



Peace Airshed Zone Association

Ambient Air Monitoring Network Summary

**Ambient Air Quality Monitoring Program
Monthly Report
January 2019**

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February 28th, 2019

Alberta Environment and Parks

11th Floor, Oxbridge Place
9820-106 Street
Edmonton Alberta T5K 2J6

RE: Peace Airshed Zone Association (PAZA) – January 2019 Ambient Air Report

Enclosed is the PAZA Ambient Air Monitoring Network Report for the month of January 2019.

The representative of the Person Responsible for this monitoring program is Mandeep Dhaliwal, Program Manager.

This report was prepared by Andersen Science Consulting and reviewed by Mandeep Dhaliwal.

PAZA has retained the services of WSP Canada Inc. to conduct continuous ambient monitoring and Andersen Science Consulting to provide data validation and reporting on its behalf.

This report is submitted by PAZA on behalf of the industrial member companies to satisfy the requirements of the following facility Operating Approvals:

Company	Facility	LSD	EPEA Approval Number
Advantage Oil & Gas Ltd.	Glacier	05-02-076-13-W6	262479-00-00
Alberta Power (2000) Ltd. (an ATCO company)	Sturgeon	SW-06-069-21-W5	10283-02-02
ATCO Power Canada	Poplar Hill	11-19-073-08-W6	67774-01-01
ATCO Power Canada	Valleyview	SW-06-069-21-W5	147709-01-01
AltaGas Ltd.	Pouce Coupe	03-03-081-13-W6	247673-00-00
	Ante Creek	02-26-068-25-W5	266694-00-00
	Gordondale	16-31-78-11-W6M	287474-00-00
Apache Canada Ltd.	House Mountain	01-08-070-10-W5	10137-02-02
Birchcliff Energy Ltd.	Pouce Coupe	03-22-078-12-W6	252529-00-00
Canadian Natural Resources Limited	Bonanza	11-25-081-11-W6	00000029-01-00
	Progress/Gordondale	01-01-077-10-W6	00010036-02-00
	Gold Creek	13-26-067-05-W6	00010446-02-00

Company	Facility	LSD	EPEA Approval Number
Canfor Forest Products	Teepee Creek	SE-2-074-04-W6	00001635-02-00
	Sturgeon/Valleyview	02-02-069-22-W5	1633-02-00
	Grande Prairie	SW-23-071-06-W6	152645-01-00
Conocophillips Canada Energy Partnership	Wembley	06-19-073-08-W6	00000212-01-00
Devon Canada	NW Belloy (Dunvegan)	16-36-079-03-W6	00009810-02-00
	Eaglesham (South)	02-14-077-25-W5	00047669-01-00
	North Normanville	03-36-079-23-W5	00047455-01-00
	West Culp	05-34-078-25-W6	00136284-00-00
	Cecil	08-15-084-08-W6	00010032-02-00
Encana Corporation	Sexsmith	04-08-075-07-W6	00010002-01-00
Enerplus Resources	Pouce Coupe	SW-06-069-21-W5	1464-02-03
Exshaw Oil Corporation	Spirit River	03-10-077-07-W6	344521-00-00
Grande Prairie Generation Inc.	Northern Prairie Power Project	04-19-073-08-W6	00238762-00-00
Long Run Exploration	Eaglesham	01-25-076-01-W6	00241532-00-00
	Kakut	14-12-075-03-W6	00248469-00-00
	Donnelly	06-01-077-21-W5	00000087-02-00
	Puskwaskau	03-26-074-01-W6	00017524-01-00
Longview Oil Corp.	Sunset House	06-22-070-20-W5	138884-01-00
Penn West Petroleum Ltd.	Tangent	13-29-080-23-W5	00001746-02-00
	Pouce Coupe	16-07-078-11-W6	00000614-01-00
Petrus Resources	Rycroft	08-25-077-06-W6	11351-02-00
	Spirit River	08-34-077-06-W6	11096-02-00

Company	Facility	LSD	EPEA Approval Number
Spectra Energy Midstream Corporation	Fourth Creek	16-11-082-09-W6	00000263-01-00
	Gordondale	11-26-079-09-W6	00011495-01-01
	Pouce Coupe/Bonanza	3-23-080-13-W6	00070203-01-01
Suncor Energy Inc.	Progress	07-22-078-09-W6	00011428-02-00
TAQA North Ltd.	Valhalla	13-21-076-09-W6	00017620-01-00
Veresen Energy	Hythe Brainard	11-18-074-12-W6	00010910-02-00
Weyerhaeuser Canada	Grande Prairie Pulp and Wood Plant	01-14-070-05-W6	00000113-02-00

Included in this report is a summary of the monthly passive monitoring and continuous monitoring programs and detailed hourly average reports. Operational summaries can be found on the “Continuous Ambient Network Equipment and Results Summary” pages of the report.

Continuous Monitoring: **Seven (7) Stations including Henry Pirker (Grande Prairie), Evergreen Park, Smoky Heights, Beaverlodge, Valleyview, Donnelly and Wembley-Portable.**

Calibration and Data Submission

Hourly data for January 2019 were submitted to Alberta’s Ambient Air Data Warehouse for all stations. This report and calibration reports were emailed to Air.Reporting@gov.ab.ca

During the month of January, the following events were noted:

Beaverlodge Station:

- ◆ The measured ambient air quality was within the AAAQO for the Beaverlodge station.
- ◆ The RH sensor malfunctioned, returning an uptime of 29.2%. Faulty wiring is suspected and is under investigation. All other analyzers and meteorological sensors at the Beaverlodge station had operational uptimes greater than 90% for the month of January.

Evergreen Park Station:

- ◆ The measured ambient air quality was within the AAAQO for the Evergreen Park station.
- ◆ All analyzers and meteorological sensors at the Evergreen Park station had operational uptimes greater than 90% for the month of January.

Henry Pirker Station:

- ◆ The measured ambient air quality was within the AAAQO for the Henry Pirker station.
- ◆ All analyzers and meteorological sensors at the Henry Pirker station had operational uptimes greater than 90% for the month of January.

Smoky Heights Station:

- ◆ There was one (1) 1-hour exceedance of the AAAQG for PM_{2.5} in January.

Station Name	Date	Start Time	End Time	PM _{2.5} Concentration	Reference Number
		(MST)	(MST)	(µg/m ³)	
Smoky Heights	04-Jan-19	22:00	23:00	95.0	348103

- ◆ All analyzers and meteorological sensors at the Smoky Heights station had operational uptimes greater than 90% for the month of January.

Valleyview Station:

- ◆ The measured ambient air quality was within the AAAQO for the Valleyview station.
- ◆ All analyzers and meteorological sensors at the Valleyview station had operational uptimes greater than 90% for the month of January.

Donnelly Station:

- ◆ The measured ambient air quality was within the AAAQO for the Donnelly station.
- ◆ All analyzers and meteorological sensors at the Donnelly station had operational uptimes greater than 90% for the month of January.

Wembley-Portable Station:

- ◆ The measured ambient air quality was within the AAAQO for the Wembley-Portable station.
- ◆ All analyzers and meteorological sensors at the Wembley-Portable station had operational uptimes greater than 90% for the month of January.

Air Incidents

None were reported to PAZA

Deviations from Authorized Monitoring Methods

Trees nearby to Valleyview air monitoring station exceed the height allowed under section 2.3 of the siting criteria in Chapter 3 of the AMD. This variance was authorized in writing by the director on February 4, 2019.

Passive Monitoring - 32 Stations throughout the PAZA zone:

There were eight duplicate sites sampled in the month of January: Eaglesham, Poplar, Crooked Creek (SO₂), Kinuso (O₃), Wanham, Hythe, Wapiti (NO₂), and Guy (H₂S). The passive sample analyses were performed by MAXXAM Analytics Inc. There were no exceedances of the AAAQOs for all monitored parameters at any of the passive monitoring stations during this month.

I certify that I have reviewed and verified this report and that the information is complete, accurate and representative of the monitoring results, reporting timeframe and the specified analysis, summarization and reporting requirements.

X 

Mandeep Dhaliwal, B.Sc., P.Chem.

Program Manager

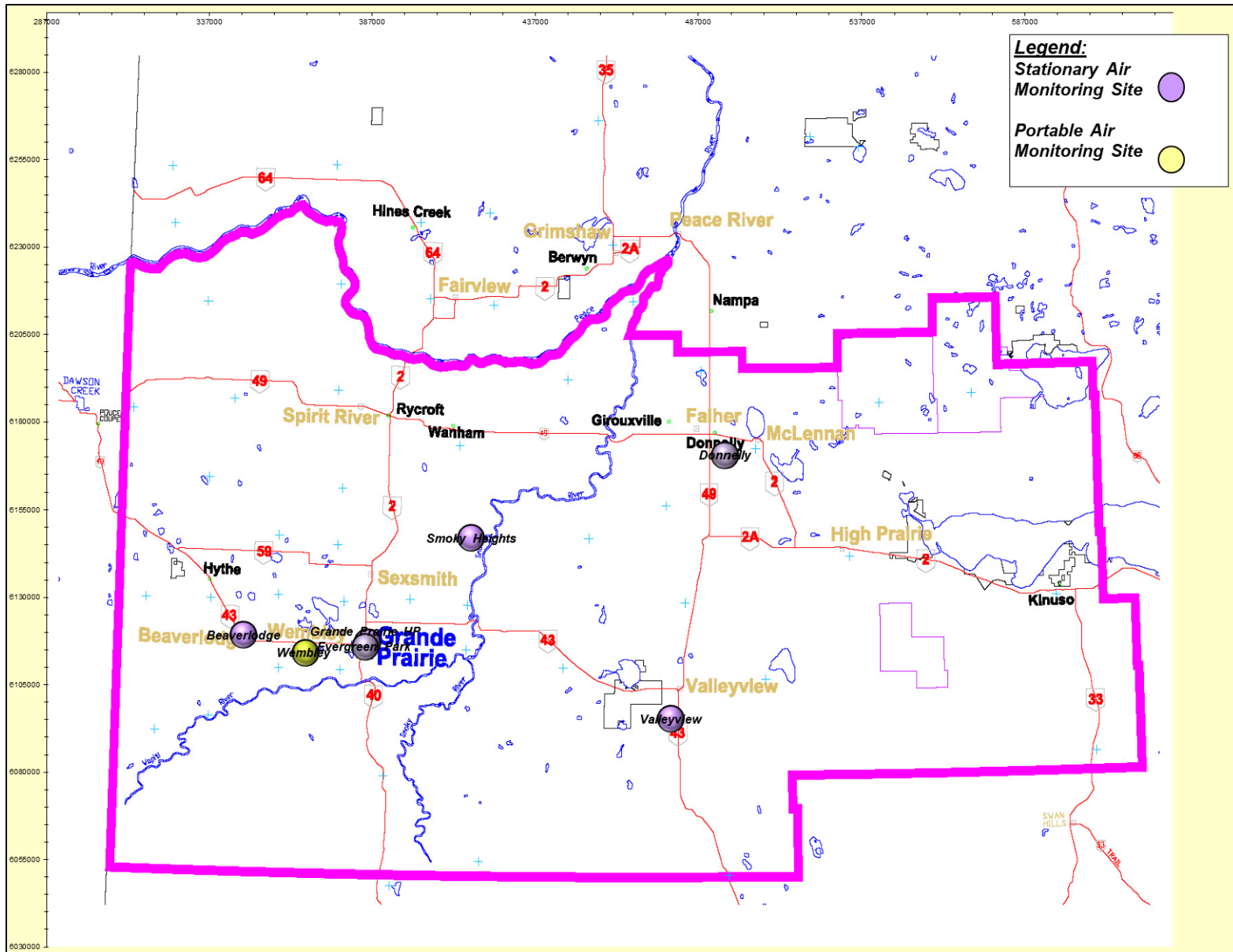
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Location of PAZA Continuous Monitoring Stations



Continuous Ambient Network Equipment and Results Summary

Beaverlodge Air Monitoring Station

Jan-2019 Peace Airshed Zone Association										Maximum Recorded Values					
										1-hr		24-hr / 8-hr			
Parameter (units)	Objectives			Station	Monthly Average	Min	Exceedence			Conc	Day	Conc	Day	Operational Time (%)	Calibration Date
	1-hr	24-hr	30-day				1-hr	24-hr	30-day						
SO ₂ (ppb)	172	48	8	Beaverlodge	0.5	0	0	0	0	2.9	Jan-12 00:00	1.8	Jan-11	99.7	Jan-04
NO (ppb)				Beaverlodge	2.3	0	-	-	-	68.8	Jan-11 11:00	25.7	Jan-11	99.7	Jan-04
NO ₂ (ppb)	159	106		Beaverlodge	7.4	0	0	0	-	36.3	Jan-08 20:00	25.5	Jan-11	99.7	Jan-04
NO _x (ppb)				Beaverlodge	9.7	0	-	-	-	99.6	Jan-11 11:00	51.1	Jan-11	99.7	Jan-04
O ₃ (ppb)	82			Beaverlodge	25.8	1	0	-	-	43.9	Jan-25 02:00	39.4	Jan-25	99.7	Jan-04
O ₃ (ppb) - 8-hr				Beaverlodge			-	-	-			42.7	Jan-25		-
PM _{2.5} (µg/m3)	80	30		Beaverlodge	4.3	0	0	0	-	43.9	Jan-13 22:00	17.8	Jan-11	99.6	Nov-20
RH (%)				Beaverlodge	74.0	45	-	-	-	98.3	Jan-11 00:00	85.6	Jan-31	29.2	-
Temp (°C)				Beaverlodge	-6.8	-27	-	-	-	7.1	Jan-02 06:00	6.0	Jan-26	99.6	-
WSPD v (km/hr)				Beaverlodge	10.0	0	-	-	-	48.5	Jan-27 00:00	30.3	Jan-26	99.6	01/06/2017
WDIR				Beaverlodge	WNW		-	-	-	-	-	-	-	99.6	01/06/2017

Parameter	Analyzer		Notes
	Make	Model	
SO ₂	TECO	43I	Power outage Jan 28
NO/NO ₂ /NO _x	TECO	42I	
O ₃	TECO	49I	
PM _{2.5}	SHARP	5030	
ET/RH			RH probe failed to return valid data, faulty wiring is suspected
WS/WD	MetOne	50.5	

Evergreen Park Air Monitoring Station

Jan-2019 Peace Airshed Zone Association										Maximum Recorded Values					
										1-hr		24-hr / 8-hr			
Parameter (units)	Objectives			Station	Monthly Average	Min	Exceedence			Conc	Day	Conc	Day	Operational Time (%)	Calibration Date
	1-hr	24-hr	30-day				1-hr	24-hr	30-day						
SO ₂ (ppb)	172	48	8	Evergreen Park	0.3	0	0	0	0	5.7	Jan-07 17:00	0.9	Jan-11	100.0	Jan-25
TRS (ppb)				Evergreen Park	0.6	0	-	-	-	2.5	Jan-07 09:00	1.2	Jan-07	100.0	Jan-25
PM _{2.5} (µg/m3)	80	30		Evergreen Park	3.1	0	0	0	-	21.2	Jan-04 04:00	12.2	Jan-12	100.0	Dec-07
RH (%)				Evergreen Park	76.9	46	-	-	-	95.8	Jan-13 08:00	91.9	Jan-13	100.0	-
Temp (°C)				Evergreen Park	-8.0	-32	-	-	-	8.6	Jan-26 22:00	7.1	Jan-26	100.0	-
WSPD v (km/hr)				Evergreen Park	9.0	0	-	-	-	52.3	Jan-26 22:00	30.1	Jan-26	100.0	-
WDIR				Evergreen Park	W		-	-	-	-	-	-	-	100.0	-

Parameter	Analyzer		Notes
	Make	Model	
SO ₂	TECO	43I	No operational issues noted
TRS	TECO	43I	
PM _{2.5}	SHARP	5030	
ET/RH			
WS/WD	Gil	MetPak	

Henry Pirker Air Monitoring Station

Jan-2019 Peace Airshed Zone Association										Maximum Recorded Values					
										1-hr		24-hr / 8-hr			
Parameter (units)	Objectives			Station	Monthly Average	Min	Exceedence			Conc	Day	Conc	Day	Operational Time (%)	Calibration Date
	1-hr	24-hr	30-day				1-hr	24-hr	30-day						
SO ₂ (ppb)	172	48	8	Henry Pirker	0.5	0	0	0	4.6	Jan-07 12:00	1.4	Jan-11	100.0	Jan-03	
TRS (ppb)				Henry Pirker	0.3	0	-	-	2.1	Jan-12 13:00	1.3	Jan-12	100.0	Jan-04	
NO (ppb)				Henry Pirker	13.1	0	-	-	211.8	Jan-12 20:00	111.6	Jan-12	100.0	Jan-03	
NO ₂ (ppb)	159	106		Henry Pirker	15.0	0	0	0	56.0	Jan-12 13:00	37.5	Jan-12	100.0	Jan-03	
NO _x (ppb)				Henry Pirker	28.2	1	-	-	267.1	Jan-12 13:00	149.6	Jan-12	100.0	Jan-03	
O ₃ (ppb)	82			Henry Pirker	18.7	0	0	-	42.1	Jan-25 03:00	35.3	Jan-01	100.0	Jan-03	
O ₃ (ppb) - 8-hr				Henry Pirker			-	-			39.6	Jan-25		-	
CO (ppm)	13			Henry Pirker	0.28	0	0	-	1.8	Jan-12 20:00	0.9	Jan-12	100.0	Jan-04	
CO (ppm) - 8-hr	5			Henry Pirker			0					1.1	Jan-13		-
THC (ppm)				Henry Pirker	2.2	2	-	-	3.8	Jan-12 17:00	3.3	Jan-12	100.0	Jan-04	
CH ₄ (ppm)				Henry Pirker	2.2	2	-	-	3.4	Jan-12 17:00	3.0	Jan-12	100.0	Jan-04	
NMHC (ppm)				Henry Pirker	0.0	0	-	-	0.5	Jan-08 12:00	0.3	Jan-12	100.0	Jan-04	
PM _{2.5} (µg/m3)	80	30		Henry Pirker	5.6	0	0	-	51.9	Jan-04 03:00	24.5	Jan-12	99.6	Jan-04	
RH (%)				Henry Pirker	70.0	48	-	-	86.0	Jan-13 10:00	81.7	Jan-14	100.0	-	
SR (W/m ²)				Henry Pirker	25.9	0	-	-	292.7	Jan-28 14:00	58.6	Jan-28	100.0	-	
Temp (°C)				Henry Pirker	-7.8	-31	-	-	7.4	Jan-26 21:00	6.0	Jan-26	100.0	-	
WSPD v (km/hr)				Henry Pirker	5.9	0	-	-	30.9	Jan-26 23:00	19.0	Jan-26	98.5	01/07/2017	
WDIR				Henry Pirker	WNW		-	-	-	-	-	-	98.5	01/07/2017	

Parameter	Analyzer		Notes
	Make	Model	
SO ₂	TECO	43I	
TRS	TECO	450I	
NO/NO ₂ /NO _x	TECO	42I	
O ₃	TECO	49I	
CO	TECO	48I-TLE	
THC/CH ₄ /NMHC	TECO	55I	
PM _{2.5}	SHARP	5030	Analyzer maintenance performed Jan 3
ET/RH			
WS/WD	MetOne	50.5	Wind system returned invalid readings Jan 8, 23, 24

Smoky Heights Air Monitoring Station

Jan-2019 Peace Airshed Zone Association										Maximum Recorded Values					
										1-hr			24-hr / 8-hr		
Parameter (units)	Objectives			Station	Monthly Average	Min	Exceedence			Conc	Day	Conc	Day	Operational Time (%)	Calibration Date
	1-hr	24-hr	30-day				1-hr	24-hr	30-day						
SO ₂ (ppb)	172	48	8	Smoky Heights	0.6	0	0	0	0	8.4	Jan-26 12:00	1.9	Jan-26	100.0	Jan-16
TRS (ppb)				Smoky Heights	0.5	0	-	-	-	1.3	Jan-12 14:00	0.9	Jan-12	100.0	Jan-16
PM _{2.5} (µg/m3)	80	30		Smoky Heights	5.0	0	1	0	-	95.0	Jan-03 23:00	16.4	Jan-12	100.0	Aug-29
Temp (°C)				Smoky Heights	-8.7	-30	-	-	-	5.9	Jan-02 08:00	4.7	Jan-26	100.0	-
WSPD v (km/hr)				Smoky Heights	13.7	1	-	-	-	45.6	Jan-02 11:00	32.3	Jan-26	100.0	01/04/2017
WDIR				Smoky Heights	W		-	-	-	-	-	-	-	100.0	01/04/2017

Parameter	Analyzer		Notes
	Make	Model	No operational issues noted
SO ₂	TECO	43I	
TRS	TECO	43I	
PM _{2.5}	SHARP	5030	
ET/RH			
WS/WD	MetOne	50.5	

Valleyview Air Monitoring Station

Jan-2019Peace Airshed Zone Association										Maximum Recorded Values					
										1-hr		24-hr / 8-hr			
Parameter (units)	Objectives			Station	Monthly Average	Min	Exceedence			Conc	Day	Conc	Day	Operational Time (%)	Calibration Date
	1-hr	24-hr	30-day				1-hr	24-hr	30-day						
SO ₂ (ppb)	172	48	8	Valleyview	0.5	0	0	0	0	7.8	Jan-20 15:00	2.8	Jan-26	100.0	Jan-24
H ₂ S (ppb)	10	3		Valleyview	0.2	0	0	0	-	2.9	Jan-13 19:00	0.6	Jan-13	100.0	Jan-24
RH (%)				Valleyview	84.2	48	-	-	-	100.0	Jan-02 09:00	95.8	Jan-13	100.0	-
Temp (°C)				Valleyview	-3.4	-25	-	-	-	12.5	Jan-26 14:00	10.2	Jan-26	100.0	-
WSPD v (km/hr)				Valleyview	5.1	0	-	-	-	25.1	Jan-27 02:00	15.3	Jan-27	100.0	-
WDIR				Valleyview	NW		-	-	-	-	-	-	-	100.0	-

Parameter	Analyzer		Notes
	Make	Model	No operational issues noted
SO ₂	TECO	43I	
H ₂ S	TECO	450I	
ET/RH			
WS/WD	Gil	MetPak	

Donnelly Air Monitoring Station

Jan-2019 Peace Airshed Zone Association										Maximum Recorded Values					
Parameter (units)	Objectives			Station	Monthly Average	Min	Exceedence			1-hr		24-hr / 8-hr		Operational Time (%)	Calibration Date
	1-hr	24-hr	30-day				1-hr	24-hr	30-day	Conc	Day	Conc	Day		
SO ₂ (ppb)	172	48	8	Donnelly	0.2	0	0	0	0	1.5	Jan-19 11:00	1.0	Jan-19	100.0	Jan-28
H ₂ S (ppb)	10	3		Donnelly	0.1	0	0	0	-	2.7	Jan-04 07:00	0.4	Jan-04	100.0	Jan-28
Temp (°C)				Donnelly	-8.1	-25	-	-	-	6.9	Jan-26 19:00	5.0	Jan-02	100.0	-
WSPD v (km/hr)				Donnelly	11.1	0	-	-	-	50.7	Jan-26 20:00	24.5	Jan-26	100.0	01/06/2017
WDIR				Donnelly	W		-	-	-	-	-	-	-	100.0	01/06/2017

Parameter	Analyzer		Notes
	Make	Model	
SO ₂	TECO	43I	
H ₂ S	TECO	450I	Variability in daily zero spans through early part of the month due to depleted scrubber. Replaced during calibration period.
ET/RH			
WS/WD	RMYoung	5103	

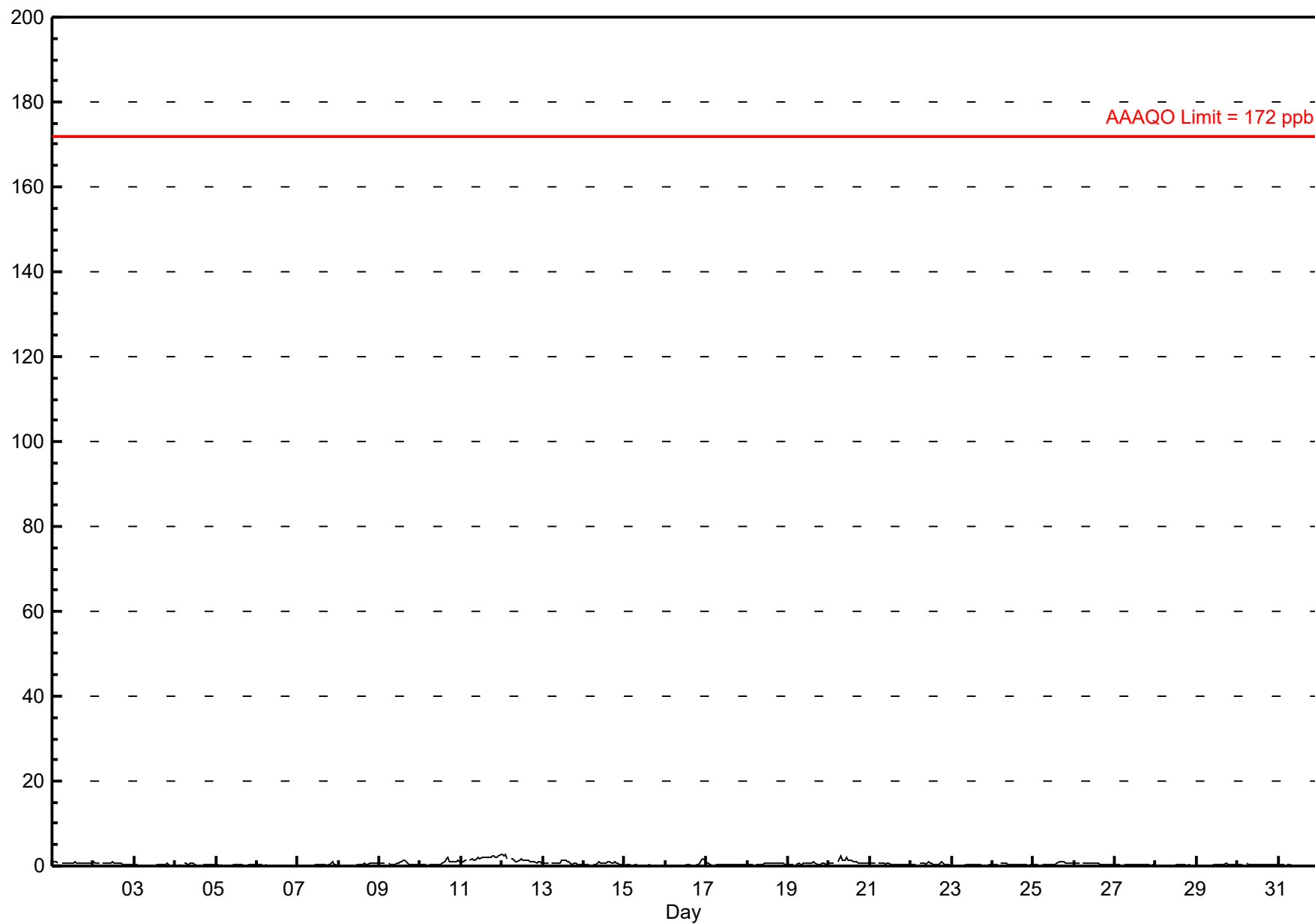
Wembley-Portable Air Monitoring Station

Jan-2019 Peace Airshed Zone Association										Maximum Recorded Values						
										1-hr		24-hr / 8-hr				
Parameter (units)	Objectives			Station	Monthly Average	Min	Exceedence			Conc	Day		Conc	Day	Operational Time (%)	Calibration Date
	1-hr	24-hr	30-day				1-hr	24-hr	30-day							
SO ₂ (ppb)	172	48	8	Wembley-Portable	0.3	0	0	0	0	3.4	Jan-22 22:00	1.4	Jan-11	100.0	Jan-10	
TRS (ppb)				Wembley-Portable	0.2	0	-	-	-	0.6	Jan-08 13:00	0.4	Jan-08	100.0	Jan-11	
NO (ppb)				Wembley-Portable	1.7	0	-	-	-	21.9	Jan-08 13:00	10.1	Jan-08	98.9	Jan-10	
NO ₂ (ppb)	159	106		Wembley-Portable	7.6	0	0	0	-	31.2	Jan-08 19:00	23.7	Jan-11	98.9	Jan-10	
NO _x (ppb)				Wembley-Portable	9.4	0	-	-	-	47.7	Jan-08 22:00	34.1	Jan-11	98.9	Jan-10	
O ₃ (ppb)	82			Wembley-Portable	24.6	0	0	-	-	45.2	Jan-24 23:00	40.9	Jan-25	100.0	Jan-10	
O ₃ (ppb) - 8-hr				Wembley-Portable			-	-	-			43.6	Jan-25		-	
THC (ppm)				Wembley-Portable	2.1	2	-	-	-	3.2	Jan-12 12:00	2.7	Jan-08	100.0	Jan-11	
CH ₄ (ppm)				Wembley-Portable	2.1	2	-	-	-	3.1	Jan-08 10:00	2.6	Jan-08	100.0	Jan-11	
NMHC (ppm)				Wembley-Portable	0.0	0	-	-	-	0.5	Jan-12 12:00	0.0	Jan-12	100.0	Jan-11	
PM _{2.5} (µg/m3)	80	30		Wembley-Portable	2.4	0	0	0	-	29.6	Jan-04 03:00	9.5	Jan-11	99.9	Dec-13	
Temp (°C)				Wembley-Portable	-7.7	-33	-	-	-	8.2	Jan-26 22:00	6.9	Jan-26	100.0	-	
WSPD v (km/hr)				Wembley-Portable	7.4	0	-	-	-	29.1	Jan-26 22:00	19.7	Jan-26	94.0	01/03/2017	
WDIR				Wembley-Portable	WNW		-	-	-	-	-	-	-	94.0	01/03/2017	

Parameter	Analyzer		Notes
	Make	Model	
SO ₂	TECO	43I	
TRS	TECO	43I	
NO/NO ₂ /NO _x	TECO	42I	Logger failed to capture all data from analyzer on Jan 9-10, malforming daily spans from those days and invalidating 8 hours of data.
O ₃	TECO	49I	Daily span value shifted from ~400ppb to ~360ppb on January 1.
THC/CH ₄ /NMHC	TECO	55I	
PM _{2.5}		TEOM	Analyzer maintenance Jan 11
ET/RH			
WS/WD	MetOne	50.5	Wind system returned invalid readings due to freezing Jan 15-17

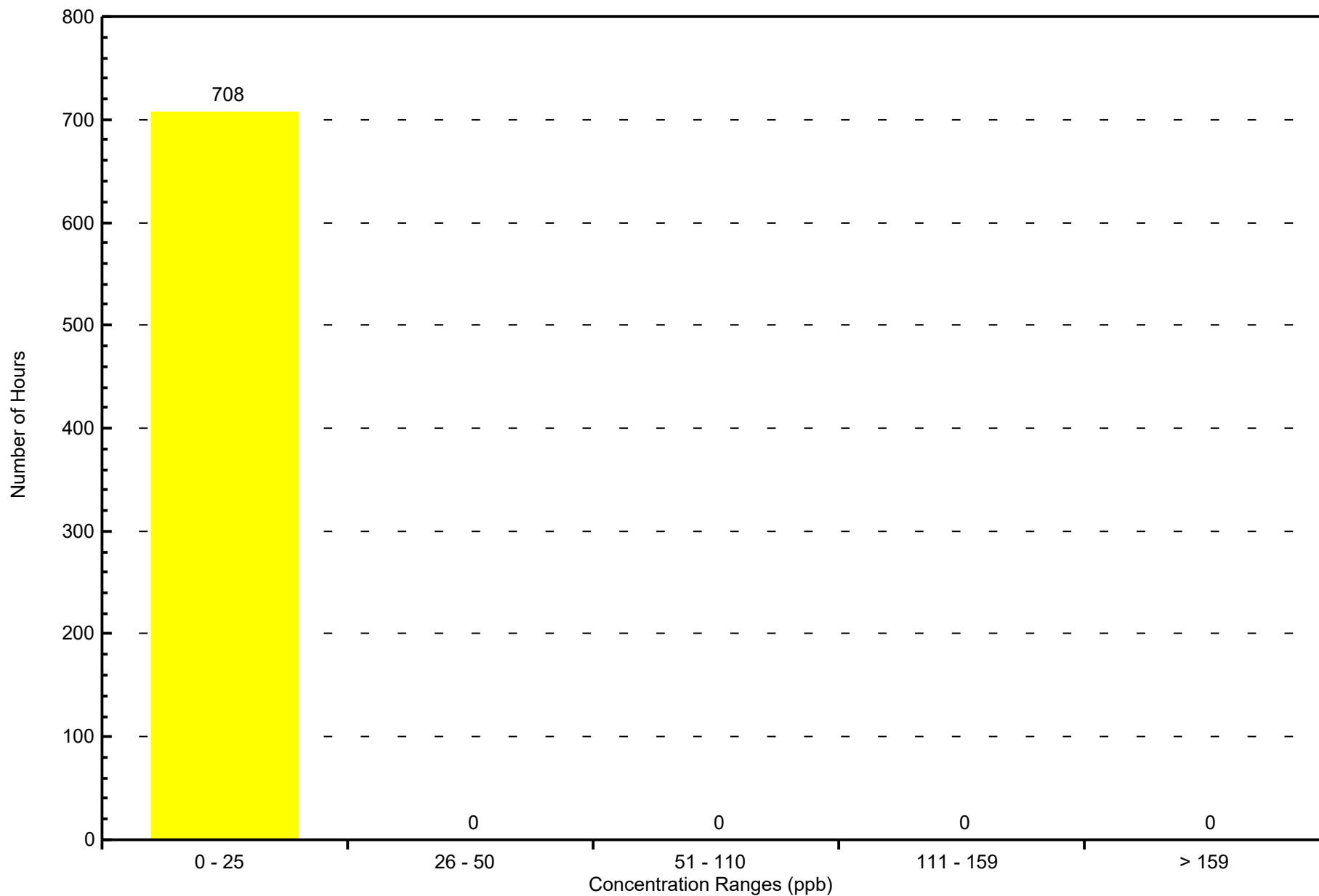
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - January 2019



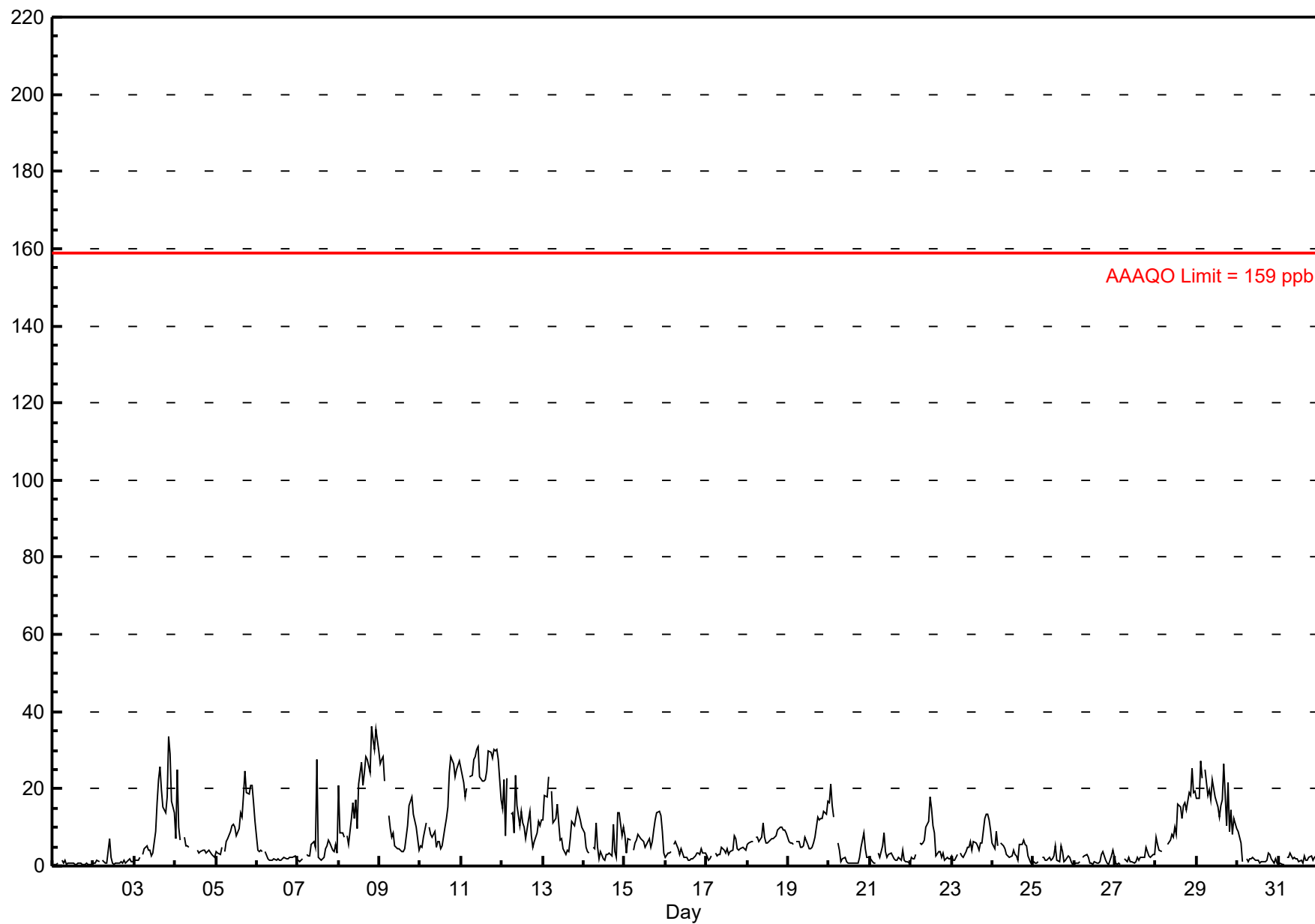
Histogram of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Beaverlodge - January 2019



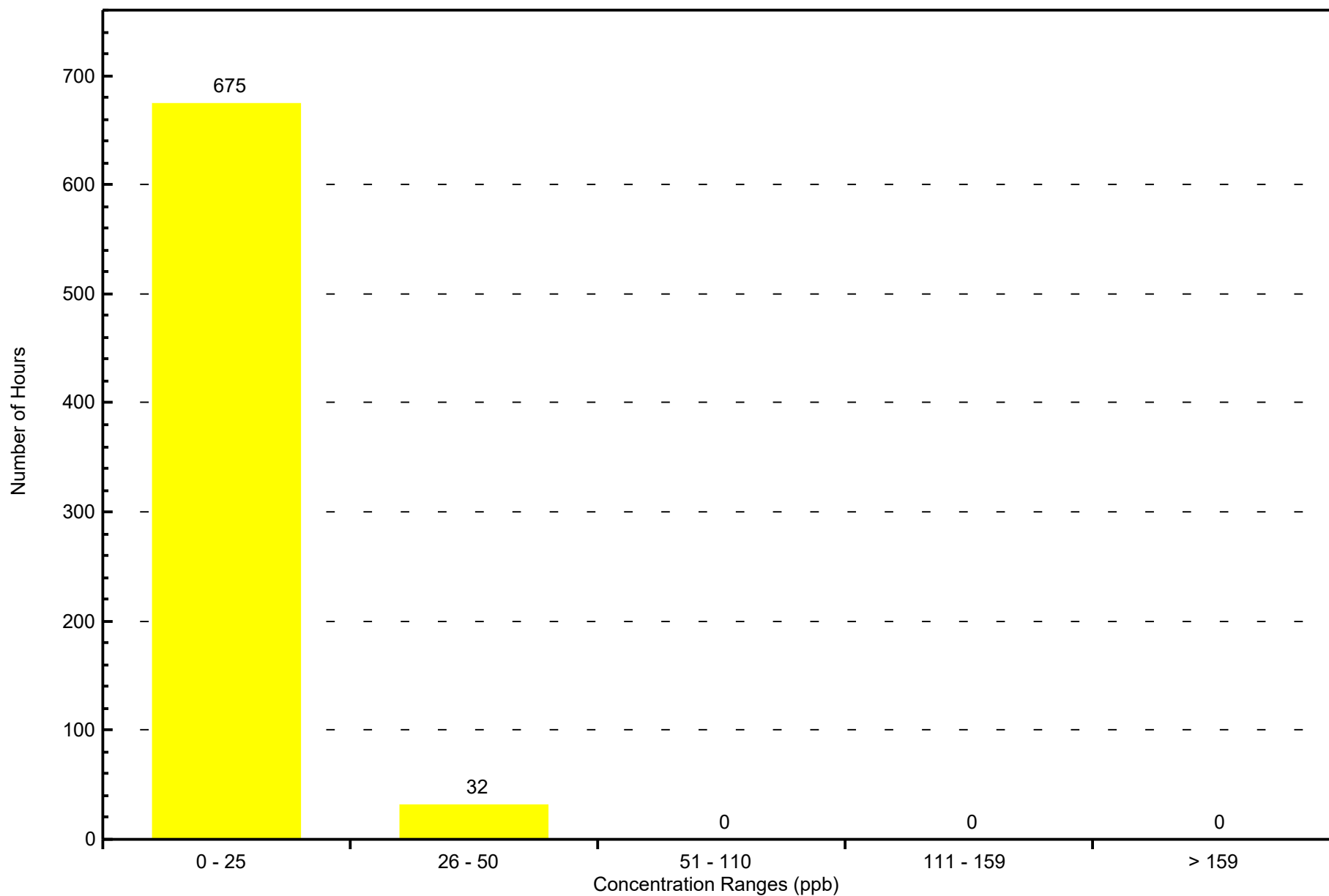
Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - January 2019



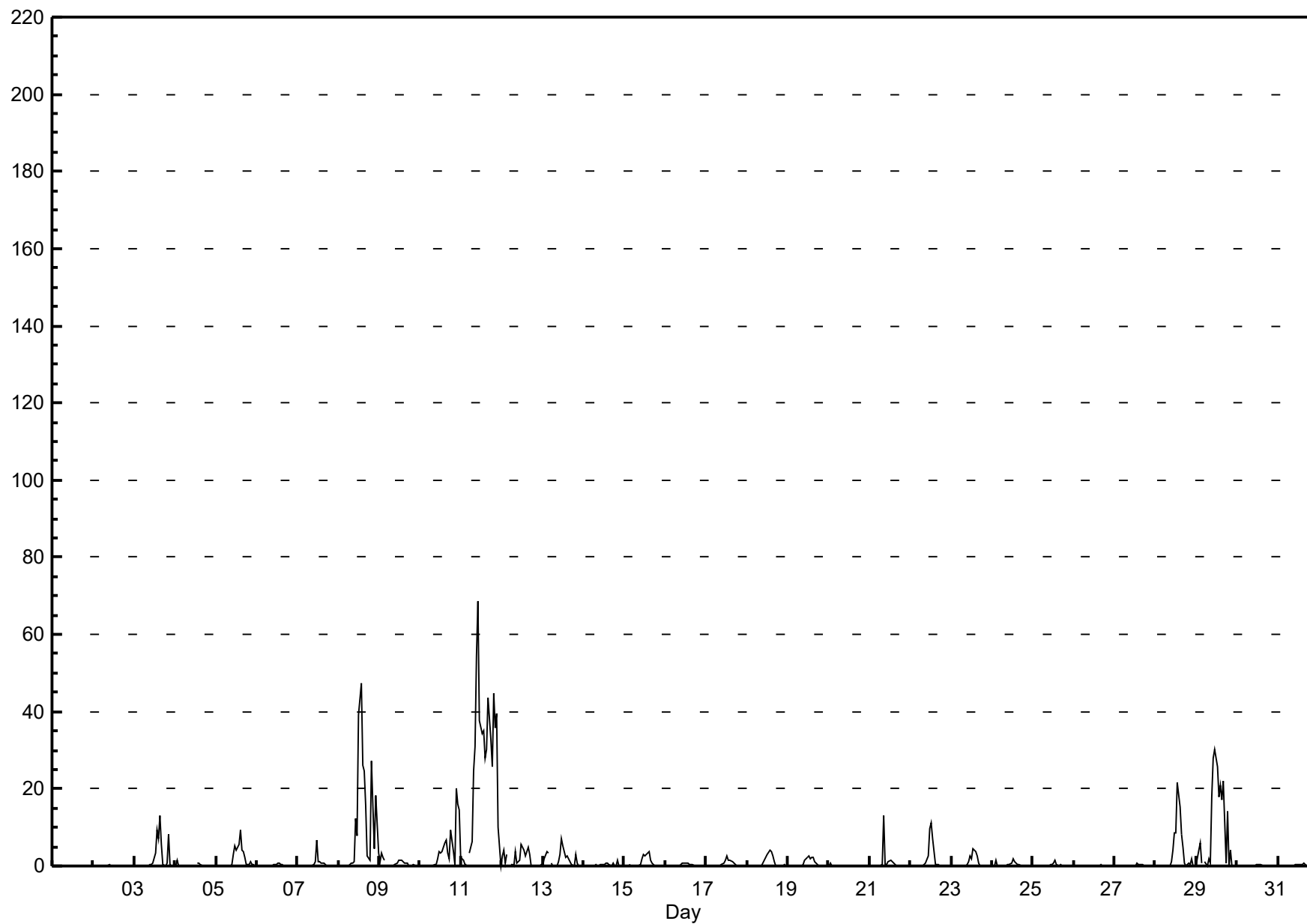
Histogram of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Beaverlodge - January 2019



Hourly Averages

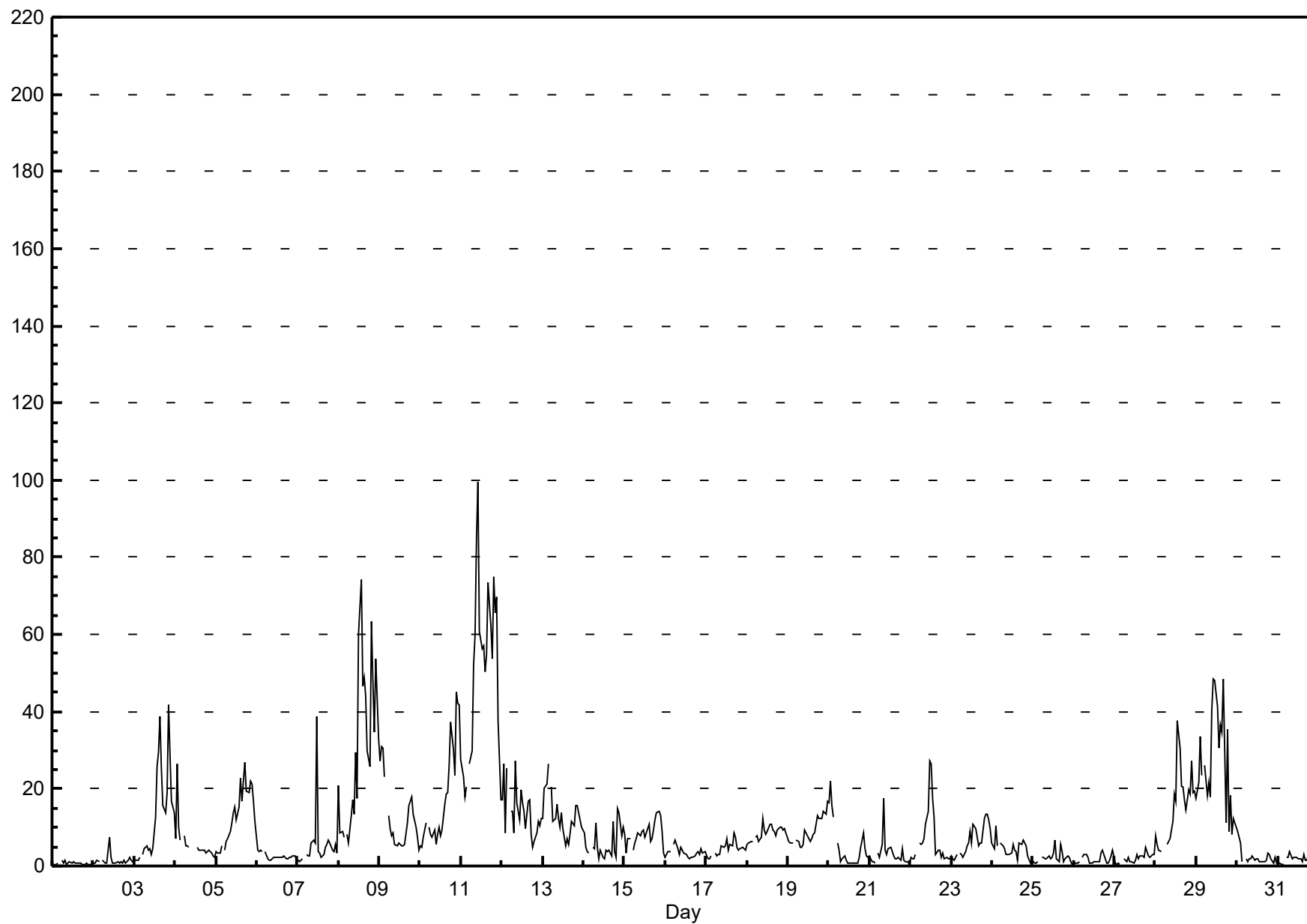
Nitrogen Oxide (NO) - ppb
Beaverlodge - January 2019



