NORTHLAND POWER

Cochrane Solar Project

Noise Assessment Study Report

January 25, 2013

Northland Power Inc.
on behalf of
Northland Power Solar
Cochrane L.P.
Toronto, Ontario

Noise Assessment Study Report

Cochrane Solar Project

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Executive Summary

This report presents the results of the Noise Assessment Study required for Solar Facilities under O. Reg. 359/09 and 521/10, as part of the Renewable Energy Approval (REA) Process. Northland Power Solar Abitibi L.P., Northland Power Solar Empire L.P., and Northland Power Solar Martin's Meadows L.P. (hereinafter collectively referred to as "Northland") are proposing to develop a 30-megawatt (MW) solar photovoltaic (PV) project titled Cochrane Solar Project (the "Project"). The Project will be located on approximately 120 hectares (ha) of land within the Town of Cochrane.

The Project was formerly submitted to the MOE as three individual 10-MW projects known as Abitibi Solar Project, Empire Solar Project and Martin's Meadows Solar Project.

This Noise Assessment Study Report has been prepared based on the document entitled "Basic Comprehensive Certificates of Approval (Air) – User Guide" by the Ontario Ministry of the Environment (MOE, 2004). The sound pressure levels at the points of reception have been estimated using ISO 9613-2, implemented in the CADNA-A computer code. The performance limits used for verification of compliance correspond to the values for rural areas of 40 dBA. The results presented in this report are based on the best available information at this time. It is the intention that, in the detailed engineering phase of the project, certified noise data based on final plans and designs will confirm the conclusions of this noise impact assessment study.

The results obtained in this study show that the sound pressure levels at the Noise Receptors, resulting from the Project operation, will not exceed MOE requirements for rural areas of 40 dBA.

Project Report

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1. Introduction

1.1 Project Description

Northland Power Solar Abitibi L.P., Northland Power Solar Empire L.P., and Northland Power Solar Martin's Meadows L.P. ("Northland") are proposing to develop a 30-megawatt (MW) AC solar photovoltaic project titled Cochrane Solar Project (the "Project"). The Project will be located on approximately 120 ha of land within the Town of Cochrane. The Project was formerly submitted to the MOE as three individual 10-MW projects known as Abitibi Solar Project, Empire Solar Project and Martin's Meadows Solar Project.

The proposed Project is a renewable energy generation facility which will use solar photovoltaic technology to generate electricity. Electricity generated by solar photovoltaic panels will be converted from Direct Current (DC) to Alternating Current (AC) by inverter clusters which will also step-up the voltage to 27.6 kV. A main transformer, located in the substation, will step up the voltage from the clusters to 115 kV prior to being transmitted to the existing local distribution line.

In order to meet the Ontario Power Authority (OPA)'s Feed-In-Tariff (FIT) Program requirements, a specific percentage of equipment will be manufactured in Ontario.

The construction of the Project will begin once the Renewable Energy Approval (REA) has been obtained and a power purchase agreement is finalized with the OPA. The anticipated operational lifespan of the Project is 30 years.

1.2 Renewable Energy Approval Legislative Requirements

Ontario Regulation (O. Reg.)359/09 and 521/10, made under the *Environmental Protection Act*, identify the Renewable Energy Approval (REA) requirements for green energy projects in Ontario. As per Section 4 of these regulations, ground mounted solar facilities with a name plate capacity greater than 12 kilowatts (kW) are classified as a Class 3 solar facility and, therefore, require an REA.

Section 13 of the O. Reg. 359/09 requires proponents of Class 3 solar facilities to complete a Noise Study Report in accordance with Appendix A of the publication; "Basic Comprehensive Certificates of Approval (Air) – User Guide, 2004" by the Ministry of the Environment (MOE, 2004).

The Noise Assessment Study Report is to include a general description of the facility, sources and Noise Receptors, Assessment of Compliance, as well as all the supporting information relevant to the Project.

2. Facility Description

The Project will utilize photovoltaic (PV) panels installed on fixed racking structures mounted on the ground. The PV panels generate DC electricity which will be converted to AC electricity by inverters. The Project layout is based on twenty five inverter clusters each one containing two inverters and one medium-voltage (360-V/27.6-kV/1.6-MVA) transformer, and one 27.6-kV/115-kV/30-MVA substation transformer. The 27.6-kV power, collected from the inverter clusters, will be stepped up to 115 kV by the substation transformer prior to being transmitted to the existing local distribution line.

Since the panels will be ground mounted and the total nameplate capacity is over 12 kW, the Project is considered to be a Class 3 Solar Facility according to the classification presented in O. Reg. 521/10.

Table 2.1 General Project Description

Project Description	Ground-mounted Solar PV, Class 3
System Nameplate Capacity	30 MW AC
Local Distribution Company	Hydro One

2.1 Project Location

The Project Location[1] will be on privately owned land, zoned as rural and agricultural, totalling approximately 120 ha. Figure A.1 in Appendix A shows the zoning designation plan while Figure A.2 presents the Project Area Location Plan.

2.2 Acoustical Environment

The Project will be surrounded by forested areas and farmlands. The background noise levels are expected to be typical of rural areas, classified as a Class 3 based on Publication NPC-232 by the MOE. Some traffic noise is expected from Glackmeyer Concession Road 8/9 mainly during day hours. The Cochrane Airport is located about 4.5 km southwest of the Project Location. The Town of Cochrane is situated approximately 8 km to the south and the Trans-Canada Highway passes through Cochrane at a distance of about 9 km from the Project Location.

2.3 Life of Project

The expected life of the Project is 30 years. The manufacturer's warranty on the PV modules is 25 years and the expected life of solar power plants of this type is typically 35 to 40 years. At that time (or earlier if the 20-yr power purchase agreement is not extended), the Project will be decommissioned or refurbished depending on market conditions and/or technological changes.

2.4 Operating Hours

Solar PV facilities produce electricity during the day hours, when the sun rays are collected by the panels. After sunset the facility will not receive solar radiation to generate any electricity. Under these conditions the inverters will not produce any noise and the transformers will be energized, but not in operation (no fans in operation).

[1] "Project Location" in the context of this study is an area occupied by the Project infrastructure.

2.5 Approach to the Study

The sound pressure levels at the points of reception (POR) were predicted using procedures from ISO 9613-2, which is a widely used and generally accepted standard for the evaluation of noise impact in environmental assessments. The sound power level for the inverters was provided by the manufacturer while the sound power level for the transformers was estimated. The software package CADNA-A, which implements ISO-9613-2, was used to predict the noise levels at the POR. This numerical modeling software is able to simulate sound sources as well as sound mitigation measures taking into account atmospheric and ground attenuation. Some of the CADNA-A configurations used in the modeling are shown in Figure 2.1.

Elevation contours were not included in the CADNA-A model. This conservative approach was applied in order to avoid including any barrier effects of ground surface obstacles.

For modeling purposes, the vegetation that blocks some of the POR from the sources has not been incorporated.

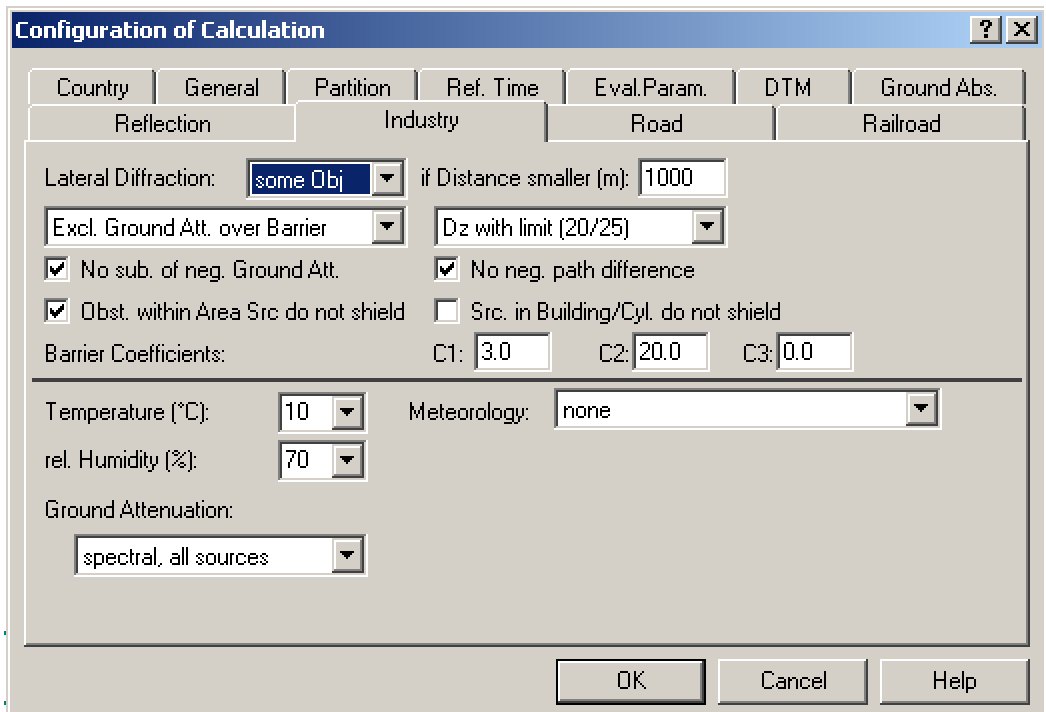

Figure 2.1 CADNA-A Configurations

3. Noise Sources

The main sources of noise from the Project will be 25 inverter clusters, each one containing two inverters and one medium-voltage transformer, and a substation containing the main step-up transformer. The Project layout is provided in Figure A.2. The coordinates of each noise source are presented in Table B.1 of Appendix B.

Presently, 25 inverter cluster locations have been considered for the noise impact assessment, however not all locations will be utilized by the Project in order to meet the 30-MW target capacity. Removal of some of the inverter clusters will reduce noise impact on the Noise Receptors.

For the purpose of this study it is assumed that all inverters and transformers will be operating 24 hours at full capacity.

3.1 Substation Transformer

A 30-MVA step-up transformer that will step up the 27.6-kV power to 115 kV, required by the local distribution company, will be located in the substation. The transformer manufacture provided expected sound pressure level of 62 dBA (compatible with C57.12.90-1993 standard), the manufacture is also committed to the combined sound power of 85 dBA for the transformer. The transformer will be of ONAF (oil natural air forced) type and will look similar to the one shown in Figure B.2. Sound power spectrum was determined using the provided characteristic sound pressure (62 dBA), 75-m^2 transformer surface area, and empirical correlations for transformer noise (Crocker, 2007). This calculation is available in Figure B.3 of Appendix B. The estimated sound power spectrum was further adjusted by adding 1.9 dB to each frequency in order to achieve the combined sound power of 85 dBA proposed by the manufacture. The point noise source height representing the transformer was assumed at 4.0 m above grade.

Power transformers are considered by the MOE to be tonal noise sources. A 5-dB penalty was added to the sound power spectrum, as recommended by Publication NPC-104, "Sound Level Adjustments" for tonality. Table B.2 in Appendix B shows the frequency spectrum used to model the substation transformer.

3.2 Inverter Clusters

Northland is planning to use inverters manufactured by SMA. It is intended to permit 25 inverter cluster locations, although the installed number of inverter clusters will be less than that. Each cluster comprises of two SMA Sunny Central 800CP inverters and one medium voltage transformer. A schematic layout with approximate dimensions of such cluster is available in Figure 3.1; additional information regarding details of the inverter cluster can be found in Appendix B. The cluster components listed above were modeled as point sources shown in Figure 3.2. *Note that the planned enclosure over the inverters was not taken into account as a mitigation measure in the noise model.*

The installed capacity of each Sunny Central 800CP inverter is 800 kW. SMA provided third-octave noise data for the Sunny Central 800CP inverter (Figure B.1 of Appendix B). The provided third octave spectrum was converted to a full octave spectrum and the contribution from two inverters was combined into a single sound power spectrum for use with CADNA-A model (calculations are available in Figure B.4 of Appendix B). A 5-dBA penalty was added to the frequency spectrum, as stipulated in Publication NPC-104, "Sound Level Adjustments," to allow for tonality. The frequency spectrum used to model combined noise emission from the two inverters located next to each other within the same cluster is shown in Table B.2 of Appendix B. Table B.3 of Appendix B contains coordinates of the individual inverters.

A 1.6-MVA transformer used to step-up the 360-V power from the inverters to 27.6 kV will be located in close proximity to the inverters. Since the transformer make and model have not been selected at this point (although it is known that the transformer will be of ONAN (oil natural air natural) type), the sound power levels resulting from the operation of the transformer were evaluated using data from NEMA TR 1-1993 (R2000) and 14.88-m^2 transformer surface area. The NEMA levels were then converted into frequency spectrum using empirical correlations for transformer noise (Crocker, 2007). This calculation is available in Figure B.5 of Appendix B. Power transformers are considered by the MOE to be tonal noise sources. A 5-dB penalty was added to the sound power spectrum, as recommended by Publication NPC-104, "Sound Level Adjustments" for tonality. Table B.2 in Appendix B shows the frequency spectrum used to model the transformers located in the clusters.

Although for the modeling purposes it was assumed that the facility will operate 24 h at full capacity, in reality at night the facility will be idle. Under these conditions the inverters do not produce noise. The transformers (at the substation and clusters) are energized and make some magnetostrictive noise at a reduced level, but no cooling fans are in operation.

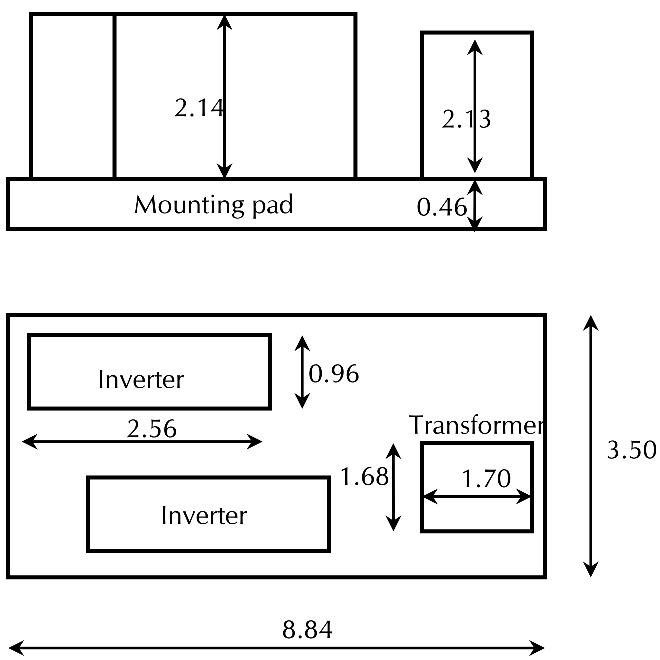

Figure 3.1 Schematic Inverter Cluster Layout
(all dimensions in metres)

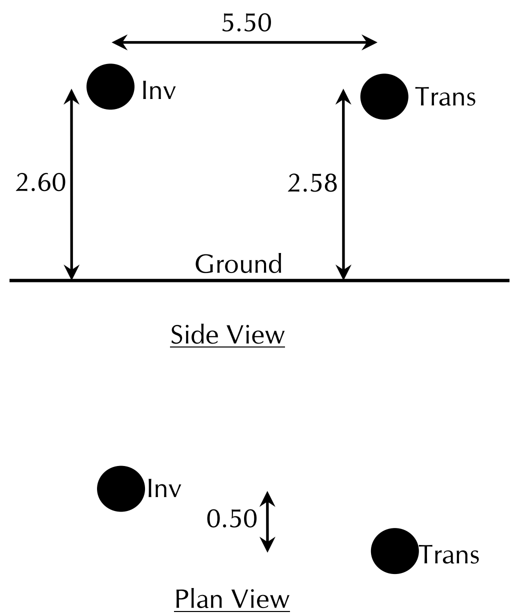

Figure 3.2 Inverter Cluster CADNA-A Acoustical Model

where: Inv = Noise Source Representing Two Sunny Central 800CP Inverters; and Trans = Noise Source Representing 360-V/27.6-kV/1.6-MVA Cluster Transformer (all dimensions in metres).

3.3 Noise Summary Table

A summary of the sound sources described above, including sound power level, characteristics and proposed noise control measures, is presented in Table 3.1.

Table 3.1 Noise Source Summary for the Project

Source ID	Description	Total Sound Power Level (dBA)	Source Location	Sound Characteristics	Noise Control Measures
Ab_Inv1	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Ab_Inv2	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Ab_Inv3	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Ab_Inv4	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Ab_Inv5	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Ab_Inv6	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Ab_Inv7	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Ab_Trans1	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Ab_Trans2	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Ab_Trans3	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Ab_Trans4	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Ab_Trans5	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Ab_Trans6	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Ab_Trans7	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U

Source ID	Description	Total Sound Power Level (dBA)	Source Location	Sound Characteristics	Noise Control Measures
Em_Inv1	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv2	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv3	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv4	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv5	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv6	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv7	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv8	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv9	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv10	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Inv11	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
Em_Trans1	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans2	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans3	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans4	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans5	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans6	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans7	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans8	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans9	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans10	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Em_Trans11	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
MM_Inv1	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
MM_Inv2	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
MM_Inv3	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
MM_Inv4	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
MM_Inv5	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
MM_Inv6	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
MM_Inv7	Two SMA Sunny Central SC8000 CP inverters	91.3	O	S-T	U
MM_Trans1	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
MM_Trans2	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
MM_Trans3	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
MM_Trans4	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
MM_Trans5	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
MM_Trans6	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
MM_Trans7	360-V/27.6-kV/1.6-MVA transformer	80.1	O	S-T	U
Sub115	27.6-kV/115-kV/30-MVA substation transformer	90.0	O	S-T	U

Notes:
1. A 5-dBA penalty is included in this table.
2. Location: Inside building (I), Outside building (O).
3. Sound Characteristics: Steady (S), Tonal (T), Impulsive (I), Quasi-Steady Impulsive (QSI).
4. Noise Control: Silencer (S), Acoustic lining (A), Barrier (B), Lagging (L), Enclosure (E), Other (O), Uncontrolled (U).

3.4 Adjacent Solar Projects

To identify the adjacent solar projects Hatch's internal database of solar projects and MOE records available in http://www.ene.gov.on.ca/environment/en/subject/renewable_energy/projects/index.htm were searched (January 25, 2013).

There are no Noise Receptors that are within 1 km of the Project noise sources and any adjacent project noise sources. As a result, there are no adjacent projects included in this study.

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4. Noise Receptors and Points of Reception

The Noise Receptors used in this study were identified from the OBM and Google Earth Pro aerial imagery (August 2003) within 1 km distance from the Project Site[2] boundary, and also from visual observations of the Project Site surroundings conducted in summer 2010. The Noise Receptors were indentified in accordance with O. Reg. 359/09, and its amendment (O. Reg. 521/10).

The Noise Receptors corresponding to the vacant lots were added based on parcel information provided by First Base Solutions (Teranet Data) and located according to the requirements outlined in O. Reg. 359/09, and its amendment (O. Reg. 521/10).

The total number of Noise Receptors within a 1-km distance from the Project Site of the Cochrane Solar Project is 50, including the vacant lots. Noise Receptors were represented in the CADNA-A computer model by Points of Reception (POR) according to the following rules:

1) existing Noise Receptors located in the immediate proximity to the Cochrane Solar Project Site were represented by building footprints with a POR located at the point on the façade where sound pressure level is maximum at 4.5 m above ground height
2) existing Noise Receptors located in the immediate proximity to the Cochrane Solar Project Site were also represented by envelopes extended 30 m from the building footprints and trimmed by property lines with a POR located at the point on the envelope where sound pressure level is maximum at 1.5 m above ground height
3) existing and vacant lot Noise Receptors located further away from the Cochrane Solar Project Site were represented by a POR placed at the center of building footprint elevated 4.5 m above ground
4) existing and vacant lot Noise Receptors located further away from the Cochrane Solar Project Site were also represented by a POR located within 30-m distance measured from the POR position as defined in Item 3) where sound pressure level is max at 1.5 m above ground height.

Six of the POR, identified in Table 4.1 and Table 4.2, were chosen as representative POR for evaluating the noise contribution from each individual source. These POR were chosen in order to represent sound pressure level contributions on different areas around the Project Location. The complete set of results for all POR used to model 50 Noise Receptors is provided in Table 6.2 while a list containing coordinates of building footprint centers for the Noise Receptors located within 1 km from the Project Site is available in Table C.1 of Appendix C.

[2] "Project Site" in the context of this study is the complete area designated for the Project, but not necessarily occupied with the project infrastructure. Project Location is always contained within Project Site.

Table 4.1 1.5-m Case – Point of Reception Noise Impact from Individual Noise Sources of Cochrane Solar Project

Source ID	Noise Receptor ID					
	R29		R31		R36	
	Dist [m]	Sound Pressure Contribution [dBA]	Dist [m]	Sound Pressure Contribution [dBA]	Dist [m]	Sound Pressure Contribution [dBA]
Ab_Inv1	1817.0	8.7	1310.8	12.6	1255.9	13.1
Ab_Inv2	1951.9	7.8	1199.0	13.6	1119.6	14.4
Ab_Inv3	2093.5	7.0	1104.9	14.5	996.8	15.7
Ab_Inv4	2240.6	6.1	1033.8	15.3	893.5	16.9
Ab_Inv5	2265.0	6.0	1547.5	10.7	1423.6	11.6
Ab_Inv6	2398.7	5.2	1476.3	11.2	1328.7	12.4
Ab_Inv7	2541.1	4.5	1426.6	11.6	1255.0	13.1
Ab_Trans1	1820.3	-2.3	1315.3	1.6	1259.7	2.1
Ab_Trans2	1955.0	-3.2	1203.8	2.7	1123.7	3.5
Ab_Trans3	2096.3	-4.1	1110.0	3.6	1001.4	4.8
Ab_Trans4	2243.2	-5.0	1039.1	4.4	898.5	6.0
Ab_Trans5	2261.3	-5.1	1542.4	-0.3	1418.7	0.7
Ab_Trans6	2395.2	-5.9	1470.9	0.3	1323.5	1.6
Ab_Trans7	2537.9	-6.7	1421.1	0.7	1249.6	2.2
Em_Inv1	203.6	31.5	2119.2	6.8	2256.0	6.0
Em_Inv10	670.9	19.9	2051.7	7.2	2251.6	6.1
Em_Inv11	607.7	20.9	2198.6	6.4	2394.4	5.3
Em_Inv2	188.2	32.2	2035.9	7.3	2192.3	6.4
Em_Inv3	399.2	25.2	1850.6	8.5	1989.7	7.6
Em_Inv4	403.9	25.0	1831.3	8.6	1994.8	7.6
Em_Inv5	649.4	20.3	1582.0	10.4	1724.1	9.4
Em_Inv6	572.8	21.6	1669.7	9.8	1838.6	8.6
Em_Inv7	728.5	19.1	1516.5	10.9	1689.6	9.6
Em_Inv8	955.1	16.1	1309.0	12.6	1493.2	11.1
Em_Inv9	950.4	16.2	1268.8	13.0	1430.7	11.6
Em_Trans1	198.8	21.2	2118.9	-4.3	2256.2	-5.1
Em_Trans10	665.9	9.3	2049.9	-3.9	2249.5	-5.1
Em_Trans11	602.3	10.3	2197.0	-4.8	2392.4	-5.9
Em_Trans2	187.1	21.7	2035.6	-3.8	2191.5	-4.7
Em_Trans3	397.1	14.6	1850.3	-2.5	1990.0	-3.5
Em_Trans4	402.7	14.5	1830.9	-2.4	1993.8	-3.5
Em_Trans5	648.4	9.5	1581.8	-0.6	1724.5	-1.7
Em_Trans6	571.6	10.9	1669.1	-1.3	1837.5	-2.5
Em_Trans7	727.4	8.3	1515.8	-0.1	1688.3	-1.4
Em_Trans8	954.0	5.3	1307.9	1.7	1491.5	0.1
Em_Trans9	950.5	5.4	1269.1	2.0	1431.7	0.6
MM_Inv1	1935.4	8.0	540.8	22.1	529.2	22.4
MM_Inv2	1774.2	9.0	688.9	19.6	705.5	19.4
MM_Inv3	1589.0	10.3	860.3	17.3	900.9	16.8
MM_Inv4	1408.4	11.8	1042.6	15.2	1098.6	14.6

Source ID	Noise Receptor ID					
	R29		R31		R36	
	Dist [m]	Sound Pressure Contribution [dBA]	Dist [m]	Sound Pressure Contribution [dBA]	Dist [m]	Sound Pressure Contribution [dBA]
MM_Inv5	1285.0	12.8	992.5	15.7	1104.6	14.5
MM_Inv6	1477.8	11.2	793.5	18.1	903.4	16.7
MM_Inv7	1672.7	9.7	596.3	21.1	702.6	19.4
MM_Trans1	1934.0	-3.1	536.5	11.5	527.0	11.7
MM_Trans2	1772.6	-2.0	685.3	9.0	703.5	8.7
MM_Trans3	1587.2	-0.6	857.3	6.5	899.3	6.0
MM_Trans4	1406.3	0.8	1040.0	4.3	1097.2	3.7
MM_Trans5	1286.2	1.9	993.8	4.9	1104.8	3.7
MM_Trans6	1478.8	0.2	795.0	7.3	903.5	5.9
MM_Trans7	1673.5	-1.3	598.1	10.4	702.6	8.7
Sub115	2242.1	5.3	157.8	33.1	130.7	34.9

Table 4.2 4.5-m Case – Point of Reception Noise Impact from Individual Noise Sources of Cochrane Solar Project

Source ID	Noise Receptor ID					
	R29		R31		R36	
	Dist [m]	Sound Pressure Contribution [dBA]	Dist [m]	Sound Pressure Contribution [dBA]	Dist [m]	Sound Pressure Contribution [dBA]
Ab_Inv1	1844.2	11.2	1333.4	15.0	1267.0	15.5
Ab_Inv2	1979.9	10.4	1223.6	15.9	1128.0	16.8
Ab_Inv3	2122.0	9.5	1131.5	16.8	1001.7	18.1
Ab_Inv4	2269.5	8.7	1062.2	17.4	893.8	19.3
Ab_Inv5	2291.3	8.5	1574.7	13.1	1425.1	14.2
Ab_Inv6	2425.7	7.8	1504.7	13.6	1326.6	15.0
Ab_Inv7	2568.8	7.1	1456.0	14.0	1248.8	15.7
Ab_Trans1	1847.6	-0.1	1337.9	3.7	1270.7	4.3
Ab_Trans2	1983.0	-1.0	1228.4	4.7	1132.0	5.6
Ab_Trans3	2124.8	-1.8	1136.7	5.6	1006.1	6.9
Ab_Trans4	2272.1	-2.7	1067.6	6.3	898.7	8.1
Ab_Trans5	2287.6	-2.8	1569.5	1.9	1420.3	3.1
Ab_Trans6	2422.3	-3.5	1499.3	2.4	1321.5	3.9
Ab_Trans7	2565.6	-4.3	1450.5	2.8	1243.5	4.6
Em_Inv1	225.0	32.2	2118.3	9.5	2283.4	8.6
Em_Inv10	677.6	22.1	2039.5	10.0	2281.5	8.6
Em_Inv11	607.7	23.2	2187.3	9.1	2424.2	7.8
Em_Inv2	215.7	32.6	2031.9	10.0	2220.7	8.9
Em_Inv3	428.8	26.5	1849.6	11.2	2017.3	10.1
Em_Inv4	431.0	26.5	1826.3	11.3	2023.6	10.1

Source ID	Noise Receptor ID					
	R29		R31		R36	
	Dist [m]	Sound Pressure Contribution [dBA]	Dist [m]	Sound Pressure Contribution [dBA]	Dist [m]	Sound Pressure Contribution [dBA]
Em_Inv5	679.4	22.1	1580.9	13.0	1751.9	11.8
Em_Inv6	600.0	23.3	1663.9	12.4	1867.7	11.1
Em_Inv7	755.9	21.0	1510.1	13.5	1718.8	12.0
Em_Inv8	982.4	18.3	1300.7	15.2	1522.8	13.5
Em_Inv9	979.6	18.3	1264.8	15.5	1459.6	13.9
Em_Trans1	220.5	21.6	2117.9	-1.8	2283.7	-2.8
Em_Trans10	672.7	11.2	2037.8	-1.3	2279.4	-2.7
Em_Trans11	602.3	12.3	2185.7	-2.2	2422.2	-3.5
Em_Trans2	214.9	21.8	2031.7	-1.3	2220.0	-2.4
Em_Trans3	426.8	15.6	1849.2	-0.1	2017.6	-1.2
Em_Trans4	429.9	15.6	1826.0	0.1	2022.6	-1.2
Em_Trans5	678.4	11.1	1580.5	1.8	1752.4	0.6
Em_Trans6	598.9	12.3	1663.4	1.2	1866.5	-0.2
Em_Trans7	755.0	10.0	1509.5	2.3	1717.5	0.8
Em_Trans8	981.4	7.2	1299.8	4.1	1521.1	2.3
Em_Trans9	979.7	7.2	1265.0	4.4	1460.6	2.7
MM_Inv1	1965.3	10.4	562.6	23.9	548.7	24.2
MM_Inv2	1804.1	11.5	706.9	21.7	726.2	21.4
MM_Inv3	1618.8	12.7	874.8	19.5	922.8	18.9
MM_Inv4	1438.0	14.1	1054.5	17.5	1121.3	16.9
MM_Inv5	1315.0	15.1	997.2	18.1	1131.2	16.8
MM_Inv6	1507.8	13.6	799.4	20.4	930.2	18.9
MM_Inv7	1702.6	12.2	604.1	23.2	729.7	21.3
MM_Trans1	1964.0	-0.8	558.2	13.0	546.6	13.2
MM_Trans2	1802.5	0.2	703.1	10.7	724.3	10.4
MM_Trans3	1617.0	1.5	871.6	8.5	921.3	7.9
MM_Trans4	1435.9	2.9	1051.8	6.4	1119.9	5.8
MM_Trans5	1316.2	3.9	998.7	7.0	1131.3	5.6
MM_Trans6	1508.8	2.4	801.1	9.4	930.3	7.8
MM_Trans7	1703.4	0.9	606.2	12.2	729.6	10.3
Sub115	2271.9	7.8	187.8	33.3	160.4	34.8

5. Mitigation Measures

The analysis indicates that no mitigation measures are necessary to meet the MOE requirement of 40 dBA for all POR.

