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**Subject:** North Kent Wind Power Project  
NAAP Daytime I-Audit Report Submission  
REA# 5272-A9FHRL  
Aercoustics Project #: 17283.07

**Date:** June 8, 2021

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Aercoustics Engineering Limited (Aercoustics) has been retained by North Kent Wind 1 LP to complete acoustic immission audit (I-audit) measurements at the North Kent 1 Wind Power Project (NKWPP). NKWPP operates under REA #5272-A9FHRL, issued on June 29, 2016. Measurements were conducted per the Compliance Protocol for Wind Turbine Noise (the Protocol) with the exception of the deviation from Section D5.2 of the Protocol to collect and analyse measurement data during daytime hours, between 07:00 and 19:00 (i.e. daytime only).

A Noise Abatement Action Plan (NAAP) was implemented at NKWPP to address the non-compliant cumulative sound impact calculated at receptor R3408 during Phase 2 of the prior I-audit campaign. In order to verify that the NAAP is effective, I-audit testing was completed at receptor R3408 and proved compliance in the I-audit report issued by Aercoustics on December 1, 2020. Following concerns from the MECP regarding daytime compliance at this receptor, NKWPP proposed an additional I-audit testing campaign in order to assess daytime turbine sound impact.

## Documents for Submission

Individual reports and data packages have been prepared for each requested measurement. The following table summarizes the documents that accompany this submission.

Table 1: Documents for Submission

Measurement	Document	File Name	File Type
All	Summary Memo	Aerc028 - NKWPP Daytime I-Audit Summary Memo 17283.07 (2021.06.08)	PDF
R3408 I-Audit	Report	Aerc029 - NKWPP Daytime I-Audit R3408 17283.07 (2021.06.08)	PDF
	Data Package: All Data	Aerc029a - NKWPP Daytime R3408 MECP Summary (2021.06.08)	Excel
	Data Package: Narrowband Spectra	Aerc029b - NKWPP Daytime R3408 Narrowband Summary (2021.06.08)	Excel

## I-Audit Results

The audit has been completed as per the methodology outlined in Parts D and E5.5 RAM-I (Revised Assessment Methodology) of the “MECP Compliance Protocol for Wind Turbine Noise” (Updated: April 21, 2017) with the exception of the deviation from Section D5.2 of the Protocol to collect and analyse measurement data during daytime hours, between 07:00 and 19:00 (i.e. daytime only).

The daytime noise monitoring campaign near R3408 spanned the following dates:

Location	Monitoring Start Date	Monitoring End Date	Monitoring Duration (weeks)
R3408	March 30, 2021	May 10, 2021	6.0

Based on discussions with North Kent Wind 1 LP it was determined that to be consistent with Sections 3.8.3 and Section 5.1 of the Compliance protocol, the tonal assessment should be completed using IEC 61400-11 Ed. 3.0, with modifications to adapt the method to immission measurements and the tonal penalty structure taken from ISO 1996-2:2007 Annex C.

Based on the results presented in Section 10.2 of the report, the cumulative sound impact calculated at receptor R3408 complies with the MECP sound level limits at all wind bins having sufficient data for assessment. No tonal penalty was found to be applicable at R3408 based on the detailed tonal audibility analysis.

The following tables and figures summarize the results at R3408.

Table 2: R3408 Assessment Table – Cumulative **Downwind** Turbine-only Sound Impact

Audited Receptor	Wind speed at 10-m AGL [m/s]	1	2	3	4	5	6	7
<b>R3408</b>	Tonal Adjustment [dB]	0	0	0	0	0	0	0
	Cumulative Sound Impact - Receptor Location [dBA]	-	-	-	-	39	40	40
	Signal-to-noise [dB]	-	-	-	-	5.1	3.8	2.2
Background Sound Level [dBA]		33	33	32	35	36	39	41
MECP Exclusion Limit [dBA]		40	40	40	40	40	40	43
Compliance? (Y/N)		-	-	-	-	Yes	Yes	Yes

- Significantly fewer than the minimum data counts outlined in Section 6.8 of the report were attained in this wind bin.

