1	9.5	0	0	100	98	68	100	2.7	7
Quesnel**	SHARP	2022	8404	3.1	6.5	13.1	33.6	40.9	61	350	9.3	27	44.2	9	7	100	84	100	100	9.6	35
Richmond-South	PM25 SHARP5030	2022	8695	2.1	3.9	6.6	19	22	124.1	363	5.3	16.5	63.1	3	3	99	100	99	100	5.7	19
Smithers	SHARP	2022	8742	2.3	4.3	8.9	30.1	35	195.8	365	7	19.9	28.5	2	1	100	100	100	100	6.7	19
Sparwood	PM25_SHARP5030i	2022	7520	2.3	4.8	9.1	32.9	52.3	86.2	310	7.1	29.5	70.1	10	8	66	95	92	87		
Squamish	BAM1020/SHARP	2022	8618	2.7	4.5	7.5	22.2	32	80.4	358	6.2	20.5	49.5	5	5	96	100	98	99	6.2	28
Surrey East	PM25 SHARP5030	2022	8536	2.8	4.6	7.8	21.7	30.3	213.7	354	6.5	20.7	92.3	3	3	93	99	97	99	6.1	25
Terrace	PM25 SHARP5030	2022	8225	2.2	3.8	6.9	24.5	33.7	151.7	339	5.7	16.7	19.4	0	0	98	78	100	96	4.8	14
Tsawwassen	PM25 SHARP5030	2022	8697	1.7	3	5.1	16.3	21.3	193.1	362	4.4	14	105.8	3	3	100	98	99	100	4.7	13
Valemount	PM25 SHARP5030	2022	2761	2.2	3.9	9.1	61.7	74.9	147.3	114	9.6	26.3	32.5	5	2	99	27				63
Vancouver-ClarkDr	PM25 SHARP5030	2022	8687	3.1	5.2	8.5	23.5	29.2	117.6	364	7	20.9	51.2	3	3	100	100	100	99	7	27
Richmond-Airport	PM25 SHARP5030	2022	8701	2.1	3.9	6.8	20.5	26.8	135.4	363	5.5	16.6	52.5	3	3	100	100	98	100	5.4	21
Vanderhoof	BAM1020	2022	8220	6	8	14	33	38	143	330	10.7	29.5	34.3	14	11	96	96	79	91	10.3	28
Vernon	PM25 SHARP5030	2022	8733	3.4	6.5	11.7	27.3	40.8	80.6	364	8.4	21.9	55	7	6	100	100	99	100	11	70
Victoria	BAM1020	2022	8631	4	6	8	22	27	175	361	6.6	16.5	40.6	2	2	100	100	100	96	7	27
Whistler	BAM1020	2022	7777	0	2	6	27	34	134	326	5	20.2	57.8	4	4	92	86	80	99	5.5	24
Williams Lake	PM25 SHARP5030	2022	8609	2.4	4.4	8.3	30.7	38.4	98.6	357	6.7	23.5	45.6	7	5	100	96	100	96	6.4	27

*CAAQS metrics for PM_{2.5} are an annual metric based on the average of daily values and a 24-hour metric based on the 98th percentile of the daily concentrations, averaged over three consecutive years. Data are normally adjusted for transboundary flow and exceptional events (e.g., wildfires) for air zone management purposes under the national Air Quality Management System. Data in this table were NOT adjusted for transboundary flow and exceptional events. For details, visit: <https://gov.bc.ca/>.

