

REPORT ID: **08020.04.T05.RP1**

McLean's Mountain Wind Farm – Turbine T05 IEC 61400-11 Edition 3.0 Measurement Report

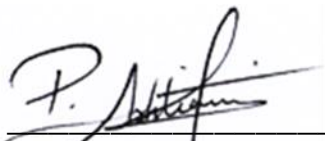
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11 October 2017 – Revision #3



Revision History

Revision Number	Description	Date
1	Issued Edition 2.1 test report	November 19, 2014
2	Update to section 4.5 and 4.6 to correct for an adjustment in the ambient conditions during the IEC test	November 21, 2014
3	Issued Edition 3.0 test report	October 11, 2017

This report in its entirety, including appendices contains 75 pages.

Statement Qualifications and Limitations

This report was prepared by Aercoustics Engineering Limited in accordance with International Standard IEC 61400-11 (Edition 3.0, released 2012-11), "Wind turbine generator systems – Part 11: Acoustic noise measurement techniques". This report is specific only to the Wind Turbine identified in this report.

Aercoustics Engineering Limited shall not be responsible for any events or circumstances that may have occurred since the date on which the Wind Turbine was tested and/or this report was prepared, or for any inaccuracies contained in information that was provided to Aercoustics Engineering Limited. Further, Aercoustics Engineering Limited agrees that this report represents test data analysed as per the above described standard for the specific Wind Turbine described in this report, but Aercoustics Engineering Limited makes no other representations with respect to this report or any part thereof.

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This Statement of Qualifications and Limitations is attached to and forms part of this report.

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1 Introduction

Aercoustics Engineering Limited (Aercoustics) was retained by McLean’s Mountain Wind GP (“MMWF”) to conduct an acoustic measurement of turbine T05 at the McLean’s Mountain Wind Farm. The purpose of the measurement was to provide verification of the maximum noise emission of the turbine. The measurement was carried out in accordance with International Standard IEC 61400-11 (Edition 3.0, released 2012-11), “Wind turbine generator systems – Part 11: Acoustic noise measurement techniques”. This report is specific only to Turbine T05.

2 Wind Turbine Information

2.1 Wind turbine equipment specific information

Wind turbine specific equipment information for turbine T05 was provided by GE Energy and is summarized in Tables 1 – 5.

Table 1 - Wind Turbine Details

Wind Turbine Details	
Manufacturer	GE
Model Number	2.85 DFIG
Turbine ID	T05: 28124304

Table 2 - Operating Details

Operating Details	
Vertical or Horizontal axis wind turbine	Horizontal axis wind turbine
Upwind or downwind rotor	Upwind rotor
Hub height	98.3m
Horizontal distance from rotor centre to tower axis	4170mm
Diameter of rotor	103m
Tower type (lattice or tube)	Tube
Passive stall, active stall, or pitch controlled turbine	Pitch controlled turbine
Constant or variable speed	Variable speed
Power curve	See Figure B.01
Rotational speed at each integer standardised wind speed	See Figure B.02 from measurement data
Rated power output	2 660 kW
Control software version	44.62.06c Turbine CONTROL

Table 3 - Rotor Details

Rotor Details	
Rotor control devices	Rotary Pulse Transducer
Presence of vortex generators, stall strips, serrated trailing edges	Vortex generator: No, Stall Strips: No, Serrated trailing edge: Yes
Blade type	Tecsis, Fibre glass, 50.2
Serial number	B1: TEC 472, B2: TEC 490, B3: TEC 512
Number of blades	3

Table 4 - Gearbox Details

Gearbox Details	
Manufacturer	Nanjing
Model number	FDM3B 931877
Serial number	FDM3B 1024R1

Table 5 - Generator Details

Generator Details	
Manufacturer	Indar
Model number	60 Hz 90/95
Serial number	22216060038

2.2 Wind Turbine Location

Turbine T05 is located in the Manitoulin district near the town of Little Current, approximately 560m West of McLean's Mountain Road, and 300m South of Morphets Side Road. The area surrounding T05 is flat and consists primarily of grassland.

A general layout of the area in which the turbine is located is provided in the site plan (Figure A.01).

3 Measurement Details

3.1 Measurement Equipment

3.1.1 Acoustic Measurement Equipment

A summary of acoustic equipment utilized by Aercoustics for the measurement of turbine T05 is summarized in Table 6.

Table 6 - Acoustic Measurement Equipment

Equipment	Manufacturer Name & Model	Serial Number
Acoustic Data acquisition system	LMS SCADA Mobile	53103922
Microphone	B&K 4189	2622169
Pre-amplifier	B&K 2671	2614900
Acoustic calibrator	B&K 4231	2513184

Calibration of the measurement setup was carried out before and after Aercoustics set of measurements.

3.1.2 Meteorological Equipment

Wind speed for Turbine ON was derived from the power curve (as per procedures outlined in IEC 61400-11). Wind direction for turbine ON measurements was utilized from the nacelle anemometer located at hub height (98.3m high) from turbine T05. Data for background measurements was obtained from a 10m high anemometer, which was placed as per guidelines outlined in IEC-61400-11 edition 2.1. See section 4.1 for details.

The meteorological equipment is summarized in Table 7

Table 7 – Meteorological Measurement Equipment

Equipment	Manufacturer Name & Model	Serial Number
Anemometer	VAISALA WXT520	K2420011
Serial to Analog Converter	NOKEVAL 7470	A159784

3.2 Measurement Setup

3.2.1 Microphone Placement

The measurement microphone was setup 150m from the base of the turbine in ‘Position 1’, (i.e. downwind of the turbine, as per IEC 61400-11) at an elevation of 0m relative to the base of T05. The microphone was placed in the centre of a circular, acoustically reflective board.

During the measurement period only data points for which the microphone was within 15 degrees of downwind from the turbine were used. The microphone position relative to

downwind of the turbine was monitoring via the yaw angle output provided from the turbine system (discussed further in Section 3.5). During placement of the microphone the turbine was parked and the reference yaw angle for that measurement logged.

When measurements of T05 were taken, the surrounding land was grassland. There were no nearby reflecting surfaces (houses, barns etc.); as such the influence from reflecting surfaces was considered to be negligible.

Photos of the measurement setup are provided in Figure A.02, Appendix A.

3.2.2 Double Windscreen Setup

A double windscreen setup was not utilized.

3.3 Measurement Schedule

Table 8 provides a summary of the test date and times. Data was logged in 10 second intervals for post-processing (as per the measurement standard).

Table 8 - Measurement Schedule Summary

Date	Test Type	Start Time	Finish time
September 19, 2014	Turbine ON	1:19pm	2:27pm
	Background	2:43pm	3:55pm
	Turbine ON	4:04pm	4:59pm

3.4 Meteorological Conditions

Detailed meteorological data relevant to the measurement is provided in Appendix E.

As previously mentioned, wind speed for Turbine ON was derived from T05's power curve (as per the standard), while wind direction was provided by T05's nacelle anemometer (located at hub height). Background data was obtained from an anemometer located 10m above ground level near T05.

Temperature and pressure readings during the measurement period were provided by the 10m anemometer, located near turbine T05 for the duration of Aercoustics measurements.

3.5 Turbine operational information

Output data from the turbine (Power, yaw, RPM, pitch angle, and nacelle wind speed) were obtained as analog output signals that were simultaneously acquired with the acoustic and anemometer measurement data using Aercoustics data acquisition system.

4 Measurement Results

4.1 Deviations from IEC-61400-11 Edition 3.0

Originally, the test contract required measurements in accordance to edition 2.1 of the standard (61400-11) which requires the anemometer to be placed upwind of the turbine. This test report is a reprocessing of the originally acquired data and as such, during the test, the anemometer position was erected in an upwind (Ed 2.1), rather than crosswind (Ed 3.0) position relative to the test turbine.

The acoustic signal to noise ratio for the noise levels is $>10\text{dB}$, and as such, the effect of this deviation on the resulting sound power levels are expected to be negligible.

4.2 Special Notes & Considerations

Turbines T10 and T06 in the immediate vicinity of T05 were parked for the duration of the measurement.

4.3 Analysis Details

The following section outlines analysis of the measurement data acquired for T05. The data presented is exclusive of transient events such as vehicle traffic, wildlife, air traffic etc. The site has been assessed to have a roughness length of 0.05m, representative of farmland with some vegetation.

4.3.1 Double Windscreen Adjustment

As previously mentioned, no double wind screen was used, as such the measurement data did not require adjustment.

4.3.2 Wind Speed Correction

The wind speed for each measurement data point for Turbine ON was derived through the power curve (as per Section 8.2.1.1 of IEC-61400-11). For data points during Turbine ON that were outside the allowed range of the power curve, the wind speed was derived from the nacelle anemometer wind speed (as specified in Section 8.2.1.2 of IEC-61400-11).

Background wind speed was derived utilizing data acquired with the 10m anemometer and normalizing the wind speed (as per Section 8.2.2 of IEC-61400-11).

4.4 Type B uncertainties

Type B uncertainties were obtained through interpretation of information provided in Annex C of IEC-61400-11, and instrument uncertainties obtained from the calibration certificate. A summary of Type B uncertainties is provided in Table 9, while detailed information (including data in 1/3 octave) is provided in Appendix C.

Table 9 - Summary of Type B uncertainties

Component	Typical (dB)	Used (dB)
Calibration	0.2	0.2
Board	0.3	0.3
Distance & direction	0.1	0.1
Air absorption	0	0
Weather conditions	0.5	0.5
Wind speed measured	0.7	0.7
Wind speed derived	0.2	0.2
Wind speed from power curve	0.2	0.2

4.5 Sound Pressure Level Measurements

Sound pressure level measurements are summarized in Table 10. Detailed 1/3 Octave band spectrum data, respective uncertainties, and analysis plots are provided in Appendix C. A copy of the measurement data used for analysis is provided in Appendix E and includes meteorological and turbine operational data.

Table 10 - Summary of Sound Pressure Level Measurements

Wind Speed (m/s)	Turbine ON		Background		Turbine ON, Background adjusted L_{eq} , (dBA)
	L_{eq} , (dBA)	# of data pts	L_{eq} , (dBA)	# of data pts	
8	52.4	24	42.4	46	52.1
8.5	53.1	44	42.0	41	52.9
9	53.3	54	41.0	46	53.1
9.5	53.4	57	42.6	32	53.1
10	53.5	87	41.5	47	53.2
10.5	53.4	85	42.0	23	53.2
11	53.5	49	42.1	23	53.2
11.5	53.4	38	42.0	30	53.1
12	53.6	19	42.2	19	53.3
12.5	53.5	20	41.0	10	53.3
13	53.4	20	42.9	12	53.1

4.6 Sound Power Level of Turbine

The calculated sound power level of the turbine T05 (as per IEC 61400-11) is summarized in Table 11 (hub height) and Table 12 (10m height). Detailed 1/3 Octave band spectrum data and respective uncertainties are provided in Appendix C.

Table 11 - $L_{WA, K}$ at each integer wind speed

Wind Speed (m/s)	Apparent L_{WA} , (dBA)	Uncertainty (dB)
8	102.3	0.8
8.5	103.1	0.8
9	103.3	0.7
9.5	103.3	0.8
10	103.4	0.8
10.5	103.4	0.7
11	103.4	0.7
11.5	103.3	0.7
12	103.5	0.7
12.5	103.5	0.7
13	103.3	0.7

Table 12 - $L_{WA 10m, K}$ at each integer wind speed

Wind Speed (m/s)	Apparent L_{WA} , (dBA)	Uncertainty (dB)
5	100.6	1.1
6	102.9	0.7
7	103.4	0.7
8	103.4	0.7
9	103.4	0.7

4.7 Tonality Analysis

The tonality analysis for Turbine T05 is summarized in Table 13, while plots of narrow band spectra at each wind speed are provided in Appendix D. The ΔL_{tn} and ΔL_a values reported represent the energy average of all data points with an identified tone that falls within the same frequency origin (as specified in Section 9.5.8 in IEC-61400-11).

The narrow band spectra provided in the plots represents an energy average of all data points in the given wind speed bin for both Turbine ON and Background.

Table 13 - Tonality Assessment Summary

Wind Speed (m/s)	Frequency (Hz)	Tonality, ΔL_{tn} (dB)	Tonal audibility, ΔL_a (dB)	FFT's with tones	Total # of FFT's	Presence (%)
No Reportable Tones						

5 Closure

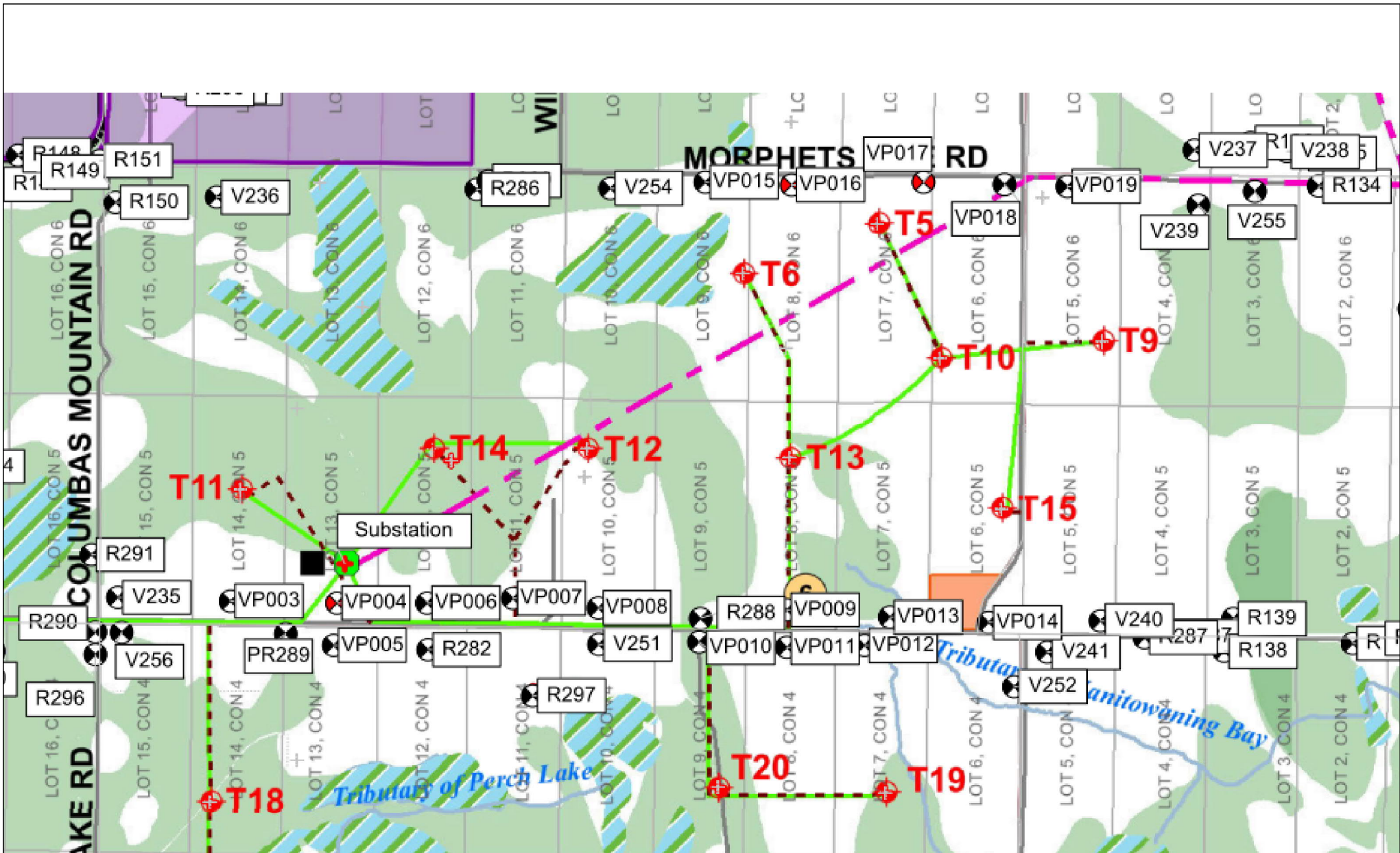
Measurements and analysis were carried on Turbine T05 of the McLean's Mountain Wind Farm, located on Manitoulin Island as per International IEC 61400-11 (Edition 3.0, released 2012-11), "Wind turbine generator systems – Part 11: Acoustic noise measurement techniques".


Should you have any questions or comments please do not hesitate to contact the authors of this report.

6 References

1. International Standard IEC 61400-11 (Edition 3.0, released 2012-11), "Wind turbine generator systems – Part 11: Acoustic noise measurement techniques".

Appendix A Site Details



	08020.04.T05.RP1	Project Name	McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0	Figure Title Site Plan	Figure A.01
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08020.04.T05.RP1

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

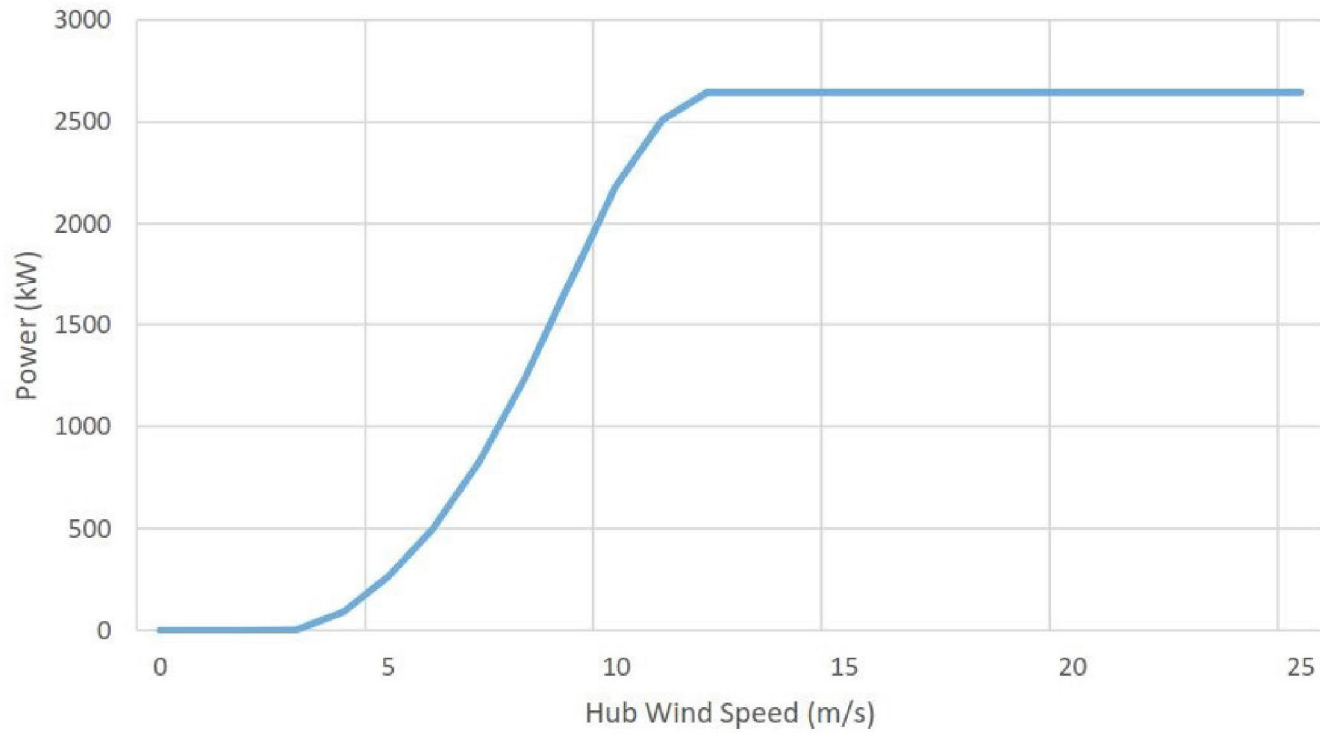
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

