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ACOUSTIC ASSESSMENT REPORT

PENN ENERGY – BRANTGATE SOLAR FARM

Burford Township, Brant County, Ontario

FIT Contract ID# F-001576-SPV-130-505
EBR Registry No: 011-8310

Prepared for:

Brantgate Solar Farm Partnership
620 Righters Ferry Road,
Bala Cynwyd, PA, 19004
USA

Prepared by

Petr Chocensky, PhD

Reviewed by

Ian Bonsma, PEng

November 27, 2013

VERSION CONTROL

Penn Energy - Brantgate Solar Farm
153 Bishopsgate Road, Burford Township, Brant County, Ontario

Ver.	Date	Version Description	Prepared By
1	3-May-12	Original Acoustic Assessment Report supporting an application for a Renewable Energy Approval	P. Chocensky
2	5-March-13	Updated Acoustic Assessment Report supporting an application for a Renewable Energy Approval incorporating refined sound level data for inverter house transformer and exclusion of main transformer	P. Chocensky
3	27-Nov-13	Updated Acoustic Assessment Report supporting an application for a Renewable Energy Approval addressing updated site layout and equipment selection	P. Chocensky

EXECUTIVE SUMMARY

Brantgate Solar Farm Partnership retained HGC Engineering to undertake an Acoustic Assessment of their proposed Brantgate Solar Facility in Burford Township, Brant County, Ontario. The study is required in support of an application for a Renewable Energy Approval from the Ontario Ministry of The Environment ("MOE"), under the Renewable Energy Act ("REA"), pursuant to Ontario Regulation 359/09. The assessment considers all acoustically significant sound sources currently proposed for use at the facility. This assessment has been prepared in accordance with the Ontario Ministry of the Environment publication "Basic Comprehensive Certificates of Approval (AIR) – User Guide".

Previously, HGC Engineering issued a number of Acoustic Assessment Reports for the Brantgate site, addressing comments from the Ministry of the Environment, as well as refinements in the site design.

Sound emissions from key items of proposed equipment were based on information provided by the equipment manufacturers and established prediction methods for the transformers. The source sound levels were used as input to a predictive acoustical model to quantify the sound emissions associated with the facility.

The predictive analysis indicates that, with the benefit of noise control measures outlined in Section 6, the sound emissions of the facility will be within the sound level limits as set out in MOE guideline NPC-300 during normal 'predictable worst case' operations at all identified residential receptors.

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Ministry of the Environment | Ministère de l'Environnement

Ontario

ACOUSTIC ASSESSMENT REPORT CHECK-LIST

Company Name: Brantgate Solar Farm Partnership

Company Address: 620 Righters Ferry Rd

Bala Cynwyd, USA 19004

Location of Facility: 153 Bishopsgate Road, Burford Township

Brent County, Ontario N0E 1R0

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

Company Contact:

Name: David Savoia

Representing: Brantgate Solar Farm Partnership

Phone Number: 610-668-0300

Signature:

Date: November 27, 2013

Technical Contact:

Name: Petr Chocensky, PhD

Representing: HGC Engineering

Phone Number: 905-826-4044

Signature:

Date: November 27, 2013

ACOUSTIC ASSESSMENT REPORT CHECK-LIST

	Required Information		
		Submitted	Explanation/Reference
1.0	**Introduction** (Project Background and Overview)	☒ Yes	Section 1
2.0	**Facility Description**		
	2.1 Operating hours of facility and significant Noise Sources	☒ Yes	Section 2
	2.2 Site Plan identifying all significant Noise Sources	☒ Yes	Figure 3
3.0	**Noise Source Summary**		
	3.1 ***Noise Source Summary Table***	☒ Yes	Appendix A
	3.2 Source noise emissions specifications	☒ Yes	Appendix A
	3.3 Source power/capacity ratings	☒ Yes	Appendix A
	3.4 Noise control equipment description and acoustical specifications	☒ Yes	Section 6
4.0	**Point of Reception Noise Impact Calculations**		
	4.1 ***Point of Reception Noise Impact Table***	☒ Yes	Appendix A
	4.2 Point(s) of Reception (POR) list and description	☒ Yes	Section 4
	4.3 Land-use Zoning Plan	☒ Yes	Appendix B
	4.4 Scaled Area Location Plan	☒ Yes	Figure 1
	4.5 Procedure used to assess noise impacts at each POR	☒ Yes	Appendix D
	4.6 List of parameters/assumptions used in calculations	☒ Yes	Appendix D
5.0	**Acoustic Assessment Summary**		
	5.1 ***Acoustic Assessment Summary Table***	☒ Yes	Appendix A
	5.2 Rationale for selecting applicable noise guideline limits	☒ Yes	Appendix E
	5.3 Predictable Worst Case Impacts Operating Scenario	☒ Yes	Figures 4
6.0	**Conclusions**		
	6.1 Statement of compliance with selected noise performance limits	☒ Yes	Sections 7 & 8
7.0	**Appendices** (provide details such as)	☒ Yes	
	Listing of Insignificant Noise Sources	☐ Yes	N/A
	Manufacturer's Noise Specifications	☒ Yes	Appendix C
	Calculations	☒ Yes	Appendices F & G
	Instrumentation	☐ Yes	N/A
	Meteorology during Sound Level Measurements	☐ Yes	N/A
	Raw Data from Measurements	☐ Yes	N/A
	Drawings (Facility / Equipment)	☒ Yes	Figure 3, Appendix C

1 INTRODUCTION

1.1 Context

The Brantgate Solar Facility is proposed to be located at 153 Bishopsgate Road, in Burford Township, Brant County, Ontario. A scaled location map of the surrounding area is included as Figure 1. The purpose of this assessment is to evaluate the sound emissions of the facility under a predictable worst case operating scenario, which is defined as an hour when typical full operation of the stationary sources under consideration could coincide with an hour of low background sound.

This report has been prepared in accordance with the Ontario Ministry of The Environment ("MOE") guideline documents NPC-233 "Information to be Submitted for Approval of Stationary Sources of Sound", dated October 1995 [1], and "Supporting Information for the Preparation of an Acoustic Assessment Report", dated November 2003 [2].

A zoning map identifying the land uses surrounding the subject facility, obtained from the County of Brant, is included as Appendix B. The lands surrounding the proposed Brantgate Solar Farm are zoned for agricultural and industrial use. Thirty seven points of reception have been considered in this assessment in order to represent the existing residential dwellings and vacant lots (which permit noise sensitive use) within 1000 m of the proposed equipment at the solar facility, labelled as locations R01 through R37 in Figure 2.

During a site visit by HGC Engineering on January 30, 2012, the daytime background sound in the vicinity of the subject site was dominated by road traffic on Bishopsgate Road. The area surrounding the site is best characterized as a Class 3 acoustical environment, under MOE noise guidelines.

1.2 Summary of Updates Addressed In This Assessment

The updates addressed in this report include:

- Updated site layout of the Brantgate Solar Farm,
- Updated number of inverter collection houses; this assessment includes a total of five collection houses, each containing two inverters and one small transformer,
- Updated sound levels of small transformers, reflecting that transformers will be 1.75 MVA

units (1 MVA units were assumed previously),

- Updated sound levels of inverters, reflective of the final equipment selection,
- Removal of inverter house ventilation fans,
- Updated modeling approach; each inverter house and accompanying transformer is represented by a single source of sound, based on instructions from the MOE. Previously, sound emissions from inverter houses and transformers were modeled individually,
- Addition of one HVAC unit (NS-06).

2 FACILITY DESCRIPTION

The Brantgate Solar Farm is a proposed 8 MW solar electrical generation project. The facility will consist of numerous fixed array mounted solar panels and five collection houses. There is no primary transformer installed at the site. The sound sources associated with the facility will be the collection houses, each including two inverters and a small transformer. The inverters are power semiconductor devices which synthesize alternating current ("A/C") from the direct current produced by the solar panels. The solar panels themselves are passive, direct current devices and do not produce sound. They are thus not considered as sources in this assessment.

The inverter units will typically operate during hours when daylight is available. However, the transformers will be energized throughout the 24 hour period. Since daylight can occur during some hours of the nighttime period (19:00 – 7:00), the facility was assumed to operate fully during both daytime (7:00 – 19:00) and nighttime hours (19:00 – 7:00). The facility will operate 7 days per week.

3 SOUND SOURCE SUMMARY

A Sound Source Summary is included as Table A1 in Appendix A, which lists the sources associated with the facility, in the standard format required by the MOE. Each noise source has been assigned an identification number of the form NS-## (e.g. NS-01).

Figure 3 shows the location of each source. The non-negligible sources of sound at the facility are described below.

The site plan for the proposed development includes five inverter collection houses (NS-01 through NS-05) which will be distributed throughout the site. Each inverter collection house will include two 800 kW inverters and will be accompanied by a small 1.75 MVA transformer. The facility will also have a small HVAC unit (NS-06) associated with a facility control house located in the east part of the site.

Sound emissions from inverter units were based on sound measurements of a single 800 kW inverter provided by the SMA Solar Technology.

For the transformers, Cooper Power Systems provided NEMA sound ratings and drawings with dimensions for the proposed 1.75 MVA transformers. The total A-weighted sound power levels of the transformers were determined using the NEMA rating and the transformer dimensions, assuming the sound level ratings apply at the distance of 0.3 m from the transformer. The shape of the octave band spectrum for the transformers was based on established engineering prediction methods [3].

The inverter sound levels, NEMA sound ratings, drawings, and details of the prediction calculation for the transformers and inverter collection houses are included in Appendix C.

Sound levels of the HVAC unit were based on measured sound data on file by HGC Engineering.

The sound power levels for the sources outlined above were used to develop the sound source inventory included as Table A1 in Appendix A, and was input to a predictive computer model (see Appendix D) to quantify the sound emissions of the facility during a predictable worst case hour of operation. As outlined in Section 2, the facility can operate throughout both daytime and nighttime hours. Therefore, for the purposes of this assessment, all sources were assumed to operate 24 hours per day, seven days per week.

4 POINT OF RECEPTION SUMMARY

The thirty-seven points of reception included in this assessment are marked as locations R01 through R37 in Figure 2. These locations represent the most impacted point of reception on each noise sensitive land use within 1000 metres of the equipment at the proposed site. Typically, these locations are upper storey windows of existing residential dwellings, outdoor amenity areas

associated with dwellings, or locations on vacant lots where a dwelling would be reasonably expected in the future based on the typical building pattern in the area.

The selected points of reception are described briefly in Table A3, the Acoustic Assessment Summary Table.

5 ASSESSMENT CRITERIA

The applicable sound level limits for the purposes of this assessment were established in accordance with the environmental noise guideline NPC-300 [4]. The details by which the applicable sound level limits were established for the assessment of this facility are provided in Appendix E. For the purposes of this assessment, the applicable sound level criterion at all locations is 40 dBA. This limit is also included in Table A3 of Appendix A.

Some types of sound have a special quality which may tend to increase their audibility and potential for disturbance or annoyance. For tonal sound, MOE guidelines [5] stipulate that a penalty of 5 dBA is to be added to the measured source level. A tonal sound is defined as one which has a "pronounced audible tonal quality such as a whine, screech, buzz or hum". A/C transformers and inverters typically exhibit a humming character at twice the line frequency (120 Hz) and harmonics thereof, as a result of magnetostrictive forces in the windings and semiconductors. In the subsequent analysis, a tonal penalty has been applied to the sounds of all inverters and transformers.

6 NOISE CONTROL MEASURES

Ventilation air inlets and outlets of two inverter collection houses (NS-04 and NS-05) will be equipped with acoustic hoods providing the acoustical performance listed in Table 1, below.

Table 1 – Acoustic Hood Insertion Loss Specifications, [dB]

Source ID	Source Name	Octave Band Centre Frequency, [Hz]							
		63	125	250	500	1k	2k	4k	8k
NS-04 and NS-05	Inverter Collection House Air Inlet and Outlet	--	--	1	9	6	9	10	--

7 IMPACT ASSESSMENT

The predictive analysis indicates that, with the benefit of the noise control measures outlined in Section 6, the sound levels will be in the range of 21 to 37 dBA at all key points of reception, which are within the applicable sound level limit.

The results of the analysis are summarized in Table A3 and are shown graphically in Figure 4. Details of the prediction methods are summarized in Appendix D, and sample calculation results are included as Appendices F and G.

8 CONCLUSIONS

The acoustical analysis indicates that, with the benefit of the noise control measures in Section 6, the predicted sound levels of the Brantgate Solar Farm will be within the applicable sound level limits specified in MOE guideline NPC-300, during all hours of the day and night, under typical "predictable worst case" operating conditions at all identified off-site receptor locations.

REFERENCES

1. Ontario Ministry of Environment Publication NPC-233, *Information to be Submitted for Approval of Stationary Sources of Sound*, October, 1995.

2. Ontario Ministry of Environment Guide, *Supporting Information for the Preparation of an Acoustic Assessment Report*, November 2003.

3. Crocker, Malcolm, J., Sound *Power Level Predictions for Industrial Machinery*, In Encyclopedia of Acoustics (Vol. 2, pp. 1049 - 1057), John Wiley & Sons, Inc., 1997.

4. Ontario Ministry of the Environment Publication NPC-300, *Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning*, August, 2013.

5. Ontario Ministry of the Environment Publication NPC-104, *Sound Level Adjustments*, August, 1978.

6. International Organization for Standardization, *Acoustics – Attenuation of Sound during Propagation Outdoors – Part 2: General Method of Calculation*, ISO-9613-2, Switzerland, 1996.

