INNOVATIVE PLANNING SOLUTIONS

planners • project managers • land development

February 9, 2024

Township of Puslinch, County of Wellington
Planning & Development
7404 Wellington Road 34
Puslinch, ON N0B 2J0

Attention: Lynne Banks
Development and Legislative Coordinator

Re: Zoning By-law Amendment 4th submission Cover letter
6706 Gore Road, Township of Puslinch

On behalf of Aziz & Amber Usman, Innovative Planning Solutions (IPS) is pleased to submit the following Zoning By-law Amendment (ZBA) 4th submission regarding lands municipally known as 6706 Gore Road in the Township of Puslinch. Materials enclosed are outlined on the table attached.

The purpose of this Application is to obtain approval for a Zoning By-law Amendment to rezone a portion of the subject lands to Agricultural Site-Specific Exception (A-XX) zone within the Township of Puslinch Zoning By-law 023-18. The proposed rezoning is intended to facilitiate the development of a dog breeding – Kennel use. We kindly request the scheduling of a public meeting for this Zoning By-law Amendment to Council.

Trusting this is satisfactory; we would request that the following information be circulated and reviewed as required. Should you have any additional questions or concerns, please do not hesitate to contact the undersigned at your convenience.

Respectfully submitted,
Innovative Planning Solutions

[redacted]

Nick Skerratt,
Senior Planner

647 WELHAM ROAD, UNIT 9A, BARRIE ONTARIO L4N 0B7
TEL: (705) 812-3281 FAX: (705) 812-3438
EMAIL: INFO@IPSCONSULTINGINC.COM

6706 Gore Road

Township of Puslinch, County of Wellington

February 2024 IPS File No. 23-1325

#	Document or Report and Plans	Copies
	Link: SUBMISSION MATERIAL (shared folder)	
1.	6706 Gore Road Cover Letter Dated February 2024	Digital
2.	6706 Gore Road Comment Response Matrix Dated February 2024	Digital
3.	6706 Gore Road Draft Zoning Bylaw Text Dated February 2024	Digital
4.	6706 Gore Road Environmental Noise Study Dated January 2024	Digital
5.	6706 Gore Road Peer Review Comment Response 3 Letter Dated January 2024	Digital

Comment Response Matrix

6706 Gore Road

Zoning By-law Amendment (D14-AZI)

IPS File No. 23-1225 Comment Matrix Date: February 9, 2024

Township of Puslinch

Legend – Consulting Abbreviations:

IPS – Innovative Planning Solutions
JD – J.D. Barnes consultant
SLR – Environmental Noise Study consultant

#	Comment	Responsibility	Comment Response
Township of Puslinch Building Department			
1	I have no further comments besides the outstanding permits.	IPS	- The owners are willing to submit and obtain building permits for the structures in question once all planning approvals have been finalized to ensure the use of these structures can be verified. By applying for and obtaining building permits for these structures before zoning is verified through a council decision would be premature at this time. Pending the ZBA and SPA process, we would be happy to apply for permits.
Blue Plan Engineering			
2	Please ensure that the accessible route is provided at the site plan stage, including accessible parking with maximum slopes per County of Wellington Facility Accessibility Design Manual.	IPS	- No further action
County of Wellington Planning Department			
3	We acknowledge that the intent of using the term kennel within the draft zoning by-law is to allow for flexibility of use. It is also noted that the draft by-law should address other zoning compliance issues, such as the kennel's setback from the existing residential dwelling on neighboring property.	IPS	- As per the 2nd submission package and within the 3rd submission package material indicates the site-specific provision for a reduced setback to the neighbouring property of 97 metres. This is part of the zoning bylaw amendment request to permit a Kennel use and reduced setback as per section 4.13.b.ii of the Zoning Bylaw. We believe this material has been provided. A draft zoning bylaw text was not requested as part of the 3rd submission package. Please see draft Zoning Bylaw text as part of the submission package.
4	It is acknowledged that the building heights have been provided and are in compliance with Section 4.4.2.f table 4.1 of the zoning by-law.	IPS	- No further action
5	The comments regarding the outdoor storage, signage and grooming services have been acknowledged.	IPS	- No further action
6	The applicant has confirmed that there will no other business on the subject property.	IPS	- No further action
7	Within the comment response (comment no 10) it is noted that proposed lighting has been identified on plans. However, the lighting plans does not appear to have been submitted. Please re-submit the plans and ensure compliance with Section 4.15 of the zoning by-law.	IPS	- As per the 2nd submission response comment from Planning regarding lighting 'Can you confirm if a lighting is proposed on site. If yes, please ensure compliance with Section 4.15 of the Zoning By-law.' has been provided. Lighting is identified on the site plan drawings '6706 Gore Road Site Plan Sheet 2' indicating lighting will be directed away from street and properties. A lighting plan was not requested as part of the 3rd submission. Confirmation of lighting details can be provided through the site plan control process and will be in compliance with municipal zoning and lighting polices.

Aboud & Associates Inc.			
8	No comments received	IPS	- No further action
Grand River Conservation Authority			
9	No comments received	IPS	- No further action
Valcoustics Canada Ltd.			
10	The updated report is still only recommending that exterior windows in climate controlled spaces remain closed. As per the SLR response, all indoor spaces where dogs could be located should have exterior doors and windows closed at all times for noise control purposes.	SLR	The revised report dated January 17, 2024 (**Section 4.1.1**) includes updated language reflecting the recommendation that exterior windows to indoor spaces where dogs could be located should have exterior doors and windows closed at all times for noise control purposes.
11	The updated report is still only recommending that the a/c selections comply with MECP Publication NPC-216. As per the SLR response, the recommendation should be changed to each a/c unit should have an ARI sound rating not exceeding 7.6 bels.	SLR	The report (**Section 4.1.2**) notes that the a/c unit selection should meet the sound emission standards and maximum ARI sound rating noted in Table 216-4 of NPC-216 (i.e., 7.6 bels).
12	The response to c) indicates there is a Figure B1 attached to the response letter. The indicated figure was not provided as part of the response matrix. Thus, we cannot comment on the information provided in this figure.	SLR	SLR has included Figure B1 as **Figure 6** in the revised report dated January 17, 2024.
13	The response provided does not address the question/concern. As an example of the issue, in the table provided in the response matrix, Dog Run 2 is about equidistant from POR1 and POR 3 and both PORs are predicted to receive the same 40 dBA sound level yet POR 1 appears to be fully screened from Dog Run 2 by Shed No. 2 and the Barns and POR 3 has full exposure to Dog Run 2. The report states that the acoustical screening from the existing buildings on the site has been included. Why is the predicted sound level at POR 1 from Dog Run 2 not significantly lower than the predicted sound level at POR 3?	SLR	Sample calculations were provided as part of the responses to round 2 of peer review comment (refer to **Appendix B**). These are also included as part of the revised report dated January 17, 2024. The sample calculations provided the necessary information to address the comment. With respect to Dog Run 2: • POR 1 (bungalow to west) is screened from Dog Run 2 by nearby buildings. The sample calculation shows the influence of the barriers, Abar (dB), following the ISO 9613-2 standard. • POR 3 (bungalow to south) is not screened by nearby buildings. The same calculation shows no influence of barriers, Abar (dB), following the ISO 9613-2 standard. • Ground attenuation, Agr (dB), is higher for POR 3 (no barriers) compared to POR 2 (with barriers), following the ISO 9613-2 standard. The lower 'Agr (dB)' for POR 1 (compared to POR 3) is offset by higher 'Abar (dB)'. This results in a similar sound level prediction of 40 dBA.
Township of Puslinch By-Law Enforcement Department			
14	By-law recognizes that Mr. Skerratt has acknowledged all comments provided from By-law during circulation of the previous submission. By-law has no further comments or concerns at this time.	IPS	- No further action
Harden Environmental Services Ltd			
15	We understand that additional details on the septic system and soak away pits will be provided through detailed site plan control submission. We have no further comments related to the ZBA application.	IPS	- No further action

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

BY-LAW NUMBER 2024-___

Being a By-law to Amend Zoning By-law 023-18, as amended of The Corporation of the Township of Puslinch

WHEREAS the Council of the Corporation of the Township of Puslinch have received an application to amend Zoning By-law 023-18 and has approved the application; and,

WHEREAS the Council of the Corporation of the Township of Puslinch deems it appropriate to amend Zoning By-law 023-18, pursuant to the authority given to it under Section 34 of the Planning Act, R.S.O. 1990;

NOW THEREFORE the Council of the Corporation of the Township of Puslinch hereby enacts as follows:

1. **THAT** Schedule "A" to By-law 023-18 by amended for the lands shown on Schedule "A" to this By-law for the lands described as Part of Lot 9, Gore Concession, Part 2 on Plan 61R-7925 & Part 3 on Plan 61R-7925 and municipally known as 6708 Gore Road from Agricultural (A) to Agricultural Exception XX, (A-XX).

2. **THAT** a new Exception be added to Table 14.1 being Exception XX to read as follows:

Exception Number	Parent Zone	By-Law	Additional Permitted uses	Prohibited uses	Site Specific Special Provision
XX	A		Kennel	N/A	That the **kennel** shall be located no closer than 97 m from any **existing residential dwelling**, or **commercial** or **institutional building** on any other **lot**.

3. **THAT** all other provisions of By-law 023-18 as amended remain in full force and effect.

4. **THAT** Schedule "A' is hereby declared to form part of this by-law.

5. **THAT** this By-law shall take force and come into force pursuant to the provisions and regulations made under the Planning Act, R.S.O. 1990, as amended.

READ a first and second time this _____ day of _____ 2024.

READ a third time and finally passed this _____ day of _____ 2024.

THE CORPORATION OF THE TOWNSHIP OF PUSLINCH

_____

MAYOR

_____

CLERK

Environmental Noise Study

Dog Breeding Kennel

Usman Aziz

6706 Gore Road
Puslinch ON, N0B 2J0

Prepared by:

SLR Consulting (Canada) Ltd.

100 Stone Road West, Suite 201
Guelph ON N1G 5L3

SLR Project No:

241.030733.00001

January 17, 2024

Table of Contents

Tables in Text

Appended Figures

Appendices

1.0 Introduction

SLR Consulting (Canada) Ltd. (SLR) was retained by property owner Usman Aziz to conduct an environmental noise study for the conversion of a former equestrian facility to a dog breeding kennel facility, to be located at 6706 Gore Road, Puslinch, Ontario.

An initial study was completed (dated December 6, 2022) to satisfy the requests of the Township of Puslinch and Wellington County as part of the zoning by-law amendment application to allow for a kennel on the lands. This revised study has been completed to consider an updated site plan, and to address peer review comments provided by Valcoustics Canada Ltd. dated April 26, 2023.

1.1 Kennel Description

The 6706 Gore Road property was formerly an equestrian facility. The proposal to convert the facility to a dog breeding kennel includes the renovation of the existing buildings to be thermally insulated and climate controlled, and the addition of new storage shed buildings. The interior box areas for dogs are designed with drains and hose facilities for easy clean up. Four (4) outdoor run areas are included throughout the kennel layout.

Small dog breeds are currently planned for the kennel, which includes Pembroke Welsh Corgis, Bichon Frisé and Miniature Poodles.

As the interior box areas are designed with drains and hose facilities for easy clean up, dogs are not let out for potty-breaks during the evening or night-time periods and can be kept indoors. Access to the outdoor dog runs is limited to the hours of 7 am to 7 pm.

A site plan excerpt showing the dog kennel layout is shown in **Figure 1**, with detailed development drawings provided in **Appendix A**.

1.2 Description of Surrounding Lands

The 6706 Gore Road property is bounded by the CP Galt Rail line to the north and Gore Road to the south. The surrounding lands are zoned Agricultural in all directions.

Lands north of Gore Road are part of the Township of Puslinch. South of Gore Road, the lands are part of the Township of North Dumfries.

Single family residential homes are located on the north and south sides of Gore Road, with no residential homes within 600 m of the 6706 Gore Road property to the north.

The surrounding topography is variable, where the surrounding residential homes are generally located at higher elevations from the 6706 Gore Road property.

An area plan is shown in **Figure 2**.

2.0 Review of Applicable Guideline Limits

A review of the following was completed to determine the applicable guidelines for dog barking related to the proposed dog kennel facility:

- The Corporation of the Township of Puslinch By-law No. 5001-05, "Being a by-law to provide for the regulation and prohibition of unusual noises or noises likely to disturb the public and/or the prevention of public nuisances ";
- The Towns of Erin and Minto, and the Townships of Centre Wellington, Guelph/Eramosa, Mapleton, Puslinch and Wellington North By-law Number 5001-05, "Being a by-law to provide for the regulation and prohibition of unusual noises or noises likely to disturb the public and/or the prevention of public nuisances";
- The Corporation of the Township of North Dumfries By-law No. 2609-14-05, "Being a By-law to prohibit and regulate noise within the Township of North Dumfries and to repeal By-law No. 2249-07"; and
- Ontario Ministry of the Environment, Conservation and Parks (MECP) NPC-300 Environmental Noise Guideline.

2.1 The Corporation of the Township of Puslinch Noise By-Law

The 6706 Gore Road property is located in the Township of Puslinch. The applicable noise by-law for this location is The Corporation of the Township of Puslinch By-Law No. 5001-05. The applicable sections of the by-law are as follows:

> **Section 3** of By-law No. 5001-05 stipulates 'General Prohibitions' based on the nature of noise-generating activities as follows:
>
> > General Prohibitions
> >
> > No Person shall emit or cause or permit the emission of sound resulting from any act listed in Schedule 1 – General Prohibitions and which sound is clearly audible at a point of reception at anywhere within the municipality, at any time.
>
> **Section 4** of By-law No. 5001-05 stipulates 'Prohibitions by Time and Place' based on the nature of noise-generating activities as follows:
>
> > Prohibitions by Time and Place
> >
> > No Person shall emit or cause or permit the emission of sound resulting from any act listed in Schedule 2 – Prohibitions by Time and Place if clearly audible at a point of reception located in an area of the municipality within a prohibited time shown for such an area.

The Township of Puslinch By-law 5001-05 does not include any references to dog barking.

2.2 The Towns of Erin and Minto, and the Townships of Centre Wellington, Guelph/Eramosa, Mapleton, Puslinch and Wellington North Noise By-Law

The Towns of Erin and Minto, and the Townships of Centre Wellington, Guelph/Eramosa, Mapleton, Puslinch and Wellington North By-Law Number 5001-05 was reviewed, and was found to be the same as

Township of Puslinch By-Law Number 5001-05 discussed in **Section 2.1** with respect to General Prohibitions and Prohibitions by Time and Place. The applicable sections of the by-law are as follows:

> **Section 3** of By-law No. 5001-05 stipulates 'General Prohibitions' based on the nature of noise-generating activities as follows:
>
> > General Prohibitions
> >
> > No Person shall emit or cause or permit the emission of sound resulting from any act listed in Schedule 1 – General Prohibitions and which sound is clearly audible at a point of reception at anywhere within the municipality, at any time.
>
> **Section 4** of By-law No. 5001-05 stipulates 'Prohibitions by Time and Place' based on the nature of noise-generating activities as follows:
>
> > Prohibitions by Time and Place
> >
> > No Person shall emit or cause or permit the emission of sound resulting from any act listed in Schedule 2 – Prohibitions by Time and Place if clearly audible at a point of reception located in an area of the municipality within a prohibited time shown for such an area.

The Towns of Erin and Minto, and the Townships of Centre Wellington, Guelph/Eramosa, Mapleton, Puslinch and Wellington North By-Law Number 5001-05 does not include any references to dog barking.

2.3 The Corporation of the Township of North Dumfries Noise By-Law

The lands south of Gore Road are located in the Township of North Dumfries. The applicable noise by-law for this location is The Corporation of the Township of North Dumfries By-Law No. 2609-14. The applicable section of the by-law is the following:

> **Section 3** of By-law No. 2609-14 stipulates 'General Prohibitions' based on the nature of noise-generating activities as follows:
>
> > General Prohibitions
> >
> > No Person shall make, cause or permit Noise or Vibration, at any time, which is likely to disturb an inhabitant of the Township, which may include disturbing the quiet, peace, rest, enjoyment, comfort or convenience of the in habitant.

The Township of North Dumfries By-law 2609-14 does not include any specific references to dog barking and does not provide sound level limits to define what may disturb inhabitants in accordance with the General Prohibition definitions. Therefore, provincial guidelines were also investigated.

2.4 Ministry of Environment, Conservation and Parks Publication NPC-300

The Ministry of Environment, Conservation and Parks (MECP) Publication NPC-300 guidelines were developed based on extensive research conducted by the MECP itself and the U.S. Environmental Protection Agency in the 1970s and 1980s. The research evaluated a number of different types of noise sources, ambient noise conditions, and community responses to the sources/conditions. The guidelines provide a robust approach and framework for evaluation noise impacts. Experience has shown that complaints are generally unlikely for noise sources meeting the guideline limits in NPC-300.

2.4.1 Applicable Sound Level Limits

Under NPC-300, Part A, Section A5 – Definitions, dog barking not considered to be a stationary source and normally addressed in a qualitative manner in the municipal by-laws. Therefore, the NPC-300 Guidelines are not directly applicable to the assessment of dog barking noise impacts. However, the NPC-300 guideline limits have been reviewed as part of this study.

Dog barking is considered an impulsive noise source and would be evaluated by comparing the logarithmic mean impulsive sound level (L_{LM}, dBAI) of several distinct impulses against limits defined by the actual number of impulses per hour.

The Publication NPC-300 sound level limits are provided in the **Table 1** and **Table 2** for impulsive noise at the plane-of-the-window and within outdoor living areas (yards).

On November 23, 2022, a site visit was completed by SLR staff to determine the applicable area classification for the surrounding receptors. As the ambient environment is dominated by the sounds of nature during the daytime period with infrequent vehicle pass-by observed, all surrounding receptors are considered to be located in a Class 3 Rural area.

Table 1: NPC-300 Impulsive Noise Guideline Limits – Plane-of-the-Window

No. of Impulses per Hour	Time Period	Class 1 & 2 Areas [1][2][3] (dBAI)	Class 3 Area [1][2][3] (dBAI)
9 or more	0700h to 2300h	50	45
	2300h to 0700h	45	40
7 or 8	0700h to 2300h	55	50
	2300h to 0700h	50	45
5 or 6	0700h to 2300h	60	55
	2300h to 0700h	55	50
4	0700h to 2300h	65	60
	2300h to 0700h	60	55
3	0700h to 2300h	70	65
	2300h to 0700h	65	60
2	0700h to 2300h	75	70
	2300h to 0700h	70	65
1	0700h to 2300h	80	75
	2300h to 0700h	75	70

Notes: [1] Expressed in terms of the Logarithmic Mean Impulsive Sound Level (L_{LM}).
[2] Or minimum hourly L_{eq} of background noise, whichever is higher.
[3] Applied at the plane-of-the-window.

Table 2: NPC-300 Impulsive Noise Guideline Limits – Outdoor Points of Reception

No. of Impulses per Hour	Time Period	Class 1 & 2 Areas [1][2] (dBAI)	Class 3 Area [1][2] (dBAI)
9 or more	0700h to 2300h	50	45
7 or 8		55	50
5 or 6		60	55
4		65	60
3		70	65
2		75	70
1		80	75

Notes: [1] Expressed in terms of the Logarithmic Mean Impulsive Sound Level (L_{LM})
[2] Or minimum hourly Leq of background noise, whichever is higher

2.5 Guidelines Adopted in Assessment

The reviewed Township noise by-laws do not include any references to dog barking.

Although the NPC-300 guidelines are not directly applicable to dog barking noise, these guidelines are intended to minimize the potential conflict between noise sensitive land uses and sources of noise emissions. As the NPC-300 guidelines can be used as way to assess whether or not a noise is considered to be at an acceptable level, the NPC-300 guidelines have therefore been applied in this assessment.

Furthermore, this approach aligns with The Corporation of the Township of Puslinch By-Law Number 024-2021 for Dogs and Kennels, which references environmental noise guidelines for stationary sources as published by the MECP.

As mentioned above, the surrounding area is considered to be a Class 3 Rural environment, in which the default Class 3 limits were applied in the assessment. Limits are based on the most stringent Class 3 guideline of 9 or more impulses in an hour (i.e., more than 9 barks in an hour).