**Data collected from two monitoring stations: Quesnel Kinchant St., and Quesnel Johnston Ave.

2022 Ozone (continued)

Site	Year	No. Valid Days	Annual Avg.	Percentiles (1h)					1h Max	Daily 8h Max		No. Days >62 ppb	% of Valid Days Per Quarter					CAAQS 8-Hr Metric*
				25th	50th	75th	98th	99th		Annual Max	Annual 4th Highest		Q1	Q2	Q3	Q4	Q2+Q3	
Abbotsford-Airport	2022	365	20.6	9.7	21.5	30.1	44.1	49	68.7	59.5	54.7	0	100	100	100	100	100	54
Abbotsford-Mill Lake	2022	360	19.9	9.1	19.9	29.6	45.6	48.7	66.6	57.8	53.6	0	100	96	100	99	98	52
Agassiz	2022	362	19.9	8.8	20	29.1	46.1	53	78.8	63.9	56.7	1	97	100	100	100	100	56
Burnaby-Kensington Park	2022	358	18	8.6	17.7	26.2	41.2	43.3	70.7	60.2	45.6	0	100	100	92	100	96	47
Burnaby-Mtn	2022	364	26.7	20.7	27	33.2	44	46.9	76.9	67.1	57.9	1	100	100	100	99	100	57
Burnaby-South	2022	364	18.5	9.2	18.5	26.8	42.1	44.1	66.3	56.8	46.2	0	100	100	99	100	99	45
Castlegar	2022	364	20.2	11.5	19.7	27.5	44.9	46.8	60.7	50.6	48.4	0	100	99	100	100	99	52
Chilliwack	2022	365	20.1	8.6	20.1	29.4	47.1	54.7	81.1	67	56.9	1	100	100	100	100	100	59
Colwood	2022	361	22.6	12.5	23.2	32.4	44	46.2	61.2	53.7	49.1	0	98	100	100	98	100	51
Coquitlam	2022	361	17	6.7	15.3	26.1	42.6	45.4	85.3	71.1	56.7	1	100	98	98	100	98	57
Courtenay	2022	362	19.7	8.4	19.5	29.2	44.2	46.6	56.7	49.6	47.8	0	100	99	100	98	99	48
Cranbrook	2022	364	28.2	18.7	28.5	37.9	49.7	51.6	61.6	56.7	52.1	0	99	100	100	100	100	53
Duncan	2022	365	18.7	6.6	18	29.3	43.6	45.6	68.9	57.9	50.1	0	100	100	100	100	100	50
Farmington	2022	361	26.3	19	27.8	34.2	44.2	45.5	58.9	55.5	48.6	0	98	98	100	100	99	49
FortSt.John	2022	335	25.5	18.5	26.9	33	43.7	45.6	59.3	56.2	47.5	0	92	93	82	100	87	48
Hope	2022	361	18.3	7	17.7	27.2	45.3	50.2	81.7	61.9	57	0	99	100	100	97	100	58
Kamloops	2022	365	21.3	10.8	21.7	31.3	44.7	46.6	60.6	55.1	47.9	0	100	100	100	100	100	51
Kelowna	2022	365	21.4	13.6	21.8	28.9	40.8	42.8	57.3	47.4	45.1	0	100	100	100	100	100	50
Kitimat-Whitesail	2022	346	19.4	11.4	19.5	27.9	37.1	39.2	48.8	46.4	41.1	0	87	97	98	98	97	41
Langley	2022	365	20.9	10.2	22.1	30.3	44.3	48.7	75.2	60.7	54	0	100	100	100	100	100	54
Maple Ridge	2022	365	19.4	8.4	18.9	28.9	45	51.1	76.7	67.7	63.1	4	100	100	100	100	100	61
Merritt-NicolaAve	2022	305	22.5	11.6	23.9	32.4	42.8	44.3	53.3	48.9	45.3	0	44	100	89	100	95	
Mission	2022	336	20.5	10.5	21	29.3	45.9	53.1	79.9	66.6	60.3	1	100	68	100	100	84	60