7. Google Maps Aerial Imagery, Internet Application: *maps.google.com*

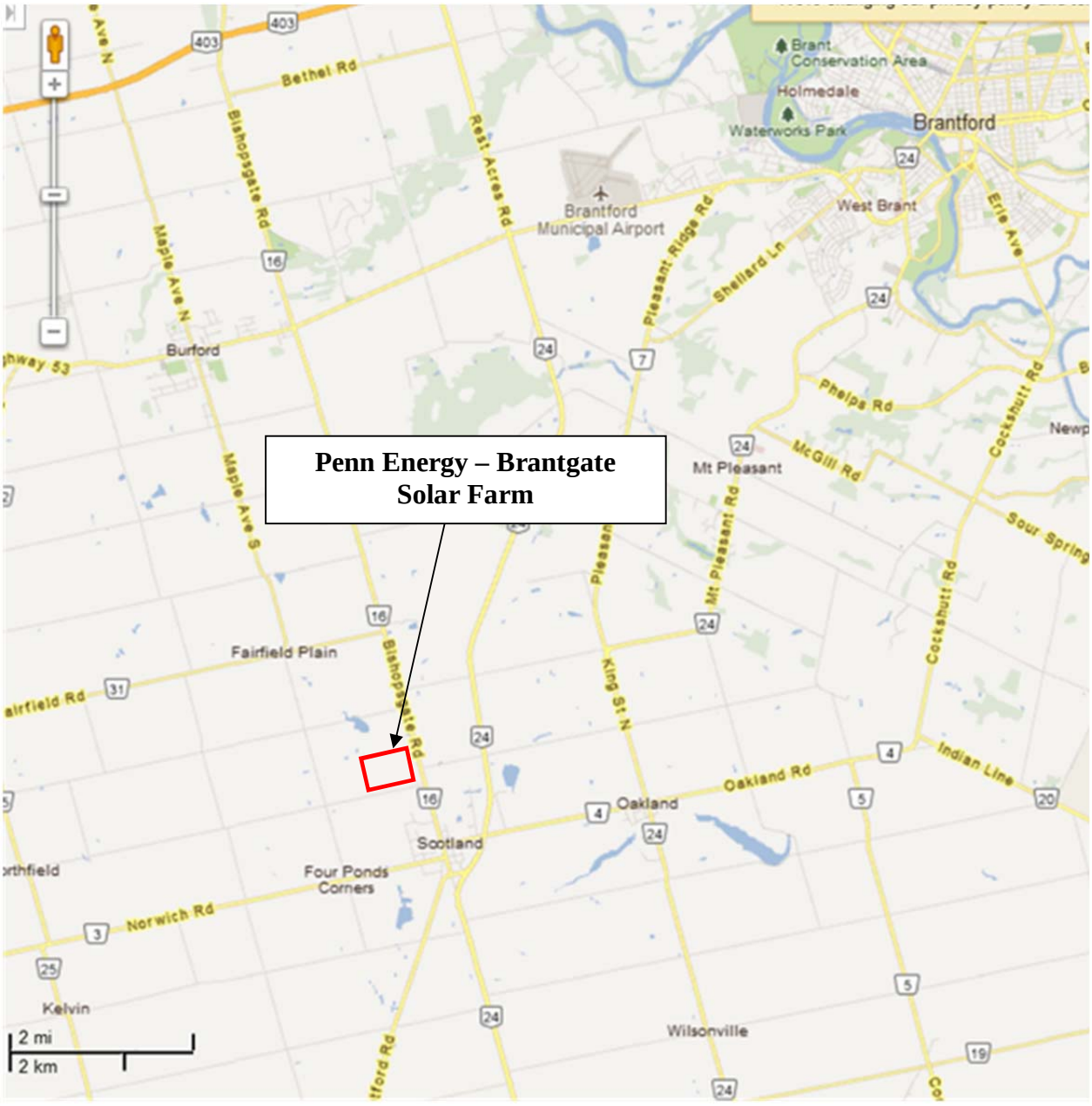


Figure 1: Location Map

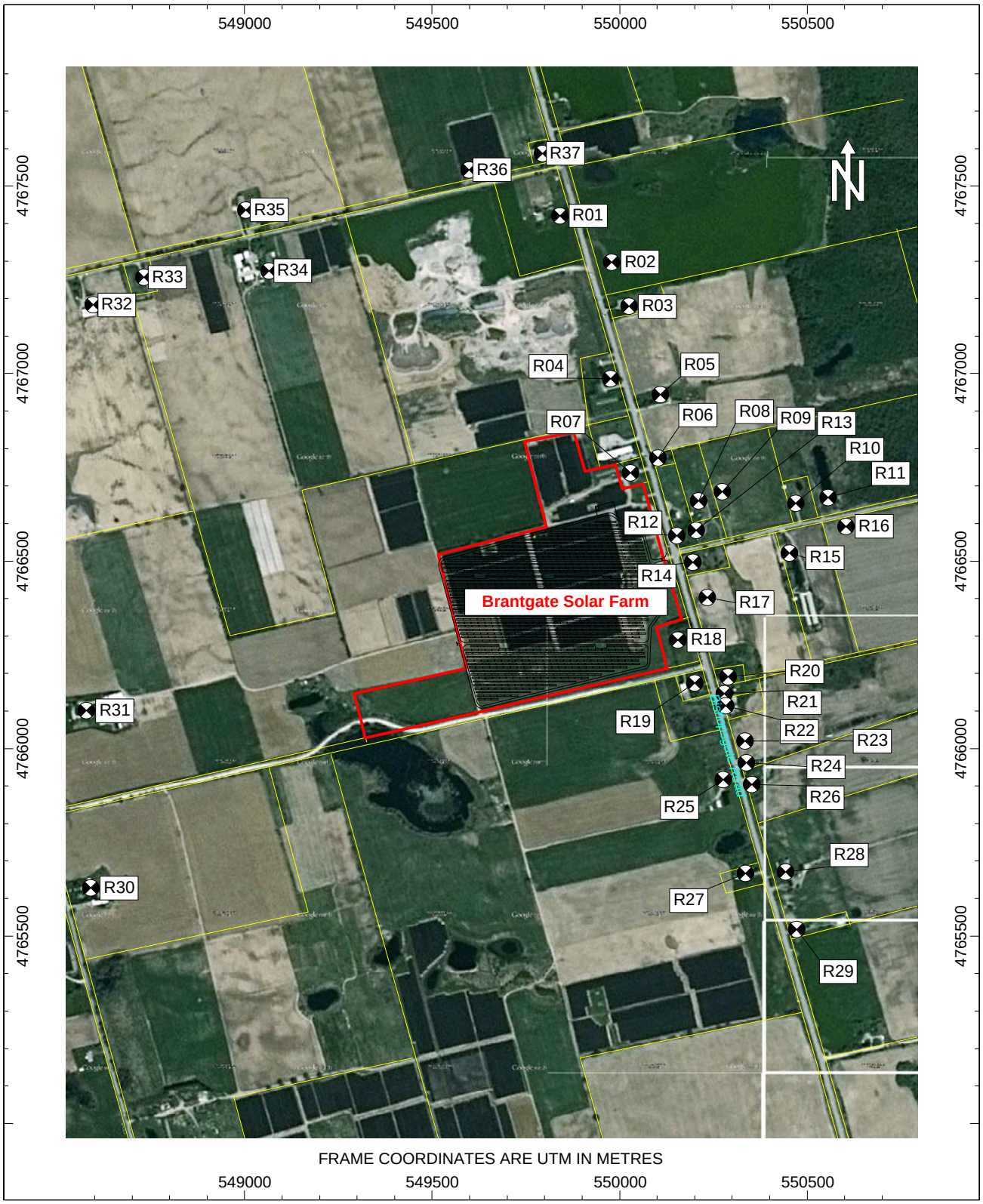


Figure 2: Locations of Points of Reception
Brantgate Solar Farm

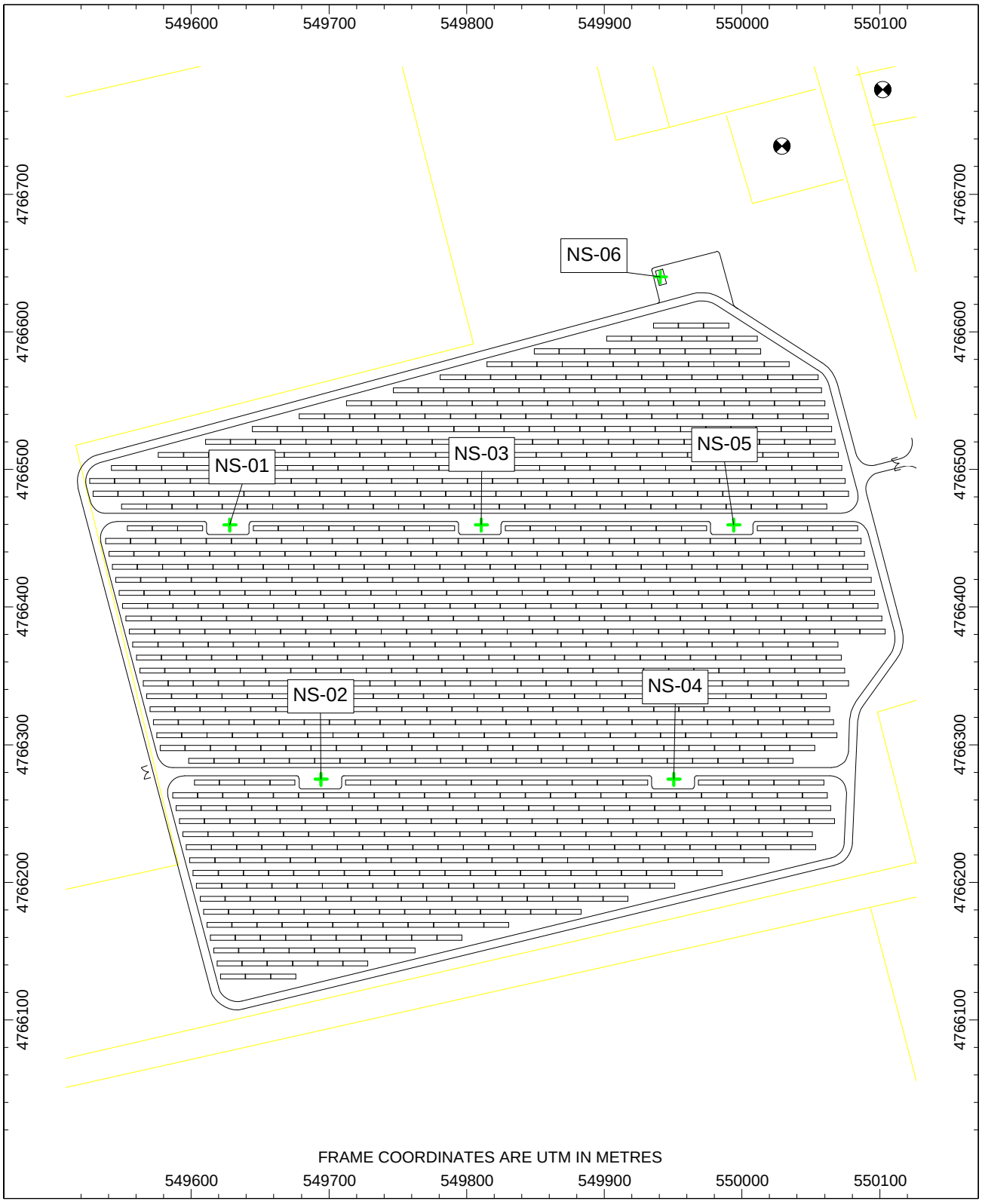


Figure 3: Locations of Sound Sources
Brantgate Solar Farm

Figure 4: Sound Level Contours Leq [dBA]
Predicted at 4.5 m Above Grade
Brantgate Solar Farm

APPENDIX A

Acoustic Assessment Summary Tables

ACOUSTIC ASSESSMENT SUMMARY TABLES
VERSION CONTROL

Penn Energy – Brantgate Solar Farm
153 Bishopsgate Road, Burford Township, Brant County, Ontario

Ver.	Date	Issued as Part of AAR?	Version Description	Prepared By
1.0	3-May-12	Y	Original version of tables as part of Ver. 1 of Acoustic Assessment Report	P. Chocensky
2.0	5-March-13	Y	Original version of tables as part of Ver. 2 of Acoustic Assessment Report	P. Chocensky
3.0	27-Nov-13	Y	Original version of tables as part of Ver. 3 of Acoustic Assessment Report	P. Chocensky

Table A1: Noise Source Summary Table

Source ID	Source Description	UTM Coordinates [m]		Sound Power Level [dBA re 10^-12 W]	Source Location	Sound Characteristic	Noise Control Measure
		Easting	Northing				
NS-01	Inverter House	549628	4766460	100	O	S,T	U
NS-02	Inverter House	549694	4766275	100	O	S,T	U
NS-03	Inverter House	549811	4766460	100	O	S,T	U
NS-04	Inverter House	549951	4766275	93	O	S,T	O
NS-05	Inverter House	549994	4766460	93	O	S,T	O
NS-06	HVAC Unit	549941	4766640	83	O	S	U

Legend

Sound Characteristics
S: Steady
Q: Quasi-steady impulsive
I: Impulsive
B: Buzzing
T: Tonal (+5 dBA penalty applied)
C: Cyclically varying
O: Occasional

Noise Control Measures
S: Silencer, Acoustic Louvre, Muffler
A: Acoustic Lining, Plenum
B: Barrier, Berm, Screening
L: Lagging (Acoustical Wrapping)
E: Acoustic Enclosure
O: Other
U: Currently Uncontrolled

Source Location
O: Outdoors
I: Indoors

Table A2: Point of Reception Noise Impact Table

Source ID	Source Name	Point of Reception									
		R01		R02		R03		R04		R05	
		Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]
NS-01	Inverter House	984	20	908	21	823	22	632	25	682	24
NS-02	Inverter House	1155	18	1061	19	963	20	765	23	786	22
NS-03	Inverter House	961	20	855	21	751	23	552	27	568	26
NS-04	Inverter House	1151	12	1023	14	908	15	711	18	687	18
NS-05	Inverter House	973	14	838	16	721	18	527	21	497	22
NS-06	HVAC Unit	787	12	659	14	546	16	348	20	347	20

Source ID	Source Name	Point of Reception									
		R06		R07		R08		R09		R10	
		Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]
NS-01	Inverter House	570	26	486	28	616	25	685	24	864	21
NS-02	Inverter House	646	25	569	26	644	25	711	24	863	21
NS-03	Inverter House	430	30	351	32	447	29	516	28	687	24
NS-04	Inverter House	523	21	467	22	465	22	523	21	643	19
NS-05	Inverter House	334	26	278	28	295	27	360	25	514	21
NS-06	HVAC Unit	211	25	130	29	270	22	337	20	529	16

