

Air Quality Report

Produced by AQDM on behalf of Bradford

BRADFORD KEIGHLEY 2018

These data have been fully ratified by AQDM to the LAQM (TG16) standards

Site Environment and Description

URBAN CENTRE: Keighley

Statistical Summary Report

This 2018 report contains all the statistics required for the LAQM reporting.

First table – Air Quality Statistics

The top four lines show the duration within the bands of the Daily Air Quality Index (DAQI). This was introduced by Defra on January 2012 and revised April 2013. The number of occasions within each band is summarised as follows.

DAQI Pollutant	Moderate	High	Very High
Gravimetric PM ₁₀	2 days	2 days	0
Gravimetric PM _{2.5}	3 days	1 day	0
NO ₂	0 hours	0	0
SO ₂	0 15-minutes	0	0

Gravimetric PM₁₀ was Moderate on 13th Feb, 5th Aug with a daily mean reaching 66 µg m⁻³.
High on 4th Aug, 5th Nov with a daily mean reaching 78 µg m⁻³.

Gravimetric PM_{2.5} was Moderate on 3rd 4th Mar, 6th Nov with a daily mean reaching 41 µg m⁻³.
High on 5th Nov with a daily mean reaching 65 µg m⁻³.

Data Captures

The annual data captures are shown on the bottom line. These were above the 85% target for NO₂ and SO₂ and below for PM₁₀ and PM_{2.5}.

High percentiles are included where the annual data capture was less than 85%.

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Second table – Air Quality Exceedences

Gravimetric PM_{10} – annual data capture was 84.0 %

The maximum daily mean was $78 \mu\text{g m}^{-3}$ so the daily mean limit value of $50 \mu\text{g m}^{-3}$ was exceeded on 4 days. The annual allowance is 35 days so this Objective was not exceeded.

The annual mean was $16 \mu\text{g m}^{-3}$ which did not exceed the $40 \mu\text{g m}^{-3}$ Objective.

Gravimetric $PM_{2.5}$ – annual data capture was 81.2 %

The annual mean was $11 \mu\text{g m}^{-3}$ which did not exceed the $25 \mu\text{g m}^{-3}$ Objective. Note, however, that the $PM_{2.5}$ standard is not set in regulations.

There should be a 15% cut in urban background exposure (annual mean) for all Local Authorities from 2010 to 2020.

NO_2 – annual data capture was 87.0 %

The annual mean was $27 \mu\text{g m}^{-3}$ which did not exceed the $40 \mu\text{g m}^{-3}$ Objective.

The maximum hourly mean was $90 \mu\text{g m}^{-3}$ so there were no exceedences of the NO_2 hourly limit of $200 \mu\text{g m}^{-3}$. There is an annual allowance of 18 hours so this Objective was not exceeded.

SO_2 – annual data capture was 87.9 %

The maximum 15-minute mean was $112 \mu\text{g m}^{-3}$ so the $266 \mu\text{g m}^{-3}$ limit was not exceeded. There is an annual allowance of 35 15-minute means so the Objective was not exceeded.

The maximum hourly mean was $45 \mu\text{g m}^{-3}$ so the $350 \mu\text{g m}^{-3}$ limit was not exceeded. There is an annual allowance of 24 hours so the Objective was not exceeded.

The maximum daily mean was $9 \mu\text{g m}^{-3}$ so the $125 \mu\text{g m}^{-3}$ limit was not exceeded. There is an annual allowance of 3 days so the Objective was not exceeded.

The annual mean was $3 \mu\text{g m}^{-3}$ which did not exceed the $20 \mu\text{g m}^{-3}$ Objective.

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Air Quality Statistics

Pollutant	PM ₁₀ ⁺	PM _{2.5} [~]	NO ₂	NO	NO _x	SO ₂	Wind Dir	Wind Speed
Number Very High [#]	0	0	0	-	-	0	-	-
Number High [#]	2	1	0	-	-	0	-	-
Number Moderate [#]	2	3	0	-	-	0	-	-
Number Low [#]	299	290	7619	-	-	30499	-	-
Maximum 15-min mean	-	-	101 µg m ⁻³	320 µg m ⁻³	570 µg m ⁻³	112 µg m ⁻³	-	146.1 m/s
Maximum hourly mean	826 µg m ⁻³	321 µg m ⁻³	90 µg m ⁻³	266 µg m ⁻³	482 µg m ⁻³	45 µg m ⁻³	-	115.0 m/s
Maximum running 8-hr mean	172 µg m ⁻³	148 µg m ⁻³	76 µg m ⁻³	159 µg m ⁻³	301 µg m ⁻³	14 µg m ⁻³	-	29.9 m/s
Maximum running 24-hr mean	98 µg m ⁻³	82 µg m ⁻³	58 µg m ⁻³	107 µg m ⁻³	211 µg m ⁻³	9 µg m ⁻³	-	18.2 m/s
Maximum daily mean	78 µg m ⁻³	65 µg m ⁻³	53 µg m ⁻³	98 µg m ⁻³	194 µg m ⁻³	9 µg m ⁻³	-	17.3 m/s
90.4 th percentile of daily means [†]	27 µg m ⁻³	-	-	-	-	-	-	-
90 th percentile of daily means [†]	27 µg m ⁻³	-	-	-	-	-	-	-
98.1 st percentile of daily means [†]	40 µg m ⁻³	-	-	-	-	-	-	-
Average	16 µg m ⁻³	11 µg m ⁻³	27 µg m ⁻³	12 µg m ⁻³	45 µg m ⁻³	3 µg m ⁻³	-	3.2 m/s
Data capture	84.0 %	81.2 %	87.0 %	87.0 %	87.0 %	87.9 %	87.6 %	88.3 %