Nanaimo	2022	364	22.7	16.7	22.8	28.9	40.8	42.6	71.7	55.5	45.3	0	100	99	100	100	99	45
New Westminster	2022	346	12.3	1.6	9.1	20.1	38.9	42.3	74.6	65.2	49.7	1	96	85	99	100	92	50
North Delta	2022	365	19.1	8.9	19.3	27.9	43.5	45.7	60.7	53.4	50.9	0	100	100	100	100	100	47
N.Vancouver-Mahon Park	2022	363	17.4	7.6	17.1	25.8	40.2	42.8	73.6	56	46.7	0	100	100	100	98	100	46
N.Vancouver-2nd Narrows	2022	364	13.2	4.7	11.7	20.2	35.2	37.5	62.9	43.4	38.2	0	100	100	100	99	100	38
Pitt Meadows	2022	358	18.1	5.7	17.9	28.4	43.7	46.6	81.6	68.4	54.8	1	96	99	98	100	98	53
Port Moody	2022	365	14.7	2.8	12.3	24.1	42.3	45	85	65.9	54.4	1	100	100	100	100	100	51
Prince George-Plaza 400	2022	356	18.7	7.9	19.2	28.1	40.2	41.6	50.8	48.6	43.3	0	97	100	100	93	100	46
Prince Rupert-Fairview	2022	363	21.1	10.8	20.7	32	42.2	43.3	49.2	47.5	45.1	0	100	100	100	98	100	41
Quesnel**	2022	333	18	6.9	16.6	27.5	44.1	46.2	57.2	49.4	46.9	0	64	100	100	100	100	46
Richmond-South	2022	360	17.9	5.7	17.8	27.8	44	45.7	66.5	56.6	46.3	0	96	99	100	100	99	46
Smithers	2022	344	13.8	3.2	11.4	22.3	38.5	40.7	51.5	48.7	45.3	0	100	93	89	95	91	44
Sparwood	2022	361	27.8	16.6	29.5	38.8	50.1	52.7	67.8	60.6	54.8	0	100	100	100	96	100	
Squamish	2022	355	16.9	6.2	16	26.1	41.5	43.8	70.9	61.8	50.4	0	100	98	100	91	99	46
Surrey East	2022	355	20.4	11.3	21	29	43.5	46.5	65.1	57.4	53.9	0	94	99	96	100	97	52

2022 Ozone (continued)

Site	Year	No. Valid Days	Annual Avg.	Percentiles (1h)					Daily 8h Max		No. Days >62 ppb	% of Valid Days Per Quarter					CAAQS 8-Hr Metric*	
				25th	50th	75th	98th	99th	1h Max	Annual Max		Annual 4th Highest	Q1	Q2	Q3	Q4		Q2+Q3
Taylor-Townsite	2022	360	24.7	15	25.7	33.8	46.5	48.4	65.5	53	50	0	99	97	99	100	98	51
Terrace	2022	326	19.5	9.3	19.3	29.5	41.2	42.8	46.8	45.3	44.3	0	82	86	91	98	89	46
Tsawwassen	2022	358	23.2	15.3	23.3	31	44.6	46.9	63.1	56.1	48.9	0	98	99	100	96	99	47
Vancouver-ClarkDr	2022	354	12.2	1.4	10	20	37.8	40.1	64.7	46.8	40.6	0	89	100	100	99	100	42
Richmond-Airport	2022	357	17.3	6.7	17	26.1	41.8	43.5	64	56.1	44.9	0	98	93	100	100	97	45
Vancouver-Downtown	2022	311	12.1	2.6	9	19.5	37	38.3	54.3	40.3	38.4	0	100	97	93	51	95	40
Vernon	2022	365	20.5	10.2	19.9	29.8	44.2	46	54	51.8	46.7	0	100	100	100	100	100	51
Victoria	2022	359	20.3	12	20.4	28.6	41	42.5	49.1	45.8	44.5	0	100	96	100	98	98	45