Source ID	Source Name	Point of Reception									
		R11		R12		R13		R14		R15	
		Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]
NS-01	Inverter House	952	20	536	27	589	26	569	26	828	22
NS-02	Inverter House	948	20	544	27	595	26	548	27	798	22
NS-03	Inverter House	775	23	359	32	412	30	387	31	646	25
NS-04	Inverter House	723	18	356	25	399	24	331	26	560	20
NS-05	Inverter House	600	20	192	32	243	29	205	31	464	22
NS-06	HVAC Unit	616	15	224	24	270	22	292	22	526	16

Source ID	Source Name	Point of Reception									
		R16		R17		R18		R19		R20	
		Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]
NS-01	Inverter House	984	20	609	25	554	27	639	25	713	24
NS-02	Inverter House	963	20	555	27	461	29	516	28	600	26
NS-03	Inverter House	804	22	427	30	384	31	483	28	548	27
NS-04	Inverter House	726	18	311	27	205	31	269	28	348	26
NS-05	Inverter House	624	19	246	29	235	30	352	25	398	24
NS-06	HVAC Unit	664	14	377	19	411	19	533	16	567	15

Source ID	Source Name	Point of Reception									
		R21		R22		R23		R24		R25	
		Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]
NS-01	Inverter House	722	23	740	23	832	22	867	21	845	22
NS-02	Inverter House	598	26	610	25	689	24	716	24	683	24
NS-03	Inverter House	563	26	585	26	684	24	725	23	715	24
NS-04	Inverter House	352	25	369	25	461	23	498	22	484	22
NS-05	Inverter House	423	23	450	23	556	20	605	20	612	19
NS-06	HVAC Unit	598	15	627	14	735	13	786	12	797	12

Source ID	Source Name	Point of Reception									
		R26		R27		R28		R29		R30	
		Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]
NS-01	Inverter House	913	21	1062	19	1134	18	1265	17	1330	16
NS-02	Inverter House	756	23	883	21	962	20	1086	18	1280	16
NS-03	Inverter House	776	23	950	20	1011	19	1151	18	1477	15
NS-04	Inverter House	547	21	719	18	779	17	920	15	1506	9
NS-05	Inverter House	661	19	863	16	907	15	1056	13	1632	8
NS-06	HVAC Unit	843	11	1050	9	1091	9	1242	7	1688	4

Source ID	Source Name	Point of Reception									
		R31		R32		R33		R34		R35	
		Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]
NS-01	Inverter House	1109	18	1260	17	1200	17	990	20	1160	18
NS-02	Inverter House	1130	18	1425	15	1376	16	1181	17	1352	16
NS-03	Inverter House	1284	16	1414	15	1342	16	1104	18	1268	17
NS-04	Inverter House	1383	10	1631	8	1566	9	1335	11	1499	9
NS-05	Inverter House	1461	10	1574	9	1494	10	1236	12	1392	10
NS-06	HVAC Unit	1465	5	1450	5	1358	6	1081	9	1231	7

Source ID	Source Name	Point of Reception			
		R36		R37	
		Dist [m]	LEQ [dBA]	Dist [m]	LEQ [dBA]
NS-01	Inverter House	1084	19	1140	18
NS-02	Inverter House	1272	17	1316	16
NS-03	Inverter House	1104	18	1128	18
NS-04	Inverter House	1316	11	1322	11
NS-05	Inverter House	1154	12	1145	13
NS-06	HVAC Unit	966	10	959	10

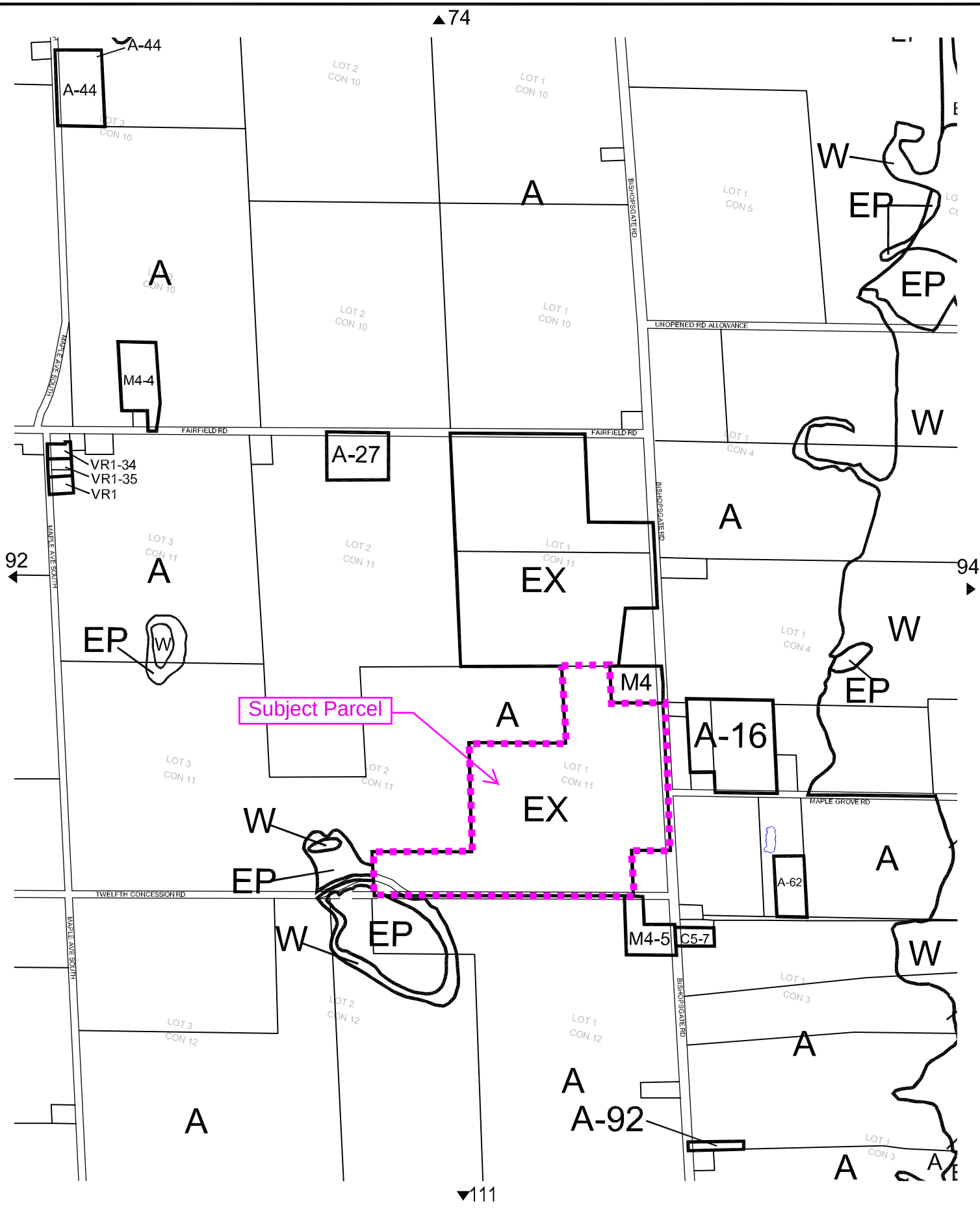
Note: Reported sound levels include all adjustment factors (time weighting, tonal penalty), as applicable.

Table A3: Acoustic Assessment Summary Table

Point of Reception	Point of Reception Description	UTM Coordinates [m]		Sound Level at Point of Reception, LEQ [dBA]	Verified by Acoustic Audit	Performance Limit, LEQ [dBA]	Compliance with Performance Limit
		Easting	Northing				
R01	Residential Dwelling	549841	4767421	25	No	40	Yes
R02	Vacant Lot	549979	4767297	26	No	40	Yes
R03	Residential Dwelling	550026	4767180	28	No	40	Yes
R04	Residential Dwelling	549977	4766986	31	No	40	Yes
R05	Residential Dwelling	550108	4766944	31	No	40	Yes
R06	Residential Dwelling	550102	4766776	34	No	40	Yes
R07	Residential Dwelling	550029	4766735	36	No	40	Yes
R08	Residential Dwelling	550210	4766661	34	No	40	Yes
R09	Residential Dwelling	550274	4766685	32	No	40	Yes
R10	Residential Dwelling	550470	4766655	29	No	40	Yes
R11	Vacant Lot	550556	4766670	28	No	40	Yes
R12	Residential Dwelling	550153	4766567	37	No	40	Yes
R13	Residential Dwelling	550204	4766582	35	No	40	Yes
R14	Vacant Lot	550196	4766497	36	No	40	Yes
R15	Residential Dwelling	550453	4766522	30	No	40	Yes
R16	Residential Dwelling	550603	4766593	27	No	40	Yes
R17	Vacant Lot	550234	4766403	35	No	40	Yes
R18	Residential Dwelling	550155	4766289	37	No	40	Yes
R19	Residential Dwelling	550200	4766174	34	No	40	Yes
R20	Residential Dwelling	550289	4766192	32	No	40	Yes
R21	Residential Dwelling	550278	4766147	32	No	40	Yes
R22	Residential Dwelling	550283	4766115	32	No	40	Yes
R23	Vacant Lot	550334	4766020	30	No	40	Yes
R24	Residential Dwelling	550338	4765962	29	No	40	Yes
R25	Residential Dwelling	550276	4765917	29	No	40	Yes
R26	Residential Dwelling	550353	4765904	28	No	40	Yes
R27	Residential Dwelling	550335	4765667	26	No	40	Yes
R28	Residential Dwelling	550442	4765670	25	No	40	Yes
R29	Residential Dwelling	550472	4765518	24	No	40	Yes
R30	Residential Dwelling	548590	4765628	21	No	40	Yes
R31	Residential Dwelling	548578	4766101	23	No	40	Yes
R32	Residential Dwelling	548596	4767183	21	No	40	Yes
R33	Residential Dwelling	548731	4767257	22	No	40	Yes
R34	Residential Dwelling	549065	4767274	24	No	40	Yes
R35	Residential Dwelling	549003	4767437	22	No	40	Yes
R36	Vacant Lot	549599	4767544	23	No	40	Yes
R37	Residential Dwelling	549795	4767587	23	No	40	Yes

APPENDIX B

Zoning Maps



COUNTY OF Brant Simply Grand

0 50 100 150 200 300 400 500 metres
METRES

COUNTY OF BRANT
ZONING BY-LAW No. 110-01

Updated to March 31st, 2009

SCHEDULE 'A'

MAP No. 93

SECTION 4 ZONES AND ZONE SYMBOLS

(1) DIVISION INTO ZONES

For the purposes of this By-Law, all lands within the zoned area are divided into zones and classified in accordance with Subsection (2) of this Section.

(2) ZONE CLASSIFICATION

(a) AGRICULTURAL ZONES

The following zone designations and symbols represent Agricultural Zones:

(i)	Agricultural Zone	A
(ii)	Agricultural Restrictive Zone	AR

(b) RESIDENTIAL ZONES

The following zone designations and symbols represent Residential Zones:

(i)	Residential First Density Zone	R1
(ii)	Residential Type 1A Zone	R1A
(iii)	Residential Type 1B Zone	R1B
(iv)	Village Residential Zone	VR
(v)	Village Residential Type 1 Zone	VR1
(vi)	Estate Residential Zone	ER
(vii)	Estate Residential Type 1 Zone	ER1
(viii)	Estate Residential Type 2 Zone	ER2
(ix)	Residential Heritage Zone	RH
(x)	Residential Second Density Zone	R2
(xi)	Residential Second Density Type 2 Zone	R2A
(xii)	Residential Third Density Zone	R3
(xiii)	Residential Multiple First Density Zone	R4
(xiv)	Residential Multiple Second Density Zone	R5
(xv)	Residential Office Zone	RO

	(xvi)	Residential Mobile Home Park Zone	RMH
	(xvii)	Residential Trailer Park Zone	RT

(c) COMMERCIAL ZONES

The following zone designations and symbols represent Commercial Zones:

(i)	General Commercial Zone	C1
(ii)	Highway Commercial Zone	C2
(iii)	Neighbourhood Commercial Zone	C3
(iv)	Recreational Commercial Zone	C4
(v)	Rural Commercial	C5
(vi)	Automotive Commercial	C6

(d) RECREATION ZONES

The following zone designations and symbols represent Recreation Zones:

(i)	Open Space	OS
(ii)	Recreation Zone	RE

(e) INSTITUTIONAL ZONES

The following zone designations and symbols represent Institutional Zones:

(i)	Institutional Zone	I

(f) ENVIRONMENTAL PROTECTION ZONES

The following zone designations and symbols represent Environmental Protection Zones:

(i)	Environmental Protection Zone	EP
(ii)	Wetland Zone	W

(g) INDUSTRIAL ZONES

The following zone designations and symbols represent Industrial Zones:

(i)	Light Industrial Zone	M1
(ii)	Special Industrial Zone	M2
(iii)	Heavy Industrial Zone	M3

(iv)	Rural Industrial Zone	M4
(v)	Disposal Industrial Zone	M5
(vi)	Extractive Industrial Zone	EX

(3) ZONE SYMBOLS AND DESIGNATIONS

(a) USE OF SYMBOLS AND DESIGNATIONS

The zone designations and symbols listed in Subsection (2) of this Section may be used to refer to buildings and structures and to the uses of lots, buildings and structures permitted by this By-Law in the said zones.

(b) INTERPRETATION OF SYMBOLS AND DESIGNATIONS

Wherever in this By-Law and the word "zone" is used, preceded by any of the said zone designations and symbols, such reference shall mean any part of the zoned area delineated on Schedule "A" and designated thereon by the said symbol.

(4) ZONE PROVISIONS

(a) USES PERMITTED AND ZONE REQUIREMENTS

For each zone listed in Subsection (2) of this Section, a separate section of this By-Law sets out the uses permitted in, and the specific provisions relating to, such zone under the headings "USES PERMITTED" and "ZONE REQUIREMENTS", respectively.

(b) SCOPE OF ZONE REQUIREMENTS

Except as otherwise specifically provided herein, the specific zone requirements set out herein for each zone shall apply to such zone in addition to the general provisions set out in Section 3 hereof.