Hourly Averages

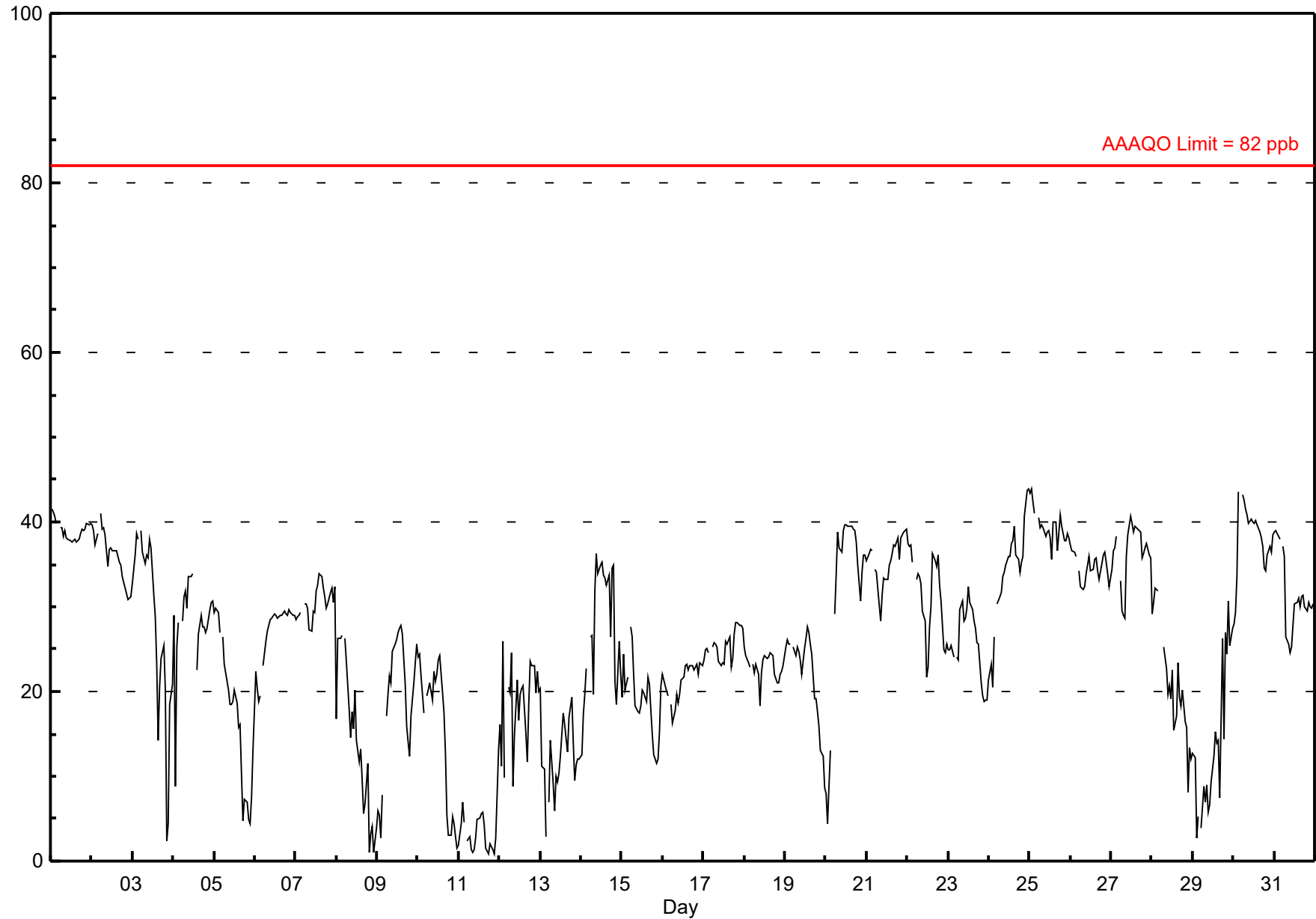
Oxides of Nitrogen (NO_x) - ppb

Beaverlodge - January 2019



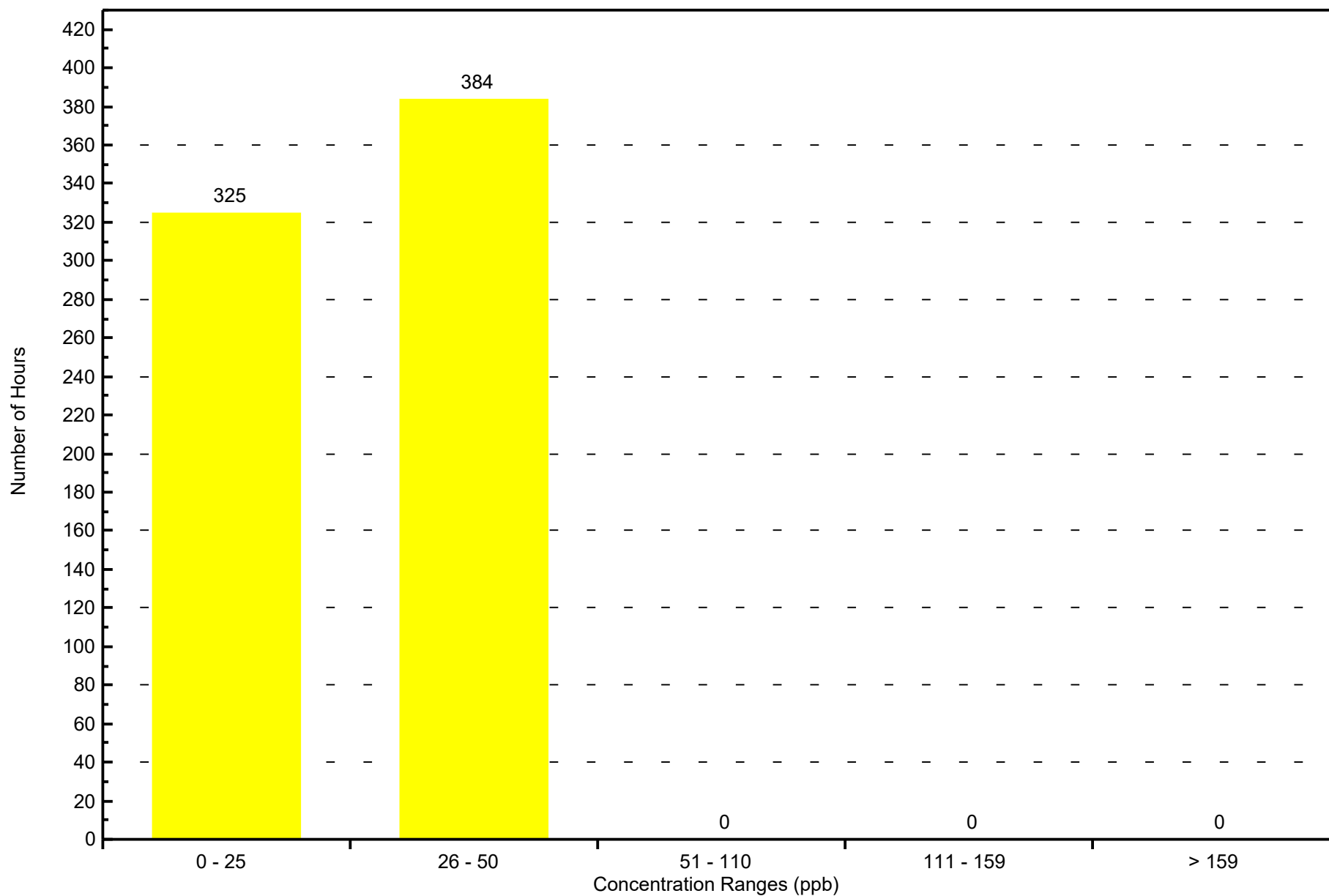
Hourly Averages

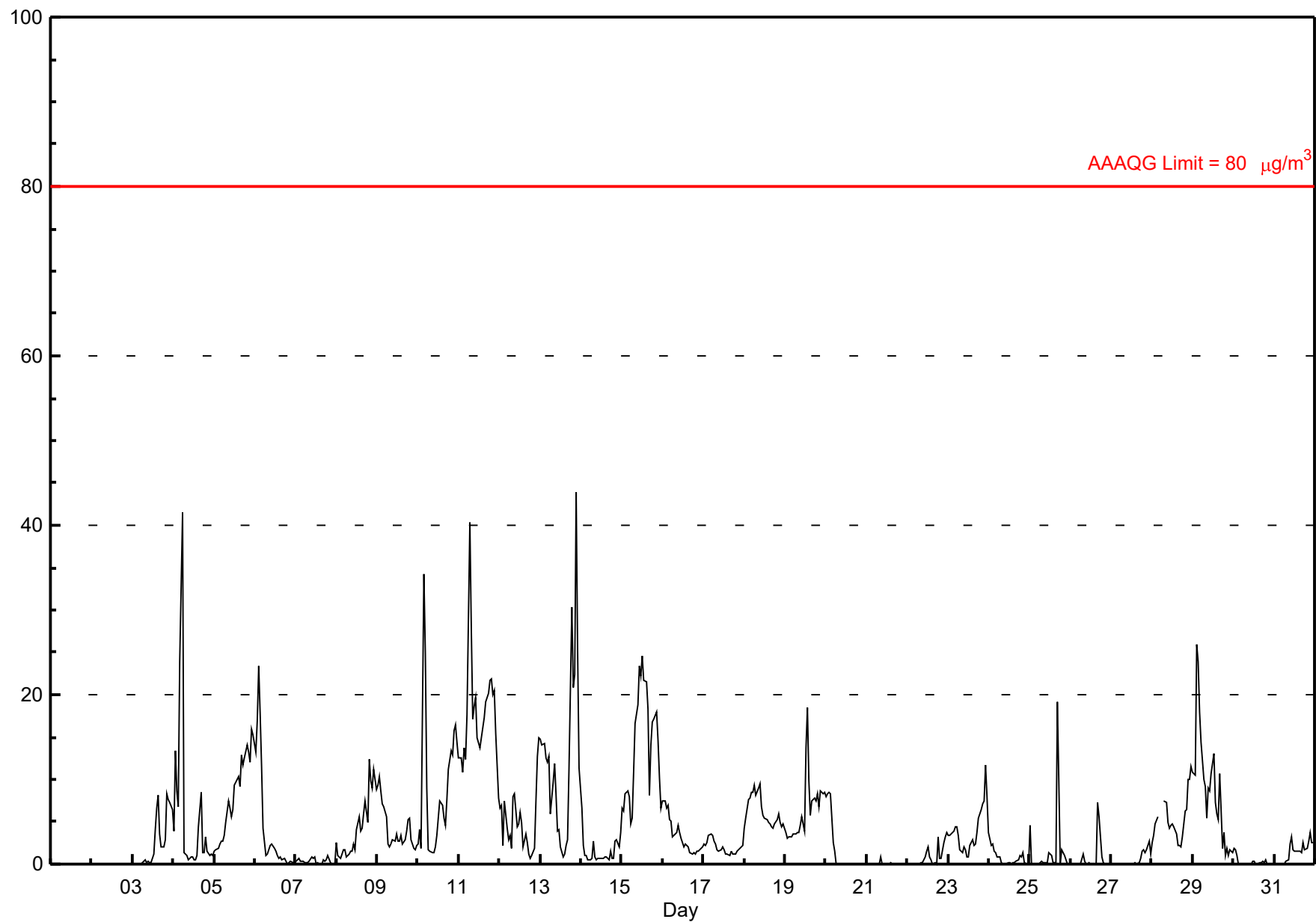
Ozone (O₃) - ppb
Beaverlodge - January 2019

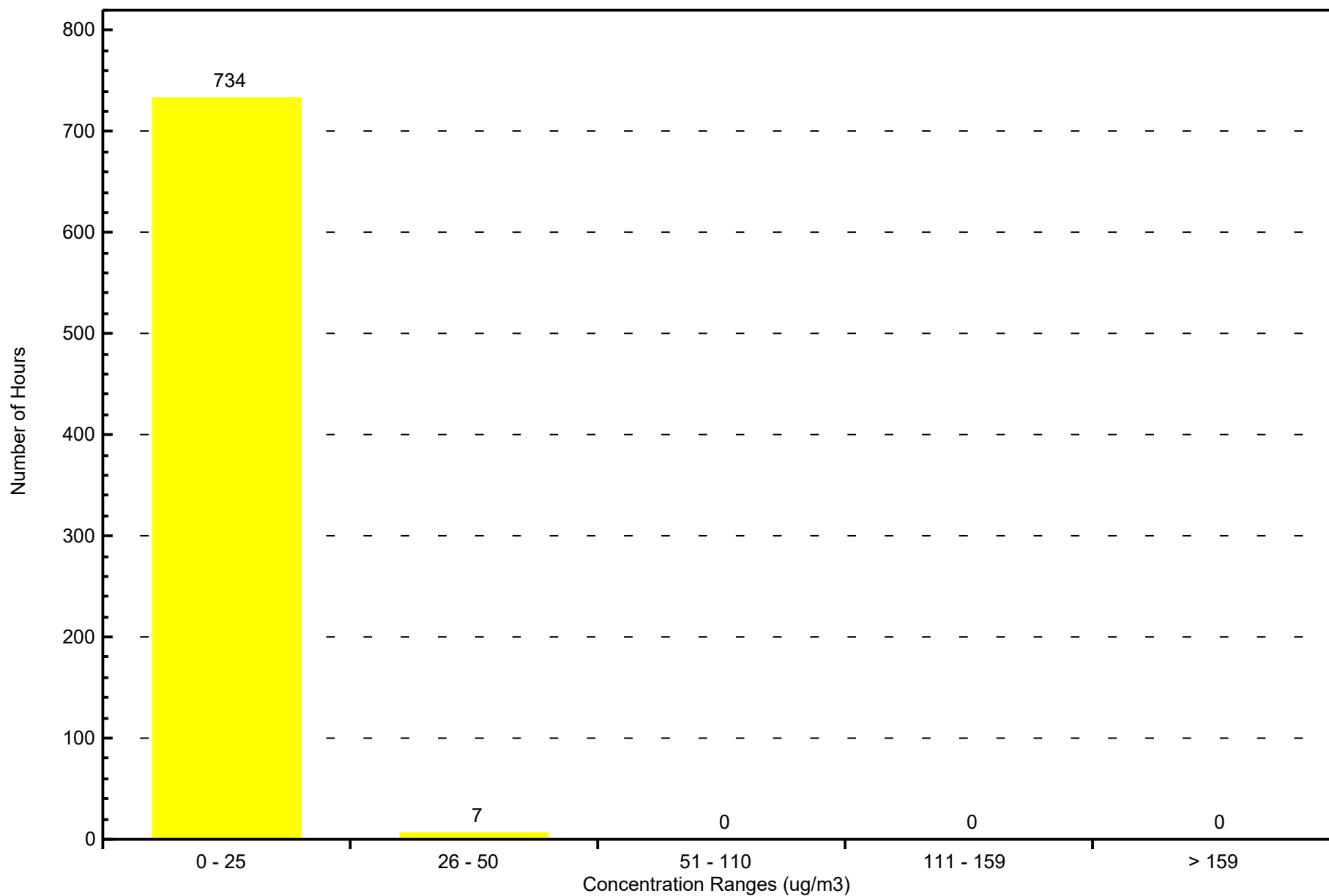


Histogram of Hourly Averages

Ozone (O₃) - ppb
Beaverlodge - January 2019



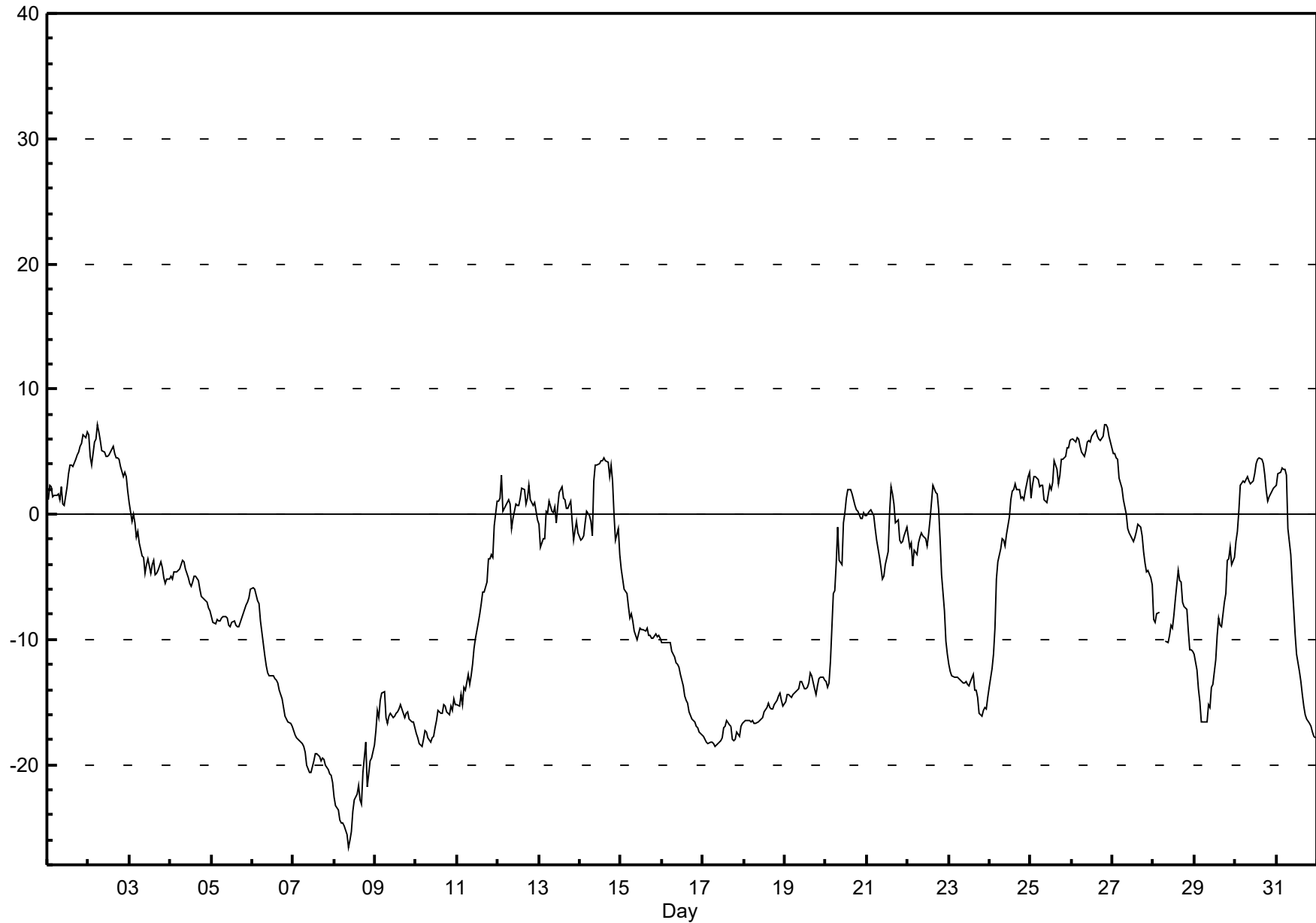




Hourly Averages

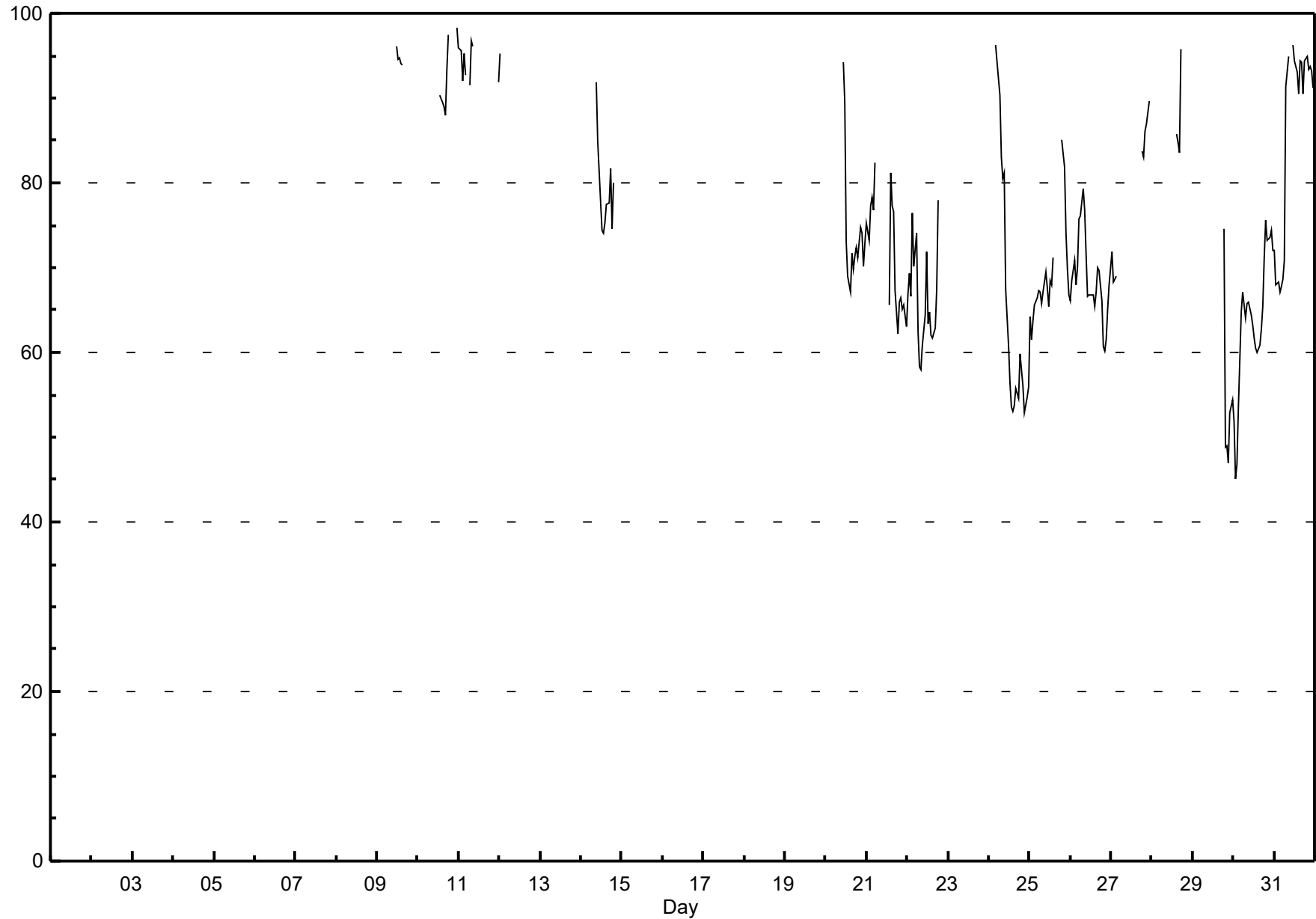
External Temperature (ET) - °C

Beaverlodge - January 2019



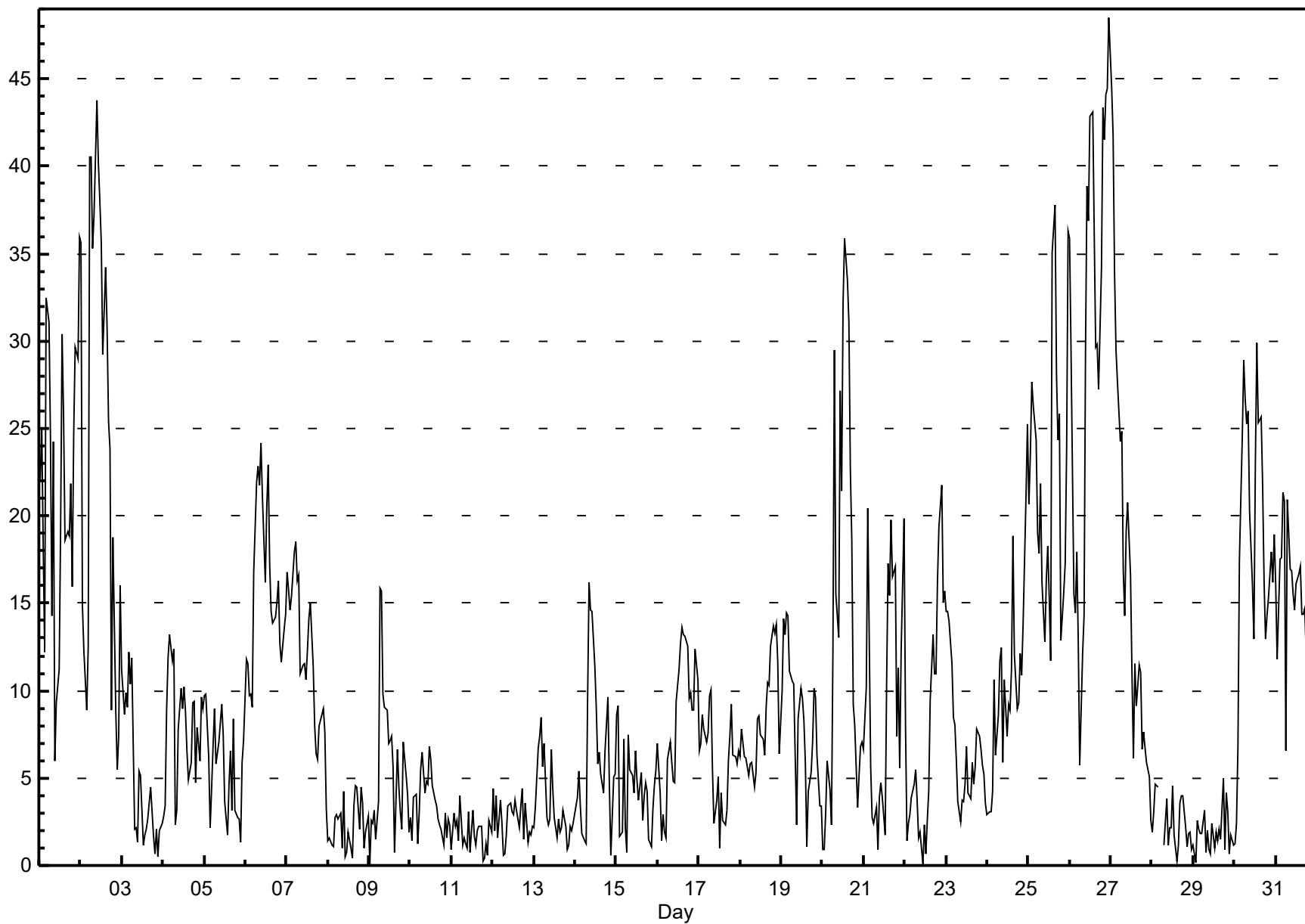
Hourly Averages

Relative Humidity (RH) - %
Beaverlodge - January 2019



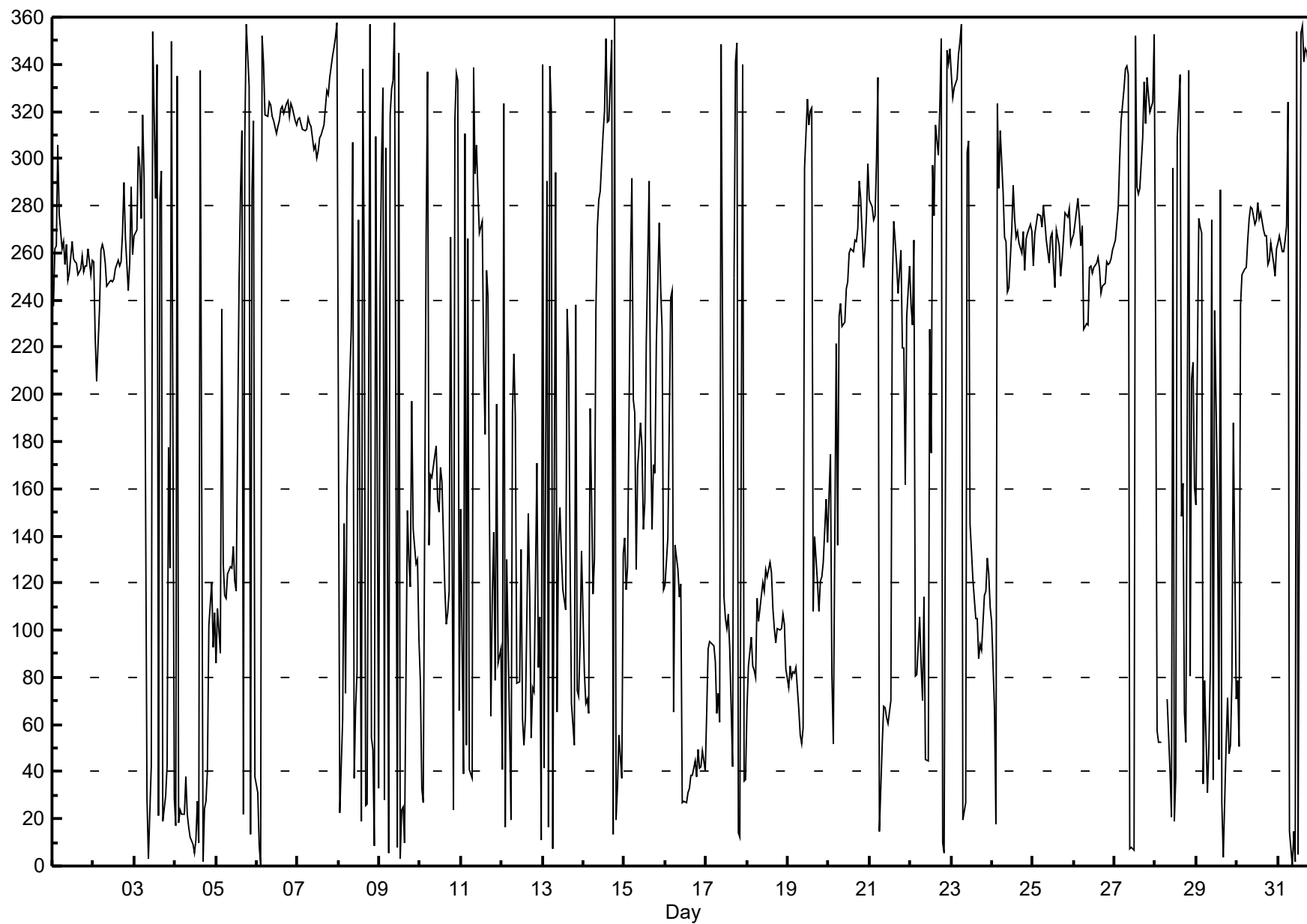
Hourly Averages

Wind Speed (WS) - km/h
Beaverlodge - January 2019



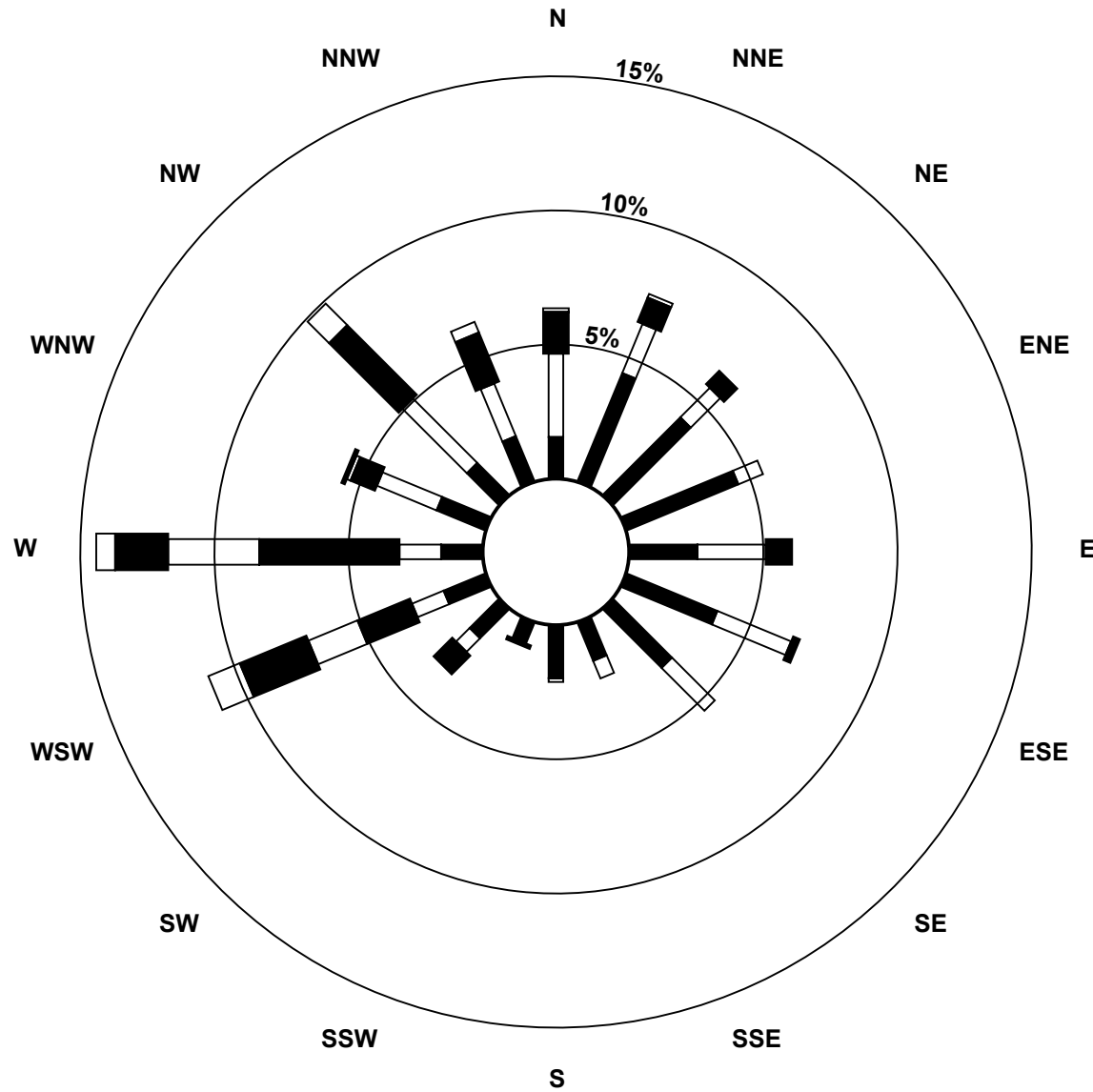
Hourly Averages

Wind Direction (WD) - deg
Beaverlodge - January 2019

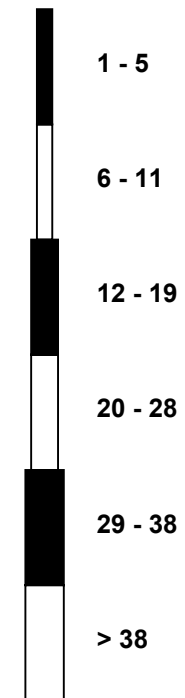


Wind Rose

Wind Speed (WS) (km/h)
Beaverlodge - January 2019

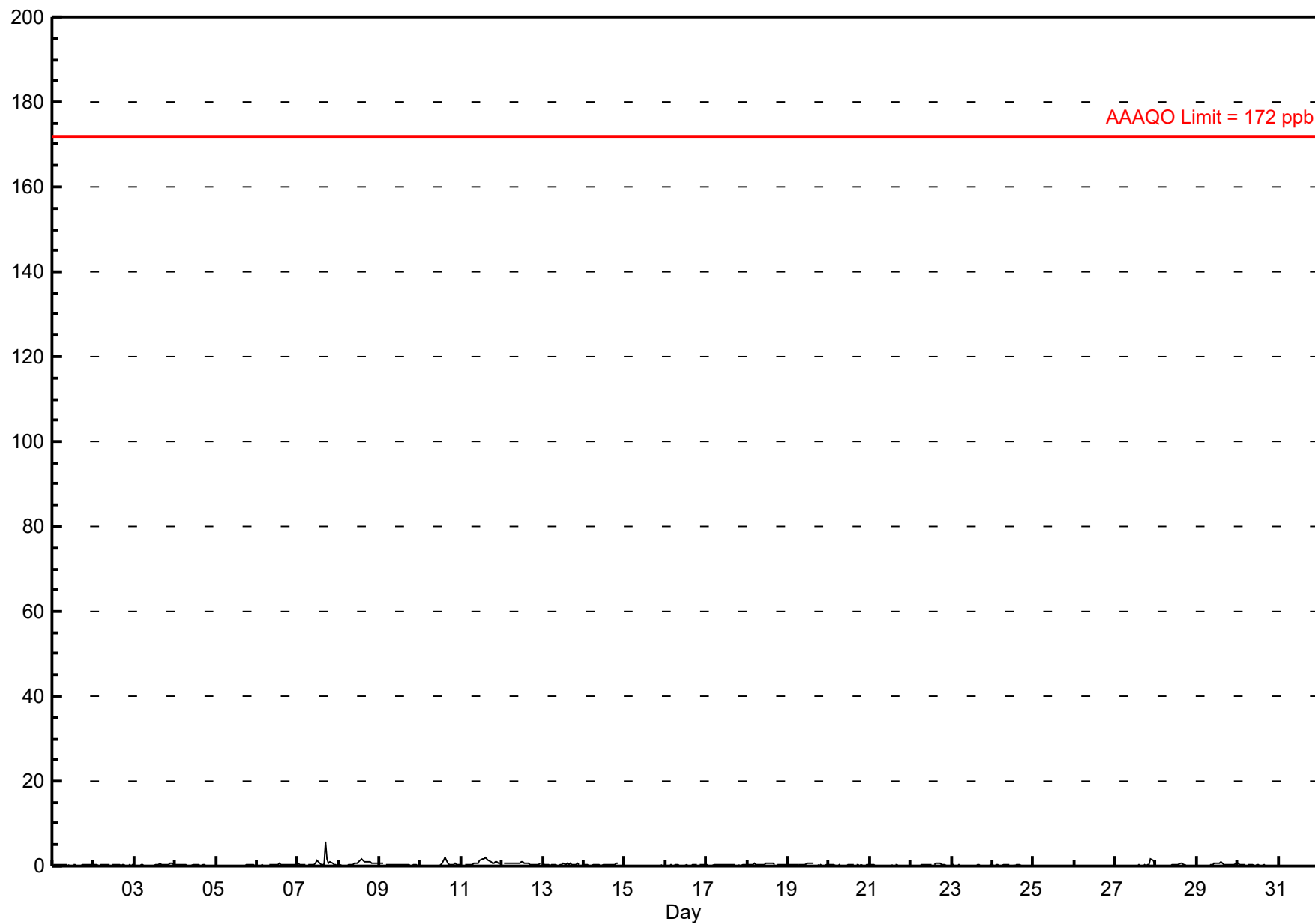


Wind Speed Classes (km/h)



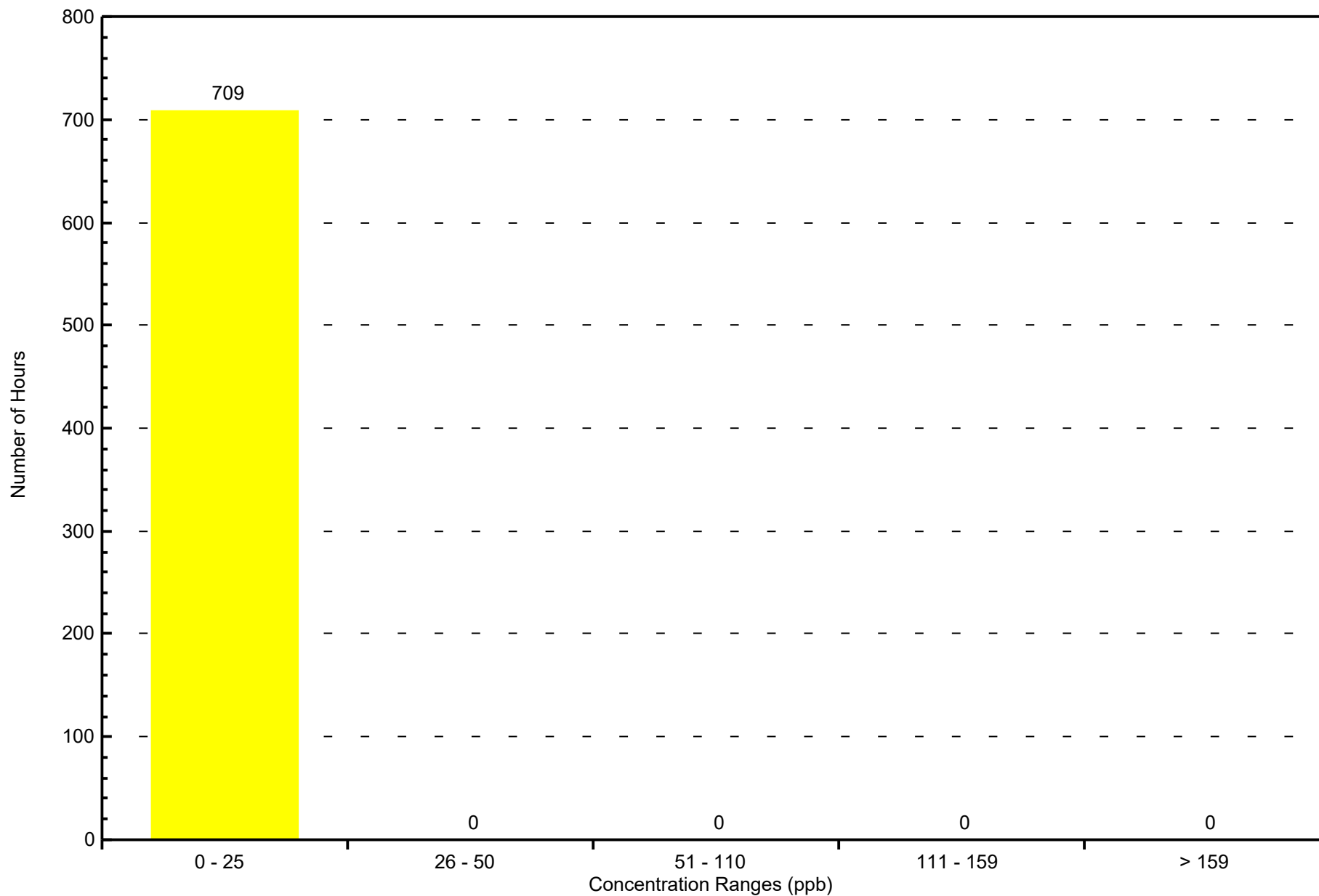
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - January 2019



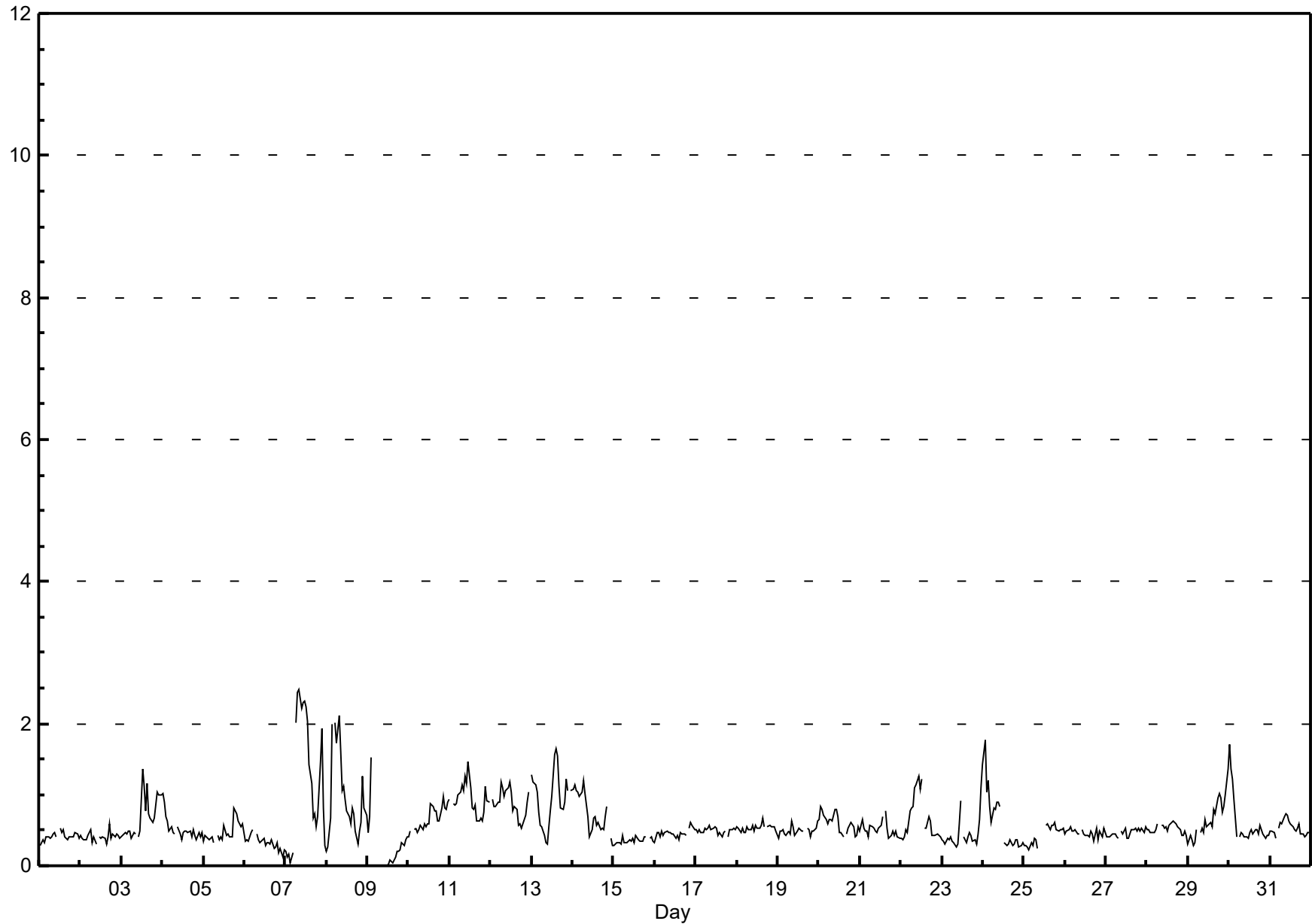
Histogram of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Evergreen Park - January 2019