It should be noted the NPC-300 guidelines do not require that sound be inaudible. Sound levels meeting the limits in **Table 1** may still be audible and recognizable. Logarithmic Mean Impulsive Sound Levels "L_{LM}" are used in the guidelines, as opposed to maximum sound levels, as research has shown that the L_{LM} levels correspond well to potential human annoyance resulting from noise.

3.0 Points of Reception

3.1 Existing Points of Reception

The existing points of reception (POR) included in the noise modelling assessment were selected based on the predicted worst-case impacts from the dog kennel and include the closest residences within a 500 m radius. The worst-case existing PORs are described as follows and are summarized in **Table 3**.

- POR1 – single storey home to the west;
- POR2 – 2-storey home to the east; and

- POR3 – single storey home to the south on the opposite side of Gore Road.

Table 3: Worst-Case Existing Point of Reception Summary

POR ID	POR Address	Description
POR1	6700 Gore Road	1-Storey Residential House to west – plane of window and yard
POR2	6720 Gore Road	2-Storey Residential House to east – plane of window and yard
POR3	6717 Gore Road	1-Storey Residential House to south – plane of window and yard

The above PORs are shown in **Figure 2**.

No PORs were identified within 500 m to the north of the 6706 Gore Road property.

The existing residential dwelling on the 6706 Gore Road property is not considered a noise-sensitive POR based on definitions outlined in NPC-300, as this dwelling is located within the property boundaries of the stationary noise source.

3.2 Vacant Lot Points of Reception

NPC-300 also indicates that certain vacant lots are to be considered as noise sensitive points of reception, depending on permitted uses for the land under the applicable zoning by-law designation.

A vacant lot zoned as Agricultural is located south/southwest of the proposed facility, south of Gore Road in the Township of North Dumfries (west of POR3). As this land use zoning designation permits a residential (noise sensitive) dwelling, it has been considered in this assessment.

4.0 Noise Impact Assessment

4.1 Noise Sources

4.1.1 Dog Barking

Based on historical noise measurements by SLR staff, a single dog bark was modelled with a sound power level (PWL) of 110 dBAI and a height of 0.5 m above grade. This is considered to be an average PWL, representative of small to large dog breeds. As the kennel is planning to include small breeds at this time, this is considered to be a conservatively high assessment of noise impacts.

Four (4) outdoor dog runs are located within the 6706 Gore Road property. The dog runs are shown in **Figure 1**.

As the kennel buildings are to be thermally insulated and climate controlled, the shell structures are sufficient to address dog barking break-out noise. Therefore, an assessment of break-out noise is not considered necessary and was not completed. It is recommended that exterior windows and doors to spaces where dogs will be located indoors remain closed for noise control purposes.

4.1.2 Mechanical Equipment

Heating and cooling for the buildings includes three (3) residential home furnace and air conditioning (AC) units.

The residential furnaces are considered to be insignificant for noise. As the closest residential home is located approximately 90 m from the kennel buildings, the residential AC unit noise is not a concern and was not assessed in detail.

The AC unit selections should meet the sound level recommendations of MECP document NPC-216 ("Residential Air Conditioning Devices"), including following the sound emission standards and Maximum ARI Standard Sound Rating noted in Table 216-4 (i.e., 7.6 bels).

4.2 Sound Level Modelling

Dog barking noise impact modelling was performed using Cadna/A, a computerized implementation of the ISO 9613 noise propagation algorithms. The model took into consideration the surrounding terrain, the existing buildings, and the absorptive ground characteristics surrounding the proposed dog kennel.

As the surrounding lands are primarily grass/vegetation covered, absorptive ground was applied in the noise modelling. Ground elevation contours for the 6706 Gore Road property and surrounding areas were taken from the Ontario GeoHub and were included in 1 m increments.

Two (2) orders of reflections were applied in the noise modelling to account for the effect of the existing 6706 Gore Road property buildings.

Dog barking was modelled as area sources within the four (4) outdoor dog runs to account for a distribution of barking over the open areas. This is considered representative of sound levels experienced as the Logarithmic Mean Impulsive Sound Level (L_{LM}) for dogs barking.

Predictable worst-case noise impacts were considered in four modelling scenarios. In each modelling scenario, all dogs and associated barking were assumed to be in a single dog run (i.e., Dog Runs 1 through 4, inclusive). This was determined to result in greater off-site noise impacts compared to considering the L_{LM} from barking in multiple dog runs simultaneously.

4.3 Predicted Sound Levels – Existing PORs

Dog barking noise levels were assessed for daytime hours considering use of the four (4) dog runs. The range of predicted noise levels are summarized in **Figure 3a** through **Figure 3d** for the worst-case plane-of-window (assessment height of 4.5 m) and, and **Figure 4a** through **Figure 4d** for outdoor yards (assessment height of 1.5 m), respectively. A sample modelling output file for POR1 is included in **Appendix B**

4.3.1 Plane of Window Sound Levels

As the outdoor runs are used between the hours of 7am and 7 pm, an assessment against the evening (7 pm to 11 pm) and night-time (11 pm to 7 am) guideline limits was not completed. The predicted dog barking sound levels as shown in **Figure 3a** through **Figure 3d** and compared to the guideline limits in **Table 4**.

Table 4: Predicted Sound Levels from Dog Barking at Worst-Case PORs

POR ID	Assessment Location	Predicted Sound Levels (L_{LM} dBAI)				Applicable Sound Level Limits [1]	Meets Applicable Limits (Y/N)?
		Dog Run 1	Dog Run 2	Dog Run 3	Dog Run 4	Daytime (L_{LM} dBAI)	
POR1	1st Floor Window – East Façade	43	40	41	39	45	Y
POR2	2nd Floor Window – West Façade	40	39	38	39	45	Y
POR3	1st Floor Window – North Façade	40	40	36	37	45	Y
Notes:	[1] Dog barking impacts were assessed against the "frequent" impulsive sound level limits for a Class 3 area.						

Based on the results in **Table 4**, sound levels due to dog barking are predicted to be below applicable sound level limits at the worst-case plane of window POR locations. No additional noise controls are required to address plane of window sound levels from dog barking for existing PORs.

4.3.2 Outdoor POR Sound Levels

Based on the calculated sound level contours at a height of 1.5 m above grade, as shown in **Figure 4a** through **Figure 4d**, the 45 dBA outdoor POR sound level limit is predicted to be met within all yards of the existing surrounding residential homes. No additional noise control measures are required to address outdoor POR sound levels from dog barking for existing PORs.

4.4 Predicted Sound Levels – Vacant Lots

4.4.1 Plane of Window & Outdoor POR Sound Levels

As the vacant lot to the south is zoned Agricultural, construction of a noise sensitive dwelling would be permitted under the current zoning designation.

Although the lot is not currently noise sensitive, sound level contours at a height of 4.5 m (representing a 2nd-storey window height) and 1.5 m (representing outdoor PORs) were modelled for each of the four predictable worst-case scenarios (**Figure 3a** through **Figure 3d** and **Figure 4a** through **Figure 4d**).

Based on the sound level contours shown in the above-noted figures, sound level excesses are predicted within areas at the northeast portion of the vacant lot area. The area encompassing predicted excesses from the four modelling scenarios is shown in **Figure 5**. **Figure 6** illustrates the area where a future potential dwelling could have an outdoor POR that extends into the 'Zone of Predicted Excesses' (**Figure 5**). Potential recommended noise control measures are discussed in the following section.

4.4.2 Potential Recommended Noise Control Measures

As the vacant lot is not currently noise sensitive, no additional noise control measures are recommended at this time. Should a residential dwelling (with associated OPOR) be planned anywhere within the areas shown on **Figure 5** or **Figure 6**, this noise study should be revised, as excesses are predicted without additional noise control measures.

The revised study should consider the actual location of the proposed residential dwelling (including the number of storeys and the potential POR locations). Furthermore, it should consider the proposed actual

grading of the vacant lot to accommodate the proposed dwelling (as topography currently increases sharply in grade moving to the south).

It is further recommended that to design appropriate noise controls (if required), off-site sound levels from dog barking at that time be measured.

Potential noise control measures to meet applicable limits could include:

- Administrative controls (e.g., limiting access to Dog Runs 1 and 2 at the south end of the property where impacts to the south are greatest); and/or
- Physical controls (upgrading board fences along the south and east extents of Dog Runs 1 and 2 to sound barriers without gaps/cracks, and meeting minimum surface density recommendations in MECP Publication NPC-300).

It is feasible to meet applicable Class 3 limits at the vacant lot using administrative and/or physical noise control measures, should a permitted dwelling be constructed within the area shown in **Figure 5**. If a future residential dwelling and associated OPOR on the vacant lot is constructed outside of this area, applicable limits are predicted to be met without the need for additional noise control measures.

5.0 Conclusions and Recommendations

The potential for noise impacts from a dog breeding kennel on the 6706 Gore Road property have been considered. Noise concerns from the kennel are primarily related to barking noise. Based on the results of our study, the following conclusions have been reached.

- The local noise bylaws do not include any references to dog barking specifically;
    - The Township of North Dumfries noise by-law includes reference to General Prohibitions, but no sound level limits are provided.
- Dog barking within the dog runs is predicted to meet the MECP NPC-300 criteria for frequent impulsive noise at all existing points of reception.
    - No additional noise controls are required for dog barking to meet the MECP NPC-300 guideline limits at existing points of receptions.
- Air conditioning units should be selected such that they comply with the recommendations of MECP Publication NPC-216 – Residential Air Conditioning Devices
    - The units should meet the Maximum ARI Standard Sound Rating noted in Table 216-4 (i.e., 7.6 bels).
- Should a residential dwelling be proposed/constructed within the area shown in **Figure 5** within the vacant lot to the south, this study should be reviewed and revised.
    - Administrative and physical mitigation measures are available to meet applicable limits, but should be designed based on actual dwelling location, grading, and measurements of dog barking at the dog kennel facility.

6.0 Statement of Limitations

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for Usman Aziz (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

This report may contain data or information provided by third party sources on which SLR is entitled to rely without verification and SLR does not warranty the accuracy of any such data or information.

Nothing in this report constitutes a legal opinion nor does SLR make any representation as to compliance with any laws, rules, regulations, or policies established by federal, provincial territorial, or local government bodies, other than as specifically set forth in this report. Revisions to legislative or regulatory standards referred to in this report may be expected over time and, as a result, modifications to the findings, conclusions, or recommendations may be necessary.

7.0 Closure

Based on the results of this environmental noise study, SLR concludes that the proposed dog breeding kennel operation on the 6706 Gore Road property will meet MECP NPC-300 guideline limits at existing PORs. Therefore, adverse impacts from the proposed dog kennel are not expected on the surroundings, and noise control measures are not required at this time.

Should you have any questions on the above study, feel free to contact the undersigned.

Sincerely,

SLR Consulting (Canada) Ltd.

[redacted]

Keni Mallinen, M.A.Sc., P.Eng
Senior Acoustics Engineer

[redacted]

Arthur Küpper, P.Eng
Principal Acoustics Engineer

Distribution: 1 electronic copy – Usman Aziz

1 electronic copy – SLR Consulting (Canada) Ltd.

8.0 References

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

Ontario Ministry of the Environment, Conservation and Parks, Publication NPC-300: Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning, 2013.

The Corporation of the Township of North Dumfries, By-Law No. 2609-14.

The Corporation of the Township of Puslinch, By-Law No. 5001-05.

The Corporation of the Township of Puslinch, By-Law No. 024-2021.

The Towns of Erin and Minto, and the Townships of Centre Wellington, Guelph/Eramosa, Mapleton, Puslinch and Wellington North, By-Law No. 5001-05.