(c) ZONE MEASUREMENTS ABBREVIATIONS

i. ac - acre; acres
ii. ha - hectare; hectares
iii. ft. - feet; foot
iv. sq. ft.- square feet;
v. m - metre; metres
vi. m² - square metres

(5) SPECIAL PROVISION ZONES

Wherever a zone symbol on Schedule "A" hereto is followed by a dash and a number, such as "R2-1", the lands so designated shall be subject to, and used in accordance with all the provisions of this By-Law applicable to the zone represented by such symbol except as otherwise specifically provided

APPENDIX C

Equipment Sound Data

Acoustic Environmental Test

SC 800CP-US central inverter

(Extract of Test report SC800CP-US-91:LE1613)

1 Overview

Project title:	SC800CP-US
Type of test / thresholds and requirements:	Sound level measurement according to DIN EN ISO 3744:2011-02 and DIN EN ISO 9614-2:2010-11 of sinusoidal, irregularly shaped, transient signals. Classification of ambient conditions in compliance with the German Noise Control Guidelines (TA Lärm). (according to Section 2)
Type of device:	e.g. solar central inverter for large-scale PV power plants
Type designation:	SC800CP-US
Test specification:	Level of emissions according to the German Noise Control Guidelines and acoustic power

2 Results

The EN 3744:04/2005 and German Noise Control Guidelines form the testing specification for the thresholds and requirements	Requirement		Results [dBA]/ without fan (distance 1m)	Results [dBA]/ with fan (distance 1m)
	Standard (Germany)	SMA		
EN 3744:2011-02 typical value; LAeq averaged [1]	-	-	-	78,74
§48 of the German Federal Emission Control ACT (BImSchG): 09-2002 German Noise Control Guidelines; L_{pa} [2]	-	-	-	77,81
EN 9614-2 sound power L_{WA} [3]	-	-	-	92,30
Sound pressure level in 10m L_{xpA} [4]	-	-	-	64,31
Sound pressure level in 50m L_{xpA} [4]	-	-	-	50,32
Overall result (if applicable)			*Standard requirments: - passed	

* Dependent on the local conditions at the mounting location (distance of 10m standard)

3 Operating States

The following states and configurations have been defined as operating conditions:

- Operation of the inverter.
- Operating conditions: UDC =820 V; 800 kW
- The device fans must be running.
- The unit under test must have reached its operating temperature.
- The unit under test must have reached an operating temperature of 25°C.

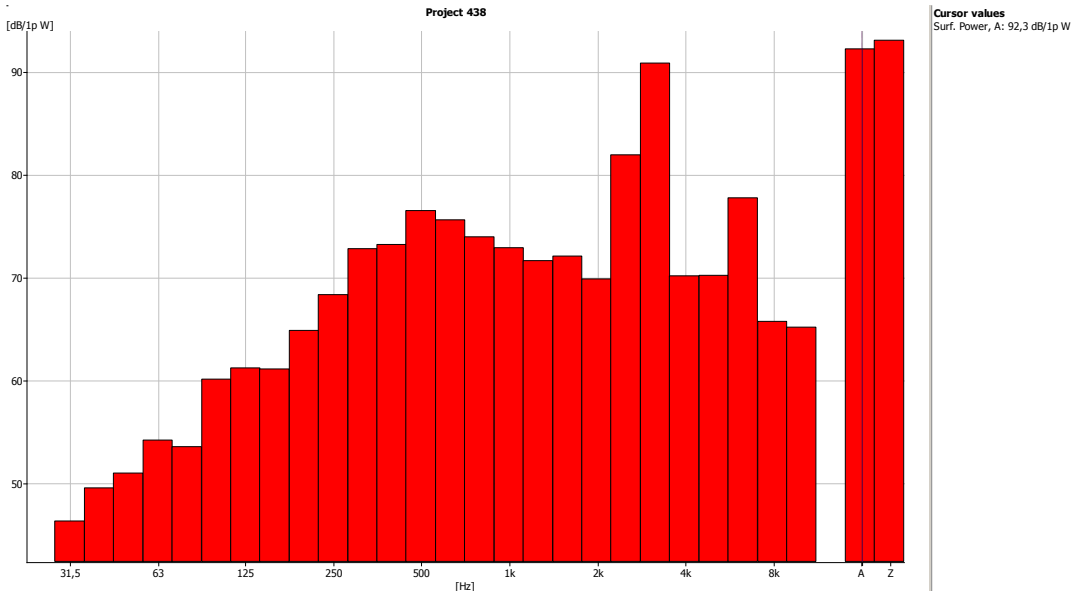
4 Calculating the Acoustic Power

L_{pA} =	average sound pressure level on the measurement surface [dB_A] *	77.81
S =	overall measurement surface [m^2]	28.09
S_0 =	1 [m^2]	

* This specified spatially/temporally averaged sound pressure level was determined using the calcu-lated acoustic power level.
$L_{PA} = L_{WA} - 10\log (S/S_0)$

Acoustic power of L_{WA}= 92,3 dBA/W results for the measurement.

Acoustic Power Levels of the Third Octave Band Frequencies According to EN ISO 9614-2



A-rated sound power = 92.3 $dB_{A/W}$

Z-rated sound power = 93.1 $dB_{A/W}$

A-rated acoustic power – based on physiologic human hearing

Z-rated acoustic power – technically linear measured value

5 Overview of the Acoustic Power

Third octave band center frequency [Hz]	Acoustic power- level LwA [dBA/pW] 880 kW	Acoustic power- level LwZ [dBA/pW] 880 kW
25 Hz	42,33	–
31.5 Hz	46,34	–
40 Hz	49,56	–
50 Hz	51	–
63 Hz	54,21	–
80 Hz	53,57	–
100 Hz	60,14	–
125 Hz	61,23	–
160 Hz	61,13	–
200 Hz	64,88	–
250 Hz	68,36	–
315 Hz	72,83	–
400 Hz	73,24	–
500 Hz	76,54	–
630 Hz	75,64	–
800 Hz	73,99	–
1 kHz	72,93	–
1.25 kHz	71,67	–
1.6 kHz	72,11	–
2 kHz	69,89	–
2.5 kHz	81,96	–
3.15 kHz	90,89	–
4 kHz	70,19	–
5 kHz	70,24	–
6.3 kHz	77,78	–
8 kHz	65,76	–
10 kHz	65,2	–
Acoustic power above the surface	A-rated	Z-rated
	92,3	93.1

6 Deriving the Emission Sound Pressure Level at a Distance

The calculated acoustic power can be used to derive an A-rated sound pressure level L_{xpA} for undirected sources at any distance x.

$$LxpA = LwA + Ko - 10 \cdot \log\left(4 \cdot \pi \cdot \frac{X^2}{So}\right)$$

K_0 = solid angle index on the floor 3 [dB]
X = distance from the source [m]
S_0 = 1 m

Device	Distance X [m]	Sound pressure level LxpA [dBA] without fan	Sound pressure level LxpA [dBA] with fan
SC800CP-US	10	–	64,30
	50	–	50.33

7 Appendix - Calculations

deriving sound pressure level at a distance

LxpA = LWA + K0 - 10log (4*PI*(x^2/S0))

LWA 92,3dB
K0 3dB
x 10m
S0 1m

LxpA 64,31dBA

Lw of Transformer 1.75 MVA													
NEMA (Nr):	61									MVA Rating: 1.75			
	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	A	Surface area [m^2]: 32.3	Length [m]	Width [m]	Height [m]
Correction*	3	5	0	0	-6	-11	-16	-23		10*logS: 15.1	2.4	2.85	2.425
Lw [dB]	79	81	76	76	70	65	60	53	76				

*based on *Crocker, Malcolm, J., Sound Power Level Predictions for Industrial Machinery, In Encyclopedia of Acoustics (Vol. 2, pp. 1049 - 1057), John Wiley & Sons, Inc., 1997*

Inverter Collection House Lw										
	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	A	
Inverter 1 (800 kW)	84	82	83	83	78	81	90	79	92	Based on test report provided by manufacturer
Inverter 2 (800 kW)	84	82	83	83	78	81	90	79	92	Based on test report provided by manufacturer
Transformer 1.75 MVA	79	81	76	76	70	65	60	53	76	Predicted as above
Total Collection House [dB]	88	86	86	86	81	84	93	82	95	

Note: The above data does not include adjustments for tonality

Substation Transformers

COOPER Power Systems

Electrical Apparatus

210-15

Unit Type Substation Transformers

GENERAL

Cooper Power Systems Unit Type Substation Transformers are designed to meet customer specifications.

Flexibility in design, combined with the highest quality manufacturing processes, equipment, and testing procedures enable Cooper Power Systems to provide a product optimized to the customer's requirements. All units meet applicable American National Standards Institute (ANSI®), Institute of Electrical and Electronics Engineers, Inc. (IEEE®)and National Electrical Manufacturers Association (NEMA) standards, as well as National Electric Code® (NEC®), Department of Energy (DOE) and Canadian Electricity Association (CEA) specifications.

Unit type substation transformers are available with enclosed sidewall-mounted bushings for connections to primary and/or secondary switchgear.

Substation transformers are made with a wide range of core steels and winding conductors to optimize efficiency versus cost. Flexible core/coil and tank construction enable your dimensional requirements to be met.

Cooper Power Systems transformers are available with our patented Envirotemp FR3 fluid, a less-flammable and bio-degradable fluid or electrical grade mineral insulating oil. Unit type substation transformers intended for indoor use are solely filled with Envirotemp FR3 fluid. Electrical codes recognize the advantages of using Envirotemp FR3 fluid both indoors and outdoors for fire sensitive applications. Envirotemp FR3 fluid-filled units meet Occupational Safety and Health Administration (OSHA) and Section 450.23, 2008 NEC requirements.

Figure 1.
Unit type substation transformer equipped with low-voltage transition flange and high-voltage full height air terminal chamber.

PRODUCT SCOPE

Type	Three-Phase or Single-Phase, 50 or 60 Hz, 65 ºC (55 ºC/65 ºC, 75 ºC Optional)
Fluid Type	Envirotemp FR3 fluid or Mineral Oil (upon special request)
Size	Three-Phase: 300 – 12,000 kVA
	Single-Phase: 500 – 6667 kVA
Primary Voltage	2400 – 46,000 V
Secondary Voltage	208Y/120 V to 24,940 V Wye
Specialty Designs	Inverter/Rectifier Bridge
	Zig Zag
	K-Factor (up to K-19)
	Hazardous Location (Class 1 Div 2)
	Internal Circuit Breaker (VFI)
	UL Listed & Labeled/ Classified
	Factory Mutual (FM) Approved
	Solar/Wind Designs
	Differential Protection
	Automation Solutions

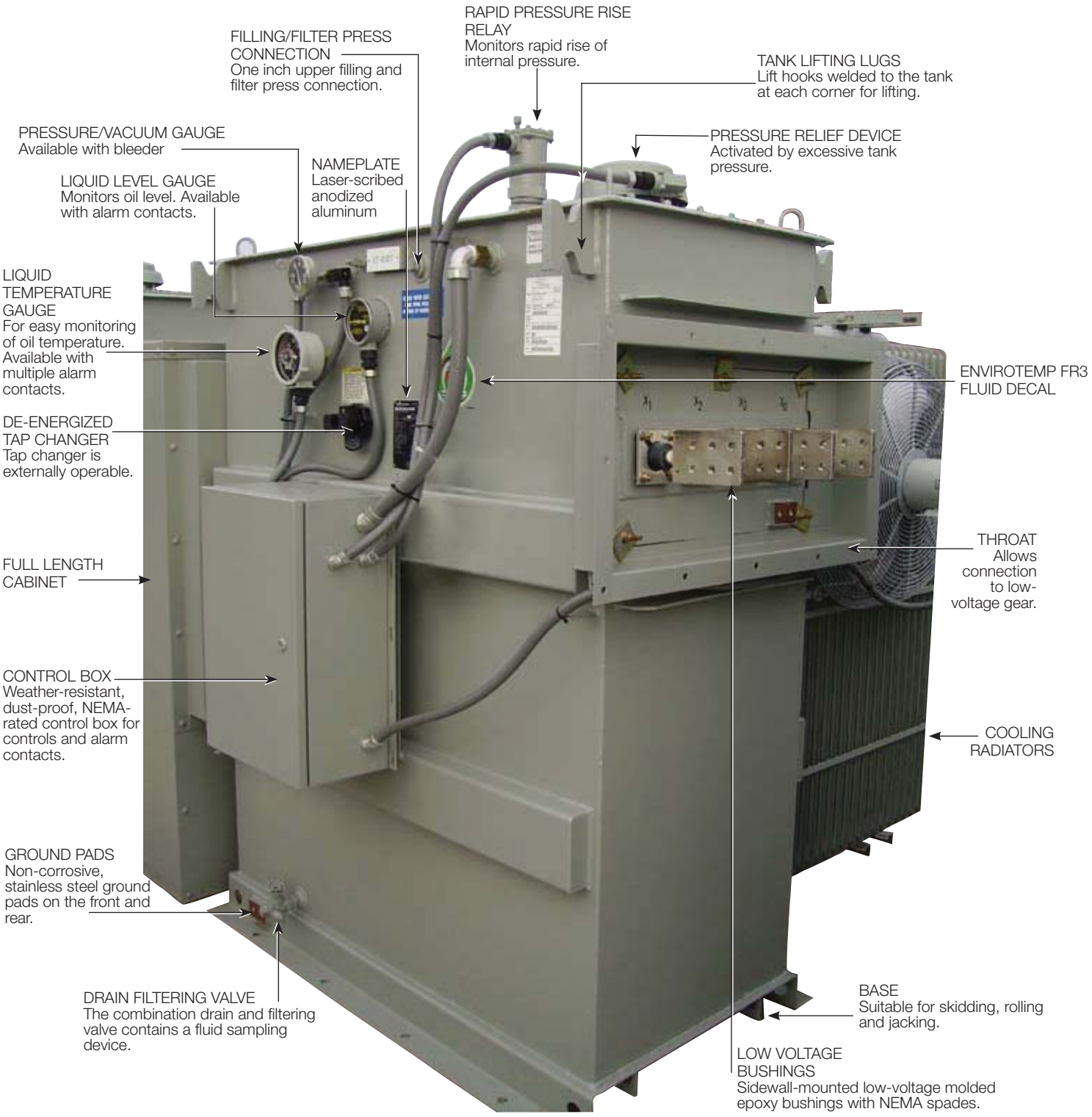


Figure 2.
Unit type substation transformer with standard features and optional accessories.