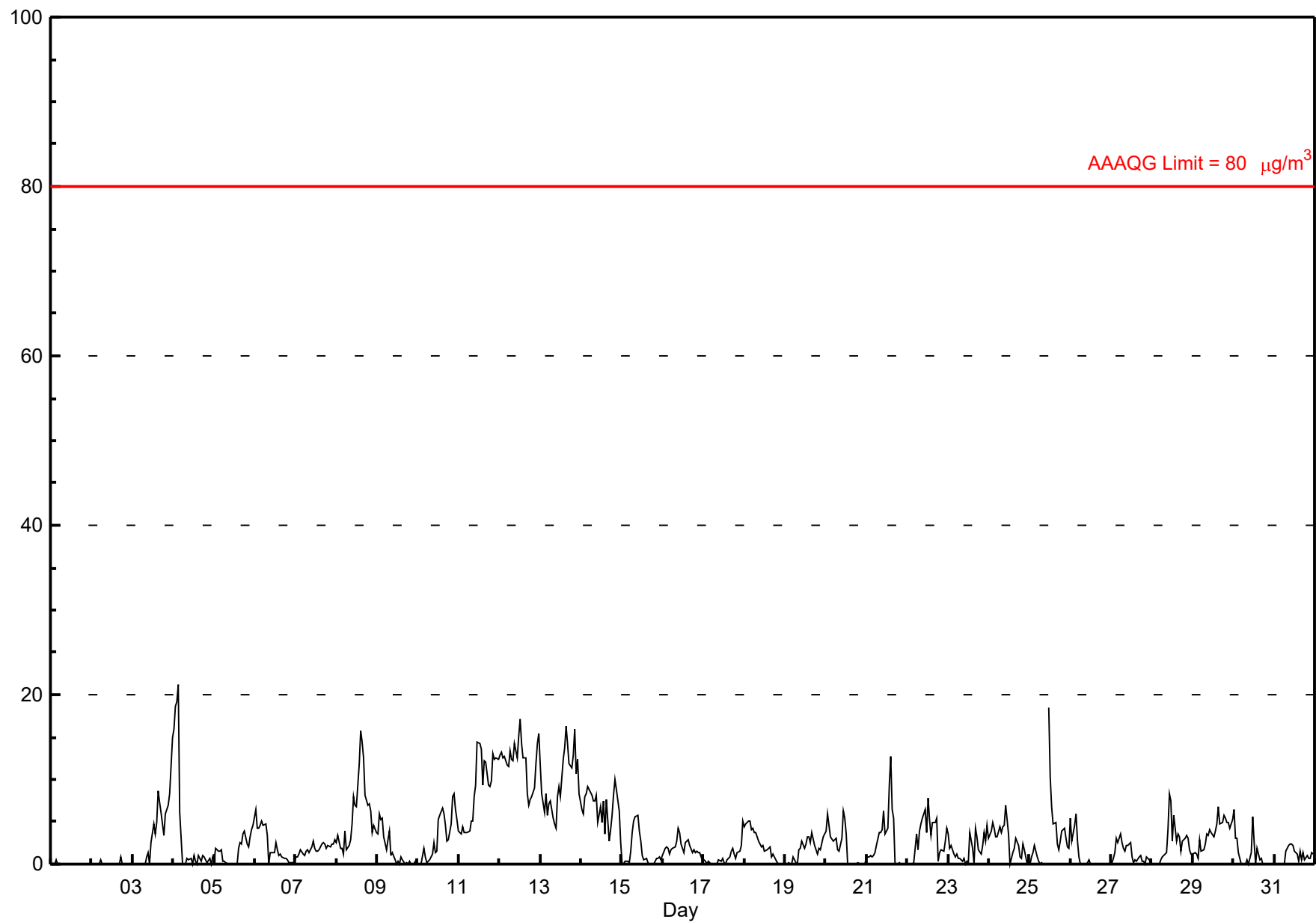
Hourly Averages

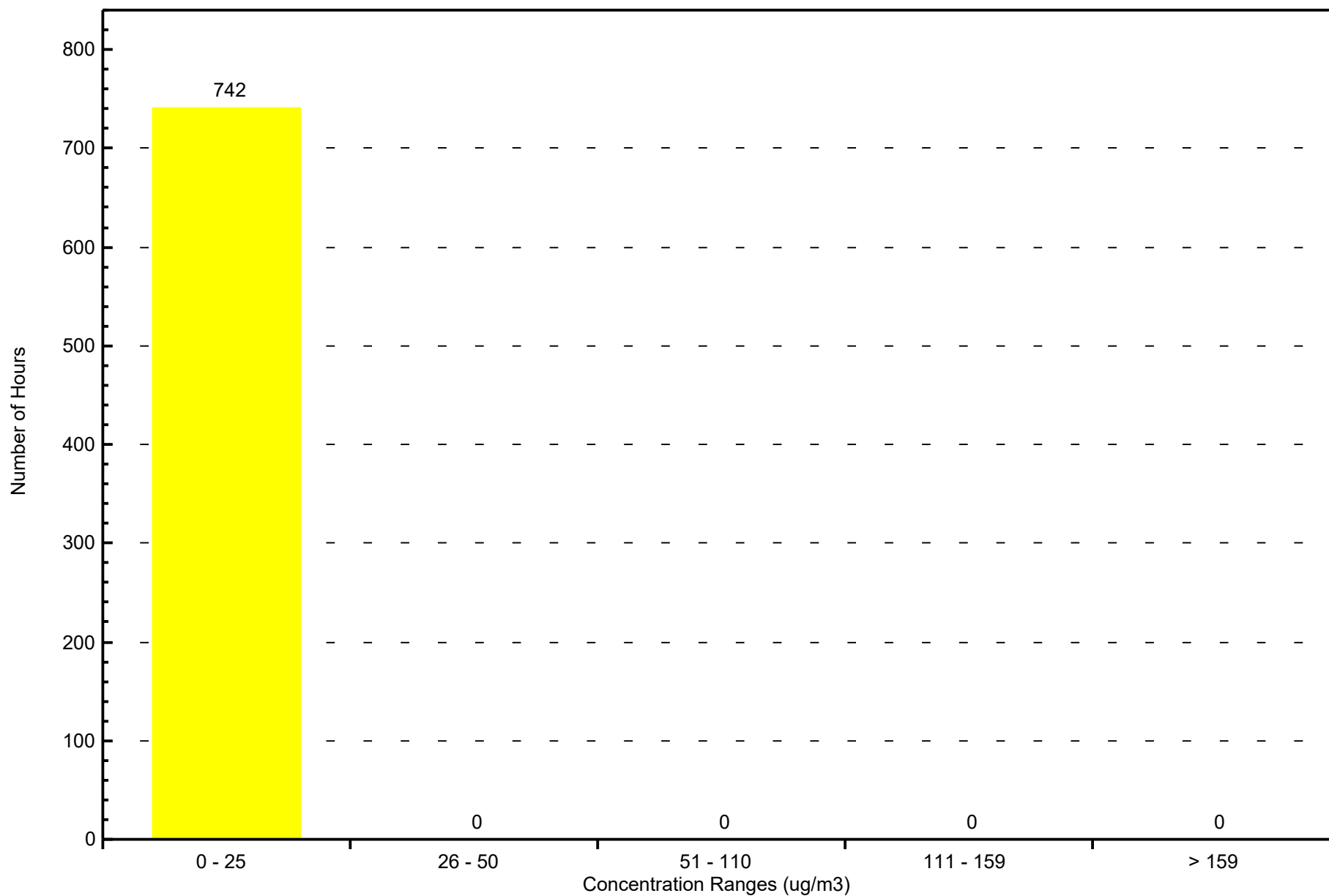
Total Reduced Sulphur (TRS) - ppb
Evergreen Park - January 2019



Hourly Averages

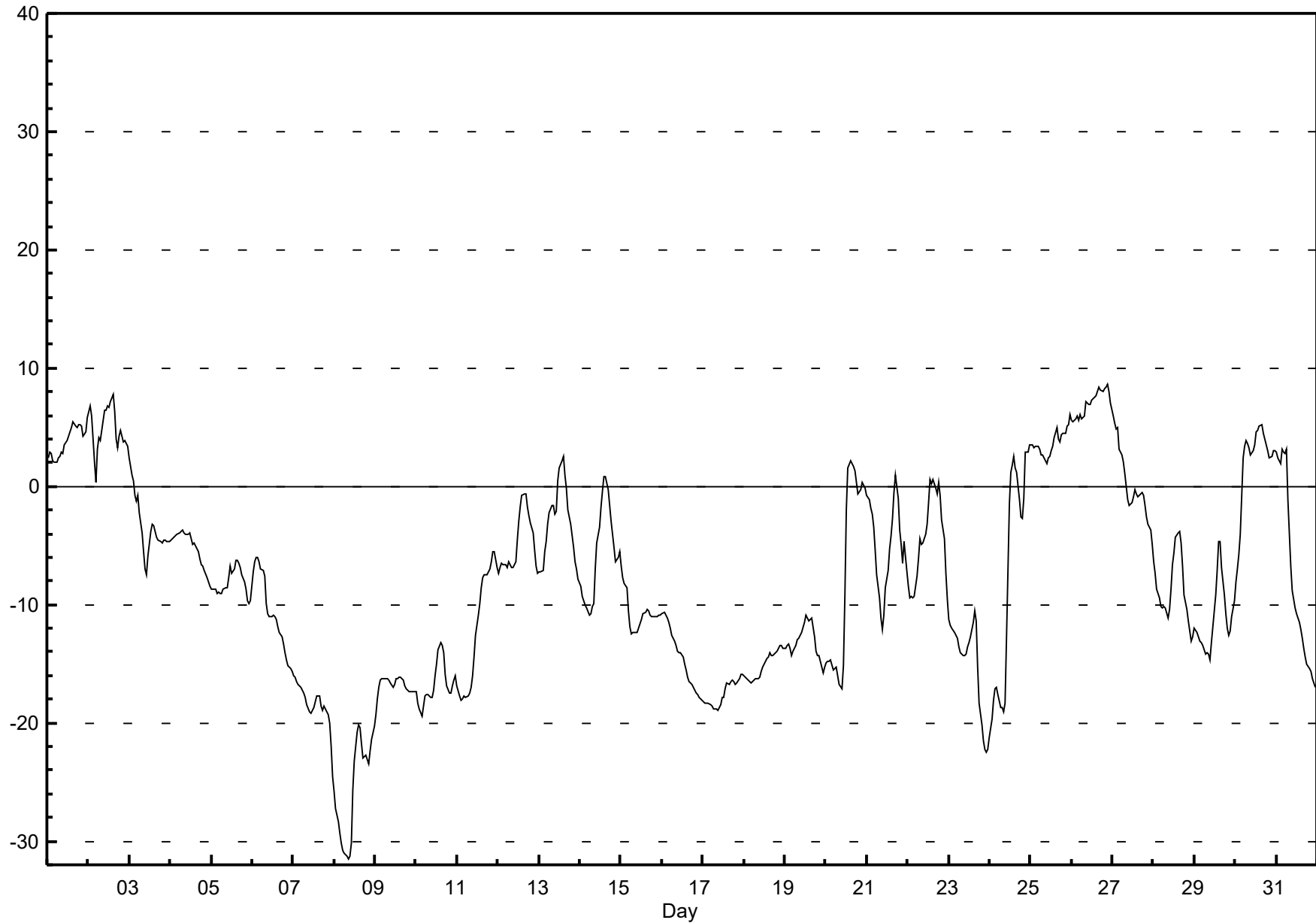
Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Evergreen Park - January 2019





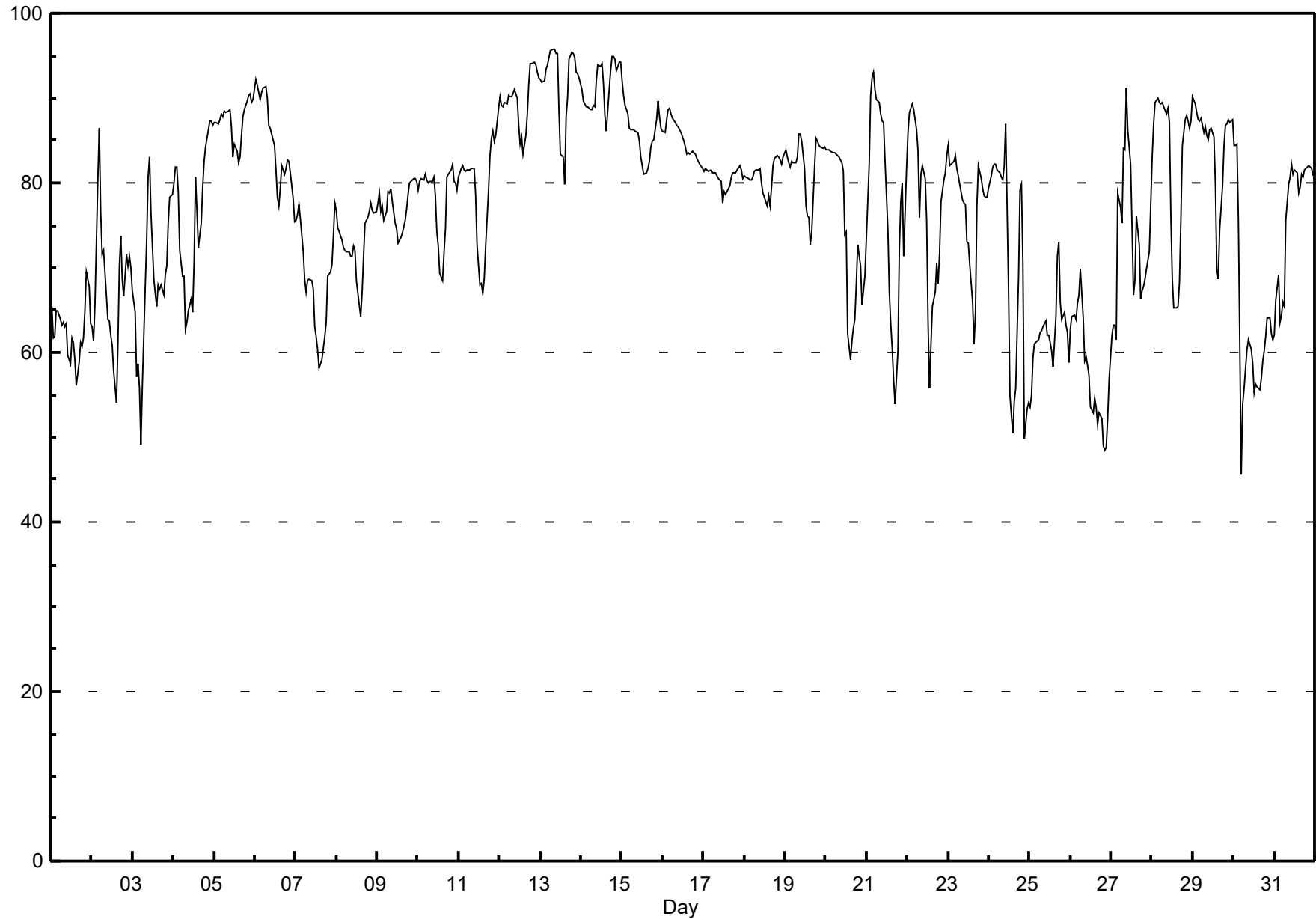
Hourly Averages

External Temperature (ET) - °C
Evergreen Park - January 2019



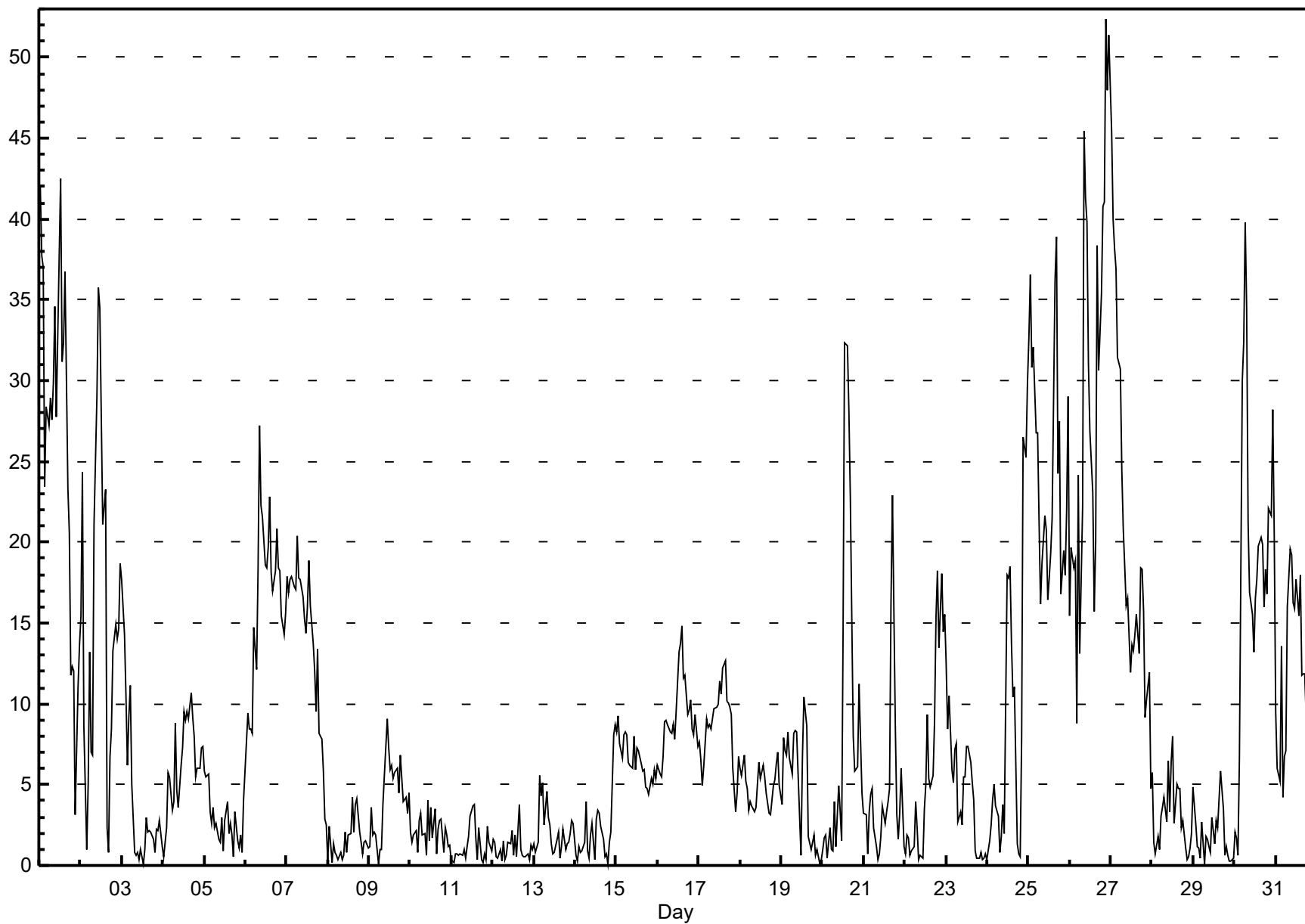
Hourly Averages

Relative Humidity (RH) - %
Evergreen Park - January 2019



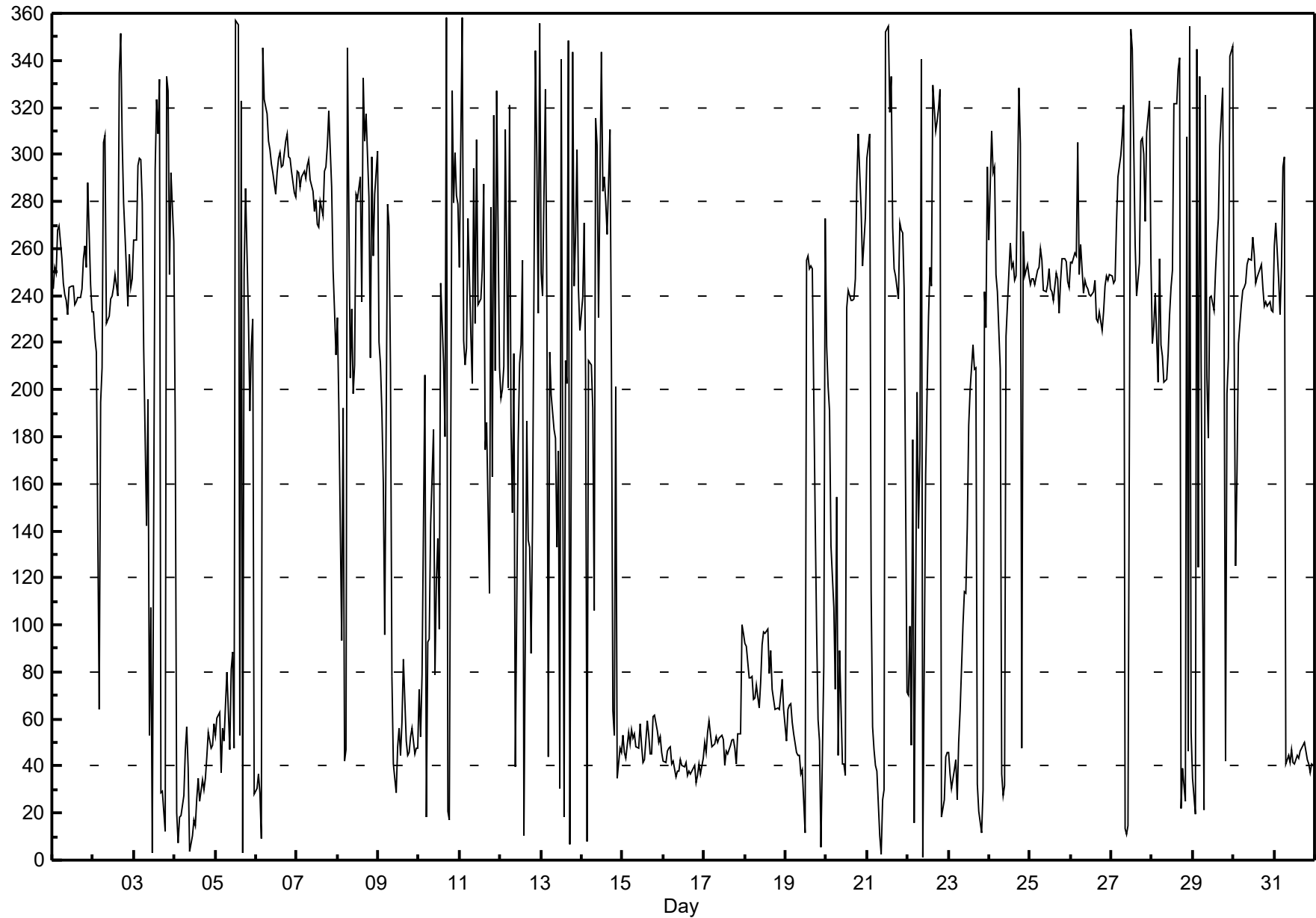
Hourly Averages

Wind Speed (WS) - km/h
Evergreen Park - January 2019



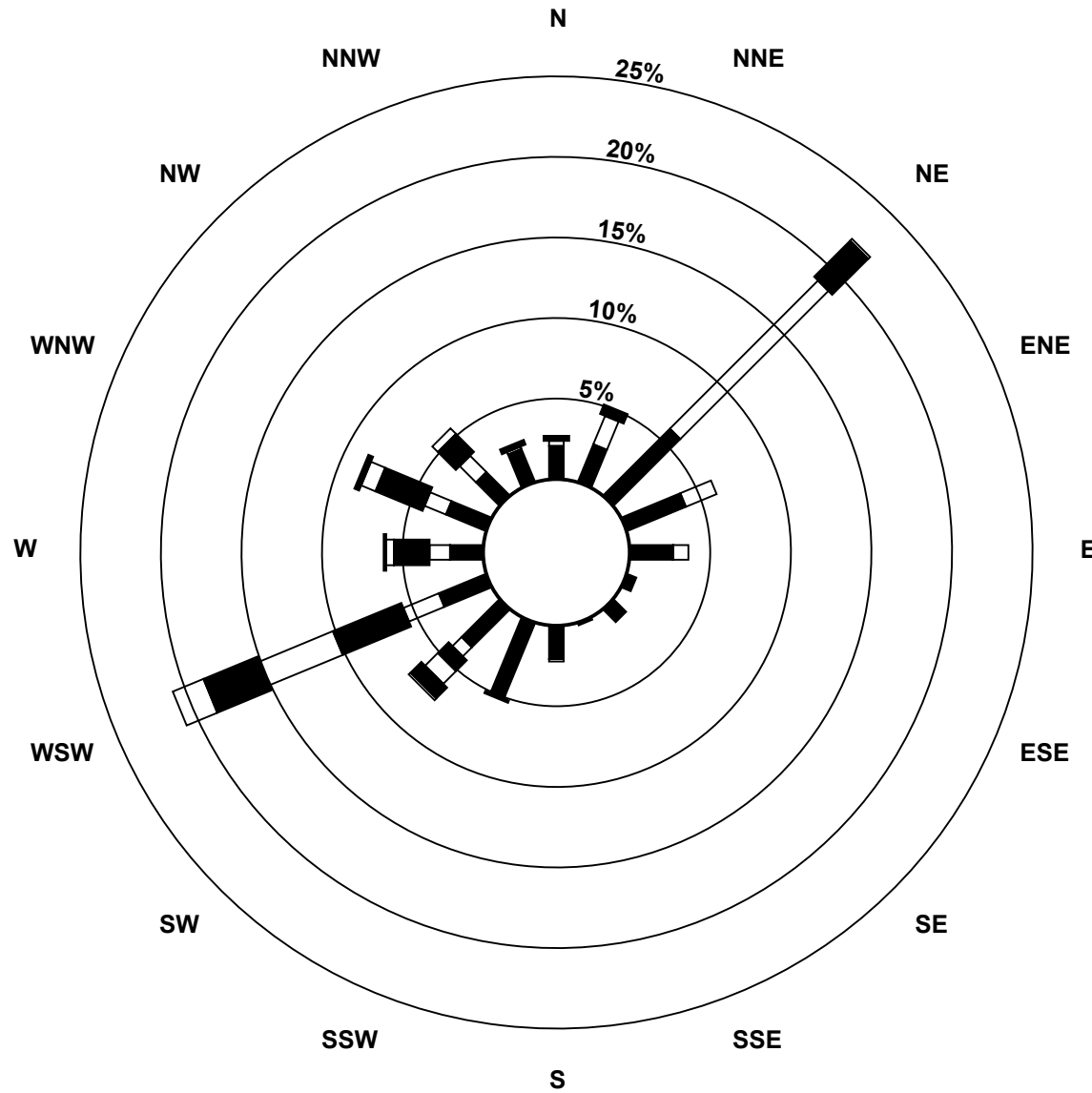
Hourly Averages

Wind Direction (WD) - deg
Evergreen Park - January 2019

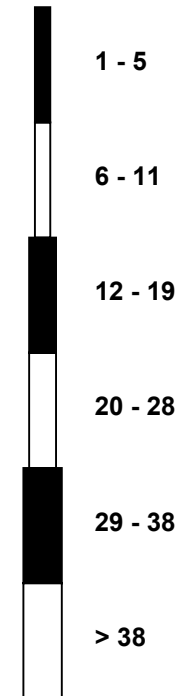


Wind Rose

Wind Speed (WS) (km/h)
Evergreen Park - January 2019



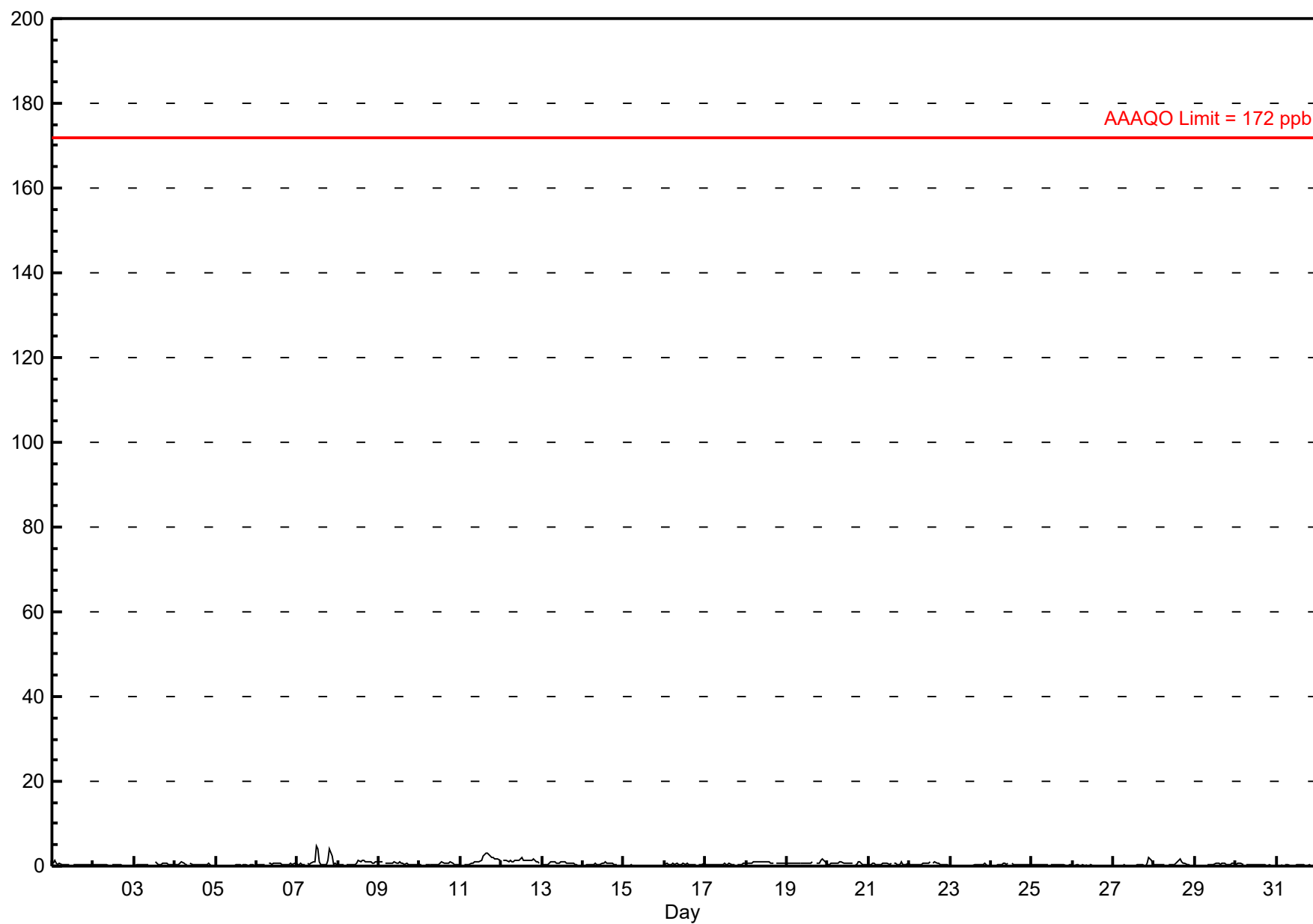
Wind Speed Classes (km/h)



Hourly Averages

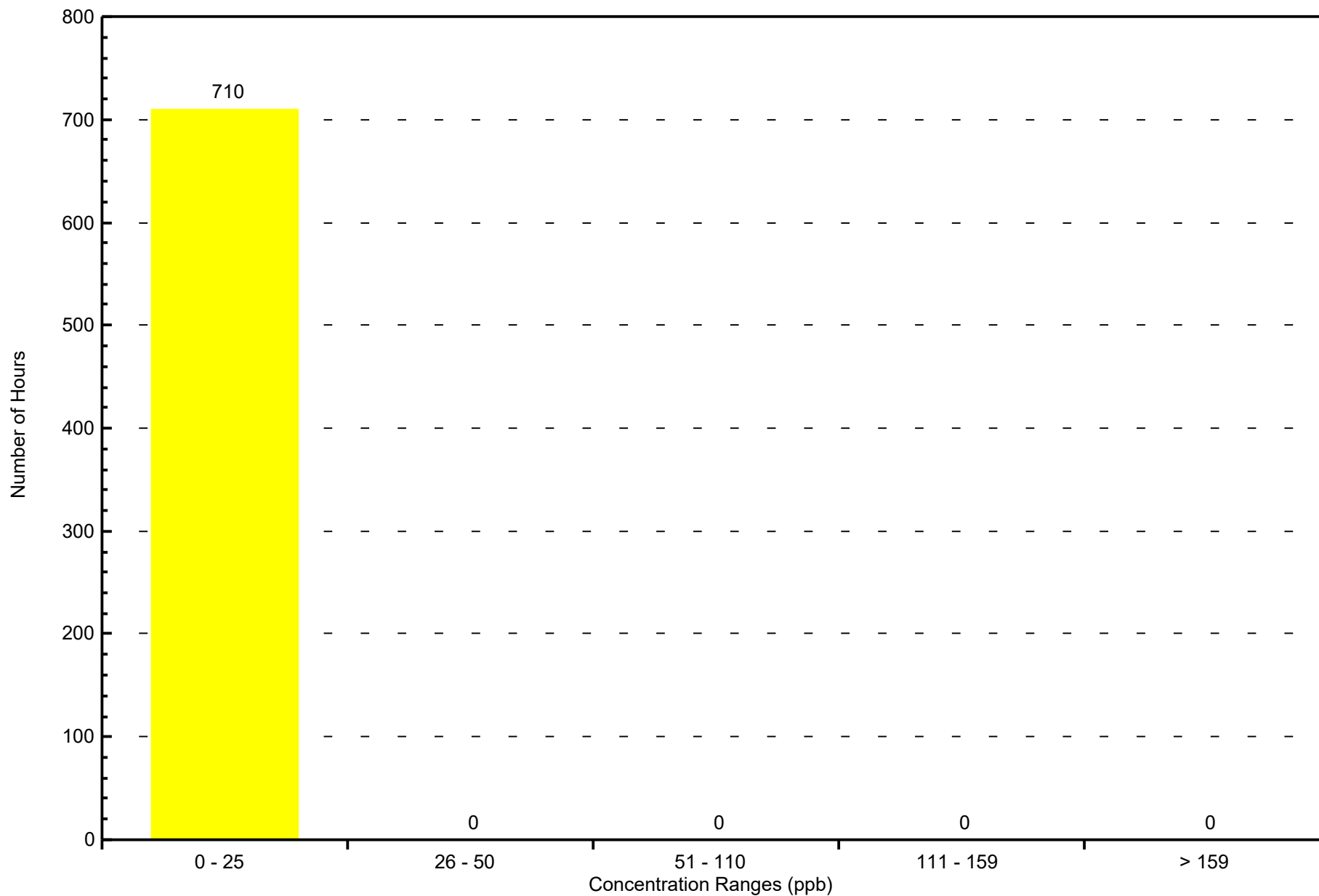
Sulphur Dioxide (SO₂) - ppb

Henry Pirker - January 2019



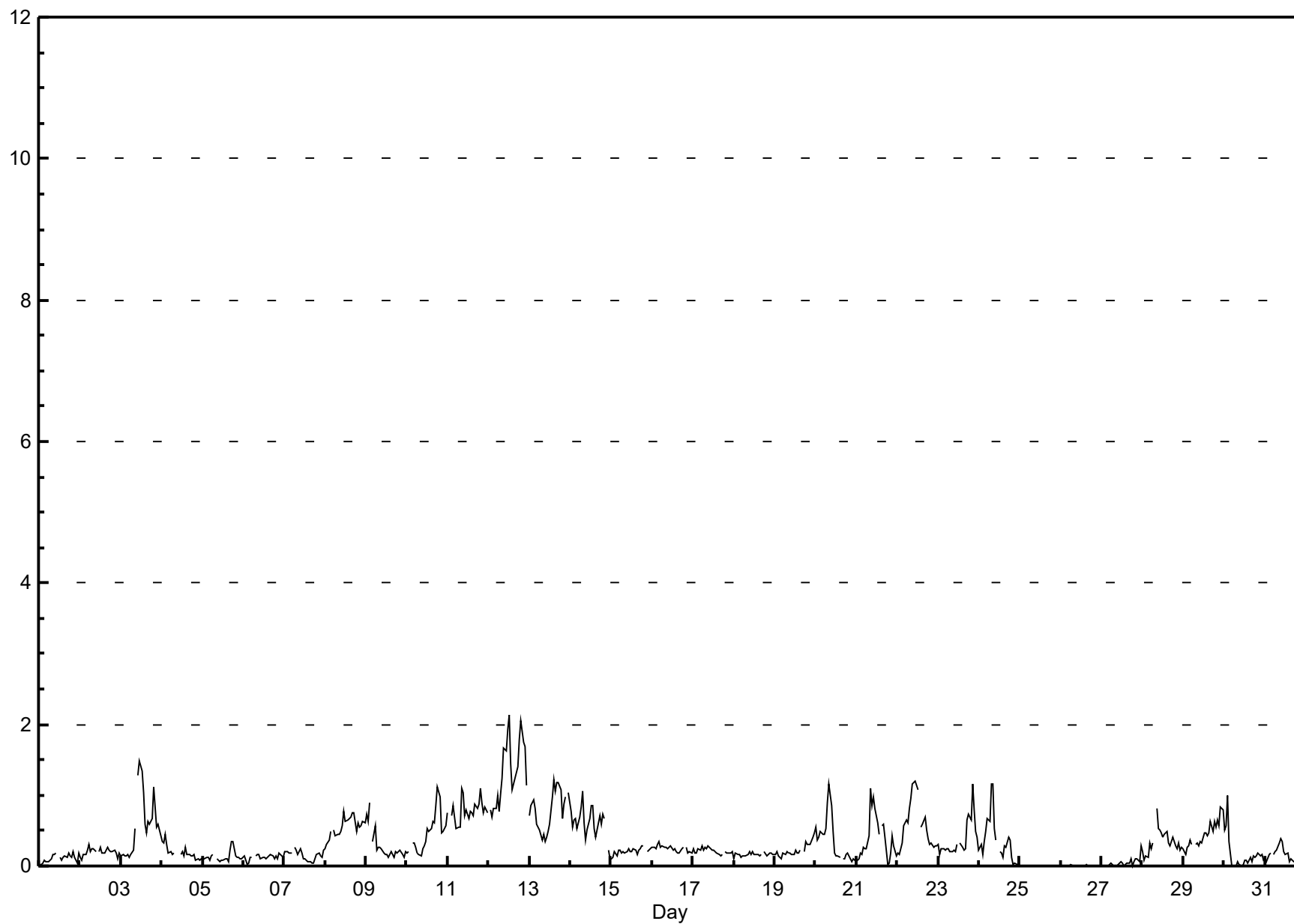
Histogram of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Henry Pirker - January 2019



Hourly Averages

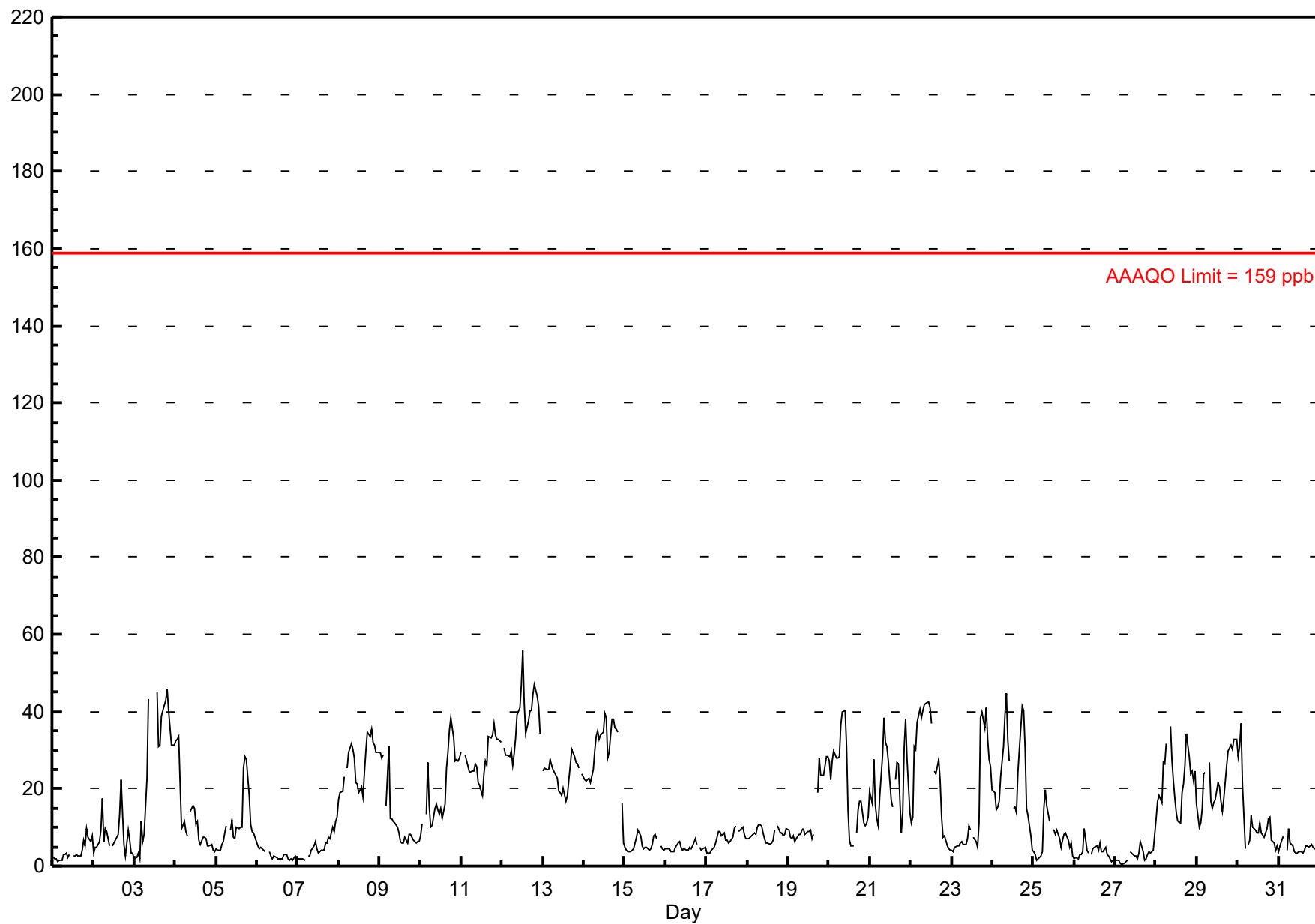
Total Reduced Sulphur (TRS) - ppb
Henry Pirker - January 2019



Hourly Averages

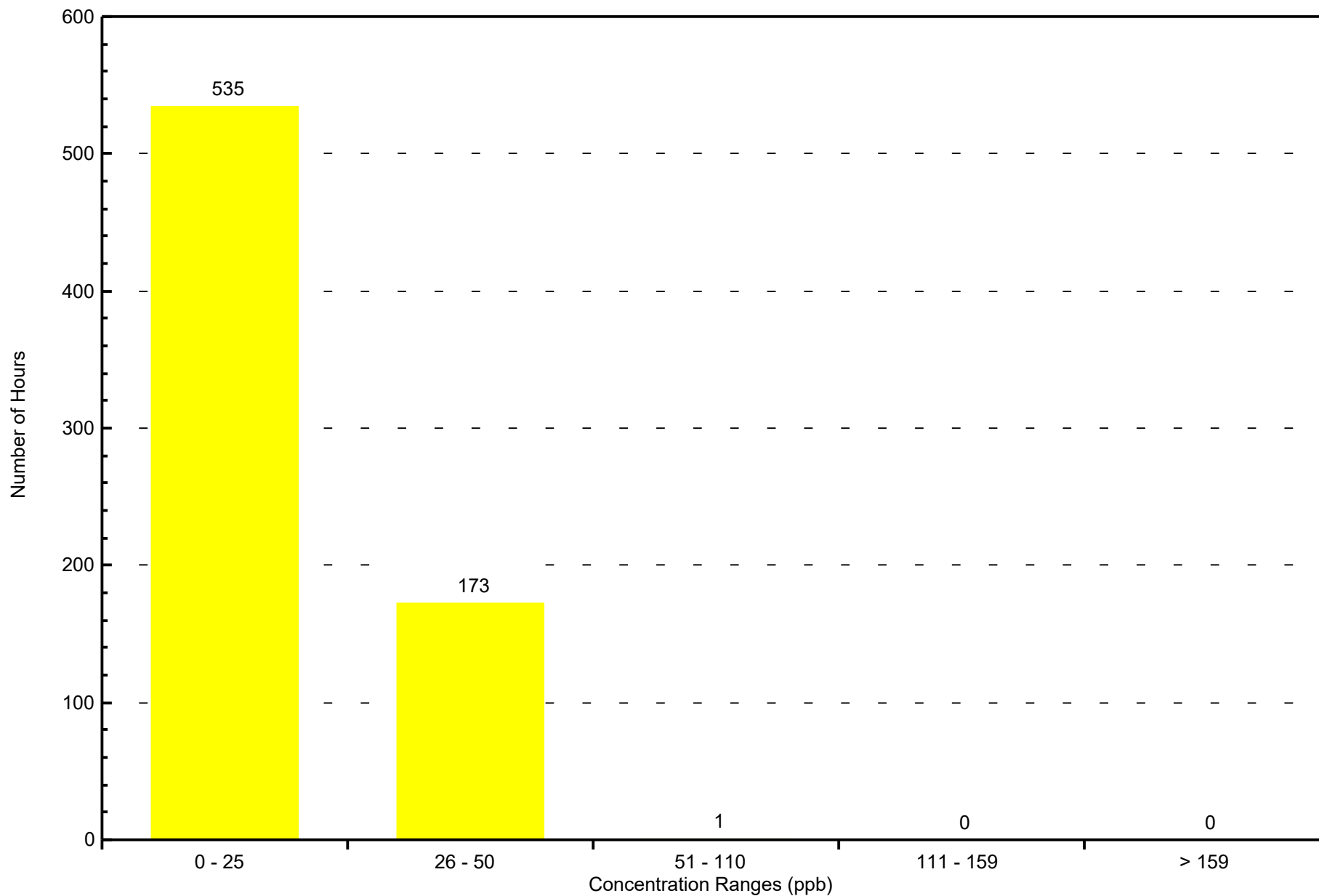
Nitrogen Dioxide (NO₂) - ppb

Henry Pirker - January 2019



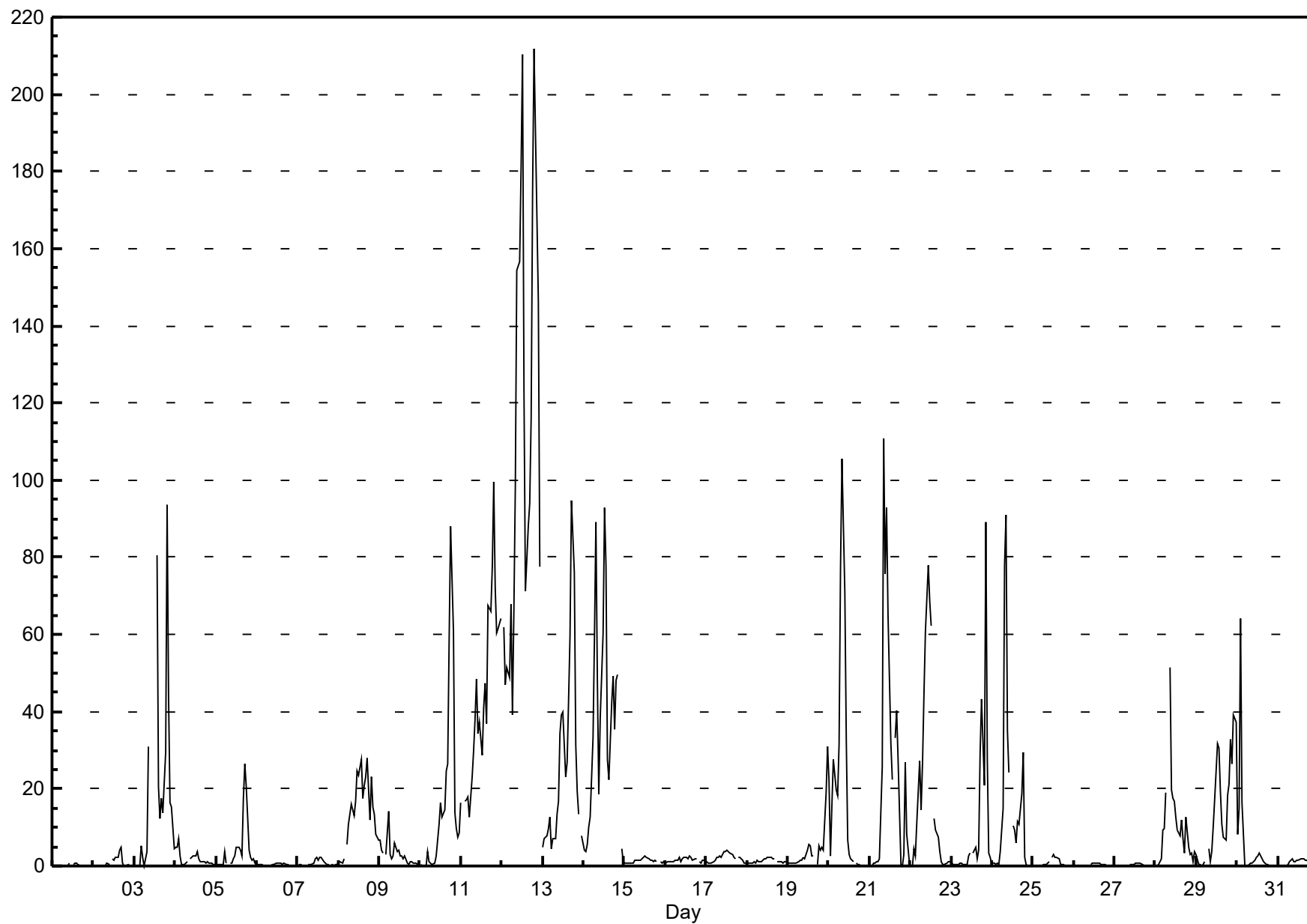
Histogram of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Henry Pirker - January 2019