Figures

Environmental Noise Study

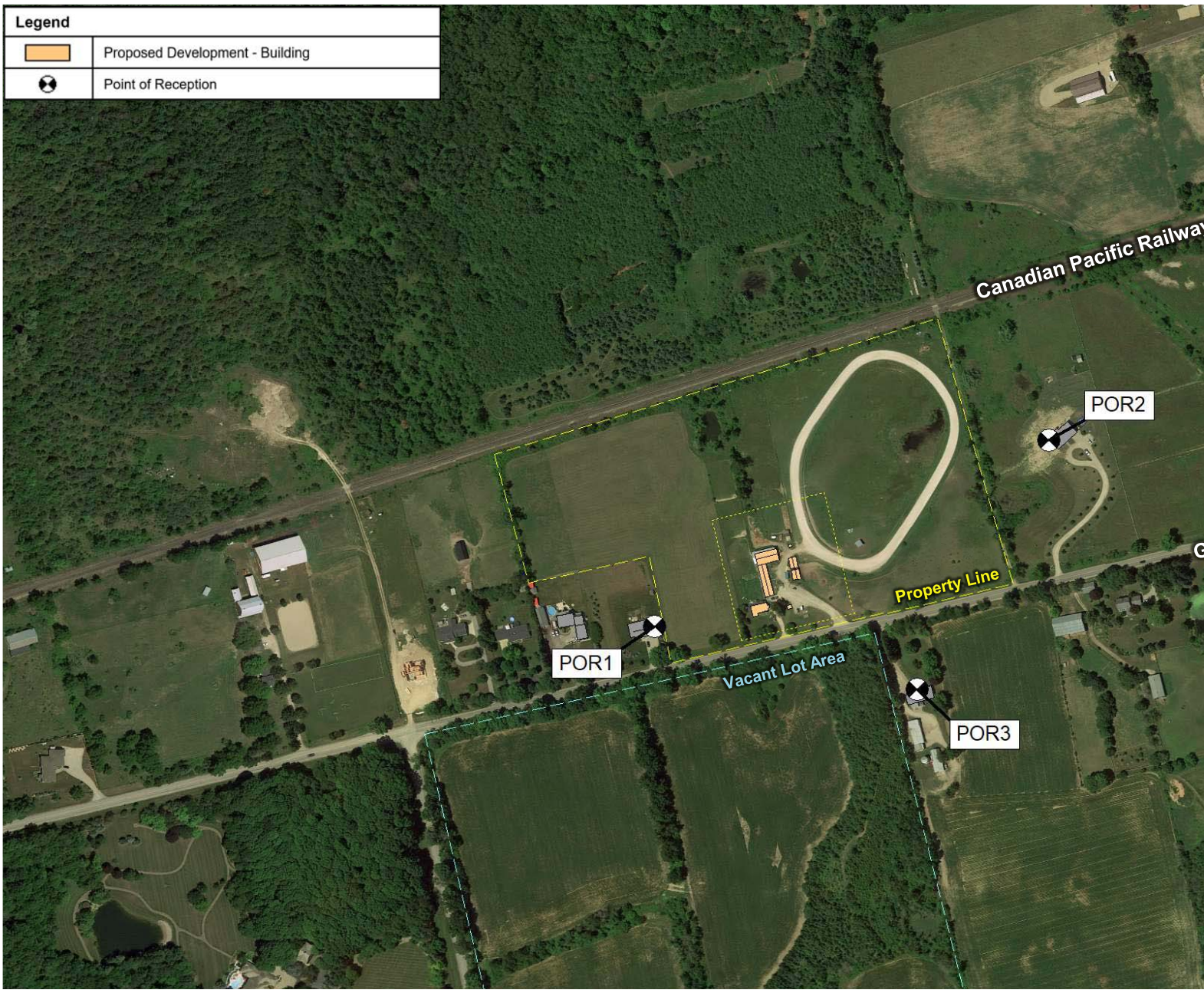
Dog Breeding Kennel

Usman Aziz

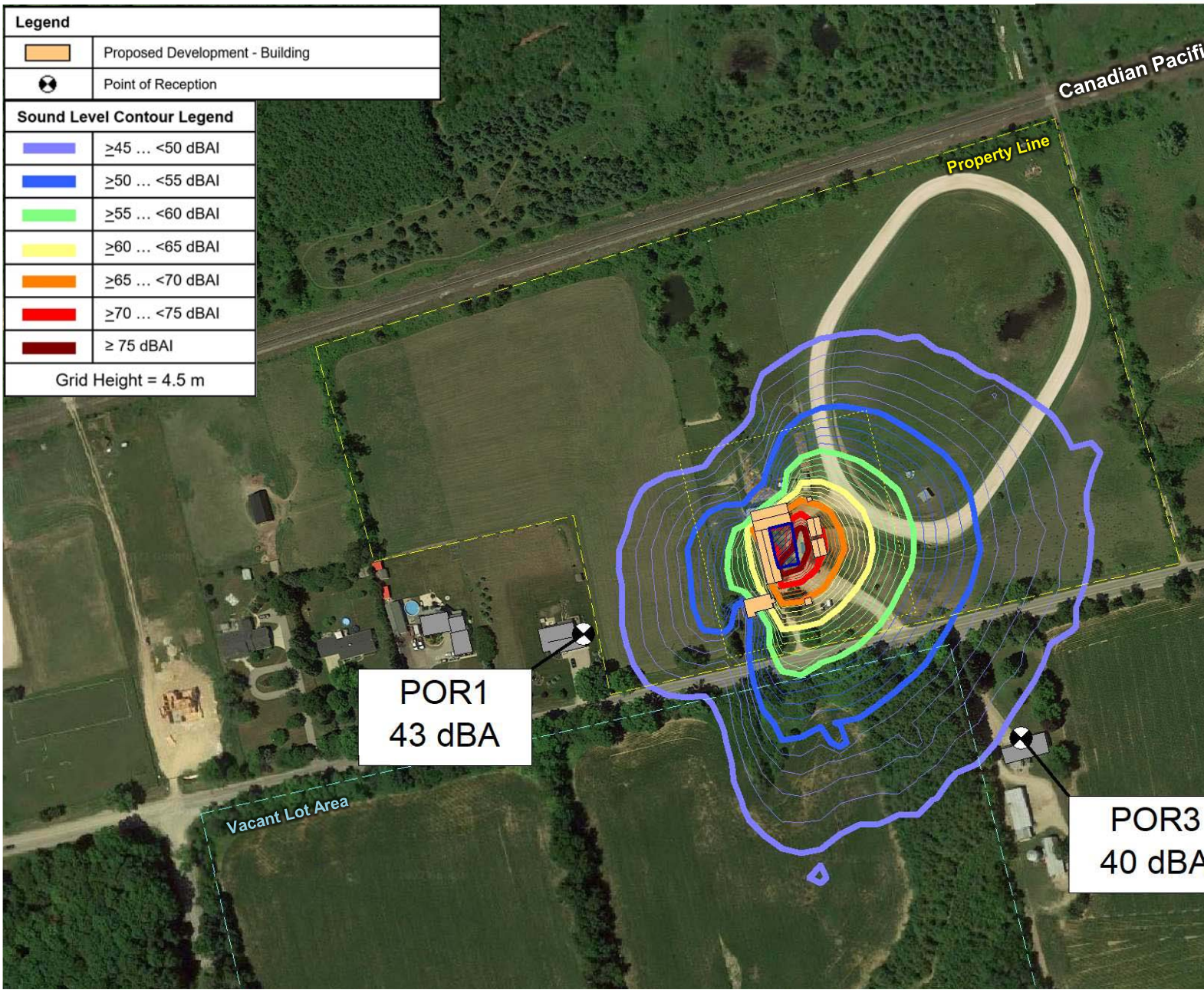
SLR Project No. 241.030733.00001

January 17, 2024

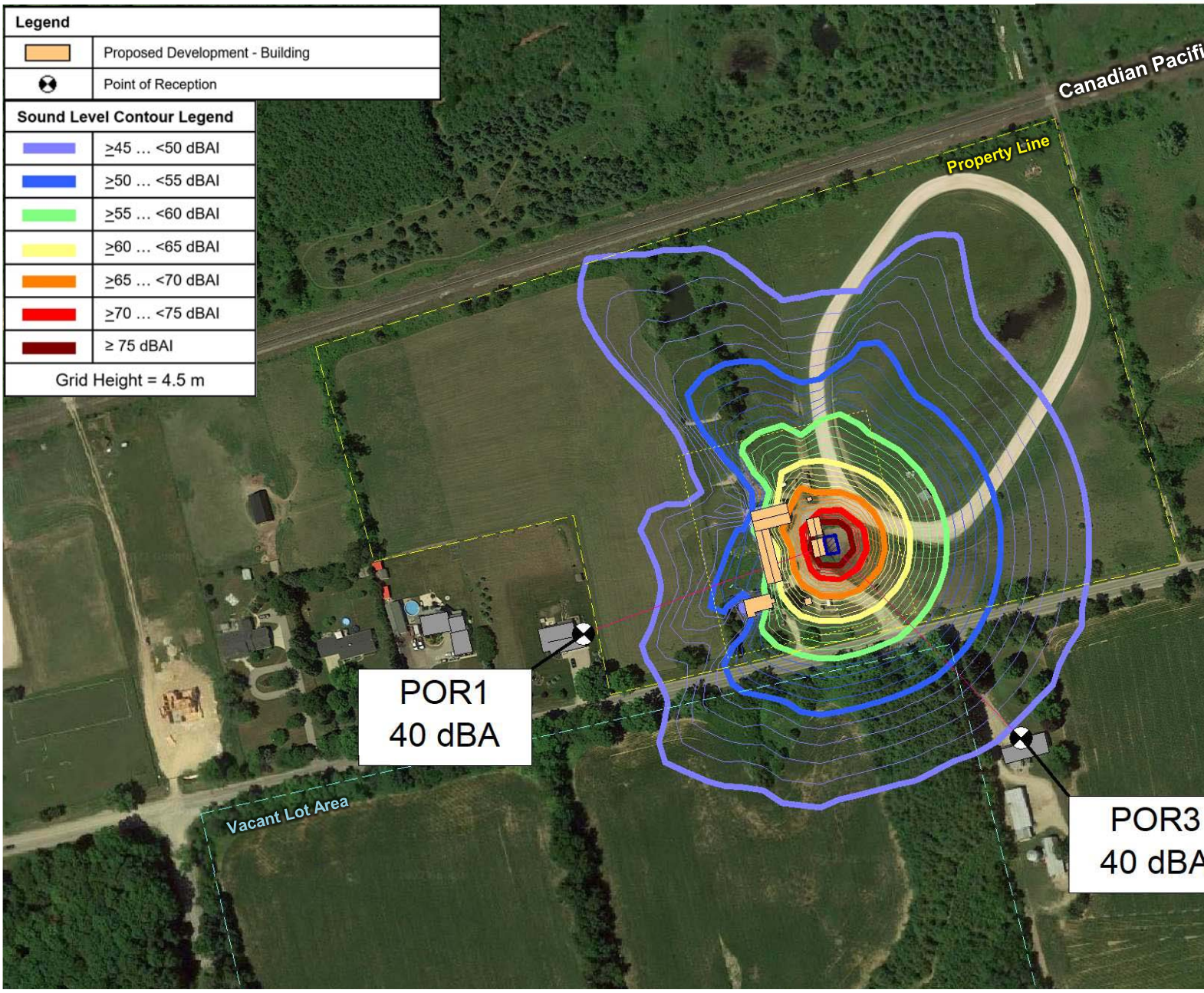
DOG BREEDING KENNEL	True North	Scale:	1:2,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
SITE PLAN		Project No. 241.030733.00001	



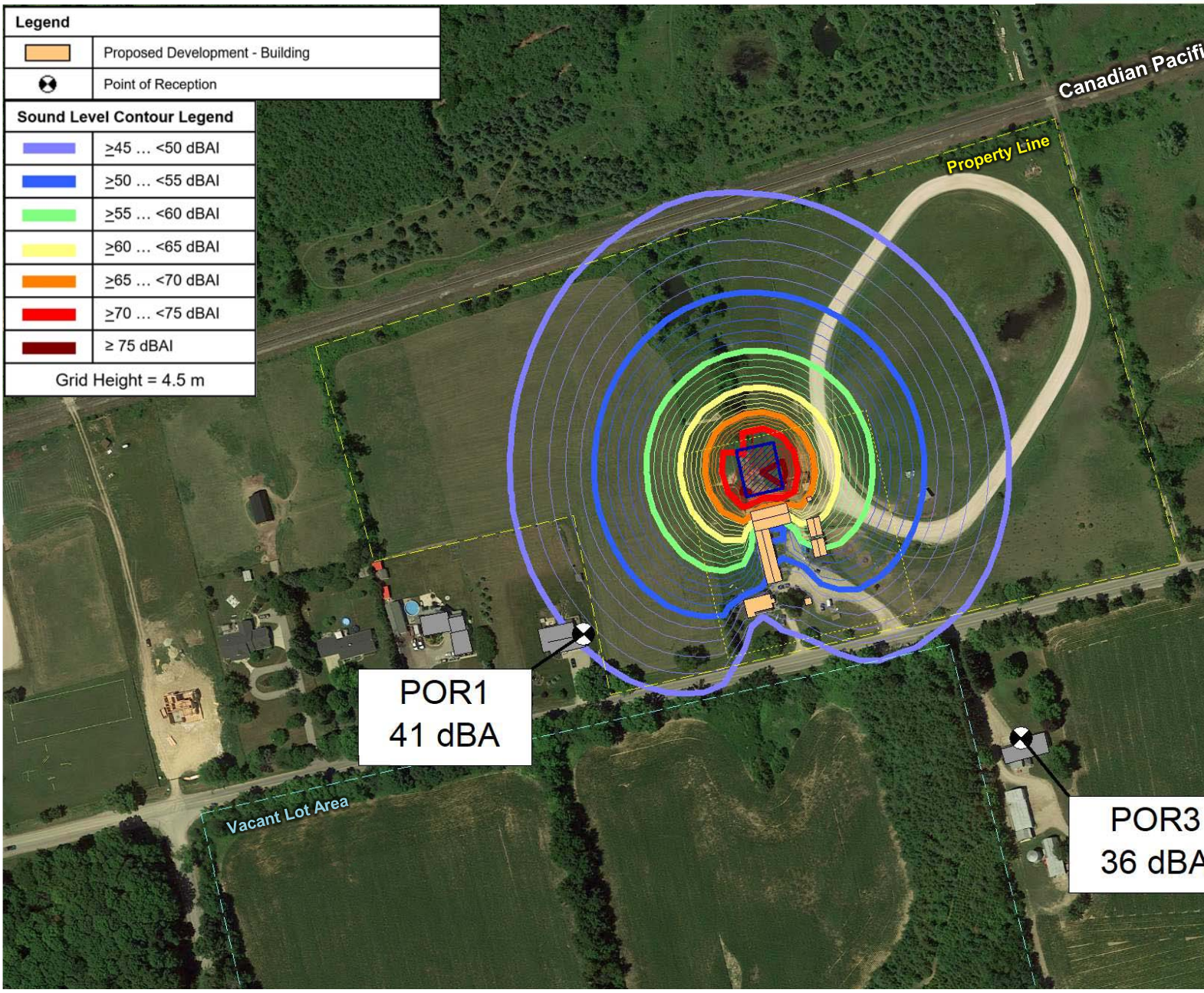
DOG BREEDING KENNEL	True North	Scale: 1:5,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024 Rev 0.0
CONTEXT PLAN		Project No. 241.030733.00001



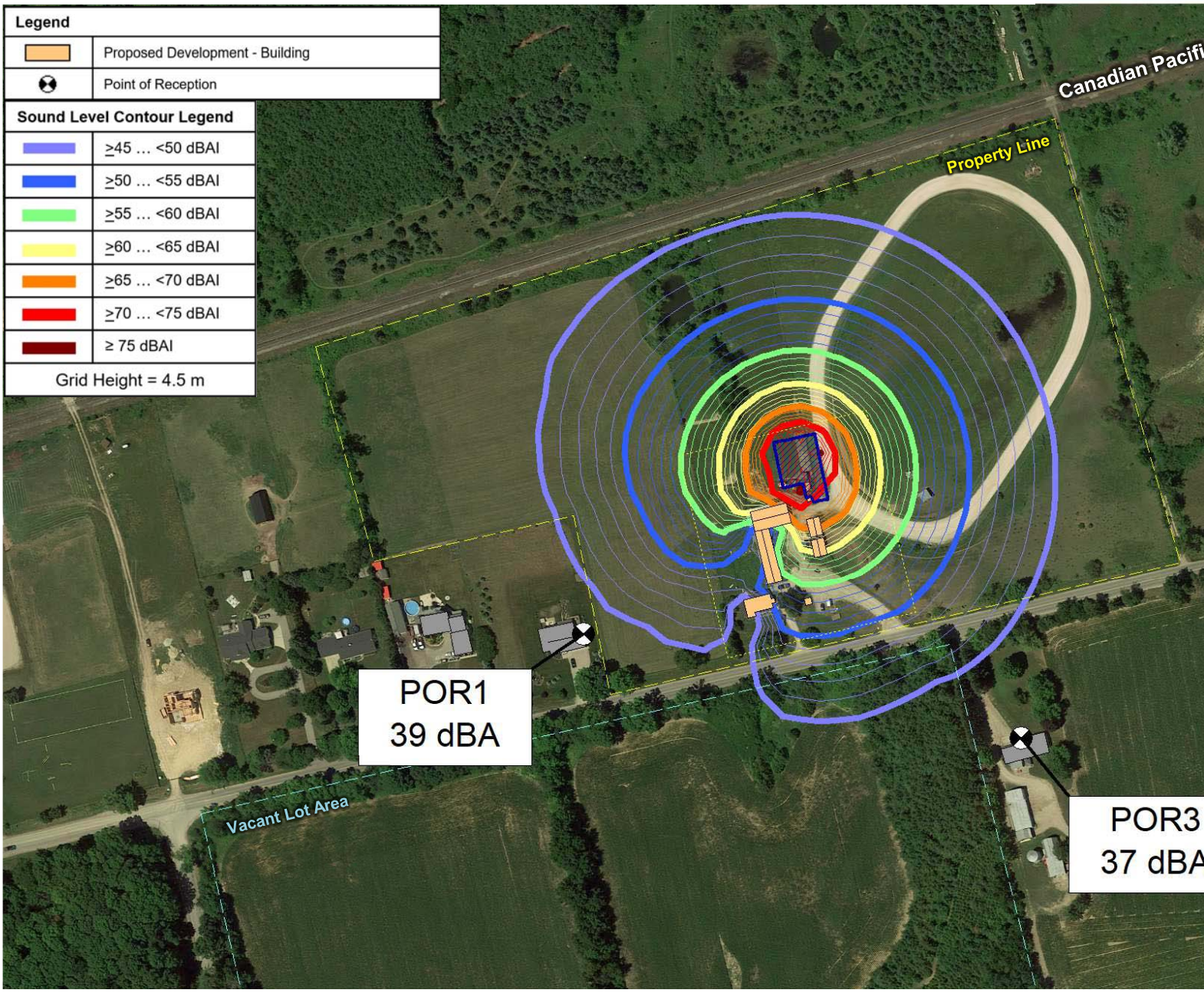
DOG BREEDING KENNEL	True North	Scale: 1:3,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024 Rev 0.0
PREDICTED DAYTIME DOG BARKING SOUND LEVELS AND CONTOURS – PLANE OF WINDOW – DOG RUN 1		Project No. 241.030733.00001



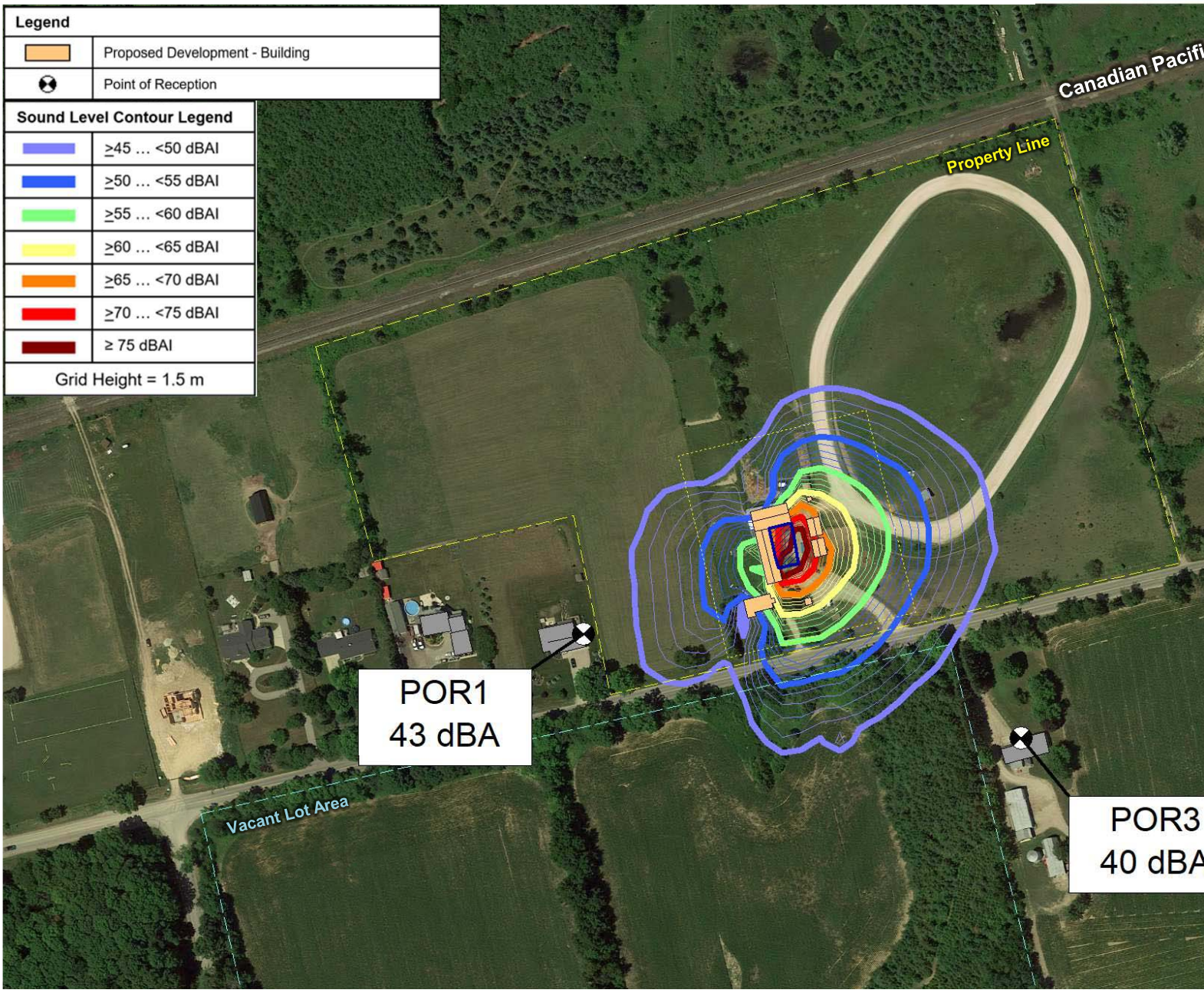
DOG BREEDING KENNEL	True North	Scale:	1:3,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
PREDICTED DAYTIME DOG BARKING SOUND LEVELS AND CONTOURS – PLANE OF WINDOW – DOG RUN 2		Project No. 241.030733.00001	



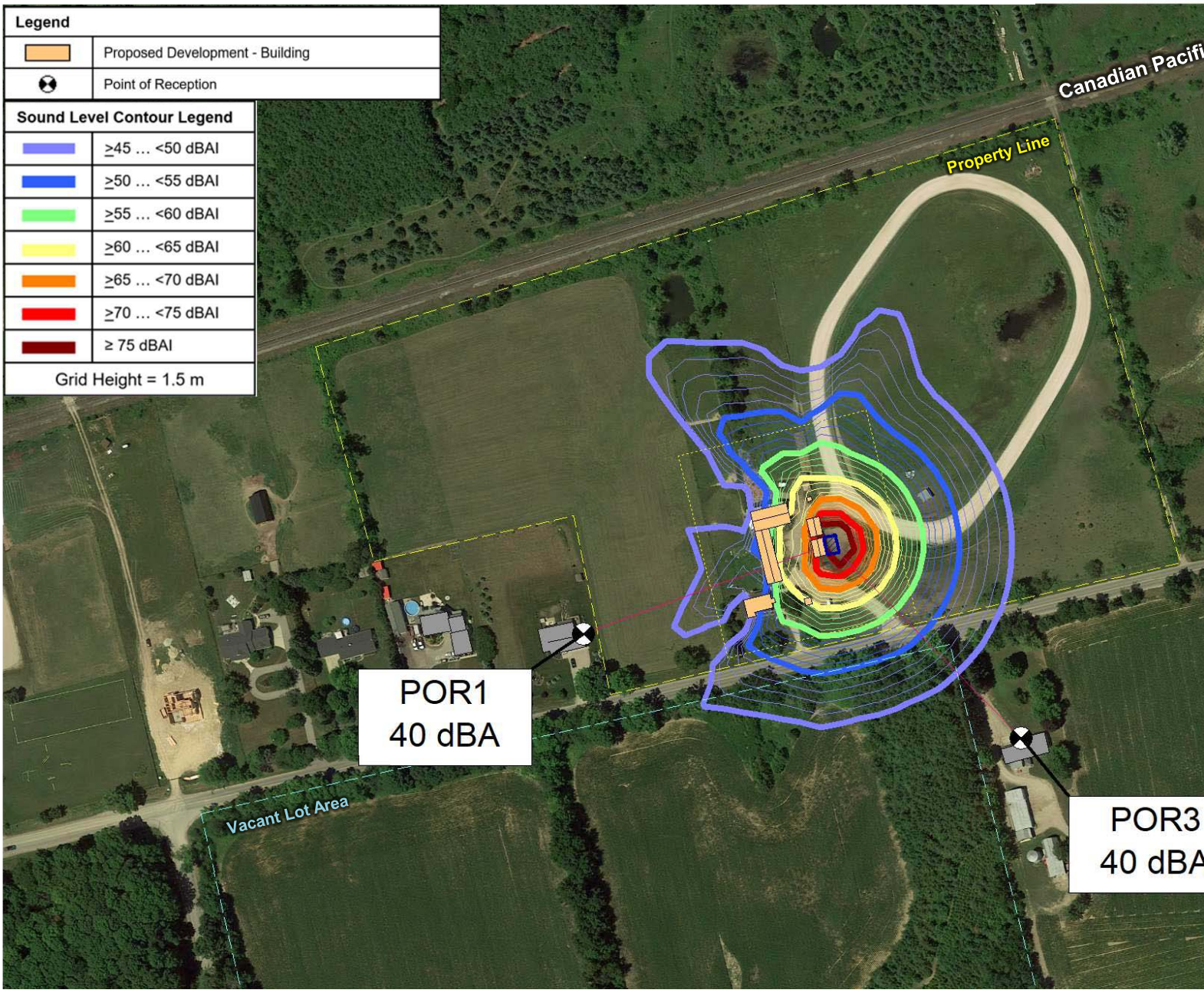
DOG BREEDING KENNEL	True North	Scale:	1:3,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
PREDICTED DAYTIME DOG BARKING SOUND LEVELS AND CONTOURS – PLANE OF WINDOW – DOG RUN 3		Project No. 241.030733.00001	