[#] Daily Air Quality Index (DAQI) as defined by COMEAP January 2012 and revised April 2013

[†] Percentile required for annual data capture < 85%

* PM₁₀ in gravimetric units µg m⁻³

⁺ PM₁₀ as measured by a FDMS using a gravimetric factor of 1

[~] PM_{2.5} as measured by a FDMS using a gravimetric factor of 1

Mass units for the gases are at 20°C and 1013mb

NO_x mass units are NO_x as NO₂ µg m⁻³

Air Quality Exceedences

Pollutant	Air Quality (England) Regulations 2000 & (Amendment) Regulations 2002	Max Conc	Number	Days	Allowed	Exceeded
PM ₁₀ Particulate Matter (Gravimetric)	Daily mean > 50 µg m ⁻³	78 µg m ⁻³	4	4	35 days	No
PM ₁₀ Particulate Matter (Gravimetric)	Annual mean > 40 µg m ⁻³	16 µg m ⁻³	0	-	-	No
PM _{2.5} Particulate Matter (Gravimetric) *	Annual mean > 25 µg m ⁻³	11 µg m ⁻³	0	-	-	No
Nitrogen Dioxide	Annual mean > 40 µg m ⁻³	27 µg m ⁻³	0	-	-	No
Nitrogen Dioxide	Hourly mean > 200 µg m ⁻³	90 µg m ⁻³	0	0	18 hours	No
Sulphur Dioxide	15-minute mean > 266 µg m ⁻³	112 µg m ⁻³	0	0	35 15 mins	No
Sulphur Dioxide	Hourly mean > 350 µg m ⁻³	45 µg m ⁻³	0	0	24 hours	No
Sulphur Dioxide	Daily mean > 125 µg m ⁻³	9 µg m ⁻³	0	0	3 days	No
Sulphur Dioxide	Annual mean > 20 µg m ⁻³	3 µg m ⁻³	0	-	-	No

* Not set in regulations

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Monthly Data Captures %

Pollutant	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
PM ₁₀	92.9	79.9	99.6	89.0	93.3	96.0	41.4	78.8	79.0	97.0	98.1	63.0
PM _{2.5}	95.6	79.9	99.5	88.8	93.4	95.4	39.8	51.7	77.5	92.9	97.8	63.0
Nitrogen Dioxide	95.7	80.2	100.0	89.3	93.3	96.3	30.1	99.7	99.0	99.2	98.5	62.9
Sulphur Dioxide	95.7	80.2	100.0	89.2	93.3	96.3	41.3	99.9	99.0	99.3	97.9	62.9