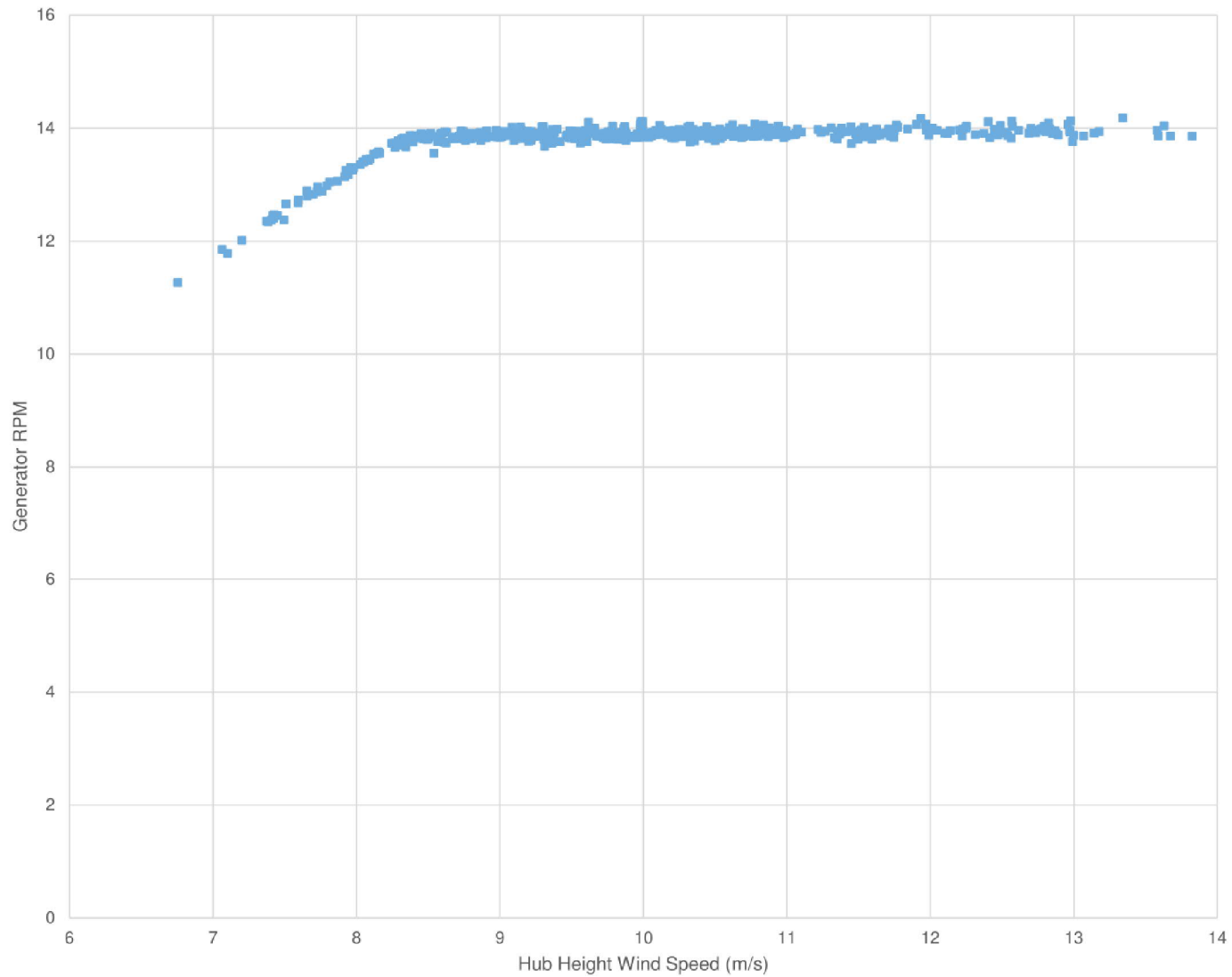
Site Photos

Figure A.02

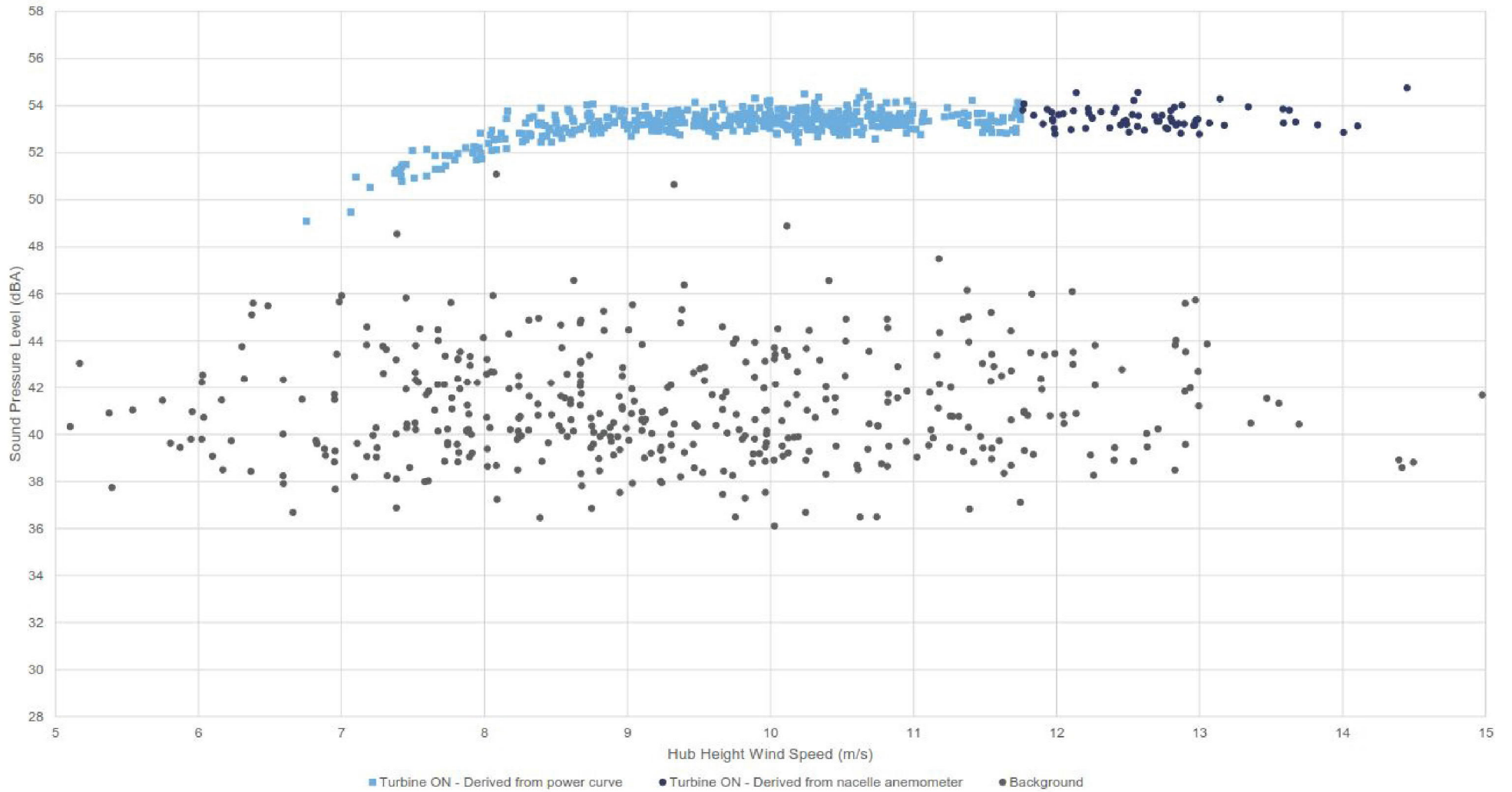
Appendix B Turbine Information

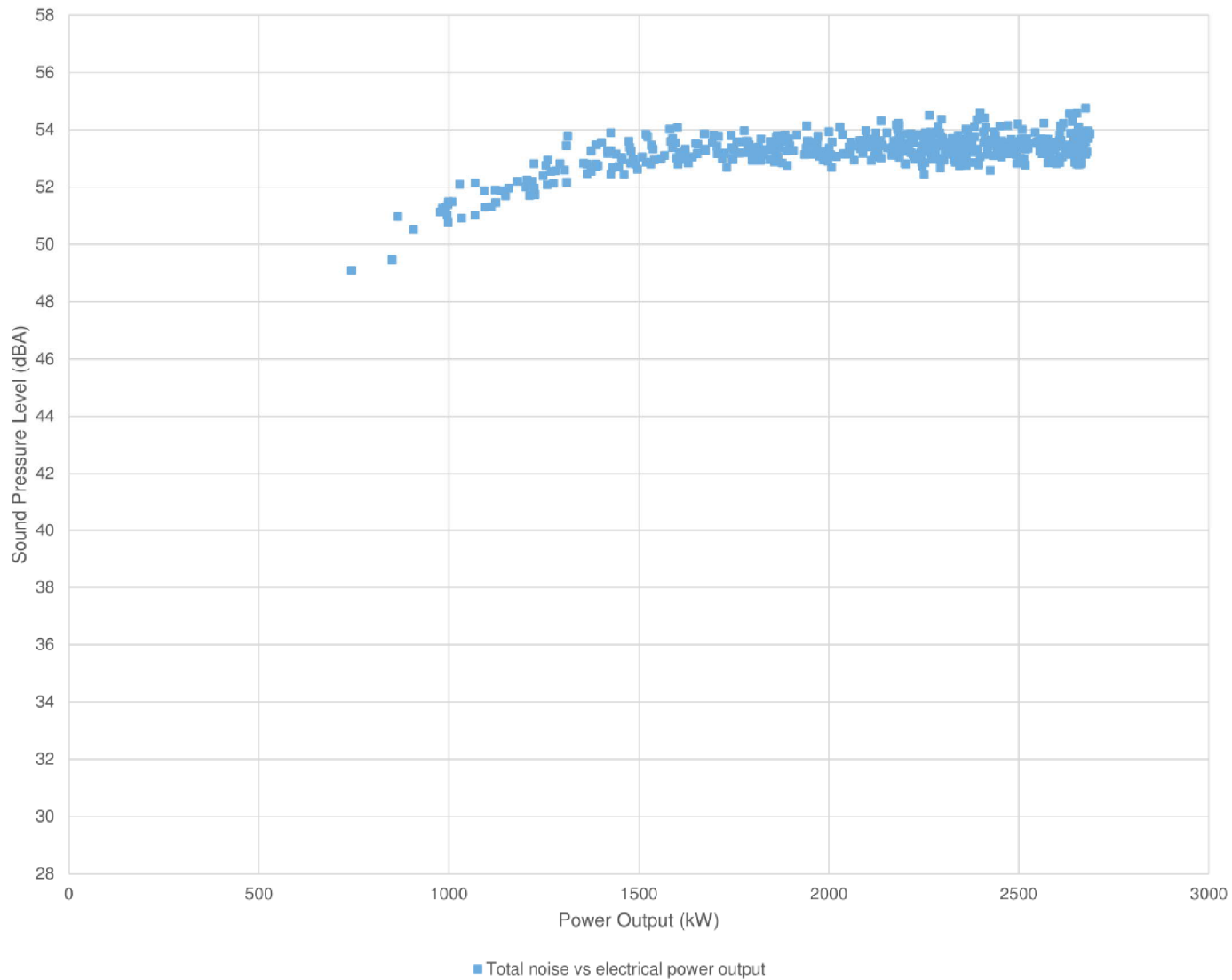



Power Curve	
Hub Wind Speed (m/s)	Power [kW]
0	0
1	0
2	0
3	2
4	86
5	263
6	499
7	824
8	1235
9	1719
10	2188
11	2511
12	2646
13	2646
14	2646
15	2646
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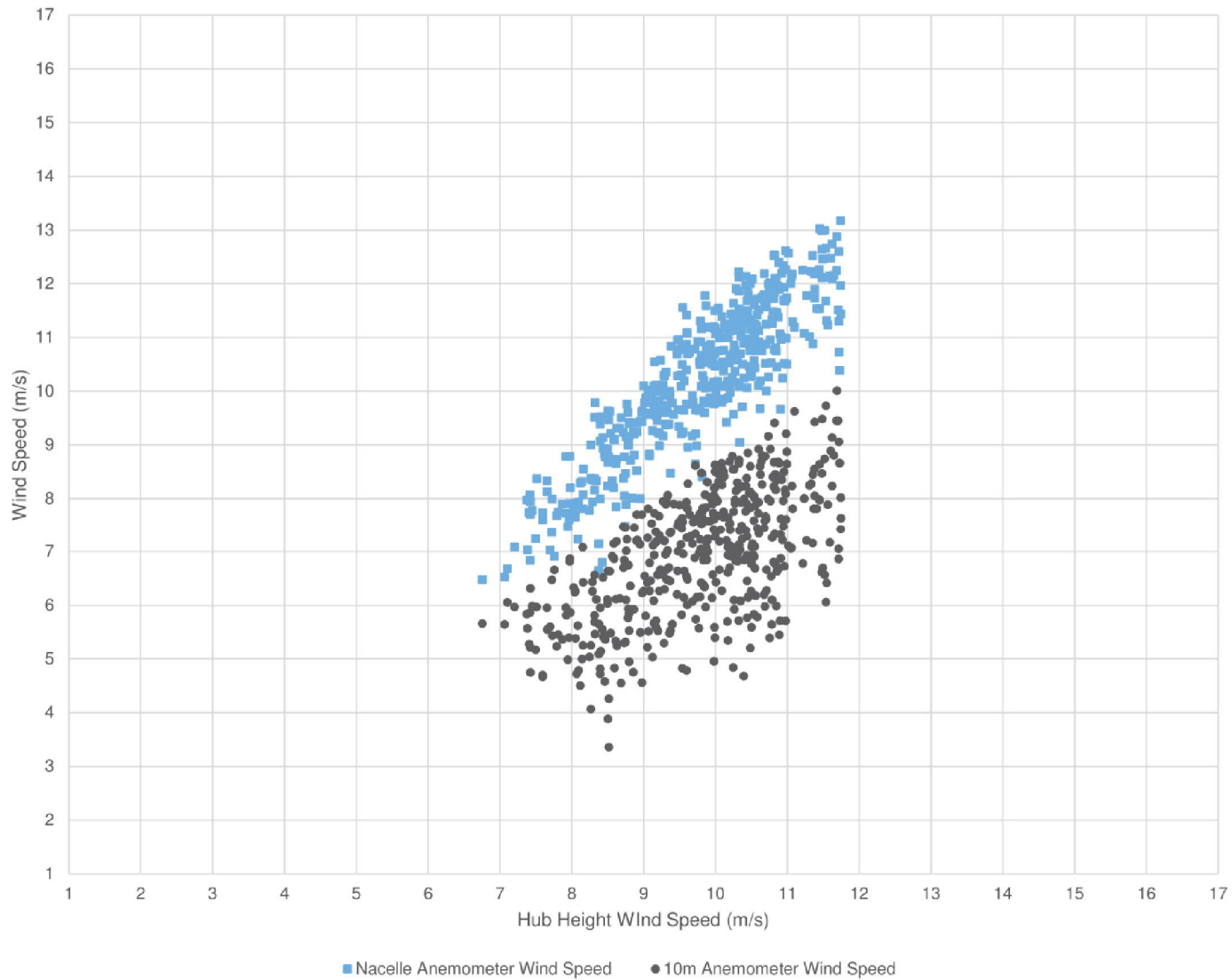



Appendix C Apparent Sound Power Level

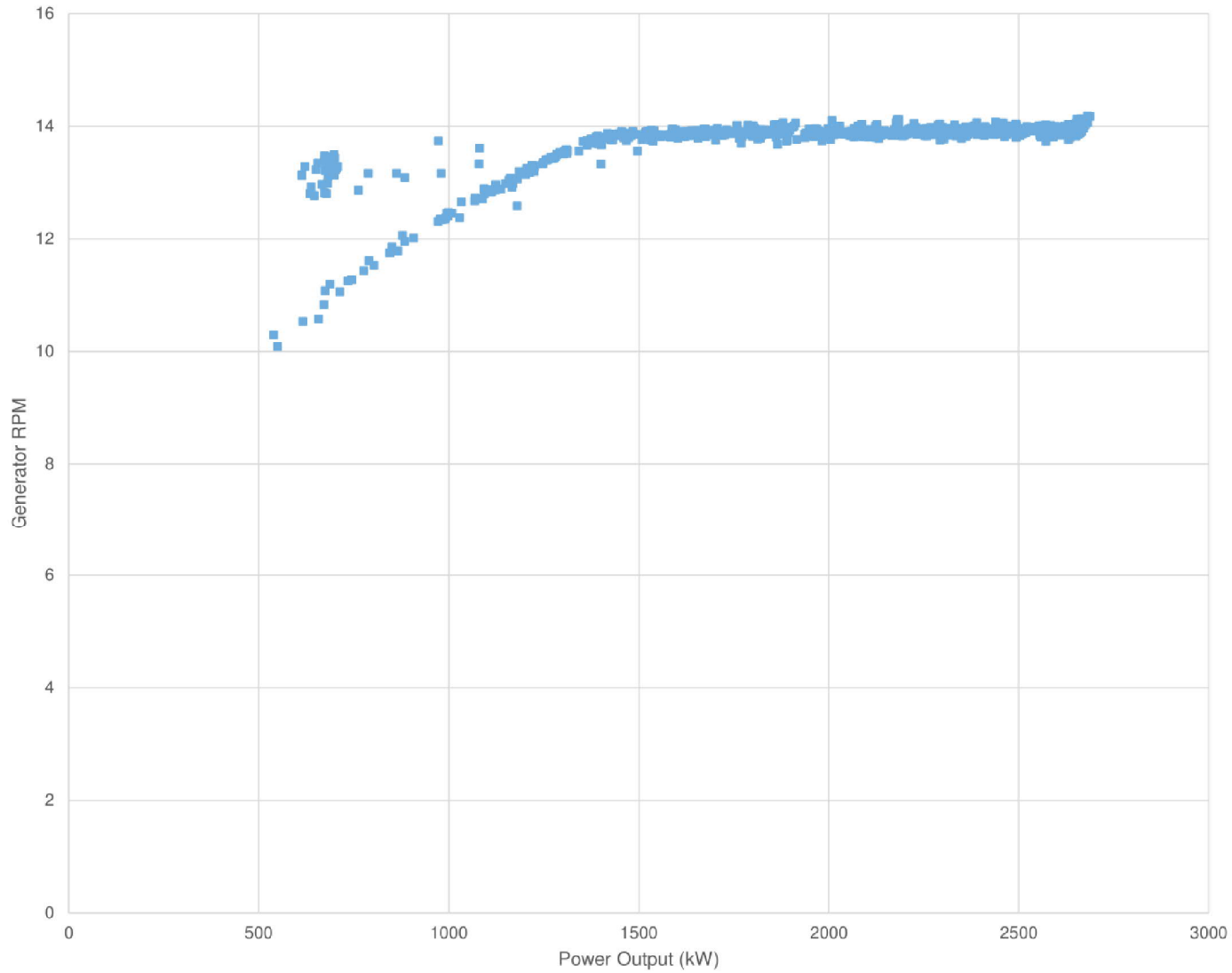




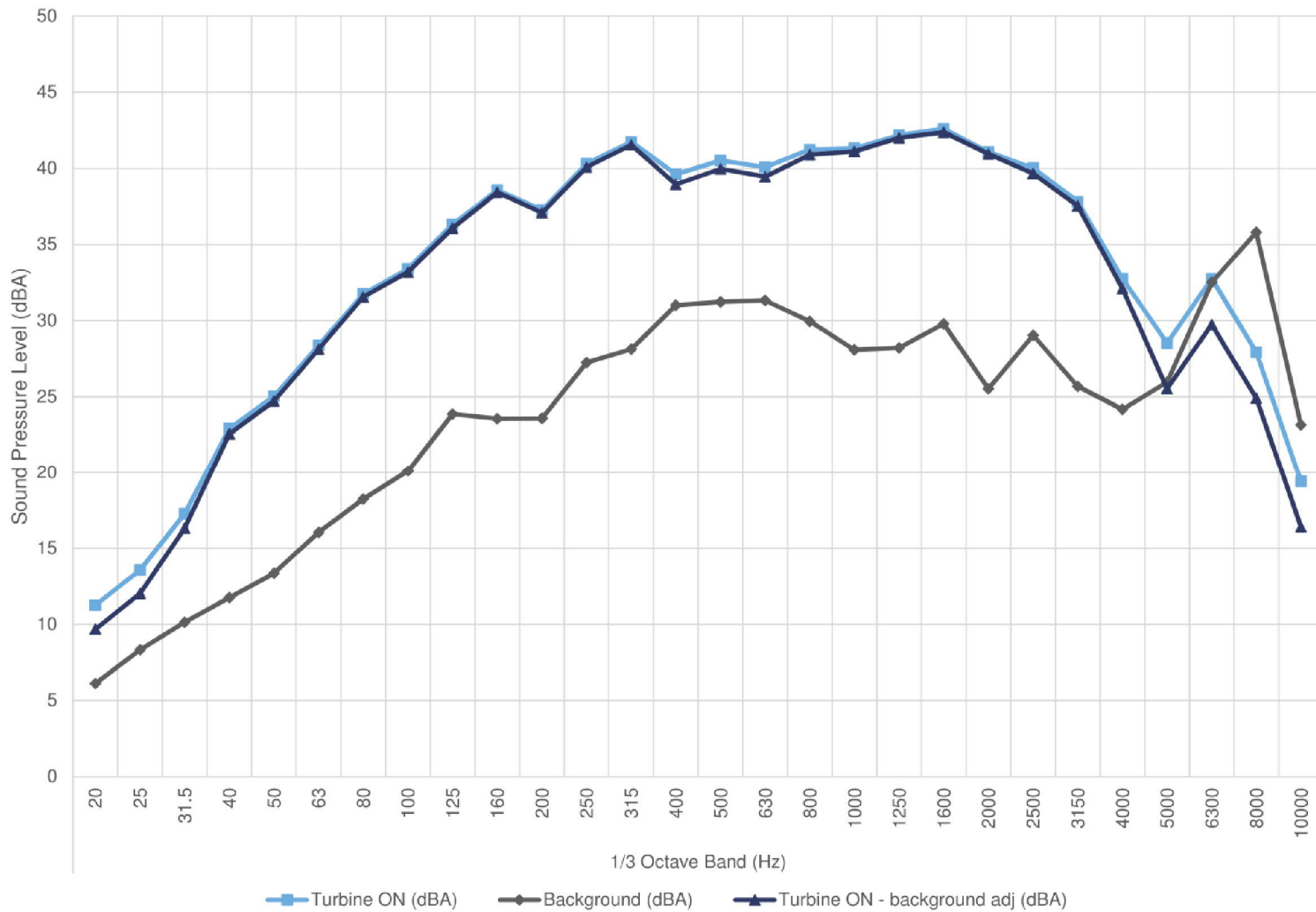
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		Figure Title	Figure C.02
		Plot of measured total noise vs electrical power output	



	08020.04.T05.RP3	Project Name	Figure C.03
	Scale: NTS Drawn by: ADT Reviewed by: AM Date: Sept 8, 2017 Revision: 1	Figure Title Plot of power curve relative to nacelle anemometer and 10m anemometer	



8.0 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

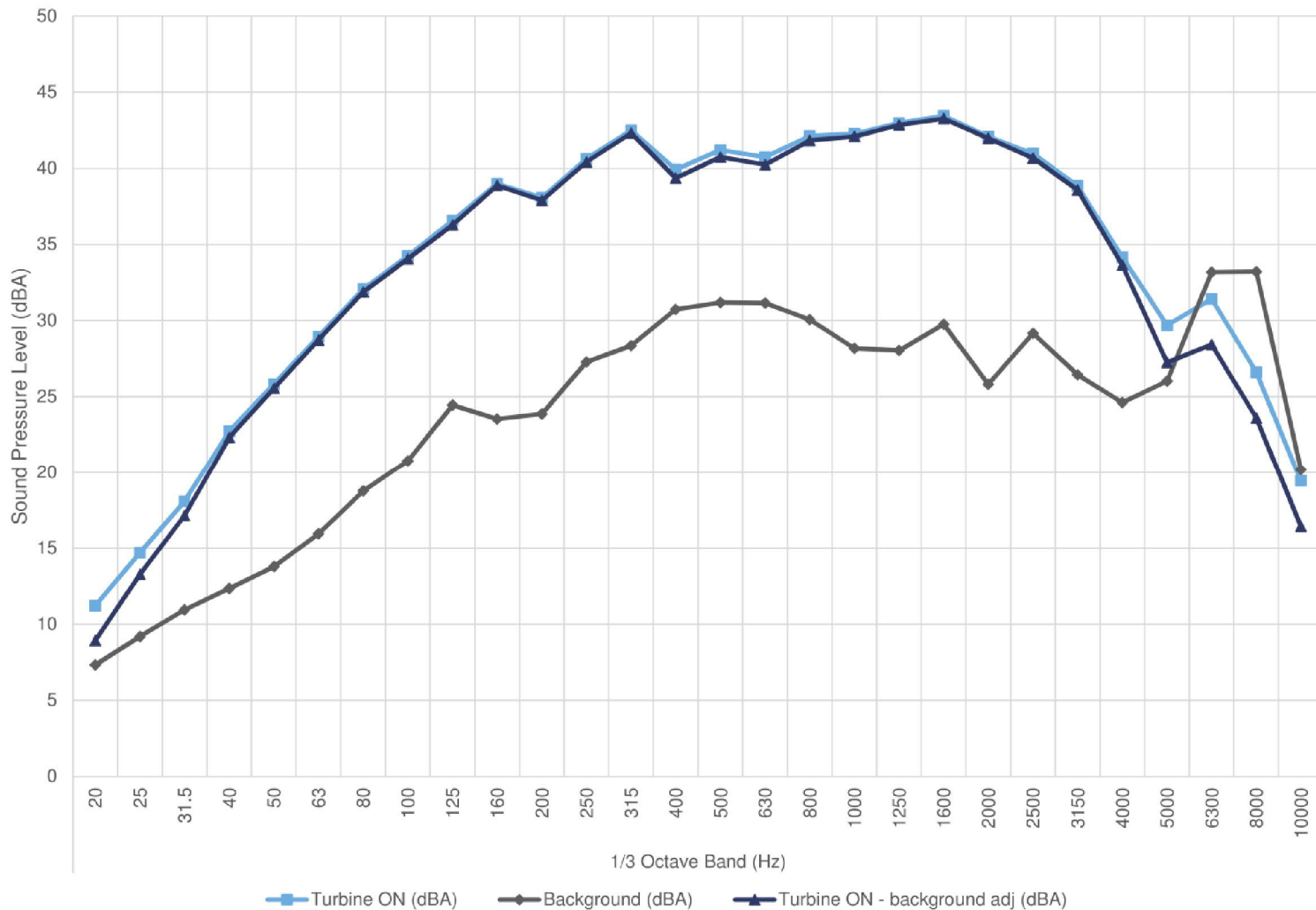
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 8.0 m/s

Figure C.05

8.5 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
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 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

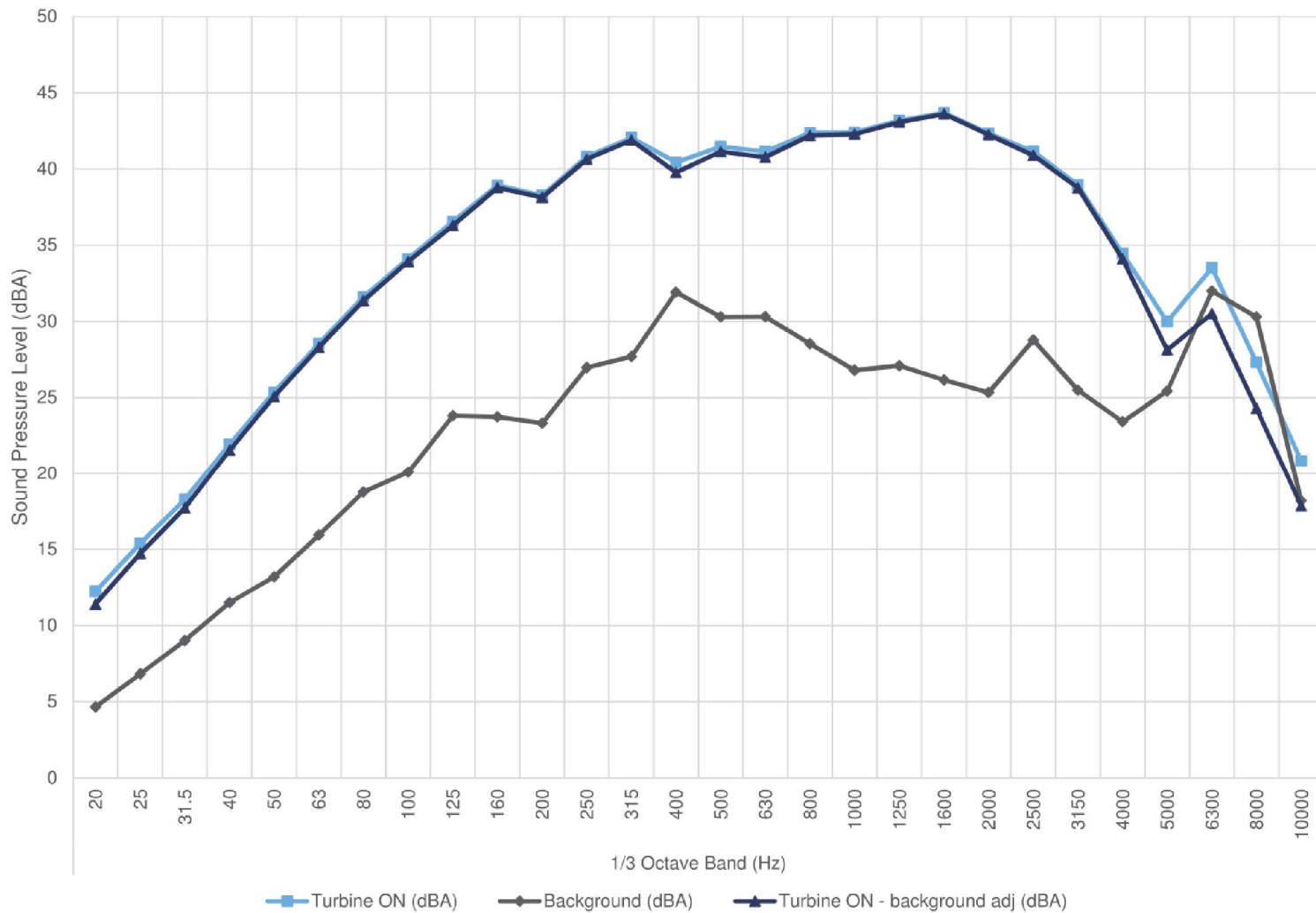
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 8.5 m/s

Figure C.06

9.0 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

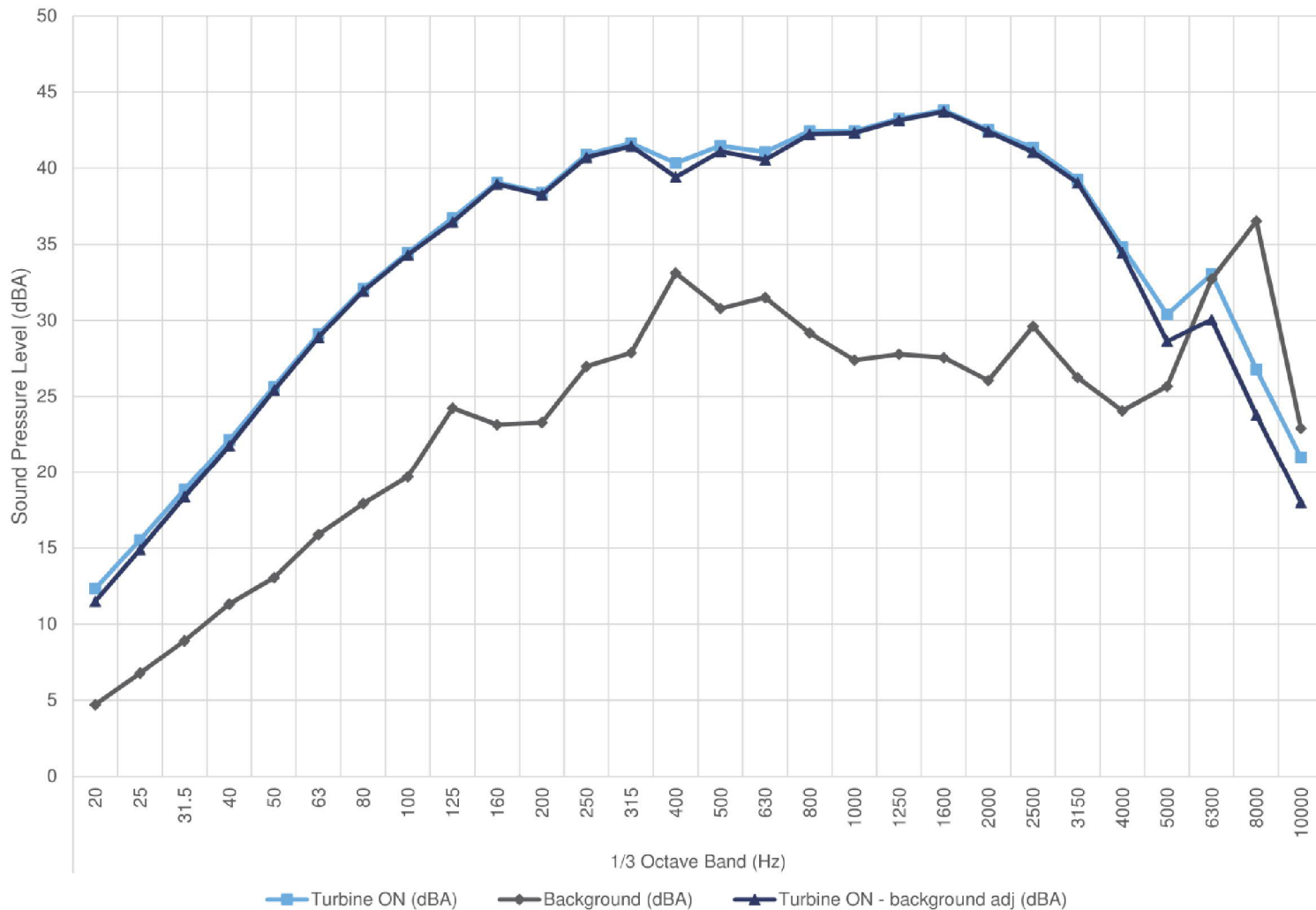
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 9.0 m/s

Figure C.07

9.5 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

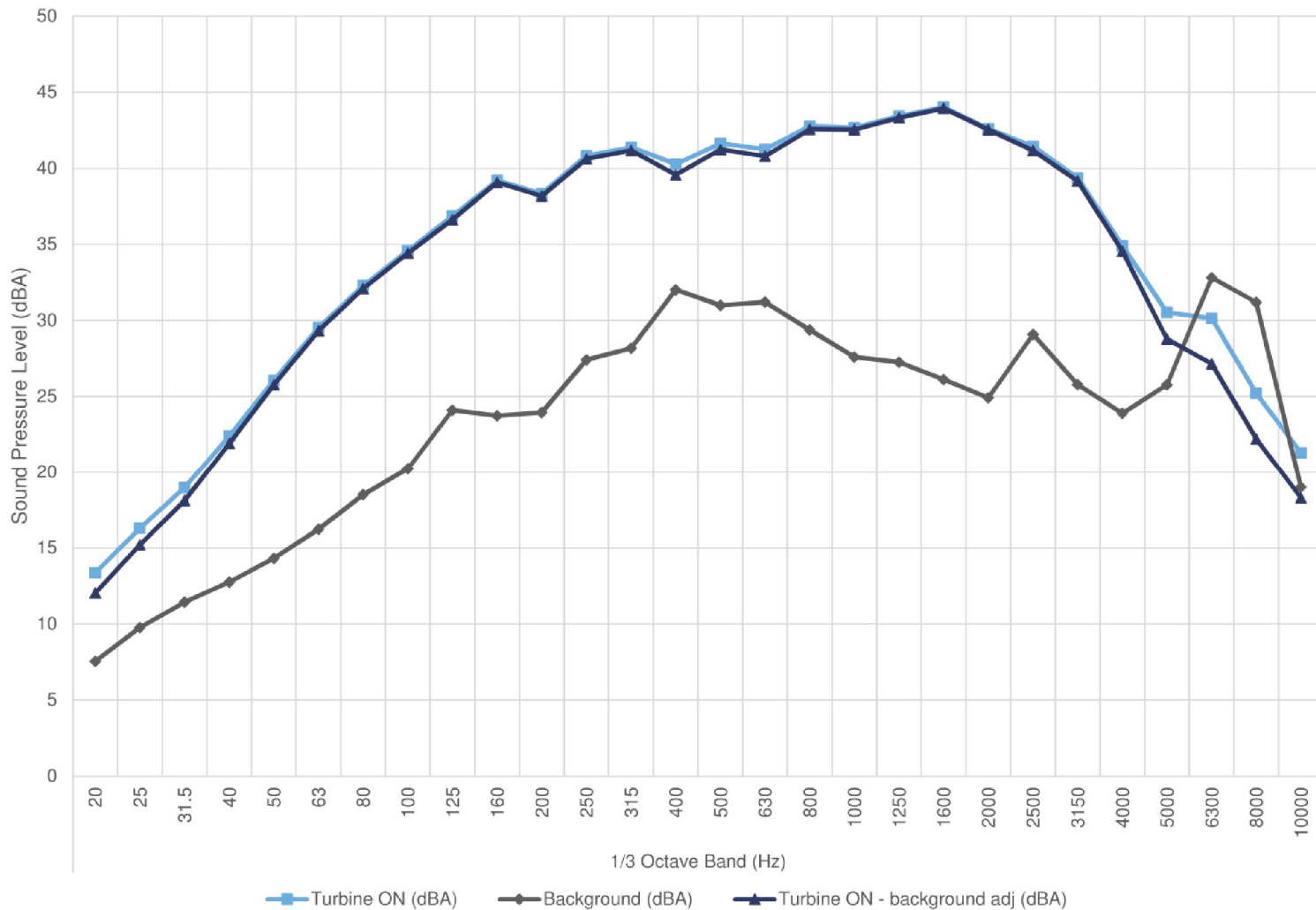
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 9.5 m/s