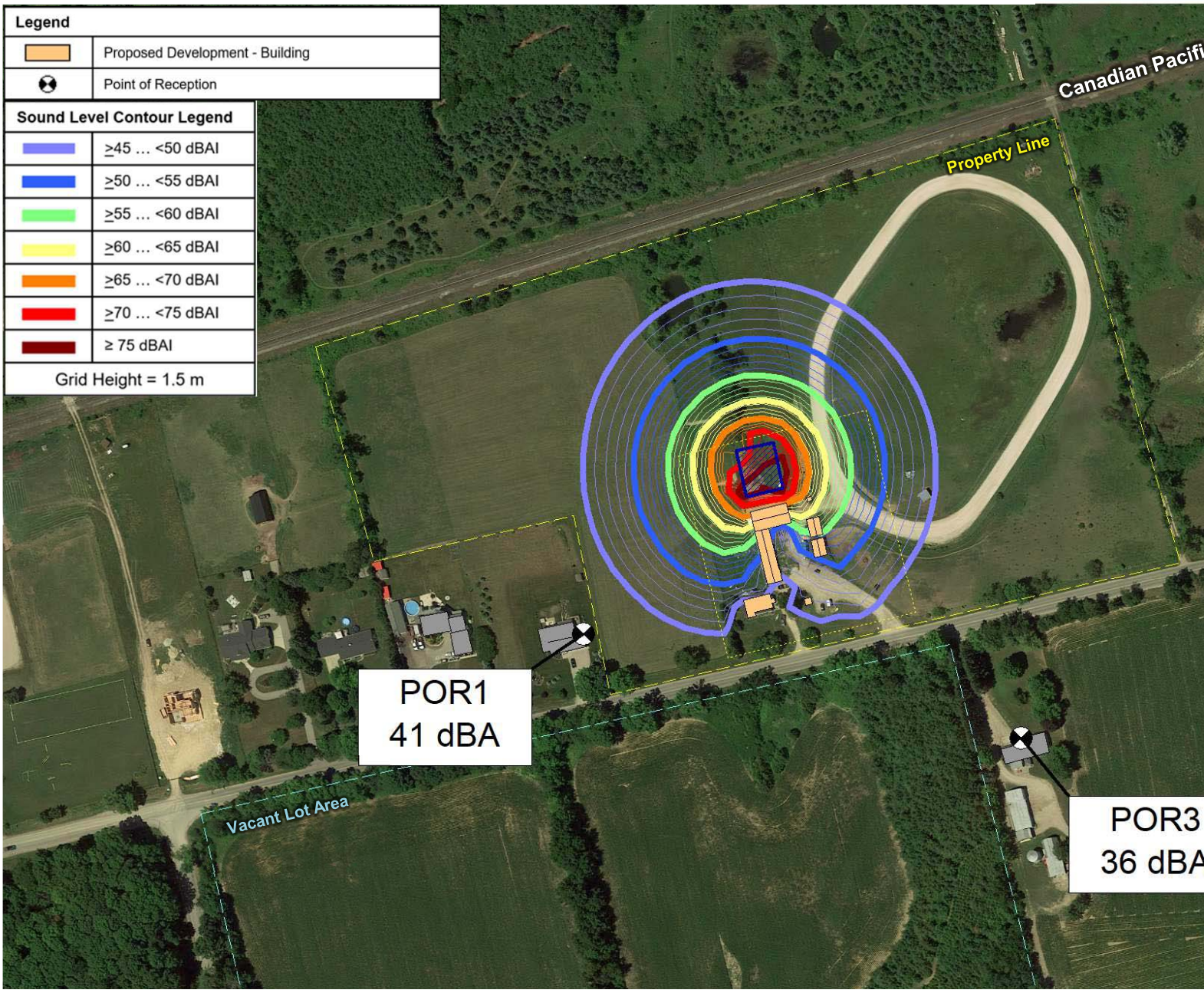
DOG BREEDING KENNEL	True North	Scale:	1:3,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
PREDICTED DAYTIME DOG BARKING SOUND LEVELS AND CONTOURS – PLANE OF WINDOW – DOG RUN 4		Project No. 241.030733.00001	



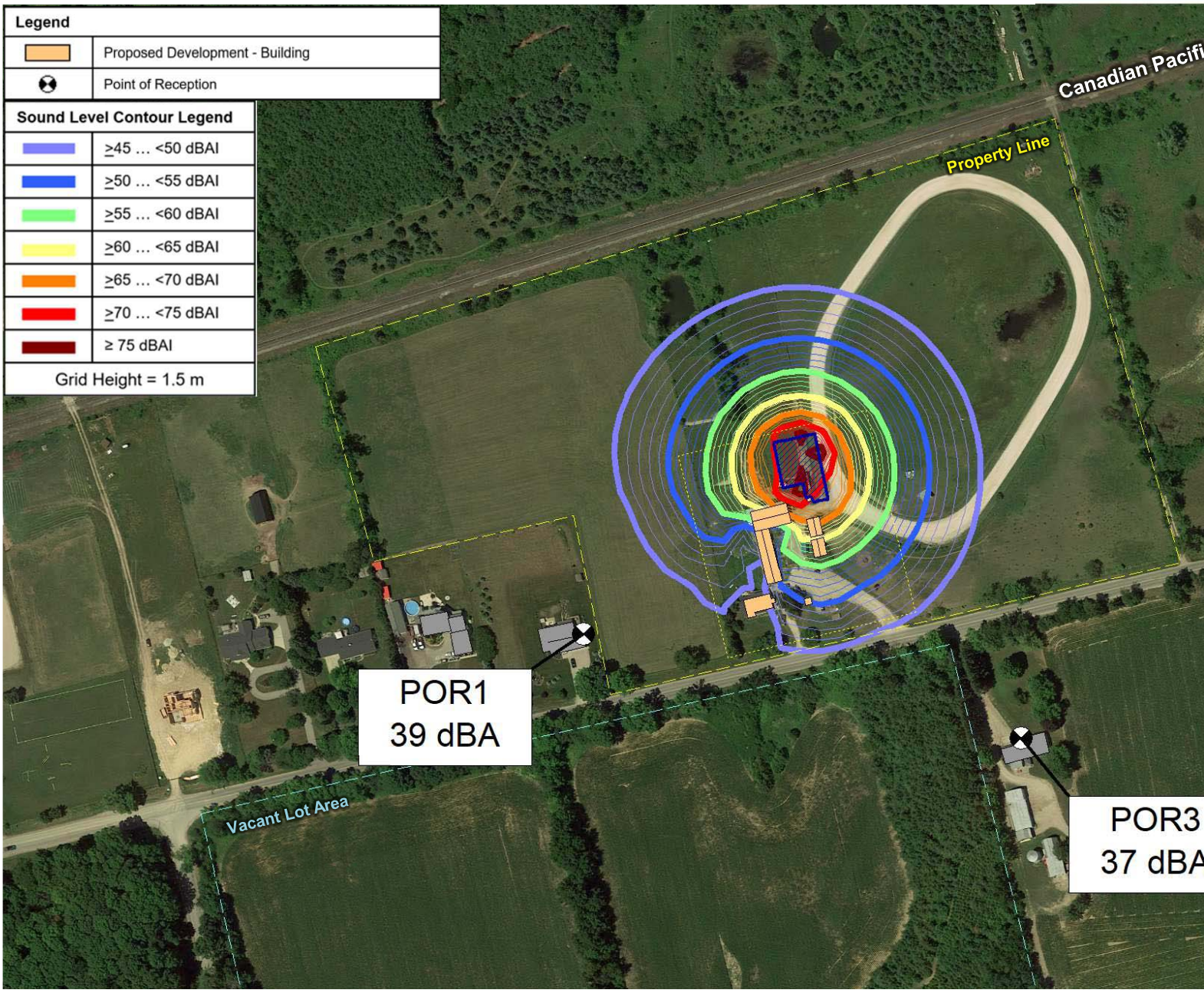
DOG BREEDING KENNEL	True North	Scale:	1:3,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
PREDICTED DAYTIME DOG BARKING SOUND LEVELS AND CONTOURS – OUTDOOR PORS – DOG RUN 1		Project No. 241.030733.00001	



DOG BREEDING KENNEL	True North	Scale:	1:3,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
PREDICTED DAYTIME DOG BARKING SOUND LEVELS AND CONTOURS – OUTDOOR PORS – DOG RUN 2		Project No. 241.030733.00001	



DOG BREEDING KENNEL	True North	Scale:	1:3,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
PREDICTED DAYTIME DOG BARKING SOUND LEVELS AND CONTOURS – OUTDOOR PORS – DOG RUN 3		Project No. 241.030733.00001	



DOG BREEDING KENNEL	True North	Scale:	1:3,000
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
PREDICTED DAYTIME DOG BARKING SOUND LEVELS AND CONTOURS – OUTDOOR PORS – DOG RUN 4		Project No. 241.030733.00001	

DOG BREEDING KENNEL	True North	Scale:	1:2,500
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
VACANT LOT – ZONE OF PREDICTED SOUND LEVEL EXCESSES FROM DOG BARKING		Project No. 241.030733.00001	

DOG BREEDING KENNEL	True North	Scale:	1:2,500
6706 GORE ROAD, PUSLINCH		Date: Jan. 17, 2024	Rev 0.0
VACANT LOT – ZONE OF PREDICTED SOUND LEVEL EXCESSES FROM DOG BARKING – OUTDOOR PORS		Project No. 241.030733.00001	

Appendix A Development Drawings

Environmental Noise Study

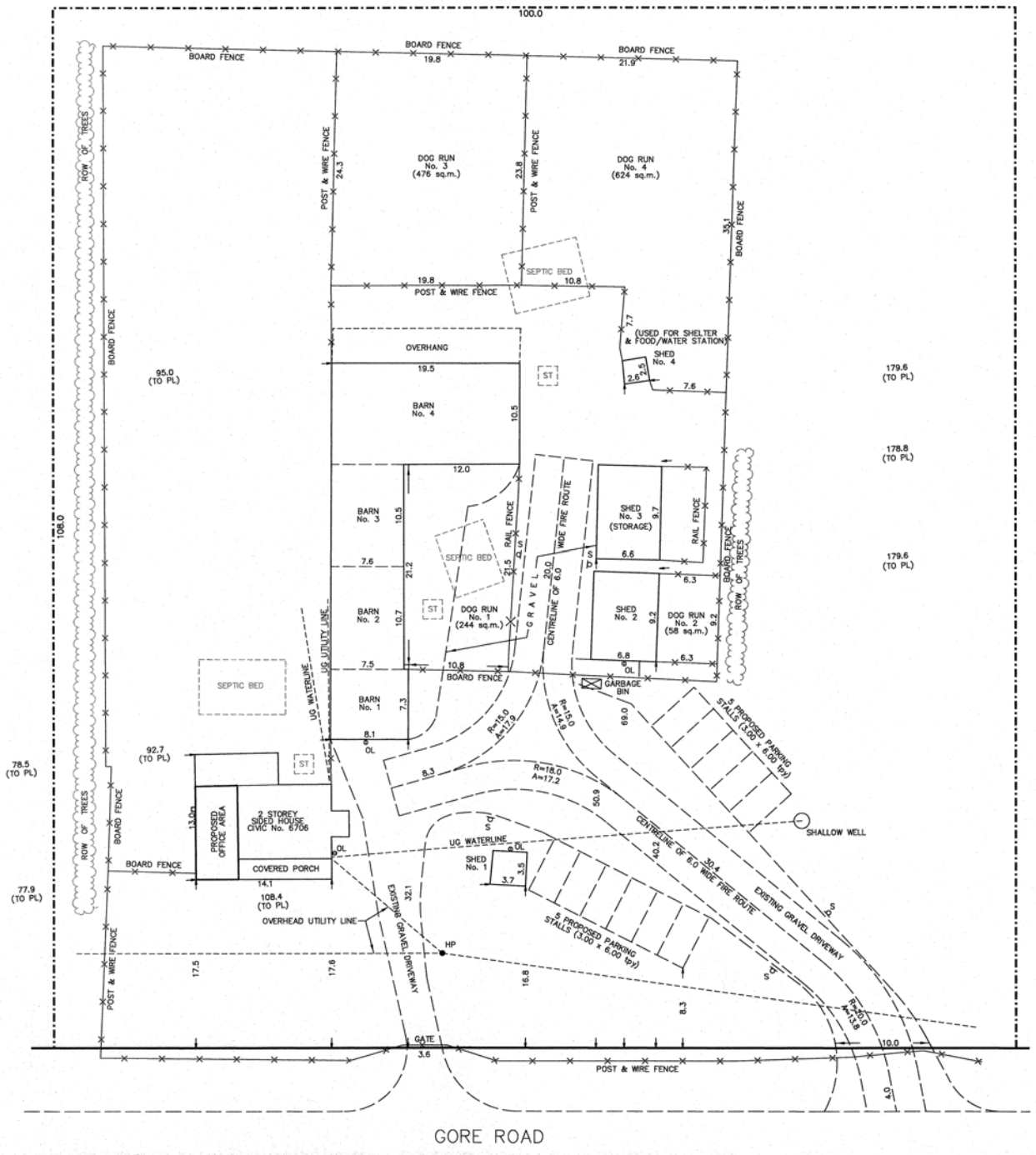
Dog Breeding Kennel

Usman Aziz

SLR Project No. 241.030733.00001

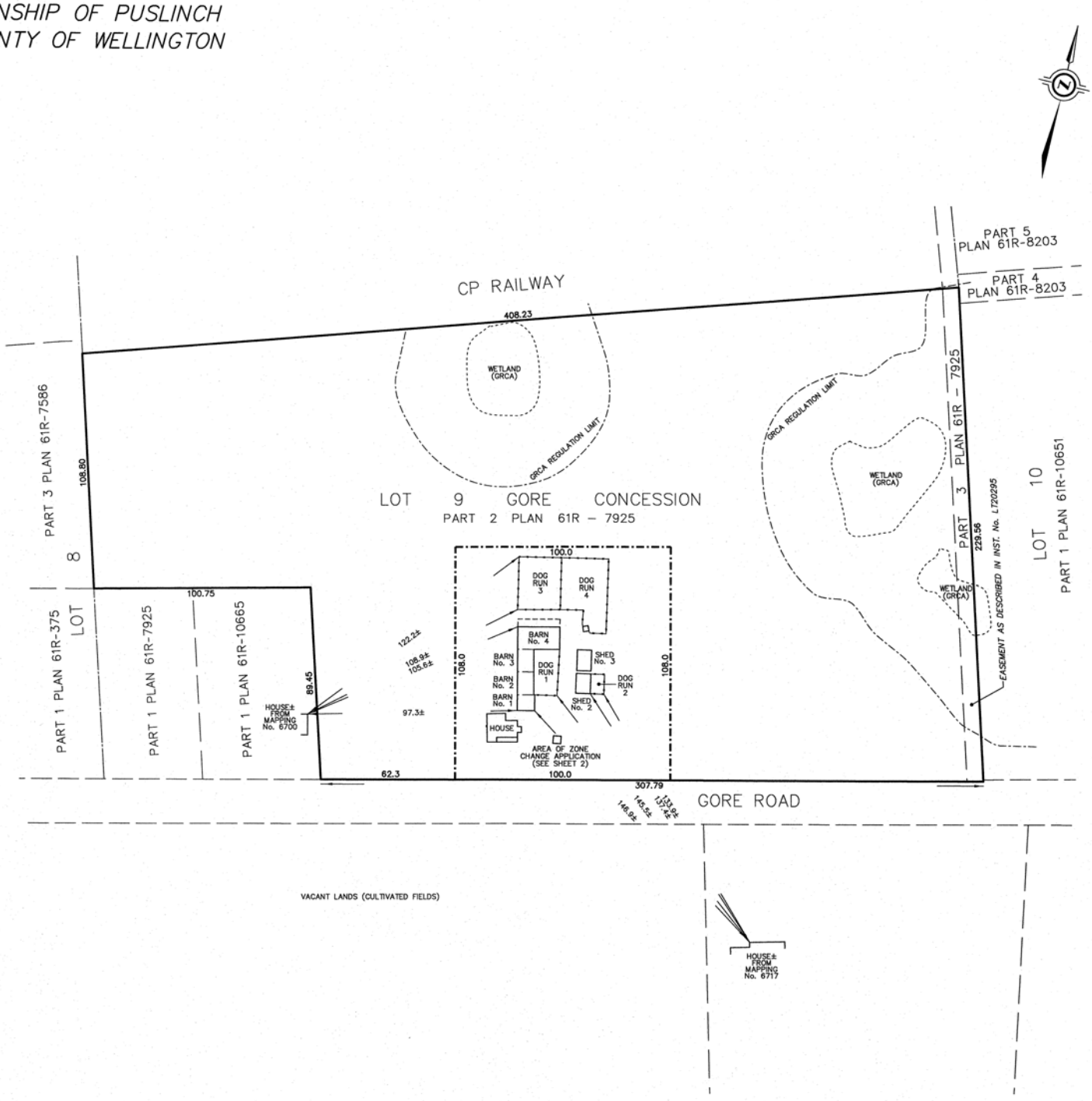
January 17, 2024

TOWNSHIP OF PUSLINCH
COUNTY OF WELLINGTON



PLOTTED: 7/20/2023
FILE: G:\22-14-851\01\Drawing

TOWNSHIP OF PUSLINCH
COUNTY OF WELLINGTON



PLOTTED: 7/20/2023
FILE: G:\22-14-851\01\Drawing\

Appendix B Sample Modelling Output Files

Environmental Noise Study

Dog Breeding Kennel

Usman Aziz

SLR Project No. 241.030733.00001

January 17, 2024

Appendix B - Sample Modelling Output File - Dog Run 1

Receiver
Name: bungalow to west
ID: POR1
X: 562467.11 m
Y: 4804855.87 m
Z: 304.50 m

Area Source, ISO 9613, Name: " ", ID: "DogRun1_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1	562573.26	4804899.56	302.21	0	DEN	500	86.1	15.4	0.0	0.0	0.0	52.2	0.2	9.2	0.0	0.0	5.4	0.0	0.0	34.6
3	562571.43	4804905.03	302.05	0	DEN	500	86.1	17.5	0.0	0.0	0.0	52.2	0.2	9.2	0.0	0.0	5.8	0.0	0.0	36.2
6	562572.35	4804912.81	301.84	0	DEN	500	86.1	-7.4	0.0	0.0	0.0	52.6	0.2	11.3	0.0	0.0	3.0	0.0	0.0	11.6
17	562572.33	4804911.51	301.87	1	DEN	500	86.1	4.3	0.0	0.0	0.0	52.6	0.2	11.1	0.0	0.0	3.3	0.0	2.0	21.3
25	562566.40	4804910.94	301.84	0	DEN	500	86.1	10.9	0.0	0.0	0.0	52.1	0.2	9.0	0.0	0.0	7.7	0.0	0.0	28.0
27	562568.05	4804910.59	301.86	0	DEN	500	86.1	7.2	0.0	0.0	0.0	52.2	0.2	9.1	0.0	0.0	6.9	0.0	0.0	24.9
28	562567.31	4804906.41	301.98	0	DEN	500	86.1	16.3	0.0	0.0	0.0	52.0	0.2	9.1	0.0	0.0	7.7	0.0	0.0	33.5
34	562567.23	4804910.85	301.85	1	DEN	500	86.1	-5.6	0.0	0.0	0.0	52.2	0.2	9.1	0.0	0.0	7.3	0.0	2.0	9.7
38	562568.93	4804911.67	301.84	1	DEN	500	86.1	10.3	0.0	0.0	0.0	52.3	0.2	9.1	0.0	0.0	6.5	0.0	2.0	26.3
46	562571.32	4804895.49	302.31	0	DEN	500	86.1	16.4	0.0	0.0	0.0	51.9	0.2	9.1	0.0	0.0	6.5	0.0	0.0	34.7
58	562573.20	4804913.27	301.83	0	DEN	500	86.1	-1.9	0.0	0.0	0.0	52.6	0.2	12.2	0.0	0.0	1.9	0.0	0.0	17.4
60	562573.65	4804913.26	301.83	0	DEN	500	86.1	-9.7	0.0	0.0	0.0	52.7	0.2	12.5	0.0	0.0	1.4	0.0	0.0	9.6
63	562575.09	4804907.77	301.99	0	DEN	500	86.1	13.1	0.0	0.0	0.0	52.6	0.2	12.5	0.0	0.0	1.2	0.0	0.0	32.7
68	562573.99	4804911.94	301.87	1	DEN	500	86.1	7.9	0.0	0.0	0.0	52.7	0.2	12.6	0.0	0.0	1.2	0.0	2.0	25.2
69	562574.02	4804913.45	301.82	1	DEN	500	86.1	-1.2	0.0	0.0	0.0	52.7	0.2	12.9	0.0	0.0	0.9	0.0	2.0	16.2
73	562575.90	4804893.53	302.41	0	DEN	500	86.1	9.6	0.0	0.0	0.0	52.2	0.2	10.1	0.0	0.0	3.8	0.0	0.0	29.5
78	562568.32	4804892.29	302.37	0	DEN	500	86.1	7.1	0.0	0.0	0.0	51.6	0.2	9.0	0.0	0.0	11.3	0.0	0.0	21.1
83	562573.19	4804892.95	302.40	0	DEN	500	86.1	5.5	0.0	0.0	0.0	52.0	0.2	9.1	0.0	0.0	5.8	0.0	0.0	24.5
88	562567.64	4804895.08	302.30	0	DEN	500	86.1	5.1	0.0	0.0	0.0	51.7	0.2	9.0	0.0	0.0	11.5	0.0	0.0	18.9
95	562577.87	4804893.96	302.42	0	DEN	500	86.1	5.3	0.0	0.0	0.0	52.4	0.2	11.8	0.0	0.0	1.5	0.0	0.0	25.5
102	562574.10	4804893.15	302.41	0	DEN	500	86.1	3.5	0.0	0.0	0.0	52.1	0.2	9.1	0.0	0.0	5.4	0.0	0.0	22.8

