CarbonFree Kynoch Project

Acoustic Assessment Report

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DATE	**REV.**	**STATUS**	**PREPARED BY**	**CHECKED BY**	**APPROVED BY**
				Discipline Lead	**Functional Manager**

Revision History

Revision	Date	Status	Update
0	2026-03-13	Approved For Use	Issued for Use
1	2026-05-29	Approved For Use	Incorporation of updated inverter orientation in the design. Incorporation of additional inverter locations and updated site layout. Updated noise model, Section 3.8, Table 3-2: Noise Source Summary Table. Updated Section 5 - Mitigation Measures Summary. Updated Section 7.3 - Noise Modelling Results.

IMPORTANT NOTICE TO READER

This report has been prepared by Hatch Ltd. (Hatch) for the sole and exclusive use of CarbonFree Kynoch Ltd. (the "Client") for the purpose of assisting the Client in making decisions with respect to the development of a proposed solar photovoltaic project and shall not be (a) used for any other purpose, or (b) provided to, relied upon or used by any third party.

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5. The noise impact evaluation is based on a conservative assumption that the Facility will operate at full power capacity for at least 1 hour during the evening and night periods. Due to the solar facility's dependency on sun exposure, it is anticipated that inverters will not operate at full capacity during evening and night periods. As a result, the inverter fan duty cycle and associated inverter sound power level is anticipated to be lower than the sound power levels identified in this report. A review of the maximum inverter and subsequent noise output during evening and night hours will be incorporated in a future addendum to this report.

Table of Concordance

The following table of concordance describes the scope of the report herein as per the requirements identified in Table 1 of O. Reg. 359/09 [1].

Item	Document	Requirement per Table 1 of O. Reg. 359/09	Project Type
8	Noise study report	Report to be prepared in accordance with Appendix A of the publication of the Ministry of the Environment and Climate Change entitled, “Basic Comprehensive Certificates of Approval (Air) – User Guide”, dated April 2004, as amended from time to time and available from the Ministry.	Class 3 solar facility

Abbreviations and Definitions

AAR	Acoustic Assessment Report
AC	Alternating Current
dB	Decibel
dBA	A-weighted sound level
DC	Direct Current
IEEE	Institute of Electrical and Electronics Engineers
km	Kilometre
kV	Kilovolt
Leq	Equivalent sound level
m/s	Metre per second
MECP	Ministry of the Environment, Climate, and Parks
MVA	Megavolt-ampere
MW	Megawatt
NEMA	National Electrical Manufacturers Association
NPC	Noise Pollution Control
O. Reg.	Ontario Regulation
INV	Inverter System (combined inverter and medium-voltage transformer)
POR	Point of Reception
PV	Photovoltaic
PWC	Predictable Worst Case
REA	Renewable Energy Approval

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1. Introduction

CarbonFree Kynoch Ltd. (CarbonFree) is proposing to develop a 154 megawatt (MW) Class 3 solar photovoltaic (PV) project adjacent to Highway 554 in the unincorporated District of Algoma.

The proposed CarbonFree Kynoch Project (hereinafter referred to as 'the Facility') is a renewable energy generation facility which will use solar PV technology to generate electricity. Electricity generated by solar PV panels will be converted from direct current (DC) to alternating current (AC) by inverters and then stepped up (via pad-mounted inverters, medium-voltage transformers and a main substation transformer) to 230 kilovolts (kV) prior to being connected to the existing Hydro One Networks Inc. transmission line.

The Project aims to contribute to the government of Ontario's goal of accelerating new electricity generation from renewable sources to support the province's growing energy needs. Accordingly, CarbonFree intends to enter into an agreement for the sale or supply of electricity, the quantity of which will be commensurate with the nameplate capacity of the facility.

Construction of the Project will commence in early 2027 once the Renewable Energy Approval (REA) and other required permits have been obtained. This Acoustic Assessment Report (AAR) provides an evaluation of the community noise impact of the Facility under predictable worst-case (PWC) noise-emitting operating conditions.

1.1 Approach to Noise Assessment

The AAR follows the Province of Ontario regulations and guidelines: O. Reg. 359/09 [1], PIBS 8472e – "Technical Guide to Renewable Energy Approvals" [2], PIBS 4391e01 – "Basic Comprehensive Certificates of Approval (Air)" [3], and NPC-300 [4]. The Facility's noise performance limit is established as the higher of the 1-hour a-weighted equivalent sound level (Leq) identified for the applicable exclusion limit or the background sound level. No background measurements were taken, so the noise limit has been set to the applicable exclusion limit based on the surrounding receptor classifications. A review of the surrounding community identifies all noise sensitive receptors as Class 3.

A community noise model of the Facility has been developed to assess the noise impact of the nearest points of reception (PORs). The noise study area for modelling was extended 1 km from the outermost noise sources consistent with the approach outlined in the *Technical Guide to Renewable Energy Approvals* [2]. Participating and non-participating receptors were identified including receptors for vacant lots. Acoustic modelling was completed on a PWC basis that determined the equivalent 1-hour noise impact on the identified PORs. There are no other surrounding solar facilities within 1 km of the boundary of the Facility.

1.2 Vibration Sources

The Facility does not have any significant stationery or moving ground-borne vibration sources. As such, a vibration assessment is not required.

2. Facility Description

The Facility is located adjacent to Highway 554 in the unincorporated District of Algoma (Appendix A).

The proposed 154 MW solar facility is comprised of eight solar panel arrays spread over four properties. Each array is isolated by its own switchgear. The panels are routed into 41 SunGrow SG4400, 4.4 megavolt-ampere (MVA) inverter/transformer system (INV) modules. Each switchgear feeds the proposed high-voltage substation located at the north end of the Facility. The Facility is designed to operate during daylight hours, 7 days a week. The proposed layout of the Facility is included in Appendix B.

2.1 Operational Flexibility

The Facility is seeking the inclusion of operational flexibility with its REA application as described under Section 9 of PIBS 8472e [2]. Operational flexibility allows the Facility to make limited modifications to its operations or works without having to seek an amendment to the REA. These permissible operational flexibility changes include:

- Noise from site maintenance equipment including vegetation control, panel washing, snow clearing, access road and infrastructure maintenance.
- In-kind equipment replacements (panels, tracker motors, inverter systems, transformer, switches, etc.).
- Decreasing the number of project components.

3. Noise Source Summary

3.1 Panel Arrays

Panel racks will be fitted with a single axis tracker. The proposed Facility will have one motor per tracker. A sample tracker is provided in Appendix C. The tracker motor operates briefly to tilt the panels into an optimal position for solar radiation exposure. Due to their relatively small size and brief operation, the tracker motors are considered insignificant community noise emission sources.

3.2 Inverter With Integrated Medium-Voltage Transformer

The 4.4 MW AC inverters convert the DC supplied by the PV modules to AC. A 4.4 MVA, 3-phase, liquid-filled transformer will then ‘step up’ the voltage to 34.5 kV. Each installation will consist of a SunGrow Solar Inverter Skid SG4400 or equivalent inverter system (INV) that combines the inverter and medium-voltage transformer in single container skid.

Noise from the inverter system comes from its air-cooling fans while noise from its medium-voltage transformer is largely from the magnetostriction hum. Due to the tonal nature of the magnetostriction hum, a 5 decibel (dB) tonal penalty is added to the noise emission of entire inverter system. Full calculations can be found in Appendix C.

3.3 Switchgear

The local panel array and substation switchgears are a combination of switches, fuses and circuit breakers used to safely isolate arrays or the entire facility for maintenance. Switchgear control panel cooling fans are small and are located indoors. Therefore, the switchgears are considered insignificant community noise emission sources.

3.4 Substation Transformer

The Facility contains one large 172 MVA transformer that will 'step up' the voltage from 34.5 kV to 230 kV. The substation transformer noise was calculated using the NEMA TP-80050 standard [5] with a 5 dB tonal penalty added for its magnetostriction hum. Calculations to characterize the sound emission of the substation transformer can be found in Appendix C. Transformer noise was modelled as a point source at half the height of the transformer.

Additional substation yard components such as the switchgear, communication tower, and line reactors are considered insignificant noise sources.

3.5 Other Nearby Solar Facilities and External Anthropic Noise Sources

There are no adjacent solar facilities within 1 km of the Facility. As such, a cumulative noise impact study that incorporates adjacent solar facilities, as recommended in Ontario's *Technical Guide to Renewable Energy Approvals* [2], is not required.

A desktop review of Access Environment did not identify any Environmental Compliance Approvals for industrial applications within 1 km of the Facility. The land-use map included with Appendix A identifies that the site is surrounded by agricultural land. As such, additional external anthropic noise may include farming equipment. However, these external anthropic noise sources need not be included with the AAR.

3.6 Ancillary Distribution Lines

Aboveground ancillary distribution lines connecting the local panel switchgears to the substation will not emit significant amounts of isolator corona noise due to a relatively low AC line current and voltage (34.5 kV). Therefore, the noise from the ancillary distribution lines is considered insignificant.

3.7 Excluded Noise Sources

Insignificant and non-applicable noise sources were excluded from this assessment. Table 3-1 lists noise sources insignificant or outside the scope of this assessment.

Table 3-1: Excluded Noise Sources

Source	Reason for Exclusion
Vehicular Traffic	Noise exclusions identified in accordance with O. Reg. 359/09 [1] and the *Technical Guide to Renewable Energy Approvals* [2]
Maintenance and Service Activities	
Emergency Conditions	
Construction and Decommissioning	

3.8 Noise Source Summary Table

Table 3-2 lists the significant noise sources from the Facility. The noise source layout is presented in Appendix B.

Table 3-2: Noise Source Summary Table

Source ID	Equipment Description	NV dB Library Source	Sound Power (Lw) Unweighted Octave Band Spectrum, Hz (dB)									Overall (dBA)	Source Location	Sound Characteristic	Noise Control Measure	UTM Zone 16	
			31.5	63	125	250	500	1000	2000	4000	8000					E	N
INV01_In	Inverter System No 01 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327618	5146657
INV01_Out	Inverter System No 01 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327618	5146657
INV01_TR	Inverter System No 01 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327618	5146657
INV02_In	Inverter System No 02 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327342	5146565
INV02_Out	Inverter System No 02 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327342	5146565
INV02_TR	Inverter System No 02 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327342	5146565
INV03_In	Inverter System No 03 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327180	5146403
INV03_Out	Inverter System No 03 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327180	5146403
INV03_TR	Inverter System No 03 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327180	5146403
INV04_In	Inverter System No 04 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327183	5146161
INV04_Out	Inverter System No 04 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327183	5146161
INV04_TR	Inverter System No 04 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327183	5146161
INV05_In	Inverter System No 05 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327308	5145938
INV05_Out	Inverter System No 05 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327308	5145938
INV05_TR	Inverter System No 05 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327308	5145938
INV06_In	Inverter System No 06 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327413	5145811

Source ID	Equipment Description	NV dB Library Source	Sound Power (Lw) Unweighted Octave Band Spectrum, Hz (dB)									Overall (dBA)	Source Location	Sound Characteristic	Noise Control Measure	UTM Zone 16	
			31.5	63	125	250	500	1000	2000	4000	8000					E	N
INV06_Out	Inverter System No 06 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327413	5145811
INV06_TR	Inverter System No 06 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327413	5145811
INV07_In	Inverter System No 07 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327413	5145633
INV07_Out	Inverter System No 07 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327413	5145633
INV07_TR	Inverter System No 07 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327413	5145633
INV08_In	Inverter System No 08 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327407	5145389
INV08_Out	Inverter System No 08 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327407	5145389
INV08_TR	Inverter System No 08 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327407	5145389
INV09_In	Inverter System No 09 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327204	5145435
INV09_Out	Inverter System No 09 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327204	5145435
INV09_TR	Inverter System No 09 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327204	5145435
INV10_In	Inverter System No 10 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327026	5145554
INV10_Out	Inverter System No 01 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327026	5145554
INV10_TR	Inverter System No 10 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327026	5145554
INV11_In	Inverter System No 11 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327026	5145754
INV11_Out	Inverter System No 11 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327026	5145754
INV11_TR	Inverter System No 11 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327026	5145754

Source ID	Equipment Description	NV dB Library Source	Sound Power (Lw) Unweighted Octave Band Spectrum, Hz (dB)									Overall (dBA)	Source Location	Sound Characteristic	Noise Control Measure	UTM Zone 16	
			31.5	63	125	250	500	1000	2000	4000	8000					E	N
INV12_In	Inverter System No 12 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326764	5144654
INV12_Out	Inverter System No 12 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326764	5144654
INV12_TR	Inverter System No 12 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326764	5144654
INV13_In	Inverter System No 13 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326531	5144660
INV13_Out	Inverter System No 13 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326531	5144660
INV13_TR	Inverter System No 13 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326531	5144660
INV14_In	Inverter System No 14 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326324	5144656
INV14_Out	Inverter System No 14 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326324	5144656
INV14_TR	Inverter System No 14 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326324	5144656
INV015_In	Inverter System No 15 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326122	5144654
INV015_Out	Inverter System No 15 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326122	5144654
INV015_TR	Inverter System No 15 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326122	5144654
INV16_In	Inverter System No 16 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326130	5144835
INV16_Out	Inverter System No 16 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326130	5144835
INV16_TR	Inverter System No 16 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326130	5144835
INV17_In	Inverter System No 17 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326224	5145008
INV17_Out	Inverter System No 17 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326224	5145008