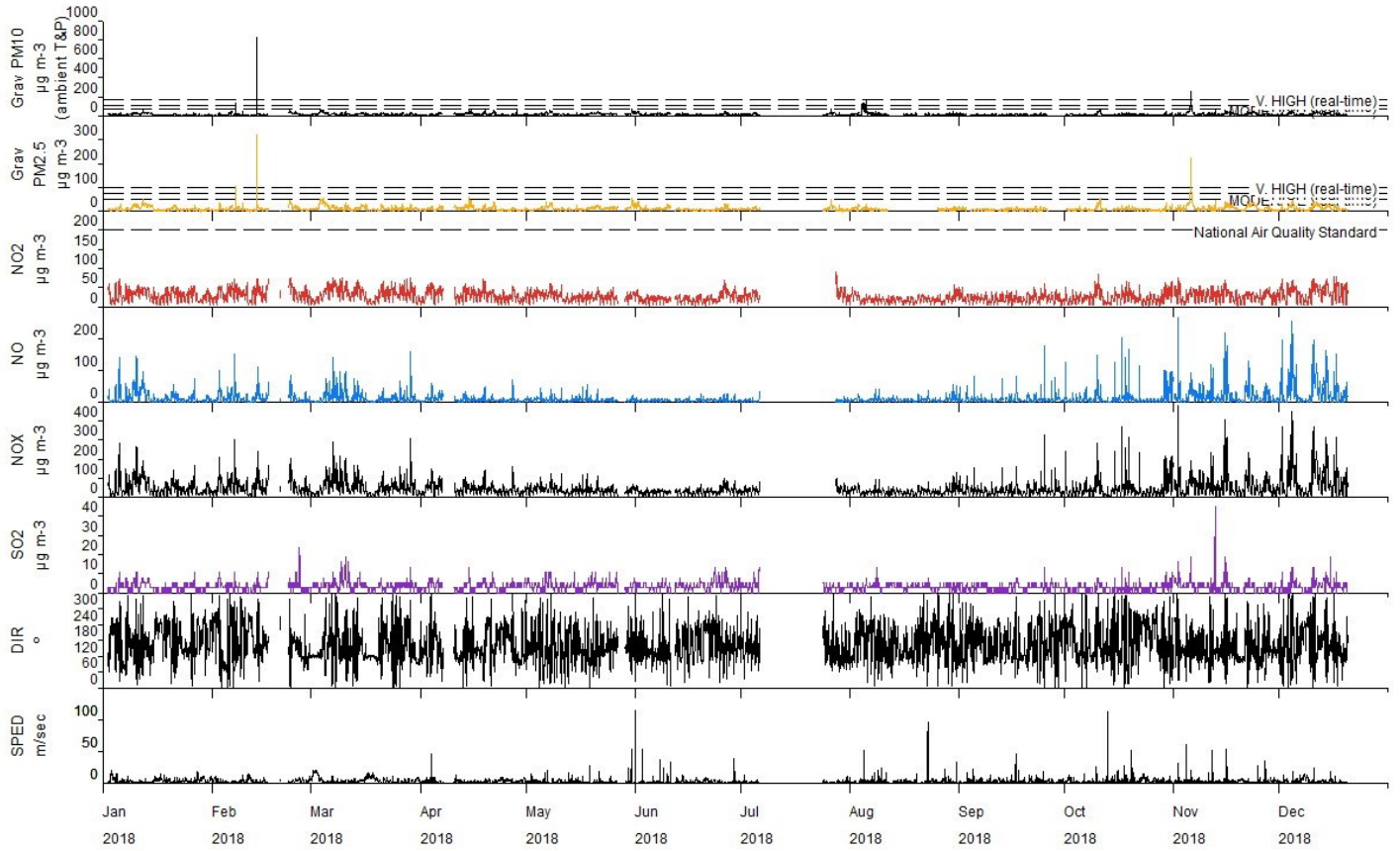
Monthly Means

Pollutant	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
PM ₁₀ µg m ⁻³	13	16	18	17	19	16	17	19	12	14	21	18
PM _{2.5} µg m ⁻³	10	10	13	10	12	9	10	8	7	8	15	13
Nitrogen Dioxide µg m ⁻³	28	32	32	29	25	21	29	19	21	25	28	36
Sulphur Dioxide µg m ⁻³	3	3	4	3	4	4	3	3	3	3	3	3

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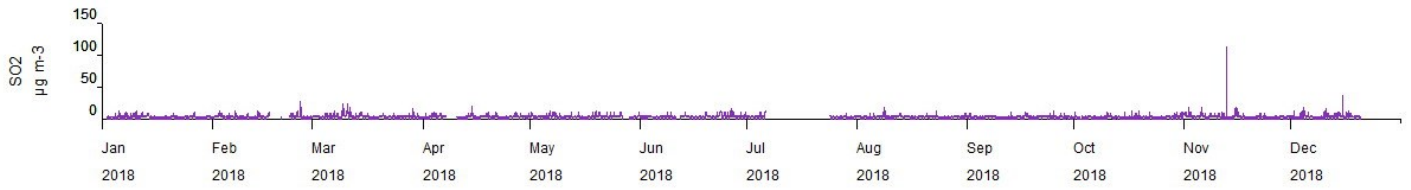
Hourly Means