Figure C.08

10.0 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

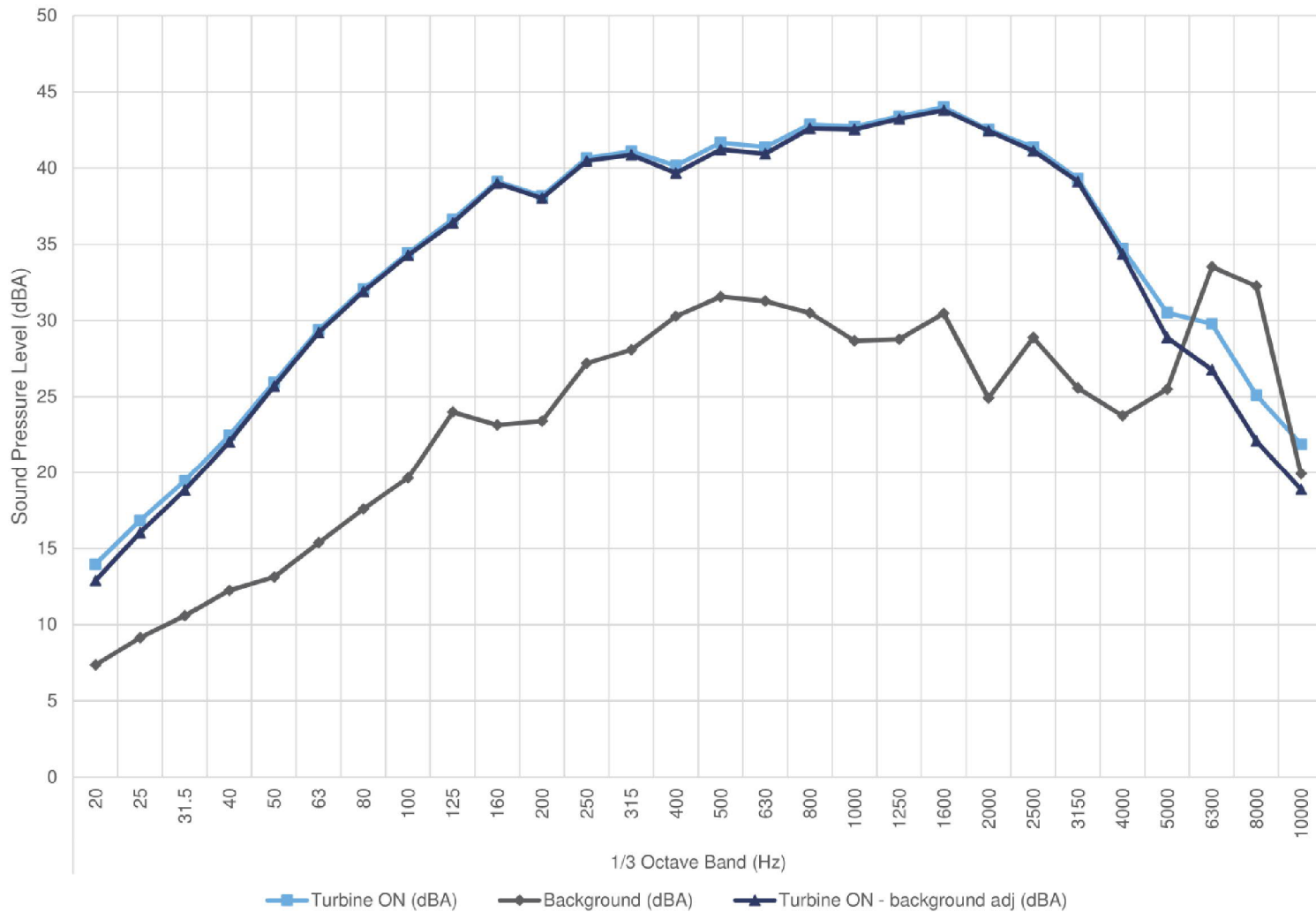
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 10.0 m/s

Figure C.09

10.5 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

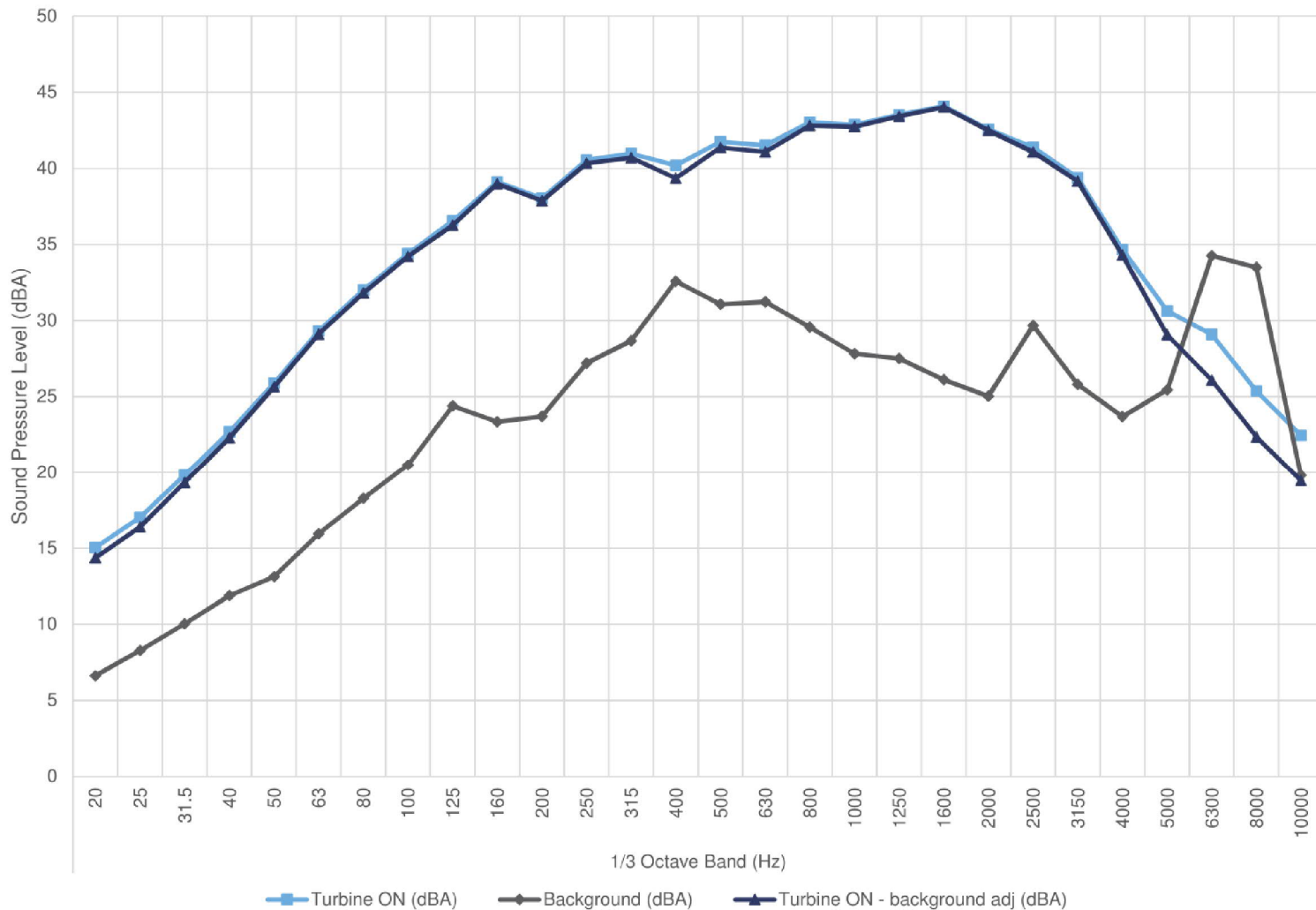
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 10.5 m/s

Figure C.10

11.0 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

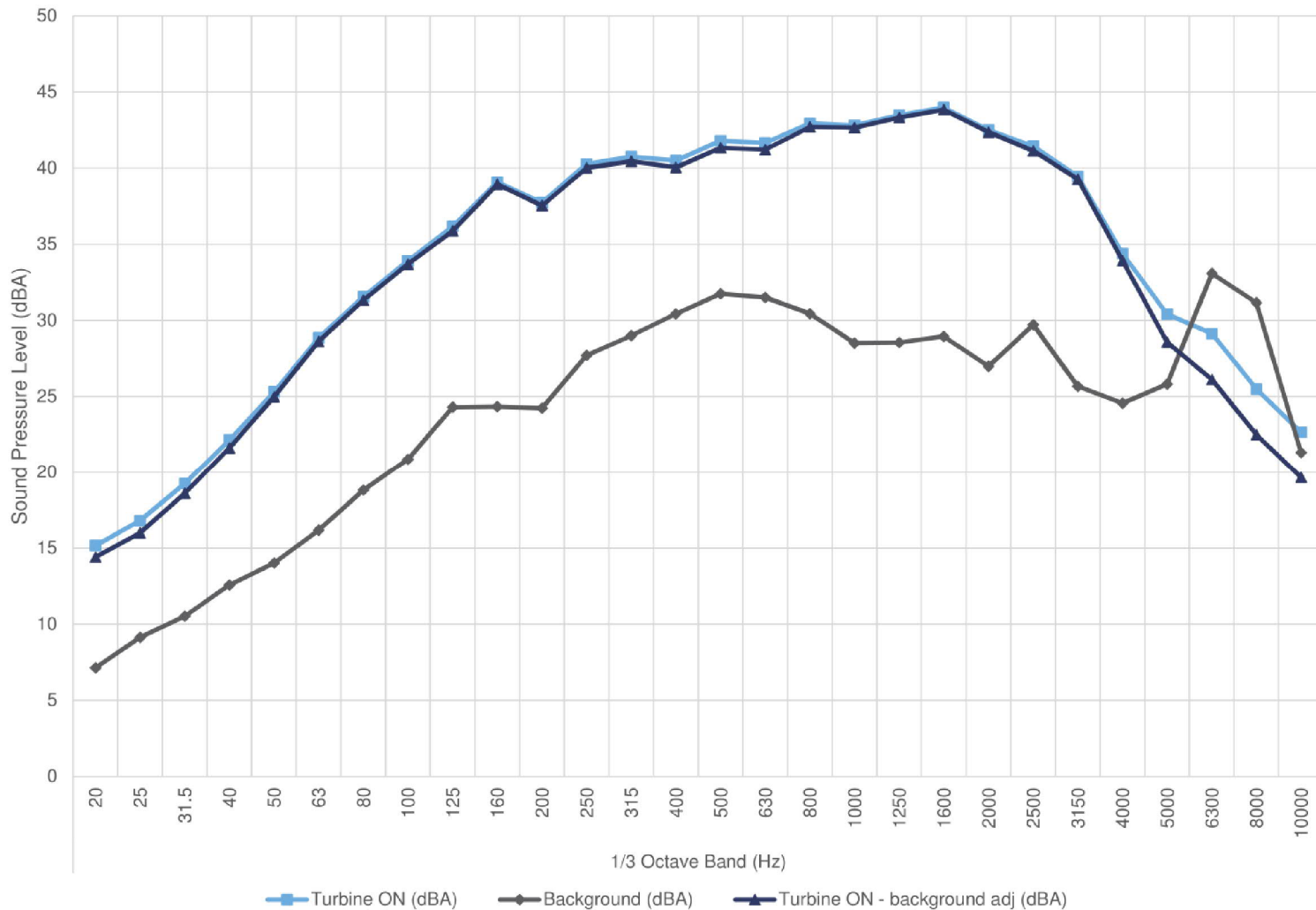
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 11.0 m/s

Figure C.11

11.5 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

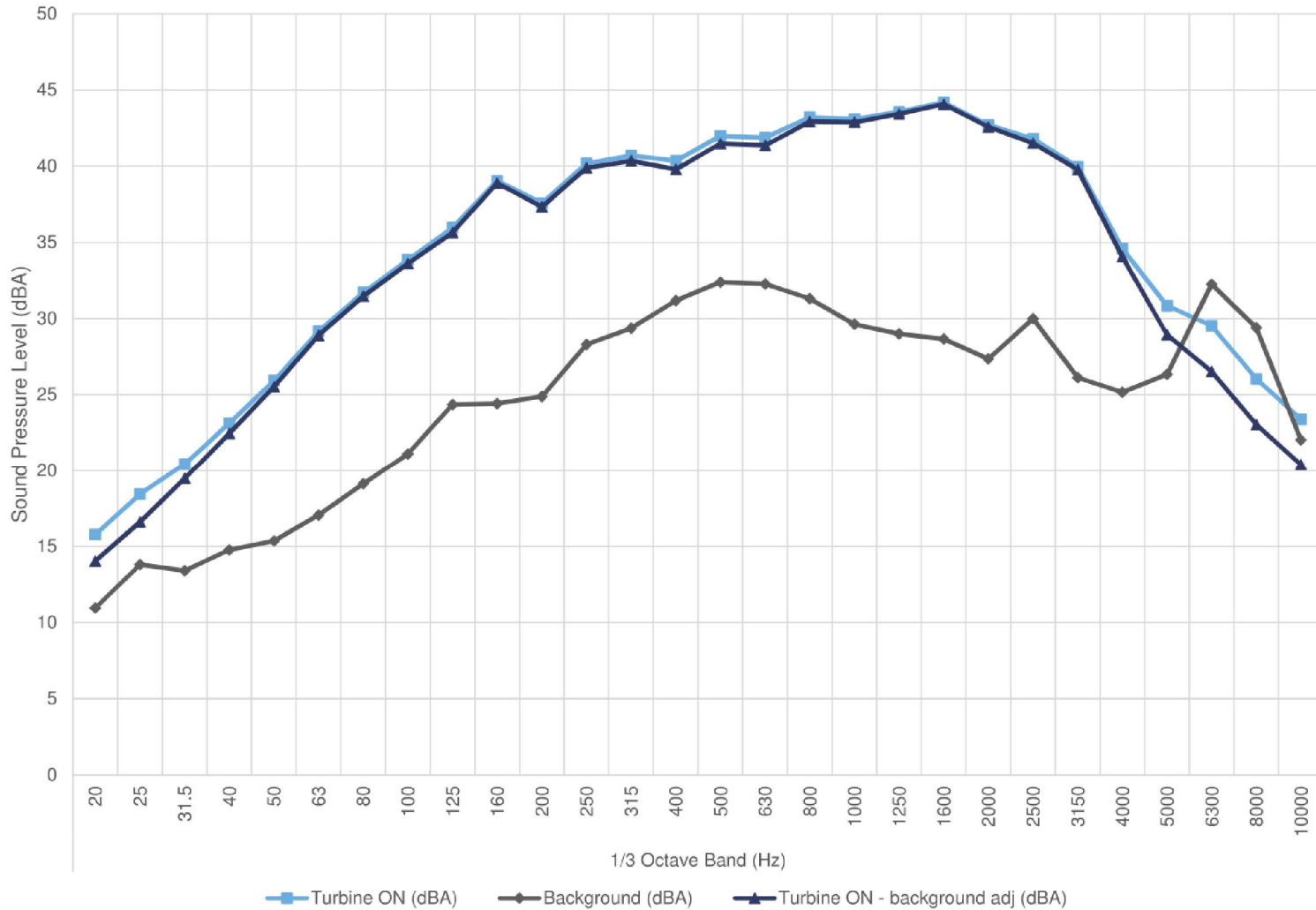
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 11.5 m/s

Figure C.12

12.0 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

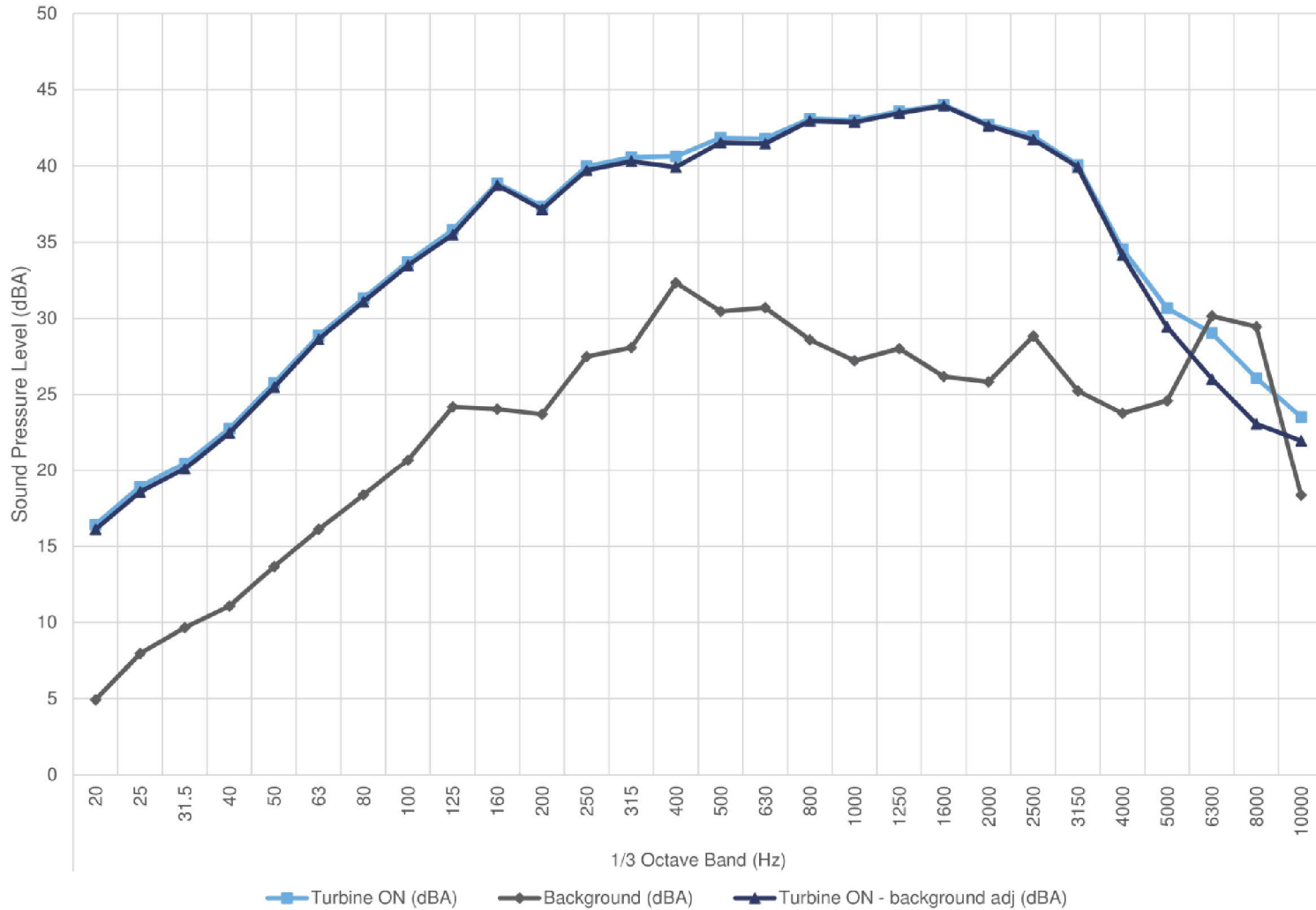
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 12.0 m/s

Figure C.13

12.5 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

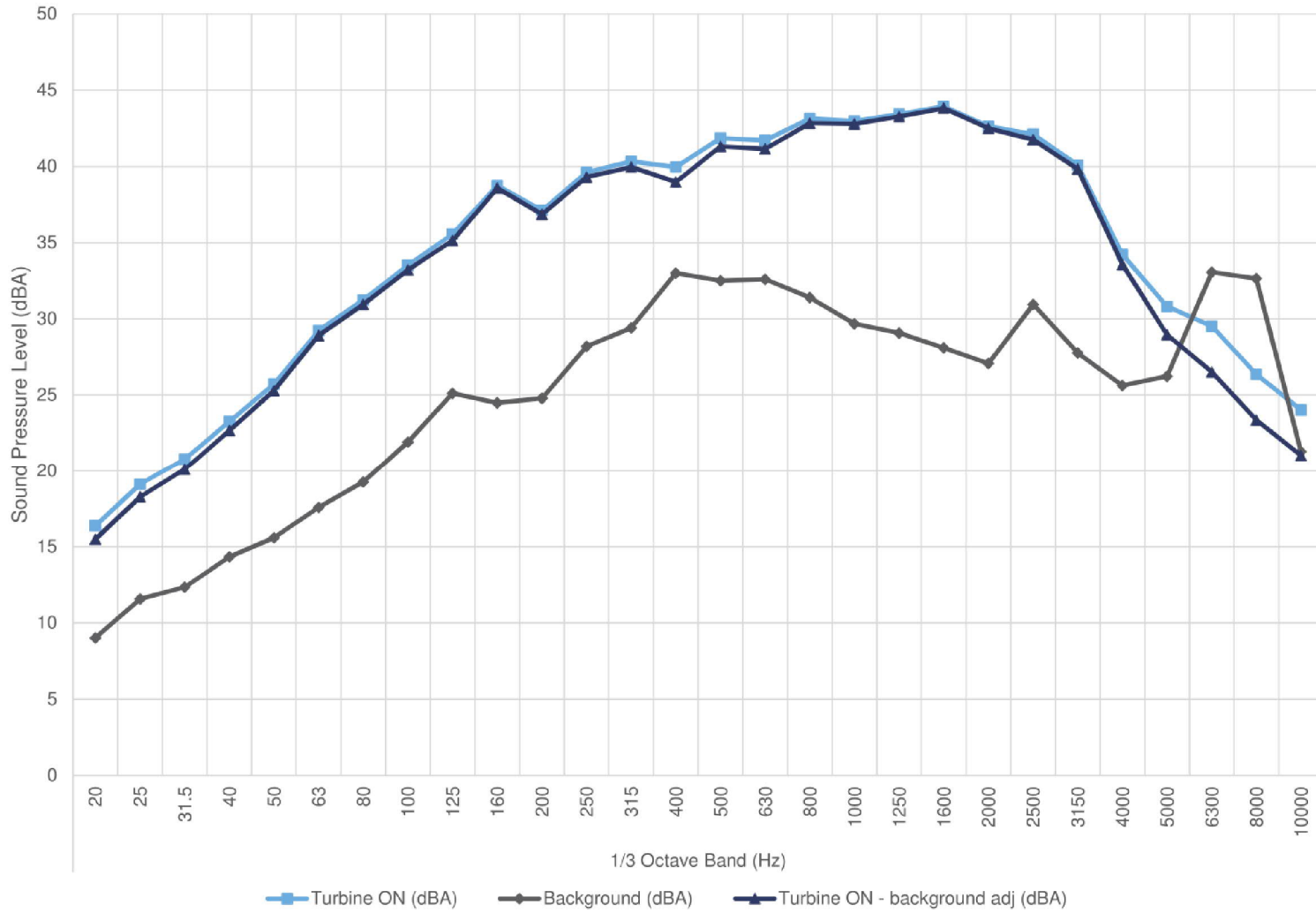
McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 12.5 m/s

Figure C.14

13.0 m/s - Hub Height



08020.04.T05.RP3

Scale: NTS
 Drawn by: ADT
 Reviewed by: AM
 Date: Sept 8, 2017
 Revision: 1

Project Name

McLeans Mountain Wind Farm - Turbine T05 - IEC61400-11 Edition 3.0

Figure Title

Plot of sound pressure spectrum at 1/3 Octave at 13.0 m/s

Figure C.15

1/3 Octave values marked with brackets [] denote less than 3 dB difference between Turbine ON and Background

Overall levels marked with an asterisk * denote 3 to 6 dB difference between Turbine ON and Background, while Overall values with less than 3 dB difference between Turbine ON and Background are not reported