Receiver
Name: 2 storey house to east
ID: POR2
X: 562807.09 m
Y: 4805017.61 m
Z: 310.18 m

Area Source, ISO 9613, Name: " ", ID: "DogRun1_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2	562575.83	4804898.10	302.27	0	DEN	500	86.1	8.7	0.0	0.0	0.0	59.3	0.5	8.3	0.0	0.0	0.0	0.0	0.0	26.7
4	562574.51	4804898.93	302.23	0	DEN	500	86.1	4.6	0.0	0.0	0.0	59.3	0.5	10.1	0.0	0.0	0.0	0.0	0.0	20.8
7	562574.03	4804899.22	302.22	0	DEN	500	86.1	3.6	0.0	0.0	0.0	59.4	0.5	11.7	0.0	0.0	0.0	0.0	0.0	18.1
10	562573.62	4804899.47	302.21	0	DEN	500	86.1	4.5	0.0	0.0	0.0	59.4	0.5	12.4	0.0	0.0	0.0	0.0	0.0	18.4
13	562572.02	4804900.45	302.18	0	DEN	500	86.1	13.5	0.0	0.0	0.0	59.4	0.5	11.5	0.0	0.0	0.0	0.0	0.0	28.2
16	562571.31	4804904.75	302.05	0	DEN	500	86.1	17.0	0.0	0.0	0.0	59.4	0.5	11.2	0.0	0.0	0.0	0.0	0.0	32.1
18	562572.06	4804910.43	301.90	0	DEN	500	86.1	2.9	0.0	0.0	0.0	59.2	0.5	10.6	0.0	0.0	0.0	0.0	0.0	18.7
20	562572.21	4804911.65	301.87	0	DEN	500	86.1	3.0	0.0	0.0	0.0	59.2	0.5	12.4	0.0	0.0	0.0	0.0	0.0	17.0
23	562572.37	4804912.96	301.83	0	DEN	500	86.1	-10.9	0.0	0.0	0.0	59.2	0.5	11.7	0.0	0.0	3.2	0.0	0.0	0.6
36	562566.33	4804911.21	301.83	0	DEN	500	86.1	9.3	0.0	0.0	0.0	59.4	0.5	7.2	0.0	0.0	5.4	0.0	0.0	22.9
40	562567.90	4804911.04	301.85	0	DEN	500	86.1	5.9	0.0	0.0	0.0	59.4	0.5	11.4	0.0	0.0	2.0	0.0	0.0	18.8
42	562567.73	4804909.86	301.88	0	DEN	500	86.1	11.6	0.0	0.0	0.0	59.4	0.5	12.4	0.0	0.0	0.0	0.0	0.0	25.4
45	562567.51	4804908.39	301.92	0	DEN	500	86.1	7.9	0.0	0.0	0.0	59.4	0.5	12.4	0.0	0.0	0.0	0.0	0.0	21.7
49	562566.99	4804904.88	302.02	0	DEN	500	86.1	14.4	0.0	0.0	0.0	59.5	0.5	12.3	0.0	0.0	0.0	0.0	0.0	28.2
52	562566.60	4804903.97	302.04	1	DEN	500	86.1	13.1	0.0	0.0	0.0	59.6	0.5	12.3	0.0	0.0	0.0	0.0	1.0	25.7
55	562566.92	4804906.96	301.96	1	DEN	500	86.1	6.7	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	1.0	19.3
57	562567.06	4804908.26	301.92	1	DEN	500	86.1	10.4	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	1.0	23.0
59	562567.20	4804909.52	301.89	1	DEN	500	86.1	7.8	0.0	0.0	0.0	59.6	0.5	11.2	0.0	0.0	1.7	0.0	1.0	20.0
62	562567.29	4804910.29	301.86	1	DEN	500	86.1	7.4	0.0	0.0	0.0	59.6	0.5	7.5	0.0	0.0	7.1	0.0	1.0	17.8
71	562567.89	4804897.80	302.22	0	DEN	500	86.1	6.7	0.0	0.0	0.0	59.6	0.5	12.3	0.0	0.0	0.0	0.0	0.0	20.4
74	562569.04	4804897.14	302.25	0	DEN	500	86.1	2.4	0.0	0.0	0.0	59.5	0.5	12.4	0.0	0.0	0.0	0.0	0.0	16.1
75	562569.48	4804896.89	302.26	0	DEN	500	86.1	2.5	0.0	0.0	0.0	59.5	0.5	12.4	0.0	0.0	0.0	0.0	0.0	16.2
76	562569.99	4804896.60	302.27	0	DEN	500	86.1	4.7	0.0	0.0	0.0	59.5	0.5	12.4	0.0	0.0	0.0	0.0	0.0	18.4
80	562572.09	4804895.38	302.32	0	DEN	500	86.1	13.9	0.0	0.0	0.0	59.5	0.5	12.3	0.0	0.0	0.0	0.0	0.0	27.7
81	562572.40	4804893.30	302.38	0	DEN	500	86.1	8.8	0.0	0.0	0.0	59.5	0.5	12.3	0.0	0.0	0.0	0.0	0.0	22.6
84	562570.37	4804897.42	302.25	1	DEN	500	86.1	10.7	0.0	0.0	0.0	59.7	0.5	12.4	0.0	0.0	0.0	0.0	1.0	23.2
89	562573.17	4804913.32	301.82	0	DEN	500	86.1	-3.6	0.0	0.0	0.0	59.2	0.5	11.7	0.0	0.0	3.3	0.0	0.0	7.9
91	562573.60	4804913.34	301.82	0	DEN	500	86.1	-10.1	0.0	0.0	0.0	59.2	0.5	12.4	0.0	0.0	0.0	0.0	0.0	4.0
93	562573.86	4804912.58	301.85	0	DEN	500	86.1	5.6	0.0	0.0	0.0	59.2	0.5	12.4	0.0	0.0	0.0	0.0	0.0	19.7
96	562574.16	4804911.41	301.88	0	DEN	500	86.1	2.3	0.0	0.0	0.0	59.2	0.5	10.7	0.0	0.0	0.0	0.0	0.0	18.0
98	562575.29	4804907.00	302.01	0	DEN	500	86.1	11.3	0.0	0.0	0.0	59.2	0.5	7.1	0.0	0.0	0.0	0.0	0.0	30.7
100	562576.80	4804901.08	302.19	0	DEN	500	86.1	-5.6	0.0	0.0	0.0	59.2	0.5	11.0	0.0	0.0	0.0	0.0	0.0	9.8
103	562576.90	4804900.68	302.20	0	DEN	500	86.1	-6.5	0.0	0.0	0.0	59.2	0.5	11.7	0.0	0.0	0.0	0.0	0.0	8.1
105	562577.02	4804900.21	302.21	0	DEN	500	86.1	-5.5	0.0	0.0	0.0	59.2	0.5	10.1	0.0	0.0	0.0	0.0	0.0	10.8
108	562577.36	4804898.88	302.25	0	DEN	500	86.1	-1.3	0.0	0.0	0.0	59.3	0.5	6.7	0.0	0.0	0.6	0.0	0.0	17.7
112	562575.90	4804893.53	302.41	0	DEN	500	86.1	9.6	0.0	0.0	0.0	59.4	0.5	9.1	0.0	0.0	0.0	0.0	0.0	26.7
116	562569.28	4804890.86	302.42	0	DEN	500	86.1	-3.2	0.0	0.0	0.0	59.6	0.5	12.3	0.0	0.0	0.0	0.0	0.0	10.5
118	562568.25	4804892.37	302.37	0	DEN	500	86.1	6.6	0.0	0.0	0.0	59.6	0.5	12.3	0.0	0.0	0.0	0.0	0.0	20.2
120	562567.08	4804895.06	302.29	0	DEN	500	86.1	-9.9	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	3.7
122	562566.91	4804895.45	302.28	0	DEN	500	86.1	-21.3	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	-7.7
124	562567.12	4804895.00	302.29	1	DEN	500	86.1	-9.0	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	1.0	3.6
126	562568.32	4804892.35	302.37	1	DEN	500	86.1	6.6	0.0	0.0	0.0	59.7	0.5	12.3	0.0	0.0	0.0	0.0	1.0	19.2
128	562568.71	4804890.72	302.41	1	DEN	500	86.1	-3.7	0.0	0.0	0.0	59.7	0.5	12.3	0.0	0.0	0.0	0.0	1.0	8.9
130	562573.19	4804892.95	302.40	0	DEN	500	86.1	5.5	0.0	0.0	0.0	59.5	0.5	11.8	0.0	0.0	0.0	0.0	0.0	19.9
133	562570.73	4804891.09	302.44	1	DEN	500	86.1	-6.6	0.0	0.0	0.0	59.7	0.5	12.4	0.0	0.0	0.0	0.0	1.0	6.0
135	562577.87	4804893.96	302.42	0	DEN	500	86.1	5.3	0.0	0.0	0.0	59.3	0.5	7.2	0.0	0.0	0.0	0.0	0.0	24.4
136	562568.39	4804893.65	302.34	0	DEN	500	86.1	1.8	0.0	0.0	0.0	59.6	0.5	12.3	0.0	0.0	0.0	0.0	0.0	15.5
137	562567.43	4804895.31	302.29	0	DEN	500	86.1	-4.1	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	9.5
138	562567.23	4804895.65	302.28	0	DEN	500	86.1	-8.3	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	5.3
139	562567.15	4804895.83	302.27	0	DEN	500	86.1	-8.5	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	5.1
140	562567.04	4804896.13	302.26	0	DEN	500	86.1	-5.4	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	8.2
141	562566.66	4804897.18	302.23	0	DEN	500	86.1	-1.2	0.0	0.0	0.0	59.6	0.5	12.3	0.0	0.0	0.0	0.0	0.0	12.5

Area Source, ISO 9613, Name: " ", ID: "DogRun1_area"																			
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
142	562568.49	4804893.46	302.35	1	DEN	500	86.1	1.2	0.0	0.0	0.0	59.7	0.5	12.3	0.0	0.0	0.0	0.0	1.0	13.8
143	562567.56	4804895.07	302.30	1	DEN	500	86.1	-3.7	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	1.0	8.9
144	562567.33	4804895.47	302.28	1	DEN	500	86.1	-7.5	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	1.0	5.1
145	562567.23	4804895.66	302.28	1	DEN	500	86.1	-8.5	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	1.0	4.1
146	562567.11	4804895.97	302.27	1	DEN	500	86.1	-4.9	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	1.0	7.7
147	562566.71	4804897.08	302.23	1	DEN	500	86.1	-0.7	0.0	0.0	0.0	59.6	0.5	12.3	0.0	0.0	0.0	0.0	1.0	12.0
148	562574.10	4804893.15	302.41	0	DEN	500	86.1	3.5	0.0	0.0	0.0	59.4	0.5	10.9	0.0	0.0	0.0	0.0	0.0	18.8

Receiver
Name: bungalow to south
ID: POR3
X: 562693.50 m
Y: 4804802.25 m
Z: 307.57 m

Area Source, ISO 9613, Name: " ", ID: "DogRun1_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
5	562572.44	4804912.92	301.83	0	DEN	500	86.1	-10.2	0.0	0.0	0.0	55.3	0.3	16.7	0.0	0.0	0.0	0.0	0.0	3.6
8	562572.66	4804909.81	301.92	0	DEN	500	86.1	9.6	0.0	0.0	0.0	55.2	0.3	16.7	0.0	0.0	0.0	0.0	0.0	23.5
9	562572.95	4804905.06	302.05	0	DEN	500	86.1	14.9	0.0	0.0	0.0	55.0	0.3	16.7	0.0	0.0	0.0	0.0	0.0	29.0
11	562573.11	4804901.63	302.15	0	DEN	500	86.1	12.2	0.0	0.0	0.0	54.9	0.3	16.7	0.0	0.0	0.0	0.0	0.0	26.4
12	562572.48	4804900.47	302.18	0	DEN	500	86.1	11.2	0.0	0.0	0.0	54.9	0.3	16.7	0.0	0.0	0.0	0.0	0.0	25.5
14	562570.33	4804899.88	302.18	0	DEN	500	86.1	12.7	0.0	0.0	0.0	54.9	0.3	16.7	0.0	0.0	0.0	0.0	0.0	27.0
15	562567.65	4804899.19	302.18	0	DEN	500	86.1	5.8	0.0	0.0	0.0	55.0	0.3	16.7	0.0	0.0	0.0	0.0	0.0	19.9
19	562567.59	4804901.78	302.11	1	DEN	500	86.1	4.9	0.0	0.0	0.0	56.0	0.3	16.8	0.0	0.0	0.0	0.0	2.0	15.9
21	562569.09	4804904.65	302.04	1	DEN	500	86.1	7.1	0.0	0.0	0.0	55.8	0.3	16.8	0.0	0.0	0.0	0.0	2.0	18.3
22	562570.50	4804905.04	302.04	1	DEN	500	86.1	14.7	0.0	0.0	0.0	55.8	0.3	16.8	0.0	0.0	0.0	0.0	2.0	26.0
24	562568.41	4804899.48	302.18	2	DEN	500	86.1	8.7	0.0	0.0	0.0	56.2	0.3	17.0	0.0	0.0	0.0	0.0	3.0	18.4
26	562566.68	4804899.00	302.18	2	DEN	500	86.1	-1.9	0.0	0.0	0.0	56.1	0.3	16.9	0.0	0.0	0.0	0.0	3.0	7.8
29	562566.08	4804900.41	302.14	0	DEN	500	86.1	2.6	0.0	0.0	0.0	55.1	0.3	16.8	0.0	0.0	0.0	0.0	0.0	16.5
30	562566.11	4804903.25	302.06	0	DEN	500	86.1	9.8	0.0	0.0	0.0	55.2	0.3	16.8	0.0	0.0	0.0	0.0	0.0	23.6
31	562566.12	4804906.76	301.96	0	DEN	500	86.1	12.5	0.0	0.0	0.0	55.3	0.3	16.8	0.0	0.0	0.0	0.0	0.0	26.2
32	562566.11	4804908.47	301.91	0	DEN	500	86.1	-4.5	0.0	0.0	0.0	55.4	0.3	16.8	0.0	0.0	0.0	0.0	0.0	9.1
33	562567.60	4804909.61	301.89	0	DEN	500	86.1	13.8	0.0	0.0	0.0	55.4	0.3	16.8	0.0	0.0	0.0	0.0	0.0	27.4
35	562570.45	4804911.75	301.85	0	DEN	500	86.1	8.2	0.0	0.0	0.0	55.3	0.3	16.8	0.0	0.0	0.0	0.0	0.0	22.0
37	562572.22	4804913.12	301.83	0	DEN	500	86.1	-11.8	0.0	0.0	0.0	55.3	0.3	16.7	0.0	0.0	0.0	0.0	0.0	2.0
39	562566.25	4804908.56	301.90	1	DEN	500	86.1	15.5	0.0	0.0	0.0	55.6	0.3	16.9	0.0	0.0	0.0	0.0	1.0	27.9
41	562571.46	4804911.42	301.87	1	DEN	500	86.1	0.4	0.0	0.0	0.0	55.4	0.3	16.7	0.0	0.0	0.0	0.0	2.0	12.1
43	562569.65	4804907.82	301.96	1	DEN	500	86.1	7.9	0.0	0.0	0.0	55.6	0.3	16.8	0.0	0.0	0.0	0.0	2.0	19.3
44	562568.60	4804905.84	302.00	1	DEN	500	86.1	0.9	0.0	0.0	0.0	55.7	0.3	16.8	0.0	0.0	0.0	0.0	2.0	12.2
47	562567.60	4804906.86	301.97	1	DEN	500	86.1	15.1	0.0	0.0	0.0	55.7	0.3	16.8	0.0	0.0	0.0	0.0	2.0	26.4
48	562565.34	4804909.03	301.88	1	DEN	500	86.1	12.8	0.0	0.0	0.0	55.7	0.3	16.9	0.0	0.0	0.0	0.0	2.0	24.1
50	562566.06	4804899.56	302.16	2	DEN	500	86.1	-4.2	0.0	0.0	0.0	56.1	0.3	16.9	0.0	0.0	0.0	0.0	3.0	5.6
51	562566.07	4804901.54	302.10	2	DEN	500	86.1	6.3	0.0	0.0	0.0	56.0	0.3	16.9	0.0	0.0	0.0	0.0	3.0	16.1
53	562566.09	4804903.57	302.05	2	DEN	500	86.1	7.1	0.0	0.0	0.0	56.0	0.3	16.9	0.0	0.0	0.0	0.0	3.0	17.0
54	562566.09	4804904.46	302.02	2	DEN	500	86.1	-3.0	0.0	0.0	0.0	55.9	0.3	16.9	0.0	0.0	0.0	0.0	3.0	6.9
56	562566.13	4804906.63	301.96	2	DEN	500	86.1	12.8	0.0	0.0	0.0	55.9	0.3	16.9	0.0	0.0	0.0	0.0	3.0	22.8
61	562569.79	4804894.34	302.33	0	DEN	500	86.1	12.6	0.0	0.0	0.0	54.8	0.3	16.7	0.0	0.0	0.0	0.0	0.0	27.0
64	562572.23	4804896.30	302.29	0	DEN	500	86.1	13.8	0.0	0.0	0.0	54.7	0.3	16.6	0.0	0.0	0.0	0.0	0.0	28.3
65	562576.80	4804896.69	302.31	0	DEN	500	86.1	0.2	0.0	0.0	0.0	54.5	0.3	16.6	0.0	0.0	0.0	0.0	0.0	14.9
66	562567.86	4804897.24	302.24	1	DEN	500	86.1	7.6	0.0	0.0	0.0	56.2	0.3	16.8	0.0	0.0	0.0	0.0	2.0	18.4
67	562566.40	4804898.53	302.19	1	DEN	500	86.1	-6.4	0.0	0.0	0.0	56.1	0.3	16.9	0.0	0.0	0.0	0.0	2.0	4.4
70	562576.33	4804902.73	302.14	0	DEN	500	86.1	7.7	0.0	0.0	0.0	54.8	0.3	16.7	0.0	0.0	0.0	0.0	0.0	22.1
72	562574.74	4804908.72	301.96	0	DEN	500	86.1	9.9	0.0	0.0	0.0	55.1	0.3	16.7	0.0	0.0	0.0	0.0	0.0	24.0
77	562573.97	4804911.61	301.88	0	DEN	500	86.1	1.5	0.0	0.0	0.0	55.2	0.3	16.7	0.0	0.0	0.0	0.0	0.0	15.4
79	562574.18	4804912.56	301.85	0	DEN	500	86.1	6.1	0.0	0.0	0.0	55.2	0.3	16.6	0.0	0.0	0.0	0.0	0.0	20.0
82	562573.51	4804912.43	301.85	1	DEN	500	86.1	5.8	0.0	0.0	0.0	55.3	0.3	16.6	0.0	0.0	0.0	0.0	2.0	17.6
85	562577.55	4804896.08	302.34	0	DEN	500	86.1	-3.8	0.0	0.0	0.0	54.5	0.3	16.6	0.0	0.0	0.0	0.0	0.0	11.0
86	562576.61	4804894.19	302.39	0	DEN	500	86.1	6.6	0.0	0.0	0.0	54.5	0.3	16.6	0.0	0.0	0.0	0.0	0.0	21.4
87	562574.96	4804892.57	302.43	0	DEN	500	86.1	6.3	0.0	0.0	0.0	54.5	0.3	16.6	0.0	0.0	0.0	0.0	0.0	21.1
90	562568.32	4804892.29	302.37	0	DEN	500	86.1	7.1	0.0	0.0	0.0	54.8	0.3	16.7	0.0	0.0	0.0	0.0	0.0	21.5
92	562569.29	4804891.09	302.42	1	DEN	500	86.1	-0.6	0.0	0.0	0.0	54.7	0.3	16.6	0.0	0.0	0.0	0.0	1.0	12.8
94	562568.59	4804891.35	302.40	1	DEN	500	86.1	-18.8	0.0	0.0	0.0	54.8	0.3	16.0	0.0	0.0	0.0	0.0	1.0	-4.8
97	562568.01	4804892.76	302.36	1	DEN	500	86.1	5.5	0.0	0.0	0.0	54.8	0.3	16.7	0.0	0.0	0.0	0.0	1.0	18.9
99	562567.38	4804894.25	302.31	1	DEN	500	86.1	-1.1	0.0	0.0	0.0	56.3	0.4	16.9	0.0	0.0	0.0	0.0	2.0	9.5
101	562568.09	4804893.24	302.35	2	DEN	500	86.1	3.6	0.0	0.0	0.0	56.4	0.4	16.9	0.0	0.0	0.0	0.0	3.0	13.1
104	562568.68	4804891.97	302.39	2	DEN	500	86.1	-2.0	0.0	0.0	0.0	56.4	0.4	16.9	0.0	0.0	0.0	0.0	3.0	7.5
106	562577.29	4804896.29	302.33	0	DEN	500	86.1	-12.2	0.0	0.0	0.0	54.5	0.3	16.6	0.0	0.0	0.0	0.0	0.0	2.6
107	562573.47	4804893.15	302.40	0	DEN	500	86.1	4.8	0.0	0.0	0.0	54.6	0.3	16.6	0.0	0.0	0.0	0.0	0.0	19.5