6. Impact Assessment

The purpose of the Acoustic Assessment report is to demonstrate that the facility is in compliance with the noise performance limits. The Project will be located in a Class 3 Area, based on the classification defined in Publication NPC-232 by the MOE. Class 3 area indicates a rural area with an acoustical environment that is dominated by natural sounds, with little or no traffic noise.

Table 6.1 shows the performance limits set by the MOE for Class 3 Areas, according to Publication NPC-232.

Table 6.1 Performance Limits (One-Hour L_{eq}) by Time of Day for Class 3 Areas

Time of Day	One Hour L_{eq} (dBA) Class 3 Area
07:00 to 19:00	45.0
19:00 to 23:00	40.0
23:00 to 07:00	40.0

The solar facility will be operating during the daylight hours, that is, between 07:00 and 19:00 during most days of the year. However, in the summer months the sun may shine before 07:00 or until past 19:00. As such, during the summer the facility will be operating at the time when the applicable performance limit changes from 45 dBA to 40 dBA. Also, the transformers remain energized at night. In order to account for this, the study assumes that the facility will be operating 24 hours and compares the impact from the facility with the 40-dBA limit. In reality, the cooling fans will not be in operation at night.

For this study, the overall ground attenuation coefficient was estimated to be 0.7. Appendix D includes a list of all the parameters used in the CADNA-A model to predict the sound pressure levels at the POR.

6.1 Compliance with Performance Limits

Table 6.2 presents the predicted sound pressure levels for the POR used to model the Noise Receptors located within 1 km from the Project Site. Sound pressure contours at 4.5 m and 1.5 m are available in Figure C.1 and Figure C.2. Appendix D includes a detailed calculation log for the representative POR with the highest sound pressure.

The results of this study show that all Noise Receptors are compliant with MOE guidelines based on the 40-dBA performance limit.

Table 6.2 Calculated Sound Pressure Levels at POR used to Mode Noise Receptors within 1 km of Cochrane Solar Project
Shaded rows correspond to representative POR
Existing = Existing dwelling, Vacant = Vacant Lot.
The performance limit is 40.0 dBA.

Noise Receptor ID	Description	Point of Reception at 4.5 m					Point of Reception at 1.5 m				
		UTM Coordinates NAD 83 Zone 17 [m]		Sound Pressure [dBA]	Nearest Project Source		UTM Coordinates NAD 83 Zone 17 [m]		Sound Pressure dBA]	Nearest Project Source	
		X	Y		Dist [m]	ID	X	Y		Dist [m]	ID
R01	Existing	499024	5441175	24.9	1023.8	Em_Inv11	499049	5441191	22.6	994.7	Em_Inv11
R03	Existing	499229	5441298	27.0	791.6	Em_Inv11	499254	5441314	24.8	763.0	Em_Inv11
R04	Existing	499243	5441270	27.0	786.1	Em_Inv11	499268	5441286	24.9	757.3	Em_Inv11
R05	Existing	499256	5441185	26.8	803.7	Em_Inv11	499282	5441199	24.6	773.9	Em_Inv11
R06	Existing	499268	5441174	26.8	797.3	Em_Inv11	499291	5441192	24.6	768.2	Em_Inv11
R07	Vacant	499945	5443686	26.5	1059.4	Sub115	499969	5443669	24.1	1032.7	Sub115
R08	Vacant	499626	5441135	29.8	521.9	Em_Inv11	499643	5441159	27.9	492.2	Em_Inv11
R09	Vacant	499742	5441281	32.8	336.2	Em_Inv11	499763	5441303	31.3	306.3	Em_Inv11
R10	Existing	499779	5442916	28.7	931.5	Em_Inv8	499804	5442898	26.4	901.7	Em_Inv8
R11	Existing	499788	5441162	31.7	400.5	Em_Inv11	499802	5441188	30.0	370.6	Em_Inv11
R12	Existing	499793	5442322	31.3	670.1	Em_Inv8	499821	5442311	29.3	641.5	Em_Inv8
R13	Existing	499793	5442405	31.0	680.1	Em_Inv8	499820	5442391	28.9	651.3	Em_Inv8
R14	Vacant	499853	5441296	34.6	251.7	Em_Inv11	499870	5441321	33.5	221.7	Em_Inv11
R15	Existing	499854	5443135	28.3	1047.3	Em_Inv8	499881	5443121	25.9	1020.7	Em_Inv8
R16	Existing	499855	5443171	28.1	1076.2	Em_Inv8	499883	5443160	25.8	1051.9	Em_Inv8
R17	Existing	499872	5442560	30.9	652.1	Em_Inv8	499900	5442549	28.8	622.2	Em_Inv8
R18	Vacant	499886	5441238	33.8	287.9	Em_Inv11	499899	5441265	32.5	258.0	Em_Inv11
R19	Vacant	499888	5440275	24.0	1235.5	Em_Trans11	499898	5440303	21.7	1206.4	Em_Trans11
R20	Vacant	499893	5441142	32.2	377.4	Em_Inv11	499906	5441169	30.6	347.8	Em_Inv11
R21	Existing	499894	5443615	26.5	1102.5	Sub115	499920	5443599	24.1	1075.8	Sub115
R22	Existing	499897	5442883	29.6	824.5	Em_Inv8	499921	5442864	27.4	794.8	Em_Inv8
R23	Existing	499898	5442807	29.9	770.8	Em_Inv8	499922	5442790	27.7	741.1	Em_Inv8
R24	Existing	500036	5443710	26.9	973.2	Sub115	500059	5443691	24.5	946.9	Sub115
R25	Existing	500040	5443691	27.0	966.1	Sub115	500064	5443672	24.6	939.9	Sub115
R26	Existing	500519	5443722	29.9	509.5	Sub115	500542	5443703	27.9	481.0	Sub115
R27	Existing	500523	5441170	34.8	340.7	Em_Trans1	500529	5441199	33.3	315.5	Em_Trans1
R28	Existing	500531	5443672	30.4	482.0	Sub115	500555	5443654	28.4	454.1	Sub115
R29	Existing	500566	5441305	37.8	214.9	Em_Trans2	500576	5441333	36.9	187.1	Em_Trans2
R30	Existing	500602	5441263	37.1	218.1	Em_Trans1	500611	5441292	36.1	191.7	Em_Trans1
R31	Vacant	500806	5443536	35.6	187.8	Sub115	500836	5443536	34.7	157.8	Sub115

Noise Receptor ID	Description	Point of Reception at 4.5 m					Point of Reception at 1.5 m				
		UTM Coordinates NAD 83 Zone 17 [m]		Sound Pressure [dBA]	Nearest Project Source		UTM Coordinates NAD 83 Zone 17 [m]		Sound Pressure dBA]	Nearest Project Source	
		X	Y		Dist [m]	ID	X	Y		Dist [m]	ID
R32	Vacant	500809	5443692	33.6	241.8	Sub115	500832	5443673	32.5	211.8	Sub115
R33	Existing	500884	5441176	34.6	272.4	Em_Inv1	500872	5441203	33.3	242.5	Em_Inv1
R34	Existing	500930	5443683	36.3	159.9	Sub115	500944	5443656	35.9	130.0	Sub115
R35	Existing	500959	5441301	35.7	231.1	Em_Inv1	500935	5441318	34.6	201.1	Em_Inv1
R36	Existing	501060	5443682	36.4	160.4	Sub115	501045	5443656	36.0	130.7	Sub115
R37	Existing	501204	5443865	31.5	389.9	Sub115	501194	5443836	29.7	361.0	Sub115
R38	Existing	501290	5443829	31.7	416.1	Sub115	501280	5443800	29.8	389.4	Sub115
R39	Existing	501366	5443669	33.1	395.8	Sub115	501355	5443657	31.1	381.1	Sub115
R40	Vacant	501542	5441106	28.4	842.0	Em_Inv1	501524	5441129	26.1	816.4	Em_Inv1
R41	Vacant	501607	5441267	28.9	859.5	Em_Inv1	501586	5441289	26.6	835.5	Em_Inv1
R42	Existing	501815	5443590	33.7	389.2	Ab_Inv4	501814	5443560	32.0	359.2	Ab_Inv4
R43	Vacant	501803	5444102	28.4	901.4	Ab_Inv4	501792	5444074	26.2	873.5	Ab_Inv4
R44	Existing	501803	5443683	32.6	481.8	Ab_Inv4	501804	5443653	30.6	451.8	Ab_Inv4
R45	Existing	501884	5443683	32.5	486.5	Ab_Trans4	501868	5443657	30.6	459.3	Ab_Trans4
R46	Existing	502025	5443713	32.1	498.6	Ab_Trans7	502018	5443684	30.2	475.3	Ab_Trans7
R47	Vacant	502197	5443689	32.1	431.7	Ab_Trans7	502199	5443659	30.3	401.7	Ab_Trans7
R48	Existing	502836	5443717	27.5	756.4	Ab_Inv7	502811	5443701	25.4	726.6	Ab_Inv7
R49	Existing	502848	5443597	28.2	700.5	Ab_Inv7	502820	5443585	26.1	670.6	Ab_Inv7
R50	Vacant	503091	5443722	25.5	973.8	Ab_Inv7	503065	5443707	23.3	943.8	Ab_Inv7
R51	Vacant	503185	5443529	25.6	987.7	Ab_Inv7	503156	5443521	23.3	957.7	Ab_Inv7

7. Conclusions and Recommendations

For the Cochrane Solar Project, the sound pressure levels at the POR have been estimated using the CADNA-A model, based on ISO 9613-2. It has been determined that no mitigation measures are needed for the Project operation.

Based on the results obtained in this study, it is concluded that the sound pressure levels at the Noise Receptors, resulting from the Project operation, will be below MOE requirements for Class 3 areas of 40 dBA at all time.

8. Signatures

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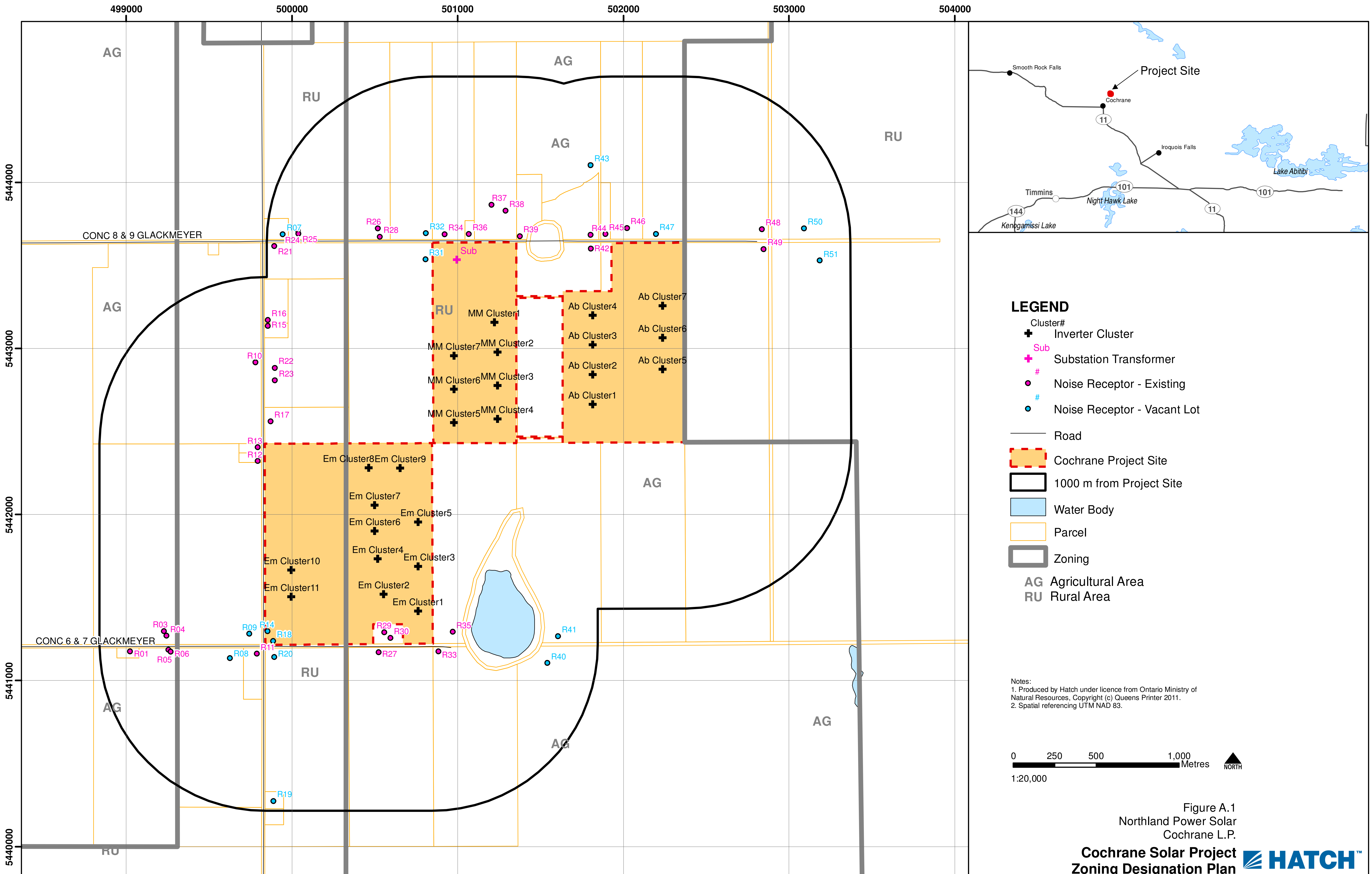
Appendix A

Land Use Zoning Designation Plan and Area Location Plans



Notes:
1. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
2. Spatial referencing UTM NAD 83.

Figure A.1
Northland Power Solar
Cochrane L.P.

Cochrane Solar Project
Zoning Designation Plan

HATCH™

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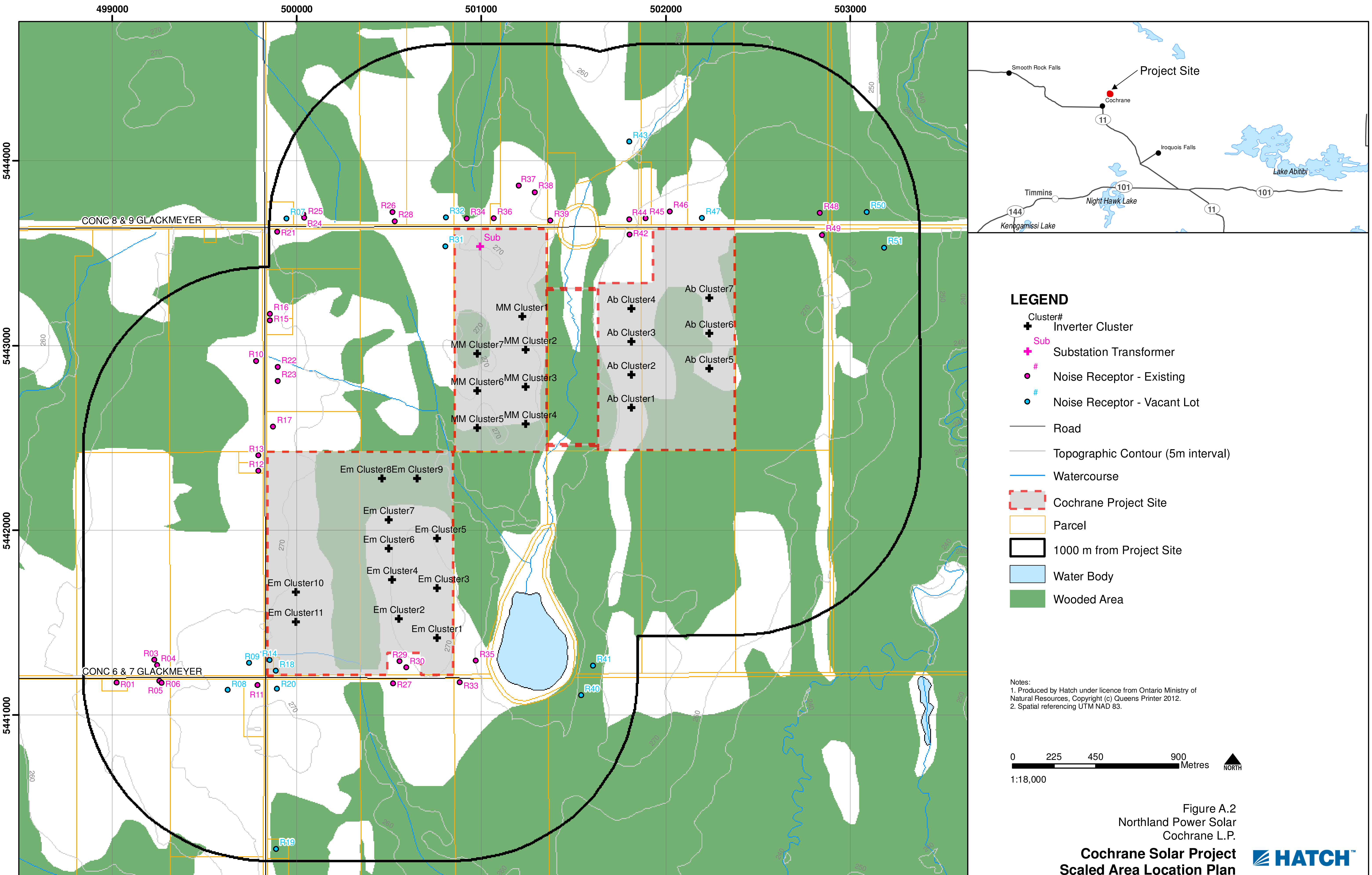

Figure A.2
Northland Power Solar
Cochrane L.P.
Cochrane Solar Project
Scaled Area Location Plan

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Appendix B

Noise Sources

Table B.1 Point Sources from the Cochrane Solar Project Used in CADNA-A, Includes Tonality Penalty of 5.0-dBA

Source ID	Description	Spectra ID	Total sound power level (dBA)	Correction (dBA)	Height (m)	Coordinates, UTM NAD 83 Zone 17 (m)	
						X	Y
Ab_Inv1	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	501813.7	5442663.2
Ab_Inv2	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	501813.7	5442842.4
Ab_Inv3	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	501813.6	5443021.6
Ab_Inv4	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	501813.7	5443200.8
Ab_Inv5	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	502235.0	5442875.0
Ab_Inv6	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	502235.0	5443065.4
Ab_Inv7	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	502235.0	5443257.8
Ab_Trans1	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	501819.2	5442662.7
Ab_Trans2	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	501819.2	5442841.9
Ab_Trans3	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	501819.1	5443021.1
Ab_Trans4	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	501819.2	5443200.3
Ab_Trans5	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	502229.5	5442875.5
Ab_Trans6	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	502229.5	5443065.9
Ab_Trans7	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	502229.5	5443258.3
Em_Inv1	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500760.5	5441418.4
Em_Inv10	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	499992.7	5441665.8
Em_Inv11	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	499992.7	5441505.7
Em_Inv2	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500552.4	5441520.2
Em_Inv3	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500760.5	5441687.2
Em_Inv4	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500516.2	5441733.0
Em_Inv5	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500760.5	5441956.0
Em_Inv6	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500498.1	5441901.0

Source ID	Description	Spectra ID	Total sound power level (dBA)	Correction (dBA)	Height (m)	Coordinates, UTM NAD 83 Zone 17 (m)	
						X	Y
Em_Inv7	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500498.1	5442057.8
Em_Inv8	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500461.9	5442281.8
Em_Inv9	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500651.9	5442280.8
Em_Trans1	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500755.0	5441418.9
Em_Trans10	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	499998.2	5441665.3
Em_Trans11	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	499998.2	5441505.2
Em_Trans2	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500557.9	5441519.7
Em_Trans3	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500755.0	5441687.7
Em_Trans4	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500521.7	5441732.5
Em_Trans5	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500755.0	5441956.5
Em_Trans6	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500503.6	5441900.5
Em_Trans7	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500503.6	5442057.3
Em_Trans8	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500467.4	5442281.3
Em_Trans9	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500646.4	5442281.3
MM_Inv1	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	501222.0	5443157.7
MM_Inv2	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	501240.1	5442978.5
MM_Inv3	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	501240.1	5442776.9
MM_Inv4	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	501240.1	5442575.3
MM_Inv5	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500977.7	5442553.9
MM_Inv6	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500977.7	5442755.5
MM_Inv7	Two SMA Sunny Central SC8000 CP inverters	SMA_SC800CPX2	91.3	5.0	2.6	500977.7	5442957.1
MM_Trans1	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	501216.5	5443158.2
MM_Trans2	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	501234.6	5442979.0

Source ID	Description	Spectra ID	Total sound power level (dBA)	Correction (dBA)	Height (m)	Coordinates, UTM NAD 83 Zone 17 (m)	
						X	Y
MM_Trans3	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	501234.6	5442777.4
MM_Trans4	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	501234.6	5442575.8
MM_Trans5	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500983.2	5442553.4
MM_Trans6	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500983.2	5442755.0
MM_Trans7	360-V/27.6-kV/1.6-MVA transformer	T27.6kV_1.6MVA	80.1	5.0	2.6	500983.2	5442956.6
Sub115	27.6-kV/115-kV/30-MVA substation transformer	T115kV_30MVA	90.0	5.0	4.0	500993.6	5443536.3

Table B.2 Frequency Spectra Used for Modelling the Noise Sources, Not Including Tonality Penalty

Spectra ID	Octave Spectrum (dBA)										
	31.5	63	125	250	500	1000	2000	4000	8000	A	lin
SMA_SC800CPX2		63.1	73.9	80.5	82.3	78.7	74.1	65.0	72.7	86.3	95.0
T27.6kV_1.6MVA	32.3	51.5	63.6	66.1	71.5	68.7	64.9	59.7	50.6	75.1	83.7
T115kV_30MVA*	42.2	61.4	73.5	76.0	81.4	78.6	74.8	69.6	60.5	85.0	93.6

*1.9 dB was added to each estimated frequency in the calculation available in Figure B.3 to achieve the combined 85-dBA sound power level specified by the transformer manufacturer. Northland is committed to procure a transformer that will not exceed the sound power level provided in this table.

Table B.3 Individual Inverter Coordinates for Cochrane Solar Project
Note: Modeled noise source representing inverter cluster uses a central location of the cluster. This table provides central points of individual inverters found within the same cluster.