Whistler	2022	364	20.6	9.9	21.2	29.7	43.7	45.1	57.2	52.9	46.4	0	100	99	100	100	99	48
<p>*CAAQS metric for O₃ is an 8-hour metric based on the annual 4th highest of the daily maximum 8-hour averaged concentration averaged over three years. Data are normally adjusted for transboundary flow and exceptional events (e.g., wildfires) for air zone management purposes under the national Air Quality Management System. Data in this table were NOT adjusted for transboundary flow and exceptional events. For details, visit: https://gov.bc.ca/.</p>																		
<p>**Data collected from two monitoring stations: Quesnel Kinchant St., and Quesnel Johnston Ave.</p>																		

2022 Sulfur Dioxide (continued)

	Year	No. Valid Hrs	No. Valid Days	Annual Avg	Percentiles (1h)					Max	Annual 99th Percentile of D1HM*	No. of Days		% of Valid Days Per Quarter				CAAQS SO ₂ Metrics*	
					25th	50th	75th	98th	99th			>65 ppb	>70 ppb	Q1	Q2	Q3	Q4	Annual	1-Hour
Abbotsford-Airport	2022	8747	365	0.2	0.1	0.2	0.3	0.6	0.7	1.7	1.2	0	0	100	100	100	100	0.2	1.7
Abbotsford-Mill Lake	2022	8733	364	0.2	0.1	0.2	0.2	0.5	0.5	1.2	1	0	0	100	100	100	99	0.2	1.3
Bessborough	2022	8267	361	0.5	0.2	0.3	0.5	1.8	2.5	51.8	15.6	0	1	96	100	100	100	0.5	22.5
Birchbank Golf Course	2022	8275	359	4.1	0.3	0.6	3.9	29.5	36.8	102.8	94.1	13	21	98	99	98	99	4.1	87.2
Burnaby-Kensington Park	2022	8736	365	0.3	0.1	0.2	0.3	1.4	2	11.1	7.4	0	0	100	100	100	100	0.3	5.8
Burnaby-North	2022	8731	365	0.6	0.2	0.3	0.7	3.6	4.5	16.5	11.1	0	0	100	100	100	100	0.6	13.9
Burnaby-South	2022	8738	364	0.3	0.1	0.2	0.3	1.2	1.5	3.4	2.6	0	0	100	100	99	100	0.3	3.1
Castlegar	2022	8387	364	1.3	0.1	0.1	0.7	12	15.5	41.7	28	0	0	100	99	100	100	1.3	31.6
Chilliwack	2022	8744	365	0.1	0.1	0.1	0.1	0.4	0.4	1.6	0.9	0	0	100	100	100	100	0.1	1.1
Crofton-Elementary	2022	7961	346	1	0.5	0.8	1.2	4.2	6	20.1	13.8	0	0	100	99	100	80	1	12
Farlington	2022	8557	361	0.3	0.1	0.2	0.4	1.4	1.8	7.2	3.4	0	0	98	98	100	100	0.3	5.7
FortSt.John	2022	8232	355	0.3	0.1	0.2	0.3	1	1.2	7.5	2.6	0	0	94	95	100	100	0.3	3.7
Fort St.John-N.CampC	2022	8428	351	0.2	0	0.1	0.2	1.5	2	10.4	4.1	0	0	100	100	90	95	0.2	5.7
Hudson's Hope	2022	8352	353	0.1	0	0.1	0.1	0.4	0.5	2.2	0.7	0	0	99	91	100	97	0.1	0.9
Kamloops	2022	8386	364	0.4	0.2	0.3	0.4	1.4	2.1	12.4	6.1	0	0	99	100	100	100	0.4	4.9
Kelowna	2022	8391	365	0.3	0.2	0.3	0.4	0.7	0.9	2.3	1.8	0	0	100	100	100	100	0.3	1.6