Wind Bin (m/s)	Parameter	1/3 Octave Band (Hz)																			Overall									
		20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250		1600	2000	2500	3150	4000	5000	6300	8000	10000
8.0	Turbine ON (dBA)	11.3	13.6	17.3	22.9	25.0	28.4	31.8	33.4	36.3	38.6	37.3	40.3	41.7	39.6	40.5	40.1	41.2	41.3	42.2	42.6	41.1	40.0	37.8	32.8	28.5	32.8	27.9	19.4	52.4
	Background (dBA)	6.1	8.3	10.1	11.8	13.4	16.0	18.2	20.1	23.9	23.6	27.3	28.1	31.0	31.2	31.3	29.9	28.1	28.2	29.8	25.5	29.0	25.7	24.2	26.0	32.5	35.8	23.1	42.4	
	Turbine ON - background adj (dBA)	9.7	12.0	16.3	22.6	24.7	28.1	31.6	33.2	36.1	38.4	37.1	40.1	41.5	39.0	40.0	39.4	40.9	41.1	42.0	42.4	41.0	39.7	37.5	32.1	[25.5]	[29.8]	[24.9]	[16.4]	52.1
	Signal to noise (dB)	5.1	5.2	7.1	11.2	11.7	12.4	13.5	13.3	12.4	15.0	13.7	13.1	13.6	8.6	9.3	8.7	11.3	13.2	14.0	12.8	15.5	11.0	12.1	8.6	2.6	0.2	-7.9	-3.7	10.0
	Uncertainty (dB)	1.7	1.6	1.1	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.9	0.8	0.9	1.8	2.2	2.7	3.4	0.8
8.5	PWL (dBA)	59.9	62.3	66.5	72.8	74.9	78.3	81.8	83.4	86.3	88.6	87.3	90.3	91.7	89.2	90.2	89.7	91.1	91.3	92.2	92.6	91.2	89.9	87.7	82.3	[75.7]	[80]	[75.1]	[66.6]	102.3
	Turbine ON (dBA)	11.2	14.7	18.1	22.7	25.8	29.0	32.1	34.2	36.6	39.0	38.1	40.6	42.5	39.9	41.2	40.7	42.1	42.3	43.0	43.4	42.1	41.0	38.8	34.2	29.7	31.4	26.6	19.4	53.1
	Background (dBA)	7.3	9.2	10.9	12.4	13.8	16.0	18.8	20.8	24.5	23.5	23.9	27.3	28.4	30.7	31.2	31.2	30.1	28.2	28.0	29.8	25.8	29.2	26.4	24.6	26.0	33.2	33.2	20.2	42.0
	Turbine ON - background adj (dBA)	8.9	13.3	17.1	22.3	25.6	28.7	31.9	34.0	36.3	38.9	37.9	40.4	42.3	39.4	40.7	40.2	41.8	42.1	42.8	43.3	42.0	40.7	38.6	33.6	27.2	[28.4]	[23.6]	[16.4]	52.9
	Signal to noise (dB)	3.9	5.5	7.1	10.4	12.0	13.0	13.3	13.5	12.1	15.5	14.2	13.3	14.1	9.2	10.0	9.6	12.1	14.1	15.0	13.7	16.3	11.8	12.4	9.5	3.7	-1.8	-6.6	-0.7	11.1
9.0	Uncertainty (dB)	2.0	1.6	1.1	0.9	0.9	0.9	0.8	0.9	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.5	2.0	2.3	3.2	0.8	
	PWL (dBA)	59.1	63.5	67.3	72.5	75.8	78.9	82.1	84.3	86.5	89.1	88.1	90.6	92.5	89.6	91.0	90.4	92.0	92.3	93.0	93.5	92.2	90.9	88.8	83.9	77.5	[78.6]	[73.8]	[66.6]	103.1
	Turbine ON (dBA)	12.2	15.4	18.3	22.0	25.3	28.5	31.6	34.1	36.5	38.9	38.3	40.8	42.1	40.4	41.5	41.1	42.4	42.4	43.2	43.7	42.3	41.2	39.0	34.5	30.0	33.5	27.3	20.9	53.3
	Background (dBA)	4.7	6.8	9.0	11.5	13.2	15.9	18.8	20.1	23.8	23.7	23.3	27.0	27.7	31.9	30.3	30.3	28.5	26.8	27.1	26.2	25.3	28.8	25.5	23.4	25.4	32.0	30.3	18.2	41.0
	Turbine ON - background adj (dBA)	11.4	14.7	17.7	21.5	25.1	28.3	31.4	33.9	36.3	38.8	38.1	40.6	41.9	39.8	41.1	40.8	42.2	42.3	43.1	43.6	42.2	40.9	38.8	34.1	28.1	[30.5]	[24.3]	[17.9]	53.1
9.5	Signal to noise (dB)	7.6	8.6	9.2	10.4	12.2	12.6	12.8	14.0	12.7	15.2	15.0	13.8	14.4	8.5	11.2	10.8	13.8	15.6	16.1	17.5	17.0	12.4	13.5	11.0	4.6	1.5	-3.0	2.7	12.3
	Uncertainty (dB)	1.3	1.2	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.3	2.1	2.1	3.2	0.7
	PWL (dBA)	61.6	64.9	67.9	71.7	75.3	78.5	81.6	84.1	86.5	89.0	88.3	90.8	92.1	90.0	91.3	91.0	92.4	92.5	93.3	93.8	92.5	91.1	89.0	84.3	78.3	[80.7]	[74.5]	[68.1]	103.3
	Turbine ON (dBA)	12.3	15.5	18.8	22.1	25.7	29.1	32.1	34.5	36.7	39.1	38.4	40.9	41.6	40.3	41.5	41.1	42.4	42.4	43.3	43.8	42.5	41.4	39.3	34.8	30.4	33.0	26.8	21.0	53.4
	Background (dBA)	4.7	6.8	8.9	11.3	13.1	15.9	17.9	19.7	24.2	23.2	23.3	27.0	27.9	33.1	30.8	31.5	29.2	27.4	27.8	27.6	26.1	29.6	26.3	24.1	25.7	32.7	36.5	22.9	42.6
10.0	Turbine ON - background adj (dBA)	11.5	14.9	18.4	21.8	25.4	28.9	31.9	34.3	36.5	38.9	38.3	40.7	41.5	39.4	41.1	40.6	42.2	42.3	43.1	43.7	42.4	41.1	39.0	34.4	28.6	[30]	[23.8]	[18]	53.1
	Signal to noise (dB)	7.6	8.7	9.9	10.8	12.6	13.2	14.2	14.8	12.5	15.9	15.1	13.9	13.8	7.2	10.7	9.6	13.3	15.0	15.5	16.3	16.4	11.7	13.0	10.8	4.7	0.3	-9.7	-1.9	10.8
	Uncertainty (dB)	1.3	1.2	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.9	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.3	2.2	2.7	3.4	0.8
	PWL (dBA)	61.7	65.1	68.6	72.0	75.6	79.1	82.1	84.5	86.7	89.2	88.5	90.9	91.7	89.6	91.3	90.8	92.4	92.5	93.3	93.9	92.6	91.3	89.2	84.7	78.8	[80.3]	[74]	[68.2]	103.3
	Turbine ON (dBA)	13.4	16.3	19.0	22.4	26.1	29.5	32.3	34.6	36.9	39.2	38.3	40.8	41.4	40.3	41.6	41.3	42.8	42.7	43.4	44.0	42.6	41.4	39.4	34.9	30.5	30.2	25.2	21.3	53.5
10.5	Background (dBA)	7.6	9.8	11.4	12.8	14.3	16.2	18.5	20.2	24.1	23.7	24.0	27.4	28.2	32.0	31.0	31.2	29.4	27.6	27.3	26.1	24.9	29.1	25.8	23.9	25.8	32.8	31.2	19.0	41.5
	Turbine ON - background adj (dBA)	12.0	15.2	18.1	21.9	25.8	29.3	32.1	34.4	36.6	39.1	38.2	40.6	41.2	39.6	41.2	40.8	42.6	42.5	43.3	44.0	42.5	41.2	39.2	34.6	28.8	[27.2]	[22.2]	[18.3]	53.2
	Signal to noise (dB)	5.8	6.5	7.5	9.6	11.7	13.3	13.8	14.4	12.8	15.5	14.4	13.4	13.2	8.3	10.6	10.1	13.4	15.1	16.2	17.9	17.7	12.3	13.6	11.0	4.8	-2.7	-6.0	2.3	11.9
	Uncertainty (dB)	1.5	1.4	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.3	1.9	2.1	3.3	0.8
	PWL (dBA)	62.3	65.4	68.3	72.1	76.0	79.5	82.3	84.6	86.8	89.3	88.4	90.8	91.4	89.8	91.4	91.0	92.8	92.7	93.5	94.2	92.7	91.4	89.4	84.8	79.0	[77.4]	[72.4]	[68.5]	103.4
10.5	Turbine ON (dBA)	14.0	16.8	19.4	22.5	25.9	29.4	32.1	34.4	36.6	39.1	38.2	40.7	41.1	40.2	41.7	41.4	42.9	42.7	43.4	44.0	42.5	41.4	39.3	34.7	30.5	29.8	25.1	21.9	53.4
	Background (dBA)	7.4	9.1	10.6	12.2	13.1	15.4	17.6	19.6	24.0	23.1	23.4	27.2	28.1	30.3	31.6	31.3	30.5	28.7	28.8	30.5	24.9	28.9	25.6	23.8	25.5	33.5	32.3	19.9	42.0
	Turbine ON - background adj (dBA)	12.9	16.0	18.8	22.0	25.7	29.2	31.9	34.3	36.4	39.0	38.0	40.5	40.9	39.7	41.2	40.9	42.6	42.5	43.2	43.8	42.4	41.1	39.1	34.4	28.9	[26.8]	[22.1]	[18.9]	53.2
	Signal to noise (dB)	6.6	7.7	8.8	10.2	12.8	14.0	14.5	14.8	12.6	16.0	14.8	13.5	13.0	9.9	10.1	10.1	12.4	14.0	14.6	13.5	17.6	12.5	13.7	11.0	5.0	-3.7	-7.2	2.0	11.4
	Uncertainty (dB)	1.4	1.3	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	1.2	1.9	2.2	3.2	0.7
PWL (dBA)	63.1	66.2	69.0	72.2	75.9	79.4	82.1	84.5	86.6	89.2	88.2	90.7	91.1	89.9	91.4	91.1	92.8	92.7	93.4	94.0	92.6	91.3	89.3	84.6	79.1	[77]	[72.3]	[69.1]	103.4	

1/3 Octave values marked with brackets [] denote less than 3 dB difference between Turbine ON and Background

Overall levels marked with an asterisk * denote 3 to 6 dB difference between Turbine ON and Background, while Overall values with less than 3 dB difference between Turbine ON and Background are not reported

Wind Bin (m/s)	Parameter	1/3 Octave Band (Hz)																	Overall											
		20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800		1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
11.0	Turbine ON (dBA)	15.0	17.0	19.8	22.7	25.9	29.3	32.0	34.4	36.5	39.1	38.0	40.5	41.0	40.2	41.7	41.5	43.0	42.9	43.5	44.1	42.6	41.4	39.4	34.7	30.6	29.1	25.4	22.5	53.5
	Background (dBA)	6.6	8.3	10.0	11.9	13.1	15.9	18.3	20.5	24.4	23.3	23.7	27.2	28.7	32.6	31.1	31.2	29.6	27.8	27.5	26.1	25.0	29.7	25.8	23.7	25.5	34.3	33.5	19.8	42.1
	Turbine ON - background adj (dBA)	14.4	16.4	19.3	22.3	25.7	29.1	31.8	34.2	36.3	39.0	37.9	40.3	40.7	39.4	41.4	41.1	42.8	42.7	43.4	44.0	42.5	41.1	39.2	34.3	29.1	[26.1]	[22.4]	[19.5]	53.2
	Signal to noise (dB)	8.4	8.7	9.8	10.8	12.8	13.4	13.7	13.9	12.1	15.8	14.3	13.3	12.3	7.6	10.7	10.3	13.5	15.0	16.0	18.0	17.5	11.7	13.5	11.0	5.2	-5.2	-8.1	2.7	11.3
	Uncertainty (dB)	1.2	1.1	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.8	0.7	0.8	1.1	1.8	2.2	3.0	0.7
11.5	PWL (dBA)	64.6	66.6	69.5	72.5	75.9	79.3	82.0	84.4	86.5	89.2	88.1	90.5	90.9	89.6	91.6	91.3	93.0	92.9	93.6	94.2	92.7	91.3	89.4	84.5	79.3	[76.3]	[72.6]	[69.7]	103.4
	Turbine ON (dBA)	15.2	16.8	19.2	22.1	25.3	28.9	31.6	33.9	36.2	39.1	37.7	40.3	40.8	40.5	41.8	41.7	42.9	42.8	43.5	44.0	42.5	41.4	39.5	34.4	30.4	29.1	25.5	22.7	53.4
	Background (dBA)	7.1	9.1	10.5	12.6	14.0	16.2	18.8	20.9	24.3	24.3	24.2	27.7	29.0	30.4	31.7	31.5	30.5	28.5	28.6	29.0	27.0	29.7	25.7	24.6	25.8	33.1	31.2	21.3	42.0
	Turbine ON - background adj (dBA)	14.4	16.0	18.6	21.6	25.0	28.6	31.3	33.7	35.9	38.9	37.5	40.0	40.5	40.0	41.3	41.2	42.7	42.6	43.3	43.8	42.4	41.1	39.3	33.9	28.6	[26.1]	[22.5]	[19.7]	53.1
	Signal to noise (dB)	8.0	7.7	8.7	9.6	11.3	12.7	12.8	13.1	11.9	14.7	13.5	12.6	11.8	10.1	10.0	10.1	12.5	14.3	14.9	15.0	15.5	11.7	13.8	9.8	4.6	-4.0	-5.7	1.3	11.4
12.0	Uncertainty (dB)	1.4	1.3	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.3	1.9	2.2	3.3	0.7
	PWL (dBA)	64.6	66.2	68.8	71.8	75.2	78.8	81.5	83.9	86.1	89.1	87.7	90.2	90.7	90.3	91.5	91.4	92.9	92.9	93.5	94.0	92.6	91.3	89.5	84.1	78.8	[76.3]	[72.7]	[69.9]	103.3
	Turbine ON (dBA)	15.8	18.4	20.4	23.1	25.9	29.2	31.7	33.9	36.0	39.0	37.6	40.2	40.7	40.4	42.0	41.9	43.2	43.1	43.6	44.2	42.7	41.8	40.0	34.6	30.8	29.5	26.0	23.4	53.6
	Background (dBA)	11.0	13.8	13.4	14.8	15.4	17.1	19.1	21.1	24.4	24.4	24.9	28.3	29.4	31.2	32.4	32.3	31.3	29.6	29.0	28.7	27.4	30.0	26.1	25.2	26.4	32.3	29.4	22.1	42.2
	Turbine ON - background adj (dBA)	14.0	16.6	19.5	22.5	25.5	28.9	31.5	33.6	35.7	38.9	37.3	39.9	40.4	39.8	41.5	41.4	42.9	42.9	43.4	44.1	42.6	41.5	39.8	34.1	28.9	[26.5]	[23]	[20.4]	53.3
12.5	Signal to noise (dB)	4.8	4.6	7.0	8.4	10.6	12.1	12.6	12.7	11.6	14.6	12.7	11.9	11.3	9.2	9.6	9.6	11.9	13.5	14.6	15.5	15.3	11.8	13.8	9.4	4.5	-2.7	-3.4	1.3	11.3
	Uncertainty (dB)	2.2	2.2	1.4	1.1	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.3	1.9	2.2	3.4	0.7
	PWL (dBA)	64.2	66.8	69.7	72.7	75.7	79.1	81.7	83.8	85.9	89.1	87.5	90.1	90.6	90.0	91.7	91.6	93.1	93.1	93.6	94.3	92.8	91.7	90.0	84.3	79.1	[76.7]	[73.3]	[70.6]	103.5
	Turbine ON (dBA)	16.4	18.9	20.5	22.8	25.8	28.9	31.3	33.7	35.8	38.9	37.4	40.0	40.6	40.6	41.9	41.8	43.1	43.0	43.6	44.0	42.7	42.0	40.1	34.5	30.7	29.0	26.1	23.5	53.5
	Background (dBA)	4.9	8.0	9.7	11.1	13.7	16.1	18.4	20.7	24.2	24.1	23.7	27.5	28.1	32.3	30.5	30.7	28.6	27.2	28.0	26.2	25.8	28.9	25.2	23.8	24.6	30.2	29.5	18.4	41.0
13.0	Turbine ON - background adj (dBA)	16.1	18.6	20.1	22.5	25.5	28.6	31.1	33.5	35.5	38.7	37.2	39.7	40.3	39.9	41.5	41.5	43.0	42.9	43.5	44.0	42.6	41.7	39.9	34.2	29.4	[26]	[23.1]	22.0	53.3
	Signal to noise (dB)	11.5	11.0	10.8	11.7	12.1	12.8	13.0	13.0	11.6	14.8	13.6	12.5	12.5	8.3	11.4	11.1	14.5	15.8	15.6	17.8	16.9	13.1	14.8	10.8	6.1	-1.1	-3.4	5.2	12.5
	Uncertainty (dB)	1.5	1.4	1.1	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.7	0.7	0.7	0.9	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.9	1.1	2.0	2.9	2.3	0.7
	PWL (dBA)	66.3	68.8	70.3	72.7	75.7	78.8	81.3	83.7	85.7	88.9	87.4	89.9	90.5	90.1	91.7	91.7	93.2	93.1	93.7	94.2	92.8	92.0	90.1	84.4	79.6	[76.2]	[73.3]	72.2	103.5
	Turbine ON (dBA)	16.4	19.1	20.8	23.3	25.7	29.2	31.2	33.5	35.6	38.7	37.1	39.6	40.3	40.0	41.9	41.7	43.1	43.0	43.4	43.9	42.6	42.1	40.1	34.2	30.8	29.5	26.4	24.0	53.4
13.0	Background (dBA)	9.0	11.6	12.4	14.3	15.6	17.6	19.3	21.9	25.1	24.5	24.8	28.2	29.4	33.0	32.5	32.6	31.4	29.7	29.1	28.1	27.1	30.9	27.8	25.6	26.2	33.1	32.6	21.3	42.9
	Turbine ON - background adj (dBA)	15.5	18.3	20.1	22.7	25.3	28.9	31.0	33.2	35.1	38.6	36.9	39.3	40.0	39.0	41.3	41.1	42.8	42.8	43.3	43.8	42.5	41.8	39.8	33.6	29.0	[26.5]	[23.4]	[21]	53.1
	Signal to noise (dB)	7.4	7.5	8.4	8.9	10.1	11.6	12.0	11.6	10.4	14.3	12.3	11.4	10.9	7.0	9.3	9.1	11.7	13.3	14.4	15.8	15.5	11.2	12.3	8.6	4.6	-3.6	-6.3	2.7	10.5
	Uncertainty (dB)	1.6	1.6	1.2	1.0	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.8	0.8	0.9	1.3	2.0	2.5	3.2	0.7
	PWL (dBA)	65.7	68.5	70.3	72.9	75.5	79.1	81.2	83.4	85.4	88.8	87.1	89.5	90.2	89.2	91.5	91.3	93.0	93.0	93.5	94.0	92.7	92.0	90.0	83.8	79.2	[76.7]	[73.6]	[71.2]	103.3

Table C.02 Detailed apparent sound power level data at 10m height
 Project: McLean's Mountain Wind Farm - Turbine T05 - IEC 61400-11 Measurement
 Report ID: 08020.04.T05.RP3

1/3 Octave values marked with brackets [] denote less than 3 dB difference between Turbine ON and Background

Overall levels marked with an asterisk * denote 3 to 6 dB difference between Turbine ON and Background, while Overall values with less than 3 dB difference between Turbine ON and Background are not reported

Wind Bin (m/s)	Parameter	1/3 Octave Band (Hz)																	Overall											
		20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800		1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
5.0	Turbine ON (dBA)	9.9	12.3	16.1	22.5	23.8	27.1	30.3	31.9	37.4	36.5	35.5	41.0	38.8	37.4	38.5	38.1	39.0	39.6	41.2	41.0	39.1	38.3	35.8	30.7	27.1	31.5	26.7	18.7	50.8
	Background (dBA)	7.4	9.4	11.6	12.8	13.5	16.0	18.2	20.3	23.9	23.5	23.5	27.1	28.1	31.7	31.7	30.1	28.5	28.7	28.7	26.2	29.2	25.9	24.4	26.1	32.8	32.8	19.4	42.0	
	Turbine ON - background adj (dBA)	[6.9]	[9.3]	14.2	22.0	23.4	26.7	30.0	31.6	37.2	36.2	35.2	40.8	38.4	36.0	37.6	37.0	38.5	39.3	41.0	40.7	38.9	37.7	35.3	29.5	[24.1]	[28.5]	[23.7]	[15.7]	50.4
	Signal to noise (dB)	2.5	2.9	4.5	9.7	10.3	11.1	12.0	11.6	13.5	13.0	12.0	13.8	10.7	5.7	7.4	6.4	8.9	11.1	12.6	12.3	12.9	9.1	9.9	6.3	1.0	-1.3	-6.1	-0.7	8.9
	Uncertainty (dB)	3.2	3.1	1.7	1.2	1.2	1.2	1.2	1.2	1.1	1.1	1.0	1.0	1.1	1.3	1.1	1.2	1.1	1.0	1.0	1.0	1.0	1.2	1.2	1.4	2.3	2.8	2.9	4.2	1.1
	PWL (dBA)	[57.1]	[59.5]	64.4	72.2	73.6	76.9	80.2	81.8	87.4	86.4	85.4	91.0	88.6	86.2	87.8	87.2	88.7	89.5	91.2	90.9	89.1	87.9	85.5	79.8	[74.3]	[78.7]	[73.9]	[65.9]	100.6
6.0	Turbine ON (dBA)	11.6	14.7	17.9	22.4	25.3	28.6	31.7	33.9	36.6	38.7	37.9	40.7	42.0	40.0	41.1	40.7	41.9	42.0	42.9	43.3	41.9	40.8	38.6	33.9	29.5	32.9	27.4	20.2	53.0
	Background (dBA)	6.2	8.2	10.1	11.9	13.4	15.9	18.6	20.3	24.1	23.6	23.5	27.1	28.0	31.1	30.7	30.7	29.3	27.5	27.6	28.6	25.5	29.0	25.9	24.0	25.8	32.6	33.8	21.0	41.8
	Turbine ON - background adj (dBA)	10.2	13.6	17.2	22.0	25.1	28.3	31.5	33.7	36.3	38.6	37.7	40.5	41.8	39.4	40.6	40.2	41.7	41.9	42.7	43.1	41.8	40.5	38.3	33.4	27.2	[29.9]	[24.4]	[17.2]	52.7
	Signal to noise (dB)	5.4	6.5	7.8	10.5	11.9	12.6	13.1	13.6	12.5	15.1	14.3	13.6	14.0	8.9	10.3	9.9	12.6	14.5	15.3	14.7	16.4	11.8	12.6	9.9	3.8	0.3	-6.5	-0.8	11.2
	Uncertainty (dB)	1.4	1.3	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	1.4	1.8	1.9	3.1	0.7
	PWL (dBA)	60.4	63.8	67.4	72.2	75.3	78.5	81.7	83.9	86.5	88.8	87.9	90.7	92.0	89.6	90.9	90.4	91.9	92.1	92.9	93.3	92.0	90.7	88.5	83.7	77.4	[80.1]	[74.6]	[67.4]	102.9
7.0	Turbine ON (dBA)	13.4	16.3	19.1	22.4	25.9	29.4	32.2	34.5	36.8	39.1	38.3	40.8	41.4	40.2	41.6	41.3	42.7	42.6	43.4	44.0	42.5	41.4	39.3	34.8	30.5	30.8	25.5	21.4	53.4
	Background (dBA)	6.9	9.0	10.7	12.3	13.8	16.0	18.2	20.0	24.2	23.5	23.7	27.2	28.1	32.2	31.1	31.4	29.7	27.8	27.8	28.0	25.2	29.1	25.8	23.9	25.7	33.0	33.9	20.9	42.0
	Turbine ON - background adj (dBA)	12.3	15.5	18.4	22.0	25.7	29.2	32.0	34.3	36.5	39.0	38.1	40.6	41.1	39.5	41.2	40.8	42.5	42.5	43.2	43.8	42.5	41.1	39.1	34.4	28.7	[27.8]	[22.5]	[18.4]	53.2
	Signal to noise (dB)	6.5	7.4	8.4	10.1	12.2	13.4	14.0	14.5	12.6	15.7	14.6	13.5	13.3	8.1	10.5	9.9	13.1	14.8	15.5	16.0	17.4	12.2	13.5	10.9	4.8	-2.2	-8.4	0.5	11.4
	Uncertainty (dB)	1.4	1.3	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	1.2	1.8	1.9	3.2	0.7
	PWL (dBA)	62.5	65.7	68.6	72.2	75.9	79.4	82.2	84.6	86.7	89.2	88.3	90.8	91.4	89.7	91.4	91.0	92.7	92.7	93.5	94.0	92.7	91.3	89.3	84.6	78.9	[78]	[72.7]	[68.6]	103.4
8.0	Turbine ON (dBA)	15.2	17.3	19.8	22.6	25.7	29.1	31.8	34.1	36.3	39.1	37.8	40.3	40.8	40.3	41.8	41.6	43.0	42.9	43.5	44.1	42.6	41.5	39.5	34.6	30.6	29.2	25.6	22.8	53.4
	Background (dBA)	8.7	11.0	11.5	13.2	14.2	16.4	18.7	20.8	24.3	24.0	24.3	27.7	29.0	31.4	31.8	31.7	30.5	28.7	28.4	28.2	26.6	29.8	25.9	24.5	25.9	33.4	31.8	21.2	42.1
	Turbine ON - background adj (dBA)	14.2	16.2	19.1	22.1	25.4	28.9	31.5	33.9	36.0	38.9	37.6	40.1	40.5	39.7	41.3	41.2	42.8	42.7	43.4	43.9	42.5	41.2	39.4	34.1	28.9	[26.2]	[22.6]	[19.8]	53.2
	Signal to noise (dB)	6.6	6.3	8.3	9.4	11.5	12.8	13.0	13.3	11.9	15.0	13.5	12.6	11.8	8.9	10.0	10.0	12.5	14.2	15.1	15.9	16.0	11.7	13.7	10.1	4.8	-4.2	-6.2	1.6	11.3
	Uncertainty (dB)	1.3	1.3	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.8	0.8	0.8	1.2	1.7	1.9	3.0	0.7
	PWL (dBA)	64.4	66.4	69.3	72.3	75.6	79.1	81.7	84.1	86.2	89.1	87.8	90.3	90.7	89.9	91.6	91.4	93.0	92.9	93.6	94.1	92.7	91.4	89.6	84.3	79.1	[76.4]	[72.8]	[70]	103.4
9.0	Turbine ON (dBA)	17.0	19.8	21.4	23.7	26.1	29.2	31.3	33.5	35.6	38.8	37.2	39.7	40.4	40.3	41.9	41.8	43.2	43.0	43.5	44.0	42.7	42.1	40.0	34.3	30.8	29.4	26.4	24.0	53.5
	Background (dBA)	7.3	10.1	10.9	13.0	14.7	17.0	18.9	21.5	24.8	24.3	24.3	27.9	28.8	32.6	31.7	31.8	30.3	28.6	28.5	27.2	26.4	29.9	26.6	24.7	25.4	31.9	31.5	20.1	42.0
	Turbine ON - background adj (dBA)	16.5	19.4	21.0	23.3	25.7	28.9	31.0	33.3	35.3	38.6	36.9	39.5	40.1	39.5	41.5	41.3	42.9	42.9	43.4	43.9	42.6	41.8	39.8	33.8	29.3	[26.4]	[23.4]	21.8	53.2
	Signal to noise (dB)	9.7	9.8	10.5	10.7	11.3	12.2	12.4	12.0	10.8	14.5	12.8	11.9	11.6	7.7	10.2	10.0	12.9	14.4	15.0	16.8	16.3	12.1	13.5	9.6	5.4	-2.5	-5.1	3.9	11.4
	Uncertainty (dB)	1.3	1.3	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.8	0.7	0.8	1.1	1.8	2.2	2.4	0.7
	PWL (dBA)	66.7	69.6	71.2	73.5	75.9	79.1	81.2	83.5	85.5	88.8	87.1	89.7	90.3	89.7	91.7	91.5	93.2	93.1	93.6	94.1	92.8	92.0	90.1	84.0	79.5	[76.6]	[73.6]	72.0	103.4