Area Source, ISO 9613, Name: " ", ID: "DogRun1_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
109	562570.92	4804891.24	302.43	0	DEN	500	86.1	-3.2	0.0	0.0	0.0	54.6	0.3	16.6	0.0	0.0	0.0	0.0	0.0	11.4
110	562577.87	4804893.96	302.42	0	DEN	500	86.1	5.3	0.0	0.0	0.0	54.4	0.3	16.5	0.0	0.0	0.0	0.0	0.0	20.2
111	562567.64	4804895.08	302.30	0	DEN	500	86.1	5.1	0.0	0.0	0.0	54.9	0.3	16.7	0.0	0.0	0.0	0.0	0.0	19.4
113	562569.57	4804891.60	302.41	1	DEN	500	86.1	-9.6	0.0	0.0	0.0	54.8	0.3	16.7	0.0	0.0	0.0	0.0	1.0	3.8
114	562567.91	4804894.51	302.32	1	DEN	500	86.1	3.1	0.0	0.0	0.0	54.9	0.3	16.7	0.0	0.0	0.0	0.0	1.0	16.4
115	562566.86	4804896.54	302.25	1	DEN	500	86.1	-1.8	0.0	0.0	0.0	55.0	0.3	16.7	0.0	0.0	0.0	0.0	1.0	11.4
117	562566.44	4804897.75	302.21	1	DEN	500	86.1	-4.9	0.0	0.0	0.0	55.0	0.3	16.7	0.0	0.0	0.0	0.0	1.0	8.1
119	562567.46	4804895.30	302.29	1	DEN	500	86.1	0.8	0.0	0.0	0.0	56.2	0.4	16.9	0.0	0.0	0.0	0.0	2.0	11.4
121	562566.76	4804896.81	302.24	1	DEN	500	86.1	-0.8	0.0	0.0	0.0	56.2	0.4	16.9	0.0	0.0	0.0	0.0	2.0	9.9
123	562566.28	4804898.19	302.20	1	DEN	500	86.1	-9.6	0.0	0.0	0.0	56.1	0.3	16.9	0.0	0.0	0.0	0.0	2.0	1.1
125	562568.41	4804893.53	302.35	2	DEN	500	86.1	1.3	0.0	0.0	0.0	56.4	0.4	16.9	0.0	0.0	0.0	0.0	3.0	10.8
127	562567.20	4804895.92	302.27	2	DEN	500	86.1	2.1	0.0	0.0	0.0	56.2	0.4	16.9	0.0	0.0	0.0	0.0	3.0	11.8
129	562566.45	4804897.84	302.21	2	DEN	500	86.1	-5.8	0.0	0.0	0.0	56.2	0.3	16.9	0.0	0.0	0.0	0.0	3.0	4.0
131	562577.34	4804896.25	302.33	0	DEN	500	86.1	-13.1	0.0	0.0	0.0	54.5	0.3	16.6	0.0	0.0	0.0	0.0	0.0	1.7
132	562574.23	4804893.26	302.40	0	DEN	500	86.1	2.9	0.0	0.0	0.0	54.5	0.3	16.6	0.0	0.0	0.0	0.0	0.0	17.7
134	562572.23	4804891.47	302.45	0	DEN	500	86.1	-6.6	0.0	0.0	0.0	54.6	0.3	16.6	0.0	0.0	0.0	0.0	0.0	8.1

Appendix B - Sample Modelling Output File - Dog Run 2

Receiver
Name: bungalow to west
ID: POR1
X: 562467.11 m
Y: 4804855.87 m
Z: 304.50 m

Area Source, ISO 9613, Name: " ", ID: "DogRun2_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
3	562594.89	4804905.71	302.53	0	DEN	500	92.4	7.2	0.0	0.0	0.0	53.7	0.3	10.1	0.0	0.0	5.7	0.0	0.0	29.8
4	562594.86	4804902.61	302.65	0	DEN	500	92.4	12.0	0.0	0.0	0.0	53.7	0.3	10.2	0.0	0.0	5.7	0.0	0.0	34.6
5	562593.36	4804897.61	302.84	0	DEN	500	92.4	-12.9	0.0	0.0	0.0	53.5	0.3	14.1	0.0	0.0	4.7	0.0	0.0	7.0
11	562597.39	4804898.40	302.96	0	DEN	500	92.4	3.6	0.0	0.0	0.0	53.7	0.3	16.1	0.0	0.0	0.0	0.0	0.0	25.8
15	562596.35	4804898.32	302.92	0	DEN	500	92.4	-12.1	0.0	0.0	0.0	53.7	0.3	16.1	0.0	0.0	0.0	0.0	0.0	10.2
17	562596.39	4804898.54	302.90	0	DEN	500	92.4	3.9	0.0	0.0	0.0	53.7	0.3	14.6	0.0	0.0	0.0	0.0	0.0	27.6
21	562597.00	4804900.86	302.76	0	DEN	500	92.4	12.1	0.0	0.0	0.0	53.8	0.3	10.2	0.0	0.0	4.2	0.0	0.0	36.0
27	562593.25	4804897.57	302.84	0	DEN	500	92.4	-17.8	0.0	0.0	0.0	53.5	0.3	14.1	0.0	0.0	5.1	0.0	0.0	1.6
29	562592.97	4804900.68	302.67	0	DEN	500	92.4	4.3	0.0	0.0	0.0	53.5	0.3	10.1	0.0	0.0	9.0	0.0	0.0	23.8
32	562593.00	4804903.78	302.55	0	DEN	500	92.4	3.4	0.0	0.0	0.0	53.6	0.3	10.1	0.0	0.0	8.0	0.0	0.0	23.8
37	562592.38	4804905.03	302.50	0	DEN	500	92.4	6.2	0.0	0.0	0.0	53.6	0.3	10.1	0.0	0.0	9.0	0.0	0.0	25.6
39	562597.75	4804905.28	302.52	0	DEN	500	92.4	-2.5	0.0	0.0	0.0	53.9	0.3	10.2	0.0	0.0	4.2	0.0	0.0	21.2
40	562596.21	4804902.37	302.64	0	DEN	500	92.4	4.6	0.0	0.0	0.0	53.7	0.3	10.2	0.0	0.0	4.8	0.0	0.0	27.9
41	562593.47	4804897.65	302.84	0	DEN	500	92.4	-19.0	0.0	0.0	0.0	53.5	0.3	14.1	0.0	0.0	4.3	0.0	0.0	1.3
42	562596.31	4804906.77	302.50	0	DEN	500	92.4	5.0	0.0	0.0	0.0	53.9	0.3	10.2	0.0	0.0	4.7	0.0	0.0	28.3
43	562593.22	4804897.56	302.83	0	DEN	500	92.4	-27.2	0.0	0.0	0.0	53.5	0.3	14.1	0.0	0.0	5.3	0.0	0.0	-7.9
44	562592.79	4804899.71	302.65	0	DEN	500	92.4	-7.7	0.0	0.0	0.0	53.5	0.3	10.1	0.0	0.0	10.1	0.0	0.0	10.6
45	562592.47	4804901.30	302.53	0	DEN	500	92.4	-12.2	0.0	0.0	0.0	53.5	0.3	10.1	0.0	0.0	10.6	0.0	0.0	5.7

Receiver
Name: 2 storey house to east
ID: POR2
X: 562807.09 m
Y: 4805017.61 m
Z: 310.18 m

Area Source, ISO 9613, Name: " ", ID: "DogRun2_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2	562594.86	4804903.36	302.62	0	DEN	500	92.4	13.3	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	34.1
7	562596.97	4804900.31	302.80	0	DEN	500	92.4	13.2	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	34.1
8	562592.98	4804902.04	302.62	0	DEN	500	92.4	6.9	0.0	0.0	0.0	58.7	0.5	12.4	0.0	0.0	0.0	0.0	0.0	27.7
13	562592.97	4804900.50	302.68	1	DEN	500	92.4	4.0	0.0	0.0	0.0	58.8	0.5	12.4	0.0	0.0	0.0	0.0	2.0	22.7
16	562592.97	4804903.37	302.56	1	DEN	500	92.4	3.3	0.0	0.0	0.0	58.8	0.5	12.4	0.0	0.0	0.0	0.0	2.0	22.1
19	562593.21	4804905.31	302.53	1	DEN	500	92.4	-9.6	0.0	0.0	0.0	58.8	0.5	12.4	0.0	0.0	0.0	0.0	2.0	9.1
23	562593.27	4804905.77	302.52	1	DEN	500	92.4	-9.0	0.0	0.0	0.0	58.8	0.5	12.4	0.0	0.0	0.0	0.0	2.0	9.8
25	562592.38	4804905.03	302.50	0	DEN	500	92.4	6.2	0.0	0.0	0.0	58.7	0.5	12.4	0.0	0.0	0.0	0.0	0.0	27.0
28	562592.32	4804904.19	302.50	1	DEN	500	92.4	3.2	0.0	0.0	0.0	58.7	0.5	12.4	0.0	0.0	0.0	0.0	2.0	21.9
30	562592.34	4804905.39	302.50	1	DEN	500	92.4	-3.0	0.0	0.0	0.0	58.7	0.5	12.4	0.0	0.0	0.0	0.0	2.0	15.8
33	562592.35	4804905.89	302.50	1	DEN	500	92.4	0.2	0.0	0.0	0.0	58.7	0.5	12.4	0.0	0.0	0.0	0.0	2.0	19.0
35	562596.45	4804902.82	302.62	0	DEN	500	92.4	5.4	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	26.3
36	562596.31	4804906.77	302.50	0	DEN	500	92.4	5.0	0.0	0.0	0.0	58.5	0.5	12.4	0.0	0.0	0.0	0.0	0.0	26.0
38	562592.71	4804900.11	302.62	0	DEN	500	92.4	-6.4	0.0	0.0	0.0	58.8	0.5	12.4	0.0	0.0	0.0	0.0	0.0	14.3

Receiver
Name: bungalow to south
ID: POR3
X: 562693.50 m
Y: 4804802.25 m
Z: 307.57 m

Area Source, ISO 9613, Name: " ", ID: "DogRun2_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1	562596.97	4804900.31	302.80	0	DEN	500	92.4	13.2	0.0	0.0	0.0	53.8	0.3	16.3	0.0	0.0	0.0	0.0	0.0	35.2
6	562594.86	4804903.36	302.62	0	DEN	500	92.4	13.3	0.0	0.0	0.0	54.0	0.3	16.4	0.0	0.0	0.0	0.0	0.0	34.9
9	562592.98	4804902.04	302.62	0	DEN	500	92.4	6.9	0.0	0.0	0.0	54.0	0.3	16.4	0.0	0.0	0.0	0.0	0.0	28.5
10	562593.21	4804898.14	302.81	1	DEN	500	92.4	-7.9	0.0	0.0	0.0	53.9	0.3	16.4	0.0	0.0	0.0	0.0	2.0	11.9
12	562592.97	4804901.41	302.64	1	DEN	500	92.4	5.4	0.0	0.0	0.0	54.0	0.3	16.4	0.0	0.0	0.0	0.0	2.0	25.0
14	562592.83	4804903.33	302.54	1	DEN	500	92.4	-6.4	0.0	0.0	0.0	54.1	0.3	16.5	0.0	0.0	0.0	0.0	2.0	13.0
18	562592.23	4804904.40	302.50	0	DEN	500	92.4	3.8	0.0	0.0	0.0	54.2	0.3	16.5	0.0	0.0	0.0	0.0	0.0	25.2
20	562592.19	4804905.53	302.50	0	DEN	500	92.4	-18.2	0.0	0.0	0.0	54.2	0.3	16.5	0.0	0.0	0.0	0.0	0.0	3.2
22	562592.59	4804905.91	302.50	0	DEN	500	92.4	2.4	0.0	0.0	0.0	54.2	0.3	16.5	0.0	0.0	0.0	0.0	0.0	23.7
24	562592.38	4804905.03	302.50	1	DEN	500	92.4	6.2	0.0	0.0	0.0	54.2	0.3	16.5	0.0	0.0	0.0	0.0	2.0	25.5
26	562596.45	4804902.82	302.62	0	DEN	500	92.4	5.4	0.0	0.0	0.0	53.9	0.3	16.4	0.0	0.0	0.0	0.0	0.0	27.2
31	562596.31	4804906.77	302.50	0	DEN	500	92.4	5.0	0.0	0.0	0.0	54.1	0.3	16.4	0.0	0.0	0.0	0.0	0.0	26.5
34	562592.71	4804900.11	302.62	0	DEN	500	92.4	-6.4	0.0	0.0	0.0	54.0	0.3	16.4	0.0	0.0	0.0	0.0	0.0	15.3

Appendix B - Sample Modelling Output File - Dog Run 3

Receiver
Name: bungalow to west
ID: POR1
X: 562467.11 m
Y: 4804855.87 m
Z: 304.50 m

Area Source, ISO 9613, Name: " ", ID: "DogRun3_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1	562560.57	4804947.12	301.50	0	DEN	500	83.2	23.1	0.0	0.0	0.0	53.3	0.3	16.2	0.0	0.0	0.0	0.0	0.0	36.6
4	562552.51	4804950.63	301.50	1	DEN	500	83.2	15.3	0.0	0.0	0.0	53.5	0.3	15.7	0.0	0.0	2.9	0.0	2.0	24.2
6	562557.96	4804935.98	301.50	0	DEN	500	83.2	21.4	0.0	0.0	0.0	52.7	0.2	15.9	0.0	0.0	0.0	0.0	0.0	35.8
8	562548.39	4804943.79	301.50	1	DEN	500	83.2	-1.5	0.0	0.0	0.0	53.0	0.2	15.5	0.0	0.0	3.1	0.0	2.0	7.9
11	562554.62	4804943.51	301.50	0	DEN	500	83.2	18.3	0.0	0.0	0.0	52.9	0.2	16.0	0.0	0.0	0.0	0.0	0.0	32.4
14	562550.01	4804945.79	301.50	1	DEN	500	83.2	8.2	0.0	0.0	0.0	53.2	0.2	15.6	0.0	0.0	3.1	0.0	2.0	17.4
15	562548.31	4804947.77	301.50	1	DEN	500	83.2	11.3	0.0	0.0	0.0	53.2	0.2	15.6	0.0	0.0	3.0	0.0	2.0	20.5
17	562551.79	4804933.39	301.50	0	DEN	500	83.2	16.4	0.0	0.0	0.0	52.2	0.2	15.7	0.0	0.0	0.0	0.0	0.0	31.5
20	562548.04	4804943.44	301.50	1	DEN	500	83.2	-4.6	0.0	0.0	0.0	53.0	0.2	15.5	0.0	0.0	3.2	0.0	2.0	4.8
21	562563.32	4804931.27	301.50	0	DEN	500	83.2	10.8	0.0	0.0	0.0	52.7	0.2	15.9	0.0	0.0	0.0	0.0	0.0	25.2
23	562568.09	4804932.44	301.50	0	DEN	500	83.2	10.4	0.0	0.0	0.0	53.1	0.2	16.1	0.0	0.0	0.0	0.0	0.0	24.3
24	562570.43	4804932.00	301.50	0	DEN	500	83.2	-13.0	0.0	0.0	0.0	53.2	0.2	16.1	0.0	0.0	0.0	0.0	0.0	0.7

Receiver
Name: 2 storey house to east
ID: POR2
X: 562807.09 m
Y: 4805017.61 m
Z: 310.18 m

Area Source, ISO 9613, Name: " ", ID: "DogRun3_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2	562560.57	4804947.12	301.50	0	DEN	500	83.2	23.1	0.0	0.0	0.0	59.2	0.5	12.4	0.0	0.0	0.0	0.0	0.0	34.2
5	562557.96	4804935.98	301.50	0	DEN	500	83.2	21.4	0.0	0.0	0.0	59.4	0.5	12.4	0.0	0.0	0.0	0.0	0.0	32.3
9	562554.62	4804943.51	301.50	0	DEN	500	83.2	18.3	0.0	0.0	0.0	59.4	0.5	12.4	0.0	0.0	0.0	0.0	0.0	29.2
12	562551.79	4804933.39	301.50	0	DEN	500	83.2	16.4	0.0	0.0	0.0	59.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	27.1
18	562565.60	4804931.83	301.50	0	DEN	500	83.2	13.7	0.0	0.0	0.0	59.2	0.5	12.4	0.0	0.0	0.0	0.0	0.0	24.8

Receiver
Name: bungalow to south
ID: POR3
X: 562693.50 m
Y: 4804802.25 m
Z: 307.57 m