Source ID	Equipment Description	NV dB Library Source	Sound Power (Lw) Unweighted Octave Band Spectrum, Hz (dB)									Overall (dBA)	Source Location	Sound Characteristic	Noise Control Measure	UTM Zone 16	
			31.5	63	125	250	500	1000	2000	4000	8000					E	N
INV17_TR	Inverter System No 17 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326224	5145008
INV18_In	Inverter System No 18 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326265	5145118
INV18_Out	Inverter System No 18 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326265	5145118
INV18_TR	Inverter System No 18 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326265	5145118
INV19_In	Inverter System No 19 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325923	5144656
INV19_Out	Inverter System No 19 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325923	5144656
INV19_TR	Inverter System No 19 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325923	5144656
INV20_In	Inverter System No 20 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325929	5144834
INV20_Out	Inverter System No 20 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325929	5144834
INV20_TR	Inverter System No 20 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325929	5144834
INV21_In	Inverter System No 21 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325633	5144759
INV21_Out	Inverter System No 21 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325633	5144759
INV21_TR	Inverter System No 21 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325633	5144759
INV22_In	Inverter System No 22 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325453	5144633
INV22_Out	Inverter System No 22 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325453	5144633
INV22_TR	Inverter System No 22 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325453	5144633
INV23_In	Inverter System No 23 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325029	5144201

Source ID	Equipment Description	NV dB Library Source	Sound Power (Lw) Unweighted Octave Band Spectrum, Hz (dB)									Overall (dBA)	Source Location	Sound Characteristic	Noise Control Measure	UTM Zone 16	
			31.5	63	125	250	500	1000	2000	4000	8000					E	N
INV23_Out	Inverter System No 23 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325029	5144201
INV23_TR	Inverter System No 23 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325029	5144201
INV24_In	Inverter System No 24 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324846	5144201
INV24_Out	Inverter System No 24 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324846	5144201
INV24_TR	Inverter System No 24 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324846	5144201
INV25_In	Inverter System No 25 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324655	5144194
INV25_Out	Inverter System No 25 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324655	5144194
INV25_TR	Inverter System No 25 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324655	5144194
INV26_In	Inverter System No 26 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325186	5143890
INV26_Out	Inverter System No 26 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325186	5143890
INV26_TR	Inverter System No 26 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325186	5143890
INV27_In	Inverter System No 27 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324813	5143885
INV27_Out	Inverter System No 27 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324813	5143885
INV27_TR	Inverter System No 27 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324813	5143885
INV28_In	Inverter System No 28 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324655	5143902
INV28_Out	Inverter System No 28 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324655	5143902
INV28_TR	Inverter System No 28 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324655	5143902

Source ID	Equipment Description	NV dB Library Source	Sound Power (Lw) Unweighted Octave Band Spectrum, Hz (dB)									Overall (dBA)	Source Location	Sound Characteristic	Noise Control Measure	UTM Zone 16	
			31.5	63	125	250	500	1000	2000	4000	8000					E	N
INV29_In	Inverter System No 29 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325102	5142776
INV29_Out	Inverter System No 29 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325102	5142776
INV29_TR	Inverter System No 29 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	325102	5142776
INV30_In	Inverter System No 30 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324859	5142646
INV30_Out	Inverter System No 30 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324859	5142646
INV30_TR	Inverter System No 30 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324859	5142646
INV31_In	Inverter System No 31 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324626	5142636
INV31_Out	Inverter System No 31 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324626	5142636
INV31_TR	Inverter System No 31 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324626	5142636
INV32_In	Inverter System No 32 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324429	5142646
INV32_Out	Inverter System No 32 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324429	5142646
INV32_TR	Inverter System No 32 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324429	5142646
INV33_In	Inverter System No 33 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324181	5142645
INV33_Out	Inverter System No 33 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324181	5142645
INV33_TR	Inverter System No 33 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324181	5142645
INV34_In	Inverter System No 34 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324970	5142392
INV34_Out	Inverter System No 34 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324970	5142392

Source ID	Equipment Description	NV dB Library Source	Sound Power (Lw) Unweighted Octave Band Spectrum, Hz (dB)									Overall (dBA)	Source Location	Sound Characteristic	Noise Control Measure	UTM Zone 16	
			31.5	63	125	250	500	1000	2000	4000	8000					E	N
INV34_TR	Inverter System No 34 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324970	5142392
INV35_In	Inverter System No 35 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324787	5142224
INV35_Out	Inverter System No 35 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324787	5142224
INV35_TR	Inverter System No 35 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324787	5142224
INV36_In	Inverter System No 36 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324639	5142225
INV36_Out	Inverter System No 36 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324639	5142225
INV36_TR	Inverter System No 36 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324639	5142225
INV37_In	Inverter System No 37 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327328	5145938
INV37_Out	Inverter System No 37 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327328	5145938
INV37_TR	Inverter System No 37 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327328	5145938
INV38_In	Inverter System No 38 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327414	5145791
INV38_Out	Inverter System No 38 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327414	5145791
INV38_TR	Inverter System No 38 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327414	5145791
INV39_In	Inverter System No 39 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326784	5144654
INV39_Out	Inverter System No 39 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326784	5144654
INV39_TR	Inverter System No 39 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	326784	5144654
INV40_In	Inverter System No 40 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324506	5144194

Source ID	Equipment Description	NV dB Library Source	Sound Power (Lw) Unweighted Octave Band Spectrum, Hz (dB)									Overall (dBA)	Source Location	Sound Characteristic	Noise Control Measure	UTM Zone 16	
			31.5	63	125	250	500	1000	2000	4000	8000					E	N
INV40_Out	Inverter System No 40 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324506	5144194
INV40_TR	Inverter System No 40 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	324506	5144194
INV41_In	Inverter System No 41 Air Inlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327413	5145612
INV41_Out	Inverter System No 41 Air Outlet	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327413	5145612
INV41_TR	Inverter System No 41 Transformer	INV	85	82	87	87	90	83	83	88	75	92	O	S, T	U	327413	5145612
ST01	Substation Transformer	TR_172	106	112	114	109	109	103	98	93	86	109	O	S, T	U	327424	5146656

*Spectra and Overall levels do NOT include tonal penalties. A 5 dB tonal penalty is added in the model for all sources with tonal sound characteristics.
1. O: located/installed outside the building, including on the roof, I: located/installed inside the building.
2. S: Steady; Q: Quasi-Steady Impulsive; B: Buzzing; T: Tonal; C: Cyclic.
3. S: Silencer, Acoustic Louvre, Muffler; A: Acoustics lining, Plenum; B: Barrier, Berm, Screening; L: Lagging; E: Acoustic Enclosure; O: Other; U: Uncontrolled.

4. Points of Reception

PORs representing the worst-case community noise sensitive dwellings and vacant lots were identified around the Facility. In accordance with O. Reg. 359/09 [1] and the *Technical Guide to Renewable Energy Approvals* [2], the noise study area extent for POR identification was set to 1 km from each of the noise sources.

All PORs, participating receptors and vacant lots within 1 km of a Facility noise source were identified and included in the noise assessment. Though O. Reg. 359/09 [1] Clause (6) notes that a "*noise receptor does **not** include a location on a parcel of land if any part of the renewable energy generation facility will be located on that parcel of land once the facility is installed, constructed or expanded*," these participating receptors are identified herein, but noise compliance for them have not been evaluated.

Each POR was modelled at 1.5 m above ground for single-storey dwellings or 4.5 m above ground for two-storey dwellings to represent a plane of window on the building façade. Building façade POR IDs are identified with a "f" suffix. Outdoor living areas are modelled at 1.5 m above ground within 30 m of a façade of the dwelling. Outdoor living POR IDs are identified with an "o" suffix. Table 4-1 lists the PORs impacted by the Facility. The layout of identified PORs is shown in Appendix D.

Table 4-1: Point of Reception Locations

POR ID	Description	UTM Coordinates (Zone 16)	
		Easting	Northing
Points of Reception			
RN01_f	55 ON-554 Existing residential dwelling	324335	5142360
RN01_o		324364	5142349
RN02_f	58 ON-554 Existing residential dwelling	325428	5142571
RN02_o		325399	5142572
RN03_f	59 ON-554 Existing residential dwelling	325370	5142505
RN03_o		325342	5142510
RN04_f	60 ON-554 Existing residential dwelling	325068	5143159
RN04_o		325065	5143130
RN05_f	61 ON-554 Existing residential dwelling	325046	5143475
RN05_o		325076	5143468
RN06_f	ON-554 Existing residential dwelling	325346	5143377
RN06_o		325323	5143399
RN07_f	62 ON-554 Existing residential dwelling	325204	5143691
RN07_o		325172	5143704

POR ID	Description	UTM Coordinates (Zone 16)	
		Easting	Northing
RN08_f	64 ON-554 Existing residential dwelling	325291	5144179
RN08_o		325266	5144179
RN09_f	65 ON-554 Existing residential dwelling	325278	5144339
RN09_o		325262	5144317
RN10_f	66 ON-554 Existing residential dwelling	325281	5144372
RN10_o		325266	5144358
RN11_f	ON-554 Existing residential dwelling	325353	5144398
RN11_o		325390	5144394
RN12_f	67 ON-554 Existing residential dwelling	325217	5144486
RN12_o		325245	5144498
RN13_f	69 ON-554 Existing residential dwelling	325311	5145117
RN13_o		325331	5145114
RN14_f	70 ON-554 Existing residential dwelling	325228	5145182
RN14_o		325254	5145182
RN15_f	2273 ON-554 Existing residential dwelling	325304	5145620
RN15_o		325334	5145618
RN16_f	2267 ON-554 Existing residential dwelling	325042	5145637
RN16_o		325073	5145627
RN17_f	28 ON-554 Existing residential dwelling	325340	5146036
RN17_o		325340	5146022
RN18_f	7 ON-554 Existing residential dwelling	325196	5146094
RN18_o		325218	5146073
RN19_f	Existing residential dwelling	328157	5146959
RN19_o		328135	5146949
RN20_f	Existing residential dwelling	328096	5147136
RN20_o		328090	5147118
VN01	Vacant Lot	324400	5141163
VN02	Vacant Lot	326446	5143416
VN03	Vacant Lot	326786	5144023
VN04	Vacant Lot	325202	5145341
VN05	Vacant Lot	325347	5146270
VN06	Vacant Lot	324624	5146101

POR ID	Description	UTM Coordinates (Zone 16)	
		Easting	Northing
Participating Receptors			
RP01_f	54 ON-554 Existing residential dwelling	324226	5142065
RP01_o		324238	5142092
RP02_f	57 ON-554 Existing residential dwelling	324555	5142472
RP02_o		324559	5142443
RP03_f	54A ON-554 Existing residential dwelling	325134	5142144
RP03_o		325112	5142163
RP04_f	63 ON-554 Existing residential dwelling	325202	5144115
RP04_o		325179	5144136
RP05_f	68 ON-554 Existing residential dwelling	325376	5144782
RP05_o		325391	5144780
RP06_f	68 ON-554 Existing residential dwelling	325335	5144820
RP06_o		325334	5144803
RP07_f	Existing residential dwelling	326947	5145300
RP07_o		326954	5145310

5. Mitigation Measures Summary

Table 5-1 lists the noise mitigation features proposed to be incorporated into the design. The evaluation of the community noise impact presented in Section 7 includes these mitigation features.

Table 5-1: Mitigation Summary Table

Mitigation ID	Targeted Noise Source	Description	Details
MT01	INV14 – INV36 INV39 – INV40	Positioning of inverters	Position inverters such that its primary noise-radiating surfaces are directed away from the nearest receptors. Appendix B presents the INV orientation incorporated in the design

6. Assessment Criteria

The MECP publications *NPC-300 - Environmental Noise Guideline - Stationary and Transportation Sources - Approval and Planning provides guidance on control of industrial noise emissions for Ontario* [4] and *Technical Guide to Renewable Energy Approvals* [2] provide noise limits according to the surrounding POR classification. Table 6-1 shows the Class 3 performance limits for rural receptors at different times of the day. A conservative assessment limit of 40 dBA was used at all receptor locations under the likely potential for the

Facility to operate, sometime throughout its lifecycle, at full power generation for at least 1 hour during the evening period.

Table 6-1: Class 3 Performance Limits

Class 3 Area	
Time Period	**Sound Level Limit – Leq [1 hour] (dBA)**
07:00 to 19:00 (Daytime)	45
19:00 to 23:00 (Evening)	40
23:00 to 07:00 (Nighttime)	40

7. Acoustic Assessment Summary

7.1 Analysis Methodology

To model the community noise impact of the project, a noise model was developed using CADNA-A software application. The ISO 9613-2 [7] algorithm was implemented using CADNA-A to evaluate the environmental noise exposure from stationary sources.

The assumptions used in the noise model are in accordance with Section 9.2 of the *Technical Guide to Renewable Energy Approvals* [2] and are as follows:

- The model is assessed at 10°C and 70% relative humidity.
- The noise study area extends 1 km from each noise source.
- Ground absorption was modelled with a global value of G=0.7.
- All equipment on-site operates continuously steady during daytime, and for at least 1 hour during evening and night periods without impulsive noise emissions. This assumption for some equipment is under review and may change following a detailed study into the dependency of equipment duty cycle and subsequent noise emissions on solar exposure.
- The substation transformer was modelled as point sources at top height and sound power data was estimated based on National Electrical Manufacturers Association (NEMA) [5] and Institute of Electrical and Electronics Engineers (IEEE) [6] standards.
- Foliage of trees surrounding the site was modelled following The ISO 9613-2 [7] guidelines. Vegetation images and description are provided in Appendix E.

7.2 Predictable Worst-Case Assessment Scenario

Acoustic modelling was completed on a PWC basis that determined the equivalent 1-hour noise impact on the identified noise PORs. The following worst-case scenario was analyzed as described in Table 7-1.

Table 7-1: Assessment Scenarios

Scenario	Description
Predictable Worst-Case (PWC)	41 INV units. One 172 MVA substation transformer. Panels as noise obstructions not modelled. All equipment operates simultaneously at design for 1 hour during the evening/nighttime period. Conservative noise limit of 40 dBA at all receptors, modelled 4.5 m above ground.

7.3 Noise Modelling Results

Table 7-2 summarizes the noise assessment results at each of the noise sensitive POR locations. Participating receptors are listed but not compared to the noise criteria as noted under Clause (6) of O. Reg. 359/09 [1] (Section 4). All applicable PORs are compliant with the NPC-300 40 dBA noise criteria for a Class 3 receptor during the evening and nighttime periods. To visualize the predicted noise emissions from the Facility, refer to the noise contour plot in Appendix D.