Kitimat-Haisla Village	2022	8332	364	0.2	0.1	0.2	0.2	1	1.4	30.3	9.8	0	0	100	100	99	100	0.2	12.9
Kitimat-Haul Rd	2022	8071	352	2.2	0.2	0.4	1.3	22.8	32.9	67.2	57.5	1	7	88	98	100	100	2.2	66.7
Kitimat-Industrial Ave	2022	8019	344	0.9	0.2	0.4	0.9	5.2	6.9	48.1	18.6	0	0	77	100	100	100	0.9	26
Kitimat-Riverlodge	2022	8328	364	0.3	0.1	0.2	0.3	1.6	2.5	16.2	9.9	0	0	100	100	100	99	0.3	19
Kitimat-Whitesail	2022	8191	355	0.2	0.1	0.2	0.2	1.1	1.7	11.5	5.5	0	0	99	97	96	98	0.2	10.6
Langdale	2022	8336	362	0.7	0.2	0.3	0.7	4.8	6.8	56.9	20.7	0	1	99	100	100	98	0.7	16.4
Langley	2022	8726	365	0.1	0.1	0.1	0.1	0.4	0.5	1.4	1	0	0	100	100	100	100	0.1	1.4
Merritt-NicolaAve	2022	7204	313	0.2	0.1	0.1	0.2	0.5	0.6	2.2	1.5	0	0	44	100	98	100		
Burnaby-Capitol Hill	2022	8731	365	0.6	0.1	0.1	0.4	5.8	11.1	52.9	39.5	0	2	100	100	100	100	0.6	28.6
N.Vancouver-Mahon Park	2022	8746	365	0.3	0.2	0.3	0.4	1.1	1.3	5	3.3	0	0	100	100	100	100	0.3	3.3
N.Vancouver-2nd Narrows	2022	8721	365	0.4	0.1	0.3	0.4	1.3	1.6	19.4	3.7	0	0	100	100	100	100	0.4	3.1
Pine River-Gas Plant	2022	8344	363	3.1	0.2	0.4	2.3	24.2	29.4	302.5	111	6	6	100	100	98	100	3.1	99.2
Pine River-Hasler	2022	8370	364	0.3	0.1	0.2	0.3	1.1	1.4	17.7	3.2	0	0	99	100	100	100	0.3	4
Pitt Meadows	2022	8700	363	0.1	0	0.1	0.2	0.7	0.9	2.2	1.6	0	0	100	98	100	100	0.1	2
Port Moody	2022	8719	365	0.4	0.1	0.1	0.3	2.5	3.1	88.5	4.7	1	2	100	100	100	100	0.4	5.4
Prince George-Jail	2022	8363	362	2.6	0.4	0.6	1.7	22.4	31.5	129.1	58.4	2	11	100	99	100	98	2.6	69.8
Prince George-Marsulex Acid Plant	2022	7857	334	0.9	0.5	0.7	1.1	2.8	3.8	13.8	6.5	0	0	90	93	95	88	0.9	10.3
Prince George-Plaza 400	2022	8291	359	1.4	0.4	0.6	1.2	10.4	14.6	64.3	38.6	0	1	94	100	99	100	1.4	36.2
Prince Rupert-Fairview	2022	8636	365	0.2	0.1	0.1	0.2	0.6	0.7	1.6	1	0	0	100	100	100	100	0.2	1.4
Quesnel**	2022	8256	358	0.4	0.2	0.3	0.4	1.5	2.9	26.3	10.3	0	0	100	92	100	100	0.4	9.6
Richmond-South	2022	8694	363	0.1	0	0.1	0.1	0.6	0.8	1.4	1.3	0	0	100	98	100	100	0.1	1.5

2022 Sulfur Dioxide (continued)

	Year	No. Valid Hrs	No. Valid Days	Annual Avg	Percentiles (1h)					Max	Annual 99th Percentile of D1HM*	No. of Days		% of Valid Days Per Quarter				CAAQS SO ₂ Metrics*	
					25th	50th	75th	98th	99th			>65 ppb	>70 ppb	Q1	Q2	Q3	Q4	Annual	1-Hour
Squamish	2022	8331	362	0.3	0.1	0.2	0.3	1	1.4	11.2	7.6	0	0	100	100	99	98	0.3	4.6
Taylor-Farm 247 Road	2022	8344	363	1.2	0.3	0.5	1	8.1	10.5	60.3	38.9	0	1	99	100	99	100	1.2	