Inverter ID	Description	Sound Power Level (dBA)	UTM Coordinates NAD 83 Zone 17 [m]	
			X	Y
Ab_Inv1.1	Sunny Central 800CP inverter	83.3	501812.88	5442664.36
Ab_Inv1.2	Sunny Central 800CP inverter	83.3	501814.48	5442662.12
Ab_Inv2.1	Sunny Central 800CP inverter	83.3	501812.88	5442843.56
Ab_Inv2.2	Sunny Central 800CP inverter	83.3	501814.48	5442841.32
Ab_Inv3.1	Sunny Central 800CP inverter	83.3	501812.78	5443022.76
Ab_Inv3.2	Sunny Central 800CP inverter	83.3	501814.38	5443020.52
Ab_Inv4.1	Sunny Central 800CP inverter	83.3	501812.88	5443201.96
Ab_Inv4.2	Sunny Central 800CP inverter	83.3	501814.48	5443199.72
Ab_Inv5.1	Sunny Central 800CP inverter	83.3	502235.81	5442873.92
Ab_Inv5.2	Sunny Central 800CP inverter	83.3	502234.21	5442876.16
Ab_Inv6.1	Sunny Central 800CP inverter	83.3	502235.81	5443064.32
Ab_Inv6.2	Sunny Central 800CP inverter	83.3	502234.21	5443066.56
Ab_Inv7.1	Sunny Central 800CP inverter	83.3	502235.81	5443256.72
Ab_Inv7.2	Sunny Central 800CP inverter	83.3	502234.21	5443258.96
Em_Inv1.1	Sunny Central 800CP inverter	83.3	500761.33	5441417.29
Em_Inv1.2	Sunny Central 800CP inverter	83.3	500759.73	5441419.53
Em_Inv10.1	Sunny Central 800CP inverter	83.3	499991.91	5441666.93
Em_Inv10.2	Sunny Central 800CP inverter	83.3	499993.51	5441664.69
Em_Inv11.1	Sunny Central 800CP inverter	83.3	499991.91	5441506.83
Em_Inv11.2	Sunny Central 800CP inverter	83.3	499993.51	5441504.59
Em_Inv2.1	Sunny Central 800CP inverter	83.3	500551.60	5441521.33
Em_Inv2.2	Sunny Central 800CP inverter	83.3	500553.20	5441519.09
Em_Inv3.1	Sunny Central 800CP inverter	83.3	500761.33	5441686.09
Em_Inv3.2	Sunny Central 800CP inverter	83.3	500759.73	5441688.33
Em_Inv4.1	Sunny Central 800CP inverter	83.3	500515.40	5441734.13
Em_Inv4.2	Sunny Central 800CP inverter	83.3	500517.00	5441731.89
Em_Inv5.1	Sunny Central 800CP inverter	83.3	500761.33	5441954.89
Em_Inv5.2	Sunny Central 800CP inverter	83.3	500759.73	5441957.13

Inverter ID	Description	Sound Power Level (dBA)	UTM Coordinates NAD 83 Zone 17 [m]	
			X	Y
Em_Inv6.1	Sunny Central 800CP inverter	83.3	500497.30	5441902.13
Em_Inv6.2	Sunny Central 800CP inverter	83.3	500498.90	5441899.89
Em_Inv7.1	Sunny Central 800CP inverter	83.3	500497.30	5442058.93
Em_Inv7.2	Sunny Central 800CP inverter	83.3	500498.90	5442056.69
Em_Inv8.1	Sunny Central 800CP inverter	83.3	500461.10	5442282.93
Em_Inv8.2	Sunny Central 800CP inverter	83.3	500462.70	5442280.69
Em_Inv9.1	Sunny Central 800CP inverter	83.3	500652.73	5442279.69
Em_Inv9.2	Sunny Central 800CP inverter	83.3	500651.13	5442281.93
MM_Inv1.1	Sunny Central 800CP inverter	83.3	501222.80	5443156.54
MM_Inv1.2	Sunny Central 800CP inverter	83.3	501221.20	5443158.78
MM_Inv2.1	Sunny Central 800CP inverter	83.3	501240.90	5442977.34
MM_Inv2.2	Sunny Central 800CP inverter	83.3	501239.30	5442979.58
MM_Inv3.1	Sunny Central 800CP inverter	83.3	501240.90	5442775.74
MM_Inv3.2	Sunny Central 800CP inverter	83.3	501239.30	5442777.98
MM_Inv4.1	Sunny Central 800CP inverter	83.3	501240.90	5442574.14
MM_Inv4.2	Sunny Central 800CP inverter	83.3	501239.30	5442576.38
MM_Inv5.1	Sunny Central 800CP inverter	83.3	500976.87	5442555.03
MM_Inv5.2	Sunny Central 800CP inverter	83.3	500978.47	5442552.79
MM_Inv6.1	Sunny Central 800CP inverter	83.3	500976.87	5442756.63
MM_Inv6.2	Sunny Central 800CP inverter	83.3	500978.47	5442754.39
MM_Inv7.1	Sunny Central 800CP inverter	83.3	500976.87	5442958.18
MM_Inv7.2	Sunny Central 800CP inverter	83.3	500978.47	5442955.94

SUNNY CENTRAL 720CP / 760CP / 800CP

SC 720CP-10 / SC 760CP-10 / SC 800CP-10

Economic

- Direct deployment in the field due to outdoor enclosure
- Simplified shipping without concrete substation

Efficient

- Full nominal power at ambient temperatures up to 50 °C
- 10 % additional power for constant operation at ambient temperatures up to 25 °C

Flexible

- Powerful grid management functions (including LVRT)
- DC voltage range configurable

Reliable

- Easy and safe installation due to a separate connection area
- Optional: extended input voltage range up to 1,100 V

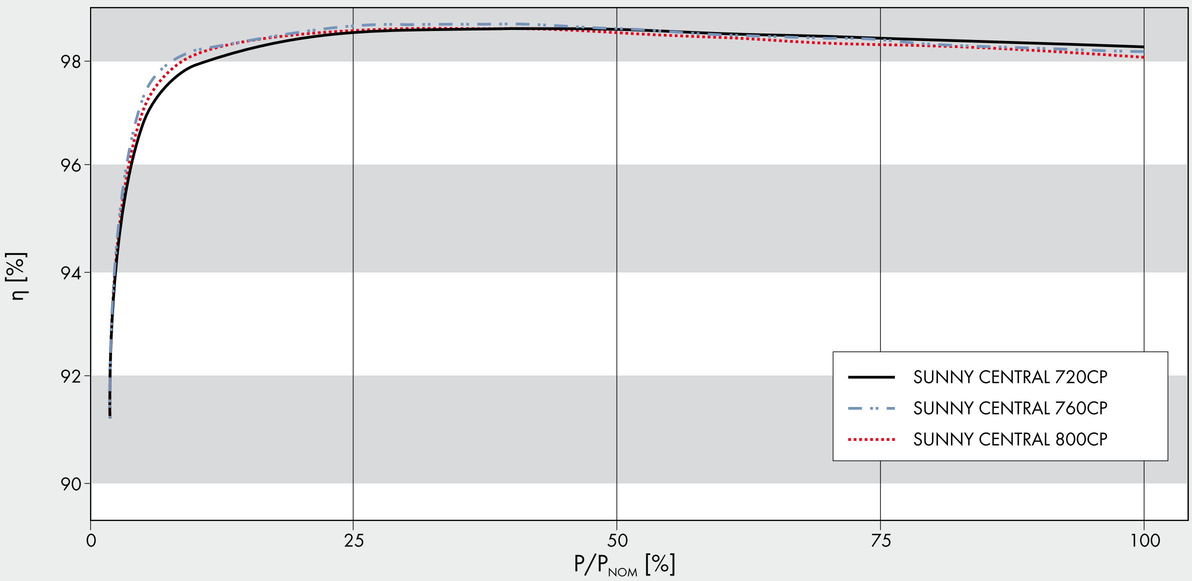
SUNNY CENTRAL 720CP / 760CP / 800CP

High performance as standard

The completely new design of the Sunny Central CP series saves you real money. The compact and weatherproof enclosure is easy to load and transport and can be installed almost anywhere – there is no need for heavy protective concrete substations any longer. The innovative cooling concept OptiCool allows it to operate at full nominal power with ambient temperatures up to 50 °C. With the powerful grid management functions you are perfectly prepared for today's utility requirements as well as those still to come. The intelligent power management is the most important feature: in continuous operation, the Sunny Central 800CP can feed 880 kVA to the grid at ambient temperatures of up to 25 °C – that's 10 % more than the rated nominal power.

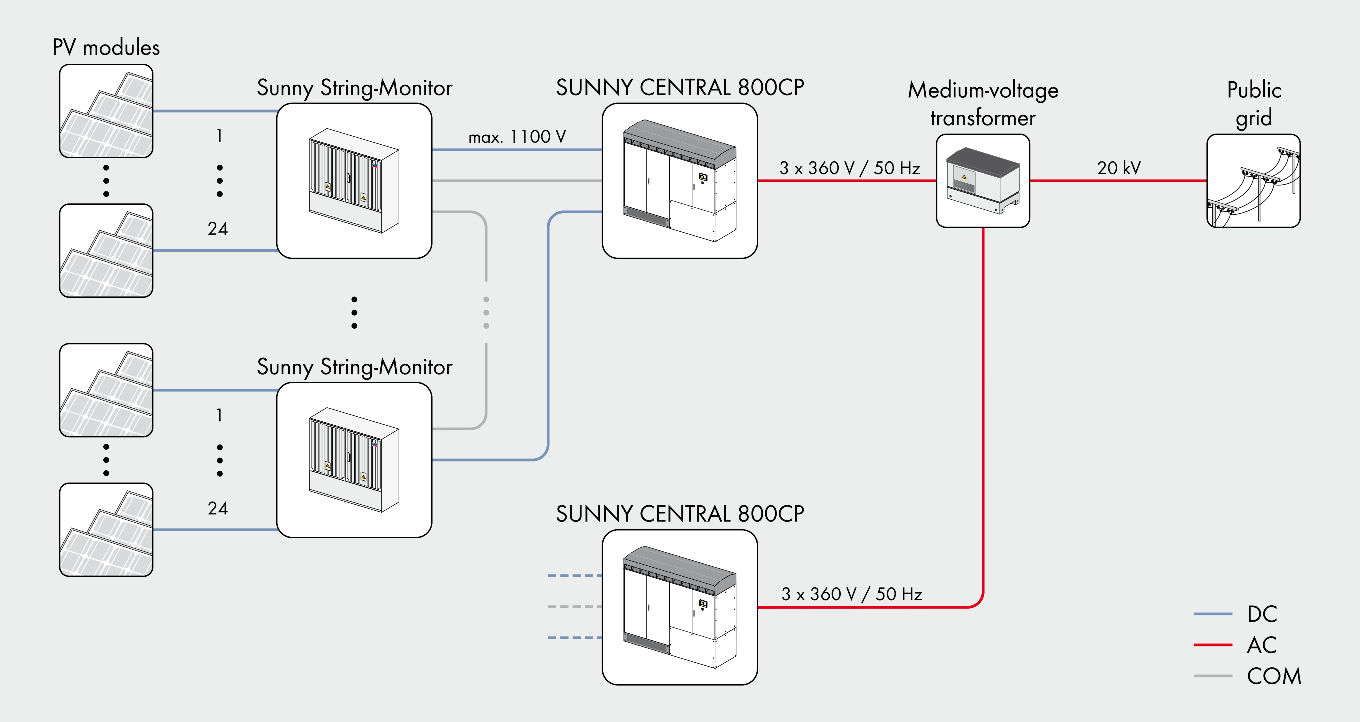
Technical data	Sunny Central 720CP	Sunny Central 760CP	Sunny Central 800CP
Input Data			
MPP voltage range	515 V – 820 V [3) 5)]	545 V – 820 V [3) 5)]	570 V – 820 V [3) 5)]
Max. DC voltage		1000 V / 1100 V [1)] Optional	
Max. DC current	1400 A	1400 A	1400 A
Number of DC inputs		9 fused inputs	
Output Values			
Nominal AC output @ 50 °C	720 kVA	760 kVA	800 kVA
Continuous AC power @ 25 °C	792 kVA	836 kVA	880 kVA
Max. AC current	1411 A	1411 A	1411 A
Nominal AC-current	1283 A	1283 A	1283 A
Nominal AC-voltage ±10 %	324 V	342 V	360 V
AC grid frequency 50 Hz	●	●	●
AC grid frequency 60 Hz	●	●	●
Power factor (cos φ)		0.9 leading ... 0.9 lagging	
Max. THD	< 3 %	< 3 %	< 3 %
Power consumption			
Internal consumption in operation	< 1500 W [4)]	< 1500 W [4)]	< 1500 W [4)]
Standby consumption	< 100 W	< 100 W	< 100 W
External auxiliary voltage	3 x 230 V, 50 / 60 Hz	3 x 230 V, 50 / 60 Hz	3 x 230 V, 50 / 60 Hz
Dimensions and Weight			
Dimensions (W / H / D) in mm	2562 / 2279 / 956	2562 / 2279 / 956	2562 / 2279 / 956
Weight	1800 kg	1800 kg	1800 kg
Efficiency [2)]			
Max. efficiency	98.6 %	98.6 %	98.6 %
Euro ETA	98.4 %	98.4 %	98.4 %
CEC-eta	98.4 %	98.4 %	98.4 %
Protection Rating and Ambient Conditions			
Protection rating (as per IEC 60529)	IP54	IP54	IP54
Protection rating (as per IEC 60721-3-3) Ambient conditions: fixed location, with protection against wind and weather		• Classification of chemically active substances: 3C2 • Classification of mechanically active substances: 3S2	
Operation temperature range	−20 °C ... +50 °C	−20 °C ... +50 °C	−20 °C ... +50 °C
Rel. humidity	15 % ... 95 %	15 % ... 95 %	15 % ... 95 %
Fresh air consumption	3000 m³/h	3000 m³/h	3000 m³/h
Max. altitude above sea level	2000 m	2000 m	2000 m

Efficiency curve SUNNY CENTRAL 720CP / 760CP / 800CP

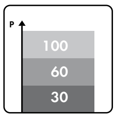


	Sunny Central 720CP	Sunny Central 760CP	Sunny Central 800CP
Features			
Sunny WebBox	●	●	●
Communication	Ethernet (optical fiber optional)	Ethernet (optical fiber optional)	Ethernet (optical fiber optional)
Communication with Sunny String-Monitor	RS485	RS485	RS485
LCD graphic display	●	●	●
Enclosure color	RAL 9016	RAL 9016	RAL 9016
Color of base	RAL 7005	RAL 7005	RAL 7005
Color of roof	RAL 7004	RAL 7004	RAL 7004
Ground fault monitoring / insulation monitoring	●	●	●
Circuit breaker AC side	●	●	●
Motor driven load disconnection switch on DC side	●	●	●
AC overvoltage protector	●	●	●
DC overvoltage protector	●	●	●
Overvoltage protectors for auxiliary supply	●	●	●
Certificates / Listings			
EMC	EN 61000-6-2 EN 61000-6-4		
CE conformity	●	●	●
BDEW-MSRL / FGW / TR8 [6]	●	●	●
RD 1633 / 2000	●	●	●
Arrêté du 23 / 04 / 08	●	●	●
● Standard features ❍ Optional features — Not available			
Type name	SC 720CP-10	SC 760CP-10	SC 800CP-10

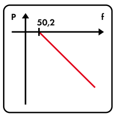
1) Startup at DC voltage < 1000 V
2) Efficiency measured without internal power supply
3) Further AC voltages, DC voltages and power classes can be configured (For detailed information see Technical Information „Innovations_CP" at www.SMA.de)
4) Internal consumption at nominal power
5) At 1.05 $U_{AC,nom}$ and cos φ= 1
6) With complete dynamic grid support



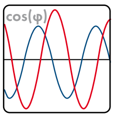
POWERFUL GRID MANAGEMENT FUNCTIONS



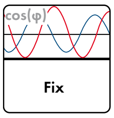
Remote controlled power reduction in case of grid overload
In order to avoid short-term grid overload, the grid operator presets a nominal active power value which the inverter will implement within 60 seconds. The nominal value is transmitted to the inverters via a ripple control receiver in combination with the SMA Power Reducer Box. Typical limit values are 100, 60, 30 or 0 per cent of the nominal power.



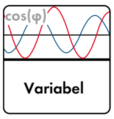
Frequency-dependent control of active power
As of a grid frequency of 50.2 Hz, the inverter automatically reduces the fed-in of active power according to a definable characteristic curve which thereby contributes to the stabilization of the grid frequency.



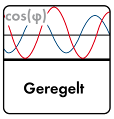
Static voltage support based on reactive power
To stabilize the grid voltage, SMA inverters feed reactive power (leading or lagging) into the grid. Three different modes are available:



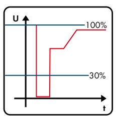
a) Fixed definition of the reactive power by the grid operator
The grid operator defines a fixed reactive power value or a fixed displacement factor between $\cos(\varphi)_{leading}$= 0.90 and $\cos(\varphi)_{lagging}$= 0.90.



b) Definition of a dynamic setpoint of the reactive power by the utility operator
The grid operator defines a dynamic displacement factor - any value between $\cos(\varphi)_{leading}$= 0.90 und $\cos(\varphi)_{lagging}$= 0.90. It is transmitted either through a communication unit the evaluation can e.g. be evaluated and processed by the SMA Power Reducer Box.

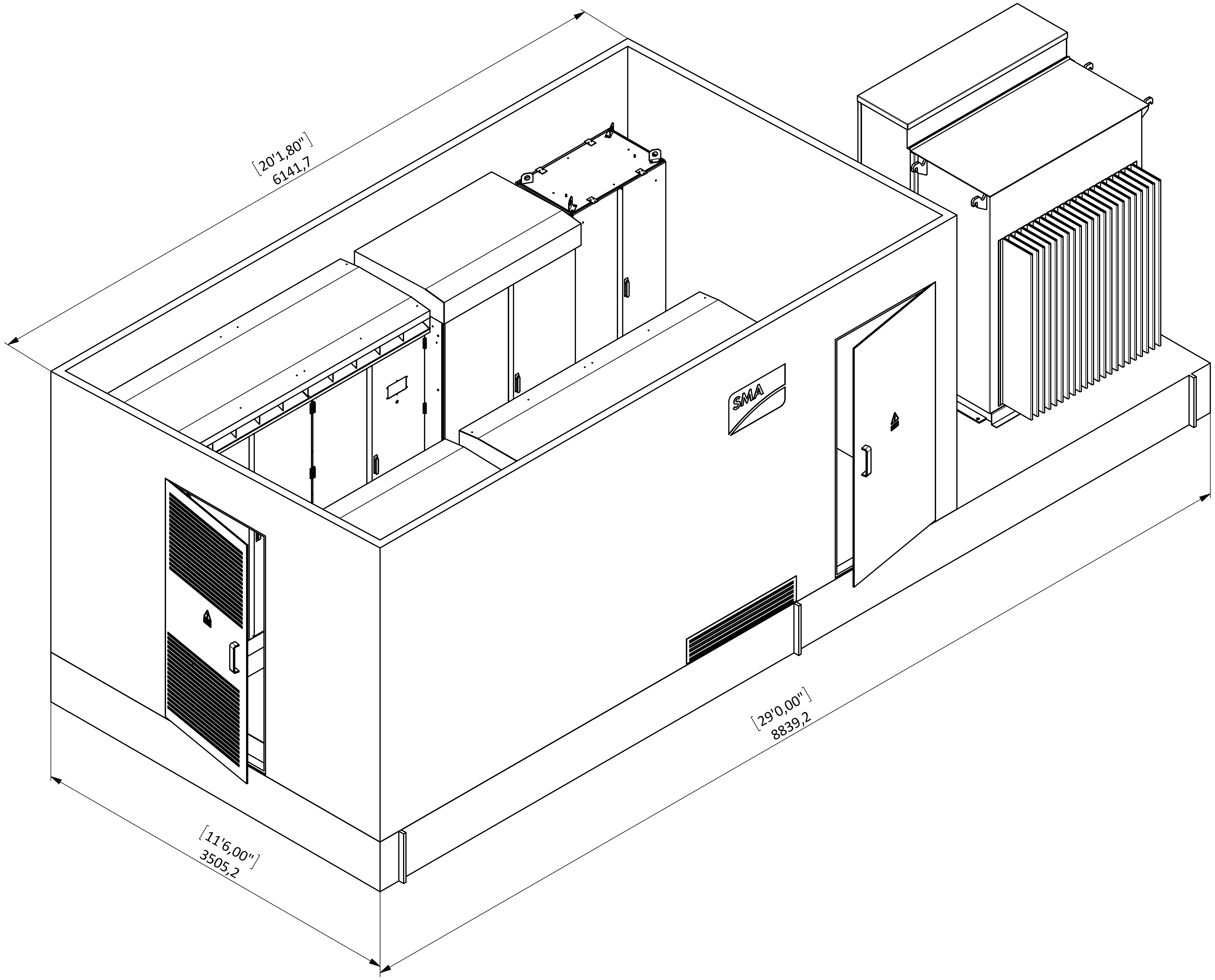


c) Control of the reactive power over a characteristic curve
The reactive power or the phase shift is controlled by a pre-defined characteristic curve – depending on the active power fed into the grid or the grid voltage.



Limited Dynamic Grid Support
The inverter continues to feed to the grid after short term voltage drops – as long as the grid voltage is within a defined voltage window.

Dynamic Grid Support
LVRT (Low-Voltage Ride Through): The inverter stays connected to the grid during voltage drops and supports the grid by feeding reactive power.



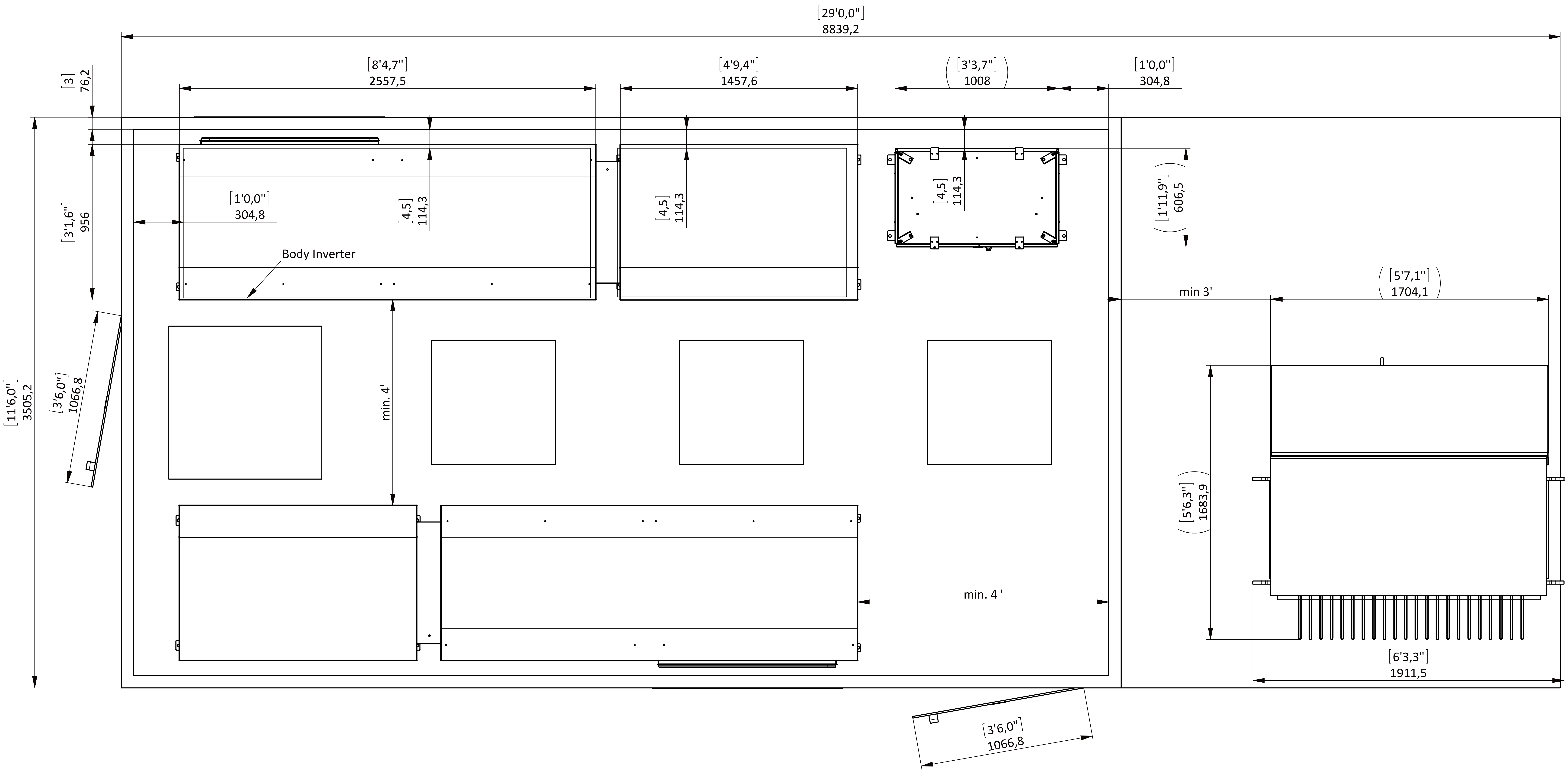
Verwendbar für: / To be used for: **SMA SKID**		all dimensions and tolerances are in millimeters [feet / inches] alle Maß- und Toleranzangaben sind in mm [feet / inches]
	Datum / Date	Name
Bearb.	25.02.2011	Mihelic
Gepr.		
Norm		
Freigabe		

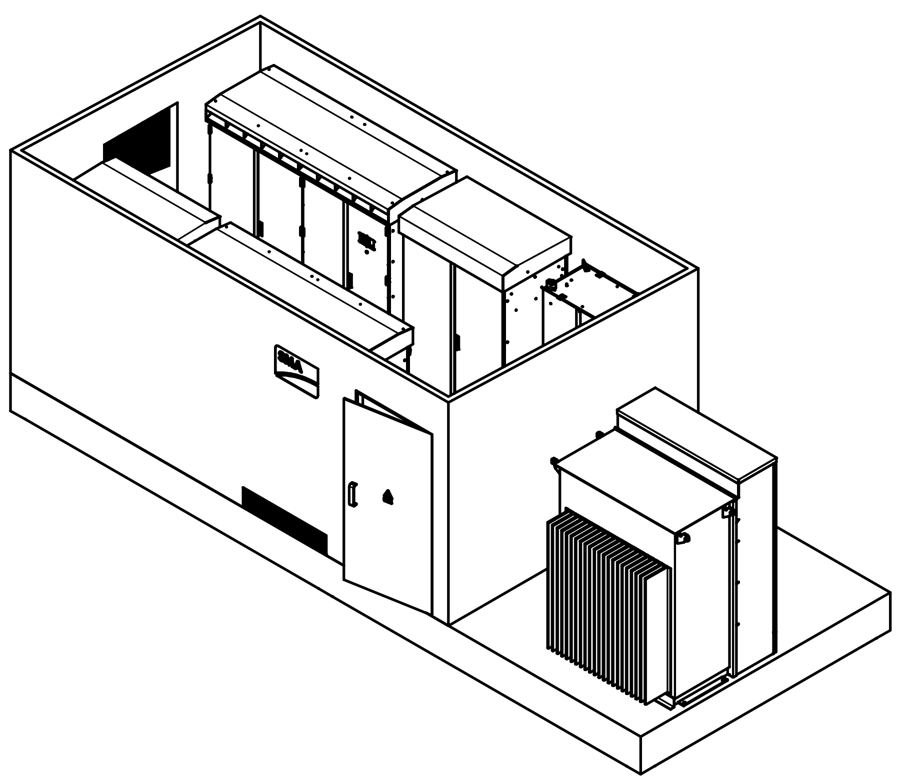
Layout enclosure

SMA Solar Technology AG
Sonnenallee 1
34266 Niestetal
Tel.: +49 561 9522-0

Z-Nr.: D.-No.:	A2	Blatt Page 1
EDV-Nr.:		Bl. / o.P. 1
Name :		Erstellt mit SolidWorks