Table 7-2: Acoustic Assessment Summary Table

POR ID	Description	Sound Level (dBA)		Verified by Acoustic Audit	Performance Limit (dBA)		Compliance (Yes/No)
		Day	Night/ Evening		Day	Night/ Evening	
Points of Reception (Non-Participating)							
RN01_f	55 ON-554 Existing residential dwelling	39	39	No	45	40	Yes
RN01_o		39	39	No	45	40	Yes
RN02_f	58 ON-554 Existing residential dwelling	36	36	No	45	40	Yes
RN02_o		36	36	No	45	40	Yes
RN03_f	59 ON-554 Existing residential dwelling	37	37	No	45	40	Yes
RN03_o		36	36	No	45	40	Yes
RN04_f	60 ON-554 Existing residential dwelling	39	39	No	45	40	Yes
RN04_o		38	38	No	45	40	Yes
RN05_f	61 ON-554 Existing residential dwelling	37	37	No	45	40	Yes
RN05_o		34	34	No	45	40	Yes
RN06_f	ON-554 Existing residential dwelling	35	35	No	45	40	Yes
RN06_o		33	33	No	45	40	Yes
RN07_f	62 ON-554 Existing residential dwelling	36	36	No	45	40	Yes
RN07_o		34	34	No	45	40	Yes
RN08_f	64 ON-554 Existing residential dwelling	39	39	No	45	40	Yes
RN08_o		38	38	No	45	40	Yes
RN09_f	65 ON-554 Existing residential dwelling	39	39	No	45	40	Yes
RN09_o		39	39	No	45	40	Yes

POR ID	Description	Sound Level (dBA)		Verified by Acoustic Audit	Performance Limit (dBA)		Compliance (Yes/No)
		Day	Night/ Evening		Day	Night/ Evening	
RN10_f	66 ON-554 Existing residential dwelling	39	39	No	45	40	Yes
RN10_o		39	39	No	45	40	Yes
RN11_f	ON-554 Existing residential dwelling	39	39	No	45	40	Yes
RN11_o		39	39	No	45	40	Yes
RN12_f	67 ON-554 Existing residential dwelling	39	39	No	45	40	Yes
RN12_o		38	38	No	45	40	Yes
RN13_f	69 ON-554 Existing residential dwelling	38	38	No	45	40	Yes
RN13_o		37	37	No	45	40	Yes
RN14_f	70 ON-554 Existing residential dwelling	37	37	No	45	40	Yes
RN14_o		35	35	No	45	40	Yes
RN15_f	2273 ON-554 Existing residential dwelling	33	33	No	45	40	Yes
RN15_o		33	33	No	45	40	Yes
RN16_f	2267 ON-554 Existing residential dwelling	33	33	No	45	40	Yes
RN16_o		31	31	No	45	40	Yes
RN17_f	28 ON-554 Existing residential dwelling	32	32	No	45	40	Yes
RN17_o		31	31	No	45	40	Yes
RN18_f	7 ON-554 Existing residential dwelling	31	31	No	45	40	Yes
RN18_o		30	30	No	45	40	Yes
RN19_f	Existing residential dwelling	34	34	No	45	40	Yes
RN19_o		33	33	No	45	40	Yes
RN20_f	Existing residential dwelling	34	34	No	45	40	Yes
RN20_o		32	32	No	45	40	Yes
VN01	Vacant Lot	27	27	No	45	40	Yes
VN02	Vacant Lot	30	30	No	45	40	Yes
VN03	Vacant Lot	33	33	No	45	40	Yes
VN04	Vacant Lot	35	35	No	45	40	Yes
VN05	Vacant Lot	32	32	No	45	40	Yes
VN06	Vacant Lot	29	29	No	45	40	Yes
Participating Receptors							
RP01_f	54 ON-554 Existing residential dwelling	40	40	No	45	40	N/A
RP01_o		38	38	No	45	40	N/A
RP02_f	57 ON-554 Existing residential dwelling	41	41	No	45	40	N/A
RP02_o		41	41	No	45	40	N/A
RP03_f	54A ON-554 Existing residential dwelling	41	41	No	45	40	N/A
RP03_o		41	41	No	45	40	N/A
RP04_f	63 ON-554 Existing residential dwelling	42	42	No	45	40	N/A
RP04_o		42	42	No	45	40	N/A
RP05_f	68 ON-554 Existing residential dwelling	44	44	No	45	40	N/A
RP05_o		45	45	No	45	40	N/A

POR ID	Description	Sound Level (dBA)		Verified by Acoustic Audit	Performance Limit (dBA)		Compliance (Yes/No)
		Day	Night/ Evening		Day	Night/ Evening	
RP06_f	68 ON-554 Existing residential dwelling	42	42	No	45	40	N/A
RP06_o		42	42	No	45	40	N/A
RP07_f	Existing residential dwelling	45	45	No	45	40	N/A
RP07_o		44	44	No	45	40	N/A

8. Conclusion

An acoustic assessment of the proposed Kynoch 154 MW Class 3 solar PV facility has been completed. Based on this AAR's approach and noise mitigations included with the design, the proposed Project is expected to be compliant with the community noise limits identified in the MECP *Technical Guide to Renewable Energy Approvals* [2] and *Environmental Noise Guidelines NPC-300* [4] for the PWC operating condition.

9. References

[1] Province of Ontario, O. Reg. 359/09 - *Renewable Energy Approvals under Part V.0.1 of the Environmental Protection Act*, 2016.

[2] Province of Ontario, PIBS 8472e – *Technical Guide to Renewable Energy Approvals*, 2013.

[3] Province of Ontario, PIBS 4391e01 – *Basic Comprehensive Certificates of Approval (Air)*, 2011.

[4] Ontario Ministry of the Environment, Climate, and Parks (MECP), NPC-300 - *Environmental Noise Guideline – Stationary and Transportation Sources*, 2013.

[5] National Electrical Manufacturers Association, "NEMA TP-80050-2013 (R2024): Transformers, Step Voltage Regulators, and Reactors," NEMA, Rosslyn, VA, USA, 2013.

[6] Institute of Electrical and Electronics Engineers, C57.12.90 Standard Test Code for Liquid-Immersed Distribution, Power and Regulating Transformers, 2010.

[7] International Organization for Standardization, "ISO 9613-2: Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation," ISO, Geneva, Switzerland, 1996.

Appendix A
Zoning/Land-Use Siting Map

Kynoch Creek
Little White River
Constance Lake
Casselman's Creek
Casselman's Lake
HIGHWAY 554
HIGHWAY 546
Little White River Provincial Park (Waterway Class)
Blind Riv... Provincial (Waterw... Class)
North Channel Inshore Provincial Park (Waterway
Mississagi River No. 8

LEGEND

- Building
- Adjacent Agricultural Land
- Road
- Contour
- Field Identified Watercourse
- Intermittent Watercourse
- Permanent Watercourse
- Proposed Transmission Line
- Transmission Line
- Trail System
- Project Location
- Study Area (300m Buffer)
- Waterbody
- Unevaluated Wetland
- Field Identified Wetland
- Crown Land
- Private Land
- Provincial Park

NOTES:
1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 17N
3. Crown and Private Land digitized from Crown Land Use Policy Atlas web map, September 2025

0 0.25 0.5 1 Km

1:25,000

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FIGURE TITLE:	Project Location
CLIENT:	CarbonFree Kynoch Ltd.

DWG BY:	CHK BY:	FIG NO.:	REV NO.:
S. PERRY	C. SEHL	1	1
DATE: 04/02/26	**PAGE:** 1		

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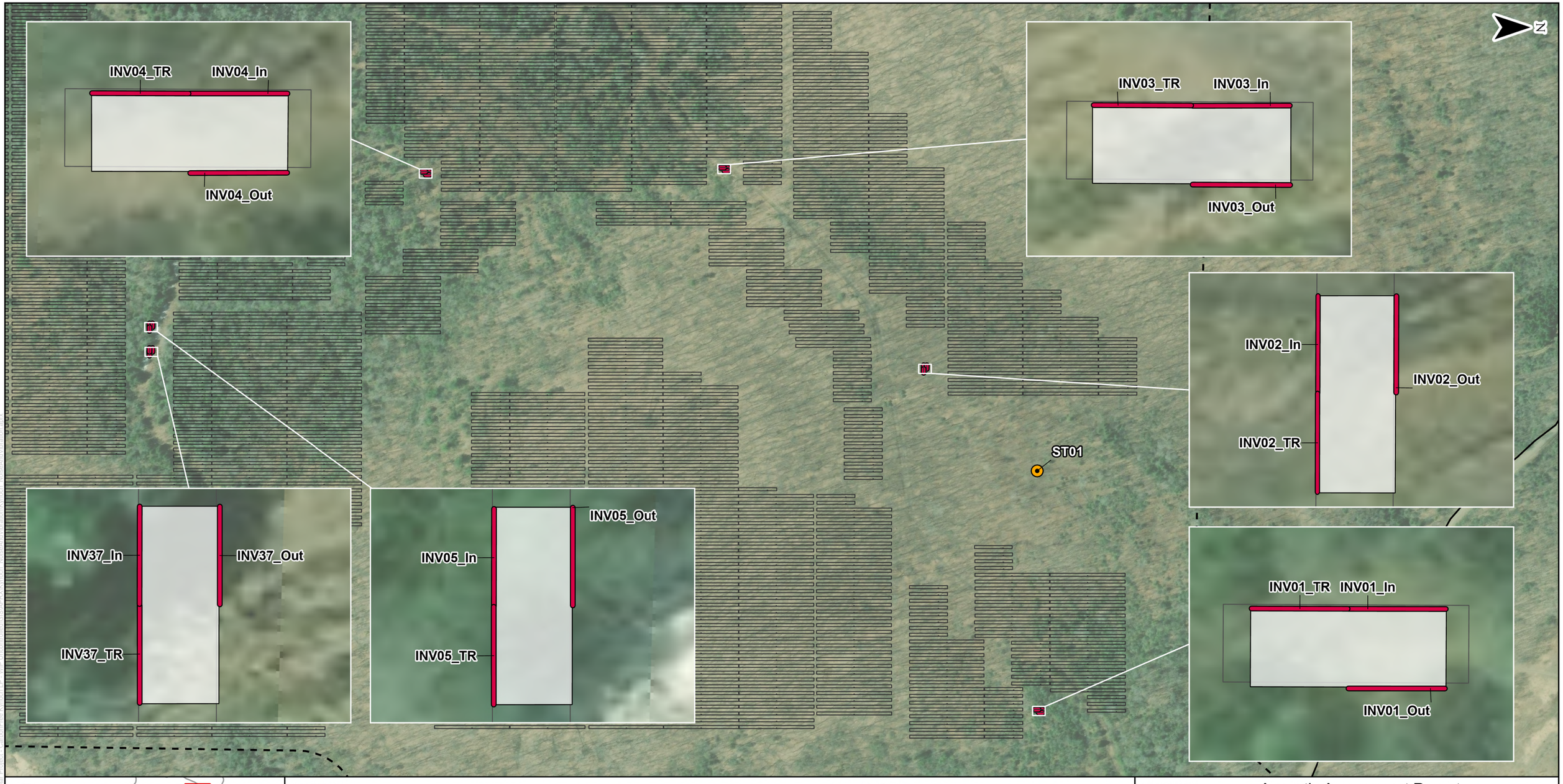
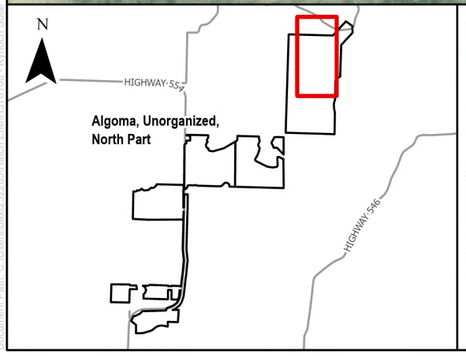
Appendix B
Site and Noise Source Layout

Microsoft, Vantor





LEGEND

- Point Source
- PV Array
- Road
- Vertical Area Source
- Inverter Casing
- Project Location

NOTES:
1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 17N

0 37.5 75 150 m

1:3,000

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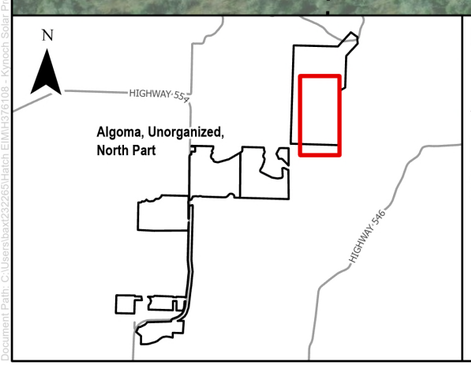
FIGURE TITLE:	Noise Source Layout
CLIENT:	CarbonFree Kynoch LTD

DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	M. ANDARGIE	1	1
DATE: 05/05/26	**PAGE:** 1 of 8		

HATCH

Microsoft, Vantor



LEGEND

- PV Array
- Vertical Area Source
- Inverter Casing
- Project Location

NOTES:
1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 17N

0 37.5 75 150 m

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FIGURE TITLE:	Noise Source Layout
CLIENT:	CarbonFree Kynoch LTD

DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	M. ANDARGIE	1	1
DATE: 05/05/26	**PAGE:** 2 of 8		