Taylor-SouthHill	2022	8361	365	0.4	0.1	0.2	0.4	1.9	2.9	21.6	10.8	0	0	100	100	100	100	0.4	9.1
Taylor-Townsite	2022	8309	363	0.8	0.1	0.3	0.5	6.9	10.6	27.9	25.1	0	0	100	98	100	100	0.8	26.7
Terrace	2022	8115	352	0.3	0.1	0.2	0.4	0.8	1	2	1.7	0	0	100	86	100	100	0.3	3.3
Trail-Butler Park	2022	8235	355	4.5	0.3	1	3.8	38.2	52.7	155.5	124.8	29	55	90	99	100	100	4.5	167.2
Trail-Airport	2022	8350	364	2.3	0.4	0.7	2.1	15.8	20.8	53.3	42.4	0	1	99	100	100	100	2.3	52.4
Tsawwassen	2022	8715	363	0.2	0.1	0.2	0.3	0.5	0.6	1.4	1.1	0	0	100	99	99	100	0.2	1.8
Richmond-Airport	2022	8559	357	0.3	0.1	0.2	0.4	1.1	1.4	4.8	2.8	0	0	98	93	100	100	0.3	4.7
Vancouver-Downtown	2022	7397	309	0.3	0.1	0.2	0.4	1.6	2	4.7	4.2	0	0	100	93	95	51		5.9
Victoria	2022	7996	348	0.2	0.1	0.2	0.3	1.2	1.6	5.7	3.9	0	0	92	100	100	89	0.2	4.6
Warfield Elementary	2022	8238	357	4.8	0.3	0.6	2.8	43.4	65.7	332.3	201.8	43	62	93	100	98	100	4.8	221.3
*CAAQS metrics for SO ₂ are an annual metric based on the average of all 1-hour concentrations over the year, and a 1-hour metric based on the 99th percentile of the daily maximum 1-hour concentration averaged over three years.																			
**Measurements were taken from two monitoring stations: Quesnel Kinchant St., and Quesnel Johnston Ave.																			

2022 Nitrogen Dioxide (continued)

Site	Year	No. Valid Hrs	No. Valid Days	Annual Avg	Percentiles (1h)					Max 1h	Annual 98th Percentile of Daily 1-Hour Maximum	No. Days		% of Valid Days Per Quarter				CAAQS NO ₂ Metrics*	
					25th	50th	75th	98th	99th			>42 ppb	>60 ppb	Q1	Q2	Q3	Q4	Annual	1-Hour
Abbotsford-Airport	2022	8743	365	7.2	2.9	5.6	10.3	21.3	23.2	35	27.2	0	0	100	100	100	100	7.2	27.8
Abbotsford-Mill Lake	2022	8732	364	7.9	3.4	6.2	11.3	23.1	25.9	37	31.1	0	0	100	100	100	99	7.9	31.6
Agassiz	2022	8658	362	7.5	3	5.5	11	22.1	24.5	39	31.2	0	0	97	100	100	100	7.5	28.8
Burnaby-Kensington Park	2022	8735	365	10.1	5	8.6	13.8	27.4	30.1	47.2	36.3	1	0	100	100	100	100	10.1	34.1
Burnaby-Mtn	2022	8635	360	7	3.1	5.6	9.1	23.6	27.5	41	32.5	0	0	96	100	100	99	7	30.4
Burnaby-South	2022	8700	364	11.7	6.1	10.2	16.1	29.1	31.4	49.5	37	3	0	100	100	99	100	11.7	36.8
Castlegar	2022	8350	362	5.5	1.9	4	7.9	18.4	20.7	37.8	25.3	0	0	100	99	100	98	5.5	25.6
Chilliwack	2022	8742	365	7.7	3.4	6.2	11	21.6	24.4	37.3	31.5	0	0	100	100	100	100	7.7	29.5