TABLE 1
Three-Phase, Single Temperature kVA Ratings

Three-Phase kVA Self-Cooled and Forced-Air Cooled with 65 ºC Temperature Rise		
65 ºC Rise KNAN		65 ºC Rise KNAN/ KNAF
500	+15%	575
750		863
1000		1150
1500		1725
2000		2300
2500	+25%	3125
3750		4688
5000		6250
7500		9375
10000		12500
12000	+33%	16000

TABLE 4
Three-Phase, Dual or Triple Temperature kVA Ratings

Three-Phase kVA Self-Cooled and Forced-Air Cooled with Triple Rated 55 ºC/65 ºC/75 ºC Temperature Rise							
55 ºC Rise KNAN		65 ºC Rise KNAN		75 ºC Rise KNAN	55 ºC Rise KNAN/ KNAF	65 ºC Rise KNAN/ KNAF	75 ºC Rise KNAN/ KNAF
500	+12%	560	+9%	610	575	644	702
750		840		916	863	966	1053
1000		1120		1221	1150	1288	1404
1500		1680		1831	1725	1932	2106
2000		2240		2442	2300	2576	2808
2500		2800		3052	3125	3500	3815
3750		4200		4578	4688	5250	5723
5000		5600		6104	6250	7000	7630
7500		8400		9156	9375	10500	11445
10000		11200		12208	12500	14000	15260
12000		13440		14650	16000	17920	19533

TABLE 2
Percentage Impedance Voltage[1]

kV BIL Class	Low Voltage	
	< 2400V	≥ 2400V
45-150	5.75[2]	6.5[3]
200	7.25	7
250	7.75	7.5

1 The standard tolerance is ± 7.5%.
2 Option for 6.75% is available.
3 Option for 5.50% is available.

TABLE 3
Audible Sound Levels

Self-Cooled, Two Winding kVA Rating	NEMA Average	
	dB, KNAN	dB, KNAF
500	56	67
501-700	57	67
701-1000	58	67
1001-1500	60	67
1501-2000	61	67
2001-2500	62	67
2501-3000	63	67
3001-4000	64	67
4001-5000	65	67
5001-6000	66	68
6001-7500	67	70
7501-10000	68	71
12500	69	71

TABLE 5
Insulation Test Levels

kV Class	Induced Test 180 or 400 Hz-7200 Cycle	kV BIL		Applied Test 60Hz (kV)
		Distribution	Power	
1.2	TWICE RATED VOLTAGE	30	45	10
2.5		45	60	15
5		60	75	19
8.7		75	95	26
15		95	110	34
25 (Grd Y Only)		125	150	40
25		150	150	50
34.5 (Grd Y Only)		125	150	50
34.5		150	200	70
46		200	250	95

TABLE 6
Temperature Rise Ratings 0 - 3300 feet (0-1000 meters)

	Standard	Optional
Unit Rating	65 ºC	55/65 ºC, 75 ºC
Ambient Temperature Rise	40 ºC	40 ºC
Ambient Temperature 24 Hour Av.	30 ºC	30 ºC
Temperature Rise Winding[1]	65 ºC	55 ºC
Temperature Rise Hotspot	80 ºC	65 ºC

1 Average Rise by resistance. Refer to ANSI/IEEE Std C57.12.00™ standard.
NOTE: Derate kVA by 0.4% for each 100 M (330 ft.) that the altitude is above 1000 M (3300 ft.)

TABLE 7
Fluid-Filled - Aluminum Windings 55/65 °C Rise[1]

kVA	Drawing Dimensions (in.)									Gallons Of Fluid	Approx. Total Weight (lbs.) (With Fluid)
	A	B	C	D	E	F	G	H	J		
500	66	51	26	52	45	45	30	60	35	300	5600
750	75	59	26	52	55	55	34	68	35	360	7000
1000	75	67	26	52	55	55	38	76	35	420	8400
1500	75	59	59	80	55	55	34	68	35	400	9500
2000	85	67	67	90	55	55	38	76	39	520	12000
2500	85	75	68	92	55	55	42	84	41	570	14600
3750	85	75	70	120	65	65	42	84	45	790	20500
5000	99	87	72	144	65	65	48	96	49	1050	26000
7500	99	95	74	148	75	75	52	104	53	1320	35000
10,000	99	103	76	152	75	75	56	112	57	1740	43000
12,000	99	103	82	164	75	75	56	112	61	1850	49000

[1] Weights, gallons of fluid and dimensions are for reference only, and not for construction. Please contact Cooper Power Systems for exact dimensions

TABLE 8
Fluid-Filled - Copper Windings 55/65 °C Rise[1]

kVA	Drawing Dimensions (in.)									Gallons Of Fluid	Approx. Total Weight (lbs.) (With Fluid)
	A	B	C	D	E	F	G	H	J		
500	66	51	26	52	45	45	30	60	35	310	5900
750	75	59	26	52	55	55	34	68	35	370	7400
1000	75	67	26	52	55	55	38	76	35	430	8800
1500	75	59	59	80	55	55	34	68	35	420	10000
2000	85	63	67	90	55	55	36	72	39	500	12800
2500	85	67	68	92	55	55	38	76	41	590	14900
3750	85	75	70	120	65	65	42	84	45	830	21500
5000	99	87	72	144	65	65	48	96	49	1090	28000
7500	99	95	74	148	75	75	52	104	53	1360	37000
10,000	99	103	76	152	75	75	56	112	57	1780	45000
12,000	99	103	82	164	75	75	56	112	61	1880	50000

[1] Weights, gallons of fluid and dimensions are for reference only, and not for construction. Please contact Cooper Power Systems for exact dimensions

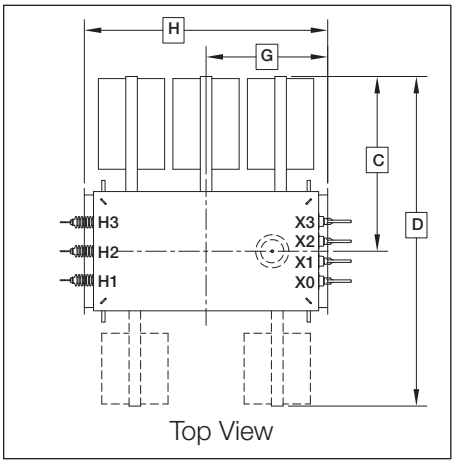


Figure 3.
High-Voltage left (Segment 2) shown. High-Voltage right (Segment 4) also available.

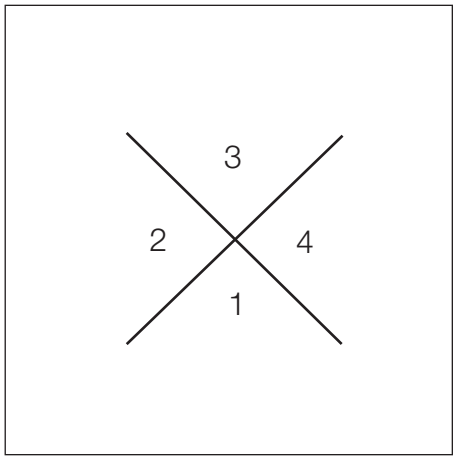


Figure 4.
ANSI segment designation.

APPENDIX D

Details of Predictive Acoustical Modelling

The predictive model used for this Assessment (*Cadna-A version 4.3.143*) is based on the methods from ISO Standard 9613-2.2 “Acoustics - Attenuation of Sound During Propagation Outdoors” [6], which accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures (or by topography and foliage where applicable). This modeling technique is acceptable to the MOE.

Although the site and its surroundings include some terrain features with the potential to provide acoustic shielding, the site and the surrounding area were conservatively modelled as flat ground. Ground attenuation was assumed to be spectral for all sources, with the ground factor (G) assumed to be 0.7 in all areas. The temperature and relative humidity were assumed to be 10° C and 70%, respectively.

The predictive modelling considered one order of reflection, with both on-site and off-site shielding/reflections afforded by buildings, walls, etc., with spectral absorptive characteristics applied to structures as appropriate. No credit has been assumed in the model for self-shielding of the sources on site by the arrays of solar panels themselves. In this regard the predictions are conservative (i.e. may tend to overpredict the sound levels slightly).

All mechanical sources were modeled as point sources of sound and are shown as crosses in Figures 3 and 4.

APPENDIX E

Acoustic Assessment Criteria

The MOE Publication NPC-300 [4] draws a distinction between sound produced by traffic sources and that produced by industrial or commercial activities, which are classified as *stationary sources*. According to NPC-300, sound level limits for stationary sources apply at noise sensitive points of reception, and are set as the higher of either the applicable exclusion limit, or the minimum background sound level that occurs during the time period corresponding to the operation of the source under assessment.

The exclusion limits applicable to Class 3 areas, and consequently to the Brantgate Solar Farm, are outlined in the table below.

Table E1: Exclusion Limits in Class 3 Areas, L_{EQ} [dBA]

	Daytime (07:00 – 19:00)	**Evening (19:00 – 23:00)**	**Nighttime (23:00 – 07:00)**
Outdoor Points of Reception	45	40	--
Plane of Window of Noise Sensitive Spaces	45	40	40

The background sound is typically dominated by road traffic, except in areas well removed from the activities of people. The background sound levels can be determined through automated long-term measurement, or by predictive analysis based on road traffic volume counts, in cases where the background sound is dominated by road traffic.

Observations and measurements during the site visit by HGC Engineering suggest that background sound levels in the area are likely to fall below the exclusion limits during some hours of the day, evening or night. Given that the equipment at the subject facility will be energized throughout the day, evening and night with steady sound emissions when daylight conditions allow, the most stringent limit of 40 dBA in the table above is the applicable sound level criterion for the purposes of this assessment.

APPENDIX F

Sample Calculation Results - Condensed, Overall dBA Format

In the following tables of calculation results, the column headings for the various sound attenuation mechanisms follow the terminology of ISO Standard 9613-2. Lx is the A-weighted, one-hour energy-equivalent (or logarithmic-mean impulse) source sound power level, which includes the effects of any source-abatement measures included in the model, and any time-averaging effects for intermittent sources. Lr is the A-weighted, one-hour energy-equivalent (or logarithmic-mean impulse) sound level at the point of reception. The results are presented in terms of overall A-weighted results, at the most impacted off-site point of reception.

R01	Residential Dwelling	549841	4767421	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	70.9	0	0.0	-0.7	0.0	10.5	0.0	0.0	0.0	0.0	20
NS-02	Inverter House	549694	4766275	257.3	100	72.3	0	0.0	-0.7	0.0	11.1	0.0	0.0	0.0	0.0	18
NS-03	Inverter House	549811	4766460	257.3	100	70.7	0	0.0	-0.7	0.0	10.5	0.0	0.0	0.0	0.0	20
NS-04	Inverter House	549951	4766275	257.3	93	72.2	0	0.0	0.5	0.0	7.5	0.0	0.0	0.0	0.0	12
NS-05	Inverter House	549994	4766460	257.3	93	70.8	0	0.0	0.4	0.0	7.2	0.0	0.0	0.0	0.0	14
NS-06	HVAC Unit	549941	4766640	257.5	83	68.9	0	0.0	0.2	0.0	1.9	0.0	0.0	0.0	0.0	12

R02	Vacant Lot	549979	4767298	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	70.2	0	0.0	-0.7	0.0	10.3	0.0	0.0	0.0	0.0	21
NS-02	Inverter House	549694	4766275	257.3	100	71.5	0	0.0	-0.7	0.0	10.8	0.0	0.0	0.0	0.0	19
NS-03	Inverter House	549811	4766460	257.3	100	69.6	0	0.0	-0.7	0.0	10.1	0.0	0.0	0.0	0.0	21
NS-04	Inverter House	549951	4766275	257.3	93	71.2	0	0.0	0.5	0.0	7.3	0.0	0.0	0.0	0.0	14
NS-05	Inverter House	549994	4766460	257.3	93	69.5	0	0.0	0.4	0.0	6.9	0.0	0.0	0.0	0.0	16
NS-06	HVAC Unit	549941	4766640	257.5	83	67.4	0	0.0	0.2	0.0	1.7	0.0	0.0	0.0	0.0	14

R03	Residential Dwelling	550026	4767180	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	69.3	0	0.0	-0.8	0.0	10.0	0.0	0.0	0.0	0.0	22
NS-02	Inverter House	549694	4766275	257.3	100	70.7	0	0.0	-0.7	0.0	10.5	0.0	0.0	0.0	0.0	20
NS-03	Inverter House	549811	4766460	257.3	100	68.5	0	0.0	-0.8	0.0	9.7	0.0	0.0	0.0	0.0	23
NS-04	Inverter House	549951	4766275	257.3	93	70.2	0	0.0	0.4	0.0	7.0	0.0	0.0	0.0	0.0	15
NS-05	Inverter House	549994	4766460	257.3	93	68.2	0	0.0	0.3	0.0	6.6	0.0	0.0	0.0	0.0	18
NS-06	HVAC Unit	549941	4766640	257.5	83	65.8	0	0.0	0.2	0.0	1.4	0.0	0.0	0.0	0.0	16

R04	Residential Dwelling	549977	4766986	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	67.0	0	0.0	-0.8	0.0	9.1	0.0	0.0	0.0	0.0	25
NS-02	Inverter House	549694	4766275	257.3	100	68.7	0	0.0	-0.8	0.0	9.7	0.0	0.0	0.0	0.0	23
NS-03	Inverter House	549811	4766460	257.3	100	65.8	0	0.0	-0.8	0.0	8.7	0.0	0.0	0.0	0.0	27
NS-04	Inverter House	549951	4766275	257.3	93	68.1	0	0.0	0.3	0.0	6.6	0.0	0.0	0.0	0.0	18
NS-05	Inverter House	549994	4766460	257.3	93	65.4	0	0.0	0.2	0.0	6.0	0.0	0.0	0.0	0.0	21
NS-06	HVAC Unit	549941	4766640	257.5	83	61.8	0	0.0	0.2	0.0	1.0	0.0	0.0	0.0	0.0	20