Rev.	Datum	Name	Urspr.: / Origin.:





Verwendbar für: / To be used for: **SMA SKID**					all dimensions and tolerances are in millimeters [feet / inches] alle Maß- und Toleranzangaben sind in mm [feet / inches]
				Datum / Date	Name
			Bearb.	25.02.2011	Mihelic
			Gepr.		
			Norm		
			Freigabe		
			SMA Solar Technology AG Sonnenallee 1 34266 Niestetal Tel.: +49 561 9522-0		
Rev.	Datum	Name	Urspr.: / Origin.:		

Clearance

Z-Nr.:
D.-No.:
A2
Blatt
Page 1
EDV-Nr.:
Bl. / o.P. 1
Name :
Erstellt mit SolidWorks

Terz-midle-frequency [kHz]	Soundpower-level L_{xpA} [dB_A]500kW	Soundpower-level L_{xpA} [dB_A]640kW	Soundpower-level L_{xpA} [dB_A]720kW	Soundpower-level L_{xpA} [dB_A]760kW	Soundpower level L_{xpA} [dB_A]800kW
0,05	63,30	55,30	57,70	67,00	56,50
0,063	60,80	53,10	56,80	63,20	54,00
0,08	63,90	56,30	56,50	59,50	55,20
0,1	64,10	66,20	65,00	66,50	68,10
0,125	65,70	64,50	60,60	65,20	62,00
0,16	72,30	65,80	65,50	63,20	66,40
0,2	67,30	64,60	66,80	64,90	67,80
0,25	66,10	76,20	77,50	70,80	72,40
0,315	78,40	79,80	77,70	82,20	75,10
0,4	73,70	73,90	73,90	72,80	66,70
0,5	77,80	78,70	77,70	77,40	74,70
0,63	78,90	78,90	74,60	77,40	77,00
0,8	70,60	72,50	74,10	70,60	72,00
1	72,20	71,00	70,00	68,90	67,90
1,25	72,40	72,00	71,50	70,80	71,80
1,6	67,30	68,30	76,70	68,60	68,50
2	69,30	66,30	66,50	67,20	65,30
2,5	65,10	66,80	64,60	64,80	63,90
3,15	62,60	64,30	65,00	63,20	61,00
4,0	53,50	54,20	54,70	52,30	53,80
5,0	51,30	49,50	50,50	51,20	49,80
6,3	68,90	72,60	73,50	73,50	69,70

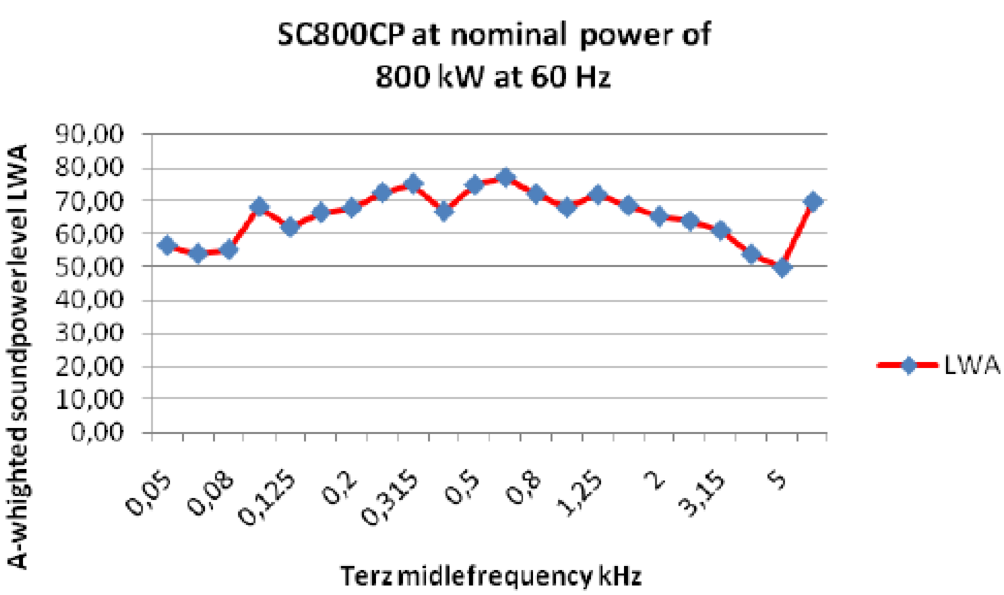


Figure B.1 SC800CP Inverter Sound Power Level as Provided by SMA. Note that the Header in the Table above Represents Various Inverter Models of CS###CP Series

Figure B.2 27.6-kV/115-kVA/30-MVA Substation Transformer

Estimated Frequency Spectra for Transformers

Transformer - 27.6kV/115kV/30MVA

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

Average LpA	62.0 dBA	Provided by transformer manufacturer
Estimated surface area	75.0 m^2	Estimated based on similar transformer dimensions

Correction factors are in dB

Freq. (Hz)	31	63	125	250	500	1000	2000	4000	8000	Notes
C1	-11.0	-5.0	-3.0	-8.0	-8.0	-14.0	-19.0	-24.0	-31.0	Outdoors, indoors in mechanical room over 140 m^3
C2	-11	-2	3	-2	-2	-11	-19	-24	-31	Indoors
C3	-11	-2	3	2	2	-4	-9	-14	-21	Serious Noise Problems

Sound Power Level calculated as Lw=Average LpA + 10*log(Estimated surface area) + C + 10

Freq. (Hz)	31	63	125	250	500	1000	2000	4000	8000	Combined [dB]
C1 based [dB]	79.8	85.8	87.8	82.8	82.8	76.8	71.8	66.8	59.8	**91.8**
C2 based [dB]	79.8	88.8	93.8	88.8	88.8	79.8	71.8	66.8	59.8	**96.8**
C3 based [dB]	79.8	88.8	93.8	92.8	92.8	86.8	81.8	76.8	69.8	**98.8**

Resulting A-weighted sound power level

Freq. (Hz)	A-Weight	C1 based [dBA]	C2 based [dBA]	C2 based [dBA]
31	-39.4	40.4	49.4	54.4
63	-26.2	59.6	62.6	62.6
125	-16.1	71.7	77.7	77.7
250	-8.6	74.2	80.2	84.2
500	-3.2	79.6	85.6	89.6
1000	0	76.8	79.8	86.8
2000	1.2	73.0	73.0	83.0
4000	1	67.8	67.8	77.8
8000	-1.1	58.7	58.7	68.7
LwA [dBA]		**83.1**	**88.1**	**92.9**

Used in the study (green shading)

Figure B.3 Sound Power Level Calculation for 27.6-kV/115-kV/30-MVA Substation Transformer

Sound Power Level Calculation for SMA Sunny Central 800CP, 100% LOAD

Third octave, as provided		
Freq #	Freq (Hz)	LwA (dBA)
1	25	
2	31.5	
3	40	
4	50	56.5
5	63	54.0
6	80	55.2
7	100	68.1
8	125	62.0
9	160	66.4
10	200	67.8
11	250	72.4
12	315	75.1
13	400	66.7
14	500	74.7
15	630	77.0
16	800	72.0
17	1000	67.9
18	1250	71.8
19	1600	68.5
20	2000	65.3
21	2500	63.9
22	3150	61.0
23	4000	53.8
24	5000	49.8
25	6300	69.7
26	8000	
27	10000	
	Total LwA	**83.3**

Full octave, as used in CADNA-A model			
Freq #	Freq (Hz)	LwA 1 inverter (dBA)	LwA 2 inverters (dBA)
	31.5		
5	63	60.1	63.1
8	125	70.9	73.9
11	250	77.5	80.5
14	500	79.3	82.3
17	1000	75.7	78.7
20	2000	71.1	74.1
23	4000	62.0	65.0
26	8000	69.7	72.7
	Total LwA	**83.3**	**86.3**

$$10\log\left(10^{\frac{56.5}{10}}+10^{\frac{54.0}{10}}+10^{\frac{55.2}{10}}\right)=60.1dBA$$

$$10\log\left(10^{\frac{60.1}{10}}+10^{\frac{60.1}{10}}\right)=63.1dBA$$

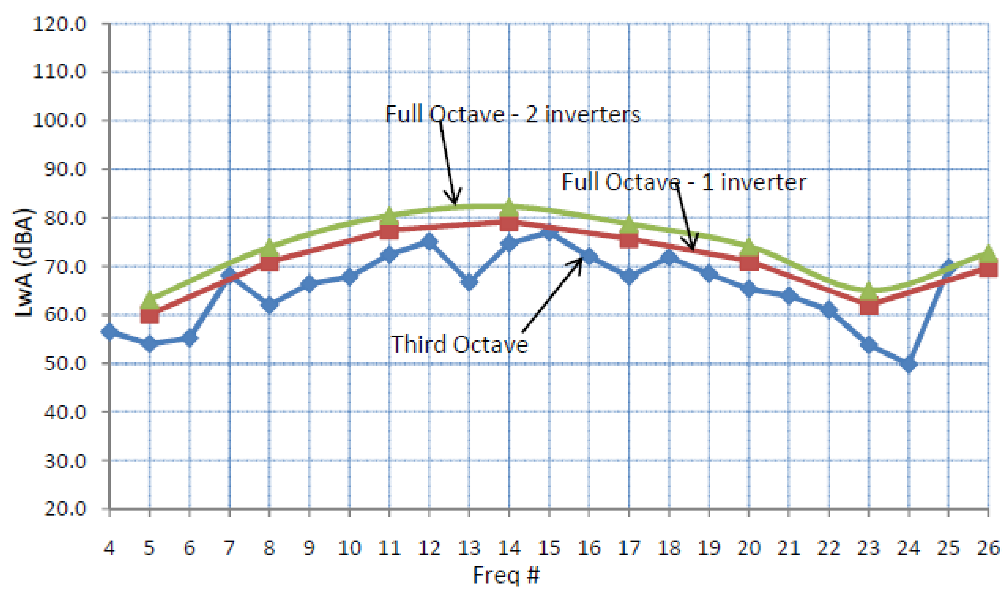


Figure B.4 Sound Power Level Calculation for SMA Sunny Central 800CP, 100% LOAD

Estimated Frequency Spectra for Transformers

Transformer - 27.6kV/1.6MVA

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

Average LpA	61 dBA	Based on NEMA TR1-1993 (R2000), Table 0-2
Estimated surface area	14.872 m^2	Estimated based on client transformer drawings

Correction factors are in dB

Freq. (Hz)	31	63	125	250	500	1000	2000	4000	8000	Notes
C1	-11.0	-5.0	-3.0	-8.0	-8.0	-14.0	-19.0	-24.0	-31.0	Outdoors, indoors in mechanical room over 140 m^3
C2	-11	-2	3	-2	-2	-11	-19	-24	-31	Indoors
C3	-11	-2	3	2	2	-4	-9	-14	-21	Serious Noise Problems

Sound Power Level calculated as Lw=Average LpA + 10*log(Estimated surface area) + C + 10

Freq. (Hz)	31	63	125	250	500	1000	2000	4000	8000	Combined [dB]
C1 based [dB]	71.7	77.7	79.7	74.7	74.7	68.7	63.7	58.7	51.7	83.8
C2 based [dB]	71.7	80.7	85.7	80.7	80.7	71.7	63.7	58.7	51.7	88.8
C3 based [dB]	71.7	80.7	85.7	84.7	84.7	78.7	73.7	68.7	61.7	90.8

Resulting A-weighted sound power level

Freq. (Hz)	A-Weight	C1 based [dBA]	C2 based [dBA]	C2 based [dBA]
31	-39.4	32.3	41.3	46.3
63	-26.2	51.5	54.5	54.5
125	-16.1	63.6	69.6	69.6
250	-8.6	66.1	72.1	76.1
500	-3.2	71.5	77.5	81.5
1000	0	68.7	71.7	78.7
2000	1.2	64.9	64.9	74.9
4000	1	59.7	59.7	69.7
8000	-1.1	50.6	50.6	60.6
LwA [dBA]		75.1	80.1	84.9

Used in the study

Figure B.5 Sound Power Level Calculation for 360-V/27.6-kV/1.6-MVA Cluster Transformer

Appendix C

Noise Receptor Coordinates and Noise Maps from CADNA-A

Table C.1 List of Building Footprint Center Coordinates for the Noise Receptors Considered in the Study

Noise Receptor ID	Description	Coordinates, UTM NAD 83 Zone 17 (m)	
		X	Y
R01	Existing	499023.9	5441174.5
R03	Existing	499228.9	5441297.5
R04	Existing	499242.9	5441269.5
R05	Existing	499255.9	5441184.5
R06	Existing	499267.9	5441173.5
R07	Vacant	499944.9	5443685.8
R08	Vacant	499625.6	5441134.8
R09	Vacant	499742.2	5441281.4
R10	Existing	499779.4	5442915.7
R11	Existing	499787.9	5441161.5
R12	Existing	499792.9	5442321.5
R13	Existing	499792.9	5442404.5
R14	Vacant	499852.9	5441296.4
R15	Existing	499853.9	5443134.5
R16	Existing	499854.9	5443170.6
R17	Existing	499871.9	5442559.6
R18	Vacant	499886.1	5441238.3
R19	Vacant	499888.2	5440274.6
R20	Vacant	499893.4	5441141.6
R21	Existing	499893.9	5443614.6
R22	Existing	499897.2	5442882.6
R23	Existing	499897.7	5442807.0
R24	Existing	500035.9	5443709.6
R25	Existing	500039.9	5443690.6
R26	Existing	500518.9	5443721.6
R27	Existing	500522.9	5441169.5
R28	Existing	500530.9	5443671.6
R29	Existing	500556.9	5441290.5
R30	Existing	500593.9	5441256.5
R31	Vacant	500805.8	5443536.2
R32	Vacant	500808.9	5443692.3
R33	Existing	500883.9	5441175.5
R34	Existing	500922.0	5443686.3
R35	Existing	500970.9	5441293.5

Noise Receptor ID	Description	Coordinates, UTM NAD 83 Zone 17 (m)	
		X	Y
R36	Existing	501067.9	5443687.6
R37	Existing	501203.6	5443864.8
R38	Existing	501289.8	5443828.6
R39	Existing	501374.9	5443675.2
R40	Vacant	501542.2	5441105.6
R41	Vacant	501606.5	5441266.7
R42	Existing	501803.8	5443600.2
R43	Vacant	501802.8	5444102.2
R44	Existing	501802.9	5443682.6
R45	Existing	501891.4	5443688.0
R46	Existing	502021.5	5443723.9
R47	Vacant	502197.1	5443688.8
R48	Existing	502836.4	5443716.6
R49	Existing	502847.7	5443597.3
R50	Vacant	503091.1	5443721.9
R51	Vacant	503184.9	5443528.5

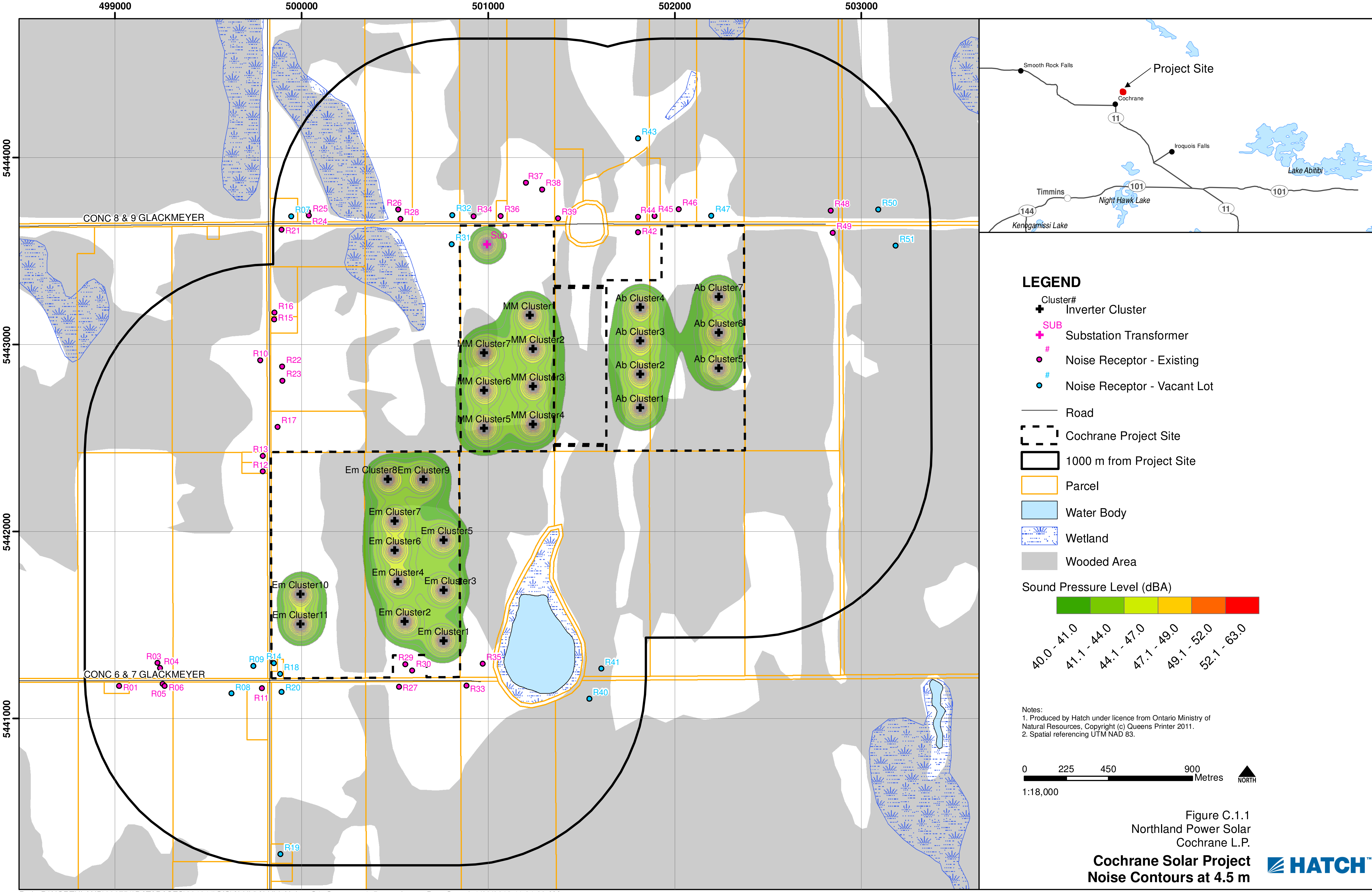
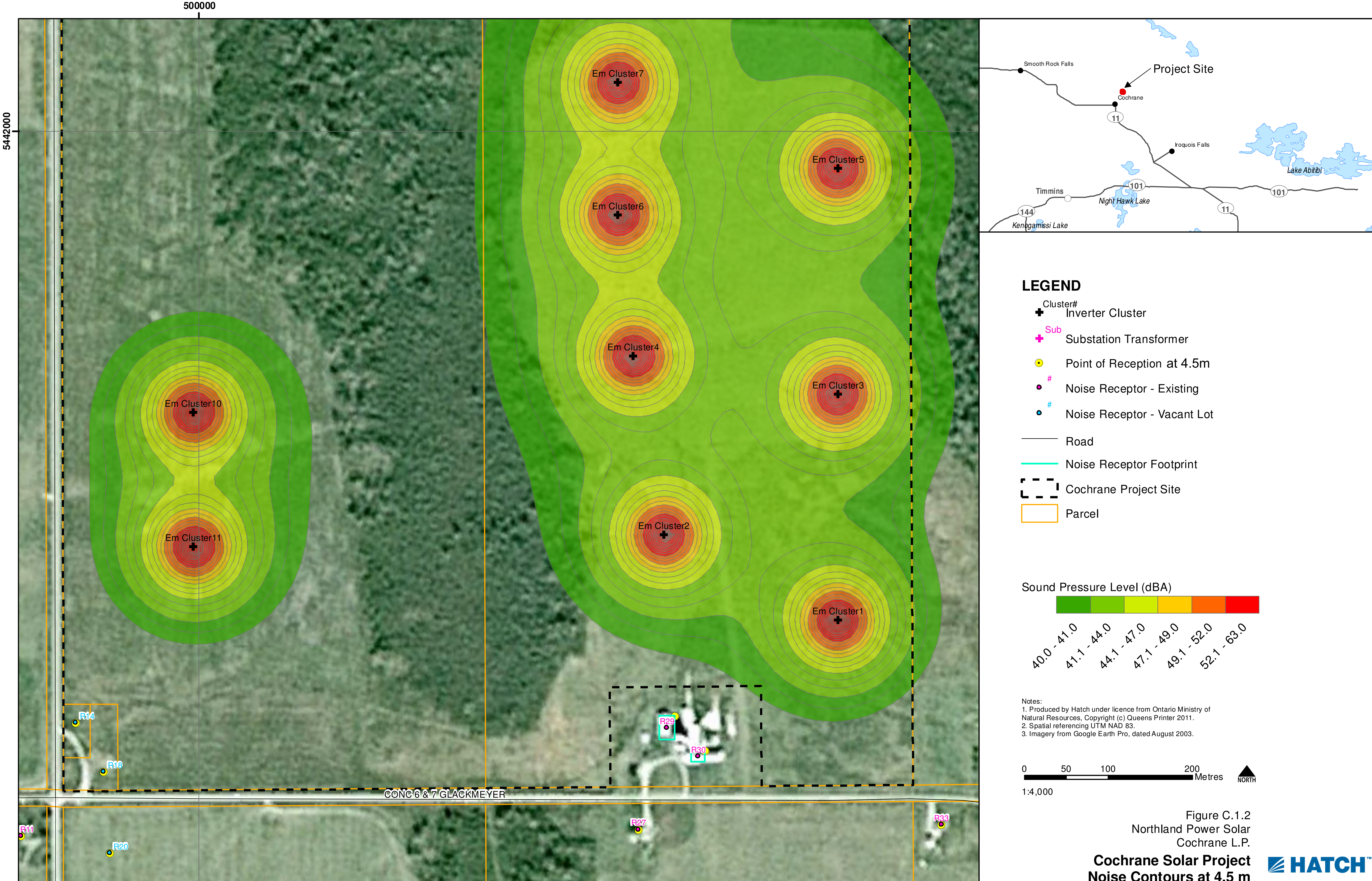


Figure C.1.1
Northland Power Solar
Cochrane L.P.
Cochrane Solar Project
Noise Contours at 4.5 m



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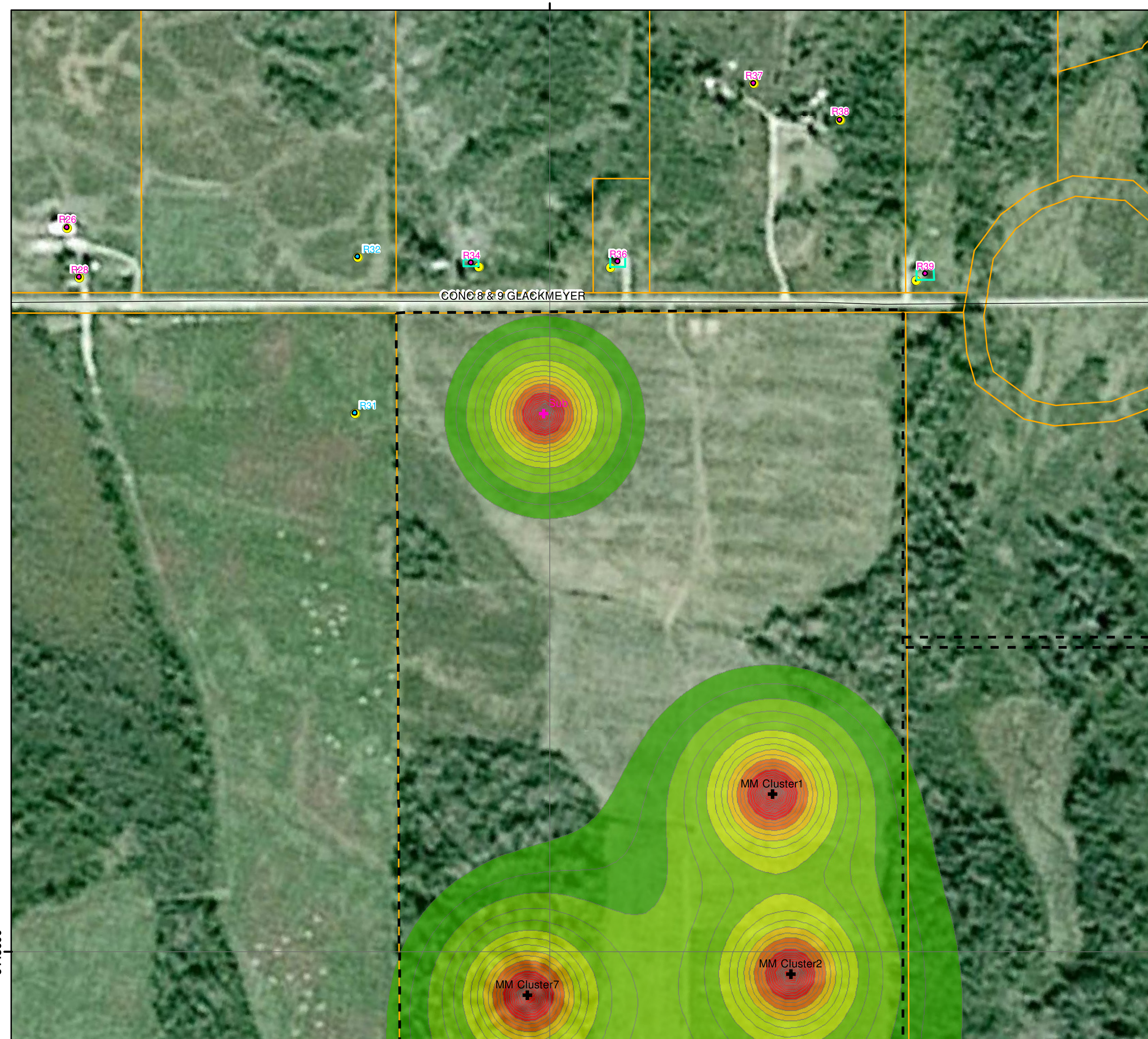

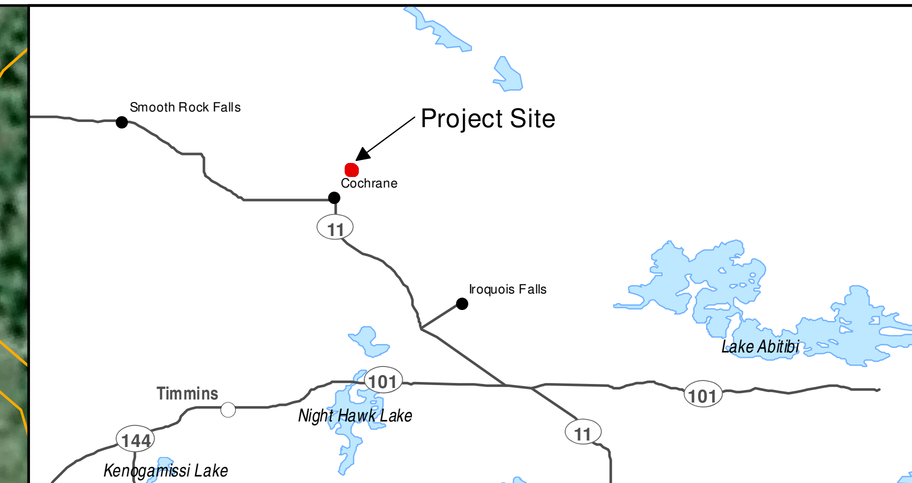

LEGEND

- Cluster# Inverter Cluster
- Sub Substation Transformer
- Point of Reception at 4.5m
- # Noise Receptor - Existing
- # Noise Receptor - Vacant Lot
- Road
- Noise Receptor Footprint
- Cochrane Project Site
- Parcel

Sound Pressure Level (dBA)

40.0 - 41.0	41.1 - 44.0	44.1 - 47.0	47.1 - 49.0	49.1 - 52.0	52.1 - 63.0

Notes:
1. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
2. Spatial referencing UTM NAD 83.
3. Imagery from Google Earth Pro, dated August 2003.