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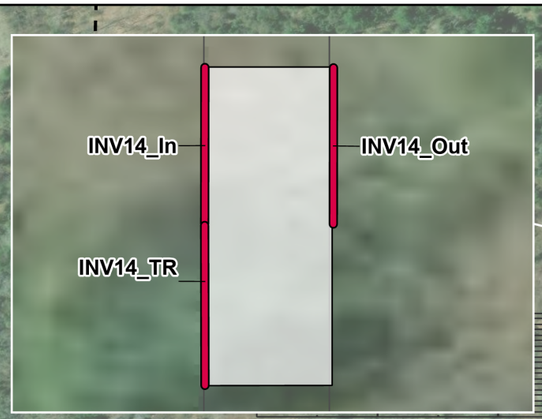
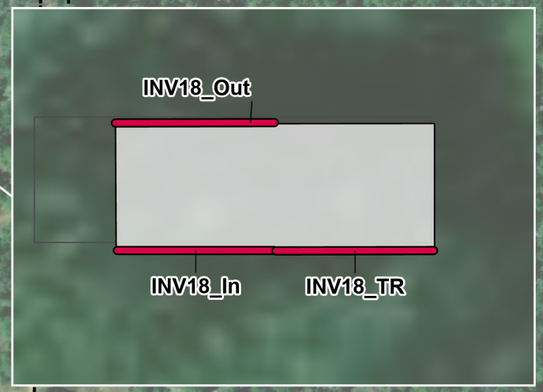
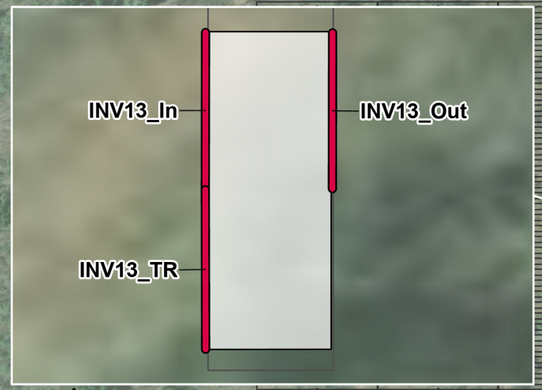
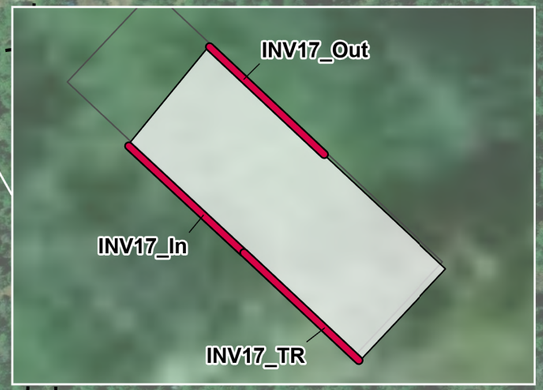
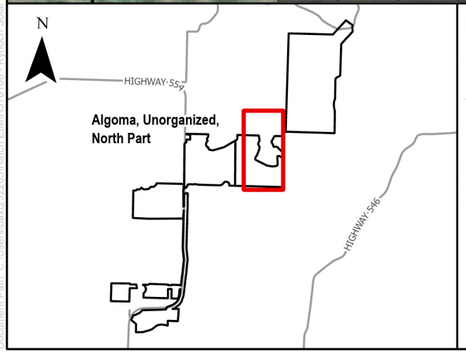
Microsoft, Vantor











LEGEND

- PV Array
- Vertical Area Source
- Inverter Casing
- Project Location

NOTES:
1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 17N

0 37.5 75 150 m

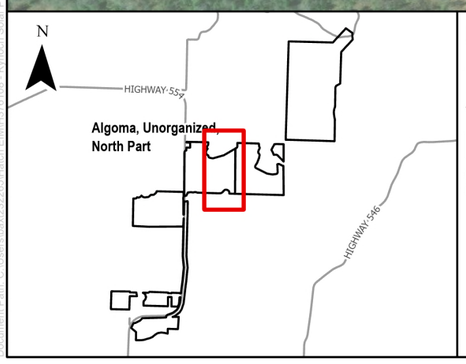
1:3,000

PROJECT:	Acoustic Assessment Report Kynoch Solar Project
FIGURE TITLE:	Noise Source Layout
CLIENT:	CarbonFree Kynoch LTD

DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	M. ANDARGIE	1	1
DATE: 05/05/26	**PAGE:** 3 of 8		

HATCH

Microsoft, Vantor



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DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	M. ANDARGIE	1	1
DATE: 05/05/26	**PAGE:** 4 of 8		

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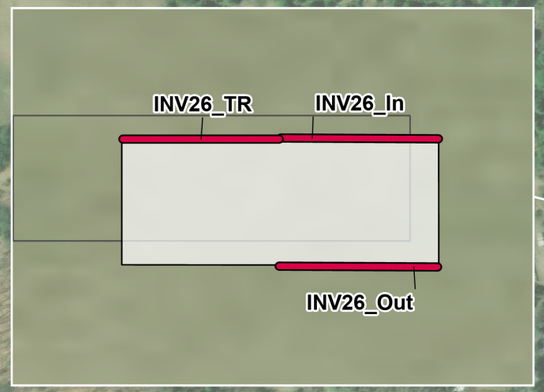
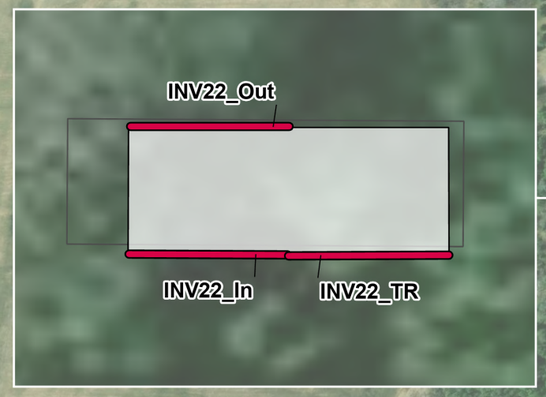
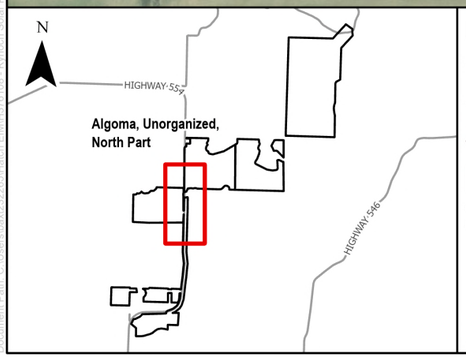


HIGHWAY-554





LEGEND

- PV Array
- Road
- Vertical Area Source
- Inverter Casing
- Project Location

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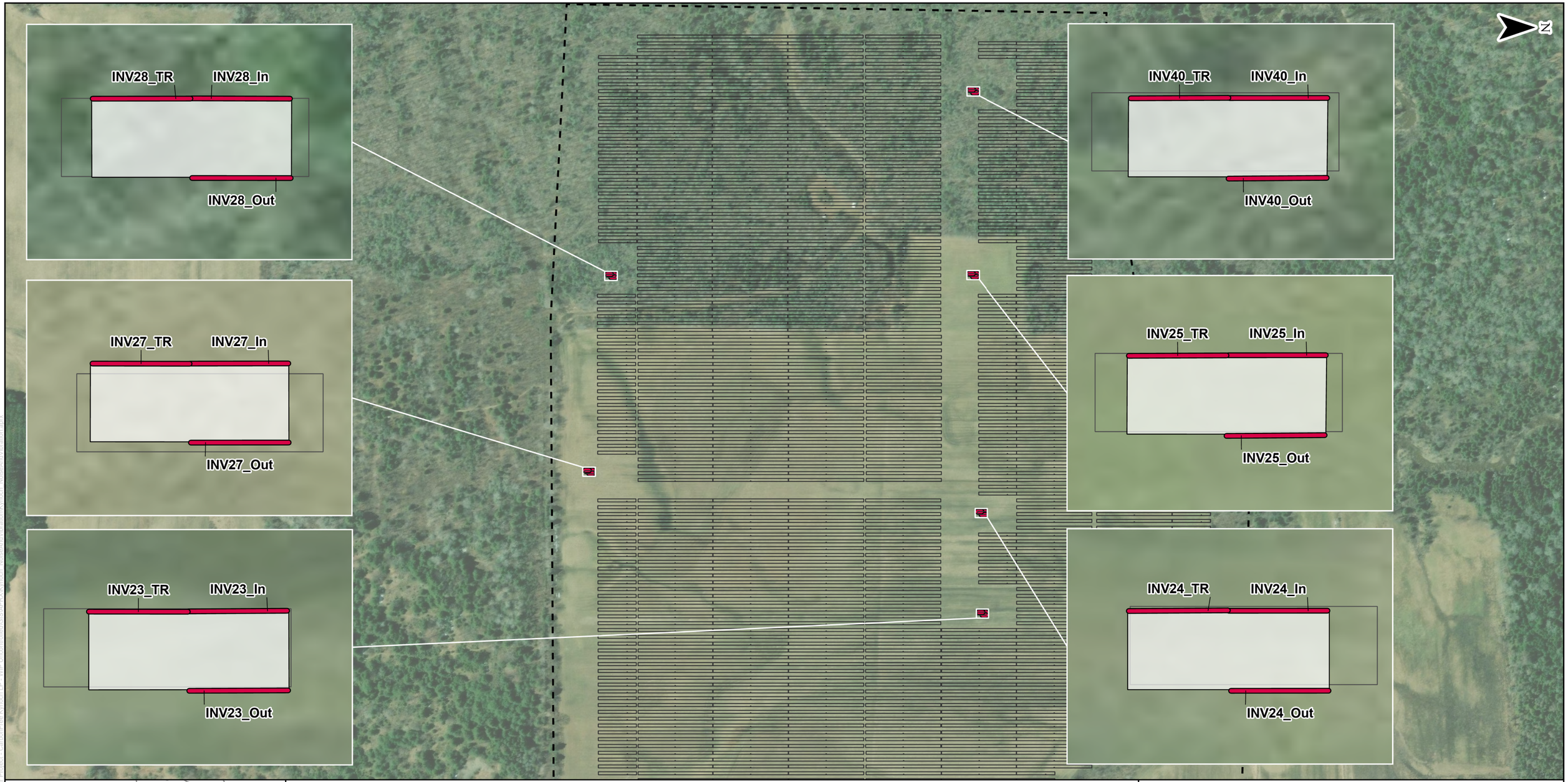
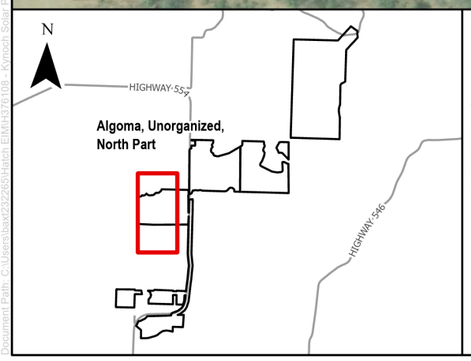
FIGURE TITLE:	Noise Source Layout
CLIENT:	CarbonFree Kynoch LTD

DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	M. ANDARGIE	1	1
DATE: 05/05/26	**PAGE:** 5 of 8		

HATCH

Microsoft, Vantor





LEGEND

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- Inverter Casing
- Project Location

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FIGURE TITLE:	Noise Source Layout
CLIENT:	CarbonFree Kynoch LTD

DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	M. ANDARGIE	1	1
DATE: 05/05/26	**PAGE:** 6 of 8		

HATCH

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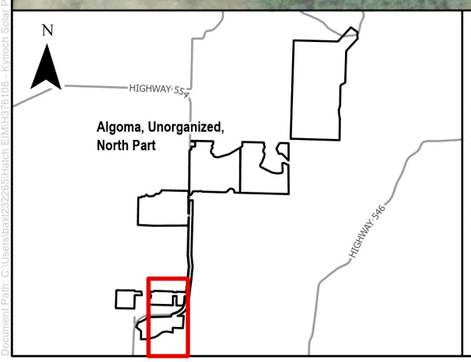

LEGEND

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CLIENT:	CarbonFree Kynoch LTD

DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	M. ANDARGIE	1	1
DATE: 05/05/26	**PAGE:** 7 of 8		

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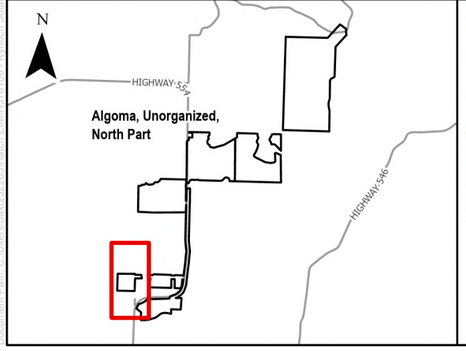

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DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	M. ANDARGIE	1	1
DATE: 05/05/26	**PAGE:** 8 of 8		

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Appendix C
Noise Source Sound Power Levels and Equipment Vendor Information

Equipment Type	Solar Inverter Skid		NV dB	INV	Project Tags: INV xx
Manufacturer	Sungrow				
Power	4400	kW	Date	27/3/2026	
Flow	-	(m^3/s)			
Pres	-	kPA	Source	Sungrow SG4400UD 2025-05-08 Test report	
Temperature	-	(^{u}C)			

		31.5	63	125	250	500	1000	2000	4000	8000	OVL(A)
Derrived Lw	INV_In/Out	85	82	87	87	90	83	83	88	75	92
	INV_TR	85	82	87	87	90	83	83	88	75	92

Figure 1. Photo of Solar Inverter Skid (Looking South)

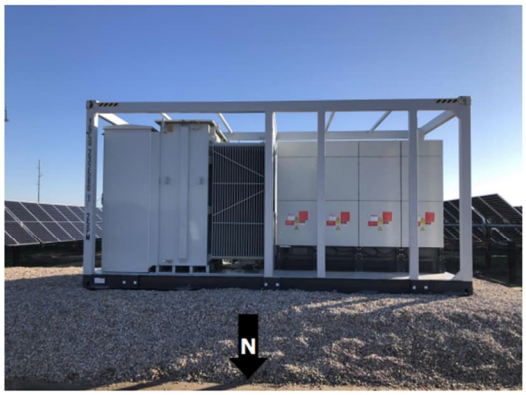
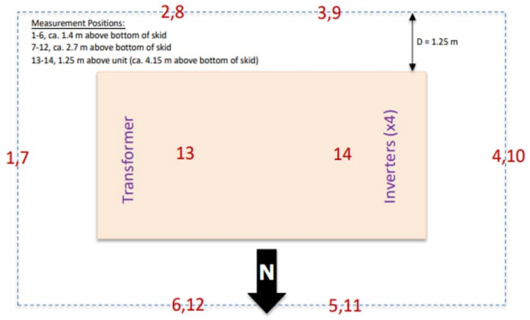