R05	Residential Dwelling	550108	4766944	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	67.7	0	0.0	-0.8	0.0	9.4	0.0	0.0	0.0	0.0	24
NS-02	Inverter House	549694	4766275	257.3	100	68.9	0	0.0	-0.8	0.0	9.8	0.0	0.0	0.0	0.0	22
NS-03	Inverter House	549811	4766460	257.3	100	66.1	0	0.0	-0.8	0.0	8.8	0.0	0.0	0.0	0.0	26
NS-04	Inverter House	549951	4766275	257.3	93	67.7	0	0.0	0.3	0.0	6.5	0.0	0.0	0.0	0.0	18
NS-05	Inverter House	549994	4766460	257.3	93	64.9	0	0.0	0.2	0.0	5.9	0.0	0.0	0.0	0.0	22
NS-06	HVAC Unit	549941	4766640	257.5	83	61.8	0	0.0	0.2	0.0	1.0	0.0	0.0	0.0	0.0	20

R06	Residential Dwelling	550102	4766776	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	66.1	0	0.0	-0.8	0.0	8.8	0.0	0.0	0.0	0.0	26
NS-02	Inverter House	549694	4766275	257.3	100	67.2	0	0.0	-0.8	0.0	9.2	0.0	0.0	0.0	0.0	25
NS-03	Inverter House	549811	4766460	257.3	100	63.7	0	0.0	-0.8	0.0	7.7	0.0	0.0	0.0	0.0	30
NS-04	Inverter House	549951	4766275	257.3	93	65.4	0	0.0	0.2	0.0	6.0	0.0	0.0	0.0	0.0	21
NS-05	Inverter House	549994	4766460	257.3	93	61.5	0	0.0	0.1	0.0	5.1	0.0	0.0	0.0	0.0	26
NS-06	HVAC Unit	549941	4766640	257.5	83	57.5	0	0.0	0.5	0.0	0.6	0.0	0.0	0.0	0.0	25

R07	Residential Dwelling	550029	4766735	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	64.7	0	0.0	-0.8	0.0	8.2	0.0	0.0	0.0	0.0	28
NS-02	Inverter House	549694	4766275	257.3	100	66.1	0	0.0	-0.8	0.0	8.8	0.0	0.0	0.0	0.0	26
NS-03	Inverter House	549811	4766460	257.3	100	61.9	0	0.0	-0.8	0.0	6.9	0.0	0.0	0.0	0.0	32
NS-04	Inverter House	549951	4766275	257.3	93	64.4	0	0.0	0.2	0.0	5.8	0.0	0.0	0.0	0.0	22
NS-05	Inverter House	549994	4766460	257.3	93	59.9	0	0.0	0.1	0.0	4.7	0.0	0.0	0.0	0.0	28
NS-06	HVAC Unit	549941	4766640	257.5	83	53.3	0	0.0	0.4	0.0	0.4	0.0	0.0	0.0	0.0	29

Where: Lr = Lx - Adiv + K0 + Dc - Agnd - Abar - Aatm - Afol - Ahous + Cmet + Refl

R08	Residential Dwelling	550210	4766661	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	66.8	0	0.0	-0.8	0.0	9.0	0.0	0.0	0.0	0.0	25
NS-02	Inverter House	549694	4766275	257.3	100	67.2	0	0.0	-0.8	0.0	9.2	0.0	0.0	0.0	0.0	25
NS-03	Inverter House	549811	4766460	257.3	100	64.0	0	0.0	-0.8	0.0	7.9	0.0	0.0	0.0	0.0	29
NS-04	Inverter House	549951	4766275	257.3	93	64.4	0	0.0	0.2	0.0	5.8	0.0	0.0	0.0	0.0	22
NS-05	Inverter House	549994	4766460	257.3	93	60.4	0	0.0	0.1	0.0	4.9	0.0	0.0	0.0	0.0	27
NS-06	HVAC Unit	549941	4766640	257.5	83	59.6	0	0.0	0.3	0.0	0.8	0.0	0.0	0.0	0.0	22

R09	Residential Dwelling	550274	4766686	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	67.7	0	0.0	-0.8	0.0	9.4	0.0	0.0	0.0	0.0	24
NS-02	Inverter House	549694	4766275	257.3	100	68.0	0	0.0	-0.8	0.0	9.5	0.0	0.0	0.0	0.0	24
NS-03	Inverter House	549811	4766460	257.3	100	65.3	0	0.0	-0.8	0.0	8.4	0.0	0.0	0.0	0.0	28
NS-04	Inverter House	549951	4766275	257.3	93	65.4	0	0.0	0.2	0.0	6.0	0.0	0.0	0.0	0.0	21
NS-05	Inverter House	549994	4766460	257.3	93	62.1	0	0.0	0.1	0.0	5.3	0.0	0.0	0.0	0.0	25
NS-06	HVAC Unit	549941	4766640	257.5	83	61.5	0	0.0	0.3	0.0	1.0	0.0	0.0	0.0	0.0	20

R10	Residential Dwelling	550470	4766655	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	69.7	0	0.0	-0.7	0.0	10.1	0.0	0.0	0.0	0.0	21
NS-02	Inverter House	549694	4766275	257.3	100	69.7	0	0.0	-0.7	0.0	10.1	0.0	0.0	0.0	0.0	21
NS-03	Inverter House	549811	4766460	257.3	100	67.7	0	0.0	-0.8	0.0	9.4	0.0	0.0	0.0	0.0	24
NS-04	Inverter House	549951	4766275	257.3	93	67.2	0	0.0	0.3	0.0	6.4	0.0	0.0	0.0	0.0	19
NS-05	Inverter House	549994	4766460	257.3	93	65.2	0	0.0	0.2	0.0	6.0	0.0	0.0	0.0	0.0	21
NS-06	HVAC Unit	549941	4766640	257.5	83	65.5	0	0.0	0.2	0.0	1.4	0.0	0.0	0.0	0.0	16

R11	Vacant Lot	550556	4766670	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	70.6	0	0.0	-0.7	0.0	10.4	0.0	0.0	0.0	0.0	20
NS-02	Inverter House	549694	4766275	257.3	100	70.5	0	0.0	-0.7	0.0	10.4	0.0	0.0	0.0	0.0	20
NS-03	Inverter House	549811	4766460	257.3	100	68.8	0	0.0	-0.8	0.0	9.8	0.0	0.0	0.0	0.0	23
NS-04	Inverter House	549951	4766275	257.3	93	68.2	0	0.0	0.3	0.0	6.6	0.0	0.0	0.0	0.0	18
NS-05	Inverter House	549994	4766460	257.3	93	66.6	0	0.0	0.3	0.0	6.3	0.0	0.0	0.0	0.0	20
NS-06	HVAC Unit	549941	4766640	257.5	83	66.8	0	0.0	0.2	0.0	1.6	0.0	0.0	0.0	0.0	15

R12	Residential Dwelling	550153	4766568	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	65.6	0	0.0	-0.8	0.0	8.5	0.0	0.0	0.0	0.0	27
NS-02	Inverter House	549694	4766275	257.3	100	65.7	0	0.0	-0.8	0.0	8.6	0.0	0.0	0.0	0.0	27
NS-03	Inverter House	549811	4766460	257.3	100	62.1	0	0.0	-0.8	0.0	7.0	0.0	0.0	0.0	0.0	32
NS-04	Inverter House	549951	4766275	257.3	93	62.0	0	0.0	0.1	0.0	5.3	0.0	0.0	0.0	0.0	25
NS-05	Inverter House	549994	4766460	257.3	93	56.7	0	0.0	0.1	0.0	3.9	0.0	0.0	0.0	0.0	32
NS-06	HVAC Unit	549941	4766640	257.5	83	58.0	0	0.0	0.5	0.0	0.7	0.0	0.0	0.0	0.0	24

R13	Residential Dwelling	550204	4766583	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	66.4	0	0.0	-0.8	0.0	8.9	0.0	0.0	0.0	0.0	26
NS-02	Inverter House	549694	4766275	257.3	100	66.5	0	0.0	-0.8	0.0	8.9	0.0	0.0	0.0	0.0	26
NS-03	Inverter House	549811	4766460	257.3	100	63.3	0	0.0	-0.8	0.0	7.6	0.0	0.0	0.0	0.0	30
NS-04	Inverter House	549951	4766275	257.3	93	63.0	0	0.0	0.2	0.0	5.5	0.0	0.0	0.0	0.0	24
NS-05	Inverter House	549994	4766460	257.3	93	58.7	0	0.0	0.1	0.0	4.4	0.0	0.0	0.0	0.0	29
NS-06	HVAC Unit	549941	4766640	257.5	83	59.6	0	0.0	0.3	0.0	0.8	0.0	0.0	0.0	0.0	22

R14	Vacant Lot	550196	4766498	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	66.1	0	0.0	-0.8	0.0	8.8	0.0	0.0	0.0	0.0	26
NS-02	Inverter House	549694	4766275	257.3	100	65.8	0	0.0	-0.8	0.0	8.6	0.0	0.0	0.0	0.0	27
NS-03	Inverter House	549811	4766460	257.3	100	62.8	0	0.0	-0.8	0.0	7.3	0.0	0.0	0.0	0.0	31
NS-04	Inverter House	549951	4766275	257.3	93	61.4	0	0.0	0.1	0.0	5.1	0.0	0.0	0.0	0.0	26
NS-05	Inverter House	549994	4766460	257.3	93	57.2	0	0.0	0.2	0.0	4.1	0.0	0.0	0.0	0.0	31
NS-06	HVAC Unit	549941	4766640	257.5	83	60.3	0	0.0	0.3	0.0	0.9	0.0	0.0	0.0	0.0	22

Where: Lr = Lx - Adiv + K0 + Dc - Agnd - Abar - Aatm - Afol - Ahous + Cmet + Refl

R15	Residential Dwelling	550453	4766522	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	69.4	0	0.0	-0.8	0.0	10.0	0.0	0.0	0.0	0.0	22
NS-02	Inverter House	549694	4766275	257.3	100	69.0	0	0.0	-0.8	0.0	9.9	0.0	0.0	0.0	0.0	22
NS-03	Inverter House	549811	4766460	257.3	100	67.2	0	0.0	-0.8	0.0	9.2	0.0	0.0	0.0	0.0	25
NS-04	Inverter House	549951	4766275	257.3	93	66.0	0	0.0	0.2	0.0	6.1	0.0	0.0	0.0	0.0	20
NS-05	Inverter House	549994	4766460	257.3	93	64.3	0	0.0	0.2	0.0	5.8	0.0	0.0	0.0	0.0	22
NS-06	HVAC Unit	549941	4766640	257.5	83	65.4	0	0.0	0.2	0.0	1.4	0.0	0.0	0.0	0.0	16

R16	Residential Dwelling	550603	4766593	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	70.9	0	0.0	-0.7	0.0	10.5	0.0	0.0	0.0	0.0	20
NS-02	Inverter House	549694	4766275	257.3	100	70.7	0	0.0	-0.7	0.0	10.5	0.0	0.0	0.0	0.0	20
NS-03	Inverter House	549811	4766460	257.3	100	69.1	0	0.0	-0.8	0.0	9.9	0.0	0.0	0.0	0.0	22
NS-04	Inverter House	549951	4766275	257.3	93	68.2	0	0.0	0.3	0.0	6.6	0.0	0.0	0.0	0.0	18
NS-05	Inverter House	549994	4766460	257.3	93	66.9	0	0.0	0.3	0.0	6.3	0.0	0.0	0.0	0.0	19
NS-06	HVAC Unit	549941	4766640	257.5	83	67.5	0	0.0	0.2	0.0	1.7	0.0	0.0	0.0	0.0	14

R17	Vacant Lot	550234	4766403	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	66.7	0	0.0	-0.8	0.0	9.0	0.0	0.0	0.0	0.0	25
NS-02	Inverter House	549694	4766275	257.3	100	65.9	0	0.0	-0.8	0.0	8.7	0.0	0.0	0.0	0.0	27
NS-03	Inverter House	549811	4766460	257.3	100	63.6	0	0.0	-0.8	0.0	7.7	0.0	0.0	0.0	0.0	30
NS-04	Inverter House	549951	4766275	257.3	93	60.9	0	0.0	0.1	0.0	5.0	0.0	0.0	0.0	0.0	27
NS-05	Inverter House	549994	4766460	257.3	93	58.8	0	0.0	0.1	0.0	4.5	0.0	0.0	0.0	0.0	29
NS-06	HVAC Unit	549941	4766640	257.5	83	62.5	0	0.0	0.2	0.0	1.1	0.0	0.0	0.0	0.0	19

R18	Residential Dwelling	550155	4766289	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	65.9	0	0.0	-0.8	0.0	8.7	0.0	0.0	0.0	0.0	27
NS-02	Inverter House	549694	4766275	257.3	100	64.3	0	0.0	-0.8	0.0	8.0	0.0	0.0	0.0	0.0	29
NS-03	Inverter House	549811	4766460	257.3	100	62.7	0	0.0	-0.8	0.0	7.3	0.0	0.0	0.0	0.0	31
NS-04	Inverter House	549951	4766275	257.3	93	57.2	0	0.0	0.2	0.0	4.1	0.0	0.0	0.0	0.0	31
NS-05	Inverter House	549994	4766460	257.3	93	58.4	0	0.0	0.2	0.0	4.4	0.0	0.0	0.0	0.0	30
NS-06	HVAC Unit	549941	4766640	257.5	83	63.3	0	0.0	0.2	0.0	1.1	0.0	0.0	0.0	0.0	19

R19	Residential Dwelling	550200	4766174	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	67.1	0	0.0	-0.8	0.0	9.2	0.0	0.0	0.0	0.0	25
NS-02	Inverter House	549694	4766275	257.3	100	65.2	0	0.0	-0.8	0.0	8.4	0.0	0.0	0.0	0.0	28
NS-03	Inverter House	549811	4766460	257.3	100	64.7	0	0.0	-0.8	0.0	8.2	0.0	0.0	0.0	0.0	28
NS-04	Inverter House	549951	4766275	257.3	93	59.6	0	0.0	0.1	0.0	4.7	0.0	0.0	0.0	0.0	28
NS-05	Inverter House	549994	4766460	257.3	93	61.9	0	0.0	0.1	0.0	5.2	0.0	0.0	0.0	0.0	25
NS-06	HVAC Unit	549941	4766640	257.5	83	65.5	0	0.0	0.2	0.0	1.4	0.0	0.0	0.0	0.0	16