Hourly Averages

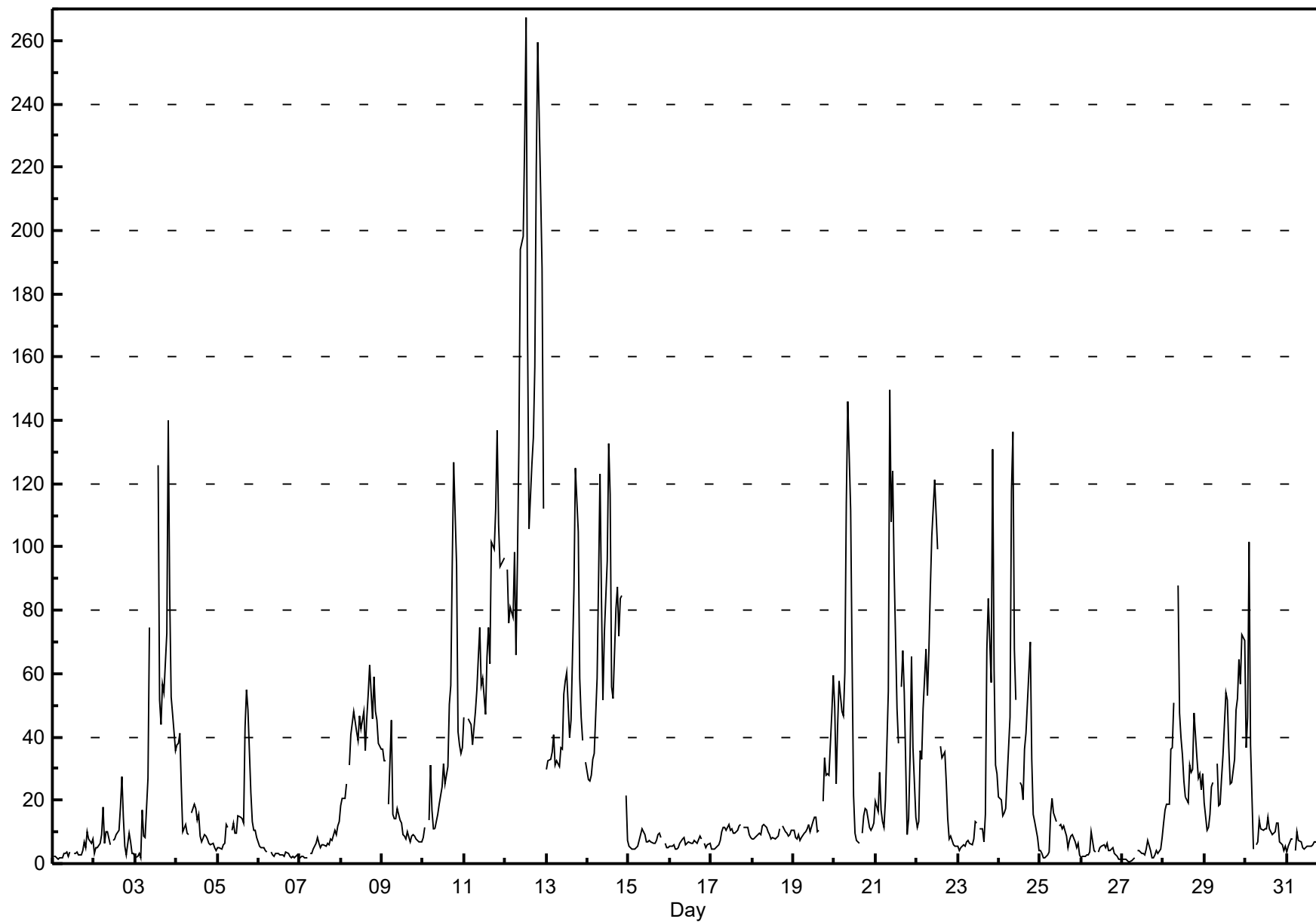
Nitrogen Oxide (NO) - ppb
Henry Pirker - January 2019



Hourly Averages

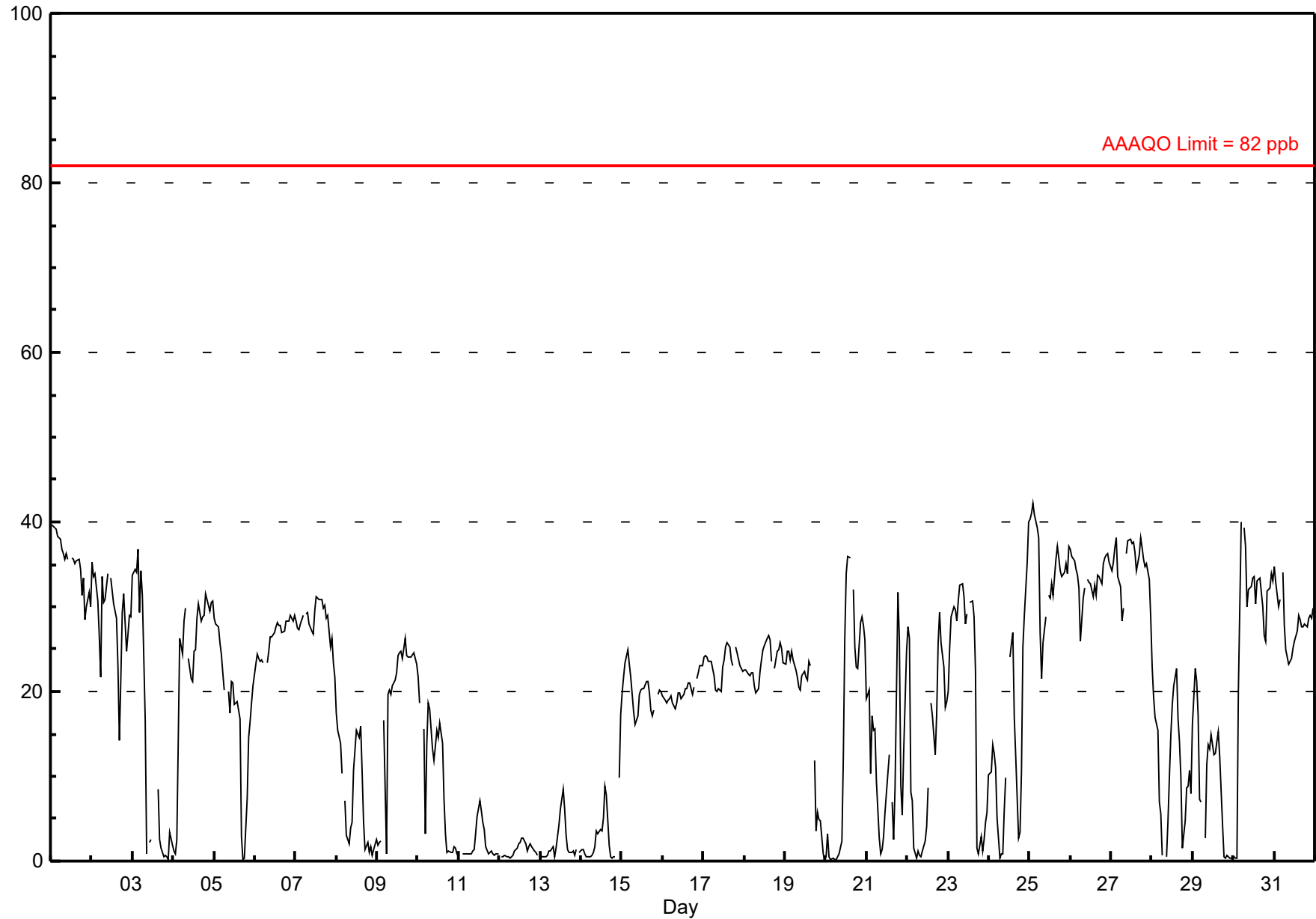
Oxides of Nitrogen (NO_x) - ppb

Henry Pirker - January 2019



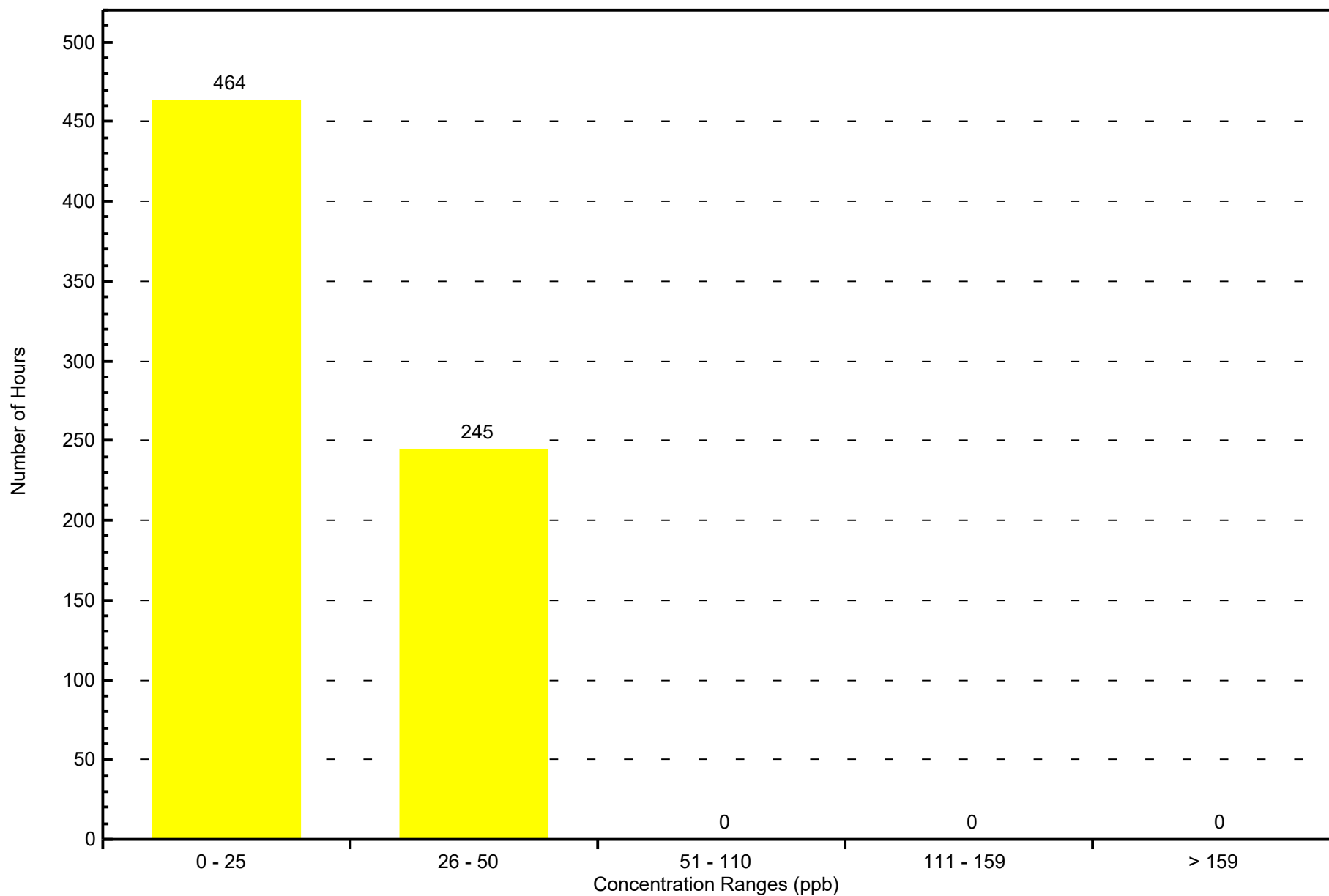
Hourly Averages

Ozone (O₃) - ppb
Henry Pirker - January 2019



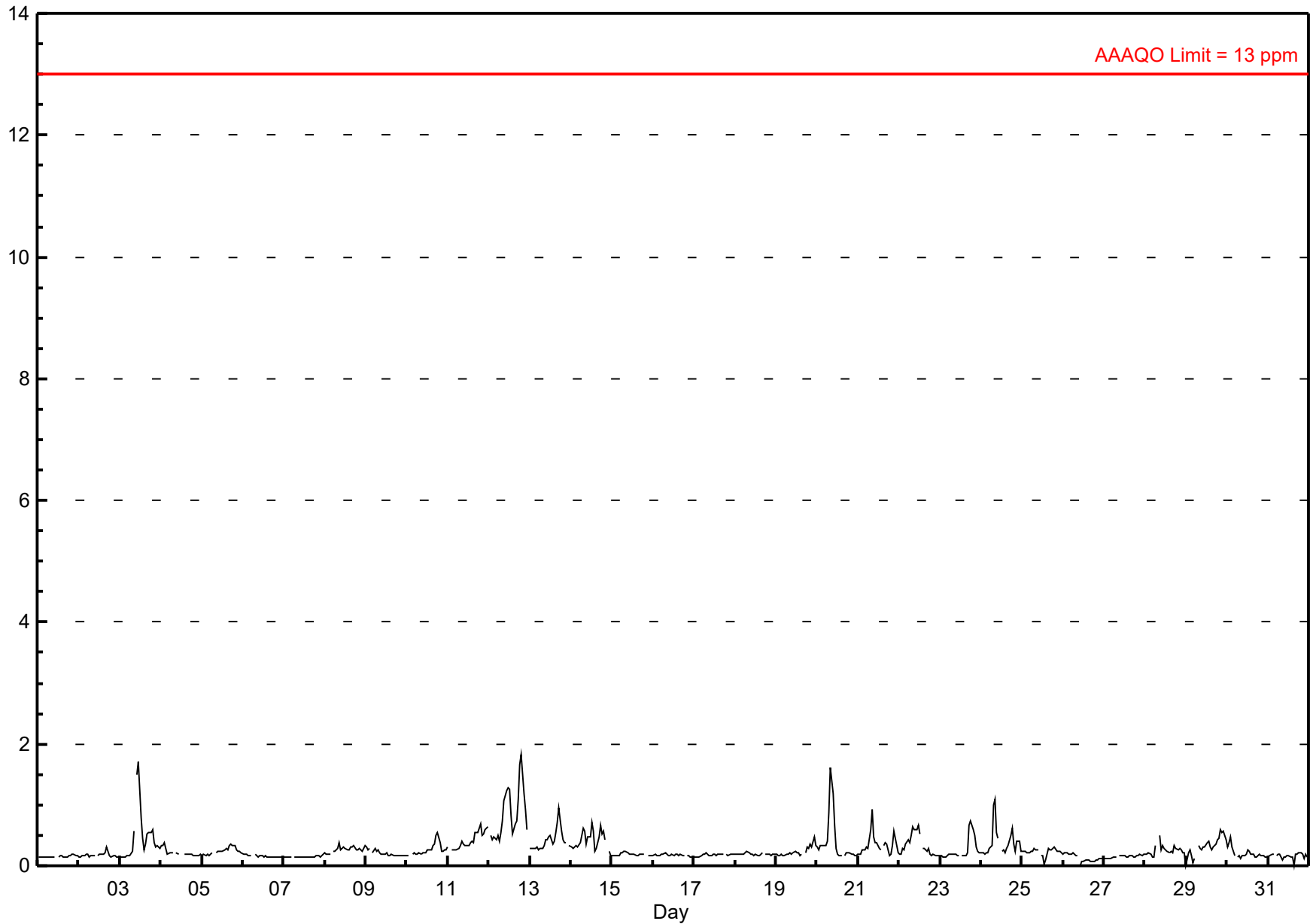
Histogram of Hourly Averages

Ozone (O₃) - ppb
Henry Pirker - January 2019



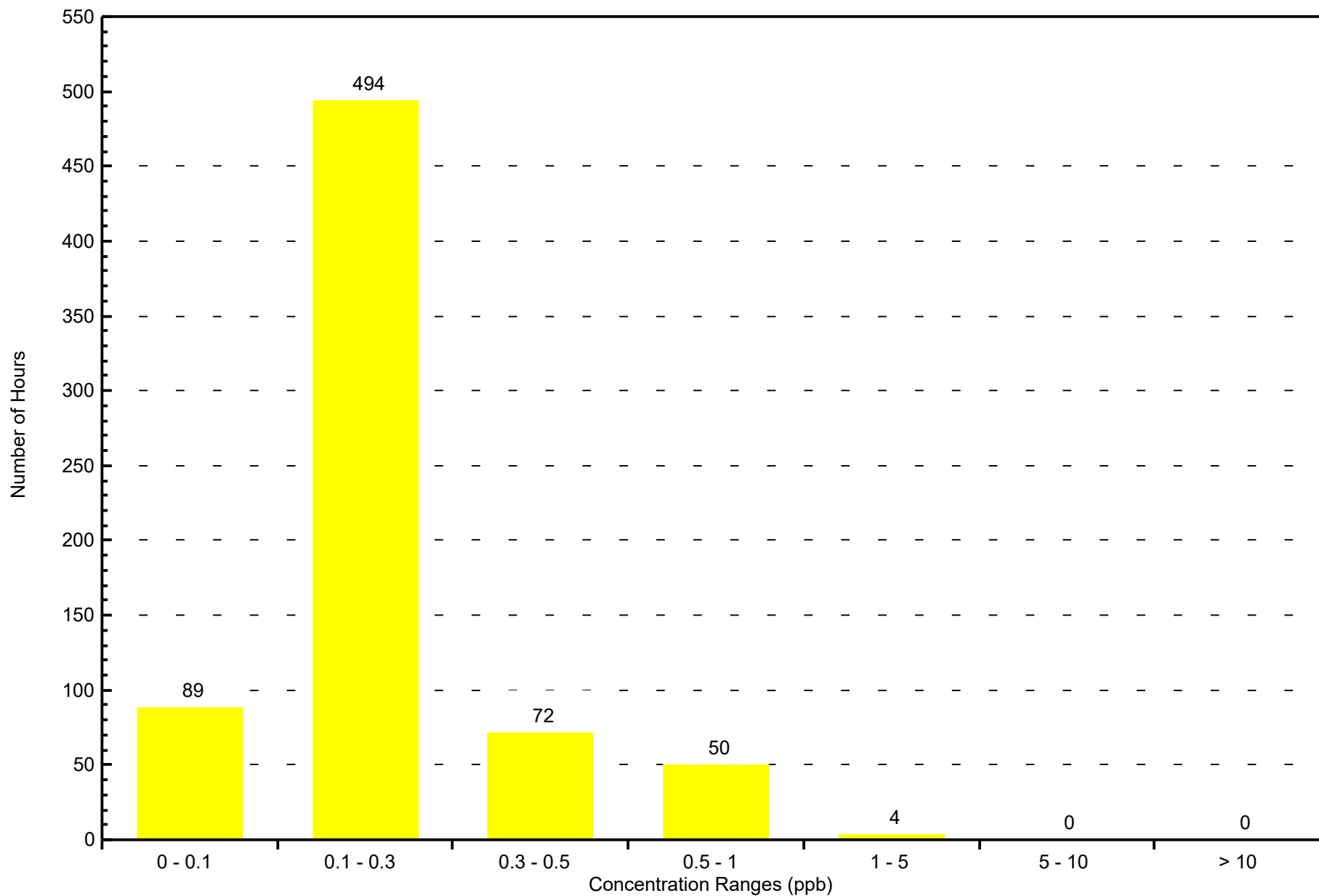
Hourly Averages

Carbon Monoxide (CO) - ppm
Henry Pirker - January 2019



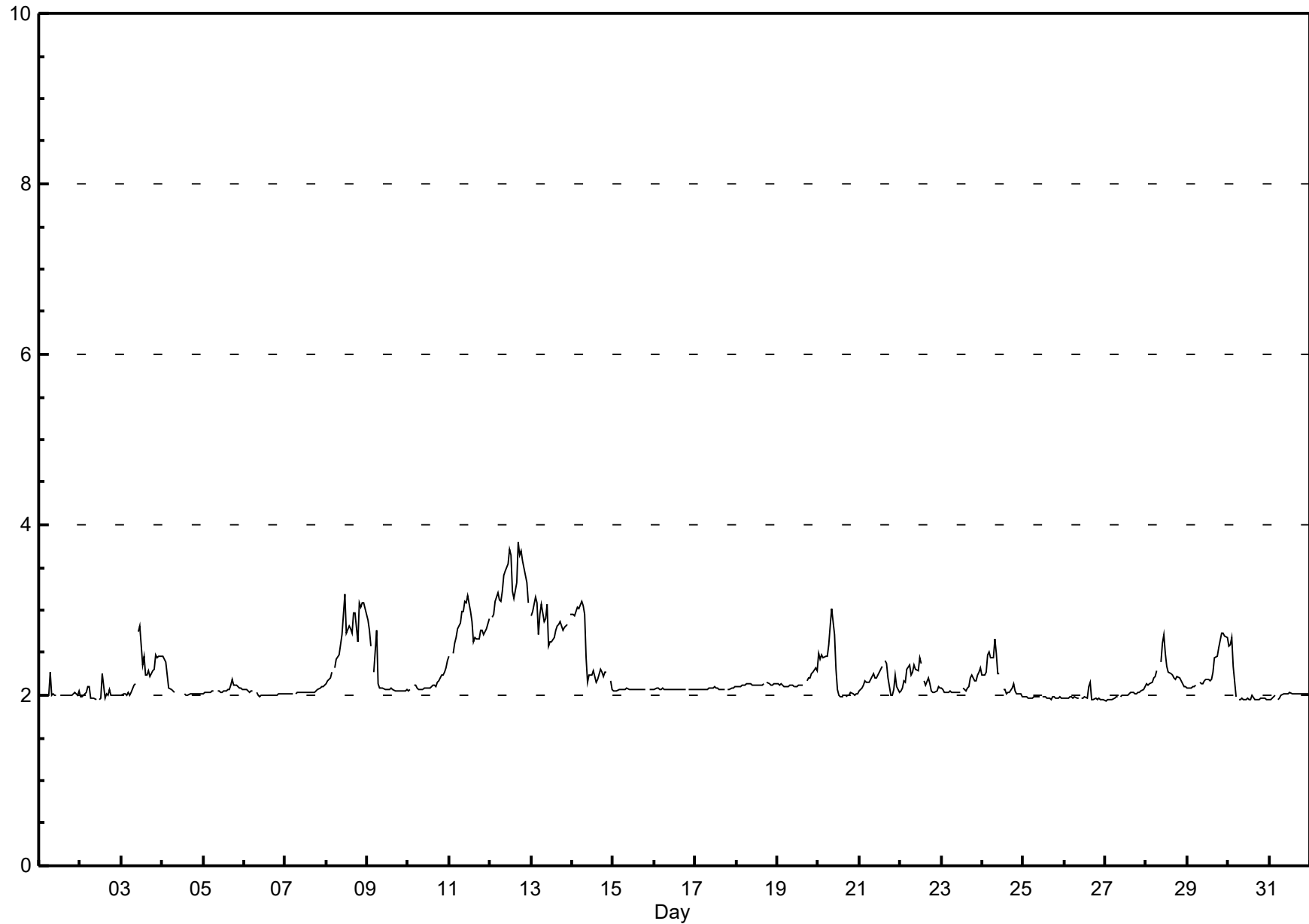
Histogram of Hourly Averages

Carbon Monoxide (CO) - ppm
Henry Pirker - January 2019



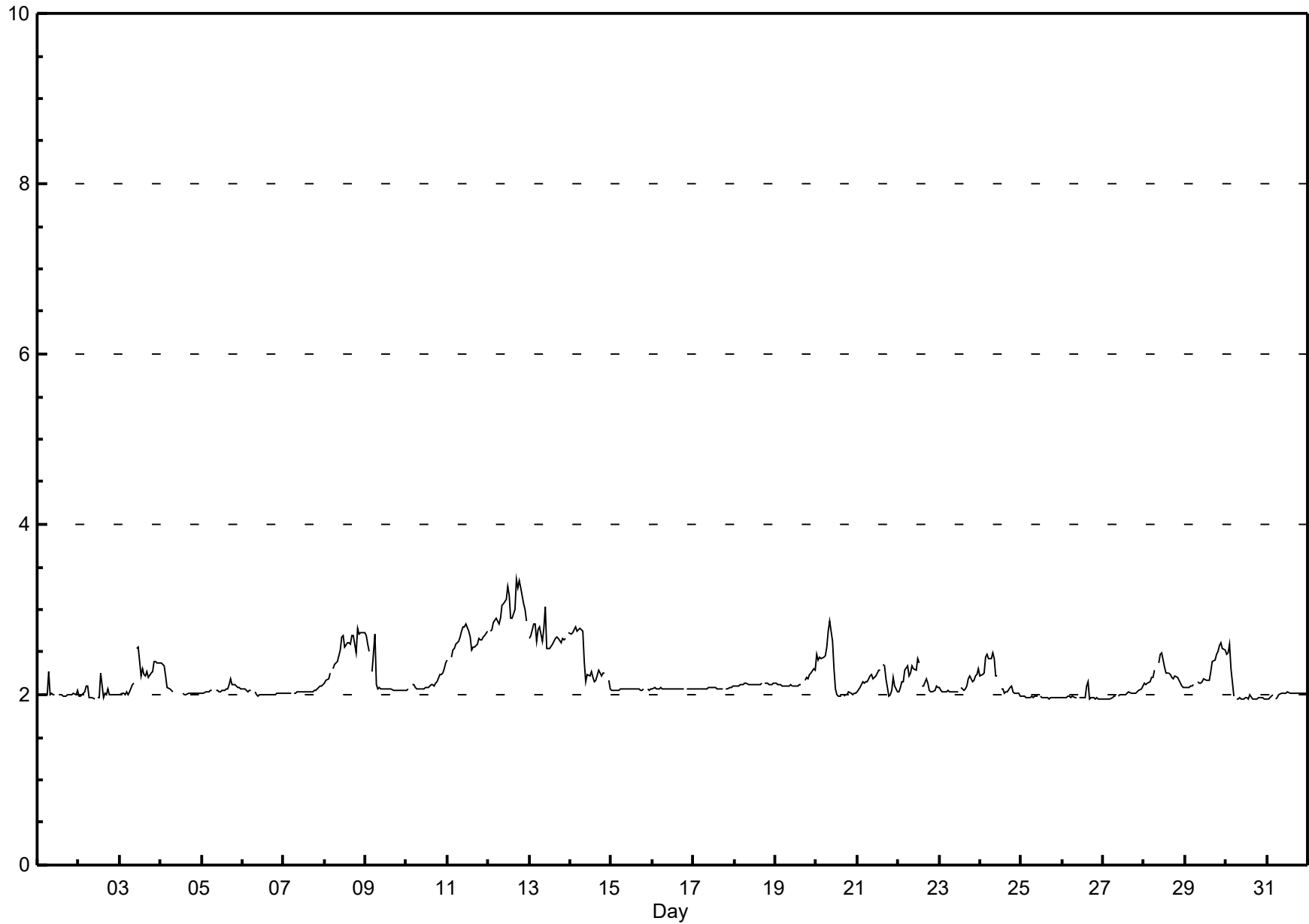
Hourly Averages

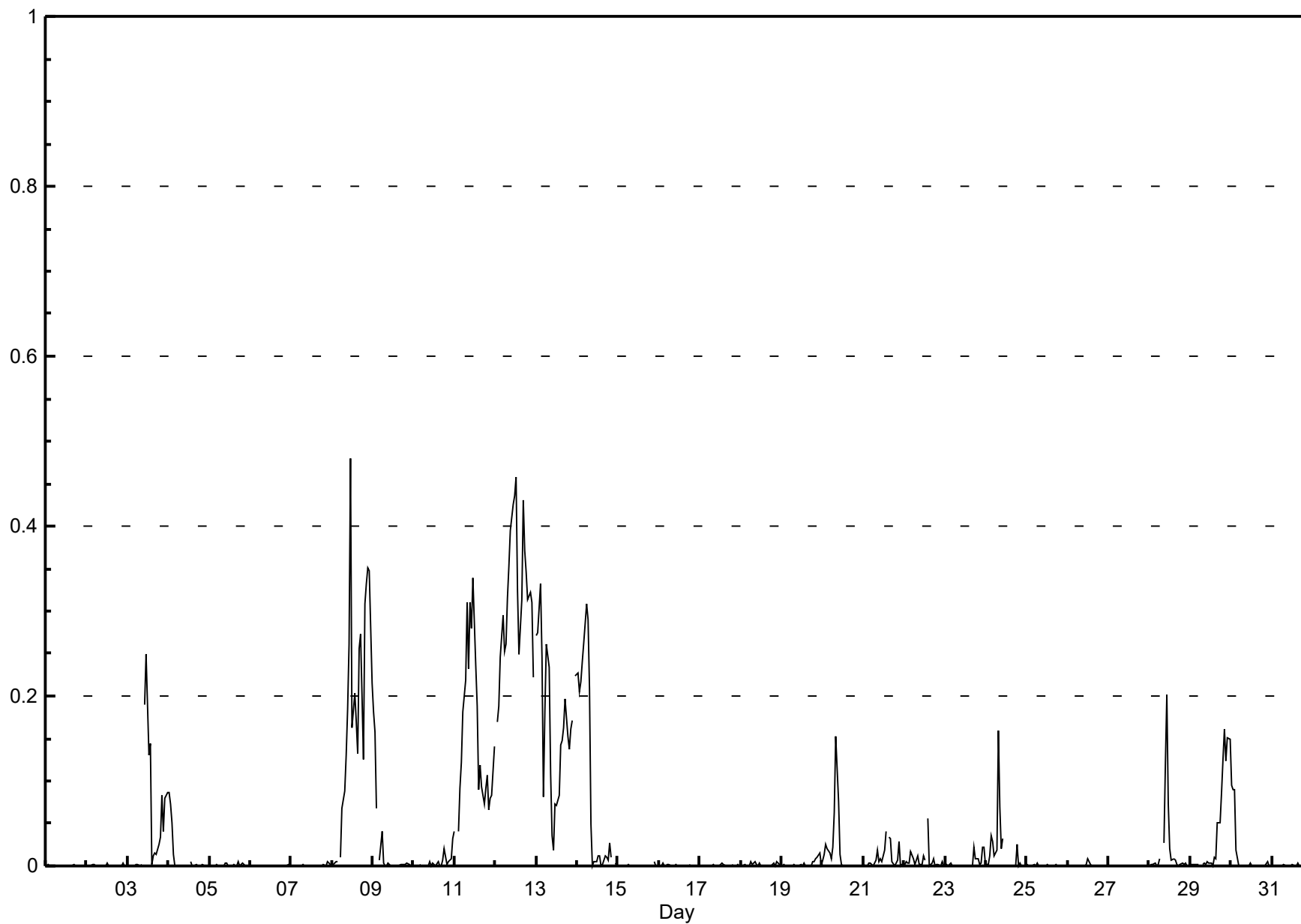
Total Hydrocarbons (THC) - ppm
Henry Pirker - January 2019