Table C.03 Type B measurement uncertainty summary

Project: McLeans Mountain Wind Farm - Turbine T05 - IEC 61400-11 Measurement

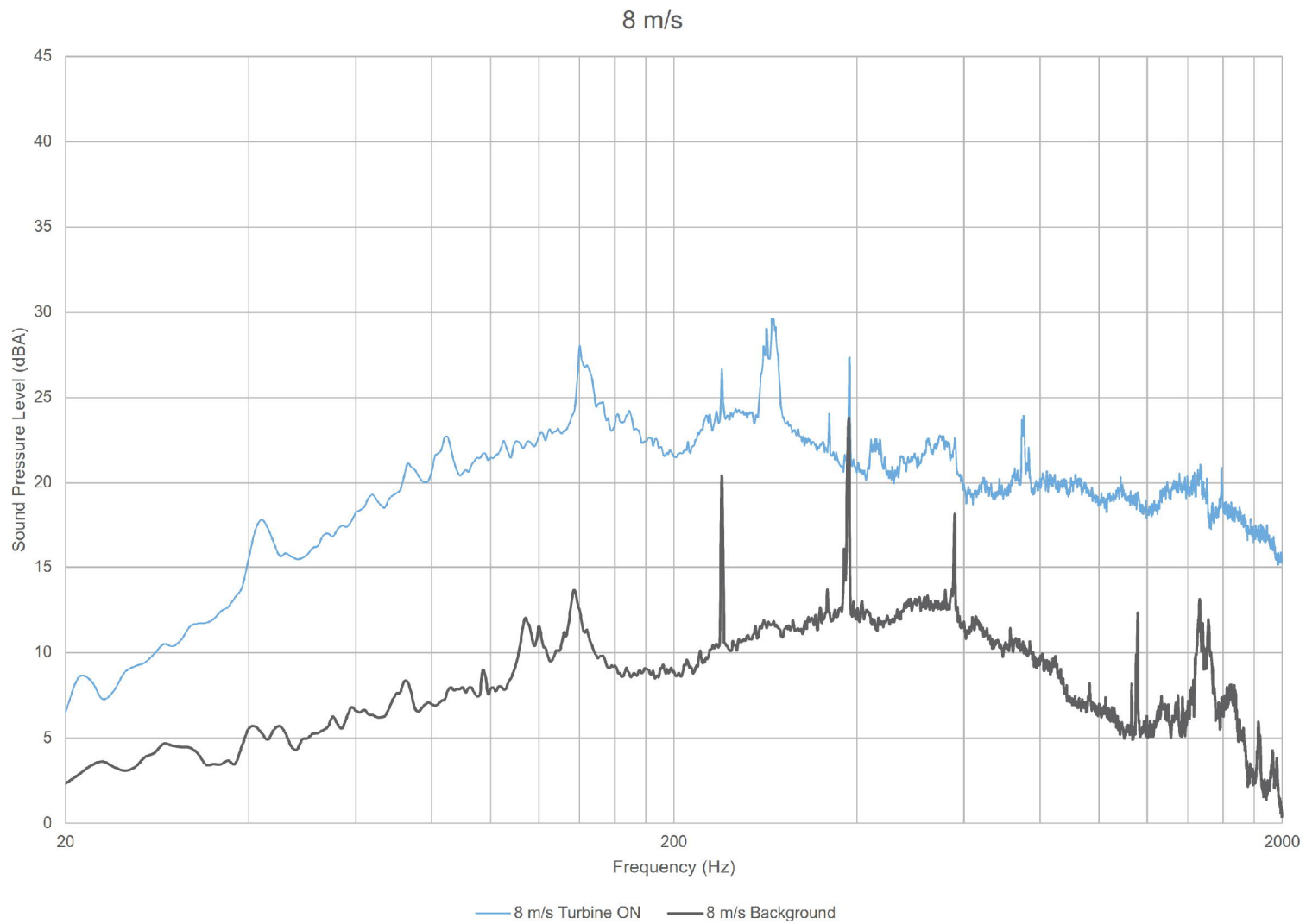
Report ID: 08020.04.T05.RP3

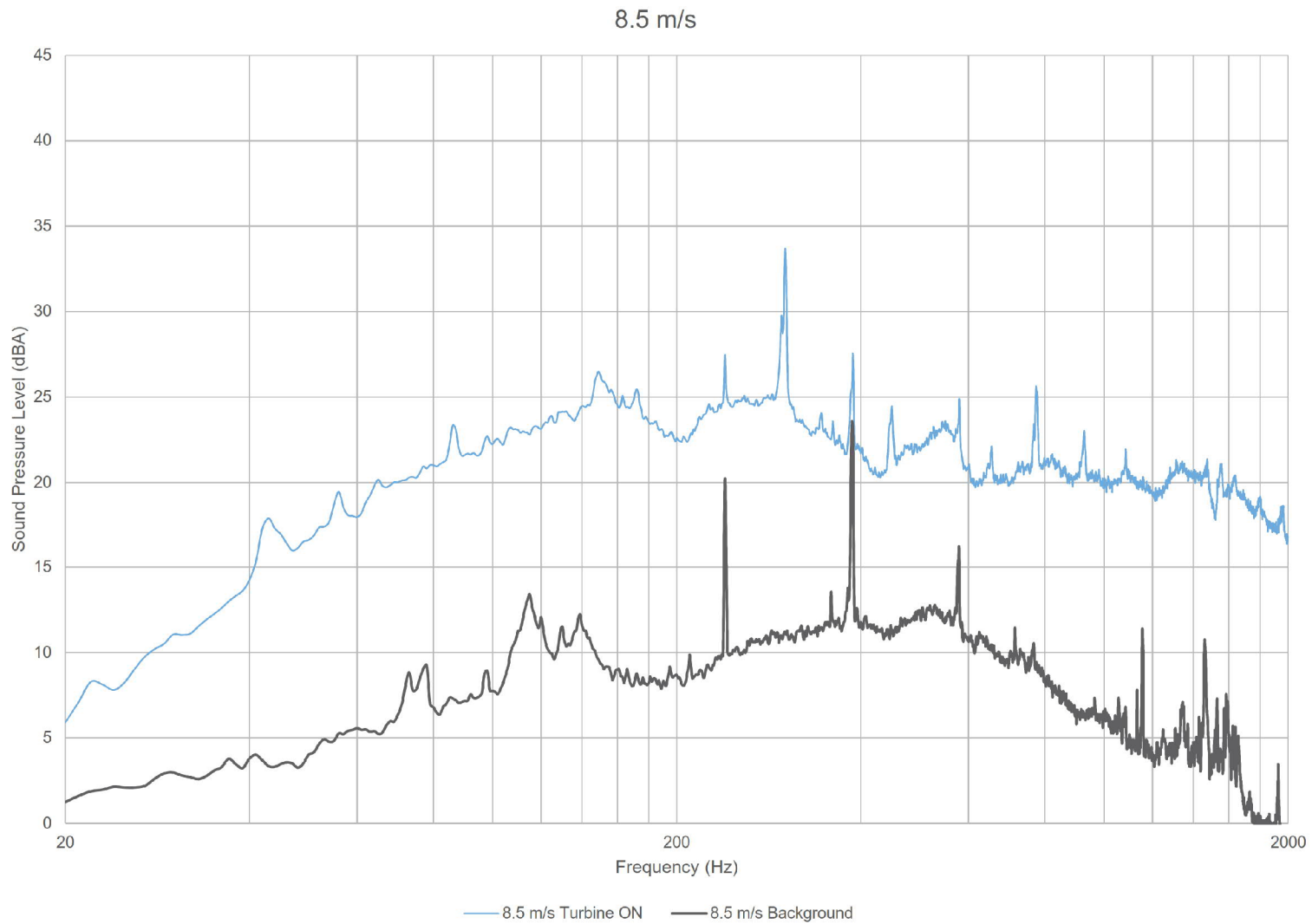
Overall Equipment Uncertainties		
	Typical values	Used values
Calibration	0.2 dB	0.2 dB
Board	0.3 dB	0.3 dB
Distance	0.1 dB	0.1 dB
Air absorption	0 dB	0 dB
Weather	0.5 dB	0.5 dB

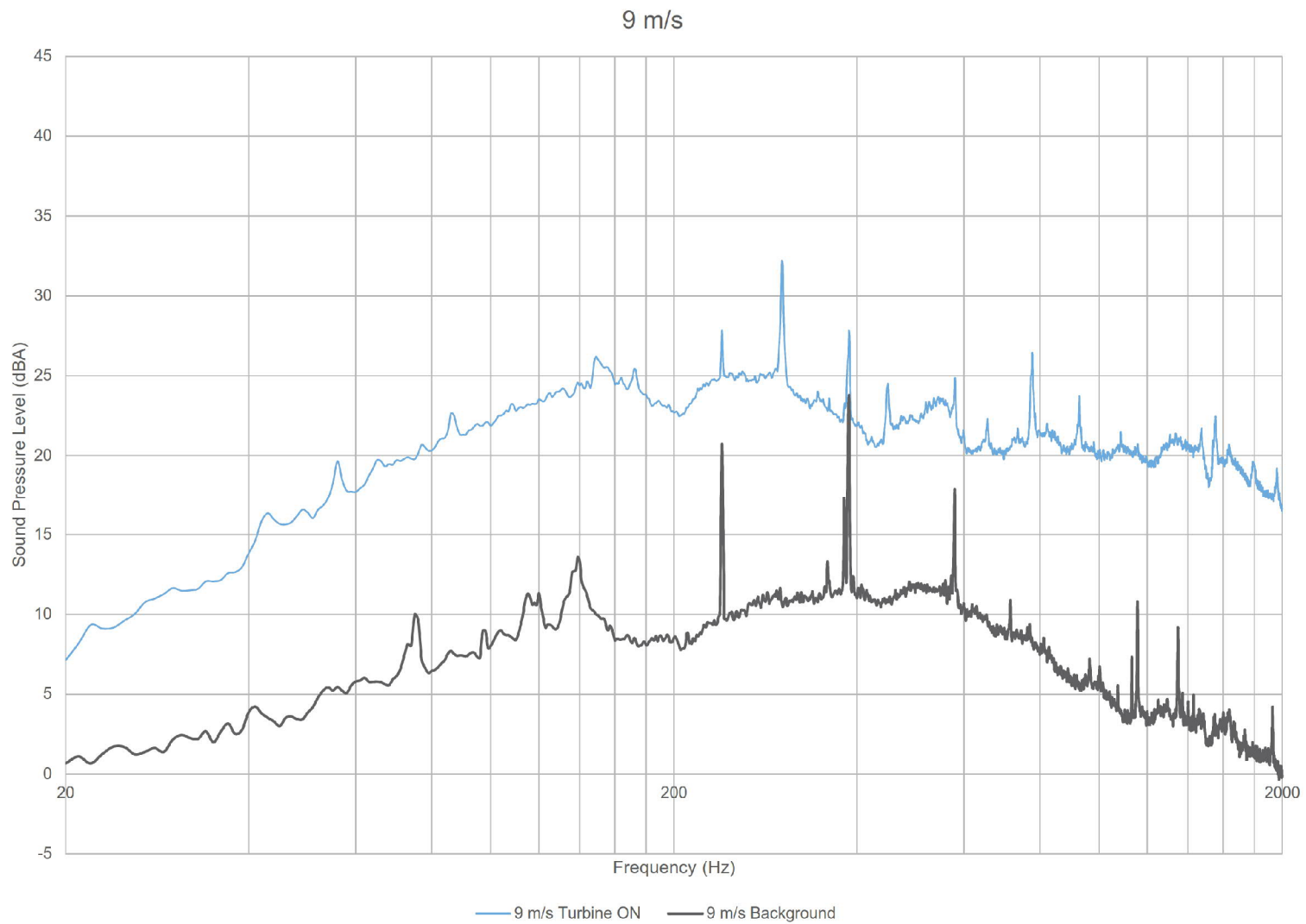
1/3 Octave Band Uncertainties		
Frequency (Hz)	Microphone Uncertainty	Overall (including overall equipment Uncertainties)
20	0.8 dB	1 dB
25	0.8 dB	1 dB
31.5	0.5 dB	0.8 dB
40	0.5 dB	0.8 dB
50	0.5 dB	0.8 dB
63	0.5 dB	0.8 dB
80	0.5 dB	0.8 dB
100	0.5 dB	0.8 dB
125	0.5 dB	0.8 dB
160	0.5 dB	0.8 dB
200	0.3 dB	0.7 dB
250	0.3 dB	0.7 dB
315	0.3 dB	0.7 dB
400	0.3 dB	0.7 dB
500	0.3 dB	0.7 dB
630	0.3 dB	0.7 dB
800	0.3 dB	0.7 dB
1000	0.3 dB	0.7 dB
1250	0.3 dB	0.7 dB
1600	0.3 dB	0.7 dB
2000	0.3 dB	0.7 dB
2500	0.5 dB	0.8 dB
3150	0.5 dB	0.8 dB
4000	0.5 dB	0.8 dB
5000	0.5 dB	0.8 dB
6300	0.5 dB	0.8 dB
8000	0.5 dB	0.8 dB
10000	1.3 dB	1.4 dB

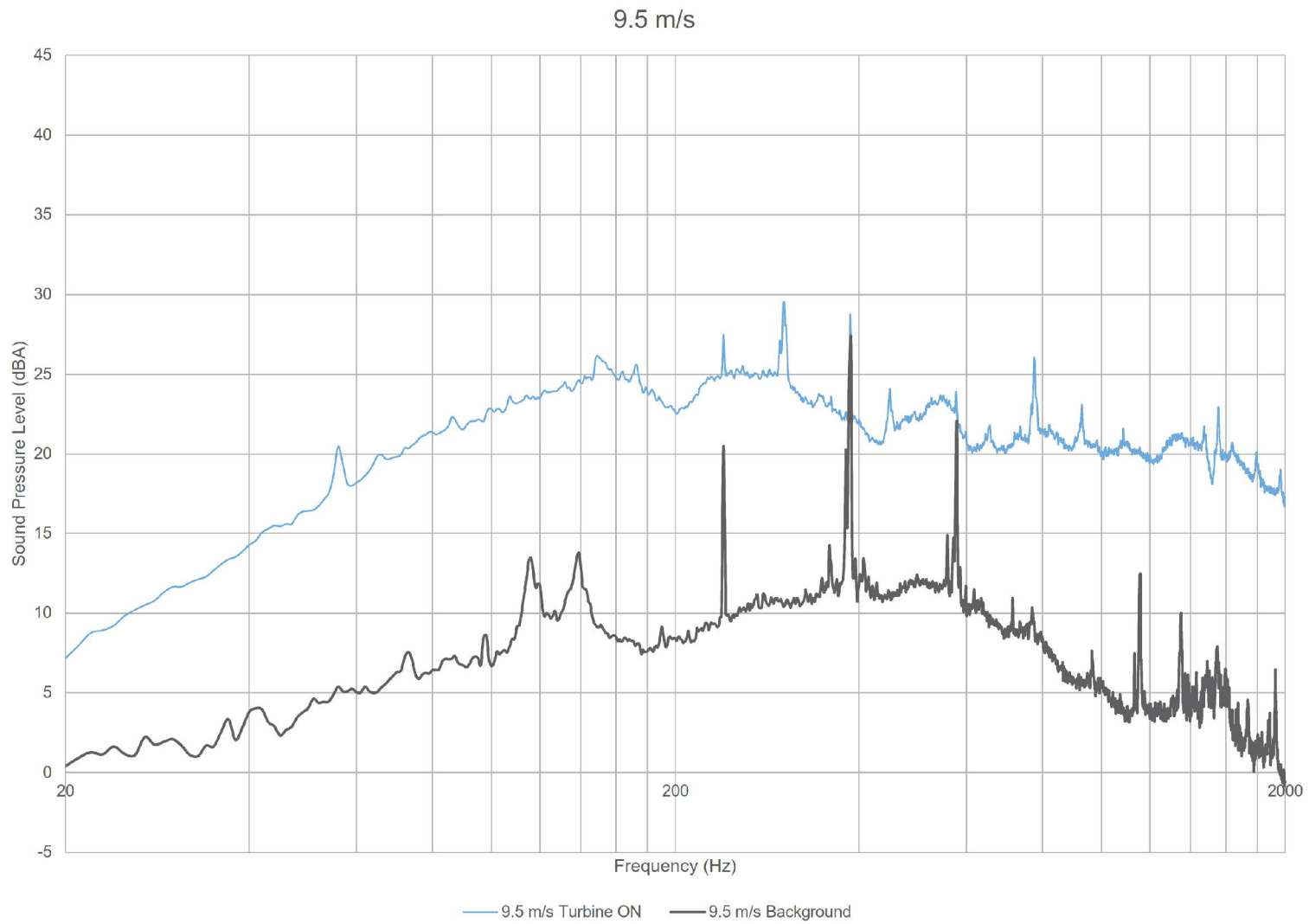
Wind Bin (m/s)	Parameter	Average Wind Speed (m/s)	# of data points	Parameter	1/3 Octave Band (Hz)																Overall																
					20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630		800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000				
11.5	Turbine ON	11.46	38	Average (dBA)	15.2	16.8	19.2	22.1	25.3	28.8	31.5	33.9	36.1	39.1	37.7	40.3	40.7	40.5	41.8	41.7	42.9	42.8	43.5	44.0	42.5	41.4	39.5	34.4	30.4	29.1	25.5	22.7	53.4				
				Uncertainty A (dB)	0.8	0.6	0.5	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
				Uncertainty B (dB)	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
				Combined Uncertainty (dB)	1.3	1.2	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	1.5	
11.5	Background	11.48	30	Average (dBA)	7.0	8.9	10.4	12.5	14.0	16.1	18.8	20.9	24.3	24.3	24.2	27.7	29.0	30.4	31.7	31.5	30.4	28.5	28.5	29.0	27.0	29.7	25.7	24.5	25.8	33.1	31.2	21.3	42.0				
				Uncertainty A (dB)	0.9	0.9	0.8	0.5	0.4	0.3	0.4	0.4	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.9	0.8	0.4	0.4	0.4	0.4	0.4	0.7	1.3	0.7			
				Uncertainty B (dB)	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.4		
				Combined Uncertainty (dB)	1.4	1.4	1.1	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.0	1.2	1.1	0.9	0.9	0.9	1.1	1.5	1.6			
12.0	Turbine ON	11.94	19	Average (dBA)	15.8	18.5	20.5	23.2	26.0	29.2	31.7	33.9	36.0	39.0	37.6	40.2	40.7	40.4	42.0	41.9	43.2	43.1	43.6	44.2	42.7	41.8	40.0	34.6	30.9	29.5	26.1	23.4	53.6				
				Uncertainty A (dB)	0.9	0.8	0.8	0.5	0.4	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.6		
				Uncertainty B (dB)	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.4		
				Combined Uncertainty (dB)	1.4	1.3	1.1	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	1.6		
12.0	Background	11.95	19	Average (dBA)	11.6	14.5	13.8	15.2	15.6	17.2	19.2	21.2	24.4	24.5	25.0	28.4	29.5	31.1	32.6	32.5	31.6	29.9	29.1	28.9	27.5	30.2	26.2	25.3	26.6	32.5	29.4	22.5	42.4				
				Uncertainty A (dB)	1.7	1.9	1.3	1.0	0.6	0.4	0.4	0.4	0.3	0.3	0.4	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.3	0.4	0.4	0.4	0.8	1.3	1.0				
				Uncertainty B (dB)	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	1.4			
				Combined Uncertainty (dB)	2.0	2.1	1.5	1.2	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	0.9	0.9	0.9	1.1	1.5	1.7				
12.5	Turbine ON	12.45	20	Average (dBA)	16.4	18.9	20.5	22.8	25.8	28.9	31.3	33.7	35.8	38.9	37.4	40.0	40.6	40.6	41.9	41.8	43.1	43.0	43.6	44.0	42.7	42.0	40.1	34.5	30.7	29.0	26.1	23.6	53.5				
				Uncertainty A (dB)	1.0	0.8	0.7	0.6	0.4	0.2	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.5	0.7			
				Uncertainty B (dB)	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	1.4		
				Combined Uncertainty (dB)	1.4	1.3	1.1	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	1.6		
12.5	Background	12.46	10	Average (dBA)	4.5	7.6	9.4	10.7	13.5	16.0	18.3	20.6	24.1	24.0	23.6	27.4	27.9	32.2	30.2	30.5	28.3	26.9	27.9	26.0	25.7	28.6	25.0	23.6	24.4	29.8	29.1	18.0	40.8				
				Uncertainty A (dB)	1.4	1.7	1.2	0.5	0.5	0.4	0.5	0.6	0.5	0.4	0.4	0.3	0.4	1.4	0.6	1.0	0.7	0.7	1.1	0.9	1.1	0.5	0.8	0.5	0.4	0.7	2.3	0.7					
				Uncertainty B (dB)	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	1.4			
				Combined Uncertainty (dB)	1.7	2.0	1.5	1.0	0.9	0.9	0.9	1.0	1.0	0.9	0.8	0.7	0.7	0.8	1.6	0.9	1.2	1.0	1.0	1.3	1.1	1.3	0.9	1.1	1.0	0.9	1.1	2.4	1.6				
13.0	Turbine ON	13.06	20	Average (dBA)	16.2	19.1	20.7	23.0	25.6	29.1	31.2	33.5	35.5	38.7	37.1	39.6	40.3	39.9	41.8	41.7	43.1	42.9	43.4	43.9	42.6	42.1	40.1	34.2	30.8	29.5	26.3	23.9	53.4				
				Uncertainty A (dB)	1.0	1.0	0.9	0.5	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.6	0.7			
				Uncertainty B (dB)	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	1.4			
				Combined Uncertainty (dB)	1.4	1.4	1.2	1.0	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	1.0	1.6			
13.0	Background	12.92	12	Average (dBA)	9.3	11.9	12.5	14.5	15.6	17.6	19.3	21.9	25.2	24.5	24.9	28.3	29.5	33.4	32.7	32.9	31.8	30.0	29.5	28.5	27.4	31.2	28.0	25.8	26.5	33.4	33.0	21.7	43.2				
				Uncertainty A (dB)	1.9	1.9	1.5	1.1	0.8	0.7	0.5	0.6	0.4	0.3	0.4	0.3	0.5	1.3	0.9	1.1	1.2	1.2	1.3	1.2	1.4	0.9	1.1	0.9	0.7	0.9	1.9	0.8					
				Uncertainty B (dB)	1.0	1.0	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	1.4				
				Combined Uncertainty (dB)	2.1	2.2	1.7	1.3	1.2	1.0	0.9	1.0	0.9	0.9	0.8	0.8	0.9	1.4	1.1	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.2	1.3	1.2	1.1	1.2	2.1	1.7			

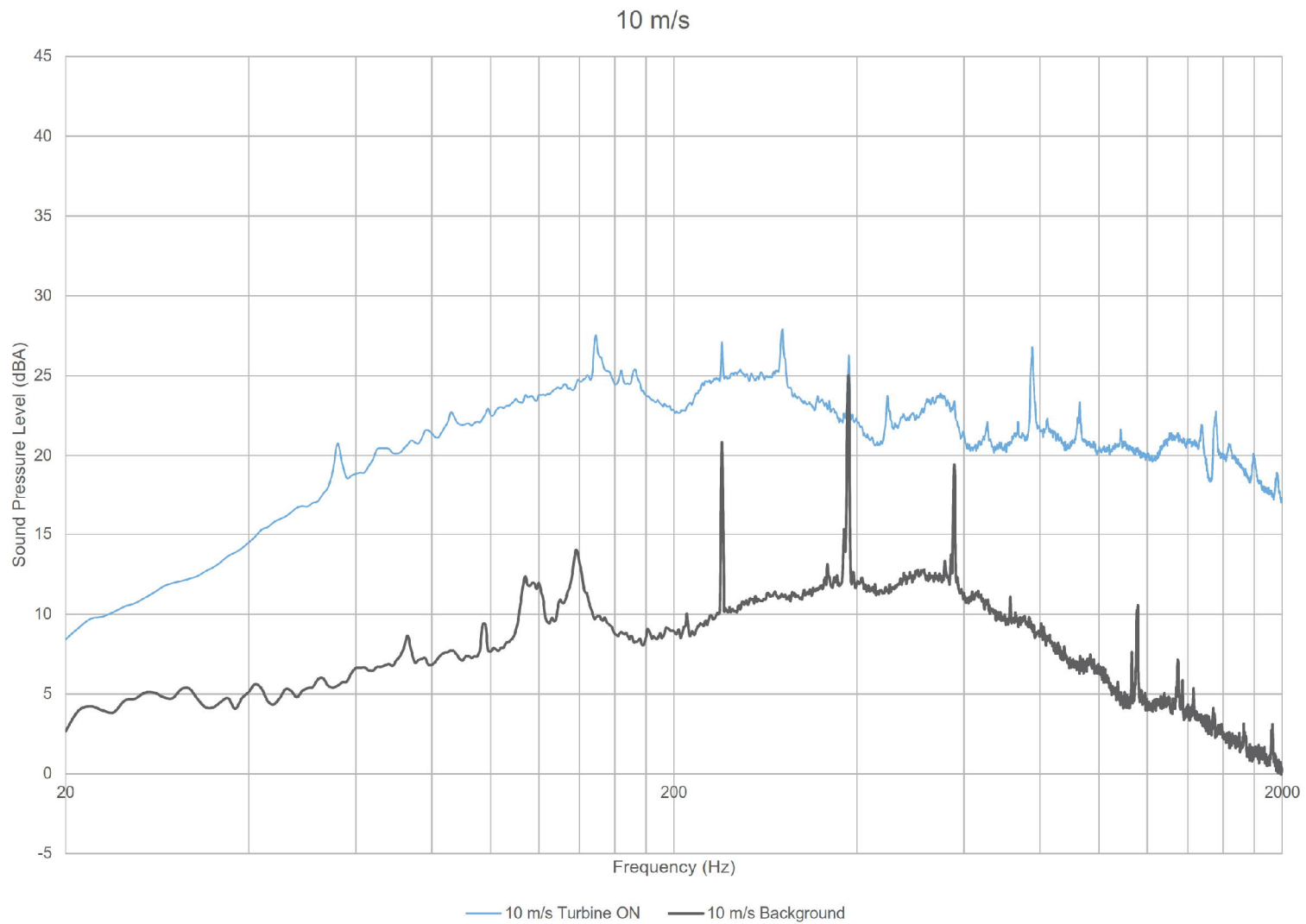
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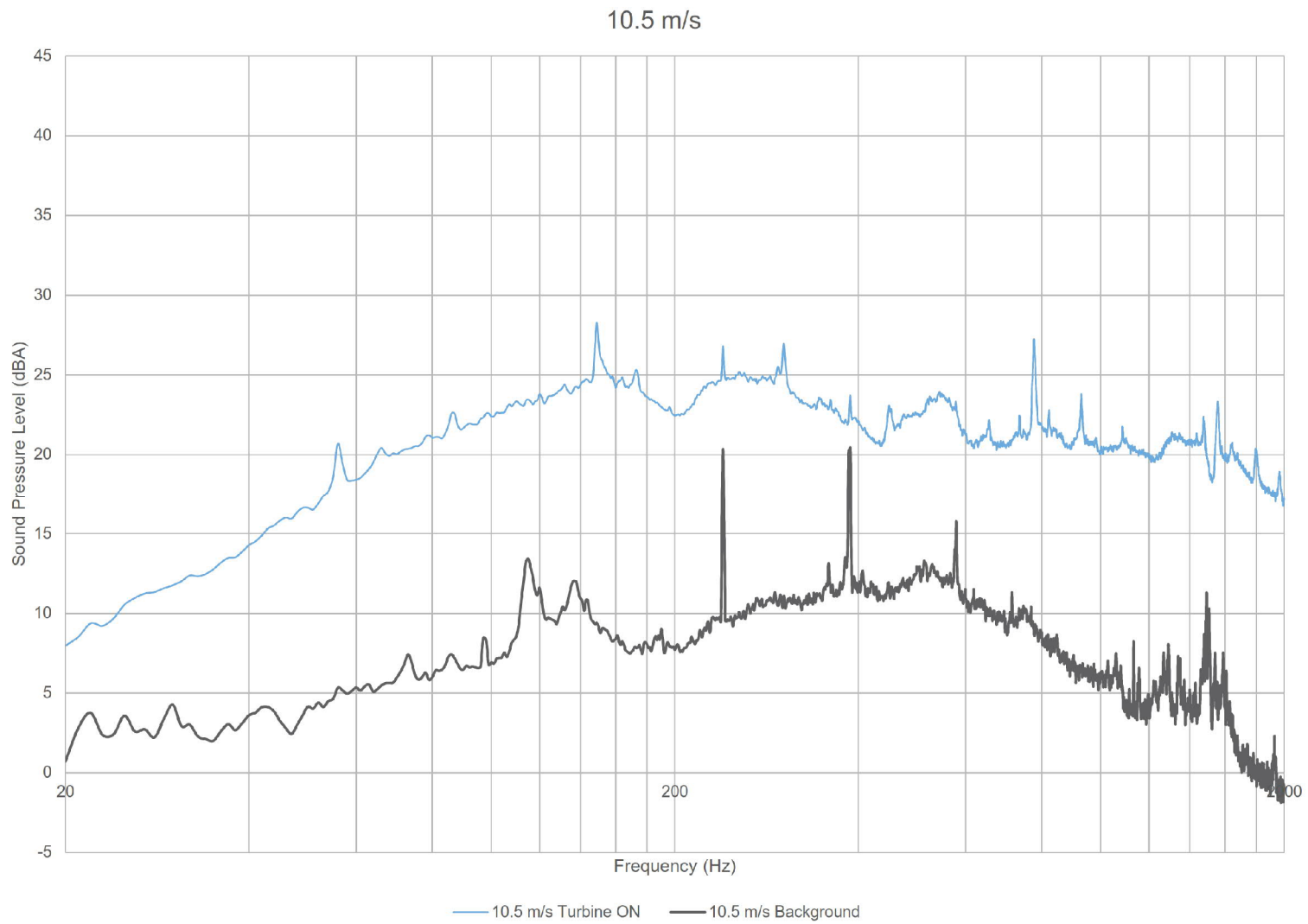