R20	Residential Dwelling	550289	4766192	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	68.1	0	0.0	-0.8	0.0	9.5	0.0	0.0	0.0	0.0	24
NS-02	Inverter House	549694	4766275	257.3	100	66.6	0	0.0	-0.8	0.0	9.0	0.0	0.0	0.0	0.0	26
NS-03	Inverter House	549811	4766460	257.3	100	65.8	0	0.0	-0.8	0.0	8.6	0.0	0.0	0.0	0.0	27
NS-04	Inverter House	549951	4766275	257.3	93	61.8	0	0.0	0.1	0.0	5.2	0.0	0.0	0.0	0.0	26
NS-05	Inverter House	549994	4766460	257.3	93	63.0	0	0.0	0.2	0.0	5.5	0.0	0.0	0.0	0.0	24
NS-06	HVAC Unit	549941	4766640	257.5	83	66.1	0	0.0	0.2	0.0	1.5	0.0	0.0	0.0	0.0	15

R21	Residential Dwelling	550279	4766147	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	68.2	0	0.0	-0.8	0.0	9.6	0.0	0.0	0.0	0.0	23
NS-02	Inverter House	549694	4766275	257.3	100	66.5	0	0.0	-0.8	0.0	8.9	0.0	0.0	0.0	0.0	26
NS-03	Inverter House	549811	4766460	257.3	100	66.0	0	0.0	-0.8	0.0	8.7	0.0	0.0	0.0	0.0	26
NS-04	Inverter House	549951	4766275	257.3	93	61.9	0	0.0	0.1	0.0	5.2	0.0	0.0	0.0	0.0	25
NS-05	Inverter House	549994	4766460	257.3	93	63.5	0	0.0	0.2	0.0	5.6	0.0	0.0	0.0	0.0	23
NS-06	HVAC Unit	549941	4766640	257.5	83	66.5	0	0.0	0.2	0.0	1.6	0.0	0.0	0.0	0.0	15

Where: Lr = Lx - Adiv + K0 + Dc - Agnd - Abar - Aatm - Afol - Ahous + Cmet + Refl

R22	Residential Dwelling	550283	4766115	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	68.4	0	0.0	-0.8	0.0	9.6	0.0	0.0	0.0	0.0	23
NS-02	Inverter House	549694	4766275	257.3	100	66.7	0	0.0	-0.8	0.0	9.0	0.0	0.0	0.0	0.0	25
NS-03	Inverter House	549811	4766460	257.3	100	66.3	0	0.0	-0.8	0.0	8.9	0.0	0.0	0.0	0.0	26
NS-04	Inverter House	549951	4766275	257.3	93	62.3	0	0.0	0.1	0.0	5.3	0.0	0.0	0.0	0.0	25
NS-05	Inverter House	549994	4766460	257.3	93	64.1	0	0.0	0.2	0.0	5.7	0.0	0.0	0.0	0.0	23
NS-06	HVAC Unit	549941	4766640	257.5	83	66.9	0	0.0	0.2	0.0	1.6	0.0	0.0	0.0	0.0	14

R23	Vacant Lot	550334	4766020	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	69.4	0	0.0	-0.8	0.0	10.0	0.0	0.0	0.0	0.0	22
NS-02	Inverter House	549694	4766275	257.3	100	67.8	0	0.0	-0.8	0.0	9.4	0.0	0.0	0.0	0.0	24
NS-03	Inverter House	549811	4766460	257.3	100	67.7	0	0.0	-0.8	0.0	9.4	0.0	0.0	0.0	0.0	24
NS-04	Inverter House	549951	4766275	257.3	93	64.3	0	0.0	0.2	0.0	5.8	0.0	0.0	0.0	0.0	23
NS-05	Inverter House	549994	4766460	257.3	93	65.9	0	0.0	0.2	0.0	6.1	0.0	0.0	0.0	0.0	20
NS-06	HVAC Unit	549941	4766640	257.5	83	68.3	0	0.0	0.2	0.0	1.8	0.0	0.0	0.0	0.0	13

R24	Residential Dwelling	550338	4765962	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	69.8	0	0.0	-0.7	0.0	10.1	0.0	0.0	0.0	0.0	21
NS-02	Inverter House	549694	4766275	257.3	100	68.1	0	0.0	-0.8	0.0	9.5	0.0	0.0	0.0	0.0	24
NS-03	Inverter House	549811	4766460	257.3	100	68.2	0	0.0	-0.8	0.0	9.6	0.0	0.0	0.0	0.0	23
NS-04	Inverter House	549951	4766275	257.3	93	65.0	0	0.0	0.2	0.0	5.9	0.0	0.0	0.0	0.0	22
NS-05	Inverter House	549994	4766460	257.3	93	66.6	0	0.0	0.3	0.0	6.3	0.0	0.0	0.0	0.0	20
NS-06	HVAC Unit	549941	4766640	257.5	83	68.9	0	0.0	0.2	0.0	1.9	0.0	0.0	0.0	0.0	12

R25	Residential Dwelling	550276	4765917	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	69.5	0	0.0	-0.8	0.0	10.1	0.0	0.0	0.0	0.0	22
NS-02	Inverter House	549694	4766275	257.3	100	67.7	0	0.0	-0.8	0.0	9.4	0.0	0.0	0.0	0.0	24
NS-03	Inverter House	549811	4766460	257.3	100	68.1	0	0.0	-0.8	0.0	9.5	0.0	0.0	0.0	0.0	24
NS-04	Inverter House	549951	4766275	257.3	93	64.7	0	0.0	0.2	0.0	5.9	0.0	0.0	0.0	0.0	22
NS-05	Inverter House	549994	4766460	257.3	93	66.7	0	0.0	0.3	0.0	6.3	0.0	0.0	0.0	0.0	19
NS-06	HVAC Unit	549941	4766640	257.5	83	69.0	0	0.0	0.2	0.0	2.0	0.0	0.0	0.0	0.0	12

R26	Residential Dwelling	550353	4765905	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	70.2	0	0.0	-0.7	0.0	10.3	0.0	0.0	0.0	0.0	21
NS-02	Inverter House	549694	4766275	257.3	100	68.6	0	0.0	-0.8	0.0	9.7	0.0	0.0	0.0	0.0	23
NS-03	Inverter House	549811	4766460	257.3	100	68.8	0	0.0	-0.8	0.0	9.8	0.0	0.0	0.0	0.0	23
NS-04	Inverter House	549951	4766275	257.3	93	65.8	0	0.0	0.2	0.0	6.1	0.0	0.0	0.0	0.0	21
NS-05	Inverter House	549994	4766460	257.3	93	67.4	0	0.0	0.3	0.0	6.4	0.0	0.0	0.0	0.0	19
NS-06	HVAC Unit	549941	4766640	257.5	83	69.5	0	0.0	0.2	0.0	2.0	0.0	0.0	0.0	0.0	11

R27	Residential Dwelling	550335	4765667	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	71.5	0	0.0	-0.7	0.0	10.8	0.0	0.0	0.0	0.0	19
NS-02	Inverter House	549694	4766275	257.3	100	69.9	0	0.0	-0.7	0.0	10.2	0.0	0.0	0.0	0.0	21
NS-03	Inverter House	549811	4766460	257.3	100	70.6	0	0.0	-0.7	0.0	10.4	0.0	0.0	0.0	0.0	20
NS-04	Inverter House	549951	4766275	257.3	93	68.1	0	0.0	0.3	0.0	6.6	0.0	0.0	0.0	0.0	18
NS-05	Inverter House	549994	4766460	257.3	93	69.7	0	0.0	0.4	0.0	6.9	0.0	0.0	0.0	0.0	16
NS-06	HVAC Unit	549941	4766640	257.5	83	71.4	0	0.0	0.3	0.0	2.4	0.0	0.0	0.0	0.0	9

R28	Residential Dwelling	550442	4765671	259.5											
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	72.1	0	0.0	-0.7	0.0	11.0	0.0	0.0	0.0	0.0	18
NS-02	Inverter House	549694	4766275	257.3	100	70.7	0	0.0	-0.7	0.0	10.5	0.0	0.0	0.0	0.0	20
NS-03	Inverter House	549811	4766460	257.3	100	71.1	0	0.0	-0.7	0.0	10.6	0.0	0.0	0.0	0.0	19
NS-04	Inverter House	549951	4766275	257.3	93	68.8	0	0.0	0.4	0.0	6.7	0.0	0.0	0.0	0.0	17
NS-05	Inverter House	549994	4766460	257.3	93	70.2	0	0.0	0.4	0.0	7.0	0.0	0.0	0.0	0.0	15
NS-06	HVAC Unit	549941	4766640	257.5	83	71.8	0	0.0	0.3	0.0	2.5	0.0	0.0	0.0	0.0	9

Where: Lr = Lx - Adiv + K0 + Dc - Agnd - Abar - Aatm - Afol - Ahous + Cmet + Refl

R29	Residential Dwelling	550472	4765518	259.5												
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	73.0	0	0.0	-0.7	0.0	11.4	0.0	0.0	0.0	0.0	17
NS-02	Inverter House	549694	4766275	257.3	100	71.7	0	0.0	-0.7	0.0	10.8	0.0	0.0	0.0	0.0	18
NS-03	Inverter House	549811	4766460	257.3	100	72.2	0	0.0	-0.7	0.0	11.0	0.0	0.0	0.0	0.0	18
NS-04	Inverter House	549951	4766275	257.3	93	70.3	0	0.0	0.4	0.0	7.1	0.0	0.0	0.0	0.0	15
NS-05	Inverter House	549994	4766460	257.3	93	71.5	0	0.0	0.5	0.0	7.3	0.0	0.0	0.0	0.0	13
NS-06	HVAC Unit	549941	4766640	257.5	83	72.9	0	0.0	0.3	0.0	2.8	0.0	0.0	0.0	0.0	7

R30	Residential Dwelling	548590	4765628	259.5												
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	73.5	0	0.0	-0.6	0.0	11.5	0.0	0.0	0.0	0.0	16
NS-02	Inverter House	549694	4766275	257.3	100	73.1	0	0.0	-0.7	0.0	11.4	0.0	0.0	0.0	0.0	16
NS-03	Inverter House	549811	4766460	257.3	100	74.4	0	0.0	-0.6	0.0	11.9	0.0	0.0	0.0	0.0	15
NS-04	Inverter House	549951	4766275	257.3	93	74.6	0	0.0	0.6	0.0	8.2	0.0	0.0	0.0	0.0	9
NS-05	Inverter House	549994	4766460	257.3	93	75.3	0	0.0	0.7	0.0	8.4	0.0	0.0	0.0	0.0	8
NS-06	HVAC Unit	549941	4766640	257.5	83	75.5	0	0.0	0.4	0.0	3.6	0.0	0.0	0.0	0.0	4

R31	Residential Dwelling	548578	4766101	259.5												
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	71.9	0	0.0	-0.7	0.0	10.9	0.0	0.0	0.0	0.0	18
NS-02	Inverter House	549694	4766275	257.3	100	72.1	0	0.0	-0.7	0.0	11.0	0.0	0.0	0.0	0.0	18
NS-03	Inverter House	549811	4766460	257.3	100	73.2	0	0.0	-0.7	0.0	11.4	0.0	0.0	0.0	0.0	16
NS-04	Inverter House	549951	4766275	257.3	93	73.8	0	0.0	0.6	0.0	8.0	0.0	0.0	0.0	0.0	10
NS-05	Inverter House	549994	4766460	257.3	93	74.3	0	0.0	0.6	0.0	8.1	0.0	0.0	0.0	0.0	10
NS-06	HVAC Unit	549941	4766640	257.5	83	74.3	0	0.0	0.4	0.0	3.2	0.0	0.0	0.0	0.0	5

R32	Residential Dwelling	548596	4767183	259.5												
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	73.0	0	0.0	-0.7	0.0	11.3	0.0	0.0	0.0	0.0	17
NS-02	Inverter House	549694	4766275	257.3	100	74.1	0	0.0	-0.6	0.0	11.8	0.0	0.0	0.0	0.0	15
NS-03	Inverter House	549811	4766460	257.3	100	74.0	0	0.0	-0.6	0.0	11.8	0.0	0.0	0.0	0.0	15
NS-04	Inverter House	549951	4766275	257.3	93	75.3	0	0.0	0.7	0.0	8.4	0.0	0.0	0.0	0.0	8
NS-05	Inverter House	549994	4766460	257.3	93	74.9	0	0.0	0.6	0.0	8.3	0.0	0.0	0.0	0.0	9
NS-06	HVAC Unit	549941	4766640	257.5	83	74.2	0	0.0	0.4	0.0	3.2	0.0	0.0	0.0	0.0	5

R33	Residential Dwelling	548731	4767257	259.5												
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	72.6	0	0.0	-0.7	0.0	11.2	0.0	0.0	0.0	0.0	17
NS-02	Inverter House	549694	4766275	257.3	100	73.8	0	0.0	-0.6	0.0	11.7	0.0	0.0	0.0	0.0	16
NS-03	Inverter House	549811	4766460	257.3	100	73.6	0	0.0	-0.6	0.0	11.6	0.0	0.0	0.0	0.0	16
NS-04	Inverter House	549951	4766275	257.3	93	74.9	0	0.0	0.6	0.0	8.3	0.0	0.0	0.0	0.0	9
NS-05	Inverter House	549994	4766460	257.3	93	74.5	0	0.0	0.6	0.0	8.1	0.0	0.0	0.0	0.0	10
NS-06	HVAC Unit	549941	4766640	257.5	83	73.7	0	0.0	0.3	0.0	3.0	0.0	0.0	0.0	0.0	6