Figure 2. Measurement Positions, Overhead View



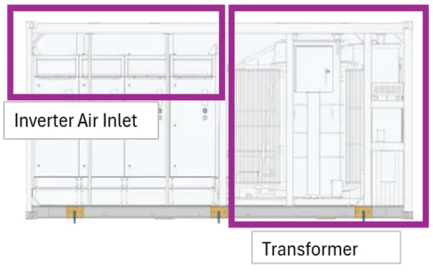


Table 1. Sound Measurement Data, dB

Position	Octave Band Center Frequency, Hz									dBA	dBZ, Calculated
	31.5	63	125	250	500	1000	2000	4000	8000		
1	67.9	64.7	67.9	61	54	47.3	46.7	51.8	36	58.5	72.3
2	64.9	65	69.1	70.3	75	68.5	68.3	67.3	59.7	75.8	78.9
3	68.5	65.9	71.5	77.4	80	72.2	72.9	71.6	63.8	80.4	83.7
4	65.4	63.8	67.3	67.2	67.8	61.7	63	67.4	53.5	71.5	75.0
5	62.9	64.3	66.8	67.9	66.5	61.5	64.7	78.8	62.5	79.9	80.1
6	60	65.8	68.9	62.4	58.7	58.1	60	68.4	53	70.4	73.8
7	61.4	63.1	69.1	56.3	53.8	46.5	47.2	49.9	35.2	57.5	70.9
8	66.1	63.9	70.9	68.3	75.1	68.3	66.8	65.9	55.6	75.2	78.7
9	67.8	65.7	71.4	76.3	77.9	71.6	69.5	67.1	56.5	78	82.0
10	64.9	62.9	70.4	66.8	67.2	60.9	61.9	65.3	51.9	70.2	75.1
11	63.9	63.2	68.2	67	64.6	59.5	64.6	74.2	60.4	75.8	77.0
12	59.4	64.7	66.2	64.9	59	55.7	57.5	68.9	52.5	70.5	73.2
13	69.1	62.3	71.6	62.1	64.8	59.7	58.5	66.2	49	69.3	75.4
14	76.3	68.1	68.6	68.1	70.8	64.9	63.5	68.8	53.2	73.3	79.4
Average	**68.1**	**64.8**	**69.5**	**70.3**	**72.7**	**65.9**	**65.9**	**70.8**	**57.6**	**75.1**	**78.3**
L_W	**90.0**	**86.7**	**91.4**	**92.2**	**94.6**	**87.8**	**87.7**	**92.6**	**79.5**	**97.0**	**100.2**

Lw Calculations

		31.5	63	125	250	500	1000	2000	4000	8000	OVL(A)	
Lw		90	87	91	92	95	88	88	93	80	97	
Inverter Air Inlet (INV_In)		85	82	87	87	90	83	83	88	75	92	33% of LW
Inverter Air Outlet (INV_Out)		85	82	87	87	90	83	83	88	75	92	33% of Lw
Inverter Transformer (INV_TR)		85	82	87	87	90	83	83	88	75	92	34% of Lw
A-Weighting		-39	-26	-16	-9	-3	0	1	1	-1		

Equipment Type	245 kV 172 MVA Transformer		NV dB	TR_172	Project Tags ST01
Manufacturer	Larson Electronics				
Power	172	MVA	Date	2025.12.23	
Flow	-	(m^3/s)			
Pres	-	kPA	Source	NEMA TR1-1993 (R2000), Oil Filled- Force	
Temperature	-	(^{0}C)		Larson Electronics 103.2/137.6/172 MVA 245 kV MT-PSTC-R7-3P	

	31.5	63	125	250	500	1000	2000	4000	8000	OVL
Derrived Lw	106	112	114	109	109	103	98	93	86	109

From Handbook of Noise and Vibration Control (Crocker, 2007, page 1335-1336, Eq. 18 and Table 20)

Average LpA	81	dBA	Based on NEMA TR1-1993 (R2000), Table 0-4, Dry type ventilated forced air cooled
Estimated surface area	403.8	m^2	Estimated based on Culter-Hammer catalogue

	102	108	110	105	105	99	94	89	82	105
	31.5	63	125	250	500	1000	2000	4000	8000	(dBA)
STEP 1: Correction factors										
C 1 Outdoors, indoors in mechanical room over	-11	-5	-3	-8	-8	-14	-19	-24	-31	
C 2 - Indoors	-11	-2	3	-2	-2	-11	-19	-24	-31	
C 3 - Serious Noise Problems	-11	-2	3	2	2	-4	-9	-14	-21	

STEP 2: Sound Power Level calculated as Lw=Average LpA + Awt + 10*log(Estimated surface area) + C + 10											
C1 based [dB]			106.1	112.1	114.1	109.1	109.1	103.1	98.1	93.1	86.1	109.4
C2 based [dB]			106	115	120	115	115	106	98	93	86	114
C3 based [dB]			106	115	120	119	119	113	108	103	96	119
A-weightings			-39.4	-26.2	-16.1	-8.6	-3.2	0	1.2	1	-1.1	

118.1

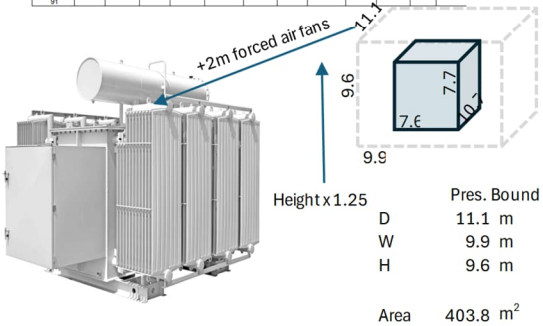
Table 1
Audible Sound Levels for Oil-Immersed Power Transformers

Average Sound Level tt. Decibels	Equivalent Two-Winding Rating*											
	350 kV BIL and Below			450, 550, 650 kV BIL			750 and 825 kV BIL			900 and 1050 kV BIL		
	1	2	3	1	2	3	1	2	3	1	2	3
57	700											
58	1000											
59				700								
60	1500			1000								
61	2000											
62	2500			1500								
63	3000			2000								
64	4000			2500								
65	5000			3000								
66	6000			4000			3000					
67	7500	6250▲▲		5000	3750▲▲		4000	3125▲▲				
68	10000	7500		6000	5000		5000	3750				
69	12500	9375		7500	6250		6000	5000				
70	15000	12500		10000	7500		7500	6250				
71	20000	16667		12500	9375		10000	7500				
72	25000	20000	20800	15000	12500		12500	9375				
73	30000	26667	25000	20000	16667		15000	12500		12500		
74	40000	33333	33333	25000	20000	20800	20000	16667		16000		
75	50000	40000	41667	30000	26667	25000	25000	20000	20800	20000	16667	
76	60000	53333	50000	40000	33333	33333	30000	26667	25000	25000	20000	20800
77	80000	66667	66667	50000	40000	41667	40000	33333	33333	30000	26667	25000
78	100000	80000	83333	60000	53333	50000	50000	40000	41667	40000	33333	33333
79		106667	100000	80000	66667	66667	60000	53333	50000	50000	40000	41667
80		133333	133333	100000	80000	83333	80000	66667	66667	60000	53333	50000
81			166667		106667	100000	100000	80000	83333	80000	66667	66667
82			200000		133333	133333		106667	100000	100000	80000	83333
83			250000			166667		133333	133333		10686	100000
84			300000			200000			166667		13333	133333
85			400000			250000			200000			166667
86						300000			250000			200000
87						400000			300000			250000
88									400000			300000
89												400000
90												
91												

Larson Electronics LLC
9419 E US HWY 175, Kemp, TX 75143
Phone: 800.369.6671

LARSON ELECTRONICS

Tertiary winding: N/A
Frequency: 60 Hz
Temperature Rise: 65°C
Insulation Rating: Class A Insulation
Cooling Class: ONAN/ONAF/ONAF
Forced Air (Fans): Included, Two-Stages, Totally Enclosed, Individually Protected Type, Fan Blades Of One-Piece Cast aluminum, Galvanized Fan Guards.
Cooling Radiator: Included, Galvanized, Has Upper And Lower Drain Plugs, ANSI #70 Sky
Conduit Opening: Bottom
Tank Cover Access Handhole: Included
Dimensions*: 413"-W x 299"-D x 303"-H
Weight*: TBD
*Please note that numbers are approximate and subject to change



Height x 1.25

	Pres. Bound	Acutal Dim
D	11.1 m	10.5 m
W	9.9 m	7.6 m
H	9.6 m	7.7 m
Area	403.8 m^2	

13.5.5 Sound power level calculation (L_w)

The sound power level shall be computed for each frequency band (A-weighted, one-third octave band, or discrete frequency) using Equation (34):

$$L_w = L_p + 10 \cdot \log_{10}(S) \quad (34)$$

The measurement surface area S is the vertical area (in square meters or square feet) enveloping the transformer (measurement surface) on which the sound measurement points are located plus the horizontal plane bounded by the vertical measurement surface.

Alternatively, for large transformers, the measurement surface area is approximately equal to 125% of the vertical area enveloping the transformer (measurement surface).

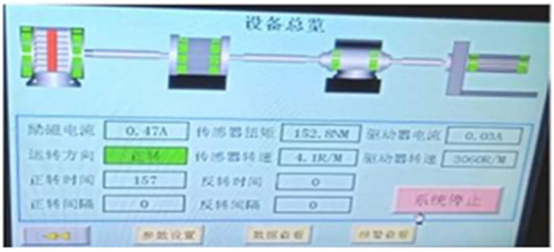
NEXTracker
A Flex Company

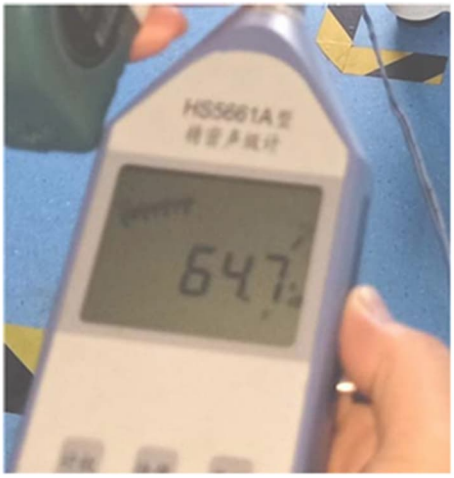
Nextracker Motor Sound Summary

Each Nextracker row uses a 24V DC motor powered by a Nextracker controller (SPC). To track the Sun, the motor operates for five to ten seconds every few minutes. The noise level of the motors is tested by the manufacturer. Test reports from the manufacturer indicate that the sound power level is approximately ~65dB. The sound level produced is low and essentially indistinguishable to surrounding site noises such as inverters, transformers, and HVAC units.

Below is a Motor test report from Nextracker Vendor.

Distance	Sound Level	Equivalent Sound
3m (9.8 ft)	~ 65dB	Normal Conversation, Quiet Suburb
30m (98 ft)	~ 45dB	Light Rain, Bird calls
300m (980 ft)	~ 25dB	Leaves Rustling, Whisper

Applicator	Lu Weijian	Department	Technical	Date	2020.04.14
Sample name		Drawing No.		Sample No.	2
Test purpose	Test gearbox motor can meet the noise standard				
Test process	1. The test motor shall be isolated from the aging table to prevent it from being affected by the noise of the aging table. The torque shall be set to 150N.m for 10min forward rotation, 1min stop, 10min reverse and 1min stop, work for 2 cycles. The noise meter should be 1m to the under test motor. 2. Acceptable standard: Noise during the test shall be ≤65dB				
Test equipment	300N.m dynamometer，noise meter				
Test cycle	1 day				
Process Description	1. Clamp the sample motor and test the corresponding data according to the above test methods 1-1 Ambient noise 56.1dB  1-2 Dynamometer parameter setting 150N.m  1-3 Test the motor noise when running as required, and the horizontal distance from the motor is 1m  1-4 Motor noise test result: 64.7dB				

			
Test report	No. B1 Motor noise 64.7 dB; No. F1 Motor noise 63.2 dB;		
Test result	According to the test results show that the stable operation of electric motor noise can meet the performance requirements;		
Operator	Sun Jieying	Audit	Lu Weijian