0 50 100 200 Metres

NORTH

1:4,000

Figure C.1.3
Northland Power Solar
Cochrane L.P.

Cochrane Solar Project
Noise Contours at 4.5 m

HATCH

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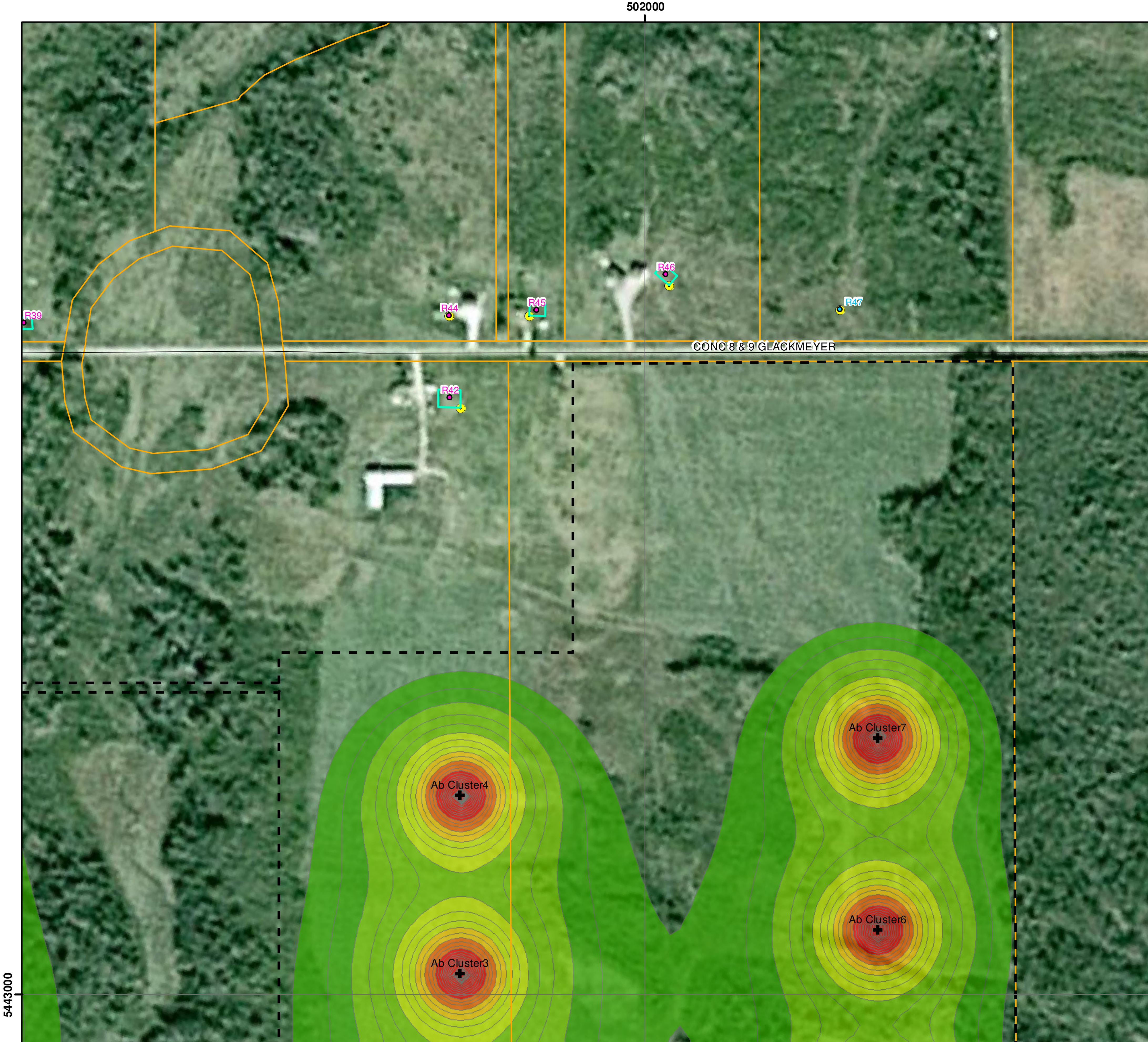

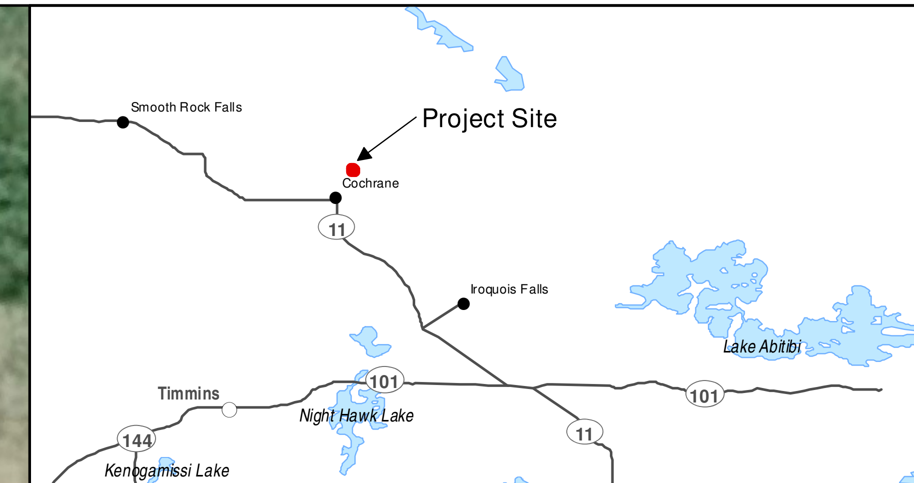

LEGEND

- Cluster# Inverter Cluster
- Sub Substation Transformer
- Point of Reception at 4.5m
- # Noise Receptor - Existing
- # Noise Receptor - Vacant Lot
- Road
- Noise Receptor Footprint
- Cochrane Project Site
- Parcel

Sound Pressure Level (dBA)

40.0 - 41.0
41.1 - 44.0
44.1 - 47.0
47.1 - 49.0
49.1 - 52.0
52.1 - 63.0

Notes:
1. Produced by Hatch under licence from Ontario Ministry of Natural Resources, Copyright (c) Queens Printer 2011.
2. Spatial referencing UTM NAD 83.
3. Imagery from Google Earth Pro, dated August 2003.

0 50 100 200 Metres
NORTH
1:4,000

Figure C.1.4
Northland Power Solar
Cochrane L.P.

Cochrane Solar Project
Noise Contours at 4.5 m

HATCH

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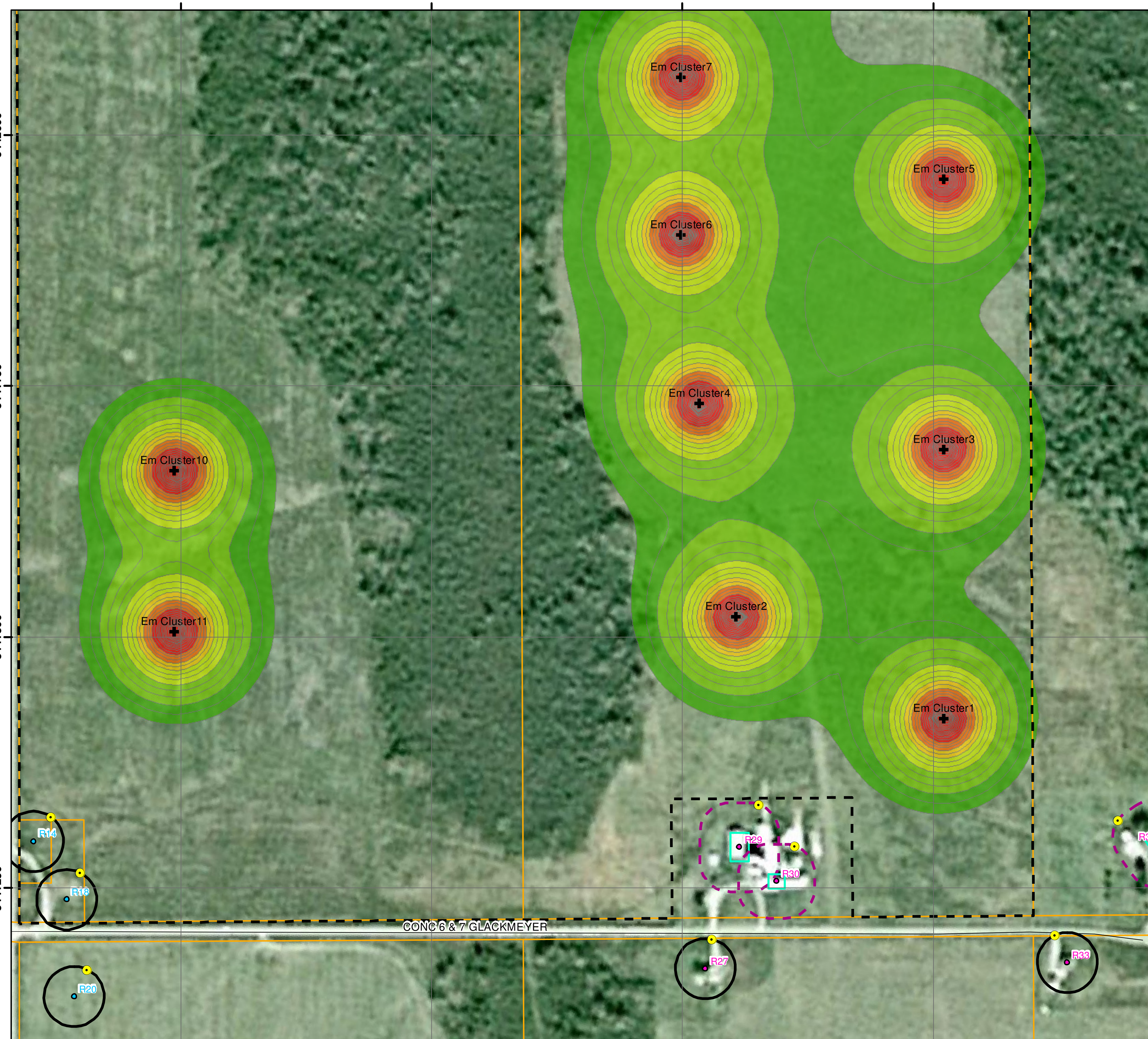

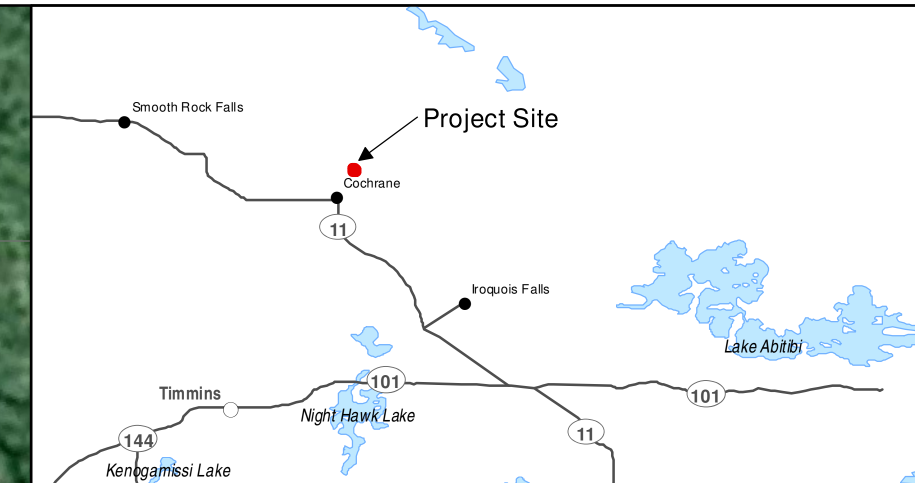

LEGEND

- Cluster# ✚ Inverter Cluster
- Sub ✚ Substation Transformer
- Point of Reception
- Noise Receptor - Existing
- Noise Receptor - Vacant Lot
- Road
- Noise Receptor Footprint
- 30 m from Noise Receptor Footprint
- Cochrane Project Site
- 30 m from Noise Receptor Centre
- Parcel

Sound Pressure Level (dBA)

40.0 - 41.0 | 41.1 - 44.0 | 44.1 - 47.0 | 47.1 - 49.0 | 49.1 - 52.0 | 52.1 - 63.0

Notes:
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2. Spatial referencing UTM NAD 83.

0 50 100 200 Metres NORTH

1:4,000

Figure C.2.1
Northland Power Solar
Cochrane L.P.

Cochrane Solar Project
Noise Contours at 1.5 m

HATCH

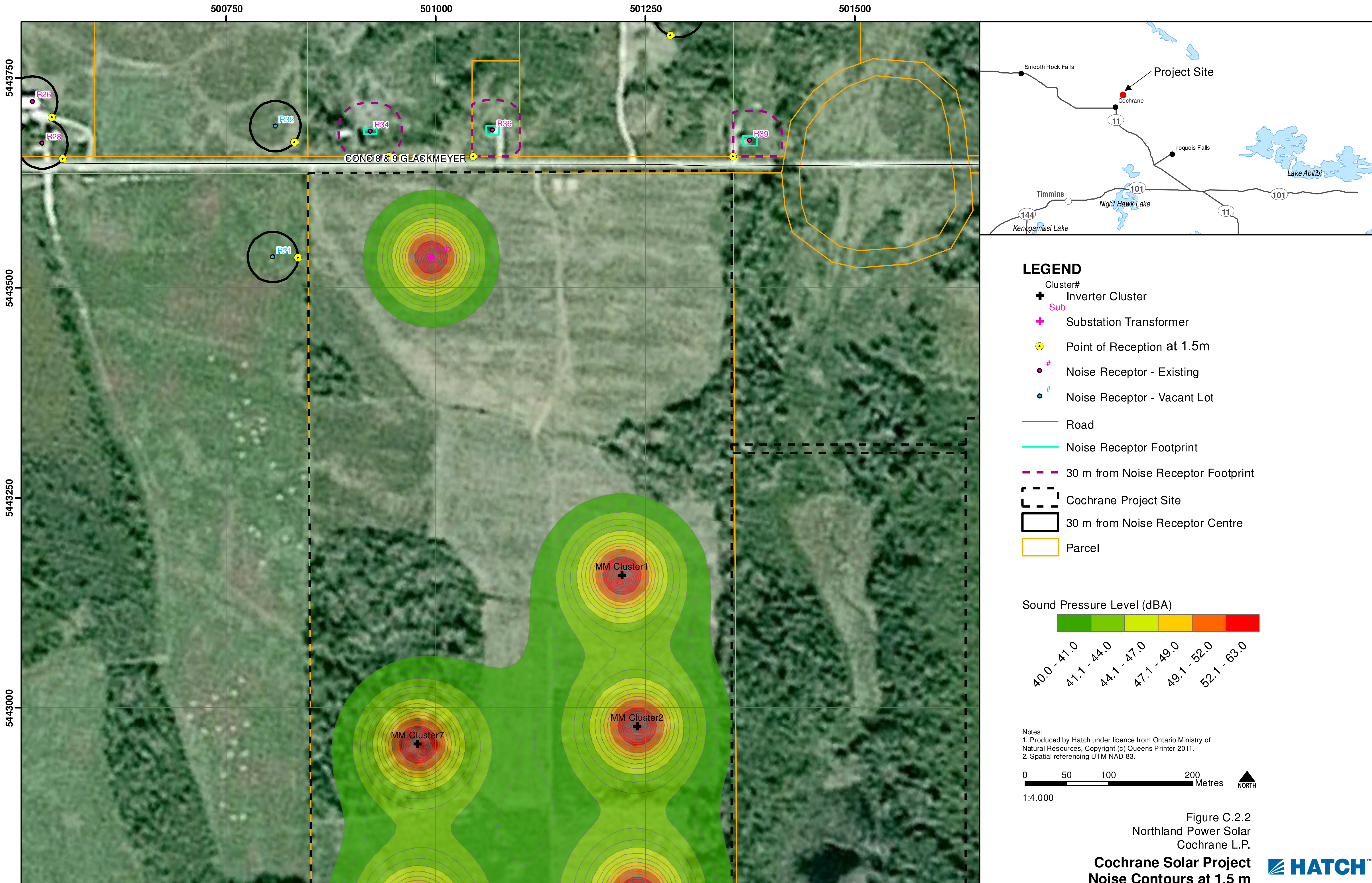

Figure C.2.2
Northland Power Solar
Cochrane L.P.

Cochrane Solar Project
Noise Contours at 1.5 m

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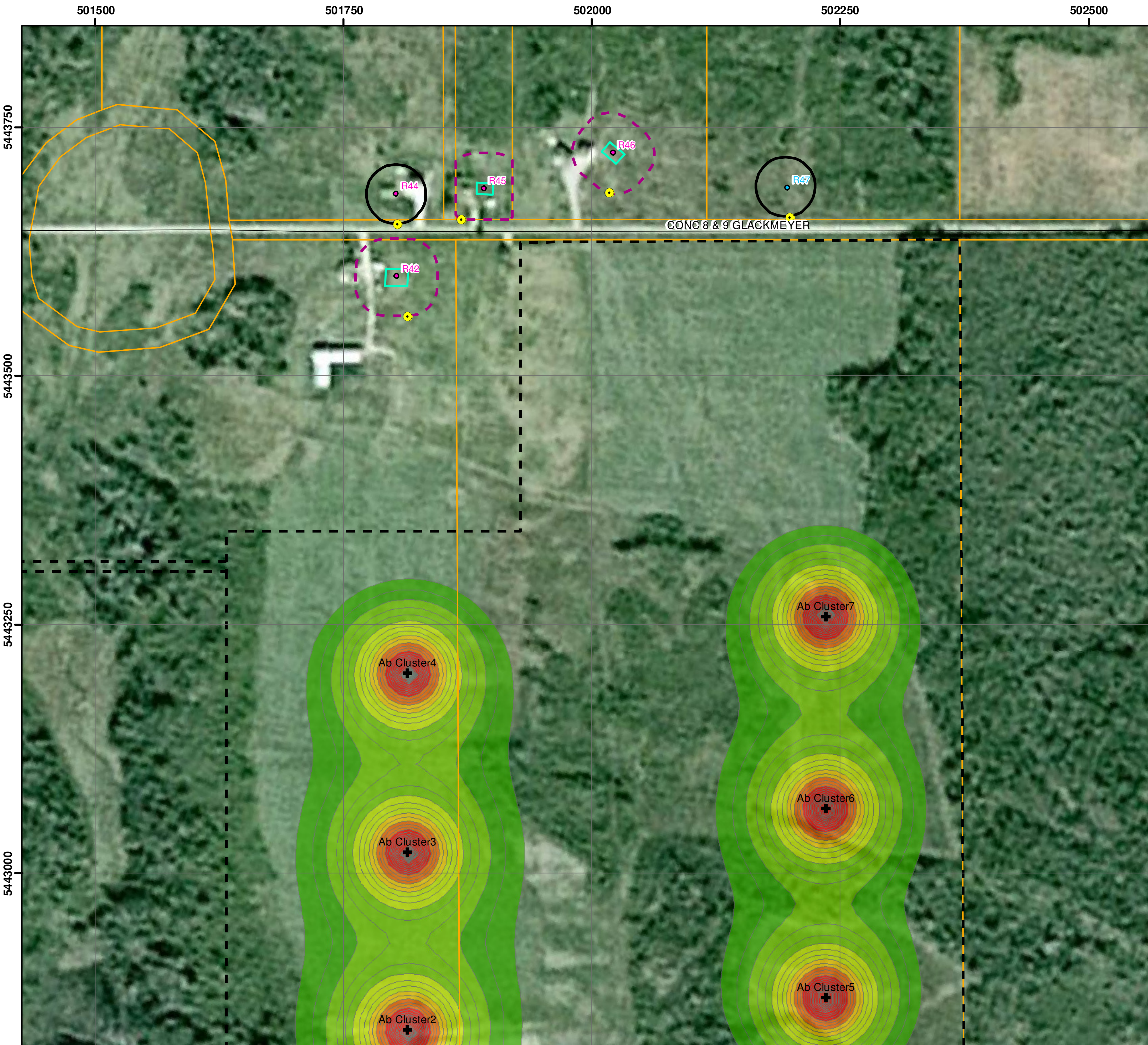

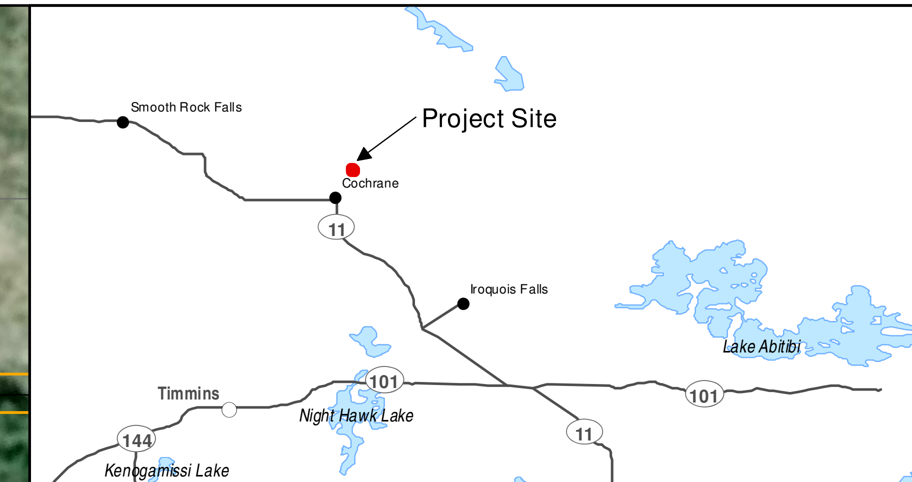

LEGEND

Cluster#
Inverter Cluster

Sub
Substation Transformer

Point of Reception at 1.5m

Noise Receptor - Existing

Noise Receptor - Vacant Lot

Road

Noise Receptor Footprint

30 m from Noise Receptor Footprint

Cochrane Project Site

30 m from Noise Receptor Centre

Parcel

Sound Pressure Level (dBA)

40.0 - 41.0
41.1 - 44.0
44.1 - 47.0
47.1 - 49.0
49.1 - 52.0
52.1 - 63.0

Notes:
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2. Spatial referencing UTM NAD 83.

0 50 100 200 Metres
NORTH

1:4,000

Figure C.2.3
Northland Power Solar
Cochrane L.P.