Colwood	2022	8269	362	4.1	1.1	2.9	5.7	15.2	17	25.1	22.6	0	0	100	100	98	99	4.1	22.4
Coquitlam	2022	8672	363	9.3	4.2	7.5	13	26.4	28.9	52.5	33.1	1	0	100	100	98	100	9.3	31.7
Courtenay	2022	8135	350	3.2	1.1	2.1	4.1	12.7	15.2	26.1	21.6	0	0	100	99	95	90	3.2	21.9
Cranbrook	2022	8378	365	4.1	0.9	2	5.3	20.7	23.7	43.2	28.1	1	0	100	100	100	100	4.1	27.2
Duncan	2022	8341	363	3.9	1.5	2.9	5.3	13.9	15.7	25	21	0	0	100	100	100	98	3.9	21.3
Farmington	2022	8551	360	2.2	0.5	1.3	2.7	11.1	13.7	25.1	19.5	0	0	98	98	99	100	2.2	18.6
FortSt.John	2022	8382	365	6	1.4	3	7	30.9	38.1	87.9	50.7	14	3	100	100	100	100	6	47.5
Fort St.John-N.CampC	2022	8696	364	3.9	1.2	2.6	5	16.1	19.4	36.7	26.3	0	0	100	100	100	99	3.9	27.3
Hope	2022	8625	360	7.1	3.1	5.8	9.8	20.6	22.9	35.3	28.2	0	0	99	100	100	96	7.1	25
Horseshoe Bay	2022	8688	363	11.1	4.8	9.5	15.5	32.6	37.1	65.3	46.3	18	1	98	100	100	100	11.1	
Hudson's Hope	2022	8380	358	2.1	0.5	1.1	2.6	10.8	12.9	24.4	17.5	0	0	99	93	100	100	2.1	19.6
Kamloops	2022	8385	365	10.9	4.5	8.4	15.7	32.1	35.3	46.7	40.9	4	0	100	100	100	100	10.9	38.4
Kelowna	2022	8388	365	5.4	2.2	4	6.9	19.2	23	36.1	28.2	0	0	100	100	100	100	5.4	26.4
Kitimat-Whitesail	2022	7034	305	1.3	0.6	0.9	1.4	6.3	8.5	21.4	13.4	0	0	99	96	48	92		14.3
Langdale	2022	8337	362	4.2	1.8	3.4	5.7	13.2	15.2	37.1	23.1	0	0	99	100	100	98	4.2	21.7
Langley	2022	8732	365	6.1	2.8	4.7	8.1	19.3	21.9	28.3	25.8	0	0	100	100	100	100	6.1	23.5
Maple Ridge	2022	8686	362	7.7	3.2	6.1	10.6	23.2	26.4	44.2	32.8	2	0	100	100	100	97	7.7	29.8
Merritt-NicolaAve	2022	7209	313	6.2	2.6	4.5	8.3	20.6	23	39.1	27	0	0	44	100	98	100		
Mission	2022	8069	336	7.1	2.8	5.1	9.8	22.7	25.3	40.1	30.5	0	0	100	68	100	100	7.1	27.9
Nanaimo	2022	8337	364	5.2	1.9	3.9	7.1	17.5	19.6	38	27	0	0	100	99	100	100	5.2	25.8
New Westminster	2022	7480	310	16.6	11	16.4	21.6	33.4	36.9	58.7	45.6	11	0	100	73	67	100	16.6	40.7
North Delta	2022	8738	365	11.4	5.1	9.4	16.6	30.5	33	48.1	40.7	3	0	100	100	100	100	11.4	39.1
N.Vancouver-Mahon Park	2022	8746	365	11	5	9	15.6	29.8	31.7	40.8	36.5	0	0	100	100	100	100	11	35.9
N.Vancouver-2nd Narrows	2022	8726	365	13.2	6.8	11	17.6	35.6	38.9	68.1	50.1	24	3	100	100	100	100	13.2	52.7
Pitt Meadows	2022	8721	365	8.2	2.8	6.6	11.8	25.7	28.5	47.8	36.2	1	0	100	100	100	100	8.2	34.1
Port Edward-Sunset Drive	2022	6855	287	1.9	0.4	1.5	3	6.7	7.8	16.3	12.4	0	0	16	99	100	99		