Area Source, ISO 9613, Name: " ", ID: "DogRun3_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
3	562564.74	4804952.60	301.50	0	DEN	500	83.2	11.6	0.0	0.0	0.0	56.9	0.4	17.1	0.0	0.0	0.0	0.0	0.0	20.4
7	562563.54	4804949.00	301.50	0	DEN	500	83.2	16.8	0.0	0.0	0.0	56.9	0.4	17.1	0.0	0.0	0.0	0.0	0.0	25.8
10	562562.72	4804946.80	301.50	0	DEN	500	83.2	11.6	0.0	0.0	0.0	56.8	0.4	17.1	0.0	0.0	0.0	0.0	0.0	20.5
13	562562.05	4804945.16	301.50	0	DEN	500	83.2	17.0	0.0	0.0	0.0	56.8	0.4	17.1	0.0	0.0	0.0	0.0	0.0	26.0
16	562560.15	4804944.65	301.50	0	DEN	500	83.2	14.5	0.0	0.0	0.0	56.8	0.4	17.0	0.0	0.0	0.0	0.0	0.0	23.5
19	562554.81	4804947.04	301.50	0	DEN	500	83.2	16.8	0.0	0.0	0.0	57.0	0.4	17.0	0.0	0.0	0.0	0.0	0.0	25.6
22	562547.86	4804950.27	301.50	0	DEN	500	83.2	2.5	0.0	0.0	0.0	57.4	0.4	17.0	0.0	0.0	0.0	0.0	0.0	11.0
25	562555.59	4804932.42	301.50	0	DEN	500	83.2	13.5	0.0	0.0	0.0	56.6	0.4	16.2	0.0	0.0	1.8	0.0	0.0	21.8
26	562554.86	4804936.04	301.50	0	DEN	500	83.2	14.2	0.0	0.0	0.0	56.7	0.4	16.8	0.0	0.0	0.0	0.0	0.0	23.6
27	562554.51	4804937.64	301.50	0	DEN	500	83.2	5.7	0.0	0.0	0.0	56.8	0.4	16.8	0.0	0.0	0.0	0.0	0.0	15.0
28	562554.96	4804937.71	301.50	0	DEN	500	83.2	10.1	0.0	0.0	0.0	56.7	0.4	16.9	0.0	0.0	0.0	0.0	0.0	19.3
29	562556.47	4804937.42	301.50	0	DEN	500	83.2	12.9	0.0	0.0	0.0	56.7	0.4	16.9	0.0	0.0	0.0	0.0	0.0	22.2
30	562558.49	4804937.02	301.50	0	DEN	500	83.2	12.0	0.0	0.0	0.0	56.6	0.4	16.9	0.0	0.0	0.0	0.0	0.0	21.4
31	562560.66	4804936.62	301.50	0	DEN	500	83.2	12.0	0.0	0.0	0.0	56.5	0.4	16.9	0.0	0.0	0.0	0.0	0.0	21.4
32	562564.35	4804935.96	301.50	0	DEN	500	83.2	13.4	0.0	0.0	0.0	56.4	0.4	16.9	0.0	0.0	0.0	0.0	0.0	23.1
33	562568.65	4804935.25	301.50	0	DEN	500	83.2	1.4	0.0	0.0	0.0	56.2	0.4	16.9	0.0	0.0	0.0	0.0	0.0	11.2
34	562548.09	4804944.56	301.50	0	DEN	500	83.2	-1.7	0.0	0.0	0.0	57.2	0.4	16.9	0.0	0.0	0.0	0.0	0.0	7.0
35	562549.04	4804944.92	301.50	0	DEN	500	83.2	7.7	0.0	0.0	0.0	57.2	0.4	17.0	0.0	0.0	0.0	0.0	0.0	16.4
36	562550.19	4804945.41	301.50	0	DEN	500	83.2	10.7	0.0	0.0	0.0	57.1	0.4	17.0	0.0	0.0	0.0	0.0	0.0	19.4
37	562551.02	4804945.81	301.50	0	DEN	500	83.2	9.1	0.0	0.0	0.0	57.1	0.4	17.0	0.0	0.0	0.0	0.0	0.0	17.8
38	562552.72	4804945.11	301.50	0	DEN	500	83.2	10.7	0.0	0.0	0.0	57.0	0.4	17.0	0.0	0.0	0.0	0.0	0.0	19.5
39	562559.03	4804941.40	301.50	0	DEN	500	83.2	14.4	0.0	0.0	0.0	56.7	0.4	16.9	0.0	0.0	0.0	0.0	0.0	23.6
40	562567.52	4804936.45	301.50	0	DEN	500	83.2	1.9	0.0	0.0	0.0	56.3	0.4	16.9	0.0	0.0	0.0	0.0	0.0	11.6
41	562547.82	4804944.10	301.50	0	DEN	500	83.2	-14.5	0.0	0.0	0.0	57.2	0.4	16.9	0.0	0.0	0.0	0.0	0.0	-5.7
42	562548.98	4804941.31	301.50	0	DEN	500	83.2	5.1	0.0	0.0	0.0	57.0	0.4	16.9	0.0	0.0	0.0	0.0	0.0	14.0
43	562551.61	4804934.94	301.50	0	DEN	500	83.2	13.5	0.0	0.0	0.0	56.8	0.4	16.8	0.0	0.0	0.0	0.0	0.0	22.9
44	562552.92	4804931.08	301.50	0	DEN	500	83.2	7.5	0.0	0.0	0.0	56.6	0.4	15.6	0.0	0.0	2.6	0.0	0.0	15.6
45	562552.33	4804929.55	301.50	0	DEN	500	83.2	10.9	0.0	0.0	0.0	56.6	0.4	14.3	0.0	0.0	4.4	0.0	0.0	18.6
46	562569.72	4804934.11	301.50	0	DEN	500	83.2	1.5	0.0	0.0	0.0	56.2	0.3	16.9	0.0	0.0	0.0	0.0	0.0	11.3
47	562569.55	4804933.38	301.50	0	DEN	500	83.2	0.8	0.0	0.0	0.0	56.1	0.3	16.9	0.0	0.0	0.0	0.0	0.0	10.7
48	562567.94	4804932.59	301.50	0	DEN	500	83.2	9.5	0.0	0.0	0.0	56.2	0.3	16.8	0.0	0.0	0.0	0.0	0.0	19.4
49	562565.55	4804931.74	301.50	0	DEN	500	83.2	4.9	0.0	0.0	0.0	56.2	0.4	16.8	0.0	0.0	0.0	0.0	0.0	14.7
50	562564.28	4804931.29	301.50	0	DEN	500	83.2	3.3	0.0	0.0	0.0	56.2	0.4	15.8	0.0	0.0	0.0	0.0	0.0	14.1
51	562563.13	4804930.89	301.50	0	DEN	500	83.2	2.7	0.0	0.0	0.0	56.3	0.4	13.7	0.0	0.0	1.4	0.0	0.0	14.2
52	562562.17	4804930.55	301.50	0	DEN	500	83.2	0.1	0.0	0.0	0.0	56.3	0.4	12.5	0.0	0.0	2.6	0.0	0.0	11.6
53	562560.98	4804930.13	301.50	0	DEN	500	83.2	2.8	0.0	0.0	0.0	56.3	0.4	12.4	0.0	0.0	6.6	0.0	0.0	10.3
54	562558.80	4804929.36	301.50	0	DEN	500	83.2	2.3	0.0	0.0	0.0	56.4	0.4	12.1	0.0	0.0	7.2	0.0	0.0	9.5

Appendix B - Sample Modelling Output File - Dog Run 4

Receiver
Name: bungalow to west
ID: POR1
X: 562467.11 m
Y: 4804855.87 m
Z: 304.50 m

Area Source, ISO 9613, Name: " ", ID: "DogRun4_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1	562576.10	4804949.18	301.63	0	DEN	500	82.0	22.6	0.0	0.0	0.0	54.1	0.3	16.5	0.0	0.0	0.0	0.0	0.0	33.7
8	562579.44	4804936.85	301.54	0	DEN	500	82.0	14.1	0.0	0.0	0.0	53.8	0.3	16.3	0.0	0.0	0.0	0.0	0.0	25.7
10	562578.03	4804939.61	301.59	0	DEN	500	82.0	16.3	0.0	0.0	0.0	53.9	0.3	16.4	0.0	0.0	0.0	0.0	0.0	27.9
12	562580.75	4804945.85	301.70	0	DEN	500	82.0	17.4	0.0	0.0	0.0	54.2	0.3	16.5	0.0	0.0	0.0	0.0	0.0	28.4
14	562584.77	4804927.95	301.63	0	DEN	500	82.0	-14.6	0.0	0.0	0.0	53.8	0.3	14.2	0.0	0.0	6.3	0.0	0.0	-7.1
16	562584.08	4804931.98	301.62	0	DEN	500	82.0	11.2	0.0	0.0	0.0	53.9	0.3	15.9	0.0	0.0	2.8	0.0	0.0	20.3
18	562583.57	4804935.05	301.61	0	DEN	500	82.0	9.4	0.0	0.0	0.0	54.0	0.3	16.1	0.0	0.0	0.0	0.0	0.0	21.0
20	562584.07	4804939.08	301.65	0	DEN	500	82.0	13.6	0.0	0.0	0.0	54.1	0.3	16.4	0.0	0.0	0.0	0.0	0.0	24.9
21	562585.74	4804947.14	301.76	0	DEN	500	82.0	12.6	0.0	0.0	0.0	54.5	0.3	16.6	0.0	0.0	0.0	0.0	0.0	23.3
25	562588.30	4804926.19	301.80	0	DEN	500	82.0	2.6	0.0	0.0	0.0	53.9	0.3	16.0	0.0	0.0	1.5	0.0	0.0	13.0
27	562587.96	4804926.79	301.79	0	DEN	500	82.0	-6.5	0.0	0.0	0.0	53.9	0.3	15.6	0.0	0.0	2.8	0.0	0.0	3.0
28	562587.75	4804927.17	301.78	0	DEN	500	82.0	2.6	0.0	0.0	0.0	53.9	0.3	13.6	0.0	0.0	4.8	0.0	0.0	12.0
30	562587.38	4804927.82	301.76	0	DEN	500	82.0	3.9	0.0	0.0	0.0	53.9	0.3	13.7	0.0	0.0	6.9	0.0	0.0	11.1
33	562586.98	4804928.55	301.74	0	DEN	500	82.0	5.7	0.0	0.0	0.0	53.9	0.3	13.8	0.0	0.0	6.3	0.0	0.0	13.5
35	562586.78	4804929.12	301.74	0	DEN	500	82.0	1.5	0.0	0.0	0.0	53.9	0.3	15.0	0.0	0.0	4.7	0.0	0.0	9.7
37	562586.88	4804932.62	301.76	0	DEN	500	82.0	13.6	0.0	0.0	0.0	54.1	0.3	16.0	0.0	0.0	2.1	0.0	0.0	23.2
39	562587.10	4804940.02	301.80	0	DEN	500	82.0	12.6	0.0	0.0	0.0	54.3	0.3	16.4	0.0	0.0	0.0	0.0	0.0	23.7
40	562587.36	4804948.34	301.84	0	DEN	500	82.0	9.8	0.0	0.0	0.0	54.6	0.3	16.6	0.0	0.0	0.0	0.0	0.0	20.3
43	562568.80	4804948.91	301.50	0	DEN	500	82.0	17.3	0.0	0.0	0.0	53.8	0.3	16.3	0.0	0.0	0.0	0.0	0.0	28.9
46	562588.44	4804949.14	301.93	0	DEN	500	82.0	9.5	0.0	0.0	0.0	54.7	0.3	16.6	0.0	0.0	0.0	0.0	0.0	19.9
48	562589.36	4804941.58	301.97	0	DEN	500	82.0	12.5	0.0	0.0	0.0	54.5	0.3	16.4	0.0	0.0	0.0	0.0	0.0	23.3
51	562590.13	4804935.26	302.01	0	DEN	500	82.0	12.8	0.0	0.0	0.0	54.3	0.3	16.1	0.0	0.0	0.9	0.0	0.0	23.2
52	562590.33	4804932.03	302.02	0	DEN	500	82.0	5.4	0.0	0.0	0.0	54.2	0.3	16.1	0.0	0.0	0.0	0.0	0.0	16.9
54	562590.04	4804930.61	301.98	0	DEN	500	82.0	5.8	0.0	0.0	0.0	54.2	0.3	13.9	0.0	0.0	0.5	0.0	0.0	19.0
56	562589.75	4804929.24	301.94	0	DEN	500	82.0	2.5	0.0	0.0	0.0	54.1	0.3	13.8	0.0	0.0	1.4	0.0	0.0	15.0
60	562589.55	4804928.24	301.91	0	DEN	500	82.0	1.1	0.0	0.0	0.0	54.1	0.3	13.7	0.0	0.0	3.1	0.0	0.0	12.0
62	562589.43	4804927.65	301.90	0	DEN	500	82.0	-8.0	0.0	0.0	0.0	54.0	0.3	15.7	0.0	0.0	1.2	0.0	0.0	2.9
64	562589.25	4804926.75	301.87	0	DEN	500	82.0	1.0	0.0	0.0	0.0	54.0	0.3	16.0	0.0	0.0	1.0	0.0	0.0	11.8
67	562581.38	4804957.38	301.63	0	DEN	500	82.0	14.8	0.0	0.0	0.0	54.7	0.3	16.6	0.0	0.0	0.0	0.0	0.0	25.2
71	562592.07	4804926.32	302.08	0	DEN	500	82.0	6.0	0.0	0.0	0.0	54.1	0.3	16.1	0.0	0.0	0.0	0.0	0.0	17.5
74	562591.36	4804927.54	302.05	0	DEN	500	82.0	9.3	0.0	0.0	0.0	54.1	0.3	16.0	0.0	0.0	0.1	0.0	0.0	20.8
77	562591.55	4804928.89	302.09	0	DEN	500	82.0	-3.9	0.0	0.0	0.0	54.2	0.3	15.7	0.0	0.0	0.2	0.0	0.0	7.7
80	562591.62	4804929.42	302.10	0	DEN	500	82.0	3.8	0.0	0.0	0.0	54.2	0.3	13.7	0.0	0.0	2.1	0.0	0.0	15.4
82	562591.76	4804930.40	302.13	0	DEN	500	82.0	2.8	0.0	0.0	0.0	54.2	0.3	13.8	0.0	0.0	0.7	0.0	0.0	15.8
85	562591.93	4804931.62	302.16	0	DEN	500	82.0	2.7	0.0	0.0	0.0	54.3	0.3	13.9	0.0	0.0	0.0	0.0	0.0	16.3
88	562592.12	4804932.94	302.20	0	DEN	500	82.0	-4.0	0.0	0.0	0.0	54.3	0.3	16.1	0.0	0.0	0.0	0.0	0.0	7.3
93	562574.33	4804933.37	301.50	0	DEN	500	82.0	8.2	0.0	0.0	0.0	53.4	0.3	16.1	0.0	0.0	0.0	0.0	0.0	20.5
95	562572.21	4804933.26	301.50	0	DEN	500	82.0	-1.1	0.0	0.0	0.0	53.3	0.3	16.2	0.0	0.0	0.0	0.0	0.0	11.2
97	562571.40	4804933.90	301.50	0	DEN	500	82.0	7.1	0.0	0.0	0.0	53.3	0.3	16.2	0.0	0.0	0.0	0.0	0.0	19.5
101	562584.60	4804927.84	301.62	0	DEN	500	82.0	-12.1	0.0	0.0	0.0	53.8	0.3	14.0	0.0	0.0	6.6	0.0	0.0	-4.7
106	562583.55	4804928.38	301.58	0	DEN	500	82.0	2.9	0.0	0.0	0.0	53.7	0.3	13.8	0.0	0.0	5.3	0.0	0.0	11.8
108	562582.40	4804930.30	301.54	0	DEN	500	82.0	7.8	0.0	0.0	0.0	53.8	0.3	13.3	0.0	0.0	6.0	0.0	0.0	16.5
111	562581.40	4804933.20	301.51	0	DEN	500	82.0	-2.6	0.0	0.0	0.0	53.8	0.3	16.1	0.0	0.0	0.6	0.0	0.0	8.7
113	562579.62	4804934.13	301.50	0	DEN	500	82.0	-2.1	0.0	0.0	0.0	53.7	0.3	16.1	0.0	0.0	0.0	0.0	0.0	9.8
114	562576.73	4804934.30	301.50	0	DEN	500	82.0	4.6	0.0	0.0	0.0	53.6	0.3	16.2	0.0	0.0	0.0	0.0	0.0	16.7
115	562572.57	4804934.76	301.50	0	DEN	500	82.0	-1.6	0.0	0.0	0.0	53.4	0.3	16.2	0.0	0.0	0.0	0.0	0.0	10.6
118	562587.76	4804925.07	301.78	0	DEN	500	82.0	-1.2	0.0	0.0	0.0	53.9	0.3	15.9	0.0	0.0	1.8	0.0	0.0	9.0
120	562586.81	4804925.38	301.72	0	DEN	500	82.0	1.9	0.0	0.0	0.0	53.8	0.3	15.9	0.0	0.0	2.1	0.0	0.0	11.8
123	562586.31	4804925.82	301.69	0	DEN	500	82.0	-9.5	0.0	0.0	0.0	53.8	0.3	15.3	0.0	0.0	5.3	0.0	0.0	-2.2
125	562586.03	4804926.07	301.68	0	DEN	500	82.0	-3.1	0.0	0.0	0.0	53.8	0.3	13.2	0.0	0.0	7.8	0.0	0.0	3.9
127	562585.57	4804926.48	301.65	0	DEN	500	82.0	-10.2	0.0	0.0	0.0	53.8	0.3	12.9	0.0	0.0	9.8	0.0	0.0	-4.9
132	562588.97	4804949.52	301.94	0	DEN	500	82.0	-2.1	0.0	0.0	0.0	54.7	0.3	16.6	0.0	0.0	0.0	0.0	0.0	8.2

Area Source, ISO 9613, Name: " ", ID: "DogRun4_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
134	562590.25	4804943.33	302.00	0	DEN	500	82.0	-0.6	0.0	0.0	0.0	54.6	0.3	16.5	0.0	0.0	0.0	0.0	0.0	10.1
135	562590.94	4804939.97	302.04	0	DEN	500	82.0	-5.3	0.0	0.0	0.0	54.5	0.3	16.3	0.0	0.0	0.0	0.0	0.0	5.6
137	562591.50	4804937.28	302.12	0	DEN	500	82.0	-4.1	0.0	0.0	0.0	54.4	0.3	16.2	0.0	0.0	0.1	0.0	0.0	6.9
138	562586.74	4804958.55	301.74	0	DEN	500	82.0	3.3	0.0	0.0	0.0	55.0	0.3	16.7	0.0	0.0	0.0	0.0	0.0	13.4
140	562587.63	4804925.80	301.76	0	DEN	500	82.0	-4.3	0.0	0.0	0.0	53.9	0.3	15.9	0.0	0.0	1.8	0.0	0.0	5.9
142	562586.92	4804926.17	301.73	0	DEN	500	82.0	-13.5	0.0	0.0	0.0	53.9	0.3	15.6	0.0	0.0	3.9	0.0	0.0	-5.1
144	562586.47	4804926.42	301.70	0	DEN	500	82.0	-4.4	0.0	0.0	0.0	53.8	0.3	13.6	0.0	0.0	6.4	0.0	0.0	3.5
146	562585.85	4804926.74	301.67	0	DEN	500	82.0	-5.2	0.0	0.0	0.0	53.8	0.3	13.2	0.0	0.0	8.9	0.0	0.0	0.7
147	562585.52	4804926.97	301.65	0	DEN	500	82.0	-8.1	0.0	0.0	0.0	53.8	0.3	13.0	0.0	0.0	9.3	0.0	0.0	-2.4
149	562585.22	4804927.29	301.64	0	DEN	500	82.0	-6.4	0.0	0.0	0.0	53.8	0.3	12.9	0.0	0.0	9.5	0.0	0.0	-0.8
153	562583.44	4804927.19	301.53	0	DEN	500	82.0	-10.1	0.0	0.0	0.0	53.7	0.3	13.1	0.0	0.0	8.6	0.0	0.0	-3.7
154	562583.17	4804927.10	301.52	0	DEN	500	82.0	-16.3	0.0	0.0	0.0	53.7	0.3	13.2	0.0	0.0	5.9	0.0	0.0	-7.3
156	562582.76	4804927.42	301.52	0	DEN	500	82.0	-0.5	0.0	0.0	0.0	53.7	0.3	12.9	0.0	0.0	6.4	0.0	0.0	8.3
158	562584.43	4804927.61	301.60	0	DEN	500	82.0	-12.5	0.0	0.0	0.0	53.8	0.3	13.1	0.0	0.0	8.5	0.0	0.0	-6.1
159	562584.13	4804927.57	301.58	0	DEN	500	82.0	-8.7	0.0	0.0	0.0	53.8	0.3	13.6	0.0	0.0	7.4	0.0	0.0	-1.7
160	562583.34	4804927.76	301.55	0	DEN	500	82.0	-2.8	0.0	0.0	0.0	53.7	0.3	13.5	0.0	0.0	5.6	0.0	0.0	6.2
161	562592.37	4804933.09	302.24	0	DEN	500	82.0	-16.0	0.0	0.0	0.0	54.4	0.3	16.1	0.0	0.0	0.0	0.0	0.0	-4.7
162	562592.54	4804932.26	302.26	0	DEN	500	82.0	-11.4	0.0	0.0	0.0	54.3	0.3	13.9	0.0	0.0	0.0	0.0	0.0	2.1
163	562592.67	4804931.65	302.27	0	DEN	500	82.0	-13.9	0.0	0.0	0.0	54.3	0.3	13.9	0.0	0.0	0.0	0.0	0.0	-0.4
164	562592.79	4804931.05	302.26	0	DEN	500	82.0	-11.3	0.0	0.0	0.0	54.3	0.3	13.8	0.0	0.0	0.3	0.0	0.0	2.0
165	562592.96	4804930.24	302.25	0	DEN	500	82.0	-12.3	0.0	0.0	0.0	54.3	0.3	13.8	0.0	0.0	1.4	0.0	0.0	-0.0
166	562593.05	4804929.77	302.25	0	DEN	500	82.0	-21.0	0.0	0.0	0.0	54.3	0.3	15.8	0.0	0.0	0.0	0.0	0.0	-9.2
167	562593.31	4804928.52	302.23	0	DEN	500	82.0	-9.3	0.0	0.0	0.0	54.3	0.3	16.1	0.0	0.0	0.0	0.0	0.0	2.1
168	562591.01	4804939.64	301.97	0	DEN	500	82.0	-26.1	0.0	0.0	0.0	54.5	0.3	16.3	0.0	0.0	0.0	0.0	0.0	-15.1
169	562591.72	4804936.21	302.12	0	DEN	500	82.0	-14.9	0.0	0.0	0.0	54.4	0.3	16.1	0.0	0.0	0.4	0.0	0.0	-4.1
170	562592.16	4804934.10	302.21	0	DEN	500	82.0	-25.3	0.0	0.0	0.0	54.4	0.3	16.1	0.0	0.0	0.0	0.0	0.0	-14.0