Appendix D
POR Noise Impact Table and Noise Contour Plot

Point of Reception Noise Impact Table

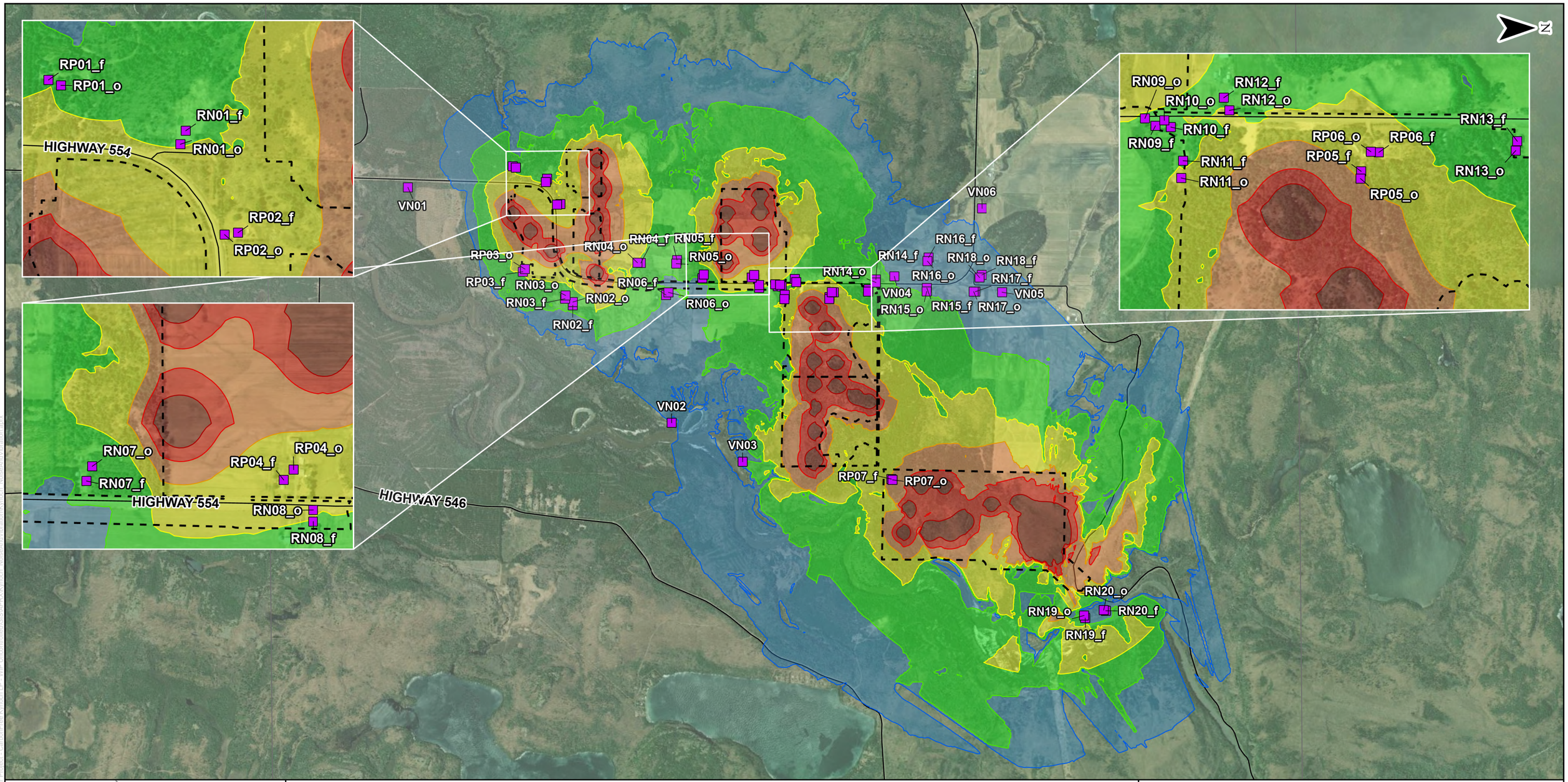
Receptor ID	Top Noise Sources									
	1	2	3	4	5	6	7	8	9	10
RN01_f	INV33_TR	INV36_Out	INV32_Out	INV34_In	INV35_Out	INV33_In	INV34_TR	INV31_Out	INV35_In	INV30_Out
	31 dBA	31 dBA	29 dBA	29 dBA	29 dBA	29 dBA	28 dBA	27 dBA	26 dBA	25 dBA
	466 m	415 m	449 m	636 m	472 m	466 m	636 m	538 m	472 m	666 m
RN01_o	INV36_Out	INV35_Out	INV33_TR	INV32_Out	INV34_In	INV33_In	INV34_TR	INV31_Out	INV35_In	INV30_Out
	31 dBA	30 dBA	29 dBA	28 dBA	28 dBA	28 dBA	27 dBA	27 dBA	25 dBA	24 dBA
	386 m	441 m	487 m	456 m	608 m	487 m	608 m	529 m	441 m	651 m
RN02_f	INV29_Out	INV34_Out	INV29_In	INV35_Out	INV29_TR	INV30_Out	INV36_Out	INV31_Out	INV34_In	INV35_TR
	33 dBA	26 dBA	26 dBA	24 dBA	22 dBA	22 dBA	21 dBA	21 dBA	19 dBA	18 dBA
	344 m	491 m	344 m	729 m	344 m	604 m	932 m	773 m	491 m	729 m
RN02_o	INV29_Out	INV34_Out	INV29_In	INV29_TR	INV35_Out	INV30_Out	INV31_Out	INV34_In	INV36_Out	INV32_Out
	34 dBA	26 dBA	24 dBA	21 dBA	20 dBA	20 dBA	19 dBA	18 dBA	17 dBA	16 dBA
	320 m	465 m	320 m	320 m	704 m	577 m	745 m	465 m	908 m	1006 m
RN03_f	INV29_Out	INV34_Out	INV35_Out	INV29_In	INV34_In	INV30_Out	INV36_Out	INV31_Out	INV29_TR	INV34_TR
	33 dBA	31 dBA	25 dBA	24 dBA	22 dBA	22 dBA	22 dBA	21 dBA	21 dBA	20 dBA
	346 m	415 m	647 m	346 m	415 m	578 m	848 m	739 m	346 m	415 m
RN03_o	INV29_Out	INV34_Out	INV29_In	INV35_Out	INV36_Out	INV29_TR	INV30_Out	INV34_In	INV31_Out	INV35_TR
	34 dBA	28 dBA	23 dBA	22 dBA	21 dBA	21 dBA	20 dBA	19 dBA	19 dBA	17 dBA
	325 m	389 m	325 m	624 m	826 m	325 m	550 m	389 m	710 m	624 m
RN04_f	INV30_In	INV30_TR	INV31_In	INV31_TR	INV32_In	INV29_In	INV32_TR	INV29_TR	INV33_Out	INV34_In
	33 dBA	32 dBA	30 dBA	29 dBA	27 dBA	26 dBA	26 dBA	24 dBA	24 dBA	23 dBA
	441 m	441 m	547 m	547 m	741 m	398 m	741 m	398 m	957 m	773 m
RN04_o	INV30_In	INV30_TR	INV31_In	INV31_TR	INV32_In	INV32_TR	INV29_In	INV29_TR	INV33_Out	INV34_In
	32 dBA	32 dBA	29 dBA	28 dBA	26 dBA	25 dBA	24 dBA	23 dBA	22 dBA	22 dBA
	414 m	414 m	525 m	525 m	725 m	725 m	370 m	370 m	944 m	744 m
RN05_f	INV31_In	INV31_TR	INV32_In	INV29_In	INV30_In	INV32_TR	INV30_TR	INV29_TR	INV33_Out	INV26_In
	26 dBA	25 dBA	25 dBA	24 dBA	23 dBA	23 dBA	23 dBA	23 dBA	22 dBA	22 dBA
	792 m	792 m	920 m	713 m	727 m	920 m	727 m	713 m	1097 m	418 m
RN05_o	INV29_In	INV30_In	INV29_TR	INV30_TR	INV31_In	INV26_In	INV31_TR	INV26_TR	INV32_In	INV32_TR
	23 dBA	23 dBA	22 dBA	22 dBA	21 dBA	20 dBA	20 dBA	20 dBA	20 dBA	19 dBA
	703 m	729 m	703 m	729 m	800 m	423 m	800 m	423 m	936 m	936 m
RN06_f	INV29_In	INV29_TR	INV30_In	INV30_TR	INV19_In	INV31_In	INV31_TR	INV26_Out	INV23_Out	INV32_In
	29 dBA	27 dBA	22 dBA	21 dBA	20 dBA	20 dBA	19 dBA	19 dBA	19 dBA	18 dBA
	640 m	640 m	777 m	777 m	1403 m	899 m	899 m	575 m	924 m	1091 m
RN06_o	INV29_In	INV29_TR	INV30_In	INV31_In	INV30_TR	INV31_TR	INV19_In	INV32_In	INV23_Out	INV26_Out
	26 dBA	25 dBA	19 dBA	19 dBA	19 dBA	18 dBA	18 dBA	18 dBA	18 dBA	17 dBA
	654 m	654 m	781 m	897 m	781 m	897 m	1393 m	1083 m	895 m	546 m
RN07_f	INV26_Out	INV26_TR	INV26_In	INV19_In	INV23_Out	INV19_TR	INV24_Out	INV22_Out	INV22_In	INV40_Out
	31 dBA	24 dBA	24 dBA	22 dBA	21 dBA	20 dBA	20 dBA	19 dBA	19 dBA	19 dBA
	231 m	231 m	231 m	1203 m	580 m	1203 m	623 m	974 m	974 m	860 m
RN07_o	INV26_Out	INV26_TR	INV26_In	INV19_In	INV19_TR	INV23_Out	INV24_Out	INV15_In	INV17_In	INV32_In
	28 dBA	25 dBA	25 dBA	20 dBA	18 dBA	18 dBA	17 dBA	16 dBA	15 dBA	15 dBA
	206 m	206 m	206 m	1213 m	1213 m	555 m	595 m	1344 m	1676 m	1175 m
RN08_f	INV23_Out	INV26_Out	INV24_Out	INV27_Out	INV19_In	INV22_Out	INV22_In	INV25_Out	INV19_TR	INV26_In
	32 dBA	32 dBA	30 dBA	27 dBA	27 dBA	26 dBA	26 dBA	26 dBA	25 dBA	25 dBA

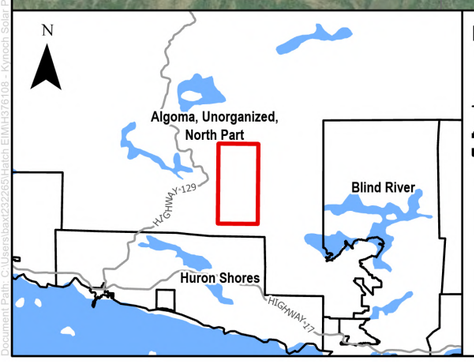
Source ID
Partial Level
Distance

Receptor ID	Top Noise Sources									
	1	2	3	4	5	6	7	8	9	10
	364 m	354 m	445 m	561 m	792 m	483 m	483 m	637 m	792 m	354 m
RN08_o	INV23_Out	INV26_Out	INV24_Out	INV25_Out	INV26_In	INV22_Out	INV19_In	INV27_Out	INV19_TR	INV22_In
	29 dBA	29 dBA	27 dBA	25 dBA	25 dBA	25 dBA	24 dBA	24 dBA	23 dBA	22 dBA
	339 m	340 m	420 m	612 m	340 m	491 m	812 m	540 m	812 m	491 m
RN09_f	INV23_Out	INV22_Out	INV24_Out	INV26_Out	INV22_In	INV25_Out	INV15_In	INV27_Out	INV21_Out	INV26_In
	32 dBA	30 dBA	30 dBA	28 dBA	27 dBA	26 dBA	25 dBA	25 dBA	25 dBA	24 dBA
	376 m	343 m	453 m	488 m	343 m	640 m	901 m	650 m	550 m	488 m
RN09_o	INV23_Out	INV24_Out	INV26_Out	INV22_Out	INV25_Out	INV22_In	INV26_In	INV21_Out	INV23_In	INV19_In
	32 dBA	30 dBA	28 dBA	28 dBA	25 dBA	24 dBA	23 dBA	23 dBA	23 dBA	23 dBA
	353 m	431 m	461 m	370 m	619 m	370 m	461 m	578 m	353 m	743 m
RN10_f	INV23_Out	INV22_Out	INV24_Out	INV26_Out	INV22_In	INV15_In	INV21_Out	INV25_Out	INV27_Out	INV15_TR
	32 dBA	31 dBA	29 dBA	28 dBA	28 dBA	26 dBA	25 dBA	25 dBA	25 dBA	24 dBA
	392 m	313 m	466 m	519 m	313 m	887 m	523 m	651 m	675 m	887 m
RN10_o	INV23_Out	INV22_Out	INV24_Out	INV26_Out	INV25_Out	INV22_In	INV27_Out	INV21_Out	INV19_In	INV26_In
	32 dBA	29 dBA	29 dBA	27 dBA	25 dBA	24 dBA	24 dBA	24 dBA	23 dBA	23 dBA
	373 m	333 m	448 m	501 m	633 m	333 m	655 m	543 m	721 m	501 m
RN11_f	INV22_Out	INV22_In	INV23_Out	INV24_Out	INV21_Out	INV26_Out	INV22_TR	INV19_In	INV19_TR	INV25_Out
	33 dBA	30 dBA	29 dBA	28 dBA	27 dBA	26 dBA	26 dBA	25 dBA	24 dBA	24 dBA
	255 m	255 m	469 m	543 m	456 m	574 m	255 m	625 m	625 m	728 m
RN11_o	INV22_Out	INV22_In	INV23_Out	INV22_TR	INV24_Out	INV21_Out	INV26_Out	INV19_In	INV19_TR	INV25_Out
	31 dBA	31 dBA	28 dBA	27 dBA	26 dBA	25 dBA	25 dBA	25 dBA	24 dBA	22 dBA
	247 m	247 m	501 m	247 m	577 m	438 m	589 m	593 m	593 m	762 m
RN12_f	INV22_Out	INV23_Out	INV24_Out	INV21_Out	INV26_Out	INV25_Out	INV15_In	INV22_In	INV27_Out	INV26_In
	32 dBA	31 dBA	29 dBA	26 dBA	26 dBA	26 dBA	25 dBA	24 dBA	24 dBA	24 dBA
	278 m	406 m	467 m	497 m	610 m	634 m	920 m	278 m	724 m	610 m
RN12_o	INV23_Out	INV22_Out	INV24_Out	INV26_Out	INV22_In	INV25_Out	INV21_Out	INV19_In	INV27_Out	INV19_TR
	30 dBA	29 dBA	28 dBA	25 dBA	24 dBA	24 dBA	24 dBA	23 dBA	22 dBA	22 dBA
	434 m	249 m	496 m	627 m	249 m	663 m	468 m	697 m	749 m	697 m
RN13_f	ST01	INV21_Out	INV22_Out	INV22_TR	INV22_In	INV19_Out	INV20_Out	INV16_Out	INV21_TR	INV21_In
	31 dBA	29 dBA	28 dBA	25 dBA	24 dBA	23 dBA	22 dBA	22 dBA	21 dBA	21 dBA
	2614 m	482 m	504 m	504 m	504 m	766 m	680 m	866 m	482 m	482 m
RN13_o	INV21_Out	ST01	INV22_Out	INV22_TR	INV22_In	INV19_Out	INV20_Out	INV16_Out	INV21_TR	INV17_Out
	29 dBA	28 dBA	28 dBA	25 dBA	23 dBA	23 dBA	21 dBA	21 dBA	20 dBA	20 dBA
	466 m	2600 m	496 m	496 m	496 m	748 m	660 m	846 m	466 m	899 m
RN14_f	ST01	INV21_Out	INV22_Out	INV22_TR	INV19_Out	INV22_In	INV20_Out	INV16_Out	INV17_Out	INV23_Out
	30 dBA	26 dBA	26 dBA	22 dBA	22 dBA	21 dBA	21 dBA	20 dBA	20 dBA	20 dBA
	2645 m	586 m	593 m	593 m	872 m	593 m	783 m	967 m	1011 m	1026 m
RN14_o	ST01	INV21_Out	INV22_Out	INV22_TR	INV19_Out	INV22_In	INV20_Out	INV16_Out	INV17_Out	INV15_Out
	28 dBA	26 dBA	26 dBA	22 dBA	21 dBA	20 dBA	20 dBA	19 dBA	19 dBA	18 dBA
	2624 m	568 m	584 m	584 m	852 m	584 m	760 m	943 m	986 m	1017 m
RN15_f	ST01	INV17_Out	INV21_Out	INV22_Out	INV20_Out	INV18_Out	INV22_In	INV22_TR	INV16_Out	INV19_Out
	29 dBA	17 dBA	17 dBA	16 dBA	16 dBA	15 dBA	15 dBA	14 dBA	14 dBA	14 dBA
	2360 m	1104 m	922 m	998 m	1004 m	1083 m	998 m	998 m	1139 m	1145 m
RN15_o	ST01	INV17_Out	INV21_Out	INV20_Out	INV22_Out	INV18_Out	INV21_TR	INV16_Out	INV19_Out	INV22_TR
	30 dBA	18 dBA	17 dBA	16 dBA	16 dBA	15 dBA	15 dBA	15 dBA	15 dBA	14 dBA
	2334 m	1078 m	909 m	984 m	992 m	1056 m	909 m	1116 m	1128 m	992 m
	ST01	INV21_Out	INV22_Out	INV17_Out	INV20_Out	INV19_Out	INV18_Out	INV16_Out	INV03_In	INV03_TR