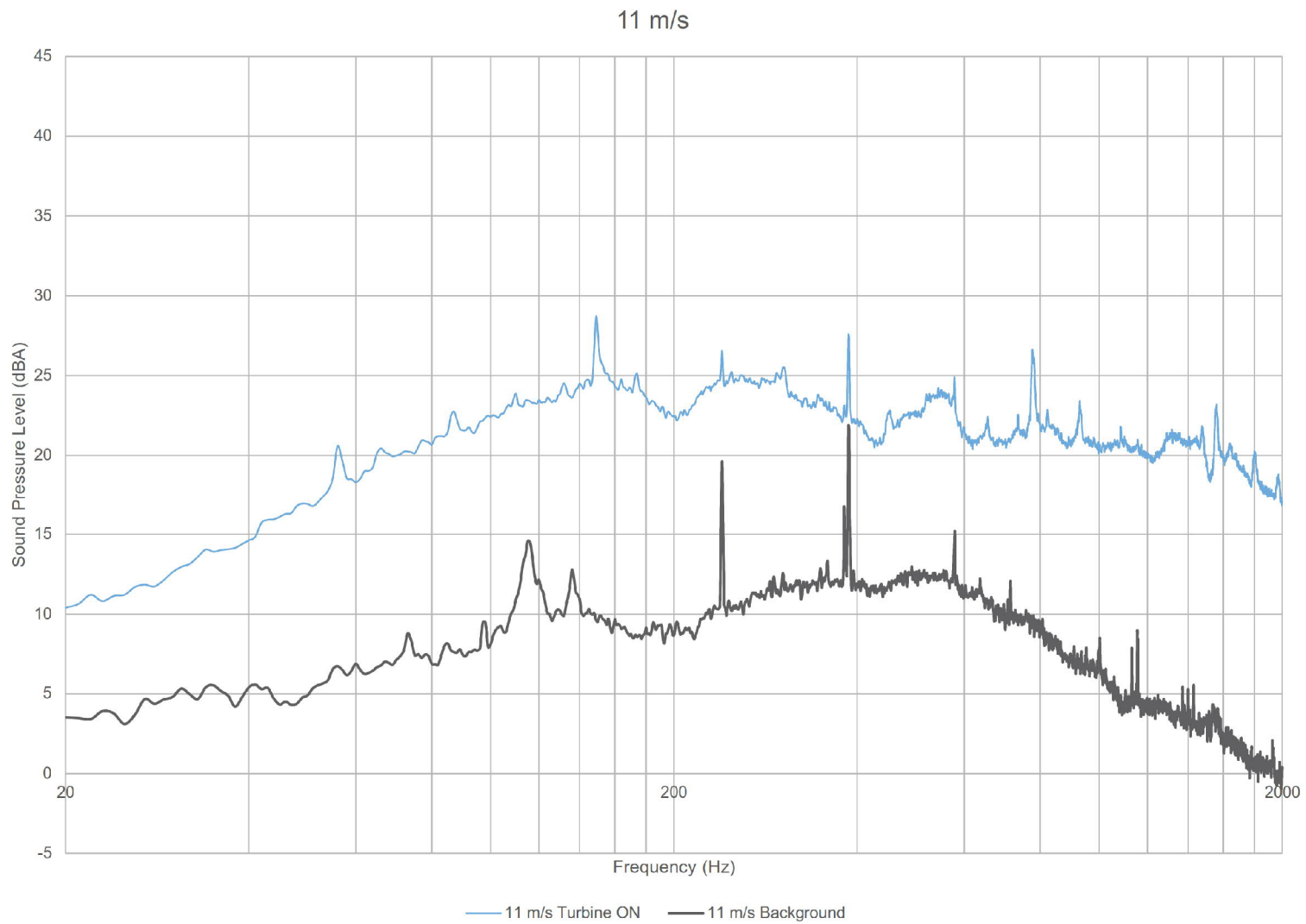


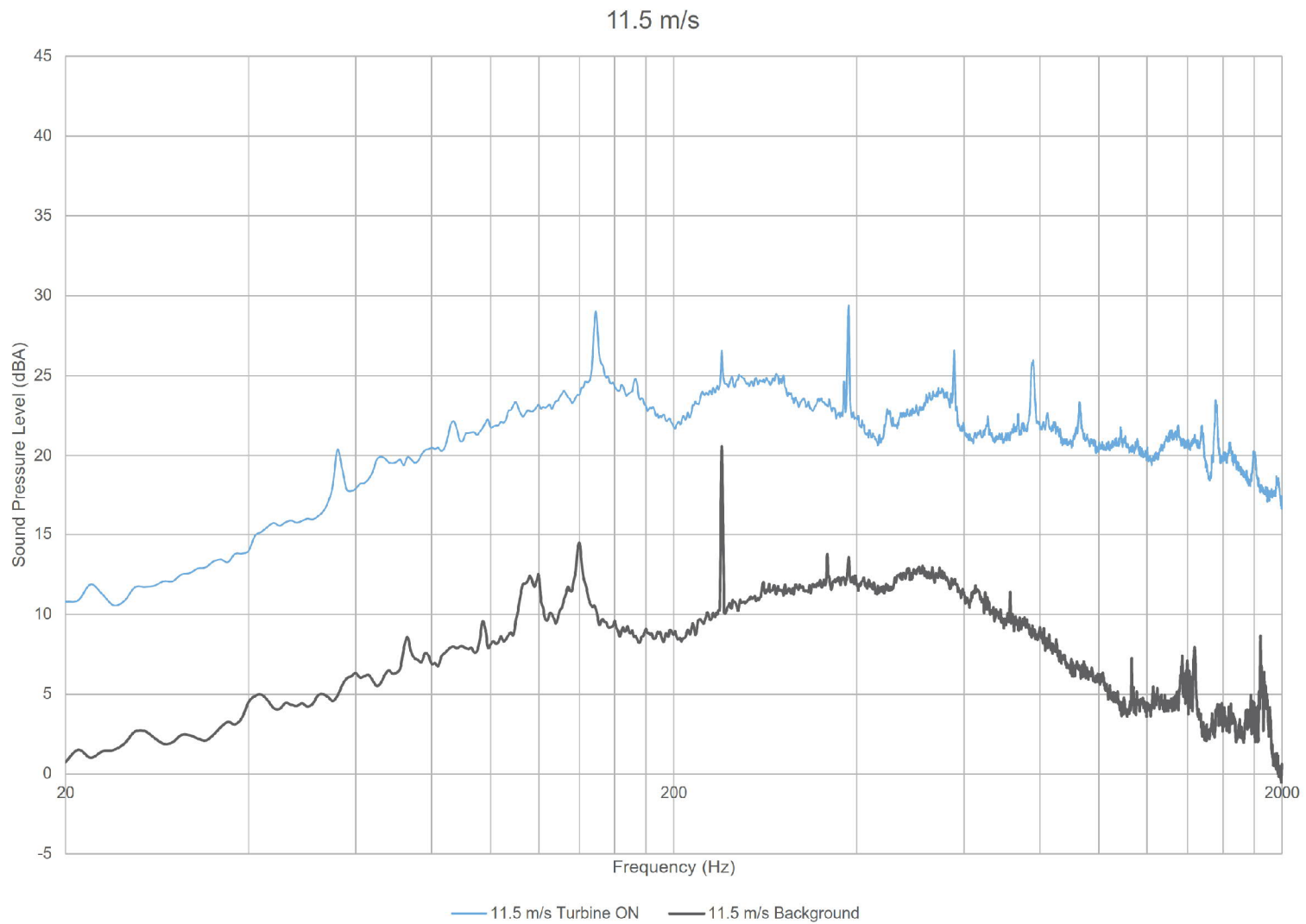


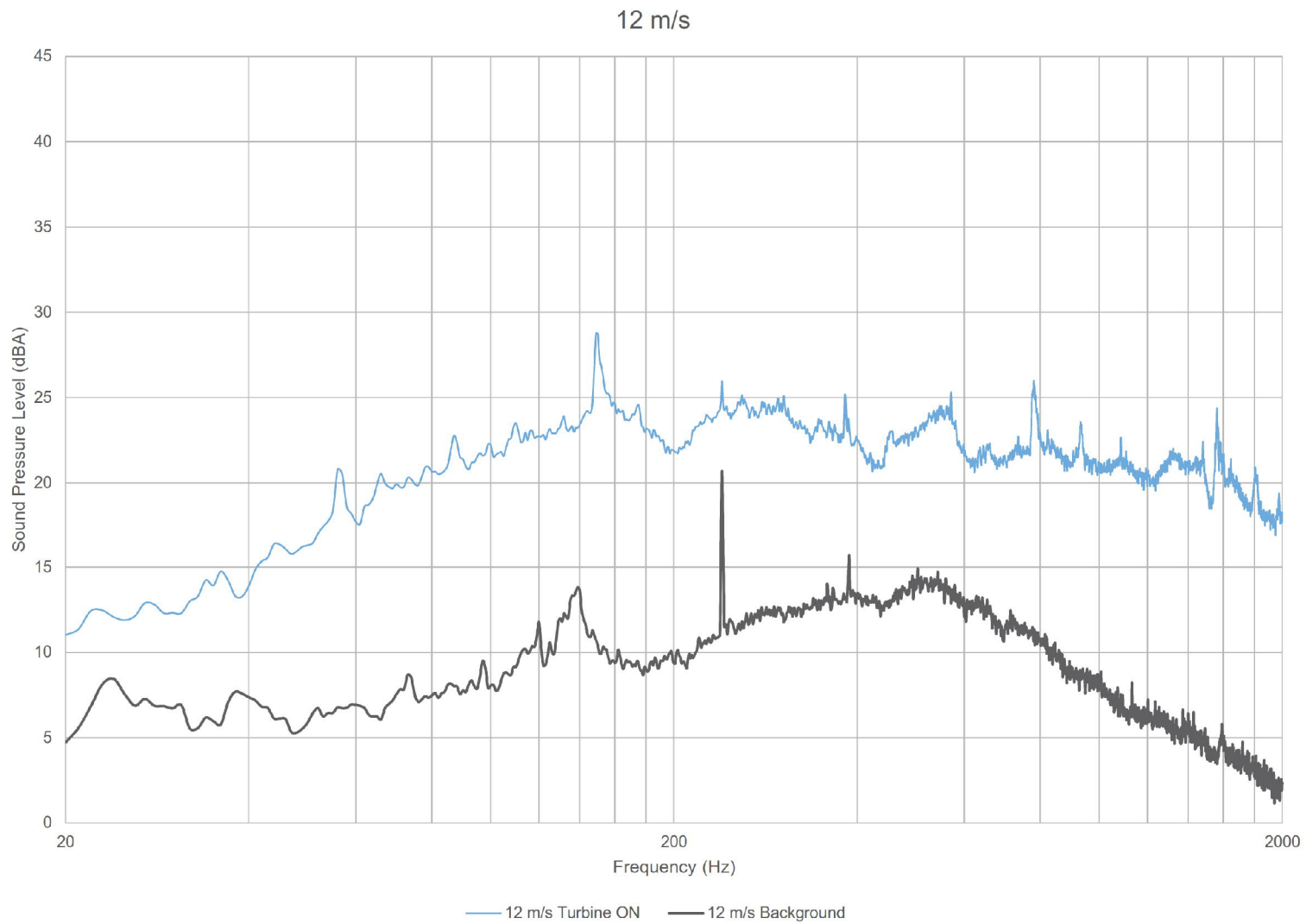


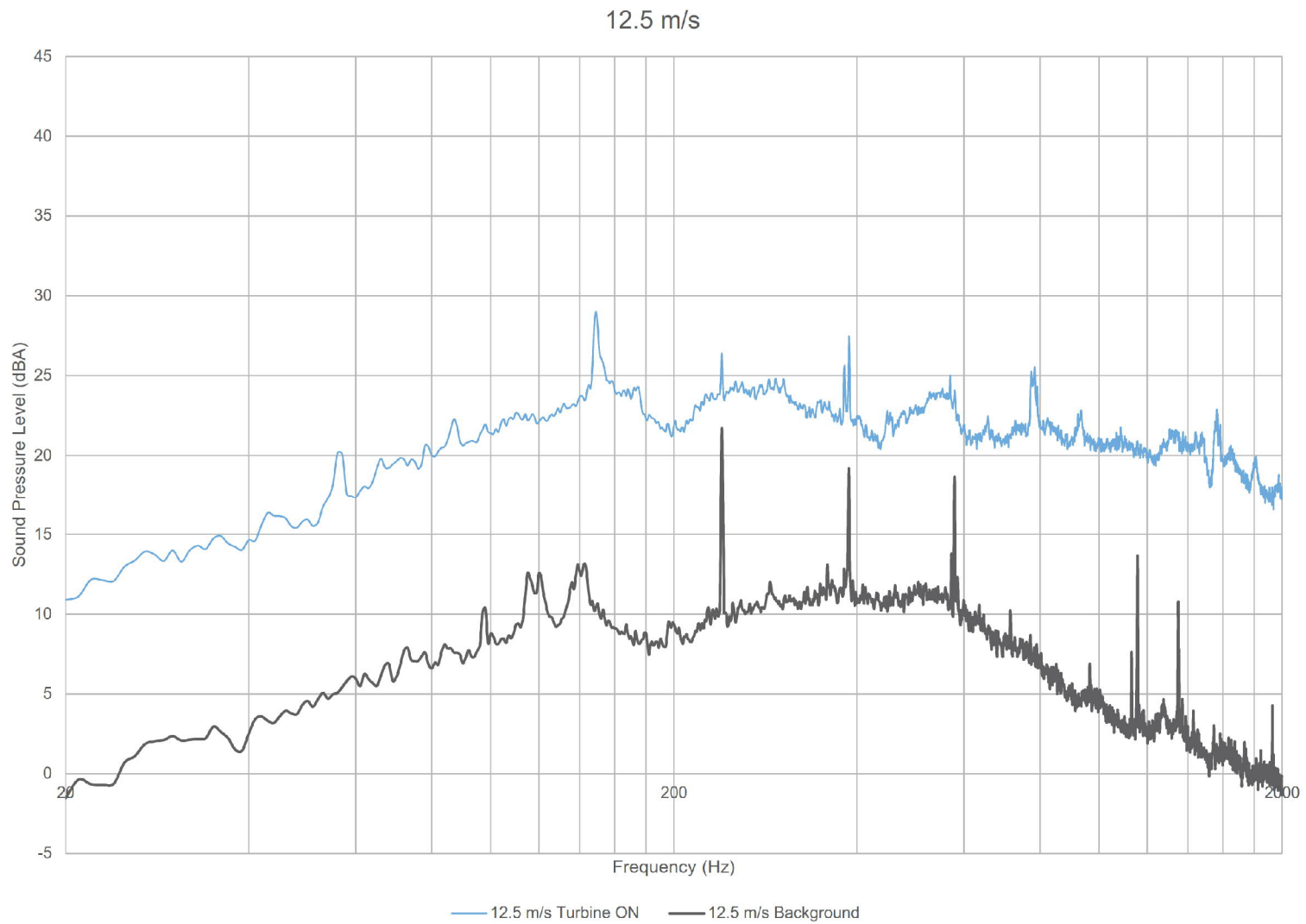












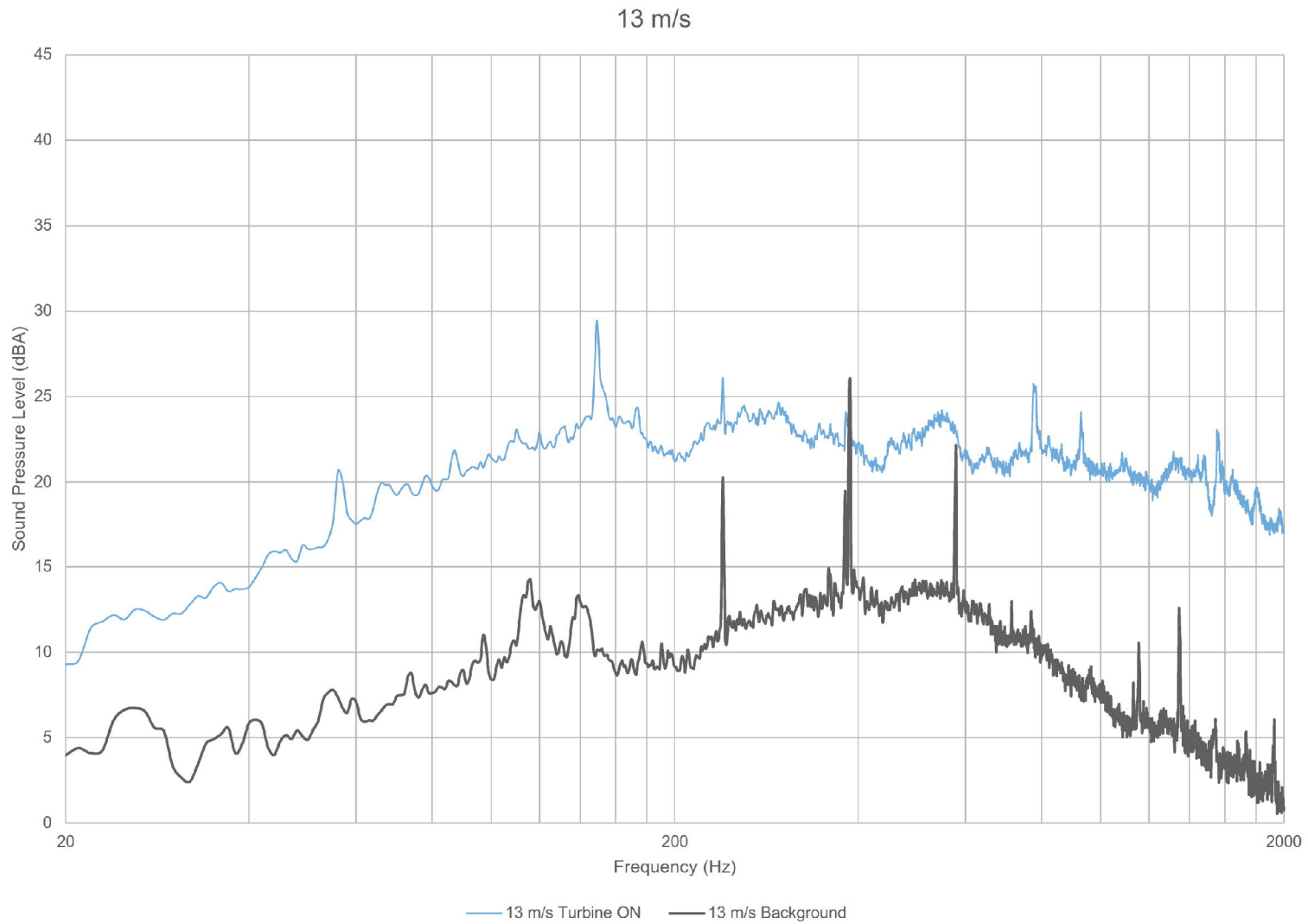


Table D.01 Tonality Assessment Table - 8 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

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Created on: 10/4/2017

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.02 Tonality Assessment Table - 8.5 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

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Created on: 10/4/2017

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.03 Tonality Assessment Table - 9 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.04 Tonality Assessment Table - 9.5 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.05 Tonality Assessment Table - 10 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.06 Tonality Assessment Table - 10.5 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.07 Tonality Assessment Table - 11 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.08 Tonality Assessment Table - 11.5 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.09 Tonality Assessment Table - 12 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.10 Tonality Assessment Table - 12.5 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Table D.11 Tonality Assessment Table - 13 m/s

Project: McLean's Mountain Wind Farm- Turbine T05 - IEC 61400-11 Measurement
Report ID: 08020.04.T05.RP3

Measurement #	Centre frequency (Hz)	Energy average of all masking lines (dB)	Background (dB)	Background adjusted criterion level (dB)	Masking level (dB)	Tone level (dB)	Determination of tonality (dB)	Frequency dependent audibility criterion (dB)	Tonal Audibility (dB)
Average									No Reportable Tones

Appendix E Measurement Data

Table E.01 Measurement data - Turbine ON
 Project: McLeans Mountain Wind Farm - Turbine T05 - IEC 61400-11 Measurement
 Report ID: 08020.04.T05.RP3

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	Lat	Turbine Power Output (kW)	Reference Yaw Angle (°)	Yaw Angle (°)	Pitch Angle (°)	Rotor Tip Speed (m/s)	Nacelle Anemometer Wind Speed (m/s)	10m Anemometer Wind Speed (m/s)	Air Temperature (°C)	Pressure (hPa)	Relative Humidity (%)
1	10.1	53.8	2200	320.7	325.6	2.4	13.8	10.7	6.7	12	89	78
2	9.7	53.2	2044	320.7	325.6	1.6	13.9	9.8	7.6	12	89	78
3	9.6	53.2	1998	320.7	325.6	1.4	13.9	9.8	7.8	12	89	78
4	9.5	53.1	1937	320.7	325.6	0.9	13.9	10.7	6.2	12	88	78
5	9.2	53.3	1800	320.7	325.6	0.5	13.8	10.0	5.6	12	88	78
6	9.1	53.3	1751	320.7	325.6	0.3	13.9	9.6	5.5	12	88	78
7	9.0	53.8	1710	320.7	325.6	0.4	13.8	9.6	6.2	12	88	78
8	8.2	53.4	1310	320.7	325.6	0.3	13.6	7.8	7.1	12	88	78
9			1248	320.7	325.6	0.3	13.3	6.8	8.0	12	88	78
10			1206	320.7	325.6	0.3	13.2	7.4	7.5	12	88	78
11			1224	320.7	325.6	0.3	13.2	7.1	7.6	12	88	78
12			1648	320.7	325.6	0.3	13.8	9.0	8.0	12	88	78
13			1632	320.7	325.6	0.2	13.5	10.0	8.3	12	88	78
14	8.9	53.3	1673	320.7	325.6	0.3	13.8	9.2	7.2	12	88	78
15	9.1	53.5	1788	320.7	325.6	0.7	14.0	9.6	6.9	12	88	78
16	9.6	52.9	1998	320.7	325.6	0.9	14.0	10.9	6.5	12	89	78
17	9.3	53.3	1864	320.7	325.6	0.7	13.9	10.3	5.3	12	89	78
18	9.2	53.4	1807	320.7	325.6	0.4	13.9	9.5	7.2	12	89	78
19			1665	320.7	325.6	0.4	13.8	9.6	8.2	12	89	78
20	9.2	53.5	1791	320.7	325.6	0.4	13.9	10.5	7.7	12	89	78
21	8.7	54.0	1582	320.7	325.7	0.4	13.8	9.2	7.5	12	89	78
22			1679	320.7	333.4	0.4	13.9	9.1	8.9	12	89	78
23			1698	320.7	333.4	0.4	13.9	9.4	7.8	12	89	78
24	9.4	53.6	1891	320.7	333.4	0.4	14.0	9.9	7.3	12	89	78
25	9.3	53.0	1860	320.7	333.4	0.6	13.9	10.4	8.0	12	89	78
26			1677	320.7	333.4	0.4	13.8	9.5	8.1	12	89	78
27			1510	320.7	333.4	0.3	13.8	9.0	8.0	12	89	78
28	8.6	52.9	1520	320.7	333.4	0.3	13.9	9.1	6.9	12	89	78
29	9.3	53.2	1862	320.7	333.4	0.5	14.0	9.4	6.6	12	89	78
30	9.1	53.0	1748	320.7	333.4	0.4	13.9	10.0	7.8	12	89	78
31	9.2	52.9	1799	320.7	333.4	0.3	13.9	9.6	7.4	12	89	78
32	8.8	52.8	1630	320.7	333.4	0.3	13.8	8.7	6.4	12	89	78
33	8.4	53.1	1441	320.7	333.4	0.3	13.8	6.8	5.6	12	89	78
34	9.1	53.6	1787	320.7	333.4	0.7	14.0	9.7	6.7	12	89	78
35	8.8	53.0	1641	320.7	333.4	0.3	13.9	8.0	5.9	12	90	78
36	9.4	53.3	1907	320.7	333.4	0.9	14.0	9.8	5.6	12	90	78
37	8.6	52.8	1531	320.7	333.4	0.4	13.8	8.7	5.3	12	90	78
38	8.7	53.4	1589	320.7	333.4	0.3	13.9	8.1	5.3	12	90	78
39	8.9	53.2	1653	320.7	330.3	0.3	13.9	9.2	5.9	12	90	78
40			1467	320.7	324.6	0.5	13.7	9.0	5.3	12	90	78
41			1169	320.7	322.7	1.4	13.0	6.7	7.3	12	90	78
42			1104	320.7	322.7	1.4	12.8	7.9	5.1	12	90	78
43			1082	320.7	322.7	1.4	13.6	7.2	5.8	12	90	78
44			973	320.7	322.7	4.4	13.7	7.8	5.8	12	90	78
45			863	320.7	322.7	5.5	13.2	6.9	5.6	12	90	78
46			762	320.7	322.7	6.8	12.9	7.5	5.4	12	89	78
47			678	320.7	322.7	6.7	12.8	7.1	7.0	12	89	78
48			647	320.7	322.7	7.3	12.8	5.9	5.9	12	89	78
49			634	320.7	322.7	7.4	12.8	7.1	6.2	12	89	78
50			639	320.7	322.7	7.6	12.9	6.7	6.0	12	89	78
51			651	320.7	322.7	8.6	13.2	8.9	8.2	12	89	78
52			673	320.7	322.7	9.8	13.5	9.3	7.7	12	88	78
53			698	320.7	322.7	10.0	13.5	7.6	7.9	12	88	78
54			692	320.7	322.7	10.2	13.5	9.1	7.9	12	88	78
55			692	320.7	322.7	9.9	13.4	9.1	8.6	12	88	78
56			700	320.7	322.7	10.2	13.4	8.6	9.1	12	88	78
57			695	320.7	322.7	9.9	13.2	7.1	8.4	12	88	78
58			682	320.7	322.7	8.5	13.3	7.1	8.2	12	88	78
59			673	320.7	322.7	10.0	13.4	8.1	8.2	12	88	78
60			684	320.7	322.2	10.4	13.4	6.7	7.0	12	88	78
61			678	320.7	317.6	10.6	13.4	9.3	7.8	12	88	78
62			681	320.7	315.8	8.2	13.0	7.9	7.7	12	88	78
63			699	320.7	315.8	8.5	13.1	7.5	8.8	12	88	78
64			705	320.7	315.8	8.2	13.3	8.5	7.9	12	89	78
65			708	320.7	315.8	8.4	13.3	8.3	8.2	12	89	78
66			702	320.7	315.8	7.8	13.2	7.0	7.6	12	89	78
67			673	320.7	315.8	7.2	12.8	6.7	5.9	12	89	78
68			667	320.7	315.8	7.3	13.0	8.6	4.9	12	89	78
69			682	320.7	315.8	8.6	13.4	7.6	6.8	12	89	78
70			679	320.7	315.8	8.4	13.3	8.8	6.7	12	90	78
71			674	320.7	315.8	7.8	13.2	7.1	7.4	12	90	78
72			655	320.7	315.8	8.1	13.3	6.7	4.9	12	90	78
73			622	320.7	315.8	8.0	13.3	7.4	6.6	12	90	78
74			614	320.7	315.8	8.9	13.1	7.1	6.9	12	90	78
75			614	320.7	315.8	8.1	13.1	7.5	7.8	12	90	78
76			682	320.7	315.8	8.8	13.1	8.6	7.3	12	89	78
77			788	320.7	315.8	7.9	13.2	8.5	7.9	12	89	78
78			885	320.7	315.8	6.6	13.1	8.1	7.5	12	89	78
79			960	320.7	315.8	6.6	13.2	7.8	8.2	12	89	78
80			1080	320.7	315.8	4.8	13.3	8.1	5.1	12	89	78
81			1162	320.7	315.8	3.5	13.1	8.2	5.6	12	89	78
82			1181	320.7	315.8	0.7	12.6	7.3	3.6	12	90	78
83	7.7	51.9	1084	320.7	315.8	0.4	12.9	8.3	6.3	12	91	78
84	7.7	51.9	1122	320.7	315.8	0.4	12.9	7.4	6.5	12	91	78
85	7.9	52.2	1205	320.7	315.8	0.3	13.3	7.7	5.8	12	91	78
86	8.1	52.5	1289	320.7	315.8	0.3	13.4	7.9	4.7	12	91	78
87	8.0	52.8	1223	320.7	315.8	0.3	13.3	7.9	4.8	12	91	78
88			1088	320.7	315.8	0.3	12.7	7.6	8.3	12	90	77

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	Lat	Turbine Power Output (kW)	Reference Yaw Angle (°)	Yaw Angle (°)	Pitch Angle (°)	Rotor Tip Speed (m/s)	Nacelle Anemometer Wind Speed (m/s)	10m Anemometer Wind Speed (m/s)	Air Temperature (°C)	Pressure (hPa)	Relative Humidity (%)
89			989	320.7	315.8	0.3	12.3	7.2	7.5	12	90	77
90	7.4	51.1	978	320.7	315.8	0.3	12.4	8.0	5.8	12	90	77
91	7.4	51.3	982	320.7	315.8	0.3	12.3	7.0	5.6	12	90	77
92	7.4	51.5	999	320.7	315.8	0.3	12.5	7.9	4.7	12	90	77
93	7.4	51.3	992	320.7	315.8	0.3	12.4	7.7	5.3	12	90	77
94	7.4	51.4	997	320.7	315.8	0.3	12.4	6.8	5.2	12	91	78
95	7.6	52.1	1069	320.7	315.8	0.3	12.7	7.7	4.7	12	91	77
96	8.5	52.6	1497	320.7	316.7	0.4	13.6	9.2	5.5	12	91	77
97	9.1	54.0	1777	320.7	322.0	0.5	13.8	9.3	5.0	12	91	77
98	8.2	53.8	1513	320.7	327.8	0.3	13.6	8.6	6.4	12	91	77
99			1161	320.7	332.6	0.3	13.0	7.9	7.2	12	91	77
100			1113	320.7	333.4	0.3	12.8	8.5	8.1	12	88	77
101			1165	320.7	333.4	0.3	13.2	8.1	7.0	12	88	77
102	7.9	51.7	1212	320.7	333.4	0.3	13.2	7.5	5.0	12	88	77
103	8.3	52.5	1365	320.7	333.4	0.3	13.7	8.4	4.1	12	88	77
104			1395	320.7	333.4	0.3	13.8	6.5	7.7	12	88	77
105			1413	320.7	333.4	0.3	13.9	8.2	8.0	12	88	77
106			1432	320.7	333.4	0.3	13.8	8.0	8.0	12	87	77
107			1301	320.7	333.4	0.3	13.5	7.3	7.5	12	87	77
108			1284	320.7	333.4	0.3	13.5	7.6	9.0	12	87	77
109			1342	320.7	333.4	0.3	13.6	7.0	10.0	12	87	77
110	10.0	53.5	2180	320.7	333.4	2.2	14.1	11.2	8.2	12		