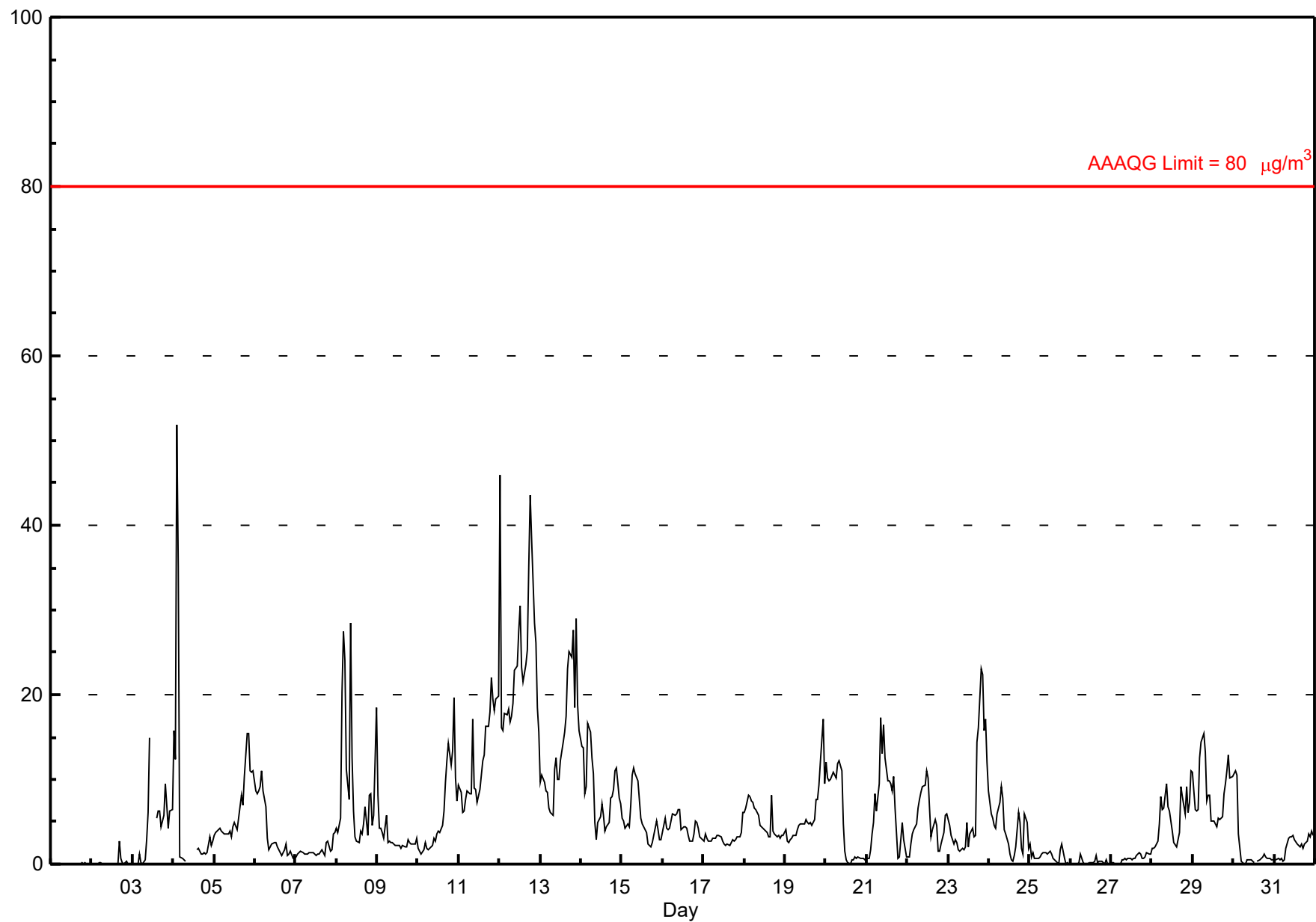


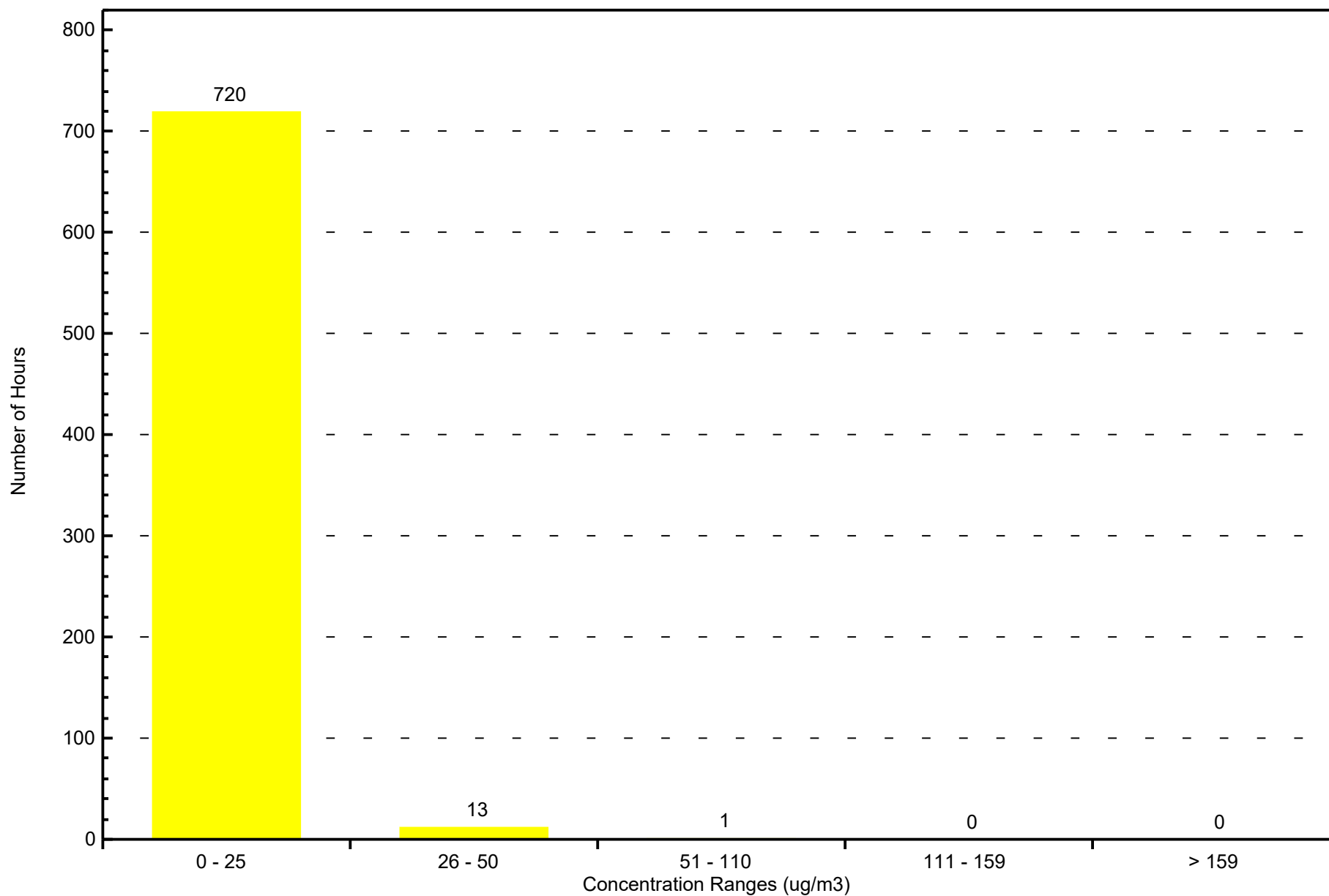
Hourly Averages

Methane (CH₄) - ppm
Henry Pirker - January 2019





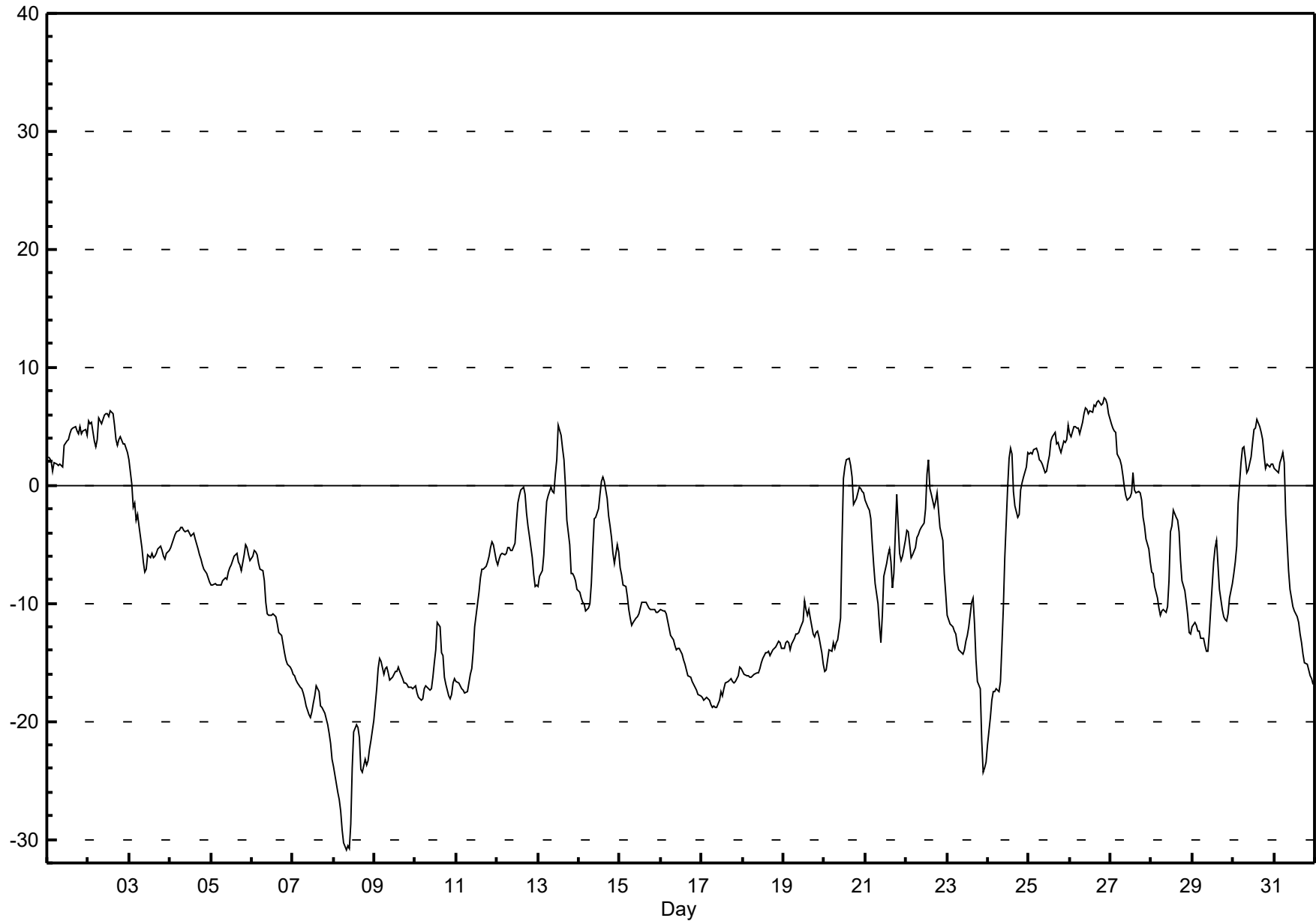




Hourly Averages

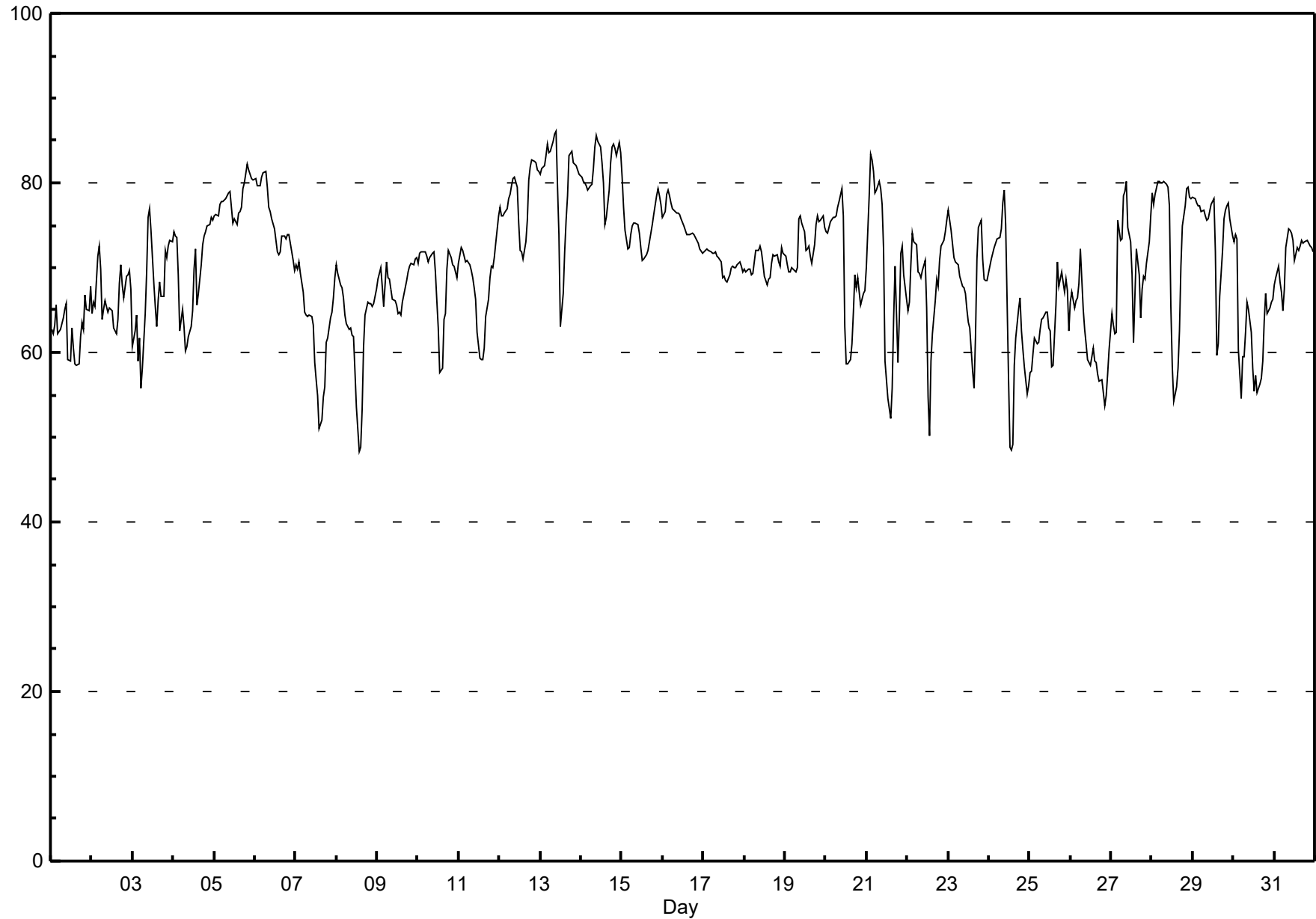
External Temperature (ET) - °C

Henry Pirker - January 2019



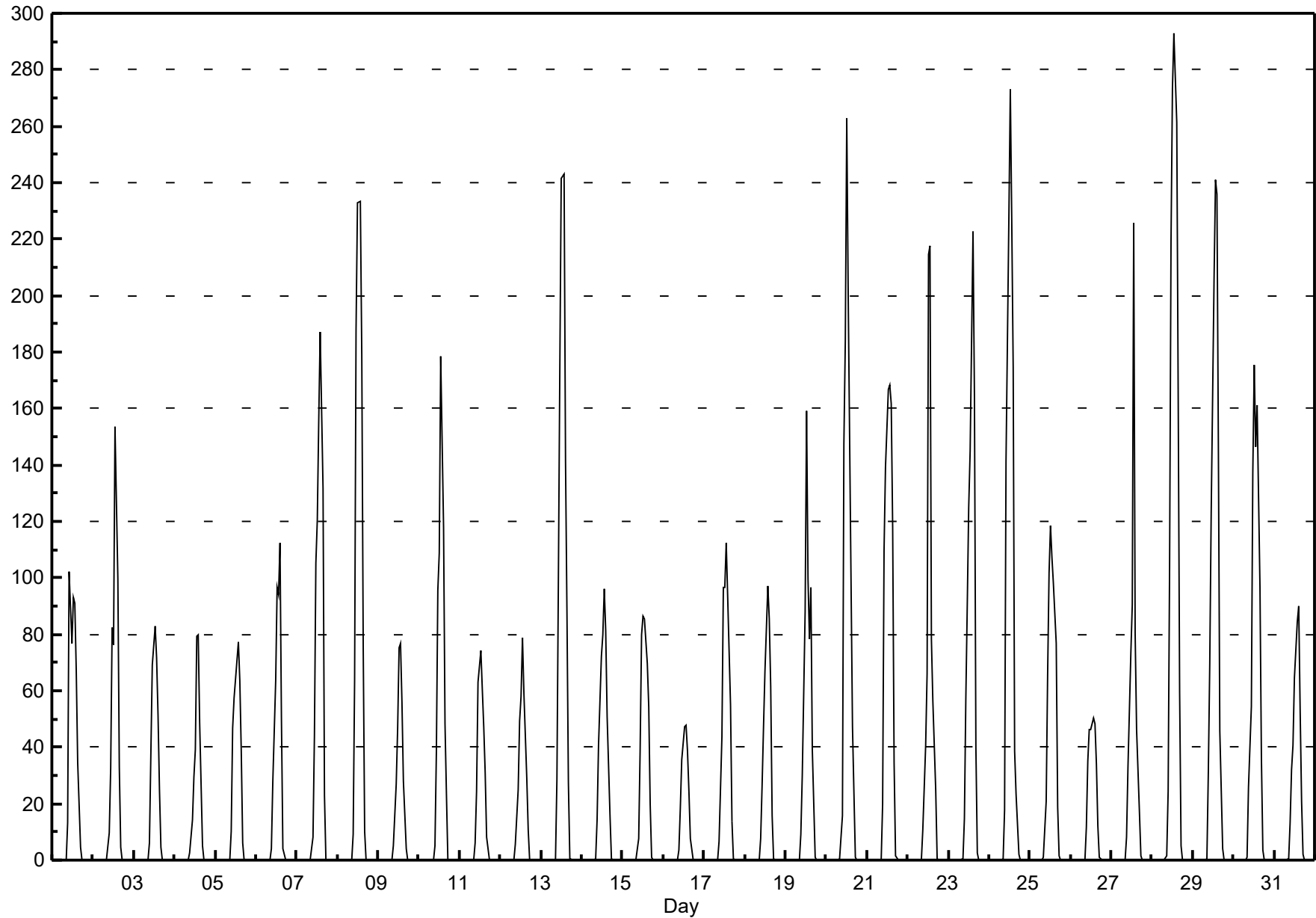
Hourly Averages

Relative Humidity (RH) - %
Henry Pirker - January 2019



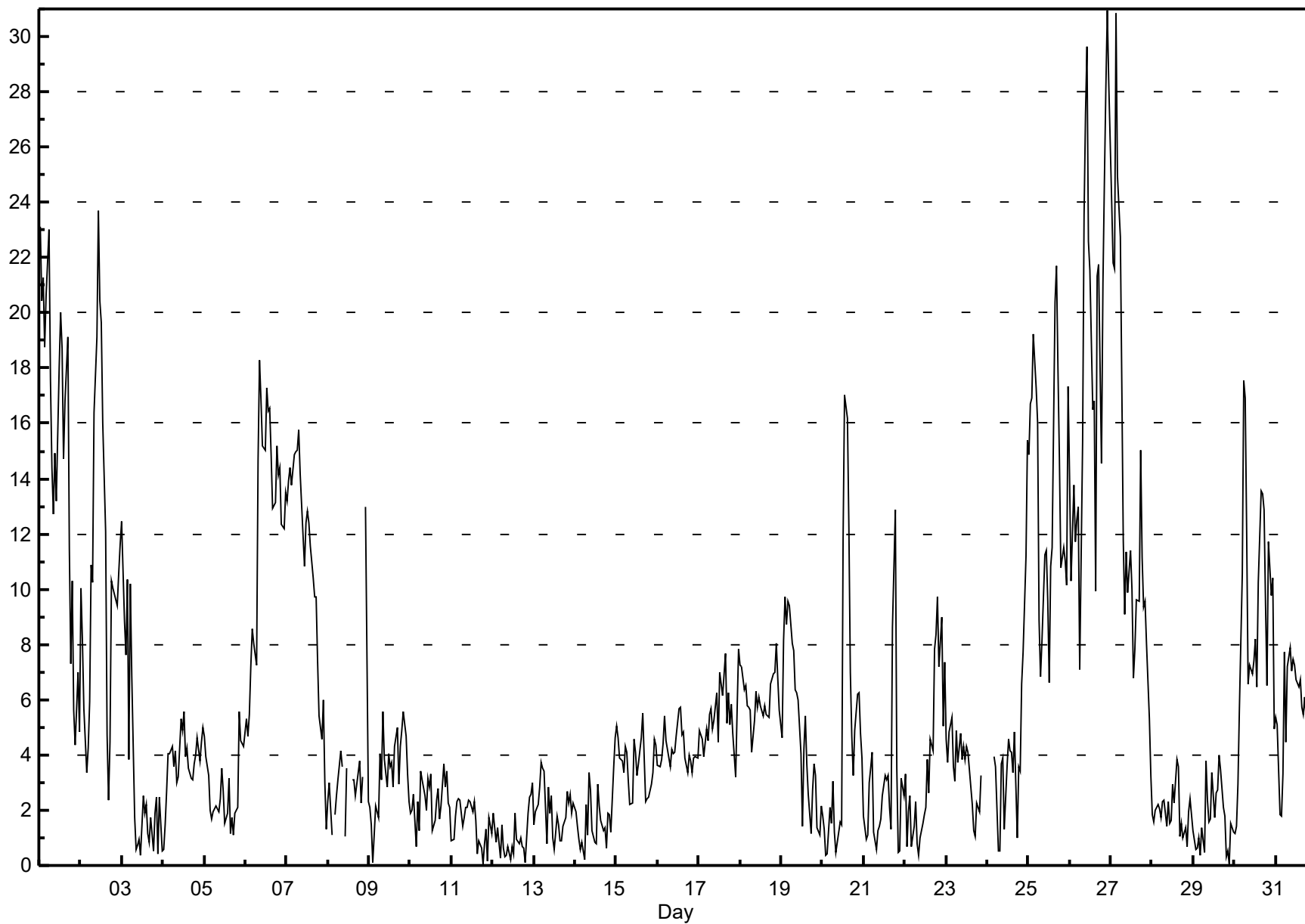
Hourly Averages

Solar Radiation (SR) - W/m²
Henry Pirker - January 2019



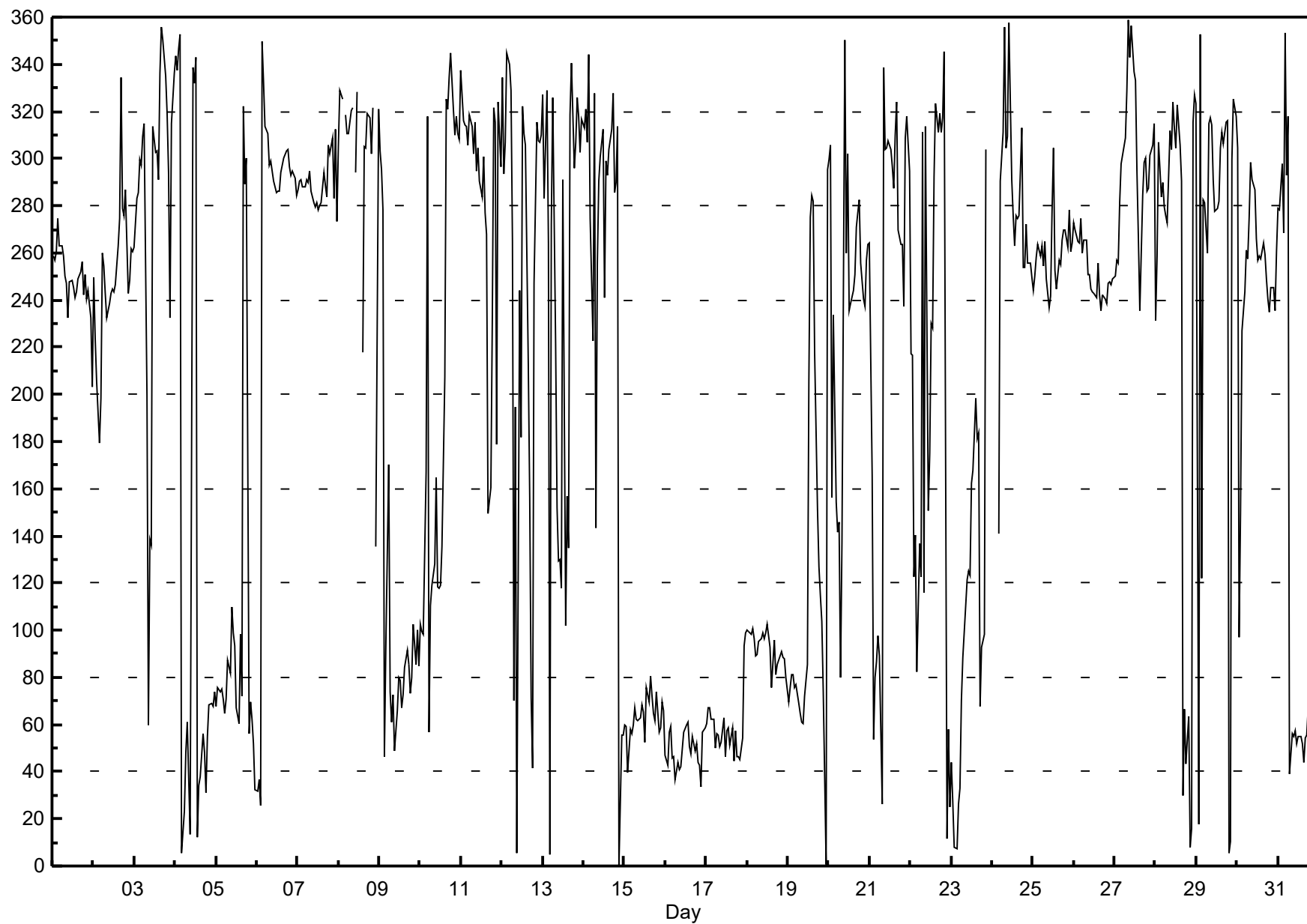
Hourly Averages

Wind Speed (WS) - km/h
Henry Pirker - January 2019



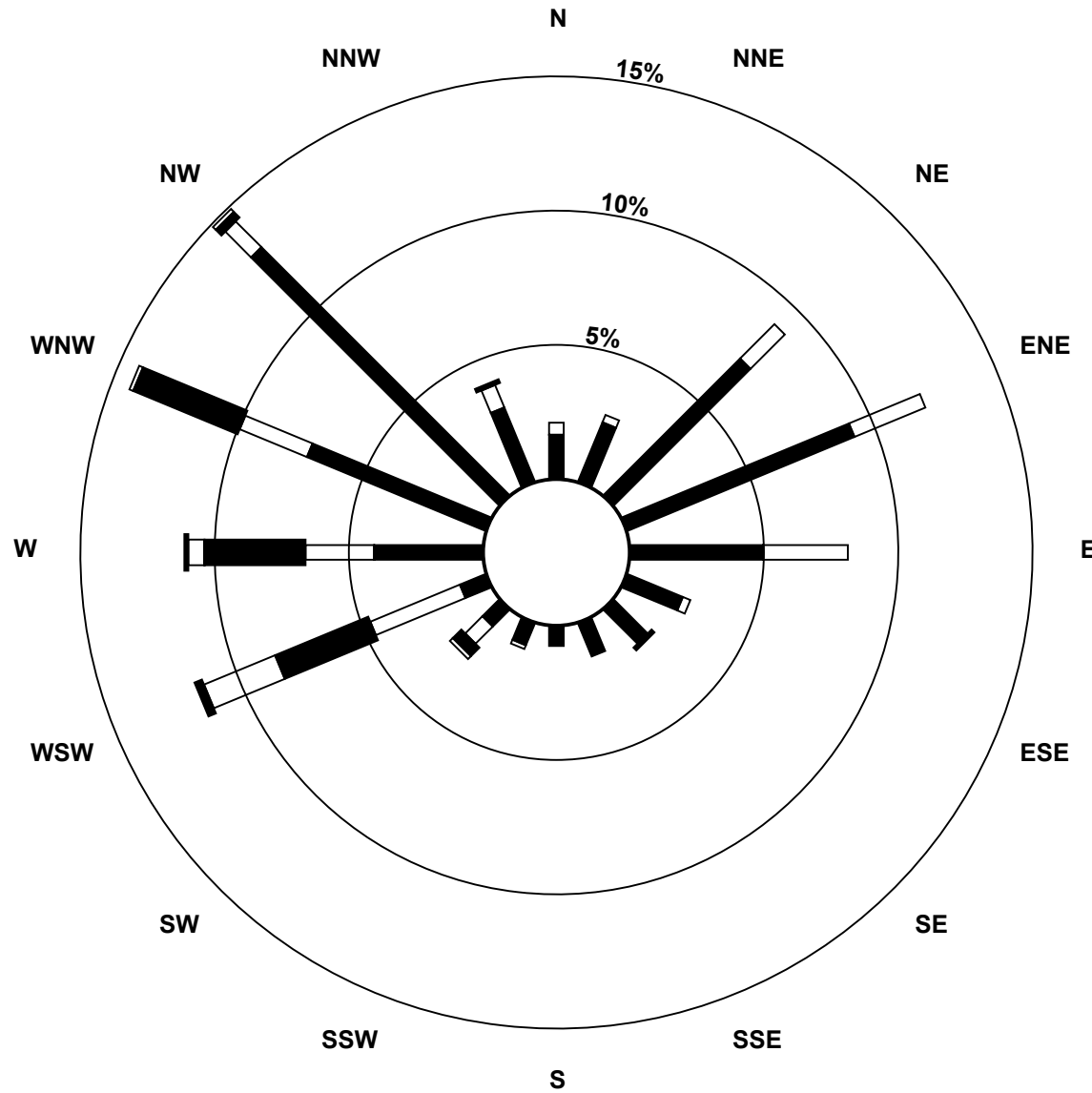
Hourly Averages

Wind Direction (WD) - deg
Henry Pirker - January 2019

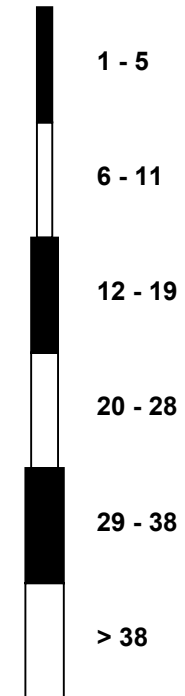


Wind Rose

Wind Speed (WS) (km/h)
Henry Pirker - January 2019

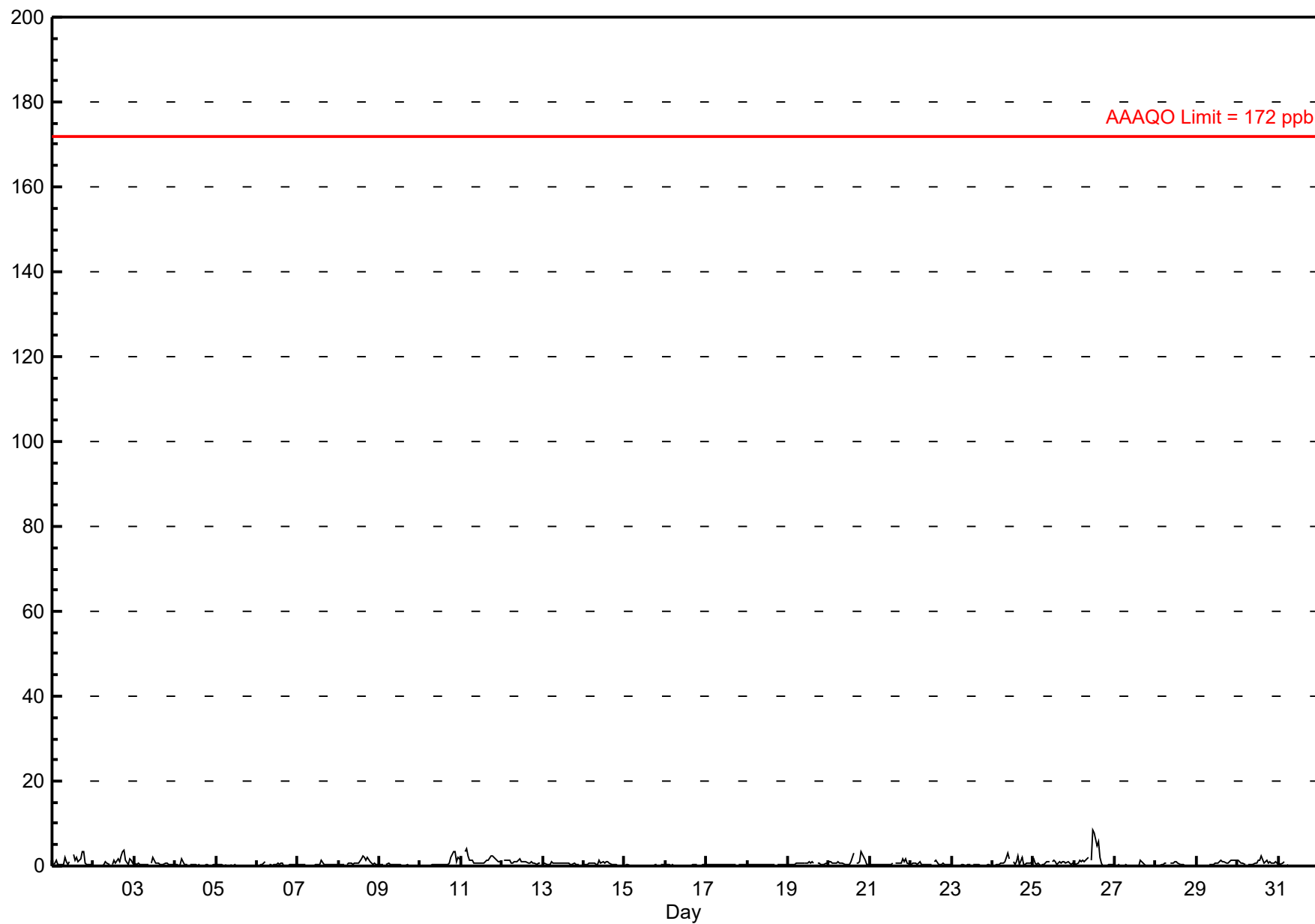


Wind Speed Classes (km/h)



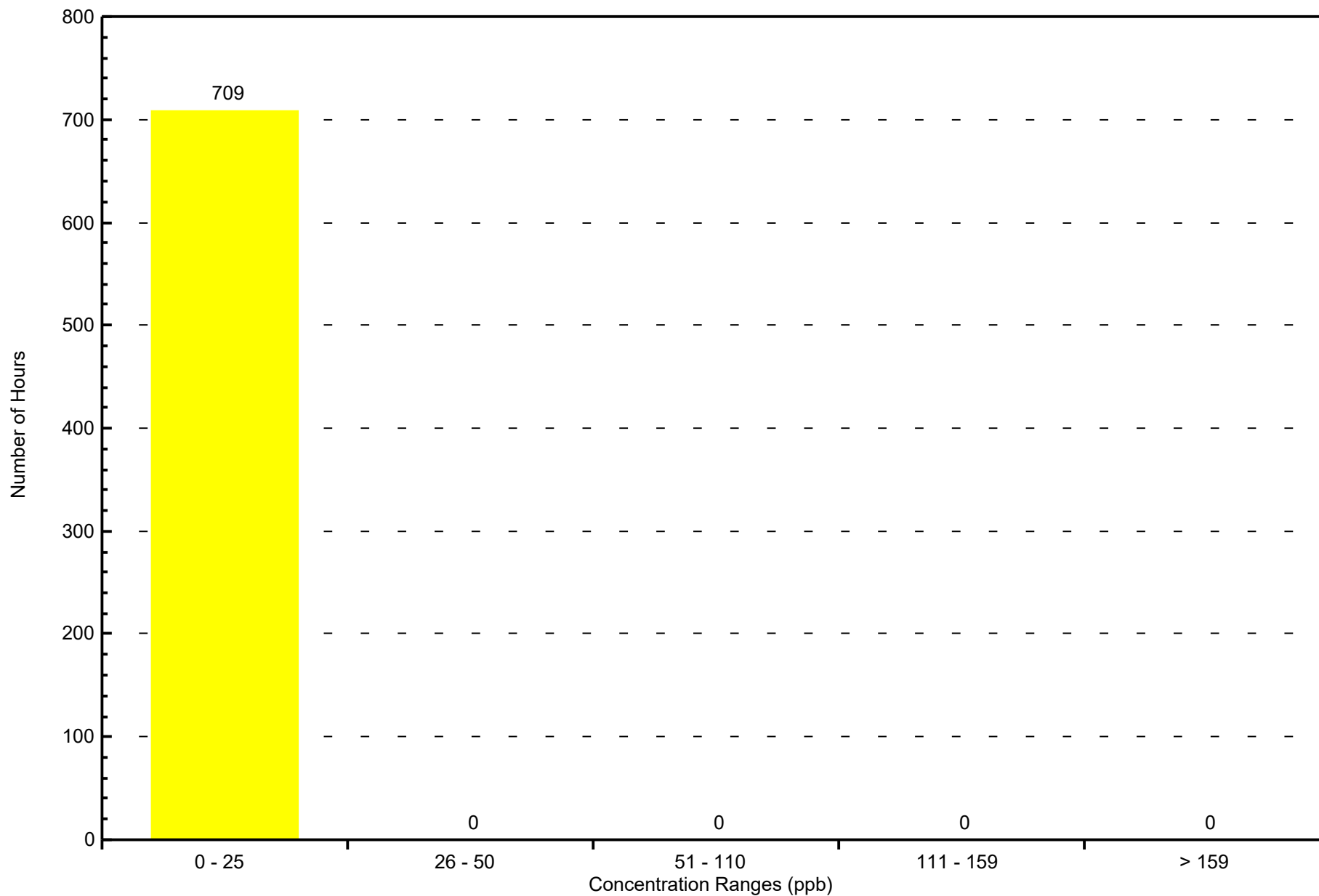
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - January 2019



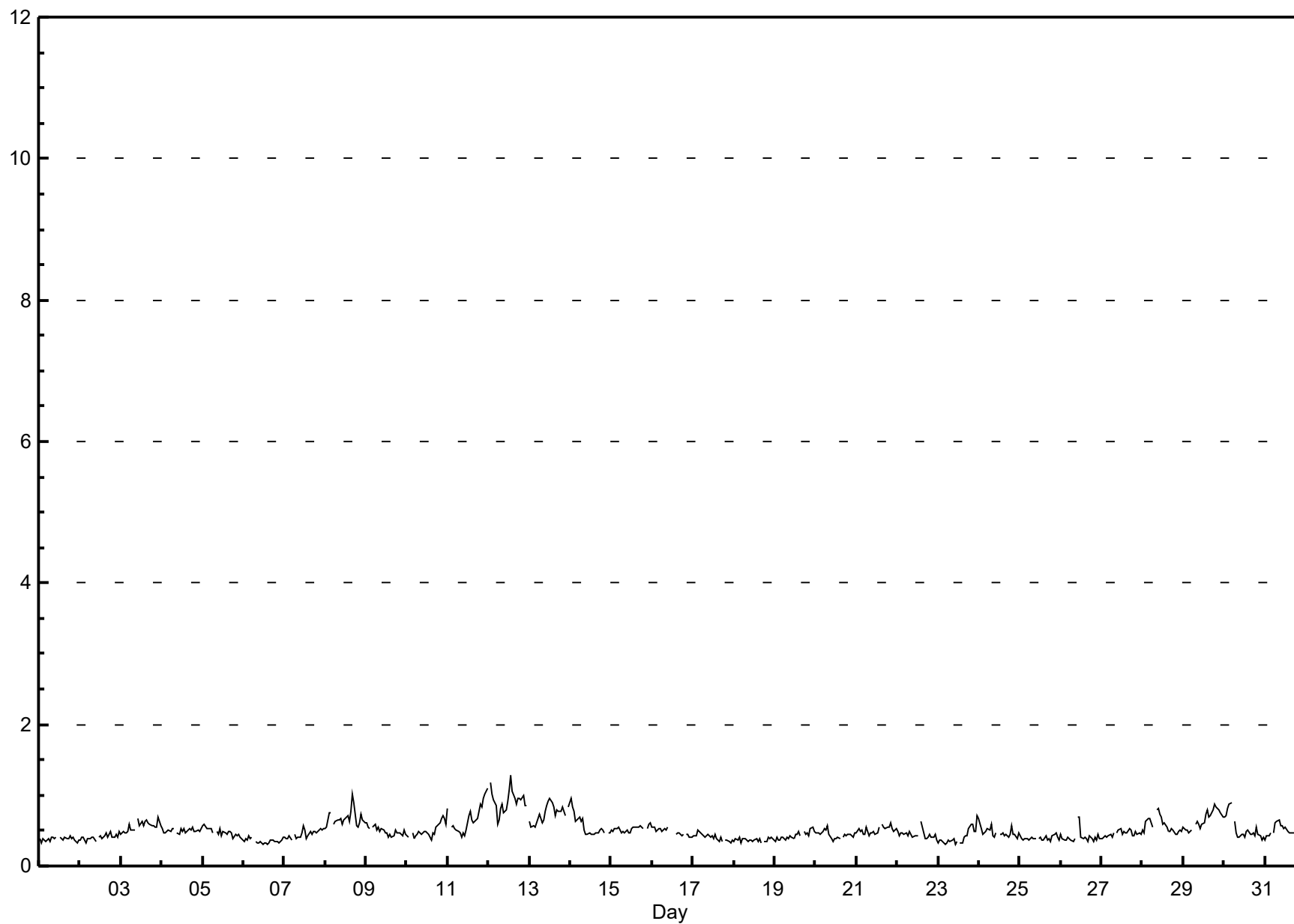
Histogram of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Smoky Heights - January 2019



Hourly Averages

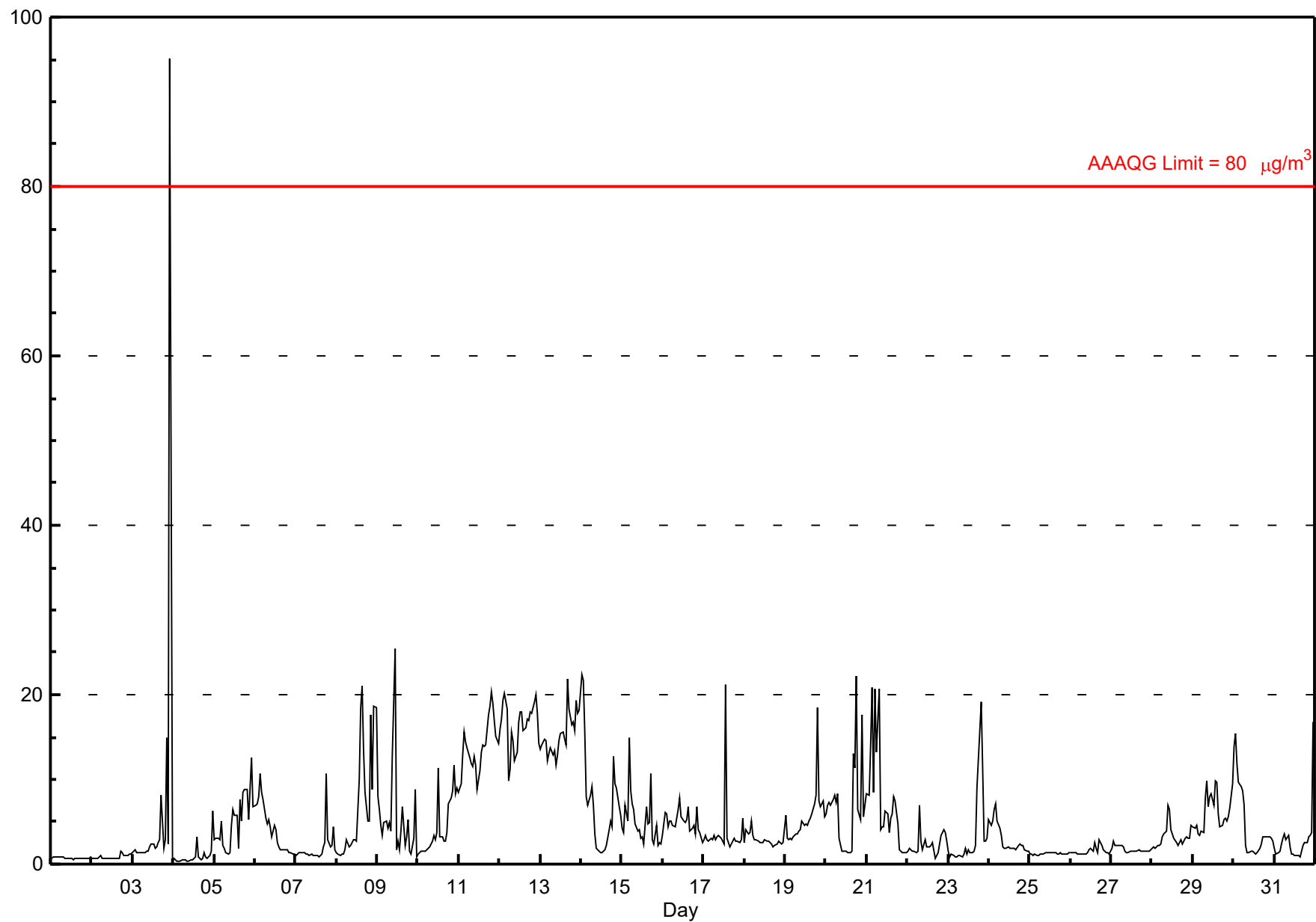
Total Reduced Sulphur (TRS) - ppb
Smoky Heights - January 2019

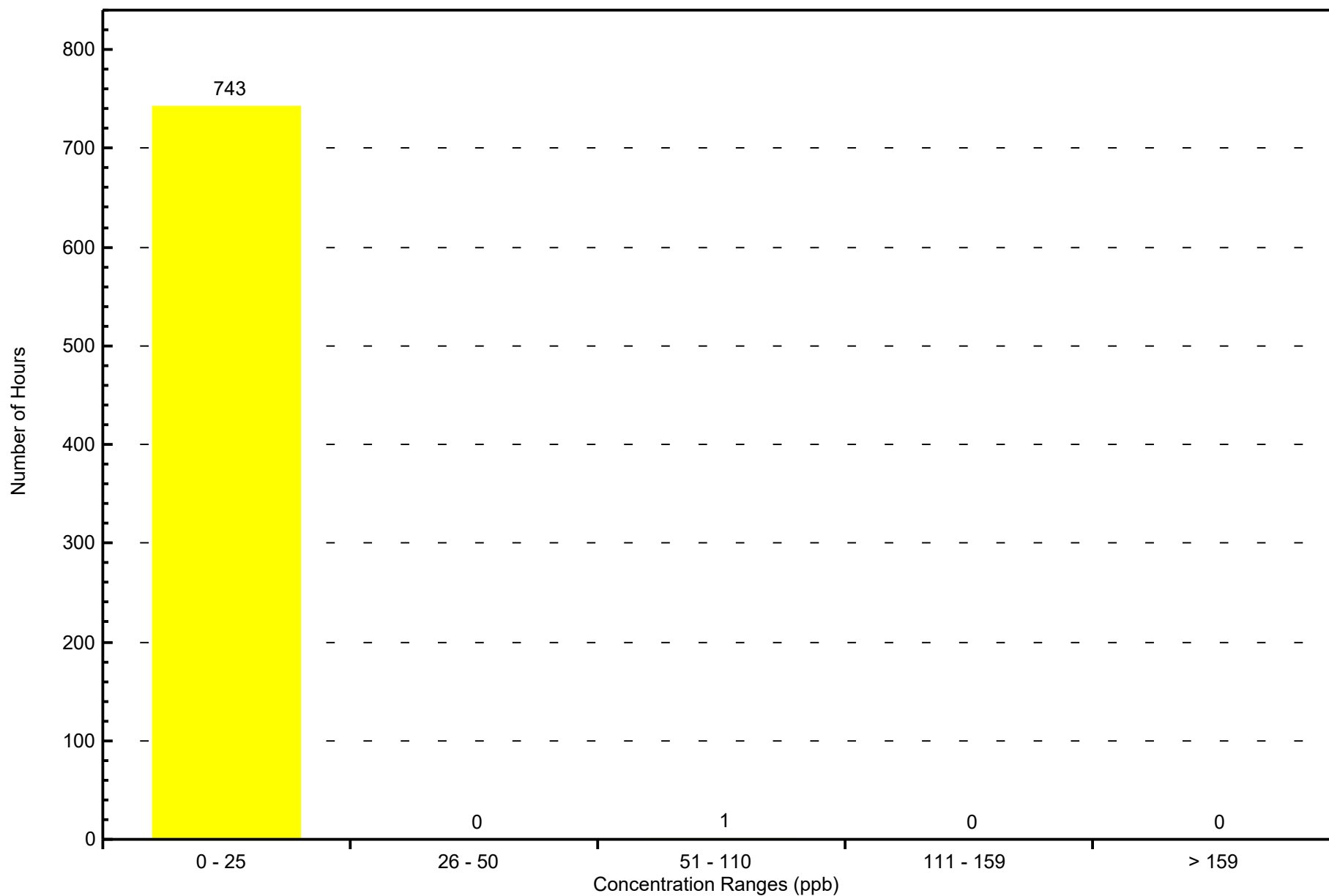


Hourly Averages

Particulate Matter 2.5 (PM_{2.5}) - $\mu\text{g}/\text{m}^3$

Smoky Heights - January 2019

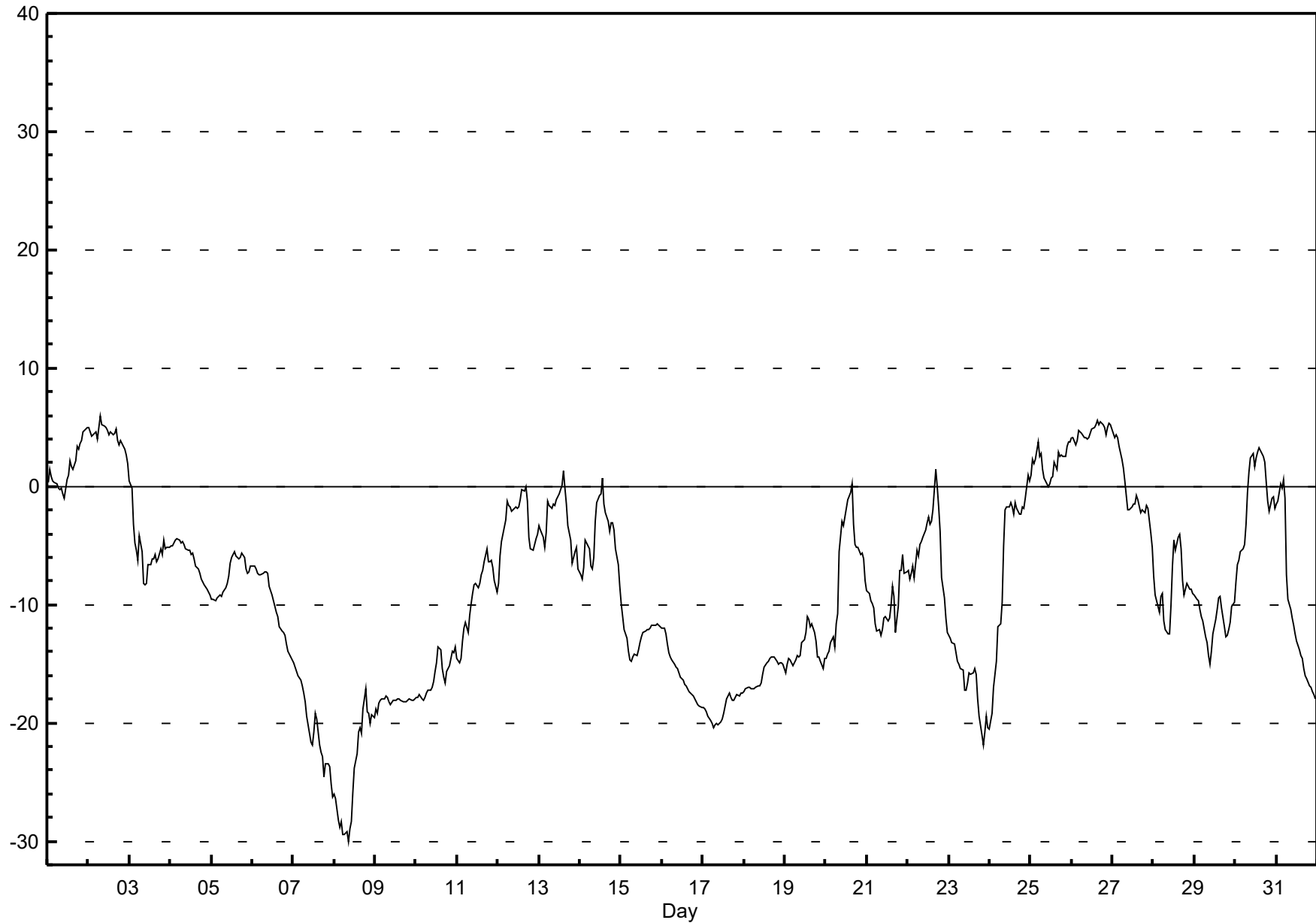




Hourly Averages

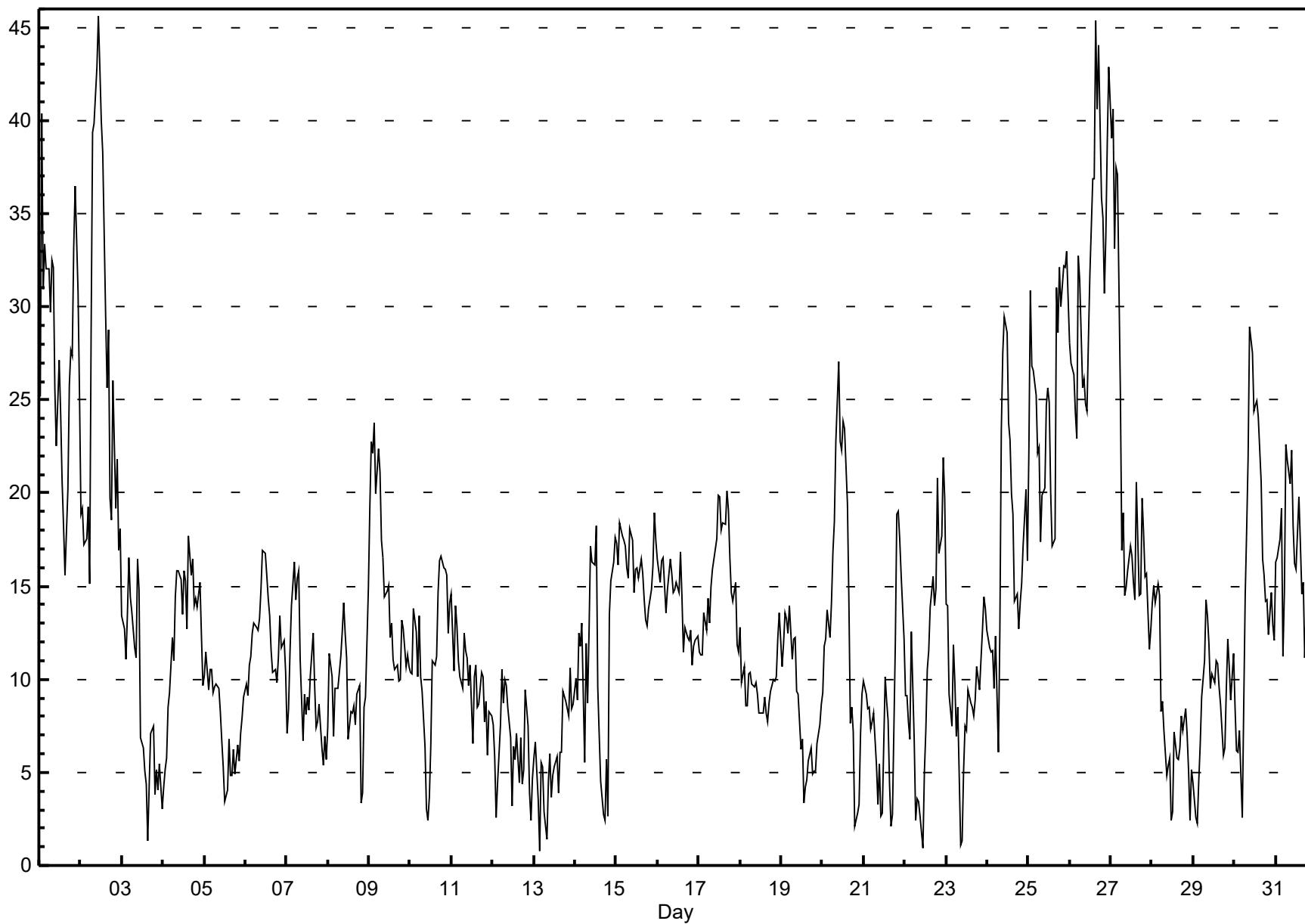
External Temperature (ET) - °C

Smoky Heights - January 2019



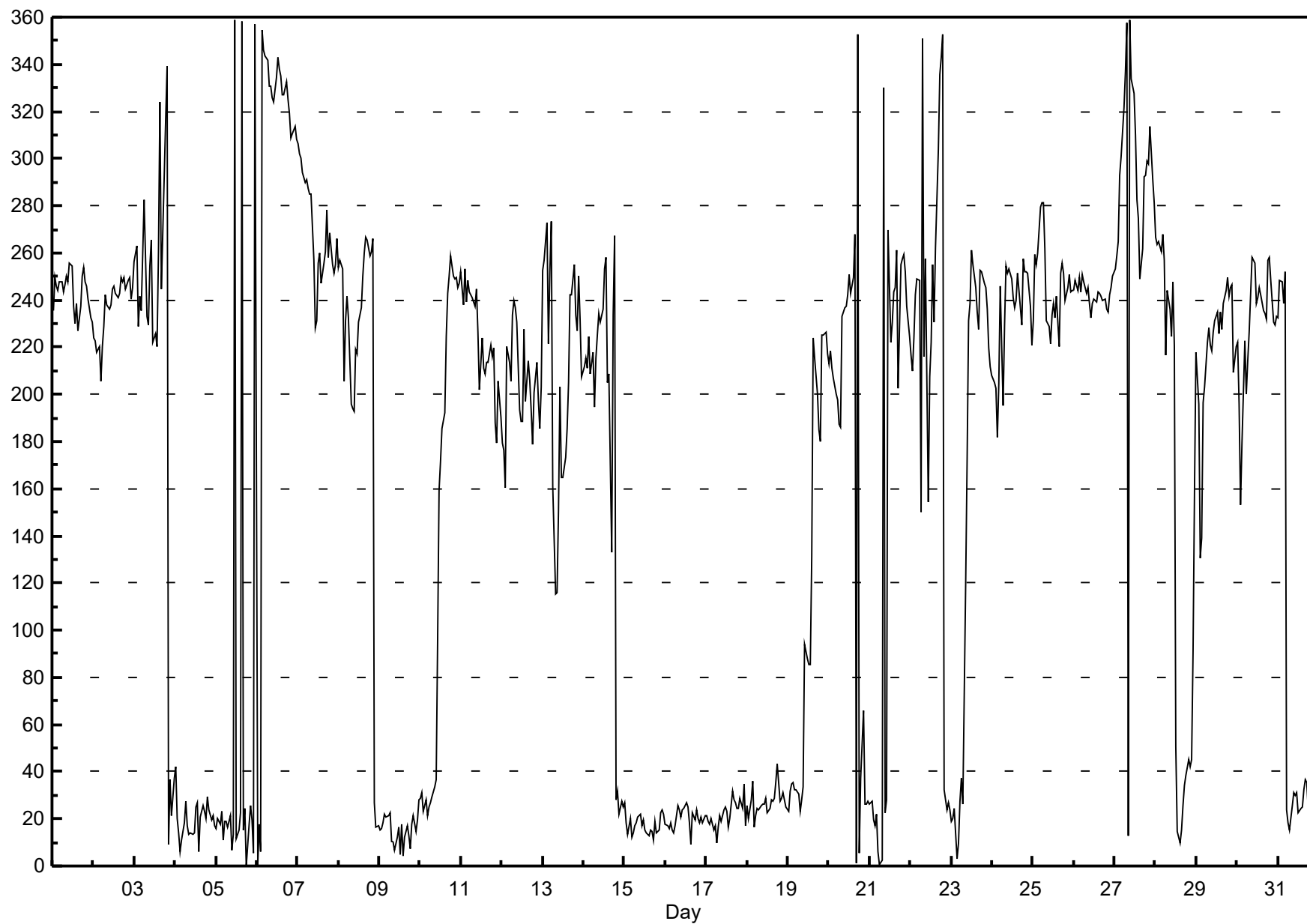
Hourly Averages

Wind Speed (WS) - km/h
Smoky Heights - January 2019



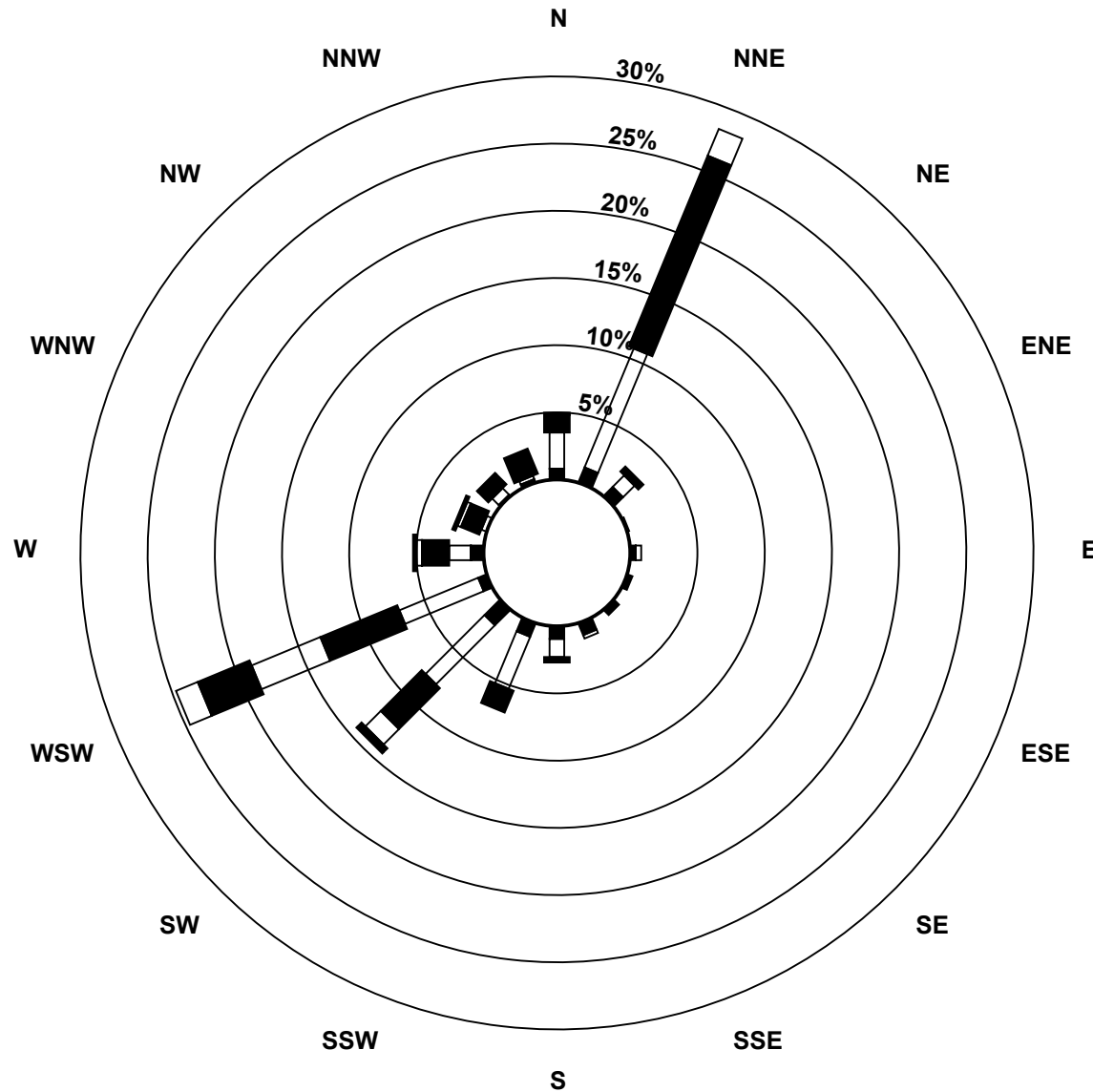
Hourly Averages

Wind Direction (WD) - deg
Smoky Heights - January 2019

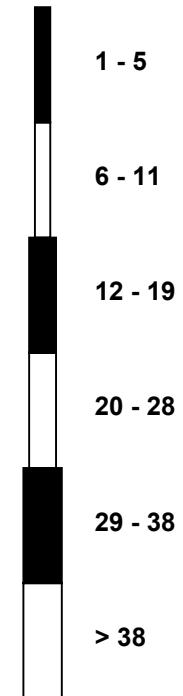


Wind Rose

Wind Speed (WS) (km/h)
Smoky Heights - January 2019

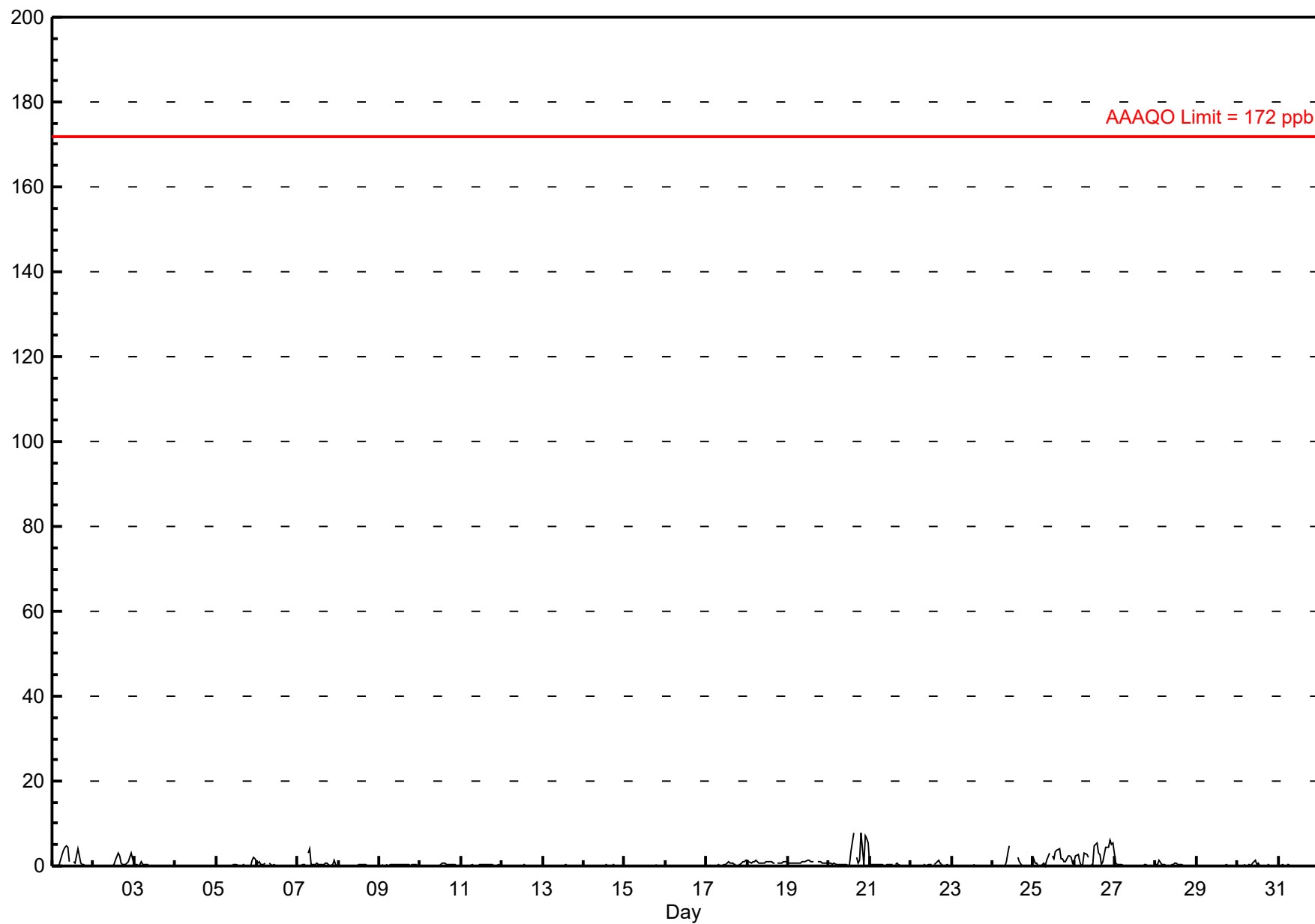


Wind Speed Classes (km/h)