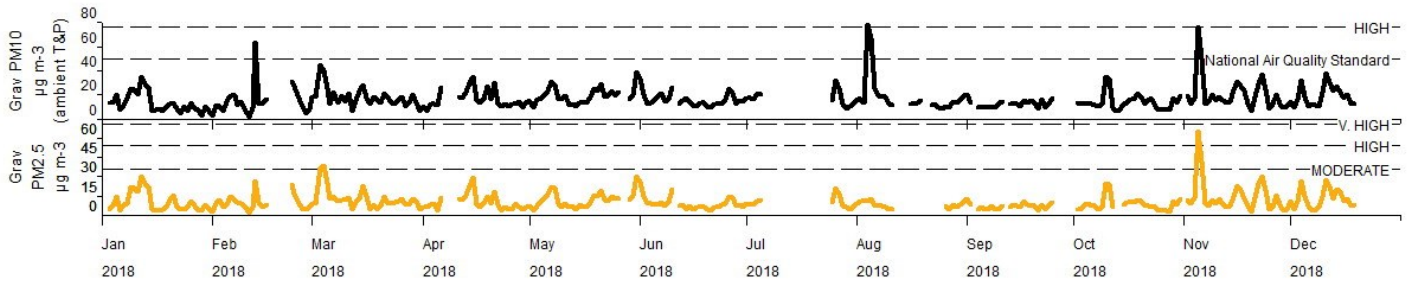
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15-min Means

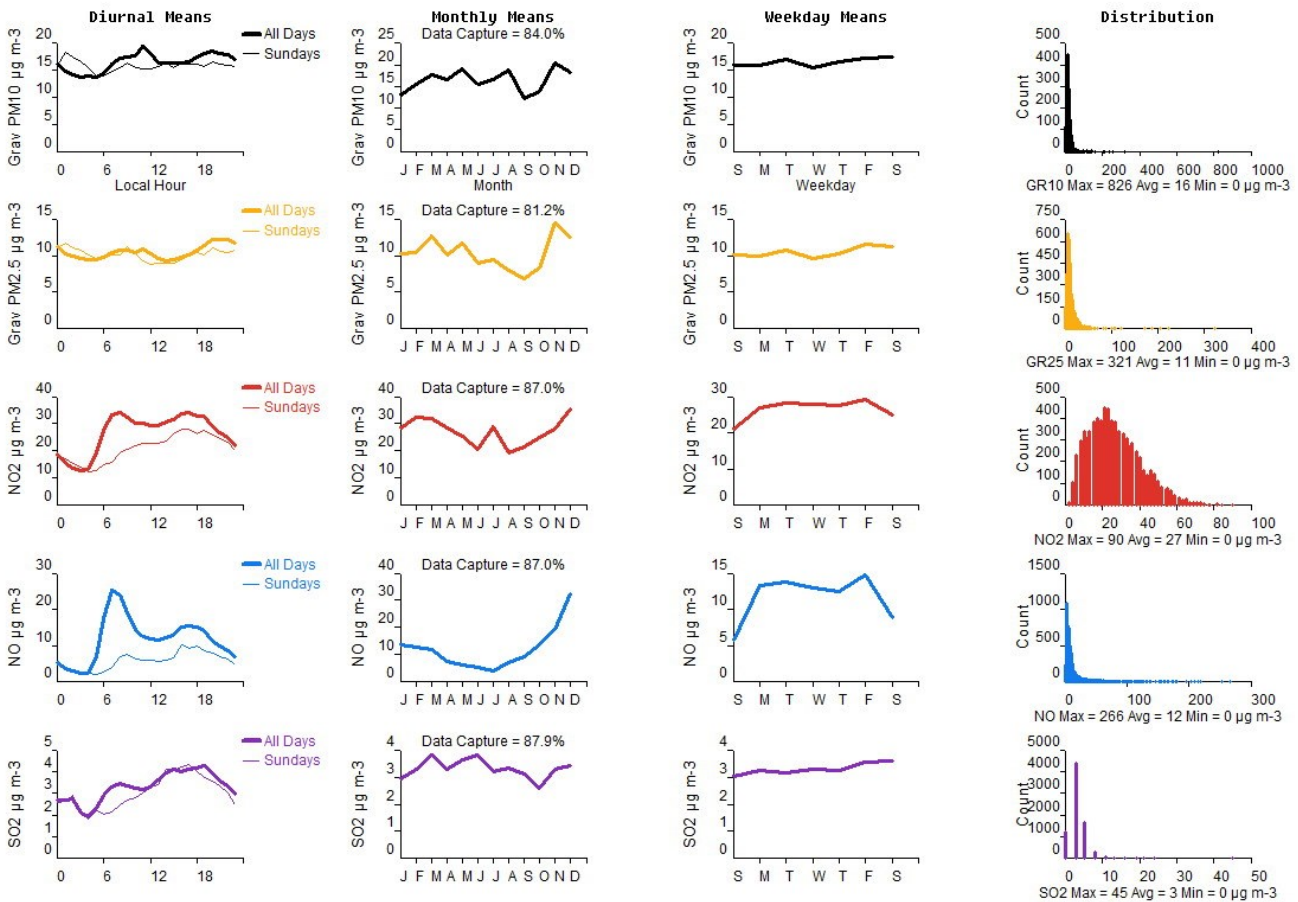


Daily Means



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