Table E.01 Measurement data - Turbine ON
 Project: McLeans Mountain Wind Farm - Turbine T05 - IEC 61400-11 Measurement
 Report ID: 08020.04.T05.RP3

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	Lead	Turbine Power (kW)	Reference Yaw Angle (°)	Yaw Angle (°)	Pitch (°)	Rotor Azimuth (°)	Nacelle Anemometer Wind Speed (m/s)	10m Anemometer Wind Speed (m/s)	Air Temperature (°C)	Pressure (hPa)	Relative Humidity (%)
177	11.5	53.0	2584	320.7	330.7	15.8	12.7	9.7	12	87	77	
178			2446	320.7	330.5	3.5	13.9	12.0	10.3	12	87	77
179	10.8	53.1	2454	320.7	330.5	3.3	13.9	12.5	9.4	12	87	77
180			2420	320.7	330.5	2.9	13.9	12.0	10.4	12	87	77
181			2359	320.7	330.5	2.9	13.9	12.5	11.1	12	87	77
182			2269	320.7	330.5	2.3	13.9	12.1	9.4	12	87	77
183	9.9	53.1	2121	320.7	330.5	1.6	13.8	11.8	8.1	12	87	77
184	10.0	52.8	2203	320.7	330.5	1.8	13.9	11.0	8.5	12	88	77
185	10.1	53.1	2224	320.7	330.5	1.8	13.9	10.8	8.5	12	88	77
186	10.0	53.1	2178	320.7	330.5	1.6	13.9	11.2	8.1	12	88	77
187			2323	320.7	330.5	1.7	14.0	11.4	9.9	12	88	77
188			2189	320.7	330.5	1.7	13.8	11.6	9.1	12	88	77
189	10.3	53.0	2277	320.7	330.5	1.6	13.9	10.8	7.9	12	88	77
190	9.9	53.5	2141	320.7	330.5	1.4	13.9	10.1	7.6	12	87	77
191	10.2	53.8	2238	320.7	330.5	1.6	13.9	9.4	7.2	12	87	77
192	10.5	53.2	2346	320.7	330.5	1.8	14.0	11.2	8.1	12	87	77
193	11.0	52.8	2465	320.7	330.5	2.3	13.9	11.9	8.5	12	87	77
194	10.5	52.8	2345	320.7	330.5	2.6	13.9	10.4	8.6	12	87	77
195	10.4	53.2	2310	320.7	330.5	2.2	13.9	10.5	8.2	12	87	77
196			2281	320.7	330.5	1.9	13.9	10.8	9.5	12	87	77
197	10.5	53.4	2343	320.7	330.5	2.0	13.9	10.8	6.8	12	87	77
198	10.0	53.1	2174	320.7	330.5	2.0	13.9	10.7	7.7	12	87	77
199	10.2	52.7	2245	320.7	330.5	1.8	13.9	11.2	6.9	12	87	77
200	9.8	53.2	2090	320.7	330.5	1.3	13.9	11.3	7.2	12	87	77
201	9.1	53.1	1985	320.7	330.5	0.7	13.9	9.8	6.0	12	87	77
202	9.2	53.3	1853	320.7	330.5	0.6	13.8	9.2	6.3	12	87	77
203	8.8	52.8	1603	320.7	330.5	0.3	13.8	9.1	7.0	12	87	77
204			1515	320.7	330.5	0.3	13.9	8.5	8.0	12	87	77
205	9.6	53.6	2000	320.7	330.5	0.7	14.0	8.3	6.3	12	87	77
206	10.0	53.8	2186	320.7	330.5	1.0	14.0	10.5	8.6	12	87	77
207	10.1	53.8	2218	320.7	330.5	2.1	13.9	10.1	8.3	12	87	77
208			2281	320.7	330.5	2.4	13.9	10.8	8.9	12	87	77
209	10.8	53.5	2460	320.7	330.5	2.4	14.0	10.8	6.7	12	87	77
210	11.2	53.8	2543	320.7	330.5	3.1	13.9	11.1	8.0	12	87	77
211	11.4	54.2	2566	320.7	325.4	2.9	13.9	11.5	7.8	12	87	77
212			2662	320.7	322.7	3.0	14.0	12.1	6.8	12	87	77
213	12.4	53.1	2815	320.7	322.7	3.3	13.9	12.9	7.8	12	87	77
214	10.4	53.1	2385	320.7	322.7	2.6	13.8	11.8	6.1	12	87	77
215	10.8	53.1	2433	320.7	322.7	2.2	13.9	11.9	5.4	12	87	77
216	10.3	53.4	2273	320.7	322.7	2.2	13.8	11.2	6.1	12	87	77
217	10.2	52.9	2245	320.7	322.7	1.7	13.9	11.0	7.1	12	87	77
218	10.4	53.6	2316	320.7	322.7	2.1	13.9	10.9	6.3	12	87	77
219	9.9	53.1	2125	320.7	322.7	1.9	13.8	11.2	6.0	12	87	77
220	9.2	53.2	1813	320.7	322.7	0.7	13.8	9.2	5.5	12	88	77
221			1589	320.7	322.7	0.3	13.8	8.3	7.6	12	88	77
222			1824	320.7	322.7	0.3	14.0	8.3	8.3	12	88	77
223	9.9	53.3	2127	320.7	322.7	1.2	14.0	11.6	7.8	12	88	77
224	9.2	52.9	1820	320.7	322.7	0.7	13.8	9.8	7.7	12	88	77
225	8.8	53.2	1607	320.7	322.7	0.3	13.8	9.8	7.2	12	88	77
226	8.7	53.6	1584	320.7	322.7	0.3	13.9	8.4	6.7	12	88	77
227	8.5	53.4	1476	320.7	322.7	0.3	13.9	8.9	6.9	12	88	77
228	8.4	52.7	1445	320.7	322.7	0.3	13.8	9.1	6.5	12	88	77
229	8.1	52.6	1305	320.7	322.7	0.3	13.6	8.3	5.0	12	88	77
230	7.9	52.2	1181	320.7	322.7	0.3	13.1	7.9	5.4	12	88	77
231	8.0	52.0	1225	320.7	322.7	0.3	13.3	8.8	6.9	12	88	77
232			1414	320.7	322.7	0.3	13.8	9.2	8.4	12	88	77
233			1553	320.7	322.7	0.3	13.7	8.0	8.8	12	88	77
234			1277	320.7	322.7	0.3	13.4	7.4	8.0	12	88	77
235			1221	320.7	322.7	0.3	13.2	7.5	8.8	12	88	77
236			1311	320.7	322.7	0.3	13.5	8.3	8.8	12	88	77
237			1671	320.7	322.7	0.3	13.9	9.5	8.5	12	88	77
238			1550	320.7	322.7	0.3	13.8	8.4	7.7	12	87	77
239	9.3	52.9	1857	320.7	322.7	0.4	14.0	9.9	7.2	12	87	77
240	10.1	53.5	2225	320.7	322.7	0.8	14.0	10.4	7.8	12	87	77
241	9.8	53.5	2103	320.7	322.7	1.4	13.9	10.1	7.6	12	87	77
242			2210	320.7	323.0	1.9	13.9	10.6	8.9	12	87	77
243			2464	320.7	327.9	2.4	14.0	11.5	9.8	12	87	77
244	10.7	53.5	2408	320.7	332.7	2.6	13.9	12.2	7.4	12	88	77
245	10.5	53.3	2355	320.7	333.4	2.4	13.9	12.1	7.1	12	88	77
246	10.0	52.8	2201	320.7	333.4	1.5	13.9	11.1	8.3	12	88	77
247			2165	320.7	333.4	1.5	13.9	11.1	8.9	12	88	77
248	10.1	53.0	2228	320.7	333.4	1.5	13.9	11.2	8.4	12	88	77
249	10.3	53.0	2272	320.7	333.4	1.7	13.9	11.4	8.5	12	88	77
250	10.0	53.5	2198	320.7	333.4	1.8	13.9	10.2	8.0	12	88	77
251	10.2	53.6	2261	320.7	333.4	2.0	13.9	11.2	7.3	12	88	77
252	10.4	53.2	2329	320.7	333.4	1.8	13.9	11.0	6.9	12	88	77
253	10.5	53.0	2351	320.7	333.4	2.1	13.9	11.3	7.1	12	88	77
254	10.4	53.3	2329	320.7	333.4	2.5	13.9	11.5	8.4	12	88	77
255	10.2	53.1	2270	320.7	333.4	2.0	13.9	11.2	7.5	12	88	77
256	10.3	53.1	2270	320.7	333.4	1.8	13.9	11.6	7.8	12	88	77
257	10.4	53.1	2324	320.7	333.4	2.1	13.9	11.3	7.4	12	88	77
258	10.6	53.5	2377	320.7	333.4	2.6	13.9	11.7	7.4	12	88	77
259	10.6	54.1	2383	320.7	333.4	2.4	13.9	11.5	7.3	12	88	77
260			2165	320.7	333.4	2.0	13.8	11.3	8.8	12	88	77
261			1937	320.7	333.4	1.1	13.8	10.8	8.5	12	88	77
262	9.5	53.1	1875	320.7	333.4	0.7	13.9	11.6	7.6	12	88	77
263	9.6	53.4	2001	320.7	333.4	1.0	13.9	11.1	7.3	12	88	77
264	9.8	53.3	2085	320.7	333.4	1.1	13.9	10.6	7.0	12	88	77

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	Lead	Turbine Power (kW)	Reference Yaw Angle (°)	Yaw Angle (°)	Pitch (°)	Rotor Azimuth (°)	Nacelle Anemometer Wind Speed (m/s)	10m Anemometer Wind Speed (m/s)	Air Temperature (°C)	Pressure (hPa)	Relative Humidity (%)
265	9.7	53.2	2039	320.7	333.4	1.1	13.9	9.9	7.1	12	88	77
266	9.8	53.5	2092	320.7	333.4	0.9	13.9	10.9	7.0	12	88	77
267	9.1	53.2	1765	320.7	333.4	0.5	13.8	9.9	6.5	12	88	77
268	9.1	53.6	1761	320.7	333.4	0.3	13.9	9.8	7.1	12	89	77
269	9.5	53.6	1948	320.7	333.4	0.5	13.9	11.0	7.5	12	89	77
270	9.3	53.5	1856	320.7	333.4	0.6	13.9	10.3	6.9	12	89	77
271	9.3	53.5	1849	320.7	333.4	0.4	13.9	10.1	7.2	12	89	77
272	9.0	53.2	1727	320.7	333.4	0.4	13.8	9.8	6.5	12	89	77
273	9.2	53.1	1810	320.7	333.4	0.4	13.9	10.1	6.6	12	89	77
274	9.5	53.5	1970	320.7	333.4	0.8	13.9	10.8	7.6	12	89	77
275	9.5	53.1	1968	320.7	333.4	0.8	13.9	10.3	7.4	12	89	77
276	9.6	53.2	1999	320.7	333.4	0.7	13.9	10.4	7.9	12	89	77
277	9.2	53.1	1870	320.7	333.4	0.6	13.9	9.7	8.9	12	89	77
278	9.3	52.8	1878	320.7	333.4	0.5	13.9	10.0	8.1	12	89	77
279	9.2	53.3	1796	320.7	333.4	0.4	13.9	10.1	7.2	12	89	77
280	9.2	53.4	1815	320.7	333.4	0.3	13.9	10.1	6.6	12	89	77
281	9.3	53.4	1870	320.7	333.4	0.4</						

Table E.01 Measurement data - Turbine ON
 Project: McLeans Mountain Wind Farm - Turbine T05 - IEC 61400-11 Measurement
 Report ID: 08020.04.T05.RP3

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	Lean	Turbine Power (kW)	Reference Yaw Angle (°)	Yaw Angle (°)	Pitch (°)	Rotor Pitch (°)	Nacelle Anemometer Wind Speed (m/s)	10m Anemometer Wind Speed (m/s)	Air Temperature (°C)	Pressure (hPa)	Relative Humidity (%)
353	8.6	52.9	1540	320.7	330.4	0.3	13.8	9.3	5.2	12	90	77
354	8.5	53.0	1485	320.7	330.4	0.3	13.9	9.5	4.3	12	90	77
355	8.5	52.9	1457	320.7	330.4	0.3	13.9	8.9	4.6	12	90	77
356	8.7	53.7	1589	320.7	326.9	0.3	13.9	8.8	6.8	12	90	77
357	8.4	53.2	1418	320.7	325.6	0.3	13.8	7.1	5.6	12	90	77
358			1375	320.7	325.6	0.3	13.7	8.2	7.9	12	90	77
359			1879	320.7	325.6	0.6	14.1	9.4	8.3	12	90	77
360			1869	320.7	325.6	0.7	13.9	9.6	9.2	12	90	77
361			1941	320.7	325.6	0.4	13.9	10.1	9.2	12	90	77
362			1824	320.7	325.6	0.4	13.9	9.4	9.0	12	90	77
363			2077	320.7	325.6	1.0	14.0	10.8	9.1	12	90	77
364			2030	320.7	325.6	1.0	13.9	10.2	9.3	12	90	77
365			2102	320.7	325.6	0.8	13.9	10.2	8.9	12	90	77
366	9.8	53.4	2098	320.7	325.6	1.1	13.9	11.2	7.5	12	90	77
367	9.8	52.9	2112	320.7	325.6	1.2	13.9	10.2	6.4	12	90	77
368	9.9	53.5	2133	320.7	325.6	1.2	13.9	10.8	7.2	12	90	77
369	9.5	53.2	2042	320.7	325.6	0.9	13.8	10.1	7.1	12	90	77
370	8.9	53.5	1656	320.7	325.6	0.4	13.8	8.8	7.5	12	90	77
371	8.8	53.0	1615	320.7	325.6	0.3	13.9	9.6	5.6	12	90	77
372	8.9	53.5	1650	320.7	325.6	0.3	13.9	9.2	4.8	12	90	77
373	8.8	53.3	1622	320.7	325.6	0.3	13.9	9.4	4.9	12	90	77
374	8.1	52.9	1260	320.7	325.6	0.3	13.4	7.8	5.4	12	90	77
375	7.8	51.9	1137	320.7	325.6	0.3	12.9	6.9	6.7	12	90	77
376	7.9	52.0	1202	320.7	325.6	0.3	13.1	8.8	6.0	12	91	77
377	9.0	53.0	1720	320.7	330.4	0.3	13.8	10.1	6.3	12	91	77
378	9.3	53.6	1846	320.7	330.0	0.3	13.9	9.6	6.6	12	91	77
379	9.3	53.0	1844	320.7	330.4	0.3	13.9	10.0	6.6	12	91	77
380	8.8	53.2	1621	320.7	330.4	0.3	13.8	9.2	5.8	12	91	77
381	8.8	53.2	2046	320.7	330.4	0.3	13.8	9.6	6.6	12	91	77
382	8.3	52.7	1363	320.7	330.4	0.3	13.8	9.8	5.5	12	91	77
383	8.1	52.6	1281	320.7	330.4	0.3	13.5	7.9	4.8	12	91	77
384	7.8	51.7	1150	320.7	330.4	0.3	13.0	7.7	5.2	12	91	77
385	7.6	51.0	1069	320.7	330.4	0.3	12.7	7.6	4.7	12	91	77
386	7.7	51.3	1084	320.7	330.4	0.3	12.8	8.1	4.1	12	91	77
387	8.0	52.2	1219	320.7	330.4	0.3	13.3	7.6	5.4	12	91	77
388	8.4	52.5	1427	320.7	330.4	0.3	13.8	9.4	4.8	12	91	77
389	8.1	52.8	1292	320.7	330.4	0.3	13.5	8.3	4.5	12	91	77
390	7.5	52.1	1029	320.7	330.4	0.3	12.4	7.2	6.2	12	91	77
391			884	320.7	330.4	0.3	12.0	7.2	6.6	12	91	77
392			803	320.7	330.4	0.3	11.5	6.4	7.1	12	91	77
393			671	320.7	330.4	0.3	10.8	6.0	7.3	12	91	77
394			720	320.7	330.4	0.3	11.3	6.8	7.9	12	91	77
395			539	320.7	330.4	0.3	10.3	6.2	6.1	13	90	77
396			687	320.7	330.4	0.3	11.2	7.4	7.5	12	90	77
397			790	320.7	330.4	0.3	11.8	6.7	8.0	12	90	77
398			715	320.7	330.4	0.3	11.5	6.3	7.1	12	90	77
399			616	320.7	330.4	0.3	10.5	5.6	6.8	12	90	77
400			674	320.7	330.4	0.3	11.1	6.2	8.6	12	89	77
401			879	320.7	330.4	0.3	12.1	7.5	8.1	12	89	77
402			972	320.7	330.4	0.3	12.3	6.8	7.9	12	89	77
403			1167	320.7	330.4	0.3	12.9	7.5	8.1	12	89	77
404			1826	320.7	330.4	0.4	13.9	10.2	8.8	12	89	77
405			2067	320.7	330.4	0.6	14.0	10.4	9.9	12	89	77
406			2046	320.7	330.4	0.5	13.9	10.0	9.6	12	90	77
407			2082	320.7	330.4	1.0	13.9	9.7	9.9	12	90	77
408	11.4	53.6	2562	320.7	329.9	3.8	13.9	11.9	9.4	13	93	77
409	12.5	53.2	2651	320.7	328.5	4.5	14.0	13.0	9.2	13	92	77
410	12.0	52.8	2653	320.7	328.5	4.3	13.9	12.5	8.1	13	92	77
411	12.1	53.0	2661	320.7	328.5	4.0	13.9	12.6	9.5	13	92	77
412	11.7	52.9	2605	320.7	328.5	4.1	13.9	12.9	10.0	12	92	77
413	12.0	53.3	2672	320.7	328.5	4.0	14.0	12.5	11.1	12	92	77
414			53.3	320.7	328.5	4.4	14.0	12.0	9.3	12	92	77
415	11.9	53.2	2679	320.7	328.5	6.0	14.1	12.4	9.4	12	93	77
416	12.5	53.9	2647	320.7	328.5	5.5	13.9	13.0	9.4	12	93	77
417	11.7	52.8	2599	320.7	328.5	4.1	13.9	12.2	8.8	12	93	77
418	10.9	53.4	2469	320.7	328.5	3.7	13.8	11.4	8.7	12	93	77
419	10.4	53.3	2467	320.7	328.5	2.9	13.9	10.2	8.0	12	93	77
420	12.3	53.5	2630	320.7	328.5	3.7	14.0	12.7	5.7	12	93	77
421	12.4	53.2	2663	320.7	328.5	4.3	14.0	12.9	5.9	12	93	77
422	12.6	53.0	2664	320.7	328.5	4.7	14.0	13.1	6.0	12	93	77
423	13.5	52.8	320.7	320.7	328.5	4.3	13.9	11.3	6.4	12	93	77
424	10.4	52.9	2303	320.7	328.5	3.3	13.8	11.0	7.9	12	93	77
425			2315	320.7	328.5	2.4	13.9	9.1	9.3	12	93	77
426			2310	320.7	328.5	2.4	13.9	10.0	10.2	12	93	77
427	11.0	53.7	2526	320.7	328.5	11.0	14.0	10.2	12	93	77	
428	12.4	53.7	2680	320.7	328.5	4.0	14.1	12.9	9.0	12	93	77
429	12.8	53.1	2658	320.7	328.5	5.7	14.0	13.3	8.4	12	93	77
430	12.9	52.8	2666	320.7	328.5	6.2	14.0	13.4	7.8	12	93	77
431	12.7	53.6	2656	320.7	328.5	6.2	13.9	11.7	7.8	12	93	77
432	12.7	53.6	2656	320.7	328.5	6.3	13.9	13.2	8.7	12	93	77
433	12.5	53.3	2633	320.7	328.5	5.1	13.9	13.0	9.3	12	93	77
434	11.5	53.3	2576	320.7	328.5	3.9	13.9	12.6	8.5	12	93	77
435			53.4	320.7	328.5	4.6	14.0	12.2	8.4	12	93	77
436	12.7	53.4	2663	320.7	328.5	5.5	14.0	13.2	8.4	12	93	77
437	11.4	53.3	2559	320.7	328.5	4.5	13.8	12.5	7.2	12	93	77
438	10.9	53.4	2464	320.7	328.5	3.5	13.9	10.4	6.6	12	93	77
439	13.0	53.4	2665	320.7	328.5	5.4	14.1	13.5	9.4	12	93	77
440	12.8	53.0	2664	320.7	328.5	5.9	14.0	13.3	8.9	12	93	77

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	Lean	Turbine Power (kW)	Reference Yaw Angle (°)	Yaw Angle (°)	Pitch (°)	Rotor Pitch (°)	Nacelle Anemometer Wind Speed (m/s)	10m Anemometer Wind Speed (m/s)	Air Temperature (°C)	Pressure (hPa)	Relative Humidity (%)
441	13.1	53.3	2922	320.7	328.5	5.1	13.9	13.6	7.9	12	93	77
442	12.8	53.2	2668	320.7	328.5	4.4	14.0	13.3	7.2	12	93	77
443			52.8	320.7	328.5	5.4	14.0	11.7	8.9	13	93	77
444	12.0	53.4	2665	320.7	327.8	6.2	14.0	12.4	8.1	13	93	77
445	12.5	54.2	2617	320.7	323.3	5.5	13.9	13.0	9.3	12	93	77
446	12.5	53.4	2631	320.7	322.6	4.4	13.9	13.0	8.3	12	93	77
447	10.5	53.0	2362	320.7	322.6	3.2	13.8	11.2	8.0	12	93	77
448	9.3	53.8	1865	320.7	322.6	1.0	13.7	9.7	7.9	12	93	77
449			1923	320.7	322.6	0.3	13.9	8.7	8.6	12	93	77
450	9.9	53.9	2124	320.7	322.6	1.7	14.0	10.1	6.9	12	93	77
451	9.7	53.6	2058	320.7	322.6	1.6	13.9	8.6	7.3	12	93	77
452	10.8	53.4	2442	320.7	322.6	3.0	14.0	11.8	5.6	12	93	77
453	10.5	52.9	2350	320.7	322.6	2.8	13.9	11.2	5.6	12	93	77
454	11.5	53.6	2584	320.7	322.6	3.7	14.0	11.7	6.1	12	93	77
455	10.9	53.2	2482	320.7	322.6	3.4	13.9	11.0	6.9	12	93	77
456	11.0	53.5	2504	320.7	322.6	3.3	13.9	11.7	8.1	12	93	77
457	10.5	52.7	2344	320.7	322.6	2.8	13.9	10.8	7.8	12	94	77
458	10.4	53.5	2330	320.								

Table E.01 Measurement data - Turbine On
 Project: McLeans Mountain Wind Farm - Turbine T05 - IEC 61400-11 Measurement
 Report ID: 08020.04.T05.RP3