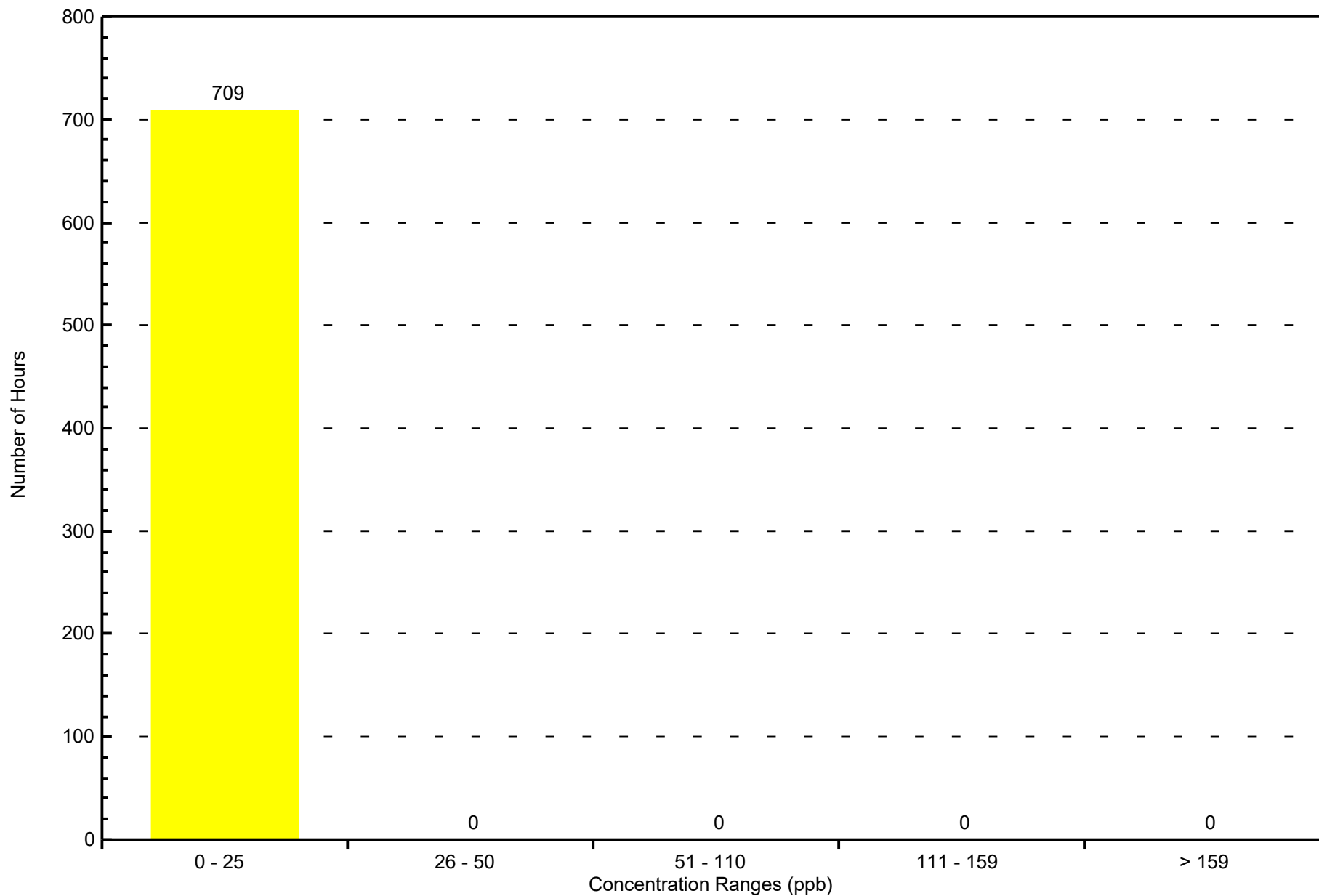
Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Valleyview - January 2019



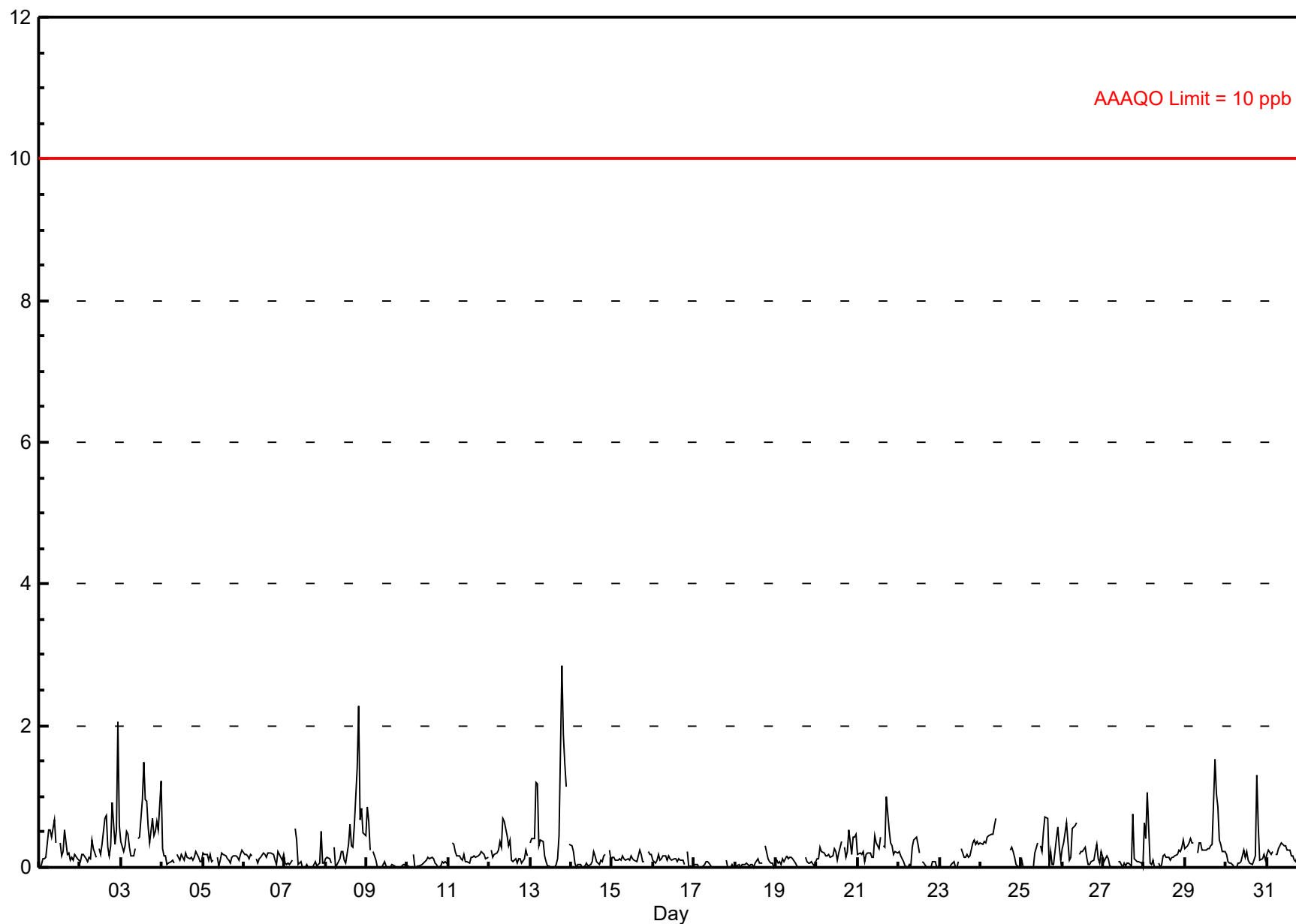
Histogram of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Valleyview - January 2019



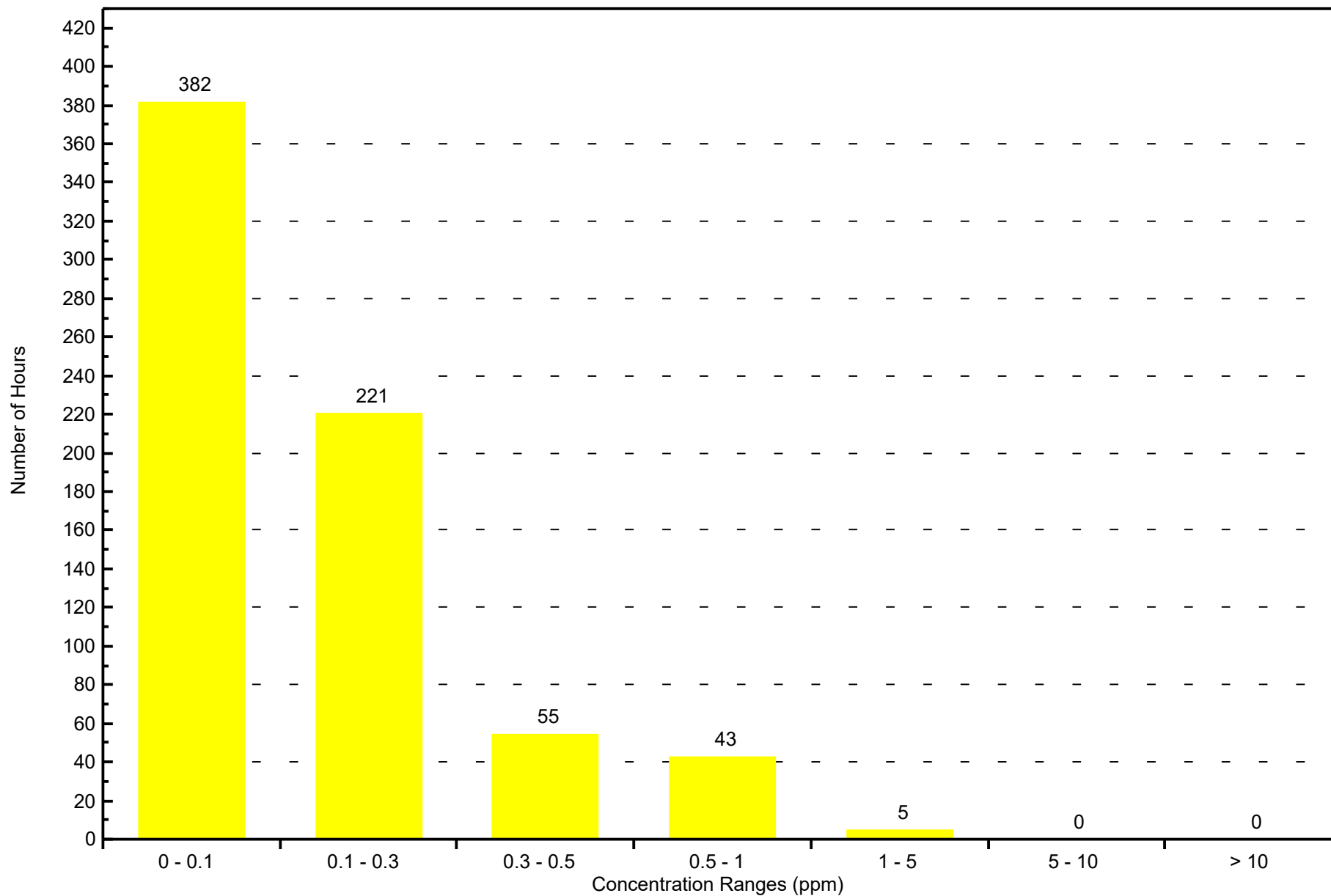
Hourly Averages

Hydrogen Sulphide (H₂S) - ppb
Valleyview - January 2019



Histogram of Hourly Averages

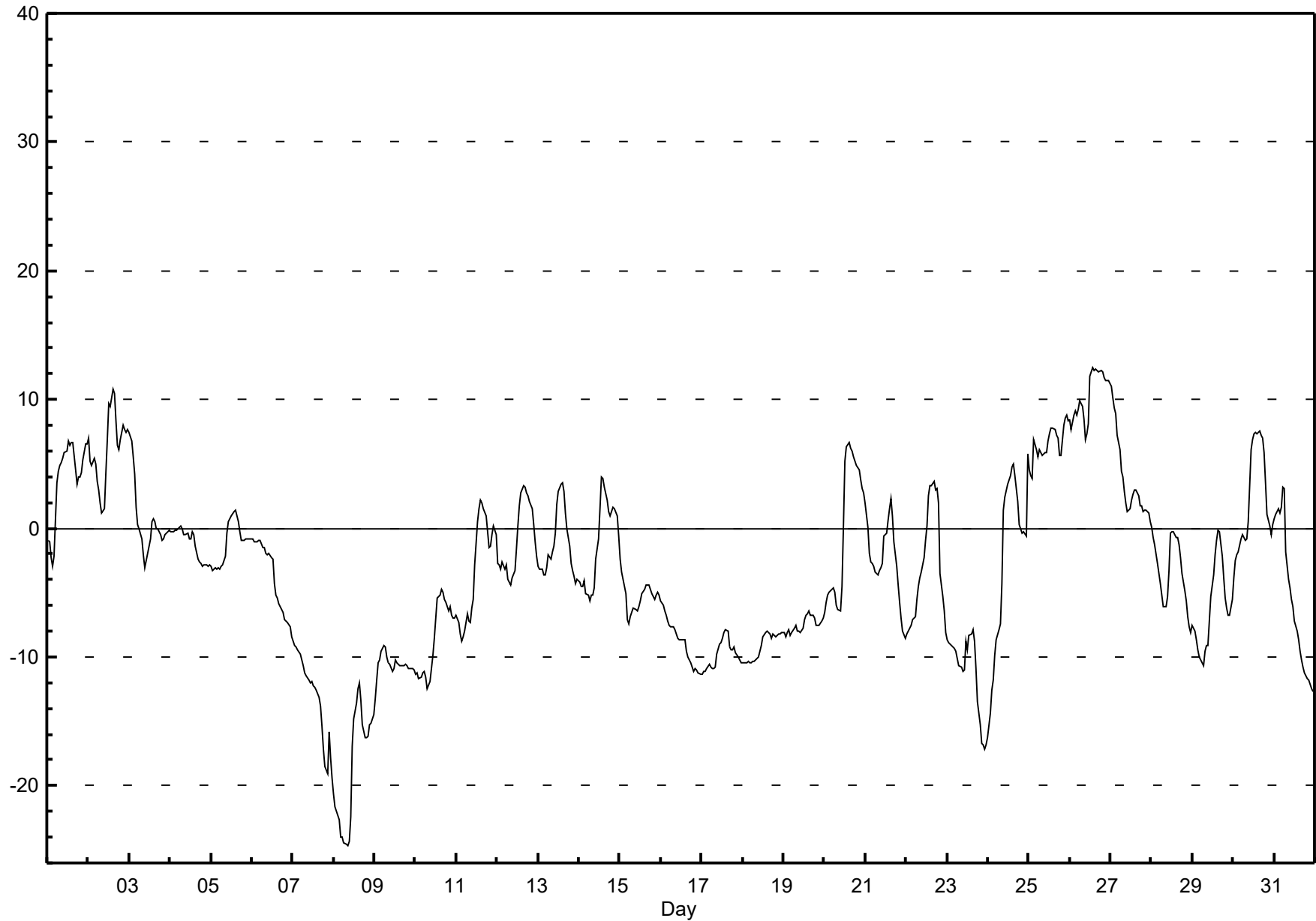
Hydrogen Sulphide (H₂S) - ppb
Valleyview - January 2019



Hourly Averages

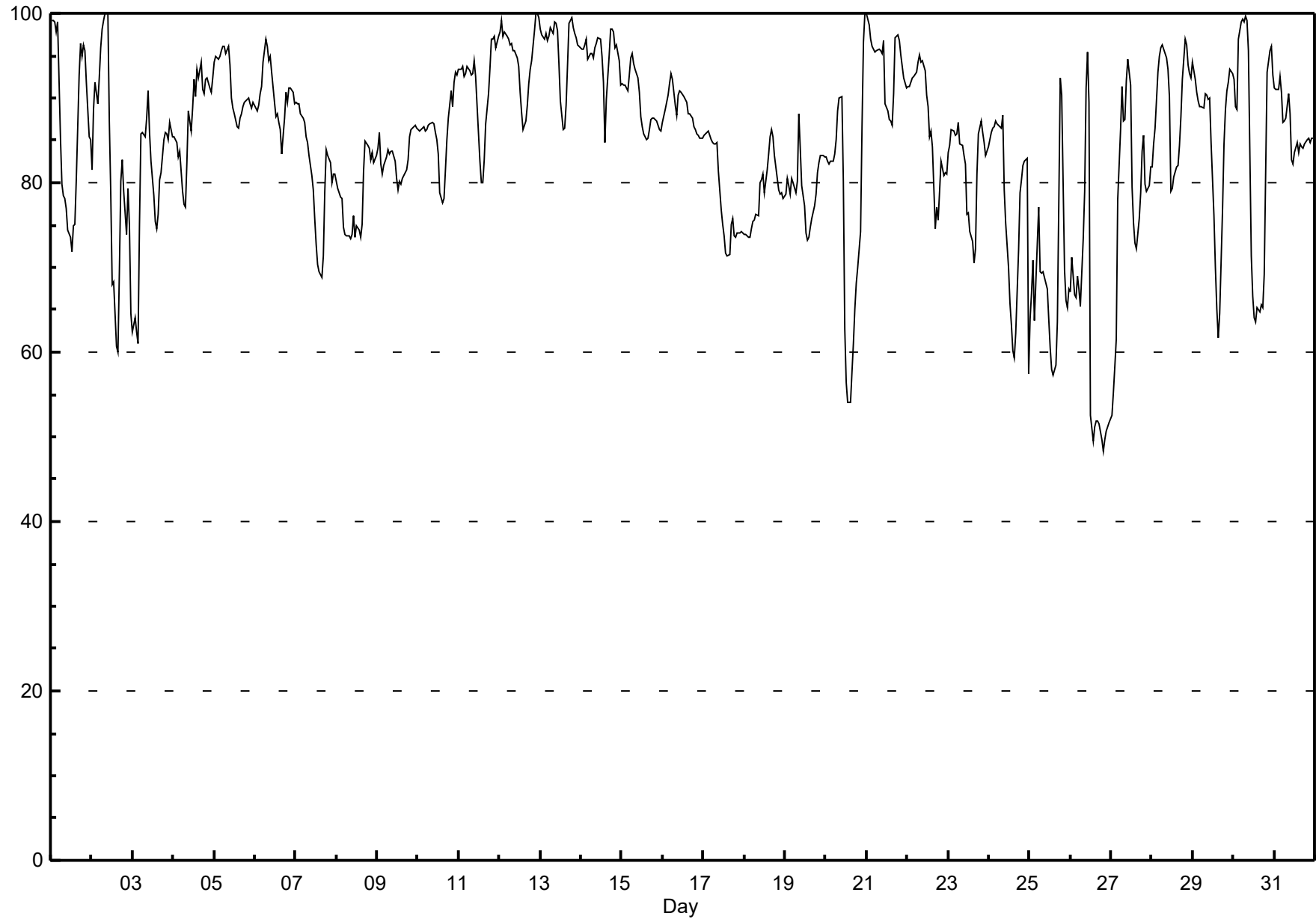
External Temperature (ET) - °C

Valleyview - January 2019



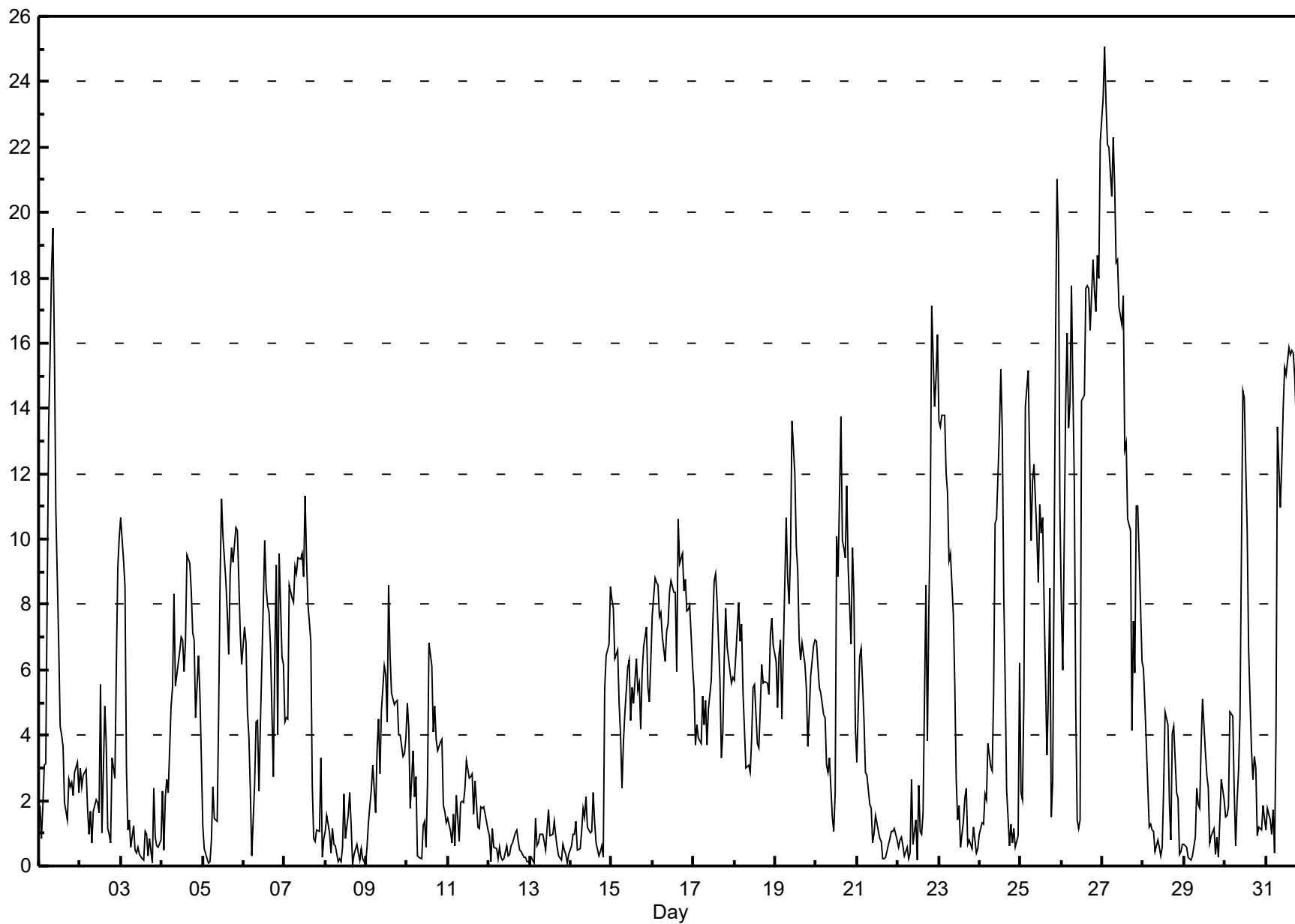
Hourly Averages

Relative Humidity (RH) - %
Valleyview - January 2019



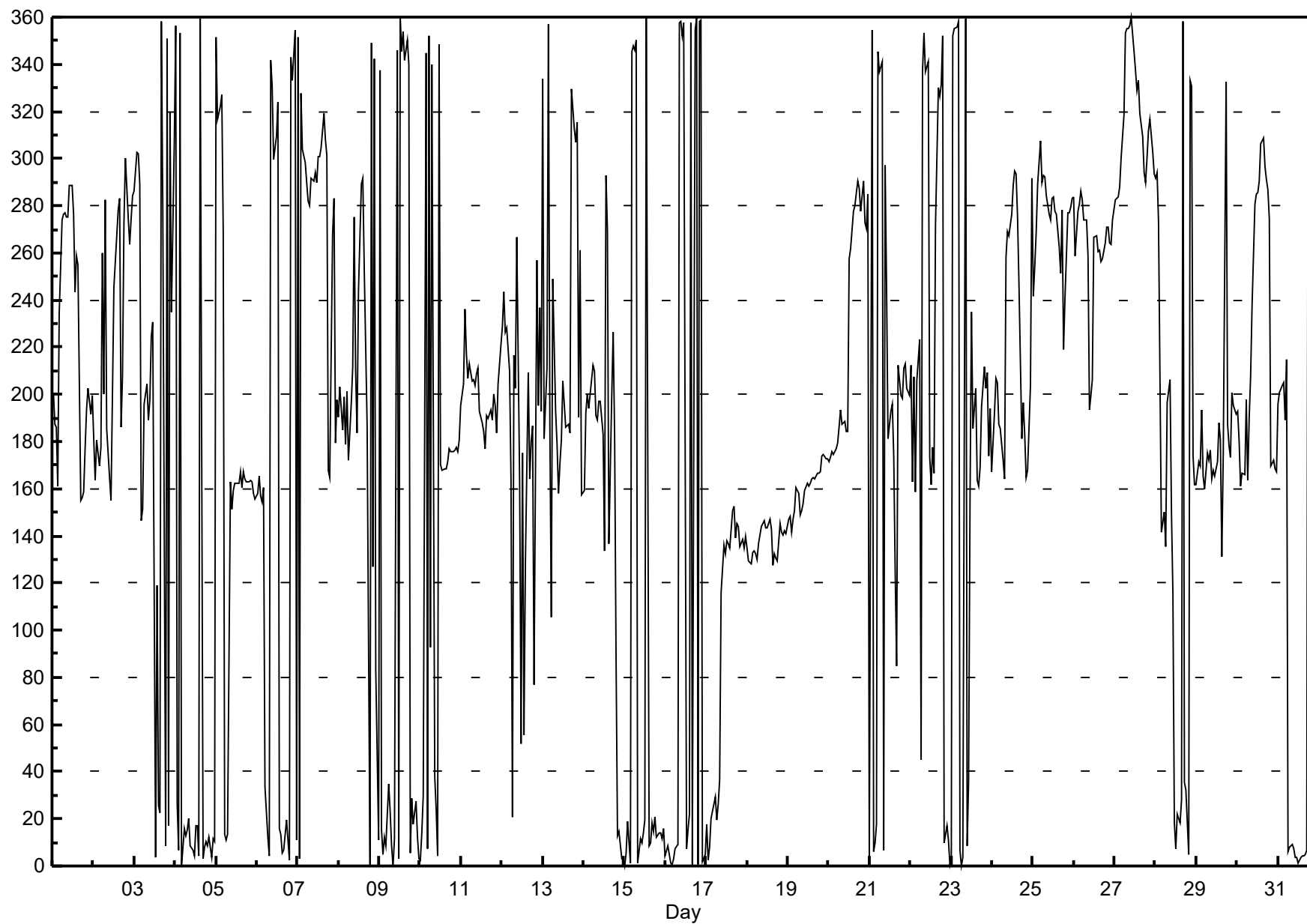
Hourly Averages

Wind Speed (WS) - km/h
Valleyview - January 2019



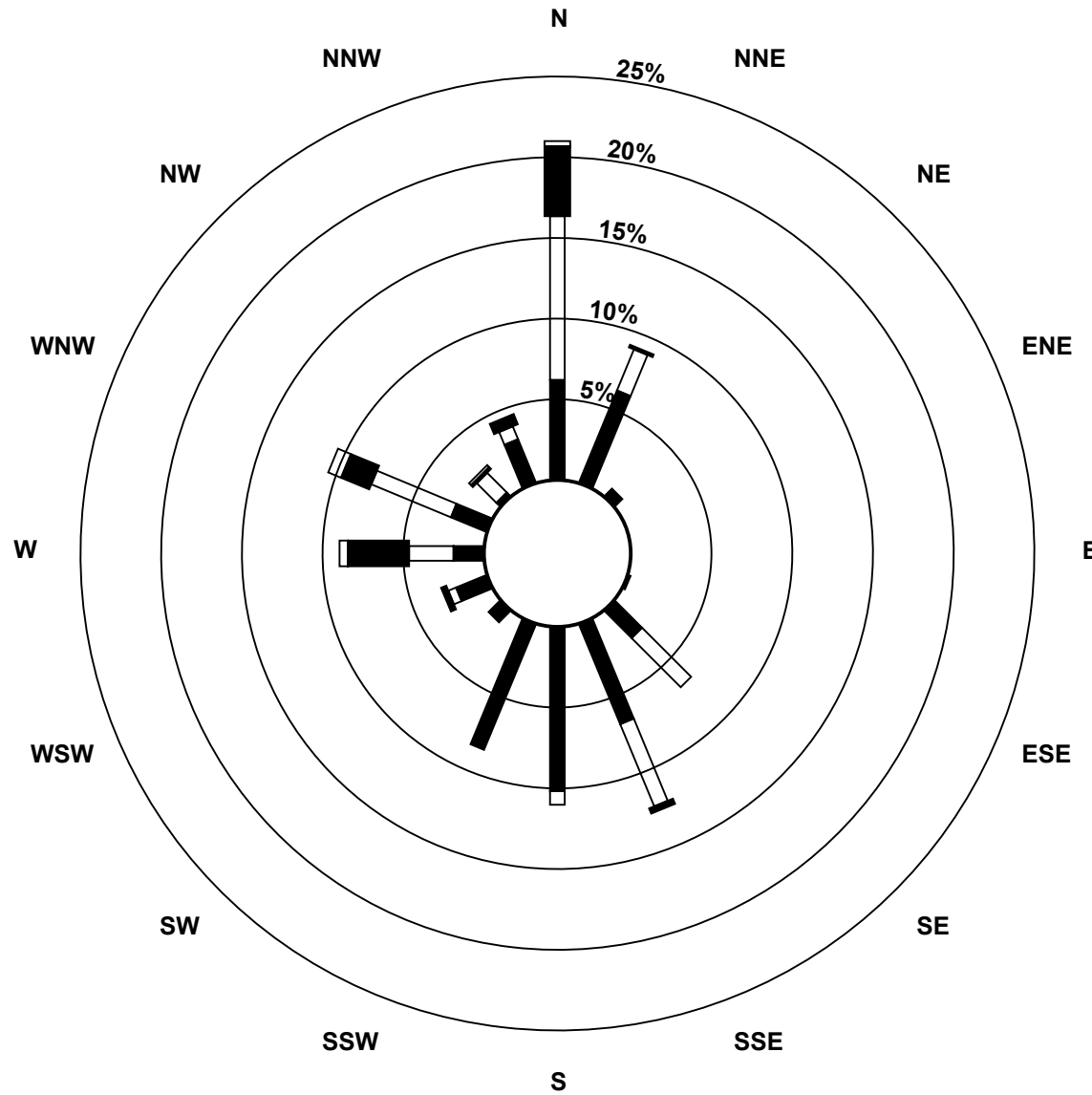
Hourly Averages

Wind Direction (WD) - deg
Valleyview - January 2019

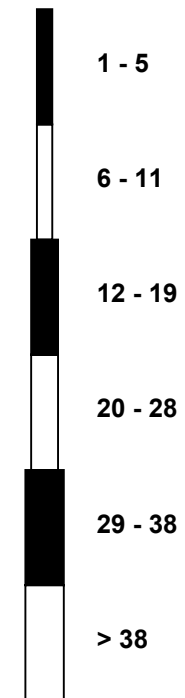


Wind Rose

Wind Speed (WS) (km/h)
Valleyview - January 2019



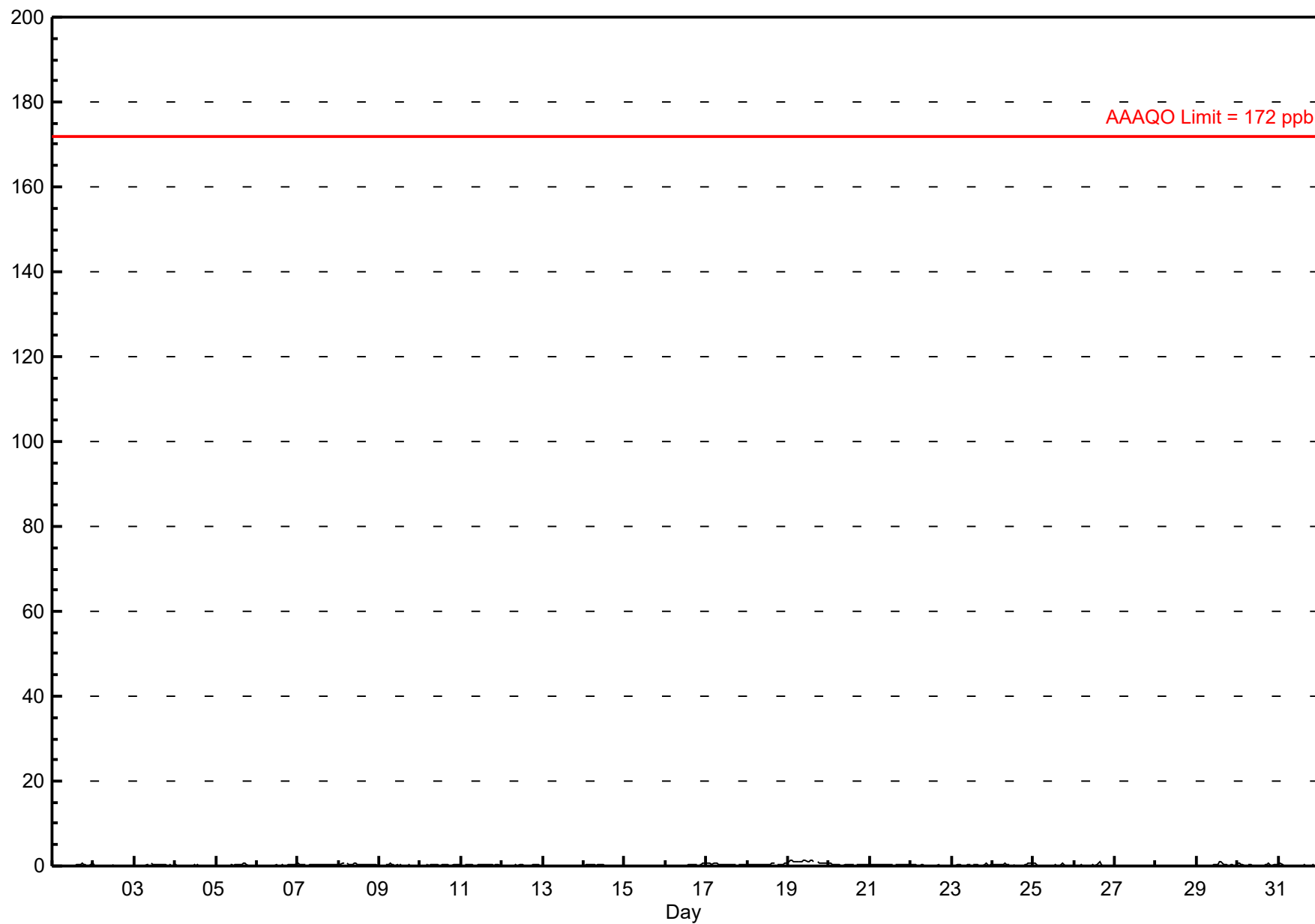
Wind Speed Classes (km/h)