Receptor ID	Top Noise Sources									
	1	2	3	4	5	6	7	8	9	10
RN16_f	31 dBA	17 dBA	17 dBA	16 dBA	16 dBA	15 dBA	14 dBA	14 dBA	14 dBA	14 dBA
	2591 m	1058 m	1084 m	1338 m	1196 m	1318 m	1328 m	1351 m	2271 m	2271 m
RN16_o	ST01	INV21_Out	INV22_Out	INV20_Out	INV18_Out	INV19_Out	INV17_Out	INV16_Out	INV26_In	INV15_Out
	28 dBA	16 dBA	15 dBA	14 dBA	13 dBA	13 dBA	13 dBA	12 dBA	12 dBA	12 dBA
	2566 m	1033 m	1064 m	1166 m	1295 m	1290 m	1306 m	1320 m	1737 m	1431 m
RN17_f	ST01	INV03_In	INV03_TR	INV17_Out	INV02_In	INV18_Out	INV21_Out	INV20_Out	INV15_Out	INV22_Out
	28 dBA	16 dBA	16 dBA	16 dBA	15 dBA	15 dBA	15 dBA	14 dBA	14 dBA	14 dBA
	2175 m	1876 m	1876 m	1356 m	2071 m	1304 m	1311 m	1339 m	1589 m	1408 m
RN17_o	ST01	INV03_In	INV03_TR	INV18_Out	INV11_In	INV21_Out	INV02_In	INV20_Out	INV10_In	INV17_Out
	28 dBA	14 dBA	14 dBA	13 dBA	13 dBA	13 dBA	12 dBA	12 dBA	12 dBA	12 dBA
	2179 m	1879 m	1879 m	1293 m	1708 m	1297 m	2075 m	1326 m	1750 m	1345 m
RN18_f	ST01	INV03_In	INV03_TR	INV17_Out	INV16_Out	INV21_Out	INV19_Out	INV18_Out	INV20_Out	INV22_Out
	28 dBA	16 dBA	16 dBA	15 dBA	14 dBA	14 dBA	14 dBA	14 dBA	13 dBA	13 dBA
	2298 m	2008 m	2008 m	1495 m	1568 m	1405 m	1611 m	1447 m	1457 m	1483 m
RN18_o	ST01	INV03_In	INV03_TR	INV21_Out	INV11_In	INV18_Out	INV20_Out	INV10_In	INV15_Out	INV17_Out
	27 dBA	13 dBA	13 dBA	12 dBA	12 dBA	12 dBA	12 dBA	11 dBA	11 dBA	11 dBA
	2282 m	1989 m	1989 m	1378 m	1836 m	1417 m	1428 m	1881 m	1683 m	1465 m
RN19_f	ST01	INV01_Out	INV02_Out	INV09_In	INV09_TR	INV38_Out	INV06_Out	INV01_In	INV11_Out	INV10_Out
	34 dBA	14 dBA	13 dBA	10 dBA	10 dBA	9 dBA	9 dBA	9 dBA	9 dBA	8 dBA
	793 m	618 m	906 m	1797 m	1797 m	1384 m	1368 m	618 m	1653 m	1803 m
RN19_o	ST01	INV01_Out	INV02_Out	INV09_In	INV01_In	INV06_Out	INV38_Out	INV09_TR	INV02_In	INV02_TR
	33 dBA	11 dBA	9 dBA	6 dBA	6 dBA	6 dBA	6 dBA	6 dBA	5 dBA	5 dBA
	769 m	594 m	882 m	1777 m	594 m	1348 m	1364 m	1777 m	882 m	882 m
RN20_f	ST01	INV01_Out	INV09_In	INV09_TR	INV02_Out	INV38_Out	INV06_Out	INV01_In	INV10_Out	INV41_Out
	33 dBA	14 dBA	10 dBA	9 dBA	9 dBA	9 dBA	9 dBA	9 dBA	8 dBA	7 dBA
	826 m	677 m	1921 m	1921 m	946 m	1508 m	1491 m	677 m	1910 m	1670 m
RN20_o	ST01	INV01_Out	INV02_Out	INV01_In	INV09_In	INV09_TR	INV01_TR	INV18_In	INV18_TR	INV41_Out
	31 dBA	11 dBA	6 dBA	6 dBA	5 dBA	4 dBA	4 dBA	3 dBA	2 dBA	2 dBA
	811 m	660 m	931 m	660 m	1902 m	1902 m	660 m	2708 m	2708 m	1651 m
RP01_f	INV36_In	INV36_TR	INV35_In	INV35_TR	INV36_Out	INV34_In	INV33_TR	INV34_TR	INV33_In	INV32_Out
	34 dBA	33 dBA	30 dBA	29 dBA	28 dBA	26 dBA	26 dBA	25 dBA	24 dBA	23 dBA
	412 m	412 m	583 m	583 m	412 m	813 m	736 m	813 m	736 m	761 m
RP01_o	INV36_Out	INV36_In	INV35_In	INV35_TR	INV36_TR	INV33_TR	INV34_In	INV34_TR	INV33_In	INV32_Out
	31 dBA	30 dBA	29 dBA	28 dBA	28 dBA	25 dBA	25 dBA	24 dBA	23 dBA	23 dBA
	401 m	401 m	565 m	565 m	401 m	710 m	792 m	792 m	710 m	732 m
RP02_f	INV35_Out	INV31_Out	INV34_In	INV32_Out	INV34_TR	INV36_Out	INV30_Out	INV33_TR	INV33_In	INV35_In
	33 dBA	33 dBA	32 dBA	32 dBA	31 dBA	31 dBA	30 dBA	29 dBA	28 dBA	23 dBA
	340 m	325 m	423 m	355 m	423 m	405 m	426 m	497 m	497 m	340 m
RP02_o	INV35_Out	INV34_In	INV31_Out	INV34_TR	INV36_Out	INV32_Out	INV30_Out	INV33_TR	INV33_In	INV35_In
	34 dBA	32 dBA	32 dBA	32 dBA	32 dBA	31 dBA	29 dBA	28 dBA	27 dBA	24 dBA
	317 m	415 m	351 m	415 m	375 m	384 m	444 m	520 m	520 m	317 m
RP03_f	INV35_In	INV34_Out	INV35_TR	INV34_TR	INV34_In	INV36_Out	INV29_Out	INV35_Out	INV31_Out	INV30_Out
	35 dBA	35 dBA	34 dBA	26 dBA	26 dBA	24 dBA	23 dBA	23 dBA	23 dBA	22 dBA
	356 m	298 m	356 m	298 m	298 m	501 m	625 m	356 m	774 m	686 m
RP03_o	INV34_Out	INV35_In	INV35_TR	INV34_TR	INV34_In	INV35_Out	INV36_Out	INV31_Out	INV29_Out	INV30_Out
	36 dBA	35 dBA	34 dBA	26 dBA	25 dBA	24 dBA	23 dBA	22 dBA	22 dBA	21 dBA
	270 m	330 m	330 m	270 m	270 m	330 m	481 m	746 m	607 m	660 m

Receptor ID	Top Noise Sources									
	1	2	3	4	5	6	7	8	9	10
RP04_f	INV26_Out	INV23_Out	INV24_Out	INV27_Out	INV26_In	INV25_Out	INV19_In	INV26_TR	INV23_In	INV22_Out
	36 dBA	35 dBA	32 dBA	30 dBA	30 dBA	27 dBA	25 dBA	25 dBA	25 dBA	24 dBA
	253 m	287 m	366 m	452 m	253 m	552 m	902 m	253 m	287 m	576 m
RP04_o	INV23_Out	INV26_Out	INV24_Out	INV27_Out	INV26_In	INV25_Out	INV23_In	INV26_TR	INV23_TR	INV19_In
	36 dBA	35 dBA	33 dBA	29 dBA	29 dBA	27 dBA	25 dBA	25 dBA	24 dBA	23 dBA
	260 m	263 m	339 m	444 m	263 m	528 m	260 m	263 m	260 m	907 m
RP05_f	INV22_Out	INV21_Out	INV22_TR	INV22_In	INV19_Out	ST01	INV21_In	INV19_In	INV20_Out	INV21_TR
	41 dBA	36 dBA	34 dBA	32 dBA	27 dBA	25 dBA	25 dBA	25 dBA	25 dBA	24 dBA
	167 m	258 m	167 m	167 m	561 m	2777 m	258 m	561 m	556 m	258 m
RP05_o	INV22_Out	INV21_Out	INV22_TR	INV22_In	INV19_Out	INV21_In	ST01	INV21_TR	INV20_Out	INV19_In
	42 dBA	37 dBA	34 dBA	31 dBA	27 dBA	25 dBA	25 dBA	24 dBA	24 dBA	24 dBA
	159 m	242 m	159 m	159 m	546 m	242 m	2766 m	242 m	540 m	546 m
RP06_f	INV22_Out	INV21_Out	INV22_TR	INV22_In	INV19_Out	ST01	INV20_Out	INV21_In	INV23_Out	INV19_In
	38 dBA	34 dBA	31 dBA	29 dBA	26 dBA	25 dBA	24 dBA	24 dBA	24 dBA	24 dBA
	220 m	304 m	220 m	220 m	610 m	2782 m	594 m	304 m	740 m	610 m
RP06_o	INV22_Out	INV21_Out	INV22_TR	INV22_In	INV19_Out	ST01	INV21_In	INV20_Out	INV19_In	INV21_TR
	39 dBA	34 dBA	30 dBA	27 dBA	25 dBA	24 dBA	23 dBA	22 dBA	22 dBA	22 dBA
	207 m	303 m	207 m	207 m	607 m	2794 m	303 m	596 m	607 m	303 m
RP07_f	INV10_In	INV10_TR	INV09_Out	ST01	INV11_In	INV11_TR	INV41_In	INV07_In	INV41_TR	INV07_TR
	38 dBA	38 dBA	35 dBA	33 dBA	33 dBA	32 dBA	30 dBA	30 dBA	29 dBA	29 dBA
	266 m	266 m	290 m	1437 m	460 m	460 m	560 m	572 m	560 m	572 m
RP07_o	INV10_In	INV10_TR	INV09_Out	ST01	INV41_In	INV07_In	INV41_TR	INV11_In	INV07_TR	INV11_TR
	37 dBA	36 dBA	35 dBA	33 dBA	29 dBA	29 dBA	28 dBA	28 dBA	28 dBA	27 dBA
	255 m	255 m	280 m	1425 m	549 m	561 m	549 m	449 m	561 m	449 m
VN01	INV35_In	INV36_In	INV35_TR	INV36_TR	INV34_In	INV34_TR	INV33_TR	INV30_Out	INV31_Out	INV32_Out
	18 dBA	18 dBA	18 dBA	17 dBA	16 dBA	16 dBA	13 dBA	12 dBA	12 dBA	12 dBA
	1129 m	944 m	1129 m	944 m	1355 m	1355 m	1652 m	1673 m	1633 m	1638 m
VN02	INV13_In	INV14_In	INV12_In	INV39_In	INV13_TR	INV14_TR	INV12_TR	INV39_TR	INV21_In	INV22_In
	17 dBA	17 dBA	17 dBA	17 dBA	17 dBA	16 dBA	16 dBA	16 dBA	14 dBA	14 dBA
	1247 m	1246 m	1278 m	1283 m	1247 m	1246 m	1278 m	1283 m	1570 m	1571 m
VN03	ST01	INV39_In	INV12_In	INV39_TR	INV14_In	INV12_TR	INV14_TR	INV13_In	INV13_TR	INV17_In
	25 dBA	22 dBA	22 dBA	22 dBA	21 dBA	21 dBA	21 dBA	18 dBA	18 dBA	16 dBA
	2709 m	631 m	631 m	631 m	783 m	631 m	783 m	686 m	686 m	1134 m
VN04	ST01	INV21_Out	INV22_Out	INV20_Out	INV22_TR	INV19_Out	INV22_In	INV16_Out	INV17_Out	INV18_Out
	31 dBA	22 dBA	21 dBA	19 dBA	19 dBA	18 dBA	18 dBA	17 dBA	17 dBA	17 dBA
	2582 m	724 m	751 m	886 m	751 m	994 m	751 m	1057 m	1075 m	1086 m
VN05	ST01	INV03_In	INV03_TR	INV20_Out	INV16_Out	INV18_Out	INV11_In	INV17_Out	INV19_Out	INV21_Out
	29 dBA	17 dBA	17 dBA	14 dBA	13 dBA	13 dBA	13 dBA	13 dBA	13 dBA	13 dBA
	2113 m	1838 m	1838 m	1549 m	1635 m	1473 m	1757 m	1536 m	1714 m	1538 m
VN06	ST01	INV25_In	INV23_In	INV24_In	INV21_Out	INV22_Out	INV25_TR	INV23_TR	INV24_TR	INV20_Out
	25 dBA	12 dBA	12 dBA	12 dBA	12 dBA	12 dBA	11 dBA	11 dBA	11 dBA	11 dBA
	2855 m	1907 m	1923 m	1912 m	1679 m	1685 m	1907 m	1923 m	1912 m	1818 m