Cochrane Solar Project
Noise Contours at 1.5 m

HATCH

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Appendix D

CADNA-A Sample Calculations

Configuration	
Parameter	Value
General	
Country	(user defined)
Max. Error (dB)	0.00
Max. Search Radius (m)	3000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (m)	1000.00
Min. Length of Section (m)	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Reference Time Day (min)	960.00
Reference Time Night (min)	480.00
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	0.00
Night-time Penalty (dB)	0.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	1
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (°C)	10
rel. Humidity (%)	70
Ground Absorption G	0.70
Wind Speed for Dir. (m/s)	3.0
Roads (RLS-90)	
Strictly acc. to RLS-90	
Railways (Schall 03)	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (???)	
Strictly acc. to AzB	

Receiver
Name: R29
ID: 45_R29
X: 500566.25
Y: 5441304.94
Z: 4.50

Point Source, ISO 9613, Name: "Ab_Inv1", ID: "Ab_Inv1"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501813.68	5442663.24	2.60	0	63	68.1	68.1	0.0	0.0	76.3	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-2.8	-2.8
2	501813.68	5442663.24	2.60	0	125	78.9	78.9	0.0	0.0	76.3	0.8	4.2	0.0	0.0	0.0	0.0	-0.0	-2.4	-2.4
3	501813.68	5442663.24	2.60	0	250	85.5	85.5	0.0	0.0	76.3	1.9	2.5	0.0	0.0	0.0	0.0	-0.0	4.7	4.7
4	501813.68	5442663.24	2.60	0	500	87.3	87.3	0.0	0.0	76.3	3.6	-1.3	0.0	0.0	0.0	0.0	-0.0	8.7	8.7
5	501813.68	5442663.24	2.60	0	1000	83.7	83.7	0.0	0.0	76.3	6.8	-1.7	0.0	0.0	0.0	0.0	-0.0	2.3	2.3
6	501813.68	5442663.24	2.60	0	2000	79.1	79.1	0.0	0.0	76.3	17.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-13.3	-13.3
7	501813.68	5442663.24	2.60	0	4000	70.0	70.0	0.0	0.0	76.3	60.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-65.0	-65.0
8	501813.68	5442663.24	2.60	0	8000	77.7	77.7	0.0	0.0	76.3	215.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-212.5	-212.5

Point Source, ISO 9613, Name: "Ab_Inv2", ID: "Ab_Inv2"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501813.68	5442842.44	2.60	0	63	68.1	68.1	0.0	0.0	76.9	0.2	-5.7	0.0	0.0	0.0	0.0	-0.0	-3.4	-3.4
2	501813.68	5442842.44	2.60	0	125	78.9	78.9	0.0	0.0	76.9	0.8	4.2	0.0	0.0	0.0	0.0	-0.0	-3.0	-3.0
3	501813.68	5442842.44	2.60	0	250	85.5	85.5	0.0	0.0	76.9	2.1	2.5	0.0	0.0	0.0	0.0	-0.0	4.0	4.0
4	501813.68	5442842.44	2.60	0	500	87.3	87.3	0.0	0.0	76.9	3.8	-1.3	0.0	0.0	0.0	0.0	-0.0	7.8	7.8
5	501813.68	5442842.44	2.60	0	1000	83.7	83.7	0.0	0.0	76.9	7.2	-1.7	0.0	0.0	0.0	0.0	-0.0	1.2	1.2
6	501813.68	5442842.44	2.60	0	2000	79.1	79.1	0.0	0.0	76.9	19.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-15.3	-15.3
7	501813.68	5442842.44	2.60	0	4000	70.0	70.0	0.0	0.0	76.9	64.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-70.1	-70.1
8	501813.68	5442842.44	2.60	0	8000	77.7	77.7	0.0	0.0	76.9	231.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-228.9	-228.9

Point Source, ISO 9613, Name: "Ab_Inv3", ID: "Ab_Inv3"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501813.58	5443021.64	2.60	0	63	68.1	68.1	0.0	0.0	77.5	0.3	-5.7	0.0	0.0	0.0	0.0	-0.0	-4.0	-4.0
2	501813.58	5443021.64	2.60	0	125	78.9	78.9	0.0	0.0	77.5	0.9	4.2	0.0	0.0	0.0	0.0	-0.0	-3.7	-3.7
3	501813.58	5443021.64	2.60	0	250	85.5	85.5	0.0	0.0	77.5	2.2	2.5	0.0	0.0	0.0	0.0	-0.0	3.2	3.2
4	501813.58	5443021.64	2.60	0	500	87.3	87.3	0.0	0.0	77.5	4.1	-1.3	0.0	0.0	0.0	0.0	-0.0	7.0	7.0
5	501813.58	5443021.64	2.60	0	1000	83.7	83.7	0.0	0.0	77.5	7.8	-1.7	0.0	0.0	0.0	0.0	-0.0	0.1	0.1
6	501813.58	5443021.64	2.60	0	2000	79.1	79.1	0.0	0.0	77.5	20.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-17.2	-17.2
7	501813.58	5443021.64	2.60	0	4000	70.0	70.0	0.0	0.0	77.5	69.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-75.4	-75.4
8	501813.58	5443021.64	2.60	0	8000	77.7	77.7	0.0	0.0	77.5	248.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-246.2	-246.2

Point Source, ISO 9613, Name: "Ab_Inv4", ID: "Ab_Inv4"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501813.68	5443200.84	2.60	0	63	68.1	68.1	0.0	0.0	78.1	0.3	-5.7	0.0	0.0	0.0	0.0	-0.0	-4.6	-4.6
2	501813.68	5443200.84	2.60	0	125	78.9	78.9	0.0	0.0	78.1	0.9	4.2	0.0	0.0	0.0	0.0	-0.0	-4.3	-4.3
3	501813.68	5443200.84	2.60	0	250	85.5	85.5	0.0	0.0	78.1	2.4	2.5	0.0	0.0	0.0	0.0	-0.0	2.5	2.5
4	501813.68	5443200.84	2.60	0	500	87.3	87.3	0.0	0.0	78.1	4.4	-1.3	0.0	0.0	0.0	0.0	-0.0	6.1	6.1
5	501813.68	5443200.84	2.60	0	1000	83.7	83.7	0.0	0.0	78.1	8.3	-1.7	0.0	0.0	0.0	0.0	-0.0	-1.0	-1.0
6	501813.68	5443200.84	2.60	0	2000	79.1	79.1	0.0	0.0	78.1	21.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-19.2	-19.2
7	501813.68	5443200.84	2.60	0	4000	70.0	70.0	0.0	0.0	78.1	74.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-80.8	-80.8
8	501813.68	5443200.84	2.60	0	8000	77.7	77.7	0.0	0.0	78.1	265.3	-1.7	0.0	0.0	0.0	0.0	-0.0	-264.0	-264.0

Point Source, ISO 9613, Name: "Ab_Inv5", ID: "Ab_Inv5"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	502235.01	5442875.04	2.60	0	63	68.1	68.1	0.0	0.0	78.2	0.3	-5.7	0.0	0.0	0.0	0.0	-0.0	-4.7	-4.7
2	502235.01	5442875.04	2.60	0	125	78.9	78.9	0.0	0.0	78.2	0.9	4.2	0.0	0.0	0.0	0.0	-0.0	-4.4	-4.4
3	502235.01	5442875.04	2.60	0	250	85.5	85.5	0.0	0.0	78.2	2.4	2.5	0.0	0.0	0.0	0.0	-0.0	2.4	2.4
4	502235.01	5442875.04	2.60	0	500	87.3	87.3	0.0	0.0	78.2	4.4	-1.3	0.0	0.0	0.0	0.0	-0.0	6.0	6.0
5	502235.01	5442875.04	2.60	0	1000	83.7	83.7	0.0	0.0	78.2	8.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-1.2	-1.2

Point Source, ISO 9613, Name: "Ab_Inv5", ID: "Ab_Inv5"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
6	502235.01	5442875.04	2.60	0	2000	79.1	79.1	0.0	0.0	78.2	22.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-19.5	-19.5
7	502235.01	5442875.04	2.60	0	4000	70.0	70.0	0.0	0.0	78.2	75.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-81.6	-81.6
8	502235.01	5442875.04	2.60	0	8000	77.7	77.7	0.0	0.0	78.2	267.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-266.6	-266.6

Point Source, ISO 9613, Name: "Ab_Inv6", ID: "Ab_Inv6"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	502235.01	5443065.44	2.60	0	63	68.1	68.1	0.0	0.0	78.7	0.3	-5.7	0.0	0.0	0.0	0.0	-0.0	-5.2	-5.2
2	502235.01	5443065.44	2.60	0	125	78.9	78.9	0.0	0.0	78.7	1.0	4.2	0.0	0.0	0.0	0.0	-0.0	-5.0	-5.0
3	502235.01	5443065.44	2.60	0	250	85.5	85.5	0.0	0.0	78.7	2.5	2.5	0.0	0.0	0.0	0.0	-0.0	1.7	1.7
4	502235.01	5443065.44	2.60	0	500	87.3	87.3	0.0	0.0	78.7	4.7	-1.3	0.0	0.0	0.0	0.0	-0.0	5.2	5.2
5	502235.01	5443065.44	2.60	0	1000	83.7	83.7	0.0	0.0	78.7	8.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-2.2	-2.2
6	502235.01	5443065.44	2.60	0	2000	79.1	79.1	0.0	0.0	78.7	23.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-21.3	-21.3
7	502235.01	5443065.44	2.60	0	4000	70.0	70.0	0.0	0.0	78.7	79.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-86.5	-86.5
8	502235.01	5443065.44	2.60	0	8000	77.7	77.7	0.0	0.0	78.7	283.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-282.8	-282.8

Point Source, ISO 9613, Name: "Ab_Inv7", ID: "Ab_Inv7"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	502235.01	5443257.84	2.60	0	63	68.1	68.1	0.0	0.0	79.2	0.3	-5.8	0.0	0.0	0.0	0.0	-0.0	-5.7	-5.7
2	502235.01	5443257.84	2.60	0	125	78.9	78.9	0.0	0.0	79.2	1.1	4.2	0.0	0.0	0.0	0.0	-0.0	-5.5	-5.5
3	502235.01	5443257.84	2.60	0	250	85.5	85.5	0.0	0.0	79.2	2.7	2.5	0.0	0.0	0.0	0.0	-0.0	1.1	1.1
4	502235.01	5443257.84	2.60	0	500	87.3	87.3	0.0	0.0	79.2	5.0	-1.3	0.0	0.0	0.0	0.0	-0.0	4.4	4.4
5	502235.01	5443257.84	2.60	0	1000	83.7	83.7	0.0	0.0	79.2	9.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-3.2	-3.2
6	502235.01	5443257.84	2.60	0	2000	79.1	79.1	0.0	0.0	79.2	24.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-23.2	-23.2
7	502235.01	5443257.84	2.60	0	4000	70.0	70.0	0.0	0.0	79.2	84.2	-1.7	0.0	0.0	0.0	0.0	-0.0	-91.6	-91.6
8	502235.01	5443257.84	2.60	0	8000	77.7	77.7	0.0	0.0	79.2	300.2	-1.7	0.0	0.0	0.0	0.0	-0.0	-300.0	-300.0

Point Source, ISO 9613, Name: "Ab_Trans1", ID: "Ab_Trans1"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501819.18	5442662.74	2.58	0	32	37.3	37.3	0.0	0.0	76.3	0.1	-5.7	0.0	0.0	0.0	0.0	-0.0	-33.4	-33.4
2	501819.18	5442662.74	2.58	0	63	56.5	56.5	0.0	0.0	76.3	0.2	-5.7	0.0	0.0	0.0	0.0	-0.0	-14.4	-14.4
3	501819.18	5442662.74	2.58	0	125	68.6	68.6	0.0	0.0	76.3	0.8	4.2	0.0	0.0	0.0	0.0	-0.0	-12.7	-12.7
4	501819.18	5442662.74	2.58	0	250	71.1	71.1	0.0	0.0	76.3	1.9	2.6	0.0	0.0	0.0	0.0	-0.0	-9.7	-9.7
5	501819.18	5442662.74	2.58	0	500	76.5	76.5	0.0	0.0	76.3	3.6	-1.2	0.0	0.0	0.0	0.0	-0.0	-2.2	-2.2
6	501819.18	5442662.74	2.58	0	1000	73.7	73.7	0.0	0.0	76.3	6.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-7.7	-7.7
7	501819.18	5442662.74	2.58	0	2000	69.9	69.9	0.0	0.0	76.3	17.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-22.6	-22.6
8	501819.18	5442662.74	2.58	0	4000	64.7	64.7	0.0	0.0	76.3	60.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-70.5	-70.5
9	501819.18	5442662.74	2.58	0	8000	55.6	55.6	0.0	0.0	76.3	216.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-235.0	-235.0

Point Source, ISO 9613, Name: "Ab_Trans2", ID: "Ab_Trans2"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501819.18	5442841.94	2.58	0	32	37.3	37.3	0.0	0.0	77.0	0.1	-5.7	0.0	0.0	0.0	0.0	-0.0	-34.0	-34.0
2	501819.18	5442841.94	2.58	0	63	56.5	56.5	0.0	0.0	77.0	0.2	-5.7	0.0	0.0	0.0	0.0	-0.0	-15.0	-15.0
3	501819.18	5442841.94	2.58	0	125	68.6	68.6	0.0	0.0	77.0	0.8	4.2	0.0	0.0	0.0	0.0	-0.0	-13.4	-13.4
4	501819.18	5442841.94	2.58	0	250	71.1	71.1	0.0	0.0	77.0	2.1	2.6	0.0	0.0	0.0	0.0	-0.0	-10.5	-10.5
5	501819.18	5442841.94	2.58	0	500	76.5	76.5	0.0	0.0	77.0	3.8	-1.2	0.0	0.0	0.0	0.0	-0.0	-3.0	-3.0
6	501819.18	5442841.94	2.58	0	1000	73.7	73.7	0.0	0.0	77.0	7.3	-1.7	0.0	0.0	0.0	0.0	-0.0	-8.8	-8.8
7	501819.18	5442841.94	2.58	0	2000	69.9	69.9	0.0	0.0	77.0	19.2	-1.7	0.0	0.0	0.0	0.0	-0.0	-24.5	-24.5
8	501819.18	5442841.94	2.58	0	4000	64.7	64.7	0.0	0.0	77.0	65.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-75.5	-75.5
9	501819.18	5442841.94	2.58	0	8000	55.6	55.6	0.0	0.0	77.0	231.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-251.4	-251.4

Point Source, ISO 9613, Name: "Ab_Trans3", ID: "Ab_Trans3"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501819.08	5443021.14	2.58	0	32	37.3	37.3	0.0	0.0	77.5	0.1	-5.7	0.0	0.0	0.0	0.0	-0.0	-34.6	-34.6
2	501819.08	5443021.14	2.58	0	63	56.5	56.5	0.0	0.0	77.5	0.3	-5.7	0.0	0.0	0.0	0.0	-0.0	-15.6	-15.6
3	501819.08	5443021.14	2.58	0	125	68.6	68.6	0.0	0.0	77.5	0.9	4.2	0.0	0.0	0.0	0.0	-0.0	-14.0	-14.0
4	501819.08	5443021.14	2.58	0	250	71.1	71.1	0.0	0.0	77.5	2.2	2.6	0.0	0.0	0.0	0.0	-0.0	-11.2	-11.2
5	501819.08	5443021.14	2.58	0	500	76.5	76.5	0.0	0.0	77.5	4.1	-1.3	0.0	0.0	0.0	0.0	-0.0	-3.9	-3.9
6	501819.08	5443021.14	2.58	0	1000	73.7	73.7	0.0	0.0	77.5	7.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-9.9	-9.9

Point Source, ISO 9613, Name: "Ab_Trans3", ID: "Ab_Trans3"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
7	501819.08	5443021.14	2.58	0	2000	69.9	69.9	0.0	0.0	77.5	20.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-26.5	-26.5
8	501819.08	5443021.14	2.58	0	4000	64.7	64.7	0.0	0.0	77.5	69.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-80.8	-80.8
9	501819.08	5443021.14	2.58	0	8000	55.6	55.6	0.0	0.0	77.5	248.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-268.6	-268.6

Point Source, ISO 9613, Name: "Ab_Trans4", ID: "Ab_Trans4"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501819.18	5443200.34	2.58	0	32	37.3	37.3	0.0	0.0	78.1	0.1	-5.7	0.0	0.0	0.0	0.0	-0.0	-35.2	-35.2
2	501819.18	5443200.34	2.58	0	63	56.5	56.5	0.0	0.0	78.1	0.3	-5.7	0.0	0.0	0.0	0.0	-0.0	-16.2	-16.2
3	501819.18	5443200.34	2.58	0	125	68.6	68.6	0.0	0.0	78.1	0.9	4.2	0.0	0.0	0.0	0.0	-0.0	-14.7	-14.7
4	501819.18	5443200.34	2.58	0	250	71.1	71.1	0.0	0.0	78.1	2.4	2.6	0.0	0.0	0.0	0.0	-0.0	-12.0	-12.0
5	501819.18	5443200.34	2.58	0	500	76.5	76.5	0.0	0.0	78.1	4.4	-1.3	0.0	0.0	0.0	0.0	-0.0	-4.8	-4.8
6	501819.18	5443200.34	2.58	0	1000	73.7	73.7	0.0	0.0	78.1	8.3	-1.7	0.0	0.0	0.0	0.0	-0.0	-11.0	-11.0
7	501819.18	5443200.34	2.58	0	2000	69.9	69.9	0.0	0.0	78.1	22.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-28.5	-28.5
8	501819.18	5443200.34	2.58	0	4000	64.7	64.7	0.0	0.0	78.1	74.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-86.2	-86.2
9	501819.18	5443200.34	2.58	0	8000	55.6	55.6	0.0	0.0	78.1	265.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-286.4	-286.4

Point Source, ISO 9613, Name: "Ab_Trans5", ID: "Ab_Trans5"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	502229.51	5442875.54	2.58	0	32	37.3	37.3	0.0	0.0	78.2	0.1	-5.7	0.0	0.0	0.0	0.0	-0.0	-35.2	-35.2
2	502229.51	5442875.54	2.58	0	63	56.5	56.5	0.0	0.0	78.2	0.3	-5.7	0.0	0.0	0.0	0.0	-0.0	-16.2	-16.2
3	502229.51	5442875.54	2.58	0	125	68.6	68.6	0.0	0.0	78.2	0.9	4.2	0.0	0.0	0.0	0.0	-0.0	-14.7	-14.7
4	502229.51	5442875.54	2.58	0	250	71.1	71.1	0.0	0.0	78.2	2.4	2.6	0.0	0.0	0.0	0.0	-0.0	-12.0	-12.0
5	502229.51	5442875.54	2.58	0	500	76.5	76.5	0.0	0.0	78.2	4.4	-1.3	0.0	0.0	0.0	0.0	-0.0	-4.8	-4.8
6	502229.51	5442875.54	2.58	0	1000	73.7	73.7	0.0	0.0	78.2	8.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-11.2	-11.2
7	502229.51	5442875.54	2.58	0	2000	69.9	69.9	0.0	0.0	78.2	22.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-28.7	-28.7
8	502229.51	5442875.54	2.58	0	4000	64.7	64.7	0.0	0.0	78.2	75.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-86.7	-86.7
9	502229.51	5442875.54	2.58	0	8000	55.6	55.6	0.0	0.0	78.2	267.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-288.3	-288.3

Point Source, ISO 9613, Name: "Ab_Trans6", ID: "Ab_Trans6"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	502229.51	5443065.94	2.58	0	32	37.3	37.3	0.0	0.0	78.7	0.1	-5.7	0.0	0.0	0.0	0.0	-0.0	-35.7	-35.7
2	502229.51	5443065.94	2.58	0	63	56.5	56.5	0.0	0.0	78.7	0.3	-5.7	0.0	0.0	0.0	0.0	-0.0	-16.7	-16.7
3	502229.51	5443065.94	2.58	0	125	68.6	68.6	0.0	0.0	78.7	1.0	4.2	0.0	0.0	0.0	0.0	-0.0	-15.3	-15.3
4	502229.51	5443065.94	2.58	0	250	71.1	71.1	0.0	0.0	78.7	2.5	2.6	0.0	0.0	0.0	0.0	-0.0	-12.7	-12.7
5	502229.51	5443065.94	2.58	0	500	76.5	76.5	0.0	0.0	78.7	4.7	-1.3	0.0	0.0	0.0	0.0	-0.0	-5.6	-5.6
6	502229.51	5443065.94	2.58	0	1000	73.7	73.7	0.0	0.0	78.7	8.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-12.1	-12.1
7	502229.51	5443065.94	2.58	0	2000	69.9	69.9	0.0	0.0	78.7	23.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-30.5	-30.5
8	502229.51	5443065.94	2.58	0	4000	64.7	64.7	0.0	0.0	78.7	79.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-91.6	-91.6
9	502229.51	5443065.94	2.58	0	8000	55.6	55.6	0.0	0.0	78.7	283.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-304.5	-304.5

Point Source, ISO 9613, Name: "Ab_Trans7", ID: "Ab_Trans7"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	502229.51	5443258.34	2.58	0	32	37.3	37.3	0.0	0.0	79.2	0.1	-5.8	0.0	0.0	0.0	0.0	-0.0	-36.2	-36.2
2	502229.51	5443258.34	2.58	0	63	56.5	56.5	0.0	0.0	79.2	0.3	-5.8	0.0	0.0	0.0	0.0	-0.0	-17.2	-17.2
3	502229.51	5443258.34	2.58	0	125	68.6	68.6	0.0	0.0	79.2	1.1	4.2	0.0	0.0	0.0	0.0	-0.0	-15.8	-15.8
4	502229.51	5443258.34	2.58	0	250	71.1	71.1	0.0	0.0	79.2	2.7	2.5	0.0	0.0	0.0	0.0	-0.0	-13.3	-13.3
5	502229.51	5443258.34	2.58	0	500	76.5	76.5	0.0	0.0	79.2	5.0	-1.3	0.0	0.0	0.0	0.0	-0.0	-6.4	-6.4
6	502229.51	5443258.34	2.58	0	1000	73.7	73.7	0.0	0.0	79.2	9.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-13.2	-13.2
7	502229.51	5443258.34	2.58	0	2000	69.9	69.9	0.0	0.0	79.2	24.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-32.3	-32.3
8	502229.51	5443258.34	2.58	0	4000	64.7	64.7	0.0	0.0	79.2	84.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-96.8	-96.8
9	502229.51	5443258.34	2.58	0	8000	55.6	55.6	0.0	0.0	79.2	299.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-321.7	-321.7

Point Source, ISO 9613, Name: "Em_Inv1", ID: "Em_Inv1"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500760.53	5441418.41	2.60	0	63	68.1	68.1	0.0	0.0	58.0	0.0	-3.2	0.0	0.0	0.0	0.0	-0.0	13.2	13.2
2	500760.53	5441418.41	2.60	0	125	78.9	78.9	0.0	0.0	58.0	0.1	2.5	0.0	0.0	0.0	0.0	-0.0	18.3	18.3
3	500760.53	5441418.41	2.60	0	250	85.5	85.5	0.0	0.0	58.0	0.2	3.3	0.0	0.0	0.0	0.0	-0.0	24.0	24.0
4	500760.53	5441418.41	2.60	0	500	87.3	87.3	0.0	0.0	58.0	0.4	-0.5	0.0	0.0	0.0	0.0	-0.0	29.3	29.3

Point Source, ISO 9613, Name: "Em_Inv1", ID: "Em_Inv1"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
5	500760.53	5441418.41	2.60	0	1000	83.7	83.7	0.0	0.0	58.0	0.8	-0.9	0.0	0.0	0.0	0.0	-0.0	25.8	25.8
6	500760.53	5441418.41	2.60	0	2000	79.1	79.1	0.0	0.0	58.0	2.2	-1.0	0.0	0.0	0.0	0.0	-0.0	19.8	19.8
7	500760.53	5441418.41	2.60	0	4000	70.0	70.0	0.0	0.0	58.0	7.4	-1.0	0.0	0.0	0.0	0.0	-0.0	5.5	5.5
8	500760.53	5441418.41	2.60	0	8000	77.7	77.7	0.0	0.0	58.0	26.3	-1.0	0.0	0.0	0.0	0.0	-0.0	-5.7	-5.7

Point Source, ISO 9613, Name: "Em_Inv10", ID: "Em_Inv10"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	499992.71	5441665.81	2.60	0	63	68.1	68.1	0.0	0.0	67.6	0.1	-5.1	0.0	0.0	0.0	0.0	-0.0	5.5	5.5
2	499992.71	5441665.81	2.60	0	125	78.9	78.9	0.0	0.0	67.6	0.3	3.6	0.0	0.0	0.0	0.0	-0.0	7.4	7.4
3	499992.71	5441665.81	2.60	0	250	85.5	85.5	0.0	0.0	67.6	0.7	2.7	0.0	0.0	0.0	0.0	-0.0	14.4	14.4
4	499992.71	5441665.81	2.60	0	500	87.3	87.3	0.0	0.0	67.6	1.3	-1.1	0.0	0.0	0.0	0.0	-0.0	19.4	19.4
5	499992.71	5441665.81	2.60	0	1000	83.7	83.7	0.0	0.0	67.6	2.5	-1.5	0.0	0.0	0.0	0.0	-0.0	15.1	15.1
6	499992.71	5441665.81	2.60	0	2000	79.1	79.1	0.0	0.0	67.6	6.5	-1.5	0.0	0.0	0.0	0.0	-0.0	6.5	6.5
7	499992.71	5441665.81	2.60	0	4000	70.0	70.0	0.0	0.0	67.6	22.2	-1.5	0.0	0.0	0.0	0.0	-0.0	-18.3	-18.3
8	499992.71	5441665.81	2.60	0	8000	77.7	77.7	0.0	0.0	67.6	79.2	-1.5	0.0	0.0	0.0	0.0	-0.0	-67.6	-67.6

Point Source, ISO 9613, Name: "Em_Inv11", ID: "Em_Inv11"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	499992.71	5441505.71	2.60	0	63	68.1	68.1	0.0	0.0	66.7	0.1	-5.0	0.0	0.0	0.0	0.0	-0.0	6.3	6.3
2	499992.71	5441505.71	2.60	0	125	78.9	78.9	0.0	0.0	66.7	0.3	3.4	0.0	0.0	0.0	0.0	-0.0	8.6	8.6
3	499992.71	5441505.71	2.60	0	250	85.5	85.5	0.0	0.0	66.7	0.6	2.8	0.0	0.0	0.0	0.0	-0.0	15.4	15.4
4	499992.71	5441505.71	2.60	0	500	87.3	87.3	0.0	0.0	66.7	1.2	-1.1	0.0	0.0	0.0	0.0	-0.0	20.5	20.5
5	499992.71	5441505.71	2.60	0	1000	83.7	83.7	0.0	0.0	66.7	2.2	-1.5	0.0	0.0	0.0	0.0	-0.0	16.3	16.3
6	499992.71	5441505.71	2.60	0	2000	79.1	79.1	0.0	0.0	66.7	5.9	-1.5	0.0	0.0	0.0	0.0	-0.0	8.0	8.0
7	499992.71	5441505.71	2.60	0	4000	70.0	70.0	0.0	0.0	66.7	19.9	-1.5	0.0	0.0	0.0	0.0	-0.0	-15.1	-15.1
8	499992.71	5441505.71	2.60	0	8000	77.7	77.7	0.0	0.0	66.7	71.0	-1.5	0.0	0.0	0.0	0.0	-0.0	-58.5	-58.5

Point Source, ISO 9613, Name: "Em_Inv2", ID: "Em_Inv2"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500552.40	5441520.21	2.60	0	63	68.1	68.1	0.0	0.0	57.7	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	13.4	13.4
2	500552.40	5441520.21	2.60	0	125	78.9	78.9	0.0	0.0	57.7	0.1	2.5	0.0	0.0	0.0	0.0	-0.0	18.7	18.7
3	500552.40	5441520.21	2.60	0	250	85.5	85.5	0.0	0.0	57.7	0.2	3.3	0.0	0.0	0.0	0.0	-0.0	24.3	24.3
4	500552.40	5441520.21	2.60	0	500	87.3	87.3	0.0	0.0	57.7	0.4	-0.5	0.0	0.0	0.0	0.0	-0.0	29.7	29.7
5	500552.40	5441520.21	2.60	0	1000	83.7	83.7	0.0	0.0	57.7	0.8	-0.9	0.0	0.0	0.0	0.0	-0.0	26.1	26.1
6	500552.40	5441520.21	2.60	0	2000	79.1	79.1	0.0	0.0	57.7	2.1	-0.9	0.0	0.0	0.0	0.0	-0.0	20.3	20.3
7	500552.40	5441520.21	2.60	0	4000	70.0	70.0	0.0	0.0	57.7	7.1	-0.9	0.0	0.0	0.0	0.0	-0.0	6.2	6.2
8	500552.40	5441520.21	2.60	0	8000	77.7	77.7	0.0	0.0	57.7	25.2	-0.9	0.0	0.0	0.0	0.0	-0.0	-4.3	-4.3

Point Source, ISO 9613, Name: "Em_Inv3", ID: "Em_Inv3"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500760.53	5441687.21	2.60	0	63	68.1	68.1	0.0	0.0	63.6	0.1	-4.5	0.0	0.0	0.0	0.0	-0.0	8.9	8.9
2	500760.53	5441687.21	2.60	0	125	78.9	78.9	0.0	0.0	63.6	0.2	2.9	0.0	0.0	0.0	0.0	-0.0	12.2	12.2
3	500760.53	5441687.21	2.60	0	250	85.5	85.5	0.0	0.0	63.6	0.5	2.9	0.0	0.0	0.0	0.0	-0.0	18.5	18.5
4	500760.53	5441687.21	2.60	0	500	87.3	87.3	0.0	0.0	63.6	0.8	-0.9	0.0	0.0	0.0	0.0	-0.0	23.7	23.7
5	500760.53	5441687.21	2.60	0	1000	83.7	83.7	0.0	0.0	63.6	1.6	-1.3	0.0	0.0	0.0	0.0	-0.0	19.8	19.8
6	500760.53	5441687.21	2.60	0	2000	79.1	79.1	0.0	0.0	63.6	4.1	-1.4	0.0	0.0	0.0	0.0	-0.0	12.7	12.7
7	500760.53	5441687.21	2.60	0	4000	70.0	70.0	0.0	0.0	63.6	14.1	-1.4	0.0	0.0	0.0	0.0	-0.0	-6.3	-6.3
8	500760.53	5441687.21	2.60	0	8000	77.7	77.7	0.0	0.0	63.6	50.1	-1.4	0.0	0.0	0.0	0.0	-0.0	-34.7	-34.7