Hourly Averages

Sulphur Dioxide (SO₂) - ppb

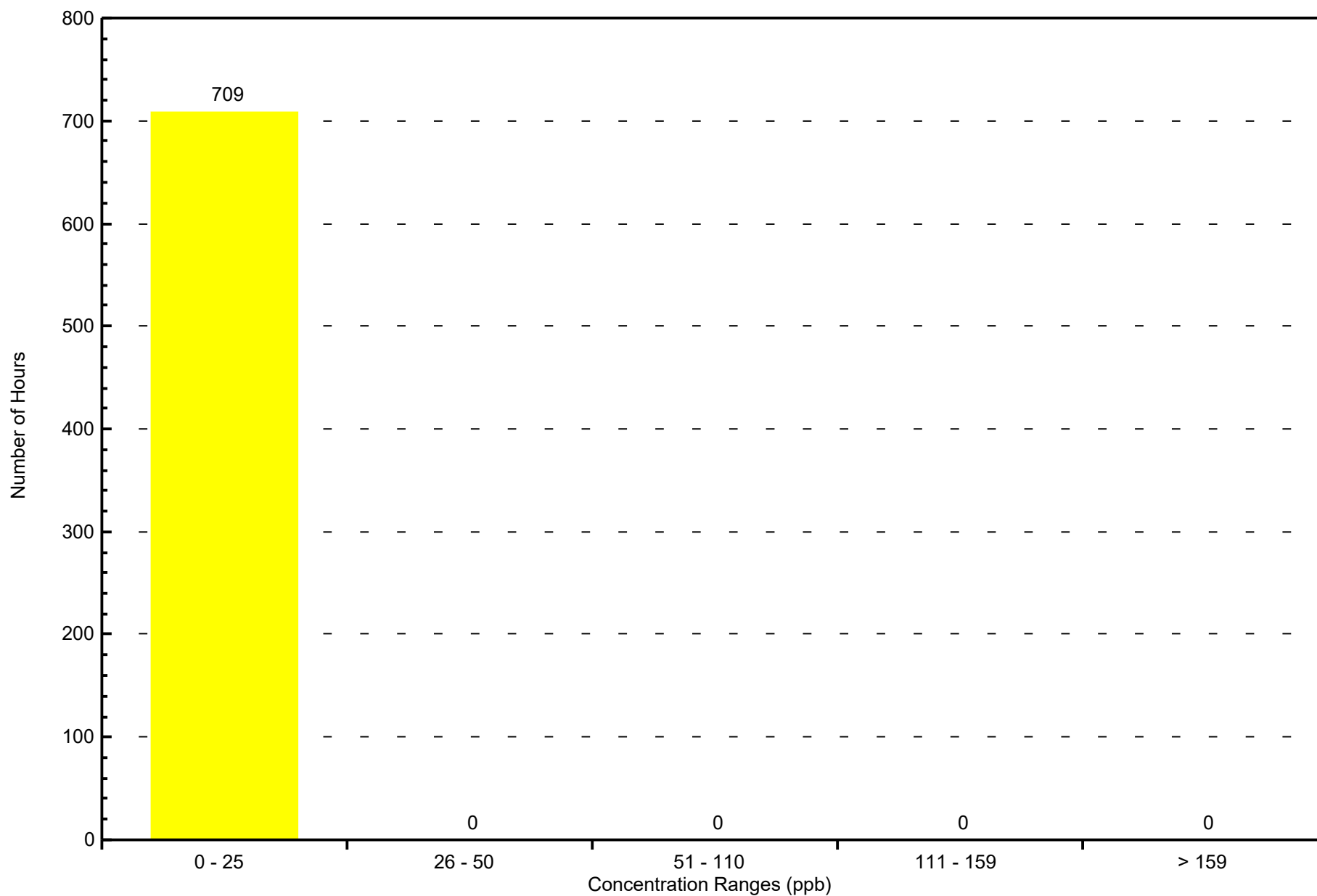
Donnelly - January 2019



Histogram of Hourly Averages

Sulphur Dioxide (SO₂) - ppb

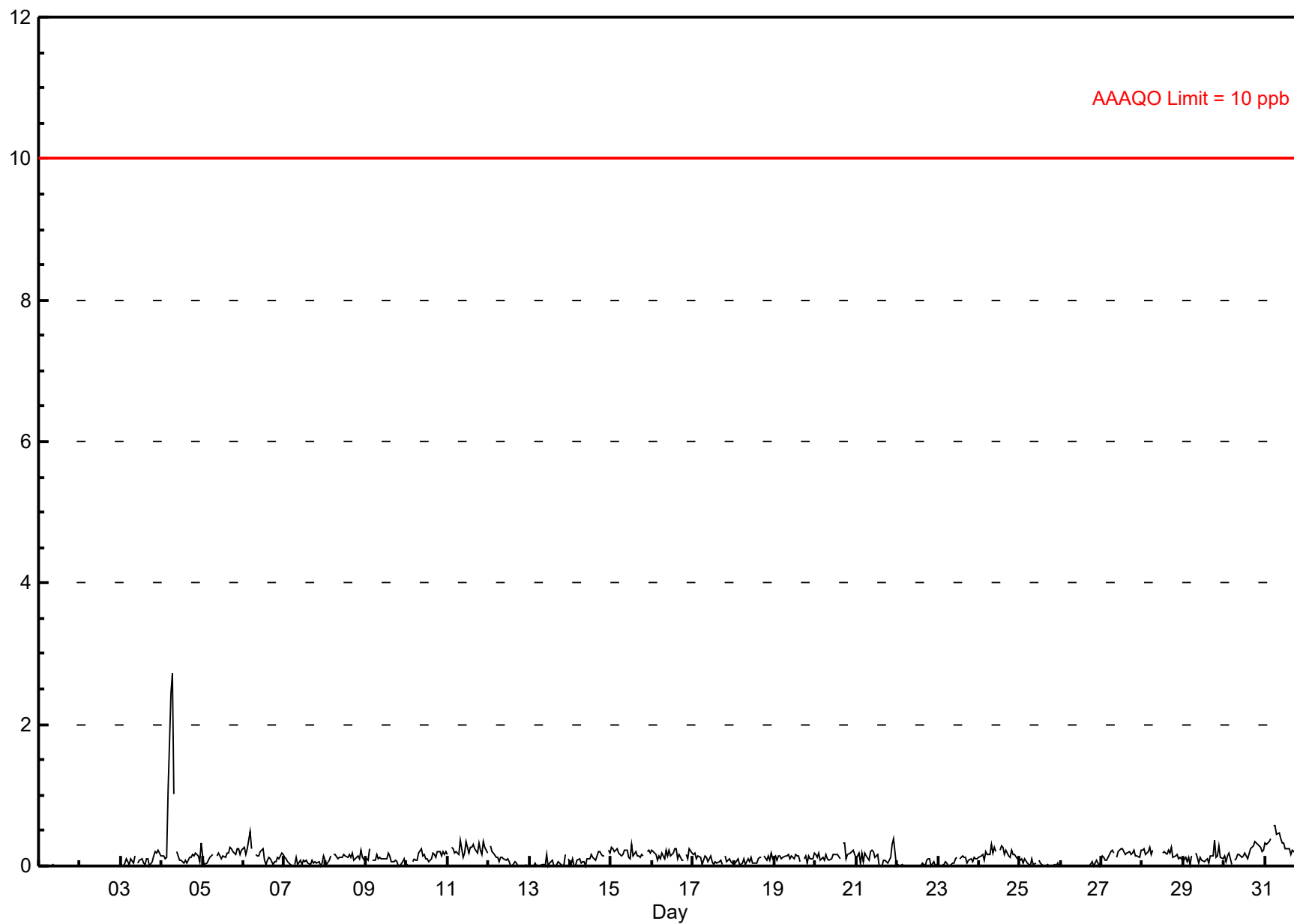
Donnelly - January 2019



Hourly Averages

Hydrogen Sulphide (H₂S) - ppb

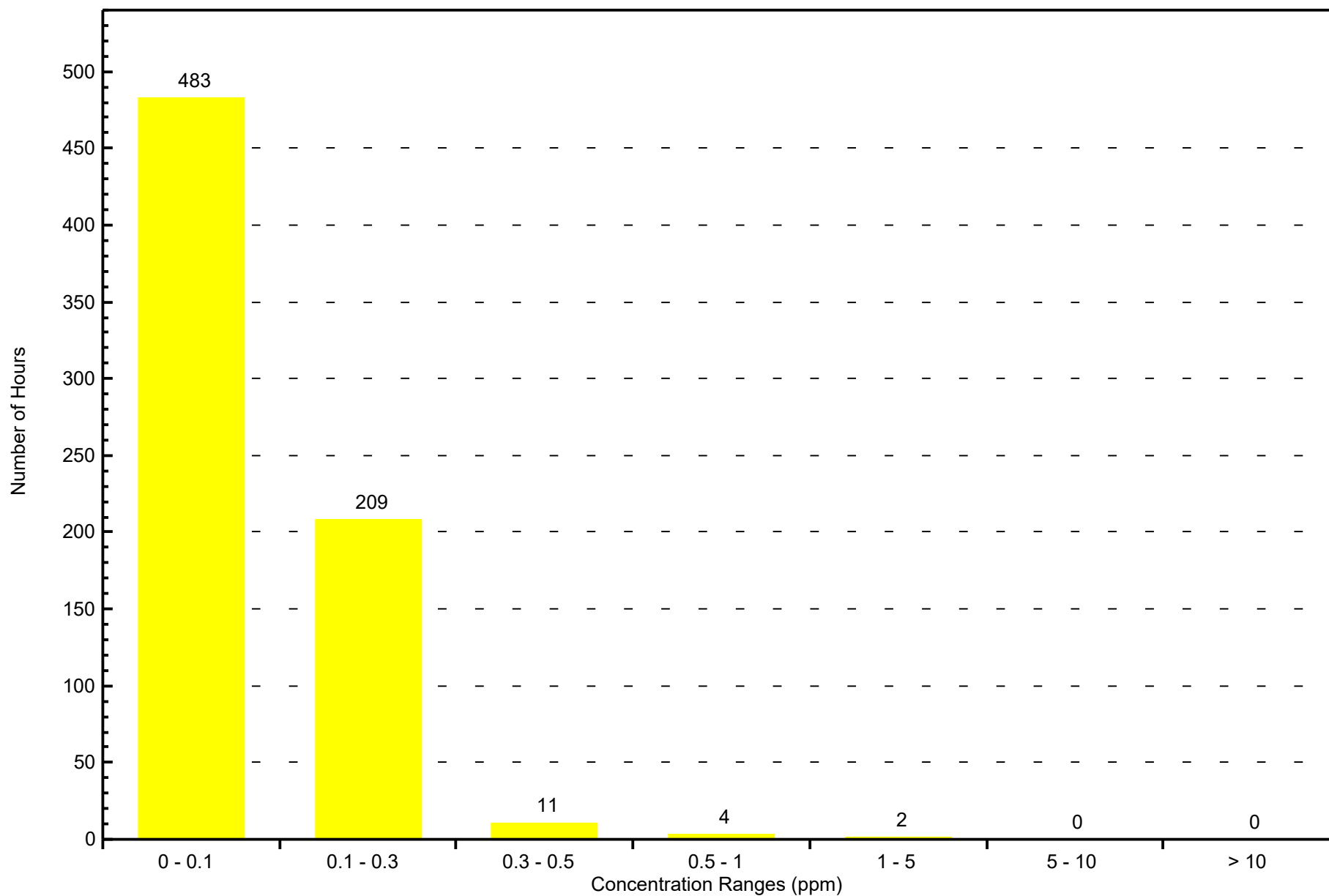
Donnelly - January 2019



Histogram of Hourly Averages

Hydrogen Sulphide (H₂S) - ppb

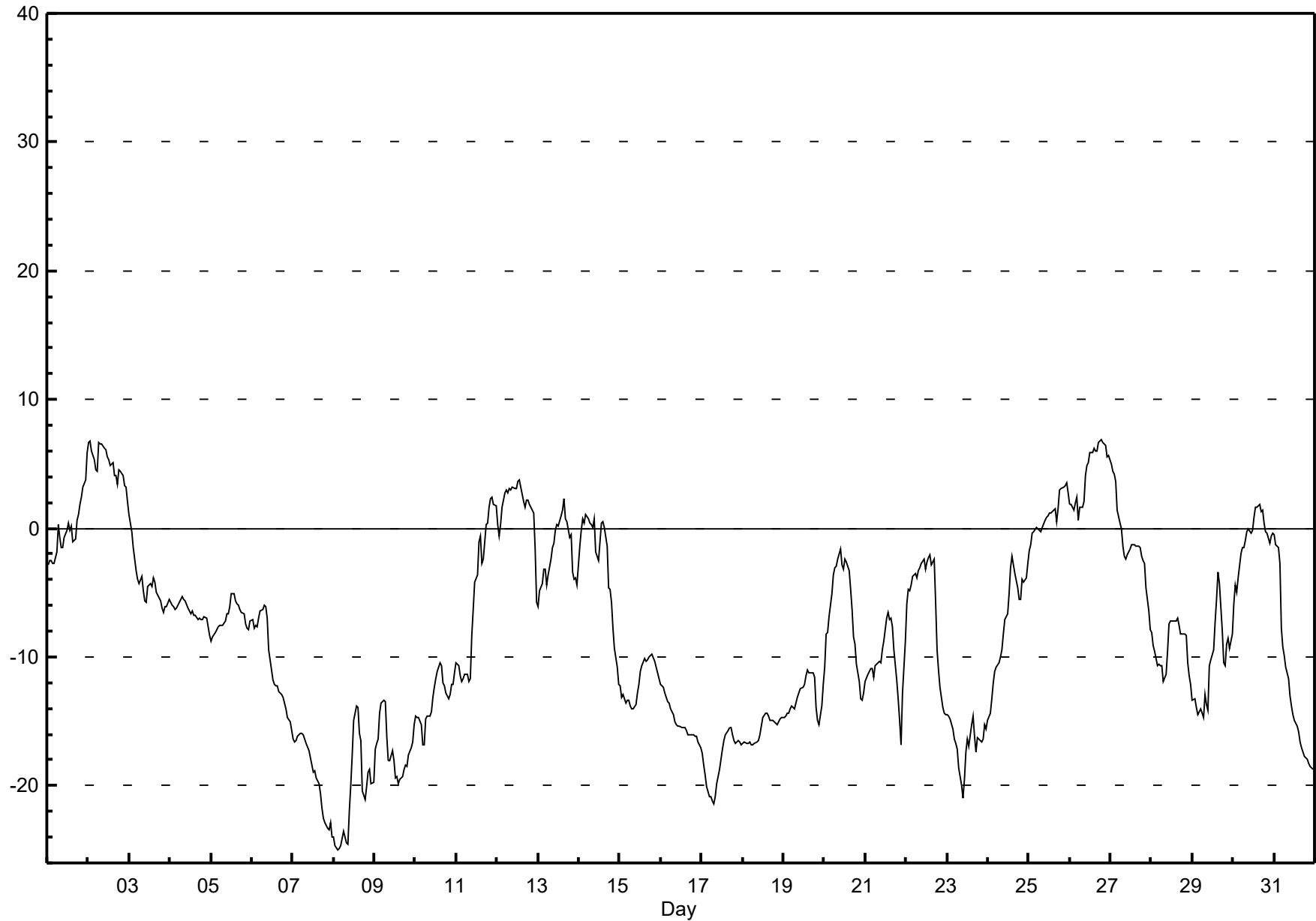
Donnelly - January 2019



Hourly Averages

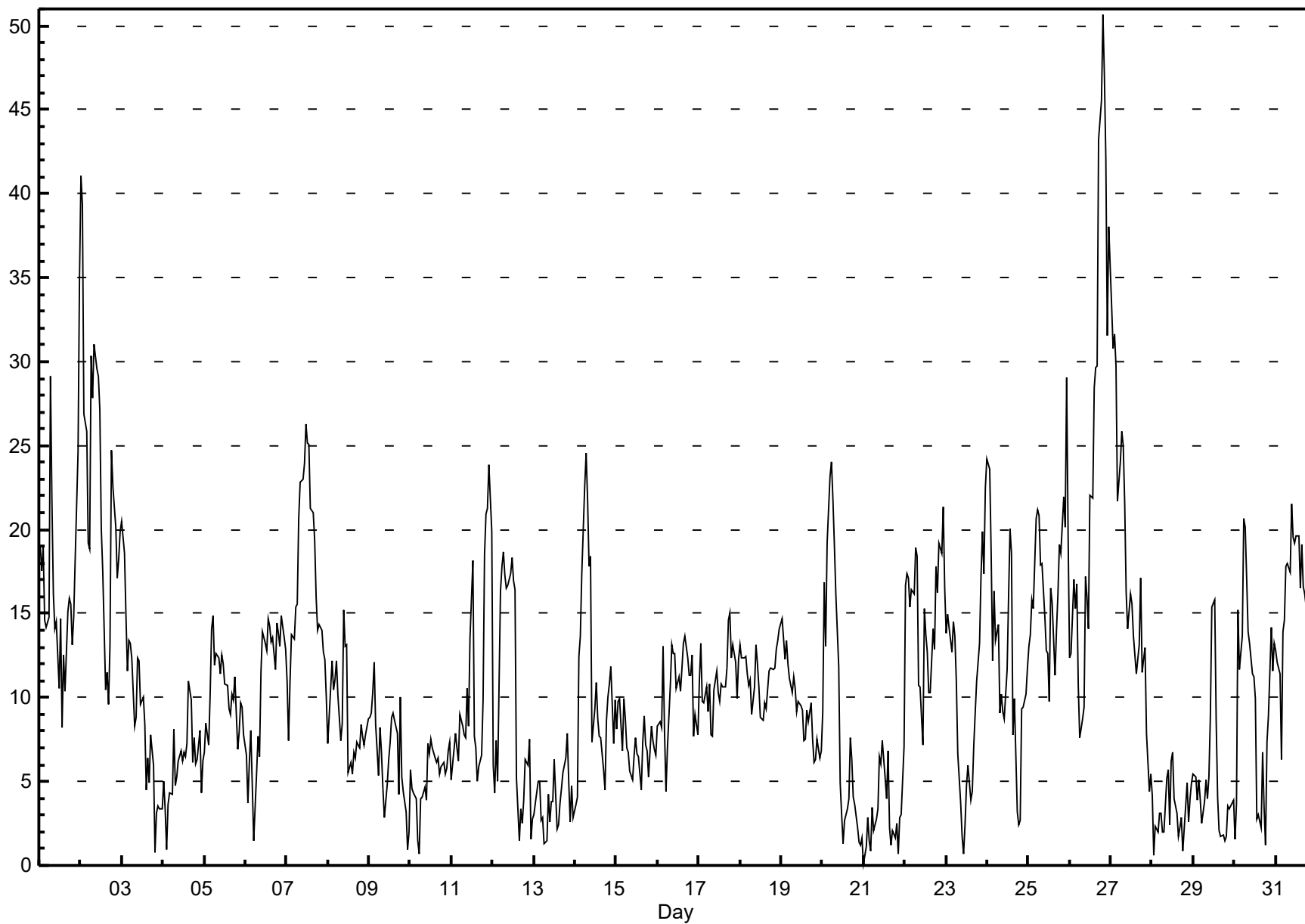
External Temperature (ET) - °C

Donnelly - January 2019



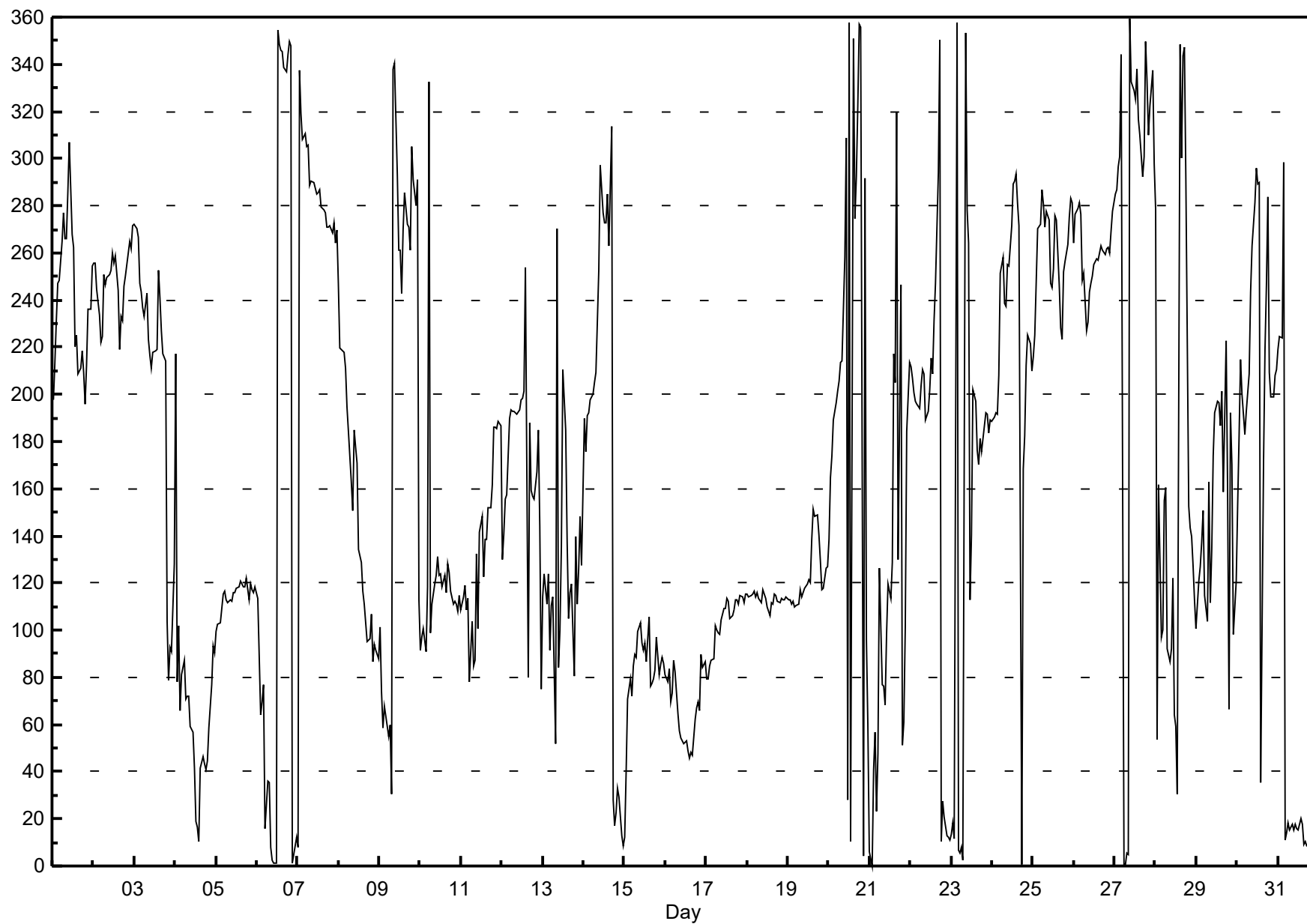
Hourly Averages

Wind Speed (WS) - km/h
Donnelly - January 2019



Hourly Averages

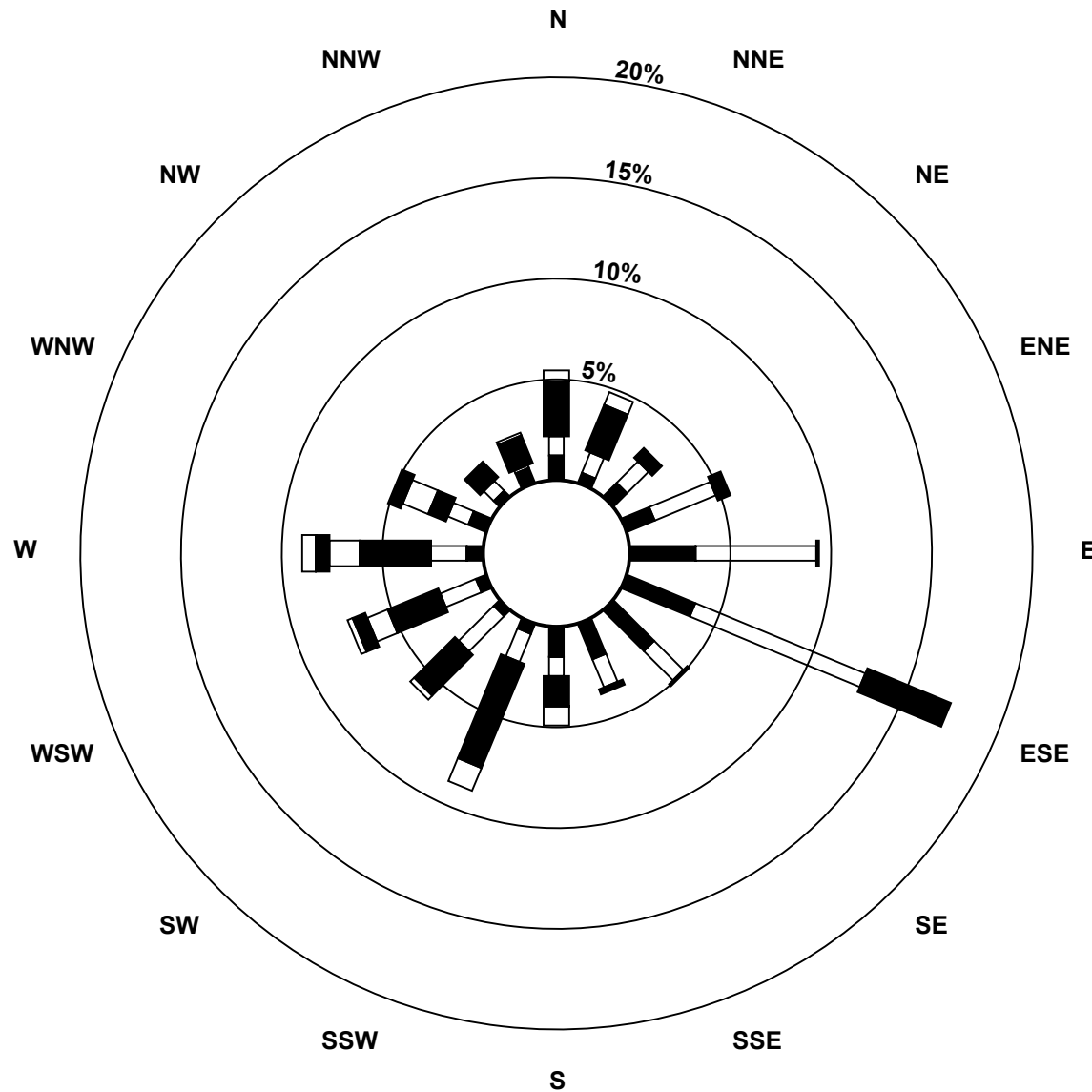
Wind Direction (WD) - deg
Donnelly - January 2019



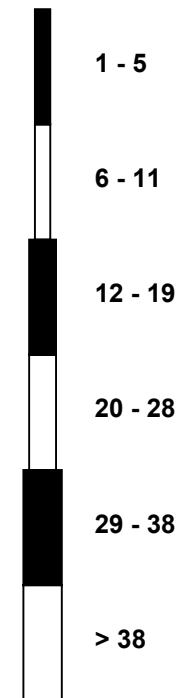
Wind Rose

Wind Speed (WS) (km/h)

Donnelly - January 2019



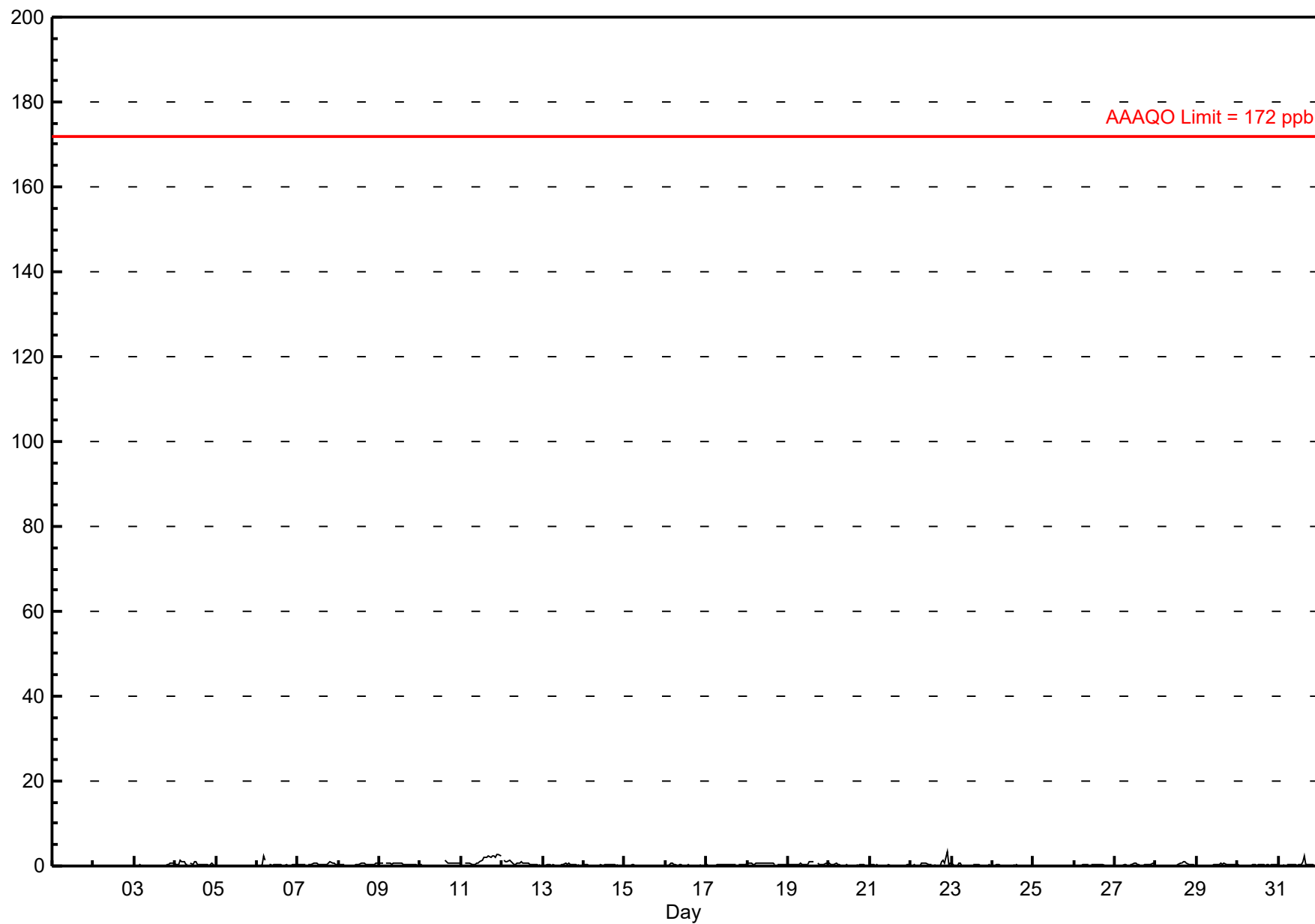
Wind Speed Classes (km/h)



Hourly Averages

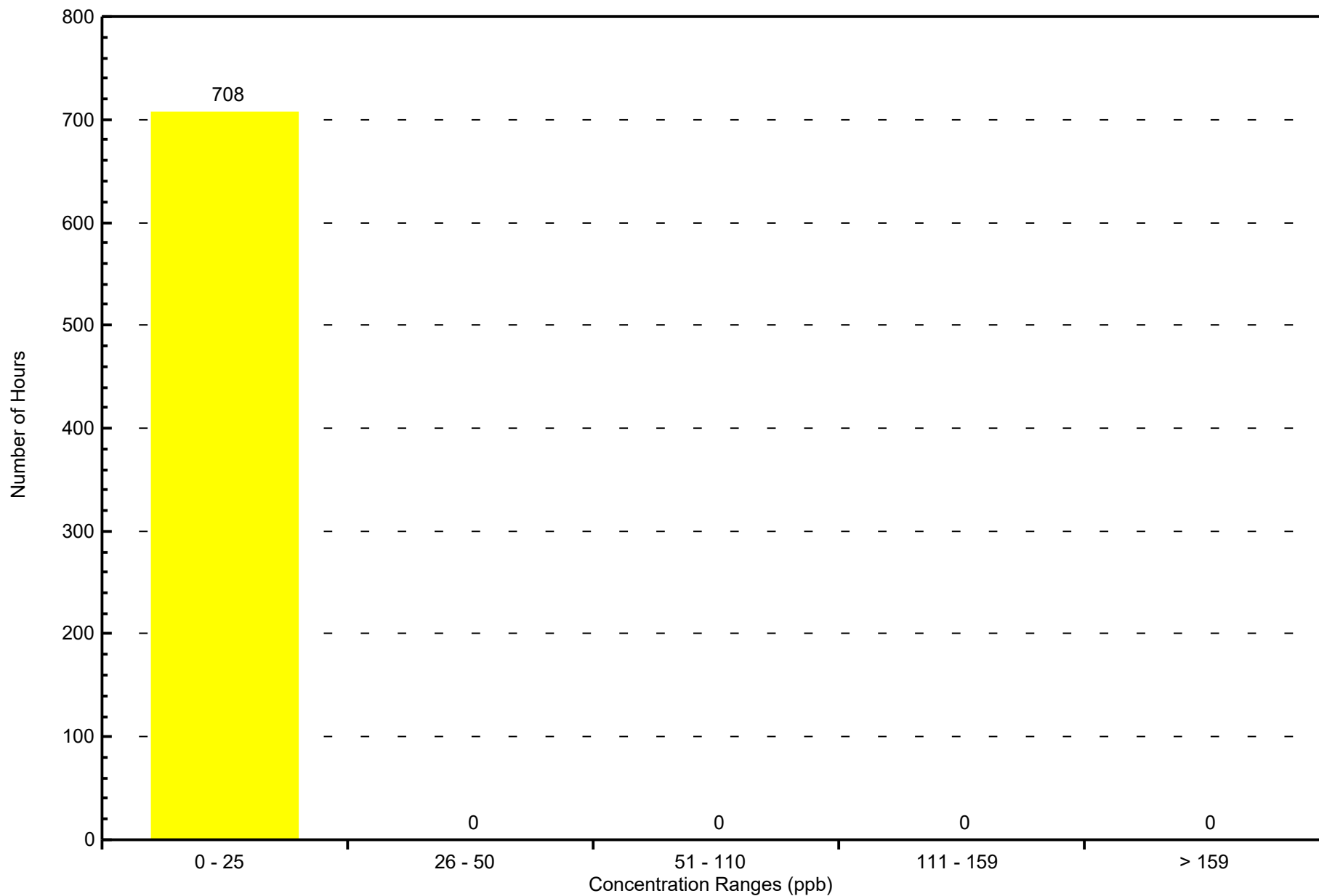
Sulphur Dioxide (SO₂) - ppb

Wembley - January 2019



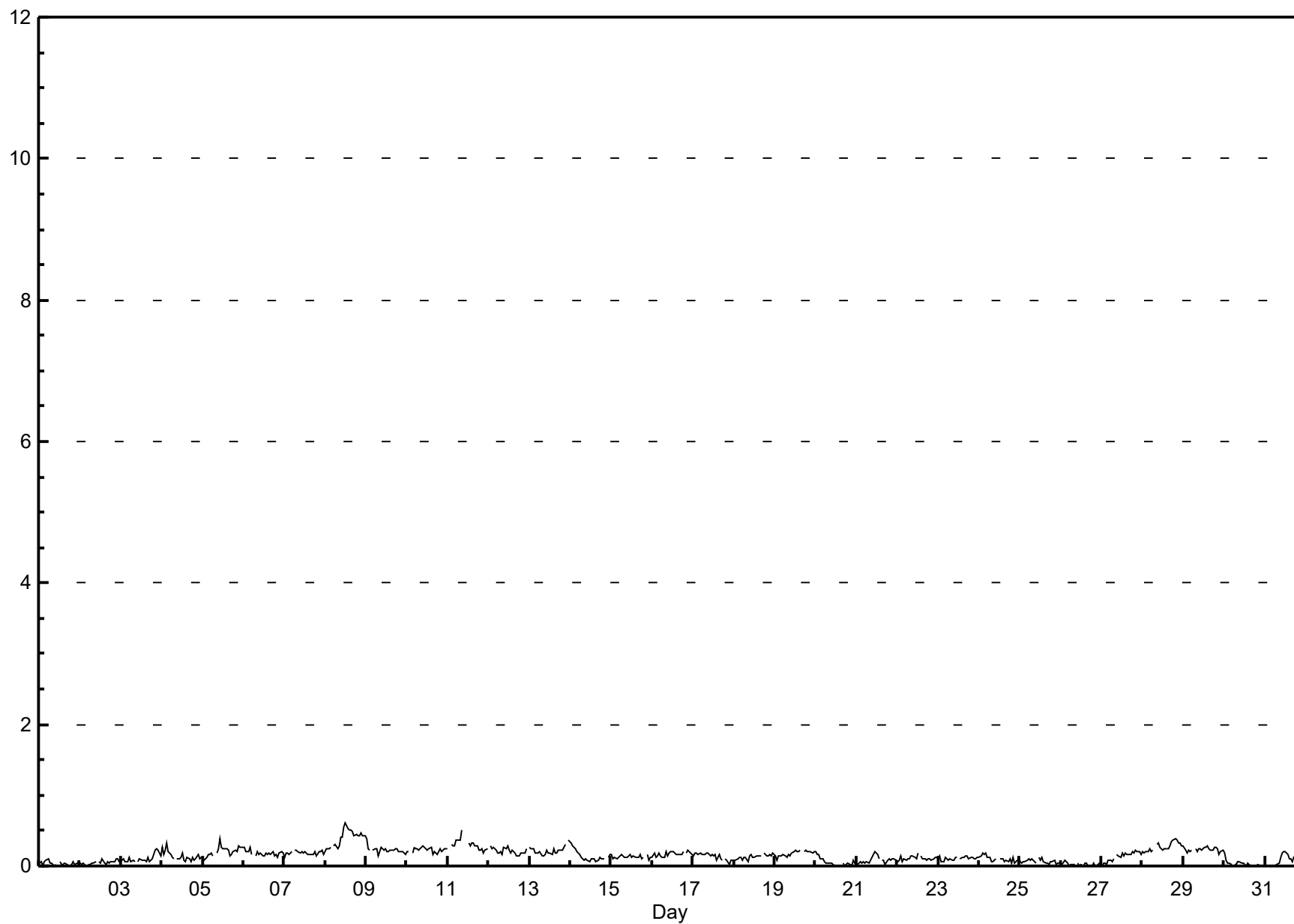
Histogram of Hourly Averages

Sulphur Dioxide (SO₂) - ppb
Wembley - January 2019



Hourly Averages

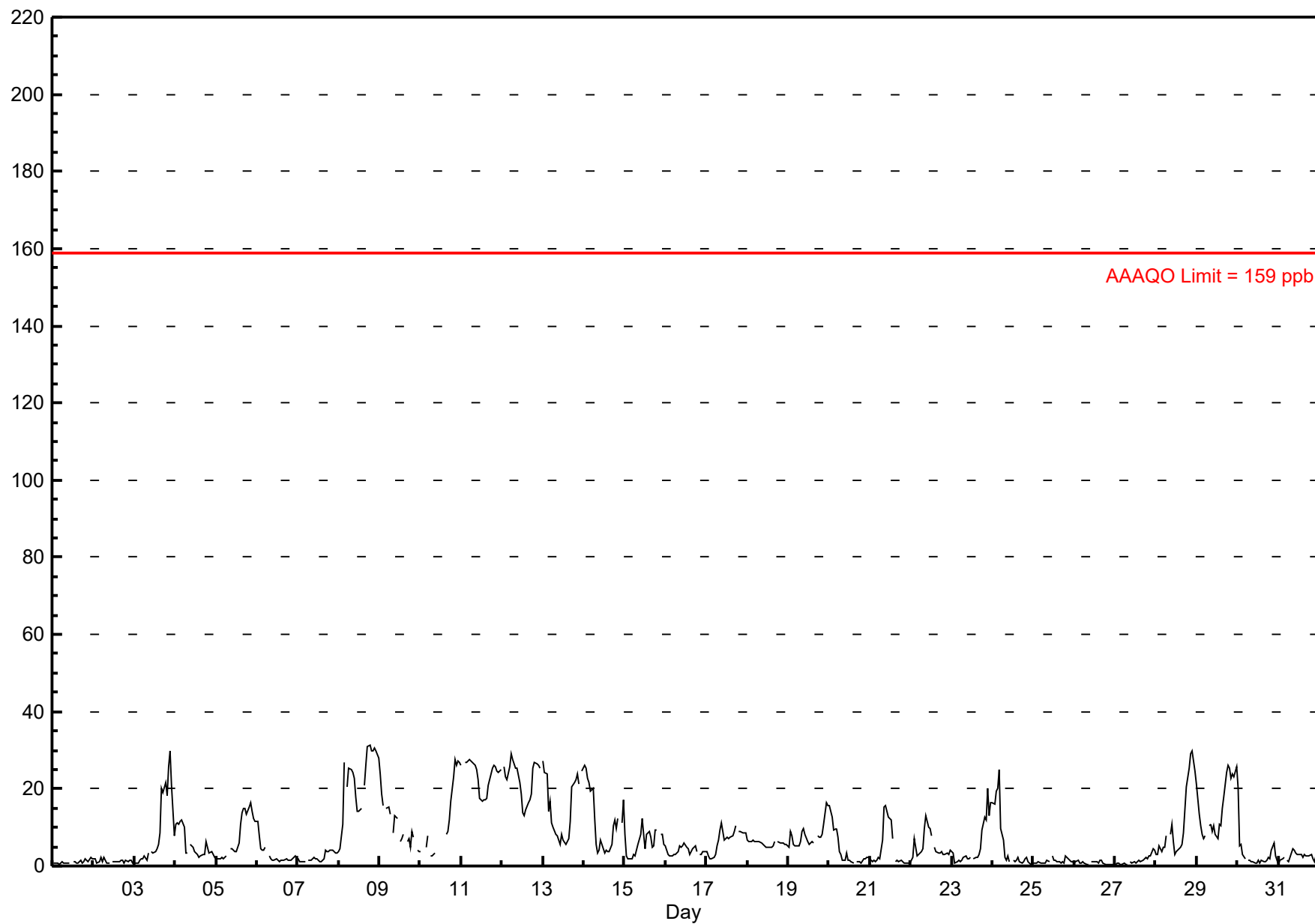
Total Reduced Sulphur (TRS) - ppb
Wembley - January 2019



Hourly Averages

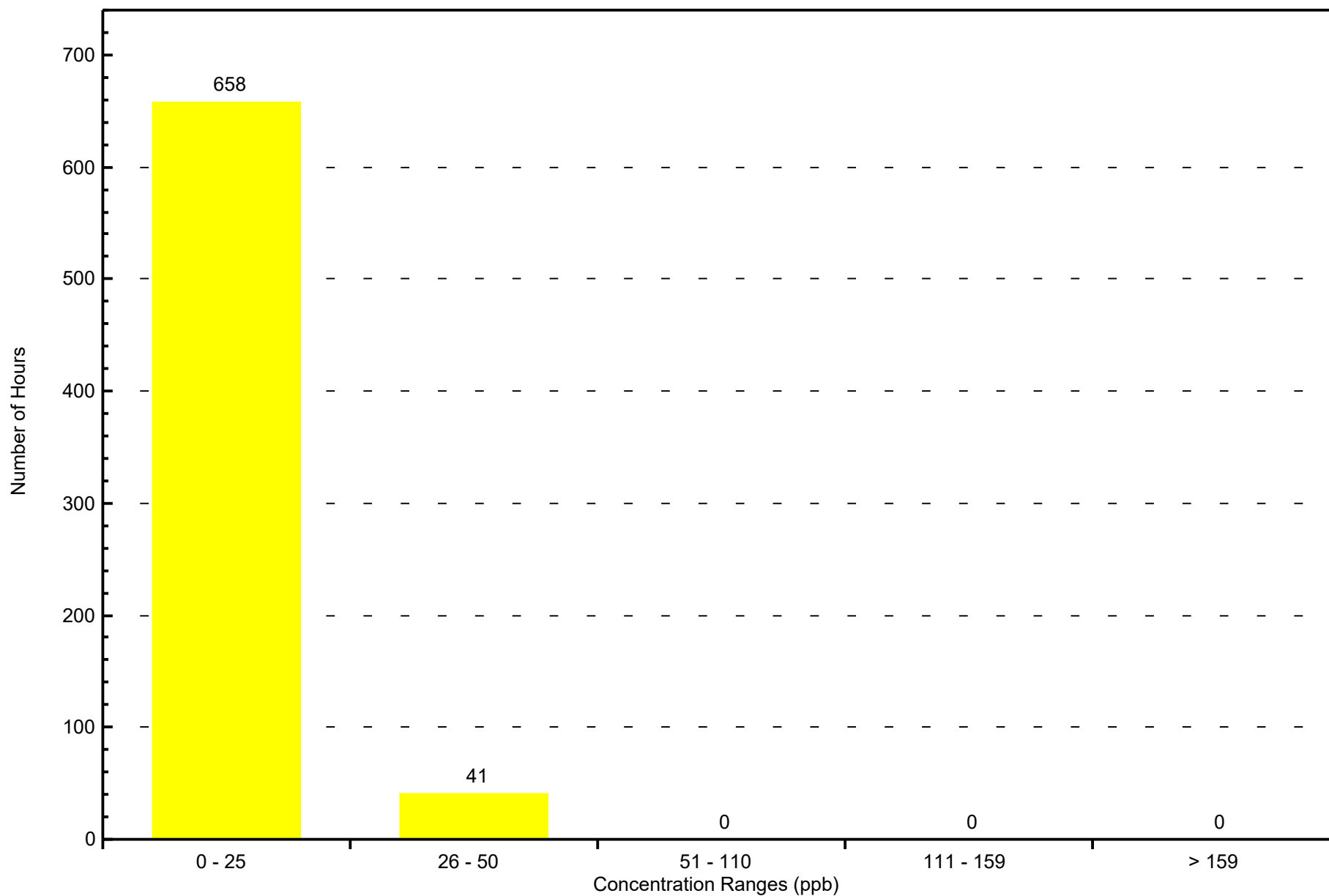
Nitrogen Dioxide (NO₂) - ppb

Wembley - January 2019



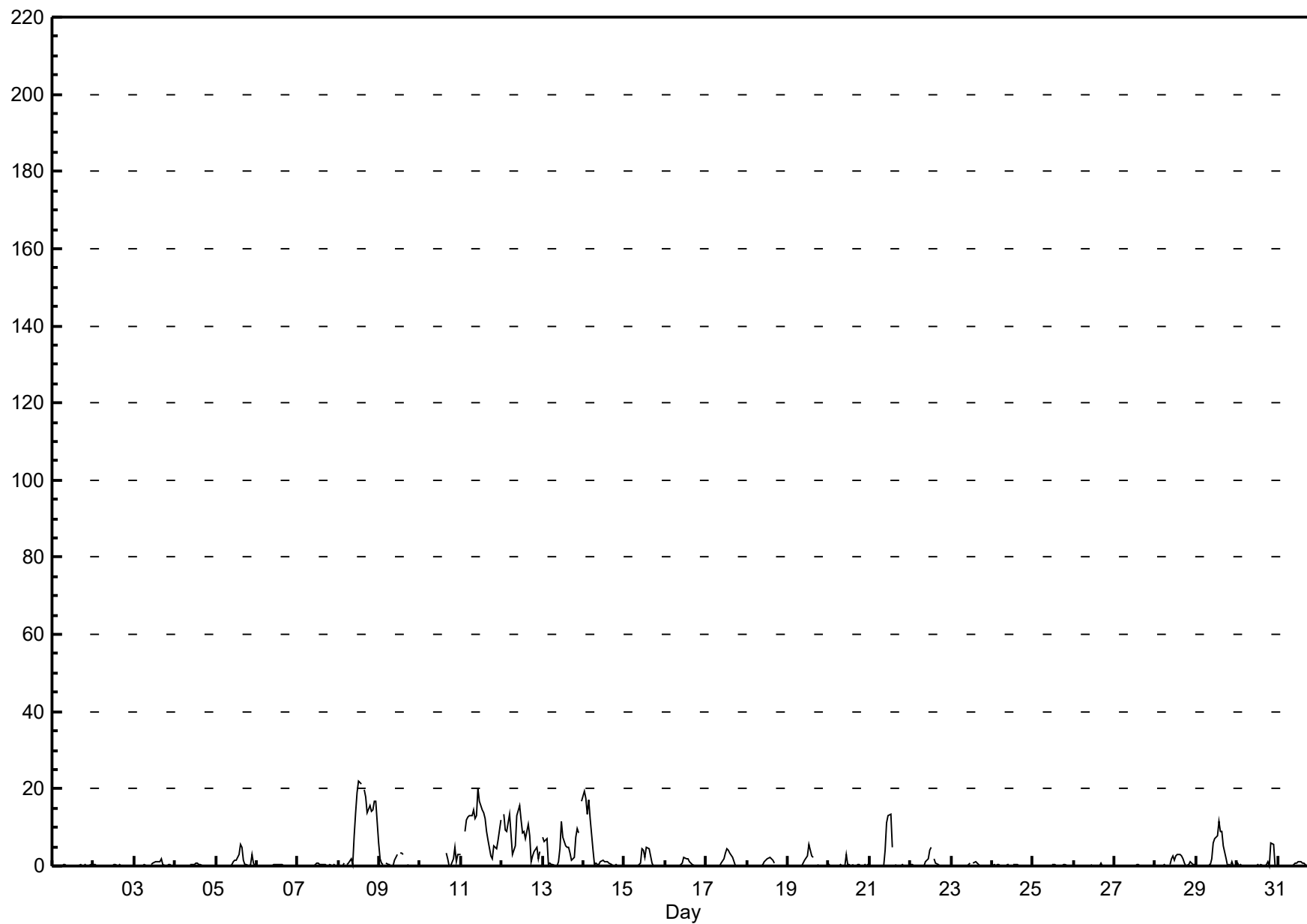
Histogram of Hourly Averages

Nitrogen Dioxide (NO₂) - ppb
Wembley - January 2019



Hourly Averages

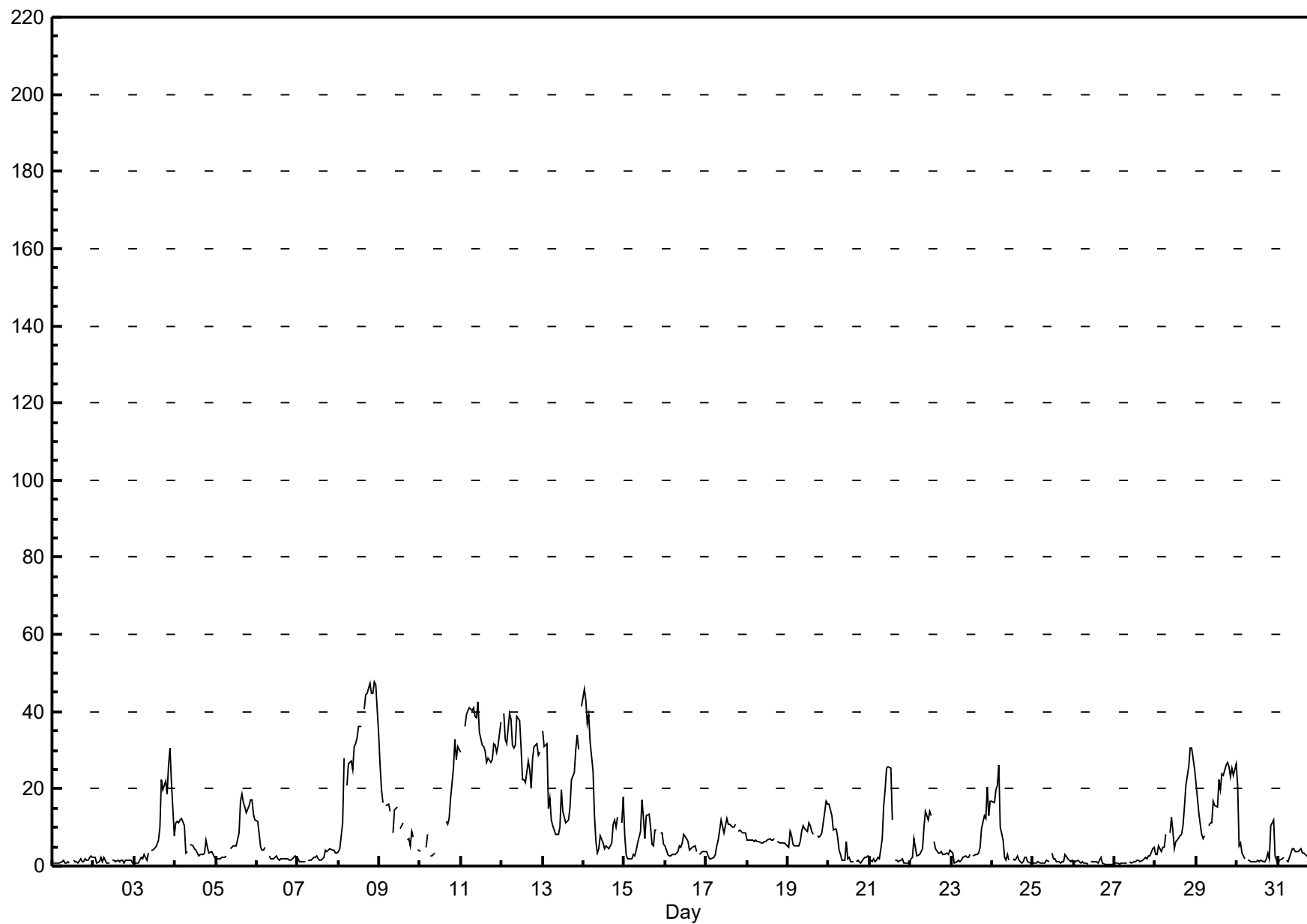
Nitrogen Oxide (NO) - ppb
Wembley - January 2019