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed (m/s)	Lat	Turbine Power (kW)	Reference Yaw Angle (°)	Yaw Angle (°)	Pitch (°)	Rotor Azimuth (°)	Nacelle Anemometer Wind Speed (m/s)	10m Anemometer Wind Speed (m/s)	Air Temperature (°C)	Pressure (hPa)	Relative Humidity (%)
529	10.3	53.9	2203	320.7	322.6	2.0	14.0	12.2	5.7	12	94	77
530	10.5	53.1	2361	320.7	322.6	2.5	13.9	11.0	5.8	12	94	77
531	10.8	53.2	2462	320.7	322.6	2.7	13.9	12.1	6.0	12	94	77
532	10.4	53.3	2315	320.7	322.6	2.1	13.9	11.3	4.7	12	94	77
533	9.8	53.5	2089	320.7	322.6	1.4	13.8	10.5	6.2	12	94	77
534	9.5	53.3	1968	320.7	322.6	1.0	13.8	9.2	5.8	12	94	77
535	9.8	53.6	2082	320.7	322.6	1.3	13.9	9.6	5.6	13	95	77
536	10.2	53.6	2257	320.7	322.6	1.5	14.0	11.2	7.1	13	95	77
537	11.3	53.6	2553	320.7	322.6	3.2	14.0	11.0	8.2	13	95	77
538	10.7	53.4	2418	320.7	322.6	3.3	13.9	11.2	7.6	13	95	77
539	9.9	53.3	2124	320.7	322.6	1.7	13.8	10.6	7.5	13	95	77
540	10.5	53.8	2341	320.7	322.6	2.1	14.0	10.5	8.1	13	95	77
541	10.2	53.5	2492	320.7	322.6	2.2	13.9	10.1	6.7	13	94	77
542	10.9	53.6	2479	320.7	322.6	2.6	14.0	11.1	8.2	13	94	77
543	10.3	52.9	2298	320.7	322.6	2.1	13.8	11.2	7.0	13	94	77
544	9.4	52.8	1891	320.7	322.6	1.0	13.7	9.9	6.4	13	94	77
545	10.0	53.2	2179	320.7	322.6	1.7	14.0	10.2	5.0	13	94	77
546	10.5	53.2	2345	320.7	322.6	2.1	13.9	12.0	5.2	13	94	77
547	9.6	53.1	2005	320.7	322.6	1.3	13.8	11.1	6.3	13	95	77
548	9.4	53.7	1894	320.7	322.6	0.7	13.9	8.5	5.5	13	95	77
549	10.8	53.8	2439	320.7	322.6	2.7	14.1	10.5	6.5	13	95	77
550	10.7	53.1	2418	320.7	322.6	2.7	13.9	11.6	6.3	13	95	77
551	10.0	53.1	2166	320.7	322.6	1.6	13.8	10.5	6.1	13	95	77
552	10.4	53.2	2306	320.7	322.6	1.4	13.9	11.2	7.5	13	95	77
553	10.7	53.2	2429	320.7	322.6	2.5	14.0	10.3	9.2	13	94	77
554	10.8	53.5	2457	320.7	322.6	2.6	13.9	12.1	8.5	13	94	77
555	11.6	53.3	2587	320.7	322.6	2.9	13.9	11.2	7.9	13	94	77
556	11.0	53.0	2513	320.7	322.6	3.3	13.9	12.6	7.1	13	94	77
557	11.5	53.5	2572	320.7	315.8	3.5	13.9	11.5	8.0	13	94	77
558	11.8	53.6	2644	320.7	315.8	3.9	14.0	12.3	9.1	13	94	77
559	10.7	54.1	2413	320.7	315.8	3.2	13.8	10.5	7.7	13	94	77
560	10.7	53.6	2418	320.7	315.8	2.7	13.9	10.0	6.7	13	94	77
561	11.7	53.4	2612	320.7	315.8	3.8	13.9	11.4	7.6	13	94	77
562	11.4	53.2	2561	320.7	315.8	3.9	13.8	12.2	7.8	13	94	77
563	11.1	53.8	2518	320.7	315.8	3.6	13.9	12.0	7.1	13	94	77
564	11.7	53.8	2608	320.7	315.8	3.3	13.9	12.6	7.1	13	94	77
565	12.0	53.7	2646	320.7	315.8	4.0	14.0	12.5	7.5	12	94	77
566	11.3	53.7	2509	320.7	315.8	4.4	13.9	11.7	8.6	12	94	77
567	11.0	53.6	2501	320.7	315.8	2.9	13.9	11.7	8.2	12	94	77
568	10.9	53.5	2482	320.7	315.8	3.1	13.9	11.0	7.6	12	94	77
569	11.4	53.6	2563	320.7	315.8	3.7	14.0	11.7	8.1	12	94	77
570	11.7	53.6	2615	320.7	315.8	4.5	13.9	11.8	9.2	12	94	77
571	11.7	52.9	2608	320.7	315.8	3.4	13.9	10.7	9.1	12	94	77
572	53.7	2639	320.7	315.8	3.9	13.9	12.2	8.7	12	94	77	
573	11.1	53.3	2519	320.7	315.8	3.3	13.9	12.1	7.1	12	94	77
574	10.7	54.4	2410	320.7	320.4	2.8	13.8	11.6	7.6	12	94	77
575	9.8	53.4	2104	320.7	320.7	1.4	13.8	10.3	7.8	12	94	77
576	10.3	53.8	2270	320.7	320.7	1.5	13.9	9.6	7.0	12	94	77
577	10.1	53.5	2206	320.7	320.7	1.5	13.9	10.5	7.2	12	94	77
578	9.6	53.2	1978	320.7	320.7	0.8	13.8	9.2	7.0	12	94	77
579	10.4	53.5	2331	320.7	320.7	1.5	14.0	10.1	6.5	12	94	77
580	11.2	53.5	2540	320.7	320.7	3.2	14.0	12.2	6.8	12	94	77
581	10.6	53.4	2366	320.7	320.7	2.6	13.9	11.2	7.9	12	94	77
582	10.9	53.5	2482	320.7	320.7	3.0	14.0	12.3	8.0	12	94	77
583	13.0	53.2	2653	320.7	320.7	4.8	14.0	13.5	7.6	13	94	77
584	13.0	53.3	2653	320.7	320.7	3.7	13.9	13.5	7.3	13	94	77
585	10.5	53.4	2350	320.7	320.7	2.5	13.8	10.9	6.8	13	94	77
586	9.6	53.2	1982	320.7	320.7	1.2	13.7	9.6	6.1	13	94	77
587	9.3	53.6	1875	320.7	320.7	0.6	13.9	9.6	7.0	13	94	77
588	9.5	53.8	1971	320.7	320.7	0.3	13.9	10.5	4.8	13	94	77
589	10.2	53.9	2288	320.7	320.7	1.7	14.0	11.3	4.8	13	95	77
590	9.7	53.8	2036	320.7	320.7	1.3	13.9	9.2	6.1	13	95	77
591	10.3	53.7	2301	320.7	320.7	1.9	14.0	10.7	6.1	13	95	77
592	10.3	53.8	2287	320.7	320.7	1.6	13.9	10.6	7.0	13	95	77
593	9.4	53.3	1888	320.7	320.7	0.9	13.7	10.0	5.5	13	95	77
594	9.0	53.8	1697	320.7	320.7	0.4	13.8	8.0	5.5	13	95	77
595	9.7	54.1	2029	320.7	320.7	0.9	14.0	9.8	7.3	13	94	77
596	10.1	53.9	2216	320.7	320.7	1.2	14.0	11.4	6.3	13	94	77
597	10.0	54.0	2181	320.7	320.7	1.9	13.9	9.8	5.6	13	94	77
598	10.9	54.1	2472	320.7	320.7	2.6	14.0	11.9	6.7	13	94	77
599	10.8	53.2	2366	320.7	320.7	3.2	14.0	12.2	7.5	13	94	77
600	10.9	53.3	2442	320.7	320.7	3.6	13.9	11.3	6.1	13	94	77
601	10.6	53.6	2369	320.7	320.7	2.7	13.9	10.8	6.2	13	94	77
602	10.8	53.6	2456	320.7	320.7	2.5	13.9	11.9	7.3	13	94	77
603	10.2	53.9	2261	320.7	320.7	2.4	13.9	10.6	7.4	13	94	77
604	10.5	54.0	2381	320.7	320.7	2.2	13.9	10.6	7.6	13	94	77
605	10.0	53.6	2177	320.7	320.7	2.0	13.8	9.8	7.4	13	94	77
606	9.9	53.9	2153	320.7	320.7	1.7	13.9	9.9	8.0	13	94	77
607	10.7	53.7	2307	320.7	320.7	2.4	13.7	8.7	7.0	13	93	77
608	11.1	53.7	2521	320.7	320.7	3.1	14.0	11.3	7.8	13	93	77
609	10.0	54.2	2178	320.7	320.7	1.1	14.1	10.2	7.6	13	93	77
610	10.7	53.6	2412	320.7	320.7	2.3	14.0	11.7	6.0	13	93	77
611	10.2	53.4	2245	320.7	320.7	2.4	13.9	9.9	5.3	13	93	77
612	11.1	53.7	2521	320.7	320.7	3.1	14.0	11.3	7.8	13	93	77
613	10.9	53.4	2490	320.7	320.7	3.1	13.9	10.2	7.2	13	94	77
614	54.1	2635	320.7	320.7	3.4	14.0	11.8	5.9	13	94	77	
615	10.8	53.9	2436	320.7	320.7	3.1	13.8	12.0	8.0	13	94	77
616	10.3	53.4	2279	320.7	320.7	2.0	13.8	10.2	6.8	13	94	77

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed (m/s)	Lat	Turbine Power (kW)	Reference Yaw Angle (°)	Yaw Angle (°)	Pitch (°)	Rotor Azimuth (°)	Nacelle Anemometer Wind Speed (m/s)	10m Anemometer Wind Speed (m/s)	Air Temperature (°C)	Pressure (hPa)	Relative Humidity (%)
617	10.8	53.7	2435	320.7	320.7	2.8	13.9	10.9	8.9	13	94	77
618	11.6	53.5	2595	320.7	320.7	3.2	14.0	12.1	9.1	13	94	77
619	11.5	53.7	2576	320.7	320.7	3.3	13.9	13.0	6.6	13	93	77
620	10.2	53.7	2295	320.7	320.7	2.4	13.8	11.5	8.7	13	93	77
621	10.2	54.5	2295	320.7	320.7	1.6	13.9	10.3	8.8	13	93	77
622	10.7	54.6	2398	320.7	320.7	2.4	13.9	10.7	8.8	13	93	77
623			2253	320.7	320.7	1.9	13.9	10.8	9.0	13	93	77
624			2231	320.7	320.7	1.5	13.9	10.1	9.4	13	93	77
625			2244	320.7	320.7	1.8	13.9	10.4	10.1	13	93	77
626			2251	320.7	320.7	2.1	13.9	10.0	10.7	13	93	77
627	12.6	54.6	2653	320.7	320.7	4.7	14.1	13.1	9.6	13	93	77
628	11.7	54.1	2610	320.7	320.7	3.7	13.9	10.4	8.7	13	93	77
629	11.8	54.1	2658	320.7	320.7	3.8	14.0	12.2	7.4	13	93	77
630			2544	320.7	320.7	4.8	13.9	12.1	8.6	13	93	77
631			53.8	2617	320.7	320.7	4.1	14.0				

Table E.02 Measurement data - Background
 Project: McLeans Mountain Wind Farm - Turbine T05 - IEC 61400-11 Measurement
 Report ID: 0820.04.T05.RP3

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	Lag	Rotor RPM	10m Anemometer Wind Speed (m/s)	Air Temperature (C)	Pressure (kPa)	Relative Humidity (%)
1	7.9	40.9	0.3	5.5	13	92	77
2	11.6	42.5	0.3	8.1	13	92	77
3	10.0	42.1	0.4	7.0	13	91	77
4	11.5	45.2	0.4	8.1	13	91	77
5	13.1	43.9	0.4	9.1	13	91	77
6	9.4	46.4	0.3	6.6	13	91	77
7	11.2	47.5	0.3	7.8	13	91	77
8	13.0	45.7	0.7	9.1	13	91	77
9	12.8	43.8	0.4	9.0	13	91	77
10	10.5	44.9	0.3	7.4	13	90	77
11	10.8	44.6	0.3	7.6	13	90	77
12	10.0	43.2	0.4	7.0	13	90	77
13	11.5	43.4	0.3	8.1	13	90	77
14	11.8	43.5	0.3	8.3	13	90	77
15	12.8	44.0	0.3	9.0	12	91	77
16	11.7	42.7	0.4	8.2	12	91	77
17	11.5	43.0	0.4	8.0	12	91	77
18	11.3	40.8	0.3	7.9	12	91	77
19	11.2	41.1	0.4	7.8	12	91	77
20	11.2	42.1	0.3	7.8	12	91	77
21	10.5	42.5	0.3	7.3	12	91	77
22	10.8	41.4	0.1	7.6	12	91	77
23	10.9	41.6	0.1	7.6	12	91	77
24	10.2	39.9	0.1	7.1	12	91	77
25	11.0	39.0	0.2	7.7	12	91	77
26	10.7	39.4	0.2	7.5	12	91	77
27	8.5	40.2	0.2	6.0	12	91	77
28	7.9	41.2	0.1	5.5	12	91	77
29	9.0	40.9	0.1	6.3	12	91	77
30	9.9	40.6	0.2	6.9	12	91	77
31	10.0	40.7	0.3	4.2	12	91	77
32	7.2	40.3	0.3	5.1	12	91	77
33	7.0	41.7	0.2	4.9	12	92	77
34	6.0	41.0	0.3	4.2	12	92	77
35	6.0	42.2	0.3	4.2	12	92	77
36	7.6	41.8	0.3	5.3	12	92	77
37	8.7	43.1	0.3	6.1	12	92	77
38	9.0	45.5	0.3	6.3	12	92	77
39	10.0	42.0	0.3	6.9	12	91	77
40	10.8	41.7	0.2	7.6	13	91	77
41	10.7	40.4	0.3	7.5	13	91	77
42	9.7	41.0	0.2	6.7	13	91	77
43	7.6	41.7	0.2	5.3	13	91	77
44	7.9	42.2	0.3	5.5	13	91	77
45	7.7	43.4	0.3	5.4	13	92	77
46	11.2	44.4	0.4	7.8	13	92	77
47	12.1	46.1	0.4	8.5	13	92	77
48	11.7	44.4	0.4	8.2	13	92	77
49	9.8	43.1	0.5	6.9	13	92	77
50	10.5	44.0	0.4	7.3	13	92	77
51	8.7	44.9	0.3	6.1	13	91	77
52	10.2	42.7	0.3	7.1	13	91	77
53	10.0	43.1	0.3	7.0	13	91	77
54	9.3	42.1	0.3	6.5	13	91	77
55	9.5	42.6	0.3	6.6	13	91	77
56	8.5	42.2	0.3	5.9	13	91	77
57	8.3	44.9	0.3	5.8	13	91	77
58	8.7	42.2	0.3	6.1	13	91	77
59	8.6	41.3	0.3	6.0	13	91	77
60	7.0	41.5	0.3	4.9	13	91	77
61	9.0	42.5	0.3	6.3	13	91	77
62	10.8	44.9	0.3	7.6	13	91	77
63	8.7	44.8	0.3	6.1	13	91	77
64	7.7	44.0	0.3	5.4	13	91	77
65	11.4	45.0	0.3	7.9	13	91	77
66	13.0	42.7	0.2	9.1	13	91	77
67	13.5	41.5	0.2	9.4	13	91	77
68	13.0	41.2	0.2	9.1	13	91	77
69	12.3	42.1	0.3	8.6	13	92	77
70	10.9	42.9	0.3	7.6	13	92	77
71	8.1	51.1	0.3	5.6	13	92	77
72	9.3	50.6	0.3	6.5	13	92	77
73	7.2	44.6	0.3	5.0	13	92	77
74	7.2	43.8	0.2	5.0	13	92	77
75	7.3	43.5	0.3	5.1	12	93	77
76	9.9	43.9	0.3	6.9	12	93	77
77	10.0	43.7	0.3	7.0	12	93	77
78	8.4	45.0	0.3	5.8	12	93	77
79	7.5	42.3	0.3	5.2	12	93	77
80	8.7	42.1	0.2	6.1	12	93	77
81	7.1	39.6	0.3	5.0	12	93	77
82	5.8	41.4	0.3	4.0	12	92	77
83	8.5	41.6	0.3	6.0	12	92	77

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	Lag	Rotor RPM	10m Anemometer Wind Speed (m/s)	Air Temperature (C)	Pressure (kPa)	Relative Humidity (%)
84	8.4	41.5	0.3	4.3	12	92	77
85	5.2	43.0	0.2	3.6	12	92	77
86	7.9	43.3	0.1	5.5	12	92	77
87	7.9	42.2	0.1	5.6	12	93	77
88	7.7	42.1	0.1	5.4	12	93	77
89	7.5	42.6	0.1	5.2	12	93	77
90	6.0	42.5	0.3	4.2	12	93	77
91	7.5	42.2	0.4	5.3	12	93	77
92	7.3	42.6	0.3	5.1	12	93	77
93	10.3	43.7	0.3	7.2	13	93	77
94	8.7	43.1	0.3	6.1	13	93	77
95	10.4	42.0	0.6	7.3	13	93	77
96	8.8	45.3	0.6	6.2	13	93	77
97	9.4	44.8	0.4	6.5	13	93	77
98	11.0	41.8	0.4	7.6	13	93	77
99	9.7	41.6	0.4	6.7	13	92	77
100	9.0	41.9	0.4	6.3	13	92	77
101	9.7	44.6	0.4	6.7	13	92	77
102	10.1	43.4	0.5	7.1	13	92	77
103	8.5	44.7	0.3	6.0	13	92	77
104	9.1	43.8	0.3	6.4	13	92	77
105	9.8	44.1	0.3	6.8	13	92	77
106	8.0	43.2	0.3	5.6	13	92	77
107	8.4	41.3	0.4	5.8	13	92	77
108	6.3	42.4	0.3	4.4	13	92	77
109	8.5	40.8	0.3	5.9	13	92	77
110	7.7	39.7	0.3	5.4	13	92	77
111	8.0	40.3	0.2	5.6	13	93	77
112	6.9	39.4	0.2	4.8	13	93	77
113	7.8	39.6	0.2	5.5	13	93	77
114	8.1	41.9	0.2	6.2	13	93	77
115	8.2	42.5	0.2	5.8	13	93	77
116	7.8	42.4	0.1	5.5	13	93	77
117	8.8	40.9	0.1	6.1	13	94	77
118	11.1	41.8	0.2	7.8	13	94	77
119	7.4	43.2	0.2	5.2	13	94	77
120	10.5	41.6	0.2	7.3	13	94	77
121	10.3	41.0	0.3	7.2	13	94	77
122	11.4	40.3	0.3	7.9	13	94	77
123	8.2	39.9	0.4	5.8	13	93	77
124	8.6	41.5	0.4	6.0	13	93	77
125	10.6	38.5	0.3	7.4	13	93	77
126	8.9	40.3	0.2	6.2	13	93	77
127	8.2	41.9	0.2	5.7	13	93	77
128	7.4	40.0	0.2	5.2	13	93	77
129	7.0	38.8	0.3	4.9	13	93	77
130	7.5	40.2	0.3	5.2	13	93	77
131	11.0	39.7	0.4	7.6	13	93	77
132	8.9	39.1	0.4	6.2	13	93	77
133	7.9	40.1	0.4	5.5	13	93	77
134	8.6	42.6	0.4	6.0	13	93	77
135	8.2	40.7	0.3	5.8	13	93	77
136	9.6	41.7	0.2	6.7	13	92	77
137	8.7	41.2	0.2	6.1	13	92	77
138	8.8	39.6	0.5	6.1	13	92	77
139	7.2	39.0	0.5	5.1	13	92	77
140	6.6	40.0	0.4	4.6	13	92	77
141	6.0	39.8	0.3	4.2	12	93	77
142	7.7	38.9	0.3	5.4	12	94	77
143	7.7	39.5	0.4	5.4	12	94	77
144	9.2	39.4	0.5	6.4	12	94	77
145	9.1	41.0	0.4	6.4	12	94	77
146	9.0	42.9	0.3	6.3	12	94	77
147	7.7	44.5	0.3	5.4	12	94	77
148	7.3	43.6	0.3	5.3	12	93	77
149	8.2	44.3	0.3	5.7	13	93	77
150	10.4	41.5	0.3	7.3	13	93	77
151	9.3	40.4	0.4	6.5	13	93	77
152	9.4	39.2	0.4	6.6	13	93	77
153	8.2	42.1	0.4	5.8	13	93	77
154	10.1	48.9	0.3	7.1	13	93	77
155	10.1	44.5	0.3	7.0	13	93	77
156	10.8	40.4	0.2	7.5	13	93	77
157	9.7	41.8	0.2	6.8	13	93	77
158	10.1	41.3	0.3	7.1	13	93	77
159	9.8	40.8	0.3	6.8	13	92	77
160	9.9	42.5	0.3	6.9	13	92	77
161	8.9	40.5	0.3	6.2	13	92	77
162	9.0	39.7	0.3	6.3	13	92	77
163	8.1	40.1	0.3	6.2	13	92	77
164	9.9	39.8	0.2	6.9	13	92	77
165	8.9	41.6	0.2	6.2	13	93	77
166	8.4	40.8	0.2	5.8	13	93	77

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	Lag	Rotor RPM	10m Anemometer Wind Speed (m/s)	Air Temperature (C)	Pressure (kPa)	Relative Humidity (%)
167	7.7	41.0	0.4	5.3	13	93	77
168	6.7	41.5	0.3	4.7	13	93	77
169	8.2	40.1	0.3	5.8	13	93	77
170	8.3	41.6	0.3	5.8	13	93	77
171	7.7	40.2	0.3	5.4	13	93	77
172	9.0	41.1	0.3	6.3	13	93	77
173	8.6	39.9	0.4	6.0	13	93	77
174	7.4	38.1	0.3	5.2	13	93	77
175	7.1	38.2	0.3	5.0	13	93	77
176	6.2	39.7	0.3	4.4	13	93	

Table E.02 Measurement data - Background
 Project: McLeans Mountain Wind Farm - Turbine T05 - IEC 61400-11 Measurement
 Report ID: 0820.04.T05.RP3

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	L-Avg	Rotor RPM	10m Anemometer Wind Speed (m/s)	Air Temperature (C)	Pressure (kPa)	Relative Humidity (%)
250	6.7	36.7	0.3	4.7	12	93	77
251	6.6	38.2	0.4	4.6	12	93	77
252	7.7	40.1	0.4	5.4	12	93	77
253	7.8	43.2	0.2	5.5	12	93	77
254	7.5	43.8	0.2	5.3	12	93	77
255	7.6	38.0	0.3	5.3	12	93	77
256	6.6	37.9	0.3	4.6	12	93	77
257	5.9	39.4	0.2	4.1	12	93	77
258	10.2	36.7	0.3	7.2	12	93	77
259	8.7	37.8	0.3	6.1	12	93	77
260	6.2	38.5	0.4	4.3	12	93	77
261	5.1	40.3	0.4	3.6	12	94	77
262	4.9	39.3	0.3	3.5	12	94	77
263	3.6	38.7	0.2	2.5	12	94	77
264	6.4	45.6	0.2	4.5	12	94	77
265	8.4	38.8	0.4	5.9	12	94	77
266	12.8	38.5	0.1	9.0	12	94	77
267	14.4	38.9	0.2	10.0	12	93	77
268	11.6	38.3	0.5	8.1	12	93	77
269	9.2	37.9	0.5	6.5	12	93	77
270	10.0	36.1	0.4	7.0	12	93	77
271	11.7	37.1	0.3	8.2	12	93	77
272	8.8	40.3	0.3	6.1	12	93	77
273	8.3	40.2	0.3	5.8	12	94	77
274	9.5	38.6	0.4	6.6	12	94	77
275	9.3	39.5	0.3	6.5	12	94	77
276	8.7	39.4	0.2	6.1	12	94	77
277	12.9	45.6	0.2	9.0	12	94	77
278	9.7	43.9	0.5	6.8	12	94	77
279	12.3	43.8	0.5	8.6	12	94	77
280	10.0	40.0	0.4	7.0	12	93	77
281	10.0	41.0	0.3	7.0	12	93	77
282	11.4	44.0	0.3	7.9	12	93	77
283	9.5	42.9	0.4	6.7	12	93	77
284	12.9	41.8	0.3	9.0	12	93	77
285	11.3	40.8	0.3	7.9	12	94	77
286	9.2	40.9	0.4	6.5	12	94	77
287	13.7	40.4	0.4	9.6	12	94	77
288	11.5	39.9	0.3	8.0	12	94	77
289	10.2	39.9	0.3	7.1	12	94	77
290	9.2	38.9	0.3	6.5	12	94	77
291	11.8	40.9	0.4	8.2	12	94	77
292	7.9	39.0	0.3	5.5	12	94	77
293	7.5	40.3	0.3	5.2	12	94	77
294	10.3	40.7	0.3	7.2	12	94	77
295	14.4	38.6	0.4	10.1	12	94	77
296	14.5	38.8	0.4	10.1	12	94	77
297	11.1	39.5	0.5	7.8	12	94	77
298	8.9	39.9	0.5	6.2	12	94	77
299	10.8	38.6	0.4	7.6	12	94	77
300	10.1	39.8	0.4	7.1	12	94	77
301	9.5	42.3	0.4	6.7	12	94	77
302	9.1	40.2	0.4	6.4	12	94	77
303	7.5	40.4	0.4	5.2	12	94	77
304	8.0	40.7	0.4	5.6	12	94	77
305	5.5	41.0	0.3	3.9	12	94	77
306	8.2	38.5	0.2	5.7	12	94	77
307	7.4	36.9	0.3	5.2	12	94	77
308	9.7	37.4	0.3	6.7	12	94	77
309	8.4	36.5	0.3	5.9	12	94	77
310	10.7	38.5	0.4	7.5	12	94	77
311	10.6	36.5	0.4	7.4	12	94	77
312	8.7	36.9	0.6	6.1	12	94	77
313	6.8	39.6	0.5	4.8	12	94	77
314	7.5	40.5	0.5	5.2	12	94	77
315	7.0	43.4	0.5	4.9	12	94	77
316	7.7	42.1	0.4	5.4	12	94	77
317	8.7	41.7	0.3	6.1	12	94	77
318	6.6	42.3	0.3	4.6	12	94	77
319	9.5	38.4	0.3	6.7	12	94	77
320	10.0	38.6	0.4	7.0	12	94	77
321	10.5	39.5	0.4	7.3	13	94	77
322	10.1	39.2	0.4	7.1	13	93	77
323	15.0	41.7	0.5	10.5	13	93	77
324	10.8	38.7	0.5	7.5	13	93	77
325	9.0	37.9	0.4	6.3	13	93	77
326	9.7	38.4	0.5	6.8	13	93	77
327	9.9	38.8	0.5	6.9	13	93	77
328	7.5	44.5	0.4	5.3	13	93	77
329	9.0	41.2	0.4	6.3	13	93	77
330	8.0	42.7	0.3	5.8	13	93	77
331	7.3	39.4	0.5	5.1	13	93	77
332	6.1	39.1	0.5	4.3	13	93	77

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	L-Avg	Rotor RPM	10m Anemometer Wind Speed (m/s)	Air Temperature (C)	Pressure (kPa)	Relative Humidity (%)
333	10.1	39.5	0.5	7.0	13	93	77
334	10.0	40.2	0.5	7.0	13	94	77
335	7.5	38.6	0.6	5.2	13	94	77
336	7.8	39.2	0.4	5.5	13	94	77
337	6.9	39.1	0.3	4.8	13	94	77
338	9.2	39.3	0.4	6.4	13	94	77
339	9.1	40.5	0.4	6.4	13	93	77
340	7.3	38.2	0.4	5.1	13	93	77
341	7.8	38.8	0.6	5.5	13	93	77
342	10.5	41.0	0.6	7.3	13	93	77
343	12.9	39.6	0.4	9.0	13	93	77
344	10.6	38.7	0.4	7.4	13	93	77
345	12.4	38.9	0.4	8.7	13	93	77
346	10.2	38.9	0.5	7.2	13	92	77
347	8.2	40.2	0.5	5.7	13	92	77
348	7.8	43.2	0.3	5.5	13	92	77
349	8.8	44.4	0.3	6.2	13	92	77
350	9.1	40.6	0.3	6.4	13	92	77
351	9.8	39.9	0.3	6.9	13	93	77
352	11.5	39.4	0.2	8.0	13	93	77
353	11.5	39.4	0.3	8.1	13	93	77
354	10.1	39.1	0.4	7.0	13	93	77
355	12.1	40.5	0.3	8.4	13	93	77
356	6.5	45.5	0.3	4.5	13	93	77
357	9.4	45.3	0.3	6.5	13	93	77
358	10.1	43.6	0.3	7.1	13	93	77
359	7.9	43.0	0.3	5.5	13	93	77
360	11.9	41.9	0.4	8.3	13	93	77
361	11.7	40.6	0.4	8.2	13	93	77
362	10.0	43.4	0.3	7.0	13	93	77
363	11.2	43.4	0.4	7.8	13	92	77
364	11.9	42.4	0.3	8.3	13	92	77
365	12.9	43.5	0.4	9.0	13	92	77
366	11.8	46.0	0.5	8.3	13	92	77
367	11.3	44.9	0.6	7.9	13	92	77
368	12.0	40.8	0.5	8.4	13	92	77
369	12.1	43.0	0.4	8.5	13	92	77
370	11.3	42.0	0.3	7.9	13	92	77
371	11.3	39.4	0.2	7.9	13	92	77
372	11.5	38.9	0.4	8.1	13	92	77
373	12.4	39.4	0.5	8.7	13	92	77
374	13.4	40.5	0.3	9.3	13	92	77
375	7.9	42.0	0.3	6.5	13	92	77
376	8.4	39.6	0.7	5.9	13	92	77
377	10.0	38.9	0.6	7.0	13	92	77
378	7.8	41.9	0.5	5.5	13	92	77
379	9.5	39.6	0.4	6.6	13	92	77
380	10.0	39.5	0.6	7.0	13	92	77
381	11.8	39.1	0.7	8.3	13	92	77
382	12.0	40.8	0.5	8.3	13	93	77
383	8.9	39.7	0.3	6.2	13	93	77
384	11.8	41.0	0.2	8.2	13	93	77
385	13.6	41.3	0.2	9.5	13	93	77
386	12.0	43.5	0.3	8.4	13	93	77
387	10.0	41.0	0.5	7.0	13	93	77
388	12.5	42.8	0.4	8.7	13	93	77
389	11.6	42.9	0.3	8.1	13	93	77
390	10.7	43.5	0.3	7.5	13	93	77
391	7.8	43.5	0.3	5.5	13	93	77
392	8.7	42.6	0.3	6.1	13	93	77
393	8.5	43.7	0.4	6.0	13	93	77
394	11.5	42.3	0.4	8.1	13	93	77
395	7.8	41.1	0.4	5.4	13	93	77
396	7.9	40.2	0.4	5.5	13	93	77
397	5.9	39.8	0.3	4.2	13	93	77
398	8.2	39.8	0.4	5.7	13	93	77
399	9.0	41.4	0.3	6.3	13	93	77
400	8.0	42.6	0.4	5.8	13	93	77
401	10.8	40.4	0.4	7.5	13	93	77
402	9.9	39.2	0.3	6.9	13	93	77
403	8.3	40.8	0.4	5.8	13	93	77
404	8.7	43.4	0.4	6.1	13	93	77
405	12.2	39.1	0.4	8.5	13	92	77
406	12.7	40.2	0.5	8.9	13	92	77
407	12.6	39.5	0.4	8.8	13	92	77
408	12.3	39.3	0.2	8.6	13	92	77
409	9.1	39.0	0.1	6.4	13	92	77
410	8.8	39.9	0.3	6.1	13	92	77
411	9.8	39.8	0.4	6.8	13	93	77
412	10.4	38.3	0.3	7.3	13	93	77
413	10.8	39.5	0.3	7.6	13	93	77
414	9.5	40.4	0.4	6.6	13	93	77
415	11.4	46.2	0.4	7.9	13	93	77

***Blank data denotes values that were omitted in the analysis due to an extraneous event during recording

Data Point #	Standardized Wind Speed	L-Avg	Rotor RPM	10m Anemometer Wind Speed (m/s)	Air Temperature (C)	Pressure (kPa)	Relative Humidity (%)
416	12.1	43.5	0.3	8.5	13	93	77
417	8.6	40.1	0.3	6.0	13	93	77
418	8.8	39.0	0.4	6.1	13	93	77
419	9.2	39.2	0.3	6.4	13	93	77
420	11.9	43.4	0.2	8.3	13	93	77
421	7.8	45.6	0.2	5.4	13	93	77
422	7.4	48.5	0.3	5.2	13	93	77
423	9.5	42.8	0.4	6.6	13	93	

End of Report