Port Moody	2022	8704	365	11.7	6.4	10.7	15.9	27.8	29.8	52.3	37	3	0	100	100	100	100	11.7	35.9
Prince George-Plaza 400	2022	8332	362	8.6	2.6	5.9	12.2	31.4	34.7	49.9	41.8	7	0	97	100	100	100	8.6	40.8
Prince Rupert-Fairview	2022	8613	362	4	1.2	2.7	5.8	14.8	17.1	34.5	22.4	0	0	100	97	100	100	4	23.1
Quesnel**	2022	8390	365	4.3	1.3	2.7	5.7	17.9	19.8	29.2	24	0	0	100	100	100	100	4.3	32.1
Richmond-South	2022	8697	365	10.4	3.8	8.7	15.7	28.6	30.9	38.5	34.6	0	0	100	100	100	100	10.4	35.3
Smithers	2022	8373	363	7	3.3	5.4	9.7	19.8	21.4	30.6	24.3	0	0	100	100	100	98	7	26
Sparwood	2022	8301	364	5.8	2.1	4	7.8	21.9	24.8	36.7	31.6	0	0	100	100	100	99	5.8	
Squamish	2022	8406	361	5.3	2.4	4.3	7.1	17	19.5	33.4	24.5	0	0	99	99	98	100	5.3	23.2
Surrey East	2022	8628	360	7.9	3.4	6	10.9	24.1	25.7	36.7	29.9	0	0	94	100	100	100	7.9	30.9

2022 Nitrogen Dioxide (continued)

Site	Year	No. Valid Hrs	No. Valid Days	Annual Avg	Percentiles (1h)					Max 1h	Annual 98th Percentile of Daily 1-Hour Maximum	No. Days		% of Valid Days Per Quarter				CAAQS NO ₂ Metrics*	
					25th	50th	75th	98th	99th			>42 ppb	>60 ppb	Q1	Q2	Q3	Q4	Annual	1-Hour
Taylor-Farm 247 Road	2022	8303	355	2	0.7	1.4	2.5	8.1	10.2	21.3	14.9	0	0	97	97	97	99	2	
Taylor-Townsite	2022	8251	350	5	1	2.7	6.4	24.7	28.2	47.9	37.6	2	0	97	95	97	96	5	36.4
Terrace	2022	7951	343	2.6	0.7	1.3	3	13.6	15.9	25.4	21.2	0	0	100	76	100	100	2.6	22.6
Tsawwassen	2022	8726	364	5.9	2.2	4.2	7.9	21.1	23.3	41.2	28.4	0	0	100	99	100	100	5.9	29
Vancouver-ClarkDr	2022	8172	341	16	9.4	15.3	21.8	34.6	37.2	48	41.8	6	0	90	85	100	99	16	44.1
Richmond-Airport	2022	8557	357	12.3	5.6	10.5	17.9	31.1	33.3	50.2	39.8	2	0	98	93	100	100	12.3	39.2
Vancouver-Downtown	2022	7429	310	15.5	9.4	14.5	20.9	32.5	35.2	47.2	40	4	0	100	97	95	49		39.3
Vernon	2022	8388	365	8.8	3.7	6.4	11.9	28.3	31.5	43.1	36	1	0	100	100	100	100	8.8	36.2
Victoria	2022	8275	360	6.7	2.4	5	9.2	22.8	25.8	42.4	34.2	1	0	100	100	95	100	6.7	33.2
Whistler	2022	8436	362	3.3	1.1	2.1	4.2	13.5	15.3	30.7	19.7	0	0	99	99	100	99	3.3	20.1
*CAAQS metrics for NO ₂ are an annual metric based on the average of all 1-hour concentrations over the year, and a 1-hour metric based on the 98th percentile of the daily maximum 1-hour concentration averaged over three years.																			
**Measurements were taken from two monitoring stations: Quesnel Kinchant St., and Quesnel Johnston																			