Hourly Averages

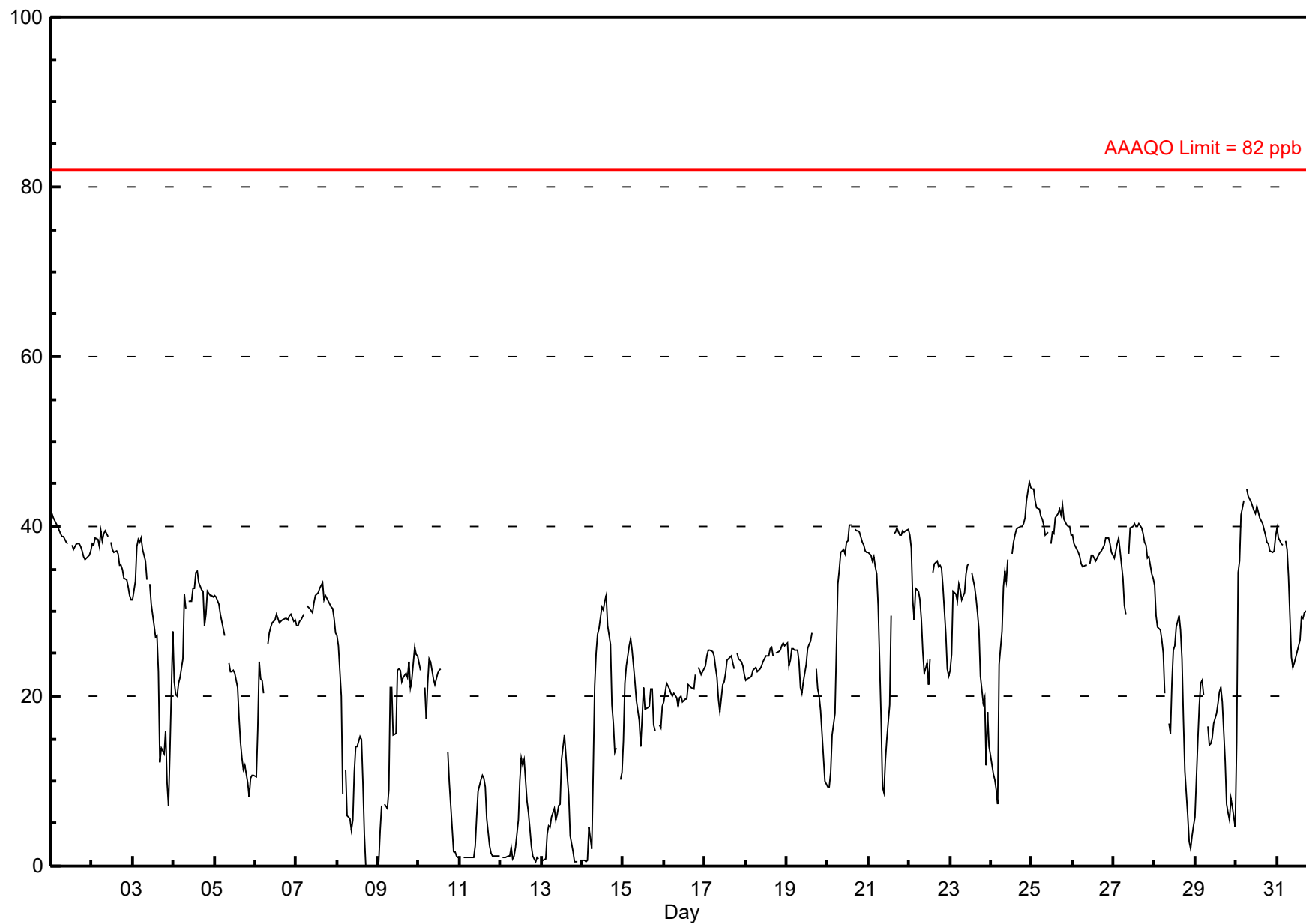
Oxides of Nitrogen (NO_x) - ppb

Wembley - January 2019



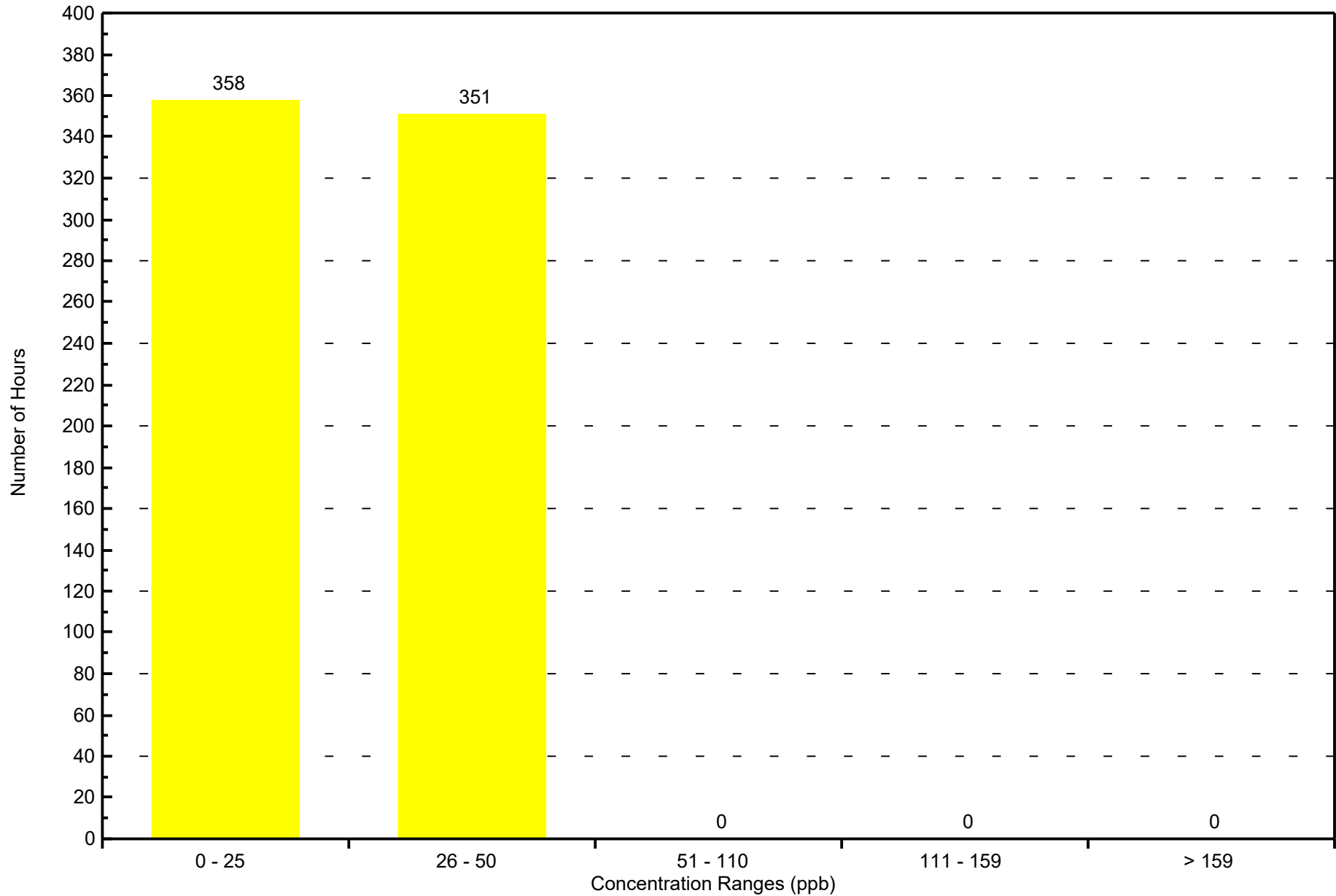
Hourly Averages

Ozone (O₃) - ppb
Wembley - January 2019



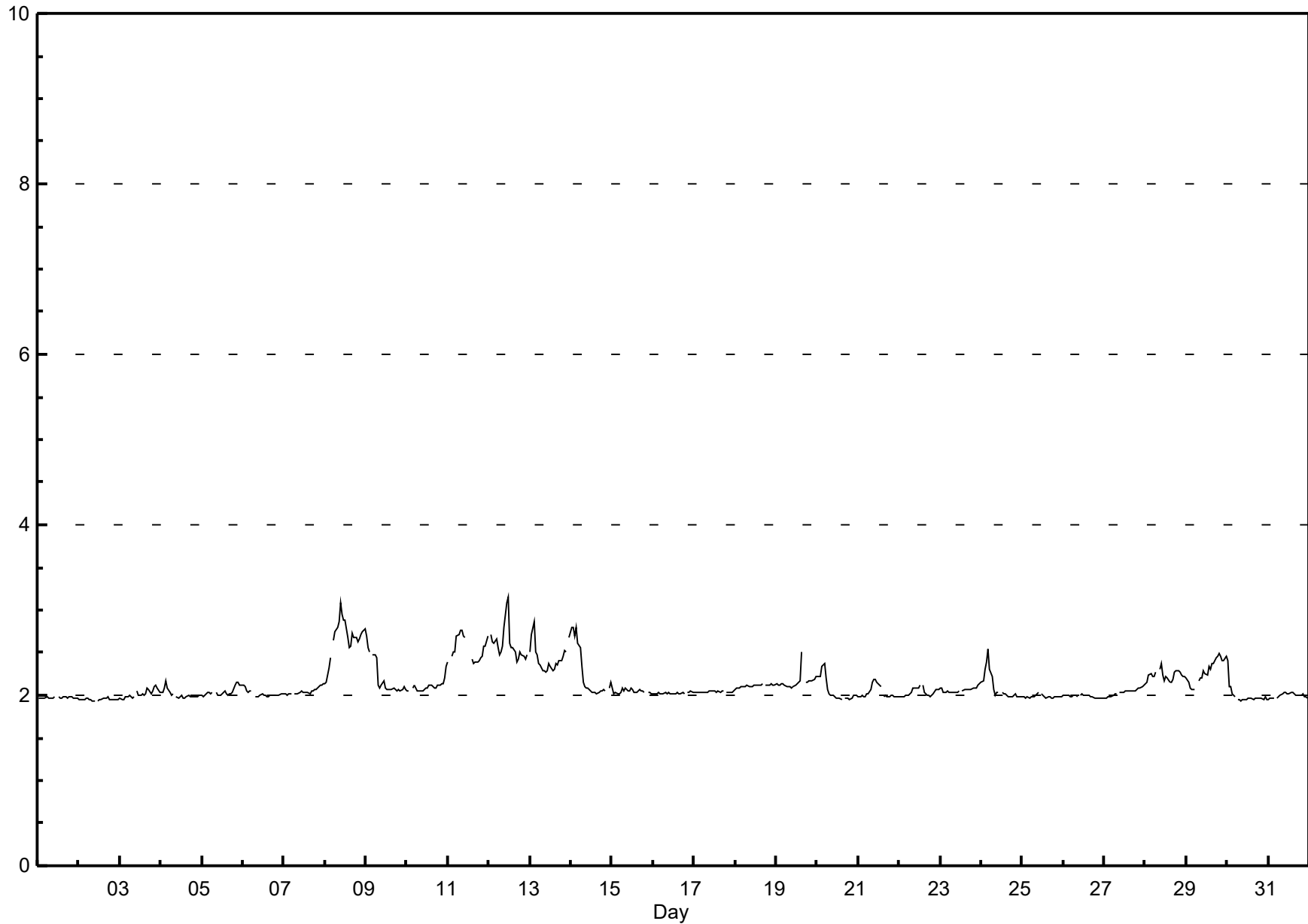
Histogram of Hourly Averages

Ozone (O₃) - ppb
Wembley - January 2019



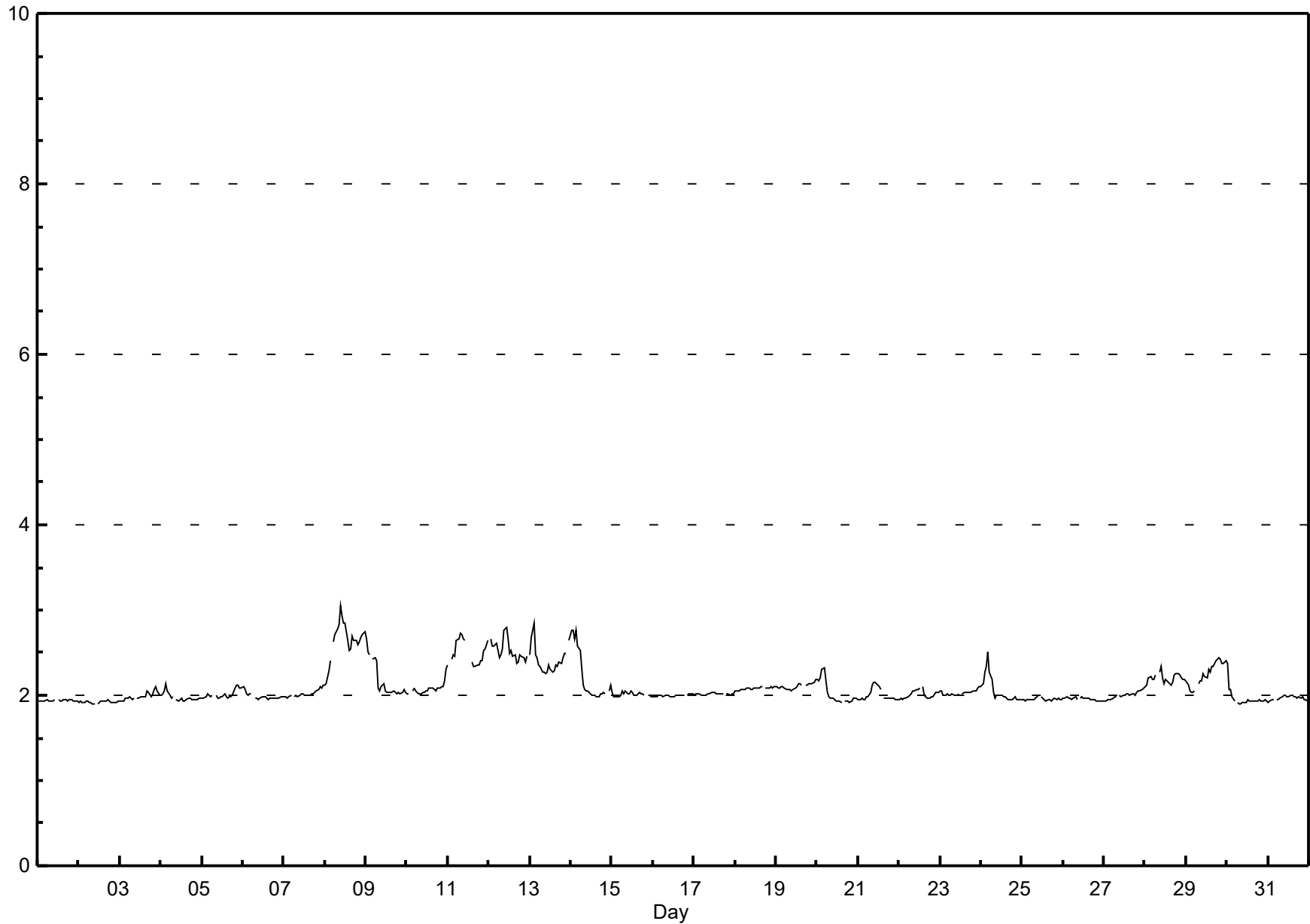
Hourly Averages

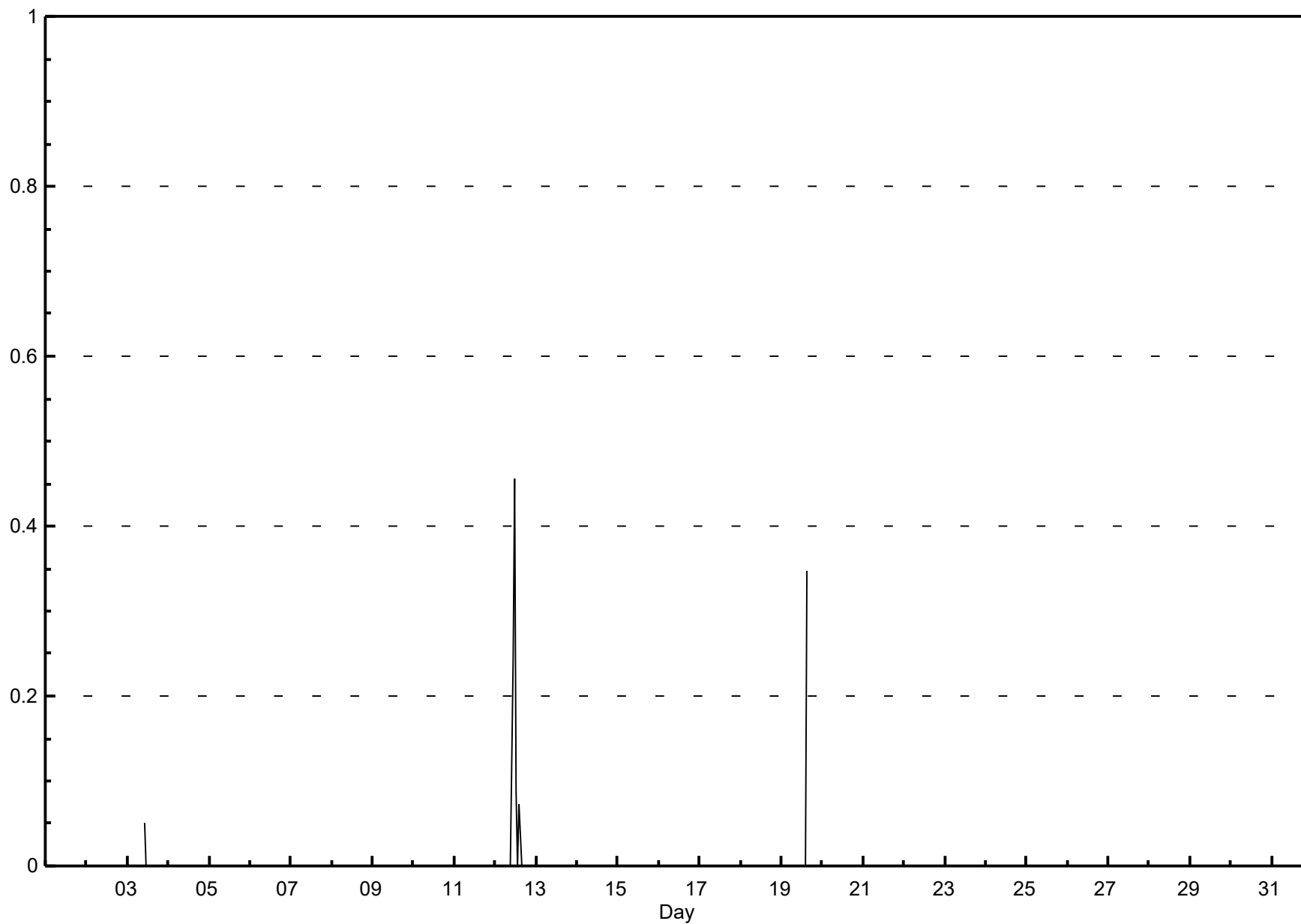
Total Hydrocarbons (THC) - ppm
Wembley - January 2019



Hourly Averages

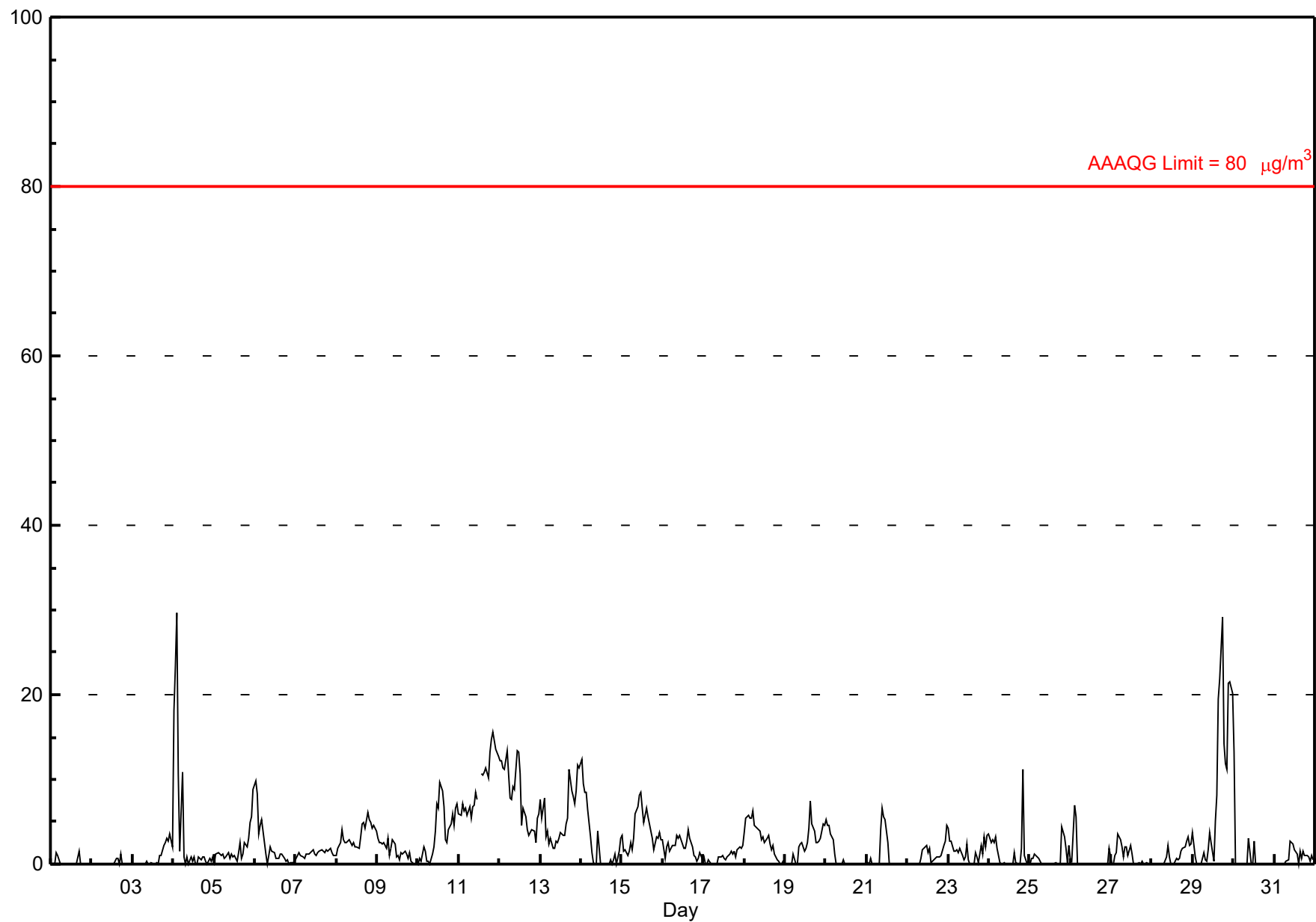
Methane (CH₄) - ppm
Wembley - January 2019





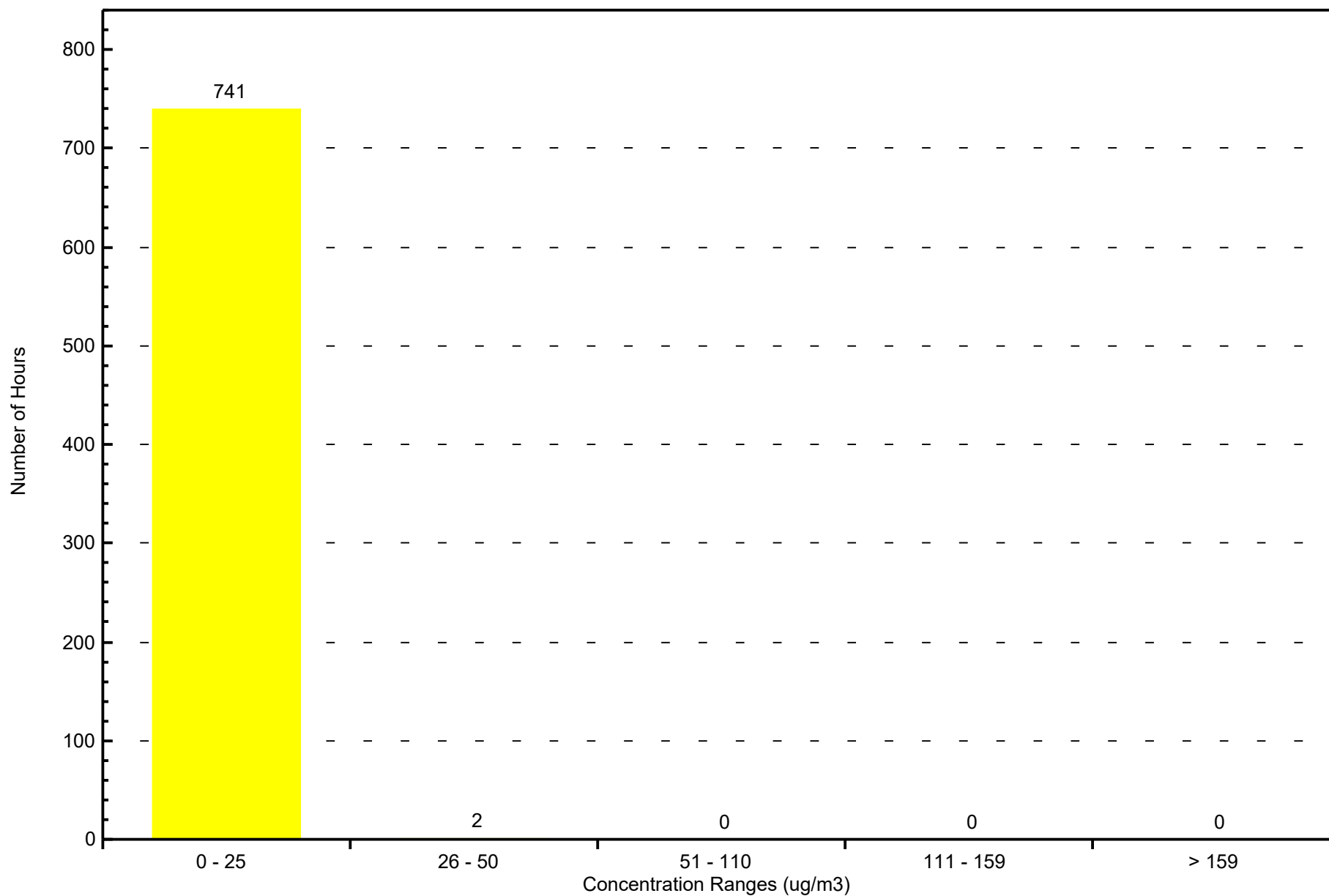
Hourly Averages

PM_{2.5} (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Wembley - January 2019



Histogram of Hourly Averages

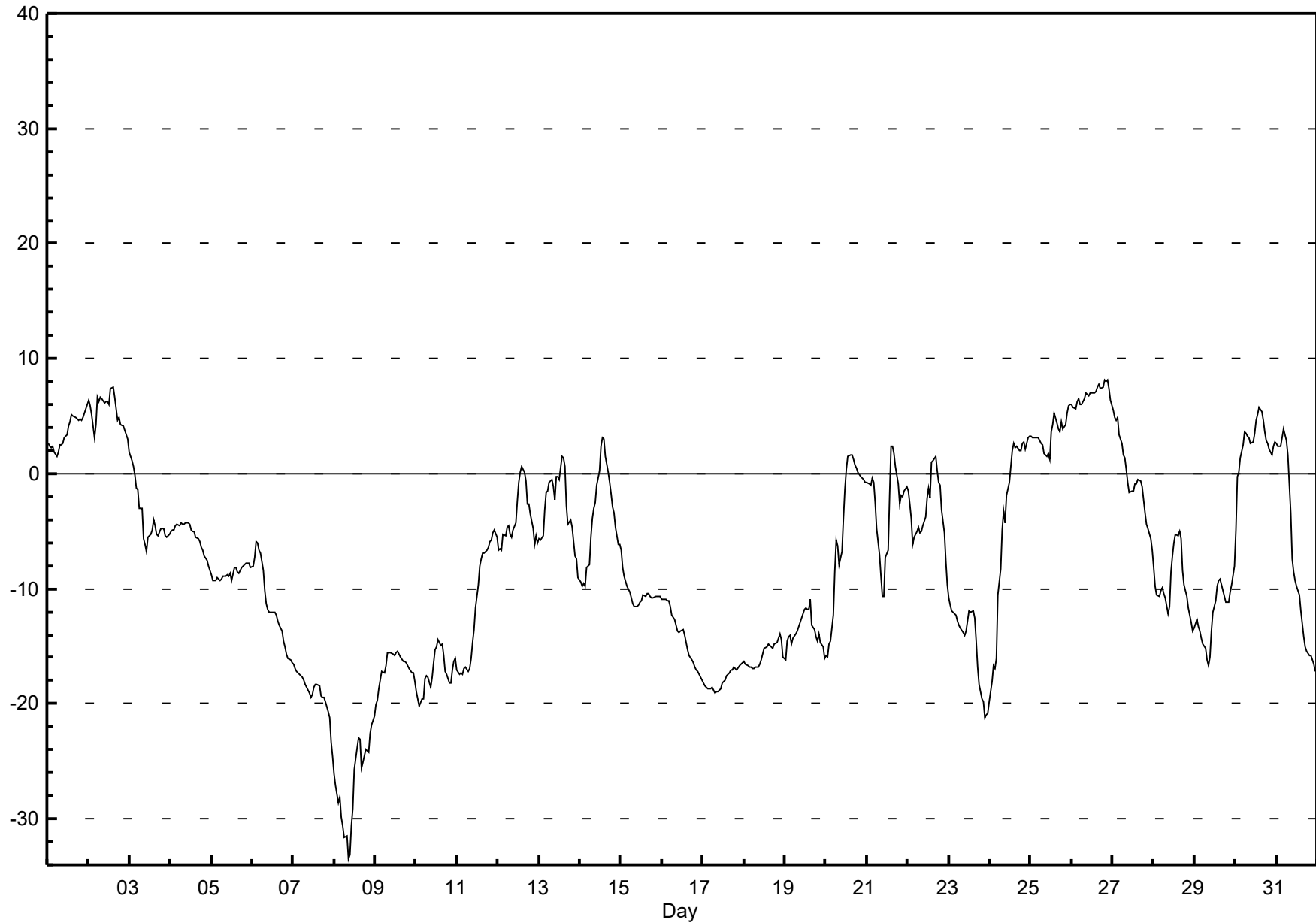
PM_{2.5} (PM_{2.5}) - $\mu\text{g}/\text{m}^3$
Wembley - January 2019



Hourly Averages

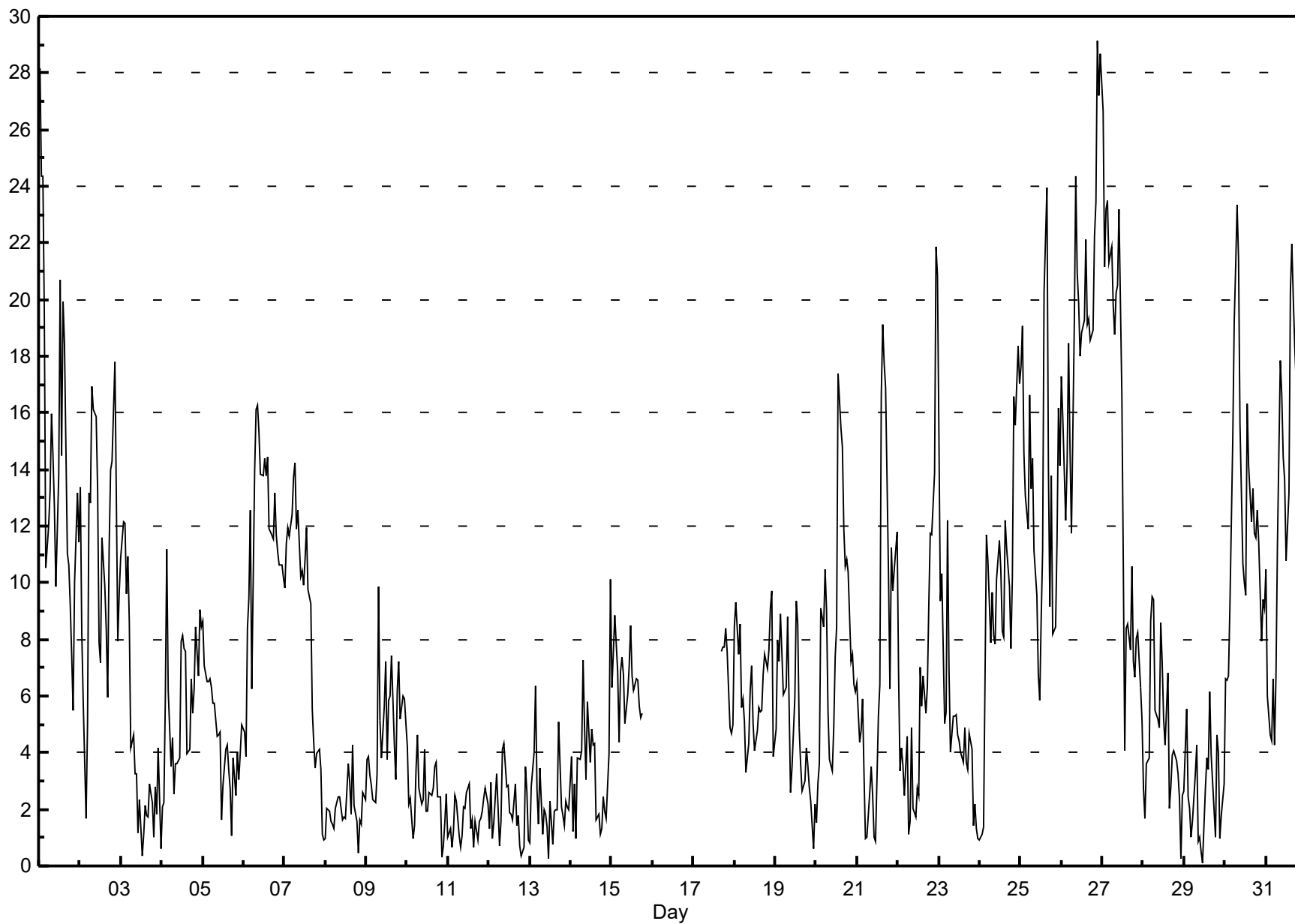
External Temperature (ET) - °C

Wembley - January 2019



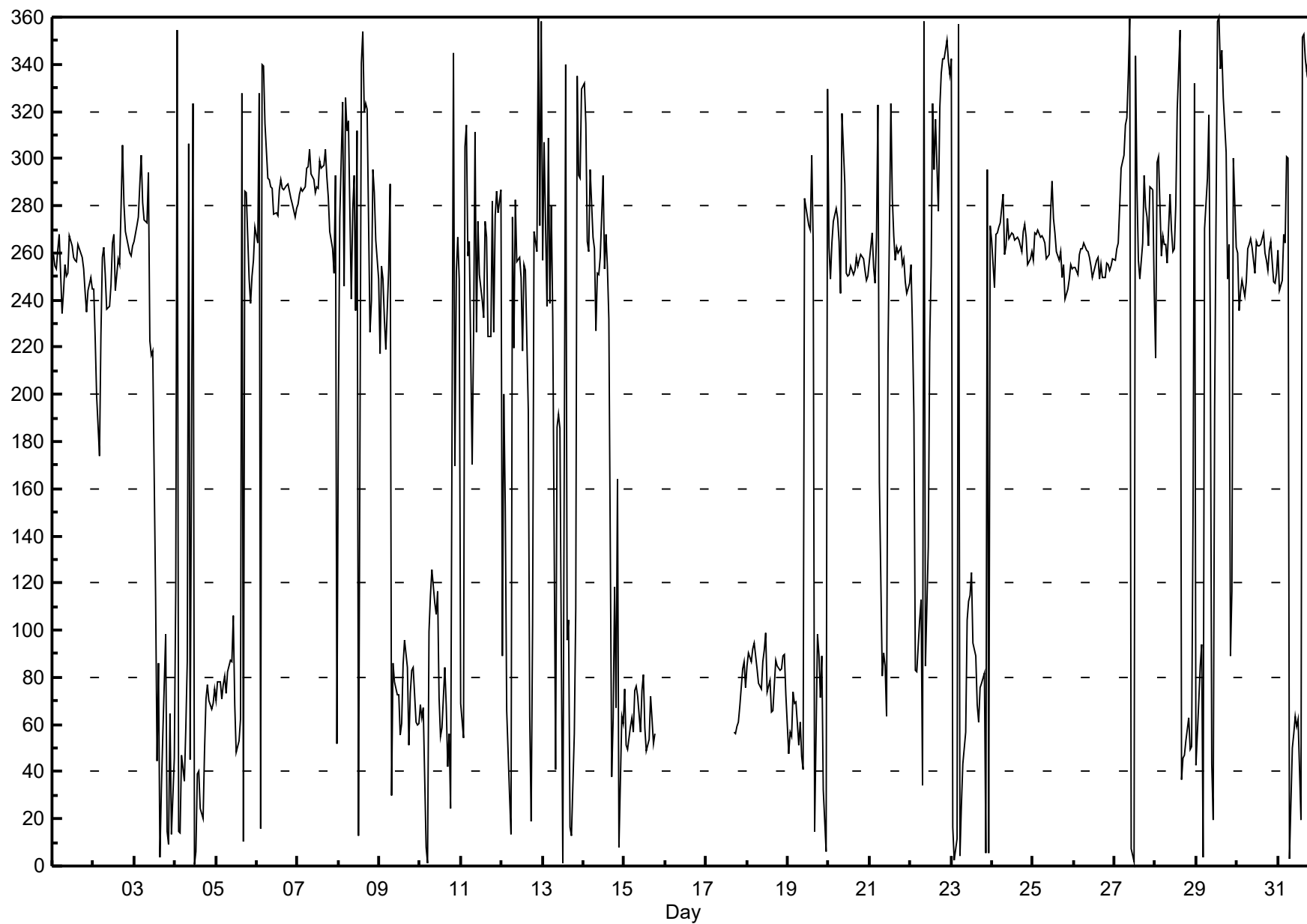
Hourly Averages

Wind Speed (WS) - km/h
Wembley - January 2019



Hourly Averages

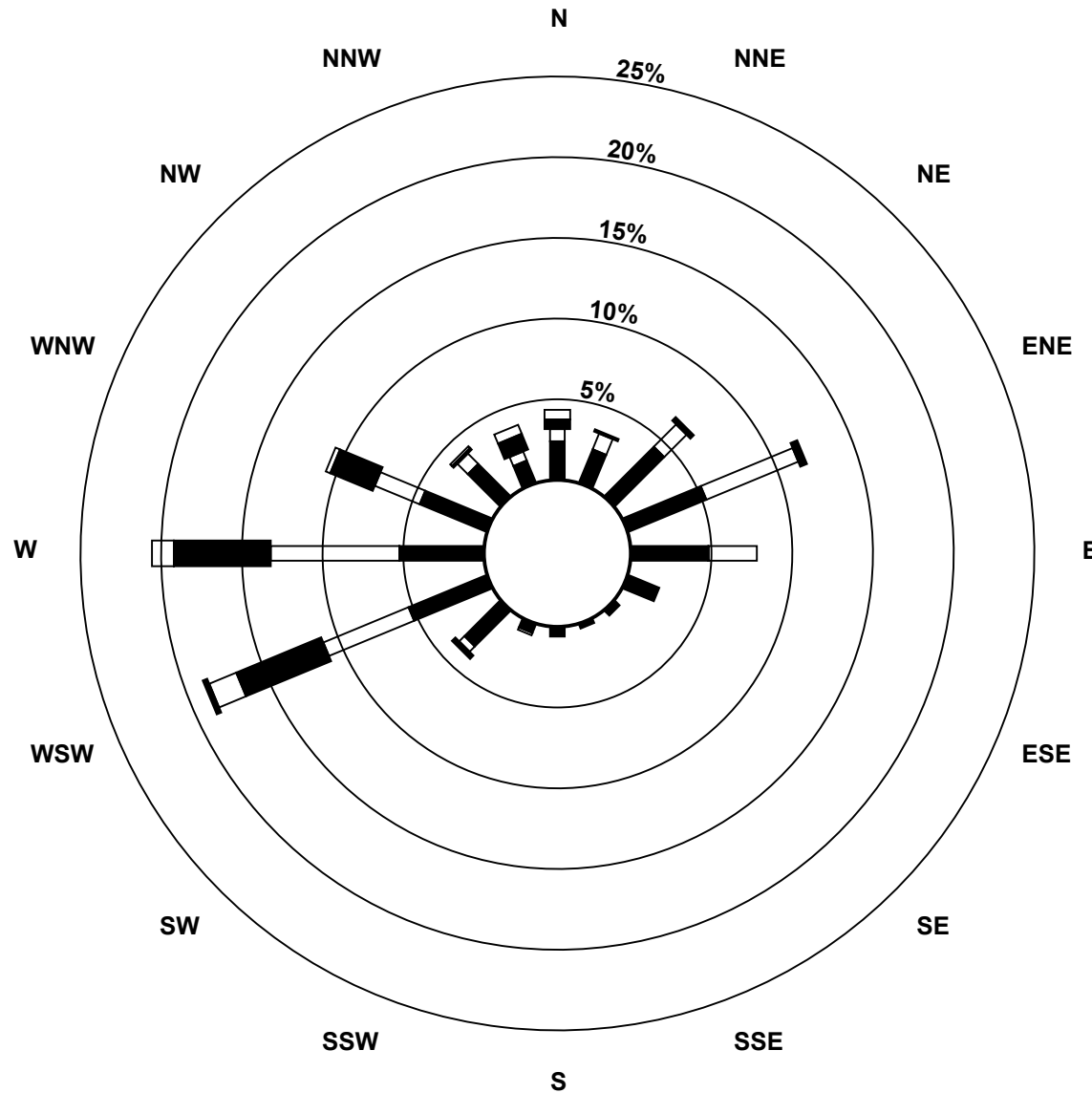
Wind Direction (WD) - deg
Wembley - January 2019



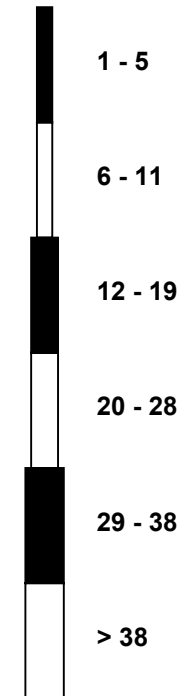
Wind Rose

Wind Speed (WS) (km/h)

Wembley - January 2019



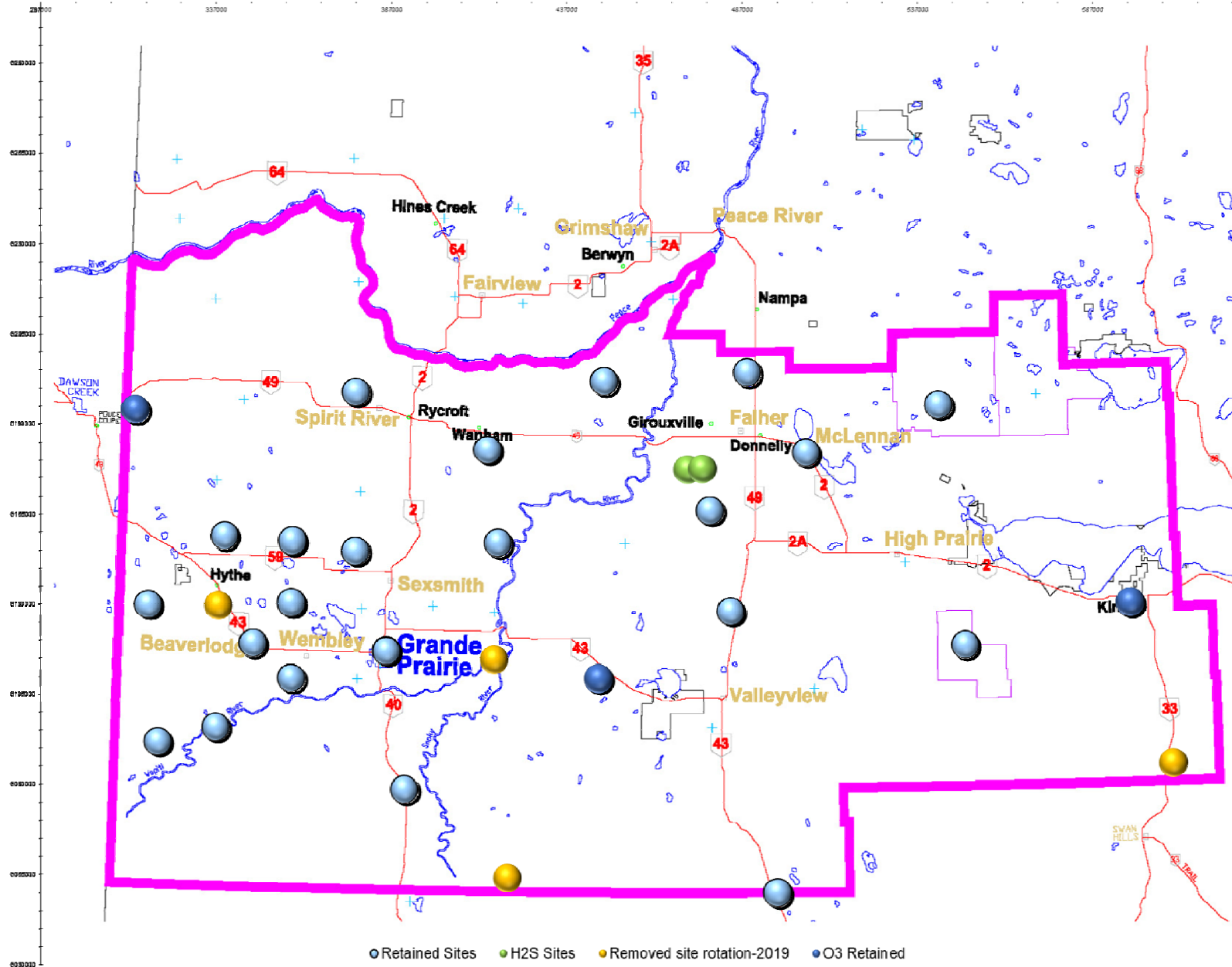
Wind Speed Classes (km/h)



PAZA

Monthly Passive Data Summary

Location of PAZA Passive Monitoring Stations



Peace Airshed Zone Association - PAZA Passive Stations
January 2019

Station Number	Station Name	SO2 ppb	O3 ppb	NO2 ppb	H2S ppb	Site Legal
Duplicates						
19a	Wanham			1.9		
19b	Wanham			1.9		
21a	Eaglesham	0.2				
21b	Eaglesham	0.2				
12a	Hythe			3.2		
12b	Hythe			2.7		
17a	Poplar	0.7				
17b	Poplar	0.7				
33a	Wapiti			3.3		
33b	Wapiti			4.4		
37a	Crooked Creek	0.3				
37b	Crooked Creek	0.3				
47a	Kinuso		37.5			
47b	Kinuso		34.6			
36a	Guy				0.1	
36b	Guy				0.2	

2	Bay Tree	0.3	39.1	0.3		13-16-078-13 W6M
5	Boone Creek	0.4		0.4		16-36-074-11 W6M
7	Steeprock Creek	0.4		0.4		09-35-072-13 W6M
9	Spirit River	0.4		0.4		08-12-079-07 W6M
11	Webber Creek	0.5		0.5		09-36-074-09 W6M
12	Hythe	0.6		2.9		14-36-072-11 W6M
14	Sylvester	0.2		1.6		08-06-069-12 W6M
16	Beaverlodge	0.5		4.1		15-36-071-10 W6M
17	Poplar	0.7		3.9		13-06-073-08 W6M
18	Saddle Hills	0.4		1.1		04-25-074-07 W6M
19	Wanham	0.3		1.9		16-22-077-03 W6M
21	Eaglesham	0.2		1.4		16-21-079-25 W5M
24	Wembley	0.4		5.2		12-31-070-08 W6M
25	Pinto Creek	0.3		1.7		04-24-069-11 W6M
27	Grande Prairie I	0.5		18.4		08-15-071-06 W6M
29	Smoky Heights	0.6		0.6		04-06-075-02 W6M
32	Gold Creek	0.5		4.9		06-33-067-05 W6M
33	Wapiti	0.4		3.9		02-25-071-03 W6M
35	Jean Cote	0.2		2.9		12-35-079-21 W5M
36	Guy	0.2		1.3	0.2	03-04-076-22 W5M
37	Crooked Creek	0.3	37.6	2.9		16-01-071-26 W5M
38	Karr Creek	0.2		1.9		10-16-065-02 W6M
39	Clouston Creek	0.3		1.9		12-01-073-22 W5M
40	McLennan	0.4		1.4		03-29-077-19 W5M
44	Peavine	0.2		0.8		03-05-079-15 W5M
46	Little Smoky	0.2		4.0		12-01-065-21 W5M
47	Kinuso	0.2	36.0	1.7		12-10-073-10 W5M
48	Deer Mountain 2	0.2		0.9		*
49	Grande Prairie HP	0.4		10.8		17-26-071-06 W6M
50	East Prairie	0.1		0.9		13-02-072-15 W5M
63	Girouxville 3				0.3	14-02-077-23 W5M
64	Girouxville 4				0.2	4-08-077-22 W5M

*BDL = Below Detection Level

*N/S - No sample

**End of Report
PAZA
January 2019
Ambient Air Monitoring Report**