LEGEND

- Point of Reception
- Road
- Project Location
- Point of Reception

Noise Contour (dBA)

30-35 | 35-40 | 40-45 | 45-50 | 50-55 | >55

NOTES:
1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 17N
3. Noise contours were generated based on a 10 x 10m grid at a 4.5m elevation above ground

0 500 1,000 2,000 m

1:32,000

PROJECT:	Acoustic Assessment Report Kynoch Solar Project
FIGURE TITLE:	Noise Contours at 4.5m Above Ground
CLIENT:	CarbonFree Kynoch LTD

DWG BY:	CHK BY:	FIG NO.:	REV NO.:
V. BAXTER	M. ANDARGIE	2	1
DATE: 06/05/26	**PAGE:** 1		

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Appendix E
Foliage Description

Overhead View

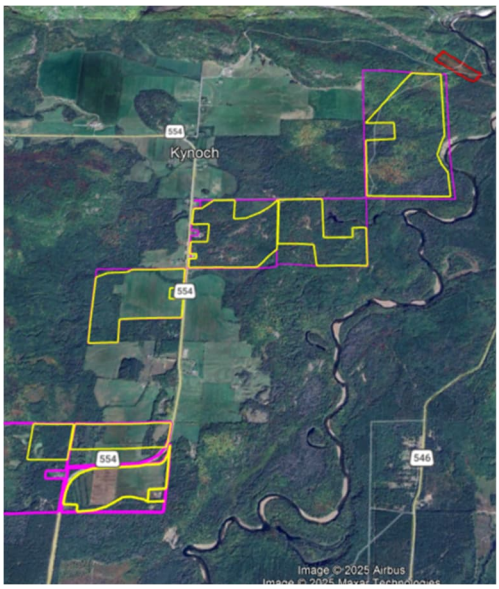


Image 1a – Southwest forest bordering central array on west side Hwy 554 **RN05**

East end is characterized as second growth mixed wood forest nearing maturity and predominated by white pine, white spruce, tamarack, poplar and birch species. West end is mature, largely undisturbed mixed wood forest with continuous canopy.

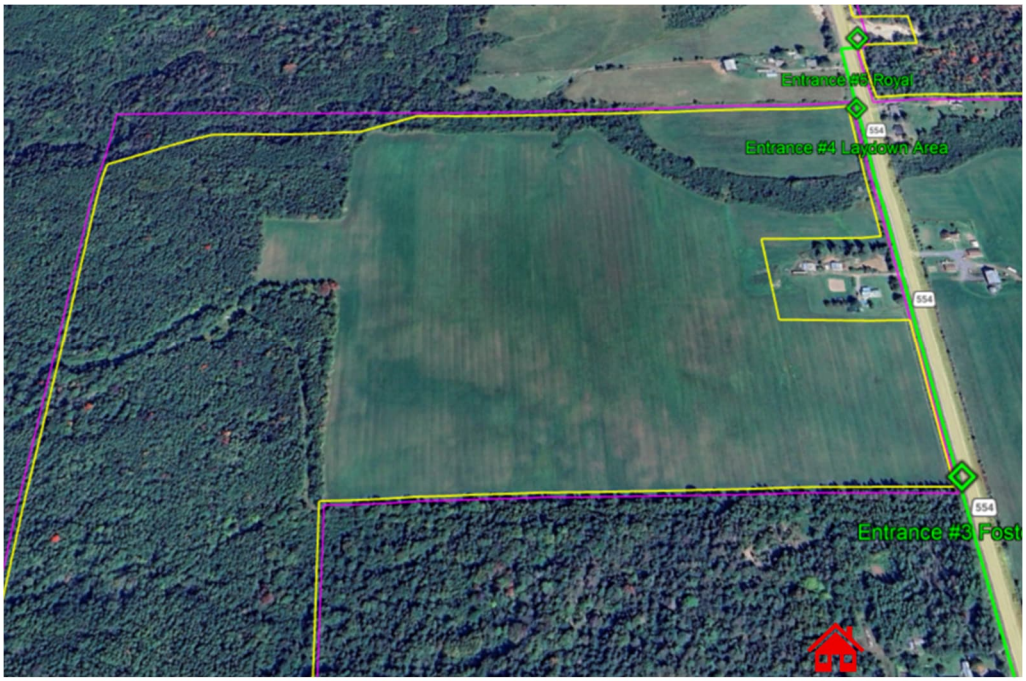


Image 1b – Looking south at intersection of solar array land and forest edge and north of **RN05**

Image 2a – Forest at Northeast **RN19-20**

Main body is Mature, dense conifer forest bordered to the west by mature deciduous forest where the land rises (within the project boundary) and wetland forest to the south and dense conifer on the north side of the transmission line in the area of the receptors before giving way to thinned deciduous forest in the area of the receptors and along the river edge.

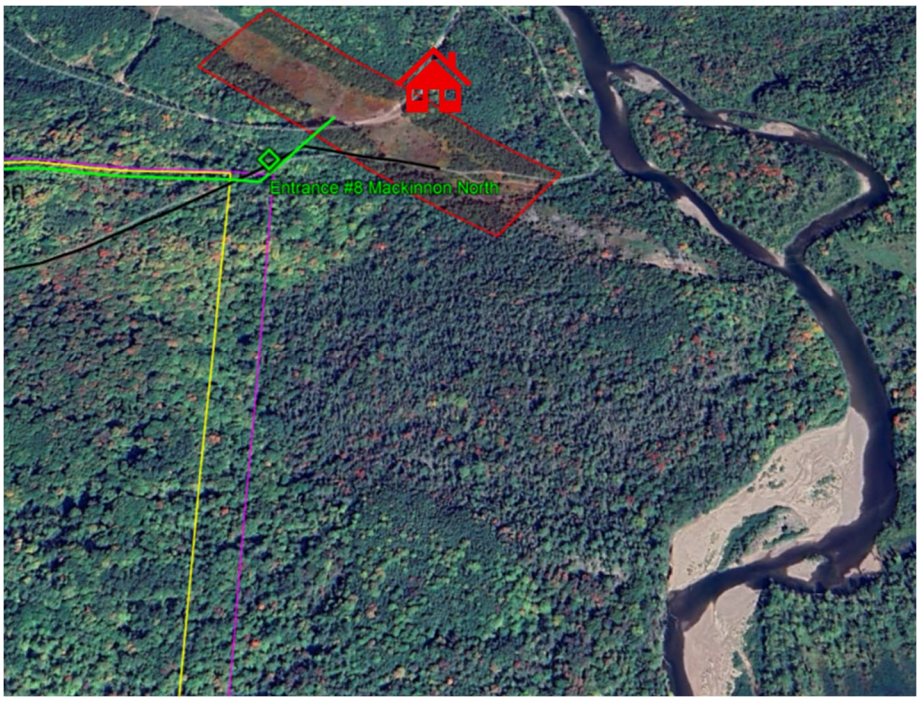
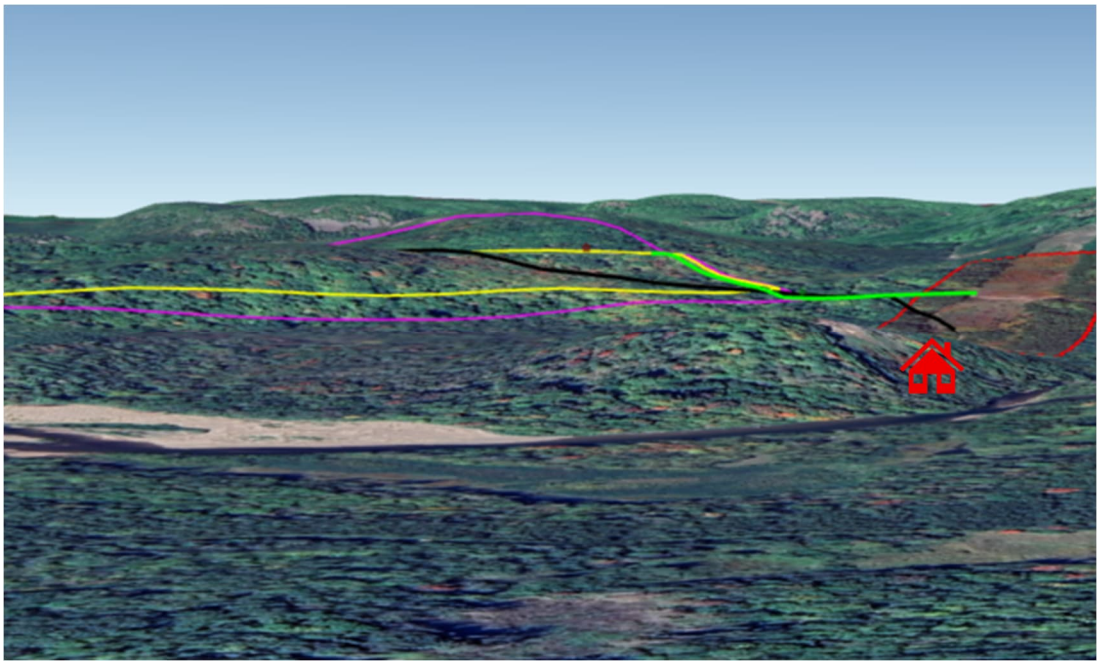


Image 2b – Topo view of the target forest area from the perspective of the east side of the river **RN19-20**



Appendix F
Acoustic Assessment Report Checklist

Ministry of the Environment | Ministère de l'Environnement

Ontario

ACOUSTIC ASSESSMENT REPORT CHECK-LIST

Company Name: CarbonFree Kynoch Ltd.

Company Address: 1 St Clair Ave W#801
Toronto, Ontario M4T 1Y5

Location of Facility: Kynoch, Ontario

The attached Acoustic Assessment Report was prepared in accordance with the guidance in the ministry document "Information to be Submitted for Approval of Stationary Sources of Sound" (NPC 233) dated October 1995 and the minimum required information identified in the check-list on the reverse of this sheet has been submitted.

Company Contact: Doug Deeks
Name: Doug Deeks
Title: Vice President - Projects
Phone Number: 647-608-9680
Signature:
Date:

Technical Contact: Hatch Ltd
Name: Mervyn Choy
Representing: Hatch Ltd.
Phone Number: 289-326-2740
Signature:
Date: May 29, 2026

ACOUSTIC ASSESSMENT REPORT CHECKLIST

	Required Information		
		Submitted	Explanation/Reference
1.0	**Introduction** (Project Background and Overview)	☒ Yes	Section 1
2.0	**Facility Description**		
	2.1 Operating hours of facility and significant Noise Sources	☒ Yes	Section 2
	2.2 Site Plan identifying all significant Noise Sources	☒ Yes	Appendix B
3.0	**Noise Source Summary**		
	3.1 ***Noise Source Summary Table***	☒ Yes	Table 3-4
	3.2 Source noise emissions specifications	☒ Yes	Appendix C
	3.3 Source power/capacity ratings	☒ Yes	Appendix C
	3.4 Noise control equipment description and acoustical specifications	☐ Yes	Section 5
4.0	**Point of Reception Noise Impact Calculations**		
	4.1 ***Point of Reception Noise Impact Table***	☒ Yes	Appendix D
	4.2 Point(s) of Reception (POR) list and description	☒ Yes	Table 4-1
	4.3 Land-use Zoning Plan	☒ Yes	Appendix A
	4.4 Scaled Area Location Plan	☒ Yes	Appendix A / B
	4.5 Procedure used to assess noise impacts at each POR	☒ Yes	Section 7.1
	4.6 List of parameters/assumptions used in calculations	☒ Yes	Section 7.1
5.0	**Acoustic Assessment Summary**		
	5.1 ***Acoustic Assessment Summary Table***	☒ Yes	Table 7-2
	5.2 Rationale for selecting applicable noise guideline limits	☒ Yes	Section 5
	5.3 Predictable Worst Case Impacts Operating Scenario	☒ Yes	Section 7.2
6.0	**Conclusions**		
	6.1 Statement of compliance with the selected noise performance limits	☒ Yes	Section 8
7.0	**Appendices** (Provide details such as)	☒ Yes	
	Listing of Insignificant Noise Sources	☒ Yes	Section 3
	Manufacture's Noise Specifications	☒ Yes	Appendix C
	Calculations	☒ Yes	Appendix C
	Instrumentation	☐ Yes	n/a
	Meteorology during Sound Level Measurements	☐ Yes	n/a
	Raw Data from Measurements	☐ Yes	n/a
	Drawings (Facility / Equipment)	☒ Yes	Appendix B