R34	Residential Dwelling	549065	4767274	259.5												
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	70.9	0	0.0	-0.7	0.0	10.6	0.0	0.0	0.0	0.0	20
NS-02	Inverter House	549694	4766275	257.3	100	72.4	0	0.0	-0.7	0.0	11.1	0.0	0.0	0.0	0.0	17
NS-03	Inverter House	549811	4766460	257.3	100	71.9	0	0.0	-0.7	0.0	10.9	0.0	0.0	0.0	0.0	18
NS-04	Inverter House	549951	4766275	257.3	93	73.5	0	0.0	0.6	0.0	7.9	0.0	0.0	0.0	0.0	11
NS-05	Inverter House	549994	4766460	257.3	93	72.8	0	0.0	0.5	0.0	7.7	0.0	0.0	0.0	0.0	12
NS-06	HVAC Unit	549941	4766640	257.5	83	71.7	0	0.0	0.3	0.0	2.5	0.0	0.0	0.0	0.0	9

R35	Residential Dwelling	549003	4767437	259.5												
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	72.3	0	0.0	-0.7	0.0	11.1	0.0	0.0	0.0	0.0	18
NS-02	Inverter House	549694	4766275	257.3	100	73.6	0	0.0	-0.6	0.0	11.6	0.0	0.0	0.0	0.0	16
NS-03	Inverter House	549811	4766460	257.3	100	73.1	0	0.0	-0.7	0.0	11.4	0.0	0.0	0.0	0.0	17
NS-04	Inverter House	549951	4766275	257.3	93	74.5	0	0.0	0.6	0.0	8.2	0.0	0.0	0.0	0.0	9
NS-05	Inverter House	549994	4766460	257.3	93	73.9	0	0.0	0.6	0.0	8.0	0.0	0.0	0.0	0.0	10
NS-06	HVAC Unit	549941	4766640	257.5	83	72.8	0	0.0	0.3	0.0	2.8	0.0	0.0	0.0	0.0	7

Where: Lr = Lx - Adiv + K0 + Dc - Agnd - Abar - Aatm - Afol - Ahous + Cmet + Refl

R36	Vacant Lot	549599	4767544	259.5												
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	71.7	0	0.0	-0.7	0.0	10.8	0.0	0.0	0.0	0.0	19
NS-02	Inverter House	549694	4766275	257.3	100	73.1	0	0.0	-0.7	0.0	11.4	0.0	0.0	0.0	0.0	17
NS-03	Inverter House	549811	4766460	257.3	100	71.9	0	0.0	-0.7	0.0	10.9	0.0	0.0	0.0	0.0	18
NS-04	Inverter House	549951	4766275	257.3	93	73.4	0	0.0	0.6	0.0	7.8	0.0	0.0	0.0	0.0	11
NS-05	Inverter House	549994	4766460	257.3	93	72.2	0	0.0	0.5	0.0	7.5	0.0	0.0	0.0	0.0	12
NS-06	HVAC Unit	549941	4766640	257.5	83	70.7	0	0.0	0.2	0.0	2.3	0.0	0.0	0.0	0.0	10

R37	Residential Dwelling	549795	4767588	259.5												
Src ID	Src Name	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
NS-01	Inverter House	549628	4766460	257.3	100	72.1	0	0.0	-0.7	0.0	11.0	0.0	0.0	0.0	0.0	18
NS-02	Inverter House	549694	4766275	257.3	100	73.4	0	0.0	-0.6	0.0	11.5	0.0	0.0	0.0	0.0	16
NS-03	Inverter House	549811	4766460	257.3	100	72.1	0	0.0	-0.7	0.0	11.0	0.0	0.0	0.0	0.0	18
NS-04	Inverter House	549951	4766275	257.3	93	73.4	0	0.0	0.6	0.0	7.8	0.0	0.0	0.0	0.0	11
NS-05	Inverter House	549994	4766460	257.3	93	72.2	0	0.0	0.5	0.0	7.5	0.0	0.0	0.0	0.0	13
NS-06	HVAC Unit	549941	4766640	257.5	83	70.6	0	0.0	0.2	0.0	2.3	0.0	0.0	0.0	0.0	10

Where: Lr = Lx - Adiv + K0 + Dc - Agnd - Abar - Aatm - Afol - Ahous + Cmet + Refl

APPENDIX G

Sample Calculation Results - Octave Band Format

In the following tables of calculation results, the column headings for the various sound attenuation mechanisms follow the terminology of ISO Standard 9613-2. Lx is the A-weighted, one-hour energy-equivalent (or logarithmic-mean impulse) source sound power level, which includes the effects of any source-abatement measures included in the model, and any time-averaging effects for intermittent sources. Lr is the A-weighted, one-hour energy-equivalent (or logarithmic-mean impulse) sound level at the point of reception. The results are presented in terms of full octave band sound levels, at the most impacted off-site point of reception.

R01	Residential Dwelling		549841	4767421	259.5												
Src ID	Src Name	Band	X	Y	Z	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr	Band
NS-01	Inverter House	32	549628	4766460	257.3	60	70.9	0	0.0	-5.4	0.0	0.0	0.0	0.0	0.0	0.0	--	32
NS-01	Inverter House	63	549628	4766460	257.3	67	70.9	0	0.0	-5.4	0.0	0.1	0.0	0.0	0.0	0.0	1	63
NS-01	Inverter House	125	549628	4766460	257.3	75	70.9	0	0.0	4.2	0.0	0.4	0.0	0.0	0.0	0.0	--	125
NS-01	Inverter House	250	549628	4766460	257.3	83	70.9	0	0.0	2.9	0.0	1.0	0.0	0.0	0.0	0.0	8	250
NS-01	Inverter House	500	549628	4766460	257.3	89	70.9	0	0.0	-1.0	0.0	1.9	0.0	0.0	0.0	0.0	17	500
NS-01	Inverter House	1000	549628	4766460	257.3	86	70.9	0	0.0	-1.6	0.0	3.6	0.0	0.0	0.0	0.0	13	1000
NS-01	Inverter House	2000	549628	4766460	257.3	91	70.9	0	0.0	-1.6	0.0	9.5	0.0	0.0	0.0	0.0	12	2000
NS-01	Inverter House	4000	549628	4766460	257.3	99	70.9	0	0.0	-1.6	0.0	32.3	0.0	0.0	0.0	0.0	--	4000
NS-01	Inverter House	8000	549628	4766460	257.3	86	70.9	0	0.0	-1.6	0.0	115.1	0.0	0.0	0.0	0.0	--	8000
NS-02	Inverter House	32	549694	4766275	257.3	60	72.3	0	0.0	-5.5	0.0	0.0	0.0	0.0	0.0	0.0	--	32
NS-02	Inverter House	63	549694	4766275	257.3	67	72.3	0	0.0	-5.5	0.0	0.1	0.0	0.0	0.0	0.0	--	63
NS-02	Inverter House	125	549694	4766275	257.3	75	72.3	0	0.0	4.3	0.0	0.5	0.0	0.0	0.0	0.0	--	125
NS-02	Inverter House	250	549694	4766275	257.3	83	72.3	0	0.0	2.8	0.0	1.2	0.0	0.0	0.0	0.0	7	250
NS-02	Inverter House	500	549694	4766275	257.3	89	72.3	0	0.0	-1.0	0.0	2.2	0.0	0.0	0.0	0.0	15	500
NS-02	Inverter House	1000	549694	4766275	257.3	86	72.3	0	0.0	-1.6	0.0	4.2	0.0	0.0	0.0	0.0	11	1000
NS-02	Inverter House	2000	549694	4766275	257.3	91	72.3	0	0.0	-1.6	0.0	11.2	0.0	0.0	0.0	0.0	9	2000
NS-02	Inverter House	4000	549694	4766275	257.3	99	72.3	0	0.0	-1.6	0.0	37.9	0.0	0.0	0.0	0.0	--	4000
NS-02	Inverter House	8000	549694	4766275	257.3	86	72.3	0	0.0	-1.6	0.0	135.0	0.0	0.0	0.0	0.0	--	8000
NS-03	Inverter House	32	549811	4766460	257.3	60	70.7	0	0.0	-5.3	0.0	0.0	0.0	0.0	0.0	0.0	--	32
NS-03	Inverter House	63	549811	4766460	257.3	67	70.7	0	0.0	-5.4	0.0	0.1	0.0	0.0	0.0	0.0	1	63
NS-03	Inverter House	125	549811	4766460	257.3	75	70.7	0	0.0	4.2	0.0	0.4	0.0	0.0	0.0	0.0	--	125
NS-03	Inverter House	250	549811	4766460	257.3	83	70.7	0	0.0	2.9	0.0	1.0	0.0	0.0	0.0	0.0	8	250
NS-03	Inverter House	500	549811	4766460	257.3	89	70.7	0	0.0	-1.0	0.0	1.9	0.0	0.0	0.0	0.0	17	500
NS-03	Inverter House	1000	549811	4766460	257.3	86	70.7	0	0.0	-1.6	0.0	3.5	0.0	0.0	0.0	0.0	13	1000
NS-03	Inverter House	2000	549811	4766460	257.3	91	70.7	0	0.0	-1.6	0.0	9.3	0.0	0.0	0.0	0.0	12	2000
NS-03	Inverter House	4000	549811	4766460	257.3	99	70.7	0	0.0	-1.6	0.0	31.5	0.0	0.0	0.0	0.0	--	4000
NS-03	Inverter House	8000	549811	4766460	257.3	86	70.7	0	0.0	-1.6	0.0	112.4	0.0	0.0	0.0	0.0	--	8000
NS-04	Inverter House	32	549951	4766275	257.3	60	72.2	0	0.0	-5.5	0.0	0.0	0.0	0.0	0.0	0.0	--	32
NS-04	Inverter House	63	549951	4766275	257.3	67	72.2	0	0.0	-5.5	0.0	0.1	0.0	0.0	0.0	0.0	--	63
NS-04	Inverter House	125	549951	4766275	257.3	75	72.2	0	0.0	4.3	0.0	0.5	0.0	0.0	0.0	0.0	--	125
NS-04	Inverter House	250	549951	4766275	257.3	83	72.2	0	0.0	2.8	0.0	1.2	0.0	0.0	0.0	0.0	7	250
NS-04	Inverter House	500	549951	4766275	257.3	82	72.2	0	0.0	-0.7	0.0	2.2	0.0	0.0	0.0	0.0	8	500
NS-04	Inverter House	1000	549951	4766275	257.3	81	72.2	0	0.0	-1.6	0.0	4.2	0.0	0.0	0.0	0.0	6	1000
NS-04	Inverter House	2000	549951	4766275	257.3	82	72.2	0	0.0	-1.6	0.0	11.1	0.0	0.0	0.0	0.0	0	2000
NS-04	Inverter House	4000	549951	4766275	257.3	89	72.2	0	0.0	-1.6	0.0	37.7	0.0	0.0	0.0	0.0	--	4000
NS-04	Inverter House	8000	549951	4766275	257.3	86	72.2	0	0.0	-1.6	0.0	134.6	0.0	0.0	0.0	0.0	--	8000
NS-05	Inverter House	32	549994	4766460	257.3	60	70.8	0	0.0	-5.4	0.0	0.0	0.0	0.0	0.0	0.0	--	32
NS-05	Inverter House	63	549994	4766460	257.3	67	70.8	0	0.0	-5.4	0.0	0.1	0.0	0.0	0.0	0.0	1	63
NS-05	Inverter House	125	549994	4766460	257.3	75	70.8	0	0.0	4.2	0.0	0.4	0.0	0.0	0.0	0.0	--	125
NS-05	Inverter House	250	549994	4766460	257.3	83	70.8	0	0.0	2.9	0.0	1.0	0.0	0.0	0.0	0.0	8	250
NS-05	Inverter House	500	549994	4766460	257.3	82	70.8	0	0.0	-0.7	0.0	1.9	0.0	0.0	0.0	0.0	10	500
NS-05	Inverter House	1000	549994	4766460	257.3	81	70.8	0	0.0	-1.6	0.0	3.6	0.0	0.0	0.0	0.0	8	1000
NS-05	Inverter House	2000	549994	4766460	257.3	82	70.8	0	0.0	-1.6	0.0	9.4	0.0	0.0	0.0	0.0	3	2000
NS-05	Inverter House	4000	549994	4766460	257.3	89	70.8	0	0.0	-1.6	0.0	31.9	0.0	0.0	0.0	0.0	--	4000
NS-05	Inverter House	8000	549994	4766460	257.3	86	70.8	0	0.0	-1.6	0.0	113.8	0.0	0.0	0.0	0.0	--	8000
NS-06	HVAC Unit	32	549941	4766640	257.5	40	68.9	0	0.0	-5.2	0.0	0.0	0.0	0.0	0.0	0.0	--	32
NS-06	HVAC Unit	63	549941	4766640	257.5	53	68.9	0	0.0	-5.2	0.0	0.1	0.0	0.0	0.0	0.0	--	63
NS-06	HVAC Unit	125	549941	4766640	257.5	69	68.9	0	0.0	3.9	0.0	0.3	0.0	0.0	0.0	0.0	--	125
NS-06	HVAC Unit	250	549941	4766640	257.5	78	68.9	0	0.0	2.9	0.0	0.8	0.0	0.0	0.0	0.0	5	250
NS-06	HVAC Unit	500	549941	4766640	257.5	78	68.9	0	0.0	-1.0	0.0	1.5	0.0	0.0	0.0	0.0	9	500
NS-06	HVAC Unit	1000	549941	4766640	257.5	77	68.9	0	0.0	-1.6	0.0	2.9	0.0	0.0	0.0	0.0	6	1000
NS-06	HVAC Unit	2000	549941	4766640	257.5	73	68.9	0	0.0	-1.6	0.0	7.6	0.0	0.0	0.0	0.0	--	2000
NS-06	HVAC Unit	4000	549941	4766640	257.5	69	68.9	0	0.0	-1.6	0.0	25.8	0.0	0.0	0.0	0.0	--	4000
NS-06	HVAC Unit	8000	549941	4766640	257.5	59	68.9	0	0.0	-1.6	0.0	92.0	0.0	0.0	0.0	0.0	--	8000

Where: Lr = Lx - Adiv + K0 + Dc - Agnd - Abar - Aatm - Afol - Ahous + Cmet + Refl