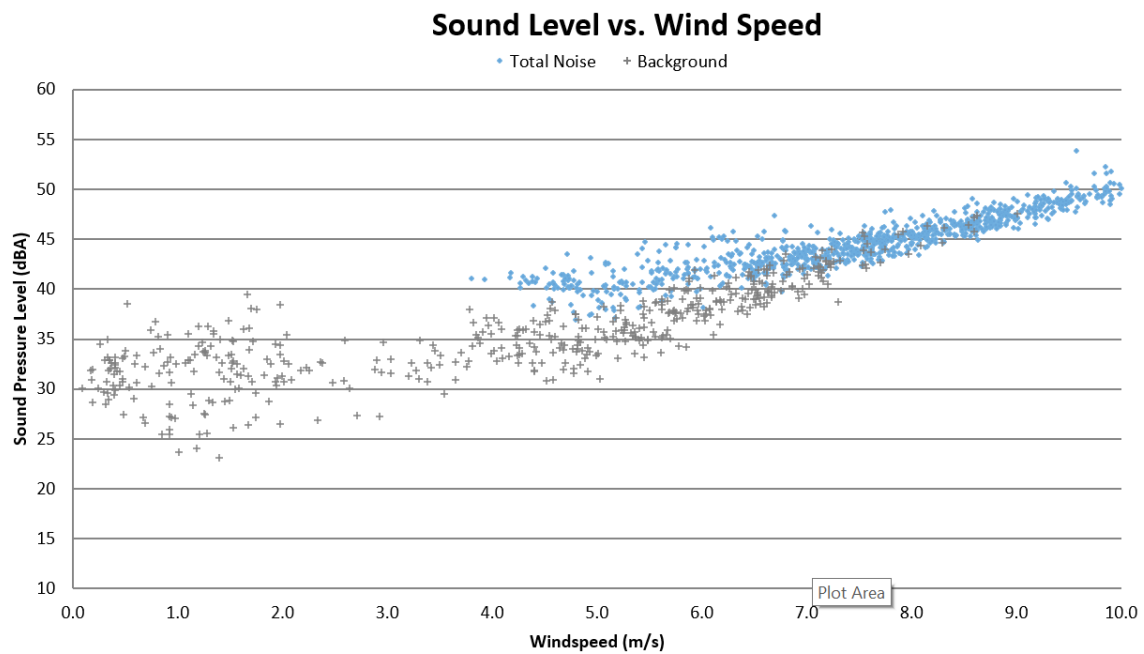


Figure 1: R3408 - Measured Downwind Sound Levels for Turbine ON and Background vs Wind Speed

Table 3: R3408 Assessment Table – Cumulative **Crosswind** Turbine-only Sound Impact

Audited Receptor	Wind speed at 10-m AGL [m/s]	1	2	3	4	5	6	7
<b>R3408</b>	Tonal Adjustment [dB]	0	0	0	0	0	0	0
	Cumulative Sound Impact - Receptor Location [dBA]	-	-	38	38	40	40	40
	Signal-to-noise [dB]	-	-	6.6	5.1	5.5	3.3	2.5
Background Sound Level [dBA]		33	33	32	35	36	39	41
MECP Exclusion Limit [dBA]		40	40	40	40	40	40	43
Compliance? (Y/N)		-	-	Yes	Yes	Yes	Yes	Yes

- Significantly fewer than the minimum data counts outlined in Section 6.8 of the report were attained in this wind bin.

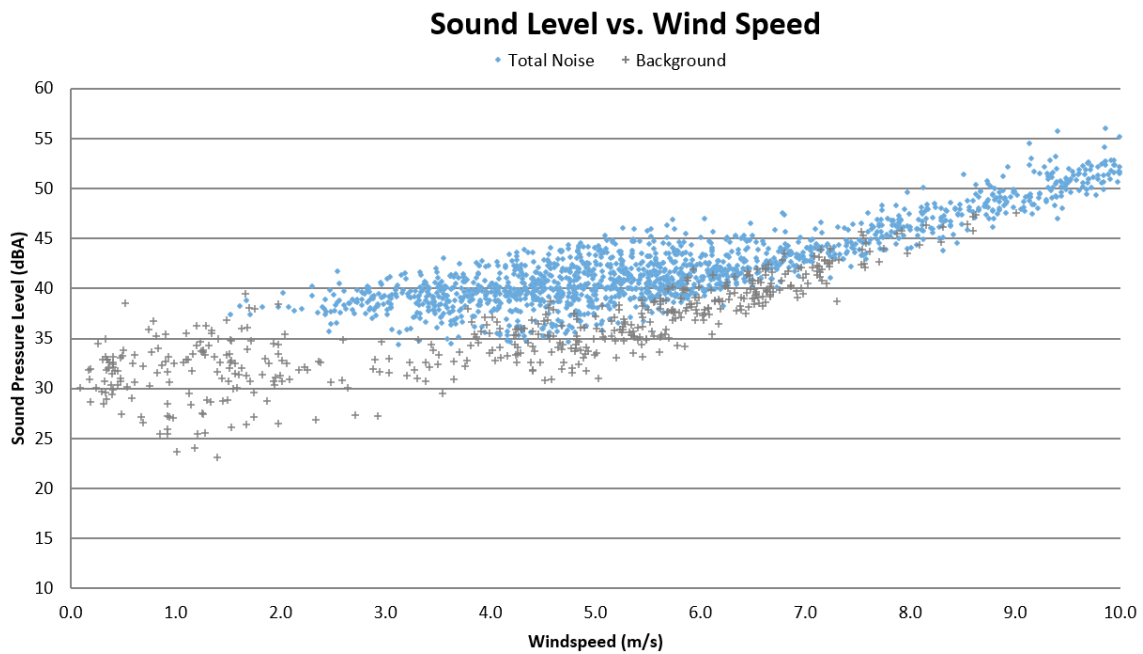


Figure 2: R3408 - Measured Crosswind Sound Levels for Turbine ON and Background vs Wind Speed

Please see the specific test reports for a detailed account of each measurement campaign and the associated data analysis and conclusions.

Sincerely,

**AERCOUSTICS ENGINEERING LIMITED**



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