Point Source, ISO 9613, Name: "Em_Inv4", ID: "Em_Inv4"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500516.20	5441733.01	2.60	0	63	68.1	68.1	0.0	0.0	63.7	0.1	-4.5	0.0	0.0	0.0	0.0	-0.0	8.9	8.9
2	500516.20	5441733.01	2.60	0	125	78.9	78.9	0.0	0.0	63.7	0.2	2.9	0.0	0.0	0.0	0.0	-0.0	12.2	12.2
3	500516.20	5441733.01	2.60	0	250	85.5	85.5	0.0	0.0	63.7	0.5	2.9	0.0	0.0	0.0	0.0	-0.0	18.5	18.5
4	500516.20	5441733.01	2.60	0	500	87.3	87.3	0.0	0.0	63.7	0.8	-0.9	0.0	0.0	0.0	0.0	-0.0	23.7	23.7
5	500516.20	5441733.01	2.60	0	1000	83.7	83.7	0.0	0.0	63.7	1.6	-1.4	0.0	0.0	0.0	0.0	-0.0	19.8	19.8
6	500516.20	5441733.01	2.60	0	2000	79.1	79.1	0.0	0.0	63.7	4.2	-1.4	0.0	0.0	0.0	0.0	-0.0	12.6	12.6
7	500516.20	5441733.01	2.60	0	4000	70.0	70.0	0.0	0.0	63.7	14.1	-1.4	0.0	0.0	0.0	0.0	-0.0	-6.5	-6.5

Point Source, ISO 9613, Name: "Em_Inv4", ID: "Em_Inv4"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
8	500516.20	5441733.01	2.60	0	8000	77.7	77.7	0.0	0.0	63.7	50.4	-1.4	0.0	0.0	0.0	0.0	-0.0	-35.0	-35.0

Point Source, ISO 9613, Name: "Em_Inv5", ID: "Em_Inv5"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500760.53	5441956.01	2.60	0	63	68.1	68.1	0.0	0.0	67.6	0.1	-5.1	0.0	0.0	0.0	0.0	-0.0	5.4	5.4
2	500760.53	5441956.01	2.60	0	125	78.9	78.9	0.0	0.0	67.6	0.3	3.6	0.0	0.0	0.0	0.0	-0.0	7.4	7.4
3	500760.53	5441956.01	2.60	0	250	85.5	85.5	0.0	0.0	67.6	0.7	2.7	0.0	0.0	0.0	0.0	-0.0	14.4	14.4
4	500760.53	5441956.01	2.60	0	500	87.3	87.3	0.0	0.0	67.6	1.3	-1.1	0.0	0.0	0.0	0.0	-0.0	19.4	19.4
5	500760.53	5441956.01	2.60	0	1000	83.7	83.7	0.0	0.0	67.6	2.5	-1.5	0.0	0.0	0.0	0.0	-0.0	15.1	15.1
6	500760.53	5441956.01	2.60	0	2000	79.1	79.1	0.0	0.0	67.6	6.6	-1.5	0.0	0.0	0.0	0.0	-0.0	6.4	6.4
7	500760.53	5441956.01	2.60	0	4000	70.0	70.0	0.0	0.0	67.6	22.3	-1.5	0.0	0.0	0.0	0.0	-0.0	-18.4	-18.4
8	500760.53	5441956.01	2.60	0	8000	77.7	77.7	0.0	0.0	67.6	79.4	-1.5	0.0	0.0	0.0	0.0	-0.0	-67.8	-67.8

Point Source, ISO 9613, Name: "Em_Inv6", ID: "Em_Inv6"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500498.10	5441901.01	2.60	0	63	68.1	68.1	0.0	0.0	66.6	0.1	-4.9	0.0	0.0	0.0	0.0	-0.0	6.4	6.4
2	500498.10	5441901.01	2.60	0	125	78.9	78.9	0.0	0.0	66.6	0.3	3.4	0.0	0.0	0.0	0.0	-0.0	8.7	8.7
3	500498.10	5441901.01	2.60	0	250	85.5	85.5	0.0	0.0	66.6	0.6	2.8	0.0	0.0	0.0	0.0	-0.0	15.5	15.5
4	500498.10	5441901.01	2.60	0	500	87.3	87.3	0.0	0.0	66.6	1.2	-1.0	0.0	0.0	0.0	0.0	-0.0	20.6	20.6
5	500498.10	5441901.01	2.60	0	1000	83.7	83.7	0.0	0.0	66.6	2.2	-1.5	0.0	0.0	0.0	0.0	-0.0	16.4	16.4
6	500498.10	5441901.01	2.60	0	2000	79.1	79.1	0.0	0.0	66.6	5.8	-1.5	0.0	0.0	0.0	0.0	-0.0	8.2	8.2
7	500498.10	5441901.01	2.60	0	4000	70.0	70.0	0.0	0.0	66.6	19.7	-1.5	0.0	0.0	0.0	0.0	-0.0	-14.7	-14.7
8	500498.10	5441901.01	2.60	0	8000	77.7	77.7	0.0	0.0	66.6	70.1	-1.5	0.0	0.0	0.0	0.0	-0.0	-57.5	-57.5

Point Source, ISO 9613, Name: "Em_Inv7", ID: "Em_Inv7"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500498.10	5442057.81	2.60	0	63	68.1	68.1	0.0	0.0	68.6	0.1	-5.1	0.0	0.0	0.0	0.0	-0.0	4.6	4.6
2	500498.10	5442057.81	2.60	0	125	78.9	78.9	0.0	0.0	68.6	0.3	3.8	0.0	0.0	0.0	0.0	-0.0	6.2	6.2
3	500498.10	5442057.81	2.60	0	250	85.5	85.5	0.0	0.0	68.6	0.8	2.7	0.0	0.0	0.0	0.0	-0.0	13.4	13.4
4	500498.10	5442057.81	2.60	0	500	87.3	87.3	0.0	0.0	68.6	1.5	-1.1	0.0	0.0	0.0	0.0	-0.0	18.4	18.4
5	500498.10	5442057.81	2.60	0	1000	83.7	83.7	0.0	0.0	68.6	2.8	-1.5	0.0	0.0	0.0	0.0	-0.0	13.9	13.9
6	500498.10	5442057.81	2.60	0	2000	79.1	79.1	0.0	0.0	68.6	7.3	-1.6	0.0	0.0	0.0	0.0	-0.0	4.8	4.8
7	500498.10	5442057.81	2.60	0	4000	70.0	70.0	0.0	0.0	68.6	24.8	-1.6	0.0	0.0	0.0	0.0	-0.0	-21.8	-21.8
8	500498.10	5442057.81	2.60	0	8000	77.7	77.7	0.0	0.0	68.6	88.4	-1.6	0.0	0.0	0.0	0.0	-0.0	-77.7	-77.7

Point Source, ISO 9613, Name: "Em_Inv8", ID: "Em_Inv8"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500461.90	5442281.81	2.60	0	63	68.1	68.1	0.0	0.0	70.8	0.1	-5.3	0.0	0.0	0.0	0.0	-0.0	2.5	2.5
2	500461.90	5442281.81	2.60	0	125	78.9	78.9	0.0	0.0	70.8	0.4	4.1	0.0	0.0	0.0	0.0	-0.0	3.5	3.5
3	500461.90	5442281.81	2.60	0	250	85.5	85.5	0.0	0.0	70.8	1.0	2.6	0.0	0.0	0.0	0.0	-0.0	11.0	11.0
4	500461.90	5442281.81	2.60	0	500	87.3	87.3	0.0	0.0	70.8	1.9	-1.2	0.0	0.0	0.0	0.0	-0.0	15.7	15.7
5	500461.90	5442281.81	2.60	0	1000	83.7	83.7	0.0	0.0	70.8	3.6	-1.6	0.0	0.0	0.0	0.0	-0.0	10.9	10.9
6	500461.90	5442281.81	2.60	0	2000	79.1	79.1	0.0	0.0	70.8	9.5	-1.6	0.0	0.0	0.0	0.0	-0.0	0.4	0.4
7	500461.90	5442281.81	2.60	0	4000	70.0	70.0	0.0	0.0	70.8	32.2	-1.6	0.0	0.0	0.0	0.0	-0.0	-31.4	-31.4
8	500461.90	5442281.81	2.60	0	8000	77.7	77.7	0.0	0.0	70.8	114.8	-1.6	0.0	0.0	0.0	0.0	-0.0	-106.4	-106.4

Point Source, ISO 9613, Name: "Em_Inv9", ID: "Em_Inv9"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500651.93	5442280.81	2.60	0	63	68.1	68.1	0.0	0.0	70.8	0.1	-5.3	0.0	0.0	0.0	0.0	-0.0	2.5	2.5
2	500651.93	5442280.81	2.60	0	125	78.9	78.9	0.0	0.0	70.8	0.4	4.1	0.0	0.0	0.0	0.0	-0.0	3.6	3.6
3	500651.93	5442280.81	2.60	0	250	85.5	85.5	0.0	0.0	70.8	1.0	2.6	0.0	0.0	0.0	0.0	-0.0	11.0	11.0
4	500651.93	5442280.81	2.60	0	500	87.3	87.3	0.0	0.0	70.8	1.9	-1.2	0.0	0.0	0.0	0.0	-0.0	15.8	15.8
5	500651.93	5442280.81	2.60	0	1000	83.7	83.7	0.0	0.0	70.8	3.6	-1.6	0.0	0.0	0.0	0.0	-0.0	10.9	10.9
6	500651.93	5442280.81	2.60	0	2000	79.1	79.1	0.0	0.0	70.8	9.5	-1.6	0.0	0.0	0.0	0.0	-0.0	0.4	0.4
7	500651.93	5442280.81	2.60	0	4000	70.0	70.0	0.0	0.0	70.8	32.1	-1.6	0.0	0.0	0.0	0.0	-0.0	-31.3	-31.3
8	500651.93	5442280.81	2.60	0	8000	77.7	77.7	0.0	0.0	70.8	114.5	-1.6	0.0	0.0	0.0	0.0	-0.0	-106.0	-106.0

Point Source, ISO 9613, Name: "Em_Trans1", ID: "Em_Trans1"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500755.03	5441418.91	2.58	0	32	37.3	37.3	0.0	0.0	57.9	0.0	-3.1	0.0	0.0	0.0	0.0	-0.0	-17.5	-17.5
2	500755.03	5441418.91	2.58	0	63	56.5	56.5	0.0	0.0	57.9	0.0	-3.1	0.0	0.0	0.0	0.0	-0.0	1.7	1.7
3	500755.03	5441418.91	2.58	0	125	68.6	68.6	0.0	0.0	57.9	0.1	2.5	0.0	0.0	0.0	0.0	-0.0	8.2	8.2
4	500755.03	5441418.91	2.58	0	250	71.1	71.1	0.0	0.0	57.9	0.2	3.3	0.0	0.0	0.0	0.0	-0.0	9.7	9.7
5	500755.03	5441418.91	2.58	0	500	76.5	76.5	0.0	0.0	57.9	0.4	-0.5	0.0	0.0	0.0	0.0	-0.0	18.7	18.7
6	500755.03	5441418.91	2.58	0	1000	73.7	73.7	0.0	0.0	57.9	0.8	-0.9	0.0	0.0	0.0	0.0	-0.0	16.0	16.0
7	500755.03	5441418.91	2.58	0	2000	69.9	69.9	0.0	0.0	57.9	2.1	-0.9	0.0	0.0	0.0	0.0	-0.0	10.8	10.8
8	500755.03	5441418.91	2.58	0	4000	64.7	64.7	0.0	0.0	57.9	7.2	-0.9	0.0	0.0	0.0	0.0	-0.0	0.5	0.5
9	500755.03	5441418.91	2.58	0	8000	55.6	55.6	0.0	0.0	57.9	25.8	-0.9	0.0	0.0	0.0	0.0	-0.0	-27.1	-27.1

Point Source, ISO 9613, Name: "Em_Trans10", ID: "Em_Trans10"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	499998.21	5441665.31	2.58	0	32	37.3	37.3	0.0	0.0	67.6	0.0	-5.0	0.0	0.0	0.0	0.0	-0.0	-25.2	-25.2
2	499998.21	5441665.31	2.58	0	63	56.5	56.5	0.0	0.0	67.6	0.1	-5.0	0.0	0.0	0.0	0.0	-0.0	-6.1	-6.1
3	499998.21	5441665.31	2.58	0	125	68.6	68.6	0.0	0.0	67.6	0.3	3.6	0.0	0.0	0.0	0.0	-0.0	-2.8	-2.8
4	499998.21	5441665.31	2.58	0	250	71.1	71.1	0.0	0.0	67.6	0.7	2.8	0.0	0.0	0.0	0.0	-0.0	0.1	0.1
5	499998.21	5441665.31	2.58	0	500	76.5	76.5	0.0	0.0	67.6	1.3	-1.1	0.0	0.0	0.0	0.0	-0.0	8.7	8.7
6	499998.21	5441665.31	2.58	0	1000	73.7	73.7	0.0	0.0	67.6	2.5	-1.5	0.0	0.0	0.0	0.0	-0.0	5.2	5.2
7	499998.21	5441665.31	2.58	0	2000	69.9	69.9	0.0	0.0	67.6	6.5	-1.5	0.0	0.0	0.0	0.0	-0.0	-2.6	-2.6
8	499998.21	5441665.31	2.58	0	4000	64.7	64.7	0.0	0.0	67.6	22.0	-1.5	0.0	0.0	0.0	0.0	-0.0	-23.4	-23.4
9	499998.21	5441665.31	2.58	0	8000	55.6	55.6	0.0	0.0	67.6	78.6	-1.5	0.0	0.0	0.0	0.0	-0.0	-89.1	-89.1

Point Source, ISO 9613, Name: "Em_Trans11", ID: "Em_Trans11"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	499998.21	5441505.21	2.58	0	32	37.3	37.3	0.0	0.0	66.6	0.0	-4.9	0.0	0.0	0.0	0.0	-0.0	-24.4	-24.4
2	499998.21	5441505.21	2.58	0	63	56.5	56.5	0.0	0.0	66.6	0.1	-4.9	0.0	0.0	0.0	0.0	-0.0	-5.2	-5.2
3	499998.21	5441505.21	2.58	0	125	68.6	68.6	0.0	0.0	66.6	0.3	3.4	0.0	0.0	0.0	0.0	-0.0	-1.7	-1.7
4	499998.21	5441505.21	2.58	0	250	71.1	71.1	0.0	0.0	66.6	0.6	2.8	0.0	0.0	0.0	0.0	-0.0	1.1	1.1
5	499998.21	5441505.21	2.58	0	500	76.5	76.5	0.0	0.0	66.6	1.2	-1.0	0.0	0.0	0.0	0.0	-0.0	9.8	9.8
6	499998.21	5441505.21	2.58	0	1000	73.7	73.7	0.0	0.0	66.6	2.2	-1.5	0.0	0.0	0.0	0.0	-0.0	6.4	6.4
7	499998.21	5441505.21	2.58	0	2000	69.9	69.9	0.0	0.0	66.6	5.8	-1.5	0.0	0.0	0.0	0.0	-0.0	-1.0	-1.0
8	499998.21	5441505.21	2.58	0	4000	64.7	64.7	0.0	0.0	66.6	19.7	-1.5	0.0	0.0	0.0	0.0	-0.0	-20.2	-20.2
9	499998.21	5441505.21	2.58	0	8000	55.6	55.6	0.0	0.0	66.6	70.4	-1.5	0.0	0.0	0.0	0.0	-0.0	-79.9	-79.9

Point Source, ISO 9613, Name: "Em_Trans2", ID: "Em_Trans2"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500557.90	5441519.71	2.58	0	32	37.3	37.3	0.0	0.0	57.6	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	-17.3	-17.3
2	500557.90	5441519.71	2.58	0	63	56.5	56.5	0.0	0.0	57.6	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	1.9	1.9
3	500557.90	5441519.71	2.58	0	125	68.6	68.6	0.0	0.0	57.6	0.1	2.5	0.0	0.0	0.0	0.0	-0.0	8.4	8.4
4	500557.90	5441519.71	2.58	0	250	71.1	71.1	0.0	0.0	57.6	0.2	3.3	0.0	0.0	0.0	0.0	-0.0	9.9	9.9
5	500557.90	5441519.71	2.58	0	500	76.5	76.5	0.0	0.0	57.6	0.4	-0.5	0.0	0.0	0.0	0.0	-0.0	18.9	18.9
6	500557.90	5441519.71	2.58	0	1000	73.7	73.7	0.0	0.0	57.6	0.8	-0.9	0.0	0.0	0.0	0.0	-0.0	16.2	16.2
7	500557.90	5441519.71	2.58	0	2000	69.9	69.9	0.0	0.0	57.6	2.1	-0.9	0.0	0.0	0.0	0.0	-0.0	11.1	11.1
8	500557.90	5441519.71	2.58	0	4000	64.7	64.7	0.0	0.0	57.6	7.0	-0.9	0.0	0.0	0.0	0.0	-0.0	0.9	0.9
9	500557.90	5441519.71	2.58	0	8000	55.6	55.6	0.0	0.0	57.6	25.1	-0.9	0.0	0.0	0.0	0.0	-0.0	-26.3	-26.3

Point Source, ISO 9613, Name: "Em_Trans3", ID: "Em_Trans3"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500755.03	5441687.71	2.58	0	32	37.3	37.3	0.0	0.0	63.6	0.0	-4.5	0.0	0.0	0.0	0.0	-0.0	-21.8	-21.8
2	500755.03	5441687.71	2.58	0	63	56.5	56.5	0.0	0.0	63.6	0.1	-4.5	0.0	0.0	0.0	0.0	-0.0	-2.6	-2.6
3	500755.03	5441687.71	2.58	0	125	68.6	68.6	0.0	0.0	63.6	0.2	2.9	0.0	0.0	0.0	0.0	-0.0	2.0	2.0
4	500755.03	5441687.71	2.58	0	250	71.1	71.1	0.0	0.0	63.6	0.5	2.9	0.0	0.0	0.0	0.0	-0.0	4.1	4.1
5	500755.03	5441687.71	2.58	0	500	76.5	76.5	0.0	0.0	63.6	0.8	-0.9	0.0	0.0	0.0	0.0	-0.0	13.0	13.0
6	500755.03	5441687.71	2.58	0	1000	73.7	73.7	0.0	0.0	63.6	1.6	-1.3	0.0	0.0	0.0	0.0	-0.0	9.9	9.9
7	500755.03	5441687.71	2.58	0	2000	69.9	69.9	0.0	0.0	63.6	4.1	-1.4	0.0	0.0	0.0	0.0	-0.0	3.5	3.5
8	500755.03	5441687.71	2.58	0	4000	64.7	64.7	0.0	0.0	63.6	14.0	-1.4	0.0	0.0	0.0	0.0	-0.0	-11.5	-11.5
9	500755.03	5441687.71	2.58	0	8000	55.6	55.6	0.0	0.0	63.6	49.9	-1.4	0.0	0.0	0.0	0.0	-0.0	-56.5	-56.5

Point Source, ISO 9613, Name: "Em_Trans4", ID: "Em_Trans4"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500521.70	5441732.51	2.58	0	32	37.3	37.3	0.0	0.0	63.7	0.0	-4.5	0.0	0.0	0.0	0.0	-0.0	-21.9	-21.9
2	500521.70	5441732.51	2.58	0	63	56.5	56.5	0.0	0.0	63.7	0.1	-4.5	0.0	0.0	0.0	0.0	-0.0	-2.7	-2.7
3	500521.70	5441732.51	2.58	0	125	68.6	68.6	0.0	0.0	63.7	0.2	2.9	0.0	0.0	0.0	0.0	-0.0	1.9	1.9
4	500521.70	5441732.51	2.58	0	250	71.1	71.1	0.0	0.0	63.7	0.5	2.9	0.0	0.0	0.0	0.0	-0.0	4.1	4.1
5	500521.70	5441732.51	2.58	0	500	76.5	76.5	0.0	0.0	63.7	0.8	-0.9	0.0	0.0	0.0	0.0	-0.0	12.9	12.9
6	500521.70	5441732.51	2.58	0	1000	73.7	73.7	0.0	0.0	63.7	1.6	-1.4	0.0	0.0	0.0	0.0	-0.0	9.8	9.8
7	500521.70	5441732.51	2.58	0	2000	69.9	69.9	0.0	0.0	63.7	4.1	-1.4	0.0	0.0	0.0	0.0	-0.0	3.4	3.4
8	500521.70	5441732.51	2.58	0	4000	64.7	64.7	0.0	0.0	63.7	14.1	-1.4	0.0	0.0	0.0	0.0	-0.0	-11.7	-11.7
9	500521.70	5441732.51	2.58	0	8000	55.6	55.6	0.0	0.0	63.7	50.3	-1.4	0.0	0.0	0.0	0.0	-0.0	-57.0	-57.0

Point Source, ISO 9613, Name: "Em_Trans5", ID: "Em_Trans5"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500755.03	5441956.51	2.58	0	32	37.3	37.3	0.0	0.0	67.6	0.0	-5.1	0.0	0.0	0.0	0.0	-0.0	-25.3	-25.3
2	500755.03	5441956.51	2.58	0	63	56.5	56.5	0.0	0.0	67.6	0.1	-5.1	0.0	0.0	0.0	0.0	-0.0	-6.1	-6.1
3	500755.03	5441956.51	2.58	0	125	68.6	68.6	0.0	0.0	67.6	0.3	3.6	0.0	0.0	0.0	0.0	-0.0	-2.9	-2.9
4	500755.03	5441956.51	2.58	0	250	71.1	71.1	0.0	0.0	67.6	0.7	2.8	0.0	0.0	0.0	0.0	-0.0	0.0	0.0
5	500755.03	5441956.51	2.58	0	500	76.5	76.5	0.0	0.0	67.6	1.3	-1.1	0.0	0.0	0.0	0.0	-0.0	8.6	8.6
6	500755.03	5441956.51	2.58	0	1000	73.7	73.7	0.0	0.0	67.6	2.5	-1.5	0.0	0.0	0.0	0.0	-0.0	5.1	5.1
7	500755.03	5441956.51	2.58	0	2000	69.9	69.9	0.0	0.0	67.6	6.6	-1.5	0.0	0.0	0.0	0.0	-0.0	-2.8	-2.8
8	500755.03	5441956.51	2.58	0	4000	64.7	64.7	0.0	0.0	67.6	22.2	-1.5	0.0	0.0	0.0	0.0	-0.0	-23.6	-23.6
9	500755.03	5441956.51	2.58	0	8000	55.6	55.6	0.0	0.0	67.6	79.3	-1.5	0.0	0.0	0.0	0.0	-0.0	-89.8	-89.8

Point Source, ISO 9613, Name: "Em_Trans6", ID: "Em_Trans6"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500503.60	5441900.51	2.58	0	32	37.3	37.3	0.0	0.0	66.5	0.0	-4.9	0.0	0.0	0.0	0.0	-0.0	-24.3	-24.3
2	500503.60	5441900.51	2.58	0	63	56.5	56.5	0.0	0.0	66.5	0.1	-4.9	0.0	0.0	0.0	0.0	-0.0	-5.2	-5.2
3	500503.60	5441900.51	2.58	0	125	68.6	68.6	0.0	0.0	66.5	0.3	3.4	0.0	0.0	0.0	0.0	-0.0	-1.6	-1.6
4	500503.60	5441900.51	2.58	0	250	71.1	71.1	0.0	0.0	66.5	0.6	2.8	0.0	0.0	0.0	0.0	-0.0	1.1	1.1
5	500503.60	5441900.51	2.58	0	500	76.5	76.5	0.0	0.0	66.5	1.2	-1.0	0.0	0.0	0.0	0.0	-0.0	9.8	9.8
6	500503.60	5441900.51	2.58	0	1000	73.7	73.7	0.0	0.0	66.5	2.2	-1.5	0.0	0.0	0.0	0.0	-0.0	6.4	6.4
7	500503.60	5441900.51	2.58	0	2000	69.9	69.9	0.0	0.0	66.5	5.8	-1.5	0.0	0.0	0.0	0.0	-0.0	-1.0	-1.0
8	500503.60	5441900.51	2.58	0	4000	64.7	64.7	0.0	0.0	66.5	19.6	-1.5	0.0	0.0	0.0	0.0	-0.0	-20.0	-20.0
9	500503.60	5441900.51	2.58	0	8000	55.6	55.6	0.0	0.0	66.5	70.0	-1.5	0.0	0.0	0.0	0.0	-0.0	-79.5	-79.5

Point Source, ISO 9613, Name: "Em_Trans7", ID: "Em_Trans7"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500503.60	5442057.31	2.58	0	32	37.3	37.3	0.0	0.0	68.6	0.0	-5.2	0.0	0.0	0.0	0.0	-0.0	-26.1	-26.1
2	500503.60	5442057.31	2.58	0	63	56.5	56.5	0.0	0.0	68.6	0.1	-5.2	0.0	0.0	0.0	0.0	-0.0	-7.0	-7.0
3	500503.60	5442057.31	2.58	0	125	68.6	68.6	0.0	0.0	68.6	0.3	3.8	0.0	0.0	0.0	0.0	-0.0	-4.1	-4.1
4	500503.60	5442057.31	2.58	0	250	71.1	71.1	0.0	0.0	68.6	0.8	2.7	0.0	0.0	0.0	0.0	-0.0	-1.0	-1.0
5	500503.60	5442057.31	2.58	0	500	76.5	76.5	0.0	0.0	68.6	1.5	-1.1	0.0	0.0	0.0	0.0	-0.0	7.6	7.6
6	500503.60	5442057.31	2.58	0	1000	73.7	73.7	0.0	0.0	68.6	2.8	-1.5	0.0	0.0	0.0	0.0	-0.0	3.9	3.9
7	500503.60	5442057.31	2.58	0	2000	69.9	69.9	0.0	0.0	68.6	7.3	-1.6	0.0	0.0	0.0	0.0	-0.0	-4.4	-4.4
8	500503.60	5442057.31	2.58	0	4000	64.7	64.7	0.0	0.0	68.6	24.7	-1.6	0.0	0.0	0.0	0.0	-0.0	-27.1	-27.1
9	500503.60	5442057.31	2.58	0	8000	55.6	55.6	0.0	0.0	68.6	88.2	-1.6	0.0	0.0	0.0	0.0	-0.0	-99.6	-99.6

Point Source, ISO 9613, Name: "Em_Trans8", ID: "Em_Trans8"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500467.40	5442281.31	2.58	0	32	37.3	37.3	0.0	0.0	70.8	0.0	-5.3	0.0	0.0	0.0	0.0	-0.0	-28.2	-28.2
2	500467.40	5442281.31	2.58	0	63	56.5	56.5	0.0	0.0	70.8	0.1	-5.3	0.0	0.0	0.0	0.0	-0.0	-9.1	-9.1
3	500467.40	5442281.31	2.58	0	125	68.6	68.6	0.0	0.0	70.8	0.4	4.1	0.0	0.0	0.0	0.0	-0.0	-6.8	-6.8
4	500467.40	5442281.31	2.58	0	250	71.1	71.1	0.0	0.0	70.8	1.0	2.7	0.0	0.0	0.0	0.0	-0.0	-3.4	-3.4
5	500467.40	5442281.31	2.58	0	500	76.5	76.5	0.0	0.0	70.8	1.9	-1.2	0.0	0.0	0.0	0.0	-0.0	4.9	4.9
6	500467.40	5442281.31	2.58	0	1000	73.7	73.7	0.0	0.0	70.8	3.6	-1.6	0.0	0.0	0.0	0.0	-0.0	0.9	0.9
7	500467.40	5442281.31	2.58	0	2000	69.9	69.9	0.0	0.0	70.8	9.5	-1.6	0.0	0.0	0.0	0.0	-0.0	-8.8	-8.8
8	500467.40	5442281.31	2.58	0	4000	64.7	64.7	0.0	0.0	70.8	32.2	-1.6	0.0	0.0	0.0	0.0	-0.0	-36.7	-36.7
9	500467.40	5442281.31	2.58	0	8000	55.6	55.6	0.0	0.0	70.8	114.7	-1.6	0.0	0.0	0.0	0.0	-0.0	-128.3	-128.3

Point Source, ISO 9613, Name: "Em_Trans9", ID: "Em_Trans9"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500646.43	5442281.31	2.58	0	32	37.3	37.3	0.0	0.0	70.8	0.0	-5.3	0.0	0.0	0.0	0.0	-0.0	-28.2	-28.2
2	500646.43	5442281.31	2.58	0	63	56.5	56.5	0.0	0.0	70.8	0.1	-5.3	0.0	0.0	0.0	0.0	-0.0	-9.1	-9.1
3	500646.43	5442281.31	2.58	0	125	68.6	68.6	0.0	0.0	70.8	0.4	4.1	0.0	0.0	0.0	0.0	-0.0	-6.7	-6.7
4	500646.43	5442281.31	2.58	0	250	71.1	71.1	0.0	0.0	70.8	1.0	2.7	0.0	0.0	0.0	0.0	-0.0	-3.4	-3.4
5	500646.43	5442281.31	2.58	0	500	76.5	76.5	0.0	0.0	70.8	1.9	-1.2	0.0	0.0	0.0	0.0	-0.0	4.9	4.9
6	500646.43	5442281.31	2.58	0	1000	73.7	73.7	0.0	0.0	70.8	3.6	-1.6	0.0	0.0	0.0	0.0	-0.0	0.9	0.9
7	500646.43	5442281.31	2.58	0	2000	69.9	69.9	0.0	0.0	70.8	9.5	-1.6	0.0	0.0	0.0	0.0	-0.0	-8.8	-8.8
8	500646.43	5442281.31	2.58	0	4000	64.7	64.7	0.0	0.0	70.8	32.1	-1.6	0.0	0.0	0.0	0.0	-0.0	-36.6	-36.6
9	500646.43	5442281.31	2.58	0	8000	55.6	55.6	0.0	0.0	70.8	114.5	-1.6	0.0	0.0	0.0	0.0	-0.0	-128.1	-128.1

Point Source, ISO 9613, Name: "MM_Inv1", ID: "MM_Inv1"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501222.00	5443157.66	2.60	0	63	68.1	68.1	0.0	0.0	76.9	0.2	-5.7	0.0	0.0	0.0	0.0	-0.0	-3.3	-3.3
2	501222.00	5443157.66	2.60	0	125	78.9	78.9	0.0	0.0	76.9	0.8	4.2	0.0	0.0	0.0	0.0	-0.0	-3.0	-3.0
3	501222.00	5443157.66	2.60	0	250	85.5	85.5	0.0	0.0	76.9	2.0	2.5	0.0	0.0	0.0	0.0	-0.0	4.0	4.0
4	501222.00	5443157.66	2.60	0	500	87.3	87.3	0.0	0.0	76.9	3.8	-1.3	0.0	0.0	0.0	0.0	-0.0	7.9	7.9
5	501222.00	5443157.66	2.60	0	1000	83.7	83.7	0.0	0.0	76.9	7.2	-1.7	0.0	0.0	0.0	0.0	-0.0	1.3	1.3
6	501222.00	5443157.66	2.60	0	2000	79.1	79.1	0.0	0.0	76.9	19.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-15.1	-15.1
7	501222.00	5443157.66	2.60	0	4000	70.0	70.0	0.0	0.0	76.9	64.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-69.6	-69.6
8	501222.00	5443157.66	2.60	0	8000	77.7	77.7	0.0	0.0	76.9	229.7	-1.7	0.0	0.0	0.0	0.0	-0.0	-227.2	-227.2

Point Source, ISO 9613, Name: "MM_Inv2", ID: "MM_Inv2"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501240.10	5442978.46	2.60	0	63	68.1	68.1	0.0	0.0	76.1	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-2.6	-2.6
2	501240.10	5442978.46	2.60	0	125	78.9	78.9	0.0	0.0	76.1	0.7	4.2	0.0	0.0	0.0	0.0	-0.0	-2.2	-2.2
3	501240.10	5442978.46	2.60	0	250	85.5	85.5	0.0	0.0	76.1	1.9	2.6	0.0	0.0	0.0	0.0	-0.0	4.9	4.9
4	501240.10	5442978.46	2.60	0	500	87.3	87.3	0.0	0.0	76.1	3.5	-1.3	0.0	0.0	0.0	0.0	-0.0	9.0	9.0
5	501240.10	5442978.46	2.60	0	1000	83.7	83.7	0.0	0.0	76.1	6.6	-1.7	0.0	0.0	0.0	0.0	-0.0	2.7	2.7
6	501240.10	5442978.46	2.60	0	2000	79.1	79.1	0.0	0.0	76.1	17.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-12.8	-12.8
7	501240.10	5442978.46	2.60	0	4000	70.0	70.0	0.0	0.0	76.1	59.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-63.5	-63.5
8	501240.10	5442978.46	2.60	0	8000	77.7	77.7	0.0	0.0	76.1	210.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-207.6	-207.6

Point Source, ISO 9613, Name: "MM_Inv3", ID: "MM_Inv3"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501240.10	5442776.86	2.60	0	63	68.1	68.1	0.0	0.0	75.2	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-1.7	-1.7
2	501240.10	5442776.86	2.60	0	125	78.9	78.9	0.0	0.0	75.2	0.7	4.2	0.0	0.0	0.0	0.0	-0.0	-1.2	-1.2
3	501240.10	5442776.86	2.60	0	250	85.5	85.5	0.0	0.0	75.2	1.7	2.6	0.0	0.0	0.0	0.0	-0.0	6.1	6.1
4	501240.10	5442776.86	2.60	0	500	87.3	87.3	0.0	0.0	75.2	3.1	-1.2	0.0	0.0	0.0	0.0	-0.0	10.2	10.2
5	501240.10	5442776.86	2.60	0	1000	83.7	83.7	0.0	0.0	75.2	5.9	-1.7	0.0	0.0	0.0	0.0	-0.0	4.3	4.3
6	501240.10	5442776.86	2.60	0	2000	79.1	79.1	0.0	0.0	75.2	15.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-10.1	-10.1
7	501240.10	5442776.86	2.60	0	4000	70.0	70.0	0.0	0.0	75.2	53.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-56.5	-56.5
8	501240.10	5442776.86	2.60	0	8000	77.7	77.7	0.0	0.0	75.2	189.2	-1.7	0.0	0.0	0.0	0.0	-0.0	-185.0	-185.0

Point Source, ISO 9613, Name: "MM_Inv4", ID: "MM_Inv4"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501240.10	5442575.26	2.60	0	63	68.1	68.1	0.0	0.0	74.2	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-0.7	-0.7
2	501240.10	5442575.26	2.60	0	125	78.9	78.9	0.0	0.0	74.2	0.6	4.2	0.0	0.0	0.0	0.0	-0.0	-0.1	-0.1
3	501240.10	5442575.26	2.60	0	250	85.5	85.5	0.0	0.0	74.2	1.5	2.6	0.0	0.0	0.0	0.0	-0.0	7.3	7.3
4	501240.10	5442575.26	2.60	0	500	87.3	87.3	0.0	0.0	74.2	2.8	-1.2	0.0	0.0	0.0	0.0	-0.0	11.6	11.6
5	501240.10	5442575.26	2.60	0	1000	83.7	83.7	0.0	0.0	74.2	5.3	-1.7	0.0	0.0	0.0	0.0	-0.0	5.9	5.9
6	501240.10	5442575.26	2.60	0	2000	79.1	79.1	0.0	0.0	74.2	13.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-7.3	-7.3
7	501240.10	5442575.26	2.60	0	4000	70.0	70.0	0.0	0.0	74.2	47.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-49.6	-49.6
8	501240.10	5442575.26	2.60	0	8000	77.7	77.7	0.0	0.0	74.2	168.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-162.9	-162.9

Point Source, ISO 9613, Name: "MM_Inv5", ID: "MM_Inv5"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500977.67	5442553.91	2.60	0	63	68.1	68.1	0.0	0.0	73.4	0.2	-5.5	0.0	0.0	0.0	0.0	-0.0	0.1	0.1
2	500977.67	5442553.91	2.60	0	125	78.9	78.9	0.0	0.0	73.4	0.5	4.2	0.0	0.0	0.0	0.0	-0.0	0.8	0.8

Point Source, ISO 9613, Name: "MM_Inv5", ID: "MM_Inv5"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
3	500977.67	5442553.91	2.60	0	250	85.5	85.5	0.0	0.0	73.4	1.4	2.6	0.0	0.0	0.0	0.0	-0.0	8.2	8.2
4	500977.67	5442553.91	2.60	0	500	87.3	87.3	0.0	0.0	73.4	2.5	-1.2	0.0	0.0	0.0	0.0	-0.0	12.6	12.6
5	500977.67	5442553.91	2.60	0	1000	83.7	83.7	0.0	0.0	73.4	4.8	-1.7	0.0	0.0	0.0	0.0	-0.0	7.2	7.2
6	500977.67	5442553.91	2.60	0	2000	79.1	79.1	0.0	0.0	73.4	12.7	-1.7	0.0	0.0	0.0	0.0	-0.0	-5.3	-5.3
7	500977.67	5442553.91	2.60	0	4000	70.0	70.0	0.0	0.0	73.4	43.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-44.8	-44.8
8	500977.67	5442553.91	2.60	0	8000	77.7	77.7	0.0	0.0	73.4	153.7	-1.7	0.0	0.0	0.0	0.0	-0.0	-147.7	-147.7

Point Source, ISO 9613, Name: "MM_Inv6", ID: "MM_Inv6"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500977.67	5442755.51	2.60	0	63	68.1	68.1	0.0	0.0	74.6	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-1.1	-1.1
2	500977.67	5442755.51	2.60	0	125	78.9	78.9	0.0	0.0	74.6	0.6	4.2	0.0	0.0	0.0	0.0	-0.0	-0.5	-0.5
3	500977.67	5442755.51	2.60	0	250	85.5	85.5	0.0	0.0	74.6	1.6	2.6	0.0	0.0	0.0	0.0	-0.0	6.8	6.8
4	500977.67	5442755.51	2.60	0	500	87.3	87.3	0.0	0.0	74.6	2.9	-1.2	0.0	0.0	0.0	0.0	-0.0	11.1	11.1
5	500977.67	5442755.51	2.60	0	1000	83.7	83.7	0.0	0.0	74.6	5.5	-1.7	0.0	0.0	0.0	0.0	-0.0	5.3	5.3
6	500977.67	5442755.51	2.60	0	2000	79.1	79.1	0.0	0.0	74.6	14.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-8.4	-8.4
7	500977.67	5442755.51	2.60	0	4000	70.0	70.0	0.0	0.0	74.6	49.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-52.3	-52.3
8	500977.67	5442755.51	2.60	0	8000	77.7	77.7	0.0	0.0	74.6	176.2	-1.7	0.0	0.0	0.0	0.0	-0.0	-171.4	-171.4

Point Source, ISO 9613, Name: "MM_Inv7", ID: "MM_Inv7"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500977.67	5442957.06	2.60	0	63	68.1	68.1	0.0	0.0	75.6	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-2.1	-2.1
2	500977.67	5442957.06	2.60	0	125	78.9	78.9	0.0	0.0	75.6	0.7	4.2	0.0	0.0	0.0	0.0	-0.0	-1.6	-1.6
3	500977.67	5442957.06	2.60	0	250	85.5	85.5	0.0	0.0	75.6	1.8	2.6	0.0	0.0	0.0	0.0	-0.0	5.5	5.5
4	500977.67	5442957.06	2.60	0	500	87.3	87.3	0.0	0.0	75.6	3.3	-1.3	0.0	0.0	0.0	0.0	-0.0	9.6	9.6
5	500977.67	5442957.06	2.60	0	1000	83.7	83.7	0.0	0.0	75.6	6.2	-1.7	0.0	0.0	0.0	0.0	-0.0	3.5	3.5
6	500977.67	5442957.06	2.60	0	2000	79.1	79.1	0.0	0.0	75.6	16.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-11.3	-11.3
7	500977.67	5442957.06	2.60	0	4000	70.0	70.0	0.0	0.0	75.6	55.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-59.7	-59.7
8	500977.67	5442957.06	2.60	0	8000	77.7	77.7	0.0	0.0	75.6	199.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-195.2	-195.2

Point Source, ISO 9613, Name: "MM_Trans1", ID: "MM_Trans1"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501216.50	5443158.16	2.58	0	32	37.3	37.3	0.0	0.0	76.9	0.1	-5.7	0.0	0.0	0.0	0.0	-0.0	-33.9	-33.9
2	501216.50	5443158.16	2.58	0	63	56.5	56.5	0.0	0.0	76.9	0.2	-5.7	0.0	0.0	0.0	0.0	-0.0	-14.9	-14.9
3	501216.50	5443158.16	2.58	0	125	68.6	68.6	0.0	0.0	76.9	0.8	4.2	0.0	0.0	0.0	0.0	-0.0	-13.3	-13.3
4	501216.50	5443158.16	2.58	0	250	71.1	71.1	0.0	0.0	76.9	2.0	2.6	0.0	0.0	0.0	0.0	-0.0	-10.4	-10.4
5	501216.50	5443158.16	2.58	0	500	76.5	76.5	0.0	0.0	76.9	3.8	-1.2	0.0	0.0	0.0	0.0	-0.0	-2.9	-2.9
6	501216.50	5443158.16	2.58	0	1000	73.7	73.7	0.0	0.0	76.9	7.2	-1.7	0.0	0.0	0.0	0.0	-0.0	-8.7	-8.7
7	501216.50	5443158.16	2.58	0	2000	69.9	69.9	0.0	0.0	76.9	19.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-24.2	-24.2
8	501216.50	5443158.16	2.58	0	4000	64.7	64.7	0.0	0.0	76.9	64.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-74.8	-74.8
9	501216.50	5443158.16	2.58	0	8000	55.6	55.6	0.0	0.0	76.9	229.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-249.1	-249.1

Point Source, ISO 9613, Name: "MM_Trans2", ID: "MM_Trans2"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501234.60	5442978.96	2.58	0	32	37.3	37.3	0.0	0.0	76.1	0.1	-5.6	0.0	0.0	0.0	0.0	-0.0	-33.2	-33.2
2	501234.60	5442978.96	2.58	0	63	56.5	56.5	0.0	0.0	76.1	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-14.2	-14.2
3	501234.60	5442978.96	2.58	0	125	68.6	68.6	0.0	0.0	76.1	0.7	4.2	0.0	0.0	0.0	0.0	-0.0	-12.5	-12.5
4	501234.60	5442978.96	2.58	0	250	71.1	71.1	0.0	0.0	76.1	1.9	2.6	0.0	0.0	0.0	0.0	-0.0	-9.5	-9.5
5	501234.60	5442978.96	2.58	0	500	76.5	76.5	0.0	0.0	76.1	3.5	-1.2	0.0	0.0	0.0	0.0	-0.0	-1.9	-1.9
6	501234.60	5442978.96	2.58	0	1000	73.7	73.7	0.0	0.0	76.1	6.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-7.3	-7.3
7	501234.60	5442978.96	2.58	0	2000	69.9	69.9	0.0	0.0	76.1	17.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-21.9	-21.9
8	501234.60	5442978.96	2.58	0	4000	64.7	64.7	0.0	0.0	76.1	59.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-68.8	-68.8
9	501234.60	5442978.96	2.58	0	8000	55.6	55.6	0.0	0.0	76.1	210.7	-1.7	0.0	0.0	0.0	0.0	-0.0	-229.5	-229.5

Point Source, ISO 9613, Name: "MM_Trans3", ID: "MM_Trans3"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501234.60	5442777.36	2.58	0	32	37.3	37.3	0.0	0.0	75.2	0.1	-5.6	0.0	0.0	0.0	0.0	-0.0	-32.3	-32.3
2	501234.60	5442777.36	2.58	0	63	56.5	56.5	0.0	0.0	75.2	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-13.3	-13.3
3	501234.60	5442777.36	2.58	0	125	68.6	68.6	0.0	0.0	75.2	0.7	4.2	0.0	0.0	0.0	0.0	-0.0	-11.5	-11.5

Point Source, ISO 9613, Name: "MM_Trans3", ID: "MM_Trans3"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
4	501234.60	5442777.36	2.58	0	250	71.1	71.1	0.0	0.0	75.2	1.7	2.6	0.0	0.0	0.0	0.0	-0.0	-8.4	-8.4
5	501234.60	5442777.36	2.58	0	500	76.5	76.5	0.0	0.0	75.2	3.1	-1.2	0.0	0.0	0.0	0.0	-0.0	-0.6	-0.6
6	501234.60	5442777.36	2.58	0	1000	73.7	73.7	0.0	0.0	75.2	5.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-5.7	-5.7
7	501234.60	5442777.36	2.58	0	2000	69.9	69.9	0.0	0.0	75.2	15.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-19.2	-19.2
8	501234.60	5442777.36	2.58	0	4000	64.7	64.7	0.0	0.0	75.2	53.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-61.8	-61.8
9	501234.60	5442777.36	2.58	0	8000	55.6	55.6	0.0	0.0	75.2	189.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-206.9	-206.9

Point Source, ISO 9613, Name: "MM_Trans4", ID: "MM_Trans4"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	501234.60	5442575.76	2.58	0	32	37.3	37.3	0.0	0.0	74.1	0.1	-5.6	0.0	0.0	0.0	0.0	-0.0	-31.3	-31.3
2	501234.60	5442575.76	2.58	0	63	56.5	56.5	0.0	0.0	74.1	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-12.3	-12.3
3	501234.60	5442575.76	2.58	0	125	68.6	68.6	0.0	0.0	74.1	0.6	4.2	0.0	0.0	0.0	0.0	-0.0	-10.4	-10.4
4	501234.60	5442575.76	2.58	0	250	71.1	71.1	0.0	0.0	74.1	1.5	2.6	0.0	0.0	0.0	0.0	-0.0	-7.1	-7.1
5	501234.60	5442575.76	2.58	0	500	76.5	76.5	0.0	0.0	74.1	2.8	-1.2	0.0	0.0	0.0	0.0	-0.0	0.8	0.8
6	501234.60	5442575.76	2.58	0	1000	73.7	73.7	0.0	0.0	74.1	5.3	-1.7	0.0	0.0	0.0	0.0	-0.0	-4.0	-4.0
7	501234.60	5442575.76	2.58	0	2000	69.9	69.9	0.0	0.0	74.1	13.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-16.4	-16.4
8	501234.60	5442575.76	2.58	0	4000	64.7	64.7	0.0	0.0	74.1	47.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-54.8	-54.8
9	501234.60	5442575.76	2.58	0	8000	55.6	55.6	0.0	0.0	74.1	167.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-184.7	-184.7

Point Source, ISO 9613, Name: "MM_Trans5", ID: "MM_Trans5"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500983.17	5442553.41	2.58	0	32	37.3	37.3	0.0	0.0	73.4	0.0	-5.5	0.0	0.0	0.0	0.0	-0.0	-30.6	-30.6
2	500983.17	5442553.41	2.58	0	63	56.5	56.5	0.0	0.0	73.4	0.2	-5.5	0.0	0.0	0.0	0.0	-0.0	-11.5	-11.5
3	500983.17	5442553.41	2.58	0	125	68.6	68.6	0.0	0.0	73.4	0.5	4.2	0.0	0.0	0.0	0.0	-0.0	-9.6	-9.6
4	500983.17	5442553.41	2.58	0	250	71.1	71.1	0.0	0.0	73.4	1.4	2.6	0.0	0.0	0.0	0.0	-0.0	-6.3	-6.3
5	500983.17	5442553.41	2.58	0	500	76.5	76.5	0.0	0.0	73.4	2.5	-1.2	0.0	0.0	0.0	0.0	-0.0	1.8	1.8
6	500983.17	5442553.41	2.58	0	1000	73.7	73.7	0.0	0.0	73.4	4.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-2.9	-2.9
7	500983.17	5442553.41	2.58	0	2000	69.9	69.9	0.0	0.0	73.4	12.7	-1.7	0.0	0.0	0.0	0.0	-0.0	-14.6	-14.6
8	500983.17	5442553.41	2.58	0	4000	64.7	64.7	0.0	0.0	73.4	43.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-50.2	-50.2
9	500983.17	5442553.41	2.58	0	8000	55.6	55.6	0.0	0.0	73.4	153.9	-1.7	0.0	0.0	0.0	0.0	-0.0	-170.0	-170.0

Point Source, ISO 9613, Name: "MM_Trans6", ID: "MM_Trans6"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500983.17	5442755.01	2.58	0	32	37.3	37.3	0.0	0.0	74.6	0.1	-5.6	0.0	0.0	0.0	0.0	-0.0	-31.7	-31.7
2	500983.17	5442755.01	2.58	0	63	56.5	56.5	0.0	0.0	74.6	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-12.7	-12.7
3	500983.17	5442755.01	2.58	0	125	68.6	68.6	0.0	0.0	74.6	0.6	4.2	0.0	0.0	0.0	0.0	-0.0	-10.8	-10.8
4	500983.17	5442755.01	2.58	0	250	71.1	71.1	0.0	0.0	74.6	1.6	2.6	0.0	0.0	0.0	0.0	-0.0	-7.6	-7.6
5	500983.17	5442755.01	2.58	0	500	76.5	76.5	0.0	0.0	74.6	2.9	-1.2	0.0	0.0	0.0	0.0	-0.0	0.2	0.2
6	500983.17	5442755.01	2.58	0	1000	73.7	73.7	0.0	0.0	74.6	5.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-4.7	-4.7
7	500983.17	5442755.01	2.58	0	2000	69.9	69.9	0.0	0.0	74.6	14.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-17.6	-17.6
8	500983.17	5442755.01	2.58	0	4000	64.7	64.7	0.0	0.0	74.6	49.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-57.6	-57.6
9	500983.17	5442755.01	2.58	0	8000	55.6	55.6	0.0	0.0	74.6	176.4	-1.7	0.0	0.0	0.0	0.0	-0.0	-193.7	-193.7

Point Source, ISO 9613, Name: "MM_Trans7", ID: "MM_Trans7"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500983.17	5442956.56	2.58	0	32	37.3	37.3	0.0	0.0	75.6	0.1	-5.6	0.0	0.0	0.0	0.0	-0.0	-32.8	-32.8
2	500983.17	5442956.56	2.58	0	63	56.5	56.5	0.0	0.0	75.6	0.2	-5.6	0.0	0.0	0.0	0.0	-0.0	-13.7	-13.7
3	500983.17	5442956.56	2.58	0	125	68.6	68.6	0.0	0.0	75.6	0.7	4.2	0.0	0.0	0.0	0.0	-0.0	-12.0	-12.0
4	500983.17	5442956.56	2.58	0	250	71.1	71.1	0.0	0.0	75.6	1.8	2.6	0.0	0.0	0.0	0.0	-0.0	-8.9	-8.9
5	500983.17	5442956.56	2.58	0	500	76.5	76.5	0.0	0.0	75.6	3.3	-1.2	0.0	0.0	0.0	0.0	-0.0	-1.2	-1.2
6	500983.17	5442956.56	2.58	0	1000	73.7	73.7	0.0	0.0	75.6	6.2	-1.7	0.0	0.0	0.0	0.0	-0.0	-6.5	-6.5
7	500983.17	5442956.56	2.58	0	2000	69.9	69.9	0.0	0.0	75.6	16.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-20.5	-20.5
8	500983.17	5442956.56	2.58	0	4000	64.7	64.7	0.0	0.0	75.6	55.8	-1.7	0.0	0.0	0.0	0.0	-0.0	-65.1	-65.1
9	500983.17	5442956.56	2.58	0	8000	55.6	55.6	0.0	0.0	75.6	199.1	-1.7	0.0	0.0	0.0	0.0	-0.0	-217.4	-217.4

Point Source, ISO 9613, Name: "Sub115", ID: "Sub115"

Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	500993.61	5443536.29	4.00	0	32	47.2	47.2	0.0	0.0	78.1	0.1	-5.7	0.0	0.0	0.0	0.0	-0.0	-25.3	-25.3

Point Source, ISO 9613, Name: "Sub115", ID: "Sub115"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
2	500993.61	5443536.29	4.00	0	63	66.4	66.4	0.0	0.0	78.1	0.3	-5.7	0.0	0.0	0.0	0.0	-0.0	-6.3	-6.3
3	500993.61	5443536.29	4.00	0	125	78.5	78.5	0.0	0.0	78.1	0.9	3.8	0.0	0.0	0.0	0.0	-0.0	-4.3	-4.3
4	500993.61	5443536.29	4.00	0	250	81.0	81.0	0.0	0.0	78.1	2.4	0.7	0.0	0.0	0.0	0.0	-0.0	-0.2	-0.2
5	500993.61	5443536.29	4.00	0	500	86.4	86.4	0.0	0.0	78.1	4.4	-1.7	0.0	0.0	0.0	0.0	-0.0	5.6	5.6
6	500993.61	5443536.29	4.00	0	1000	83.6	83.6	0.0	0.0	78.1	8.3	-1.7	0.0	0.0	0.0	0.0	-0.0	-1.1	-1.1
7	500993.61	5443536.29	4.00	0	2000	79.8	79.8	0.0	0.0	78.1	22.0	-1.7	0.0	0.0	0.0	0.0	-0.0	-18.6	-18.6
8	500993.61	5443536.29	4.00	0	4000	74.6	74.6	0.0	0.0	78.1	74.5	-1.7	0.0	0.0	0.0	0.0	-0.0	-76.3	-76.3
9	500993.61	5443536.29	4.00	0	8000	65.5	65.5	0.0	0.0	78.1	265.6	-1.7	0.0	0.0	0.0	0.0	-0.0	-276.5	-276.5