Receiver
Name: 2 storey house to east
ID: POR2
X: 562807.09 m
Y: 4805017.61 m
Z: 310.18 m

Area Source, ISO 9613, Name: " ", ID: "DogRun4_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
3	562576.10	4804949.18	301.63	0	DEN	500	82.0	22.6	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	33.1
6	562579.53	4804941.81	301.63	0	DEN	500	82.0	20.9	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	31.5
11	562584.48	4804939.37	301.67	0	DEN	500	82.0	18.0	0.0	0.0	0.0	58.5	0.5	12.4	0.0	0.0	0.0	0.0	0.0	28.7
19	562587.11	4804936.31	301.78	0	DEN	500	82.0	17.9	0.0	0.0	0.0	58.4	0.5	12.4	0.0	0.0	0.0	0.0	0.0	28.7
22	562588.73	4804925.37	301.82	1	DEN	500	82.0	-9.5	0.0	0.0	0.0	59.6	0.5	11.1	0.0	0.0	0.0	0.0	2.0	-0.7
24	562587.33	4804927.81	301.76	1	DEN	500	82.0	8.8	0.0	0.0	0.0	58.7	0.5	12.4	0.0	0.0	0.0	0.0	2.0	17.3
31	562589.59	4804938.31	301.98	0	DEN	500	82.0	17.6	0.0	0.0	0.0	58.3	0.4	12.4	0.0	0.0	0.0	0.0	0.0	28.5
34	562588.97	4804925.39	301.84	1	DEN	500	82.0	-14.3	0.0	0.0	0.0	59.6	0.5	11.1	0.0	0.0	0.0	0.0	2.0	-5.4
42	562568.80	4804948.91	301.50	0	DEN	500	82.0	17.3	0.0	0.0	0.0	58.9	0.5	12.4	0.0	0.0	0.0	0.0	0.0	27.6
44	562581.38	4804957.38	301.63	0	DEN	500	82.0	14.8	0.0	0.0	0.0	58.4	0.5	12.4	0.0	0.0	0.0	0.0	0.0	25.6
47	562591.65	4804928.33	302.09	0	DEN	500	82.0	12.9	0.0	0.0	0.0	58.4	0.4	12.4	0.0	0.0	0.0	0.0	0.0	23.7
49	562590.11	4804925.49	301.92	1	DEN	500	82.0	-1.7	0.0	0.0	0.0	59.7	0.5	11.1	0.0	0.0	0.0	0.0	2.0	7.0
58	562573.00	4804933.58	301.50	0	DEN	500	82.0	11.0	0.0	0.0	0.0	58.9	0.5	12.4	0.0	0.0	0.0	0.0	0.0	21.3
63	562582.61	4804930.03	301.54	0	DEN	500	82.0	9.3	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	19.9
68	562576.47	4804934.35	301.50	0	DEN	500	82.0	6.3	0.0	0.0	0.0	58.8	0.5	12.4	0.0	0.0	0.0	0.0	0.0	16.6
73	562587.86	4804925.02	301.78	0	DEN	500	82.0	-2.8	0.0	0.0	0.0	58.5	0.5	12.4	0.0	0.0	0.0	0.0	0.0	7.8
76	562586.93	4804925.32	301.73	0	DEN	500	82.0	2.3	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	12.9
79	562586.08	4804926.05	301.68	0	DEN	500	82.0	-1.0	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	9.6
83	562587.34	4804925.17	301.75	1	DEN	500	82.0	-0.1	0.0	0.0	0.0	59.6	0.5	11.3	0.0	0.0	0.0	0.0	2.0	8.6
87	562587.32	4804924.91	301.76	1	DEN	500	82.0	-5.3	0.0	0.0	0.0	59.6	0.5	12.2	0.0	0.0	0.0	0.0	2.0	2.5
89	562586.80	4804924.72	301.74	1	DEN	500	82.0	-9.0	0.0	0.0	0.0	59.5	0.5	12.4	0.0	0.0	0.0	0.0	2.0	-1.5
91	562586.04	4804926.07	301.68	1	DEN	500	82.0	-1.3	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	2.0	7.3
96	562586.74	4804958.55	301.74	0	DEN	500	82.0	3.3	0.0	0.0	0.0	58.2	0.4	12.4	0.0	0.0	0.0	0.0	0.0	14.4
99	562590.21	4804943.54	302.01	0	DEN	500	82.0	3.4	0.0	0.0	0.0	58.2	0.4	12.4	0.0	0.0	0.0	0.0	0.0	14.4
103	562586.35	4804926.52	301.70	0	DEN	500	82.0	1.6	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	12.3
105	562588.47	4804925.35	301.81	1	DEN	500	82.0	-13.7	0.0	0.0	0.0	59.6	0.5	11.1	0.0	0.0	0.0	0.0	2.0	-4.8
107	562586.28	4804926.51	301.69	1	DEN	500	82.0	-1.4	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	2.0	7.2
109	562585.36	4804927.15	301.65	1	DEN	500	82.0	-4.0	0.0	0.0	0.0	58.6	0.5	7.8	0.0	0.0	0.0	0.0	2.0	9.2
110	562582.83	4804927.40	301.52	0	DEN	500	82.0	-0.1	0.0	0.0	0.0	58.7	0.5	12.4	0.0	0.0	0.0	0.0	0.0	10.5
112	562583.03	4804926.97	301.52	0	DEN	500	82.0	-15.3	0.0	0.0	0.0	58.7	0.5	12.0	0.0	0.0	0.0	0.0	0.0	-4.4
117	562583.57	4804927.71	301.56	0	DEN	500	82.0	-1.4	0.0	0.0	0.0	58.6	0.5	12.4	0.0	0.0	0.0	0.0	0.0	9.1
121	562592.89	4804930.57	302.25	0	DEN	500	82.0	-4.0	0.0	0.0	0.0	58.3	0.4	12.4	0.0	0.0	0.0	0.0	0.0	6.9
130	562591.71	4804936.27	302.12	0	DEN	500	82.0	-14.2	0.0	0.0	0.0	58.2	0.4	12.4	0.0	0.0	0.0	0.0	0.0	-3.2

Receiver
Name: bungalow to south
ID: POR3
X: 562693.50 m
Y: 4804802.25 m
Z: 307.57 m

Area Source, ISO 9613, Name: " ", ID: "DogRun4_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2	562570.46	4804936.63	301.51	0	DEN	500	82.0	3.1	0.0	0.0	0.0	56.2	0.4	17.0	0.0	0.0	0.0	0.0	0.0	11.6
4	562570.85	4804937.85	301.52	0	DEN	500	82.0	2.2	0.0	0.0	0.0	56.2	0.4	17.0	0.0	0.0	0.0	0.0	0.0	10.7
5	562571.66	4804940.48	301.53	0	DEN	500	82.0	11.7	0.0	0.0	0.0	56.3	0.4	17.0	0.0	0.0	0.0	0.0	0.0	20.1
7	562573.71	4804947.28	301.58	0	DEN	500	82.0	18.7	0.0	0.0	0.0	56.5	0.4	17.0	0.0	0.0	0.0	0.0	0.0	26.9
9	562579.14	4804952.80	301.69	0	DEN	500	82.0	19.4	0.0	0.0	0.0	56.5	0.4	17.1	0.0	0.0	0.0	0.0	0.0	27.5
13	562581.26	4804943.86	301.67	0	DEN	500	82.0	19.4	0.0	0.0	0.0	56.1	0.3	17.0	0.0	0.0	0.0	0.0	0.0	28.0
15	562577.31	4804937.52	301.55	0	DEN	500	82.0	11.0	0.0	0.0	0.0	56.0	0.3	17.0	0.0	0.0	0.0	0.0	0.0	19.7
17	562574.96	4804936.71	301.53	0	DEN	500	82.0	12.7	0.0	0.0	0.0	56.1	0.3	15.0	0.0	0.0	0.0	0.0	0.0	23.4
23	562572.60	4804935.91	301.52	0	DEN	500	82.0	3.4	0.0	0.0	0.0	56.1	0.3	17.0	0.0	0.0	0.0	0.0	0.0	12.0
26	562571.45	4804935.54	301.51	0	DEN	500	82.0	4.3	0.0	0.0	0.0	56.1	0.3	17.0	0.0	0.0	0.0	0.0	0.0	12.9
29	562578.48	4804941.26	301.62	1	DEN	500	82.0	11.9	0.0	0.0	0.0	56.6	0.4	16.9	0.0	0.0	0.0	0.0	2.0	18.1
32	562580.09	4804942.48	301.64	1	DEN	500	82.0	12.8	0.0	0.0	0.0	56.7	0.4	16.9	0.0	0.0	0.0	0.0	2.0	18.9
36	562581.41	4804943.50	301.66	1	DEN	500	82.0	11.3	0.0	0.0	0.0	56.7	0.4	16.9	0.0	0.0	0.0	0.0	2.0	17.3
38	562582.10	4804938.55	301.57	1	DEN	500	82.0	6.0	0.0	0.0	0.0	56.5	0.4	16.9	0.0	0.0	0.0	0.0	2.0	12.3
41	562587.11	4804936.31	301.78	0	DEN	500	82.0	17.9	0.0	0.0	0.0	55.7	0.3	16.9	0.0	0.0	0.0	0.0	0.0	27.1
45	562584.48	4804939.37	301.67	0	DEN	500	82.0	18.0	0.0	0.0	0.0	55.9	0.3	16.9	0.0	0.0	0.0	0.0	0.0	26.9
50	562589.59	4804938.31	301.98	0	DEN	500	82.0	17.6	0.0	0.0	0.0	55.7	0.3	16.9	0.0	0.0	0.0	0.0	0.0	26.7
53	562569.70	4804937.46	301.50	0	DEN	500	82.0	2.0	0.0	0.0	0.0	56.3	0.4	17.0	0.0	0.0	0.0	0.0	0.0	10.4
55	562569.50	4804939.34	301.50	0	DEN	500	82.0	1.2	0.0	0.0	0.0	56.3	0.4	17.0	0.0	0.0	0.0	0.0	0.0	9.5
57	562569.06	4804943.46	301.50	0	DEN	500	82.0	10.8	0.0	0.0	0.0	56.5	0.4	17.0	0.0	0.0	0.0	0.0	0.0	19.0
59	562568.39	4804949.52	301.50	0	DEN	500	82.0	13.3	0.0	0.0	0.0	56.7	0.4	17.1	0.0	0.0	0.0	0.0	0.0	21.2
61	562568.97	4804953.73	301.50	0	DEN	500	82.0	12.4	0.0	0.0	0.0	56.9	0.4	17.1	0.0	0.0	0.0	0.0	0.0	20.1
65	562581.38	4804957.38	301.63	0	DEN	500	82.0	14.8	0.0	0.0	0.0	56.6	0.4	17.1	0.0	0.0	0.0	0.0	0.0	22.8
66	562591.65	4804928.33	302.09	0	DEN	500	82.0	12.9	0.0	0.0	0.0	55.2	0.3	16.8	0.0	0.0	0.0	0.0	0.0	22.6
69	562570.71	4804932.27	301.50	0	DEN	500	82.0	-7.0	0.0	0.0	0.0	56.1	0.3	16.9	0.0	0.0	0.0	0.0	0.0	1.8
70	562571.03	4804933.20	301.50	0	DEN	500	82.0	4.4	0.0	0.0	0.0	56.1	0.3	16.9	0.0	0.0	0.0	0.0	0.0	13.2
72	562572.52	4804933.72	301.50	0	DEN	500	82.0	7.9	0.0	0.0	0.0	56.0	0.3	16.9	0.0	0.0	0.0	0.0	0.0	16.6
75	562574.55	4804933.71	301.50	0	DEN	500	82.0	1.5	0.0	0.0	0.0	56.0	0.3	16.9	0.0	0.0	0.0	0.0	0.0	10.2
78	562576.18	4804933.71	301.50	0	DEN	500	82.0	3.2	0.0	0.0	0.0	55.9	0.3	15.0	0.0	0.0	0.0	0.0	0.0	14.0
81	562577.95	4804933.69	301.50	1	DEN	500	82.0	-10.2	0.0	0.0	0.0	56.2	0.4	16.8	0.0	0.0	0.0	0.0	2.0	-3.6
84	562577.03	4804933.65	301.50	1	DEN	500	82.0	-2.3	0.0	0.0	0.0	56.2	0.4	16.8	0.0	0.0	0.0	0.0	2.0	4.3
86	562575.91	4804933.60	301.50	1	DEN	500	82.0	0.4	0.0	0.0	0.0	56.2	0.4	16.8	0.0	0.0	0.0	0.0	2.0	7.0
90	562582.43	4804931.22	301.54	0	DEN	500	82.0	5.7	0.0	0.0	0.0	55.6	0.3	16.9	0.0	0.0	0.0	0.0	0.0	14.9
92	562583.11	4804929.67	301.56	0	DEN	500	82.0	-5.8	0.0	0.0	0.0	55.5	0.3	16.9	0.0	0.0	0.0	0.0	0.0	3.5
94	562582.73	4804929.11	301.54	0	DEN	500	82.0	6.7	0.0	0.0	0.0	55.5	0.3	14.8	0.0	0.0	0.0	0.0	0.0	18.1
98	562581.35	4804933.23	301.51	1	DEN	500	82.0	-3.1	0.0	0.0	0.0	56.3	0.4	16.8	0.0	0.0	0.0	0.0	2.0	3.5
100	562579.78	4804934.22	301.50	0	DEN	500	82.0	-3.0	0.0	0.0	0.0	55.8	0.3	16.9	0.0	0.0	0.0	0.0	0.0	6.0
102	562578.57	4804934.14	301.50	0	DEN	500	82.0	-1.2	0.0	0.0	0.0	55.9	0.3	15.4	0.0	0.0	0.0	0.0	0.0	9.3
104	562576.37	4804934.31	301.50	0	DEN	500	82.0	3.2	0.0	0.0	0.0	55.9	0.3	14.6	0.0	0.0	0.0	0.0	0.0	14.4
116	562573.77	4804934.61	301.50	0	DEN	500	82.0	-4.3	0.0	0.0	0.0	56.0	0.3	17.0	0.0	0.0	0.0	0.0	0.0	4.4
119	562572.12	4804934.81	301.50	0	DEN	500	82.0	-3.3	0.0	0.0	0.0	56.1	0.3	16.9	0.0	0.0	0.0	0.0	0.0	5.4
122	562580.59	4804934.25	301.50	1	DEN	500	82.0	-12.1	0.0	0.0	0.0	56.3	0.4	16.8	0.0	0.0	0.0	0.0	2.0	-5.5
124	562579.30	4804934.14	301.50	1	DEN	500	82.0	-0.9	0.0	0.0	0.0	56.3	0.4	16.8	0.0	0.0	0.0	0.0	2.0	5.7
126	562578.56	4804934.08	301.50	1	DEN	500	82.0	-17.9	0.0	0.0	0.0	56.3	0.4	16.8	0.0	0.0	0.0	0.0	2.0	-11.3
128	562578.21	4804934.12	301.50	1	DEN	500	82.0	-3.0	0.0	0.0	0.0	56.3	0.4	16.8	0.0	0.0	0.0	0.0	2.0	3.6
129	562577.33	4804934.22	301.50	1	DEN	500	82.0	-1.3	0.0	0.0	0.0	56.3	0.4	16.8	0.0	0.0	0.0	0.0	2.0	5.3
131	562576.21	4804934.35	301.50	1	DEN	500	82.0	-2.1	0.0	0.0	0.0	56.2	0.4	16.8	0.0	0.0	0.0	0.0	2.0	4.6
133	562586.87	4804925.46	301.73	0	DEN	500	82.0	4.8	0.0	0.0	0.0	55.2	0.3	16.8	0.0	0.0	0.0	0.0	0.0	14.5
136	562590.21	4804943.54	302.01	0	DEN	500	82.0	3.4	0.0	0.0	0.0	55.9	0.3	16.9	0.0	0.0	0.0	0.0	0.0	12.3
139	562586.74	4804958.55	301.74	0	DEN	500	82.0	3.3	0.0	0.0	0.0	56.5	0.4	17.1	0.0	0.0	0.0	0.0	0.0	11.4
141	562585.35	4804926.91	301.64	0	DEN	500	82.0	-7.6	0.0	0.0	0.0	55.4	0.3	16.8	0.0	0.0	0.0	0.0	0.0	2.0
143	562585.37	4804927.05	301.65	0	DEN	500	82.0	-11.0	0.0	0.0	0.0	55.4	0.3	16.8	0.0	0.0	0.0	0.0	0.0	-1.4

Area Source, ISO 9613, Name: " ", ID: "DogRun4_area"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
145	562586.56	4804926.42	301.71	0	DEN	500	82.0	0.8	0.0	0.0	0.0	55.3	0.3	16.8	0.0	0.0	0.0	0.0	0.0	10.4
148	562582.83	4804927.39	301.52	0	DEN	500	82.0	0.1	0.0	0.0	0.0	55.5	0.3	14.5	0.0	0.0	3.9	0.0	0.0	7.9
150	562584.77	4804927.73	301.63	0	DEN	500	82.0	-30.0	0.0	0.0	0.0	55.4	0.3	16.8	0.0	0.0	0.0	0.0	0.0	-20.5
151	562584.03	4804927.66	301.58	0	DEN	500	82.0	-4.4	0.0	0.0	0.0	55.4	0.3	14.8	0.0	0.0	3.8	0.0	0.0	3.2
152	562583.10	4804927.77	301.54	0	DEN	500	82.0	-4.5	0.0	0.0	0.0	55.5	0.3	14.5	0.0	0.0	3.2	0.0	0.0	4.1
155	562592.89	4804930.57	302.25	0	DEN	500	82.0	-4.0	0.0	0.0	0.0	55.3	0.3	16.8	0.0	0.0	0.0	0.0	0.0	5.7
157	562591.71	4804936.27	302.12	0	DEN	500	82.0	-14.2	0.0	0.0	0.0	55.5	0.3	16.8	0.0	0.0	0.0	0.0	0.0	-4.9

SLR Consulting (Canada) Ltd.
100 Stone Road West, Suite 201, Guelph, ON N1G 5L3

January 17, 2024

Attention: Usman Aziz
6706 Gore Road
Township of Puslinch, ON N0B 2J0

SLR Project No.: 241.030733.00001

RE: 6706 Gore Road, Township of Puslinch
Peer Review Response 3 – Proposed Dog Breeding Kennel – Environmental Noise Study

SLR Consulting (Canada) Ltd. (SLR) was retained by Usman Aziz to conduct an environmental study for the proposed dog breeding kennel facility at 6706 Gore Road in the Township of Puslinch (the Township). The initial environmental noise and vibration study was documented in the report entitled "Environmental Noise Study – Dog Breeding Kennel – 6706 Gore Road, Puslinch ON N0B 2J0" dated December 6, 2022.

The Township retained a peer reviewer, Valcoustics Canada Ltd., who have documented their peer reviews in three letter reports dated April 26, 2023, September 19, 2023 and December 1, 2023.

SLR previously provided response letters and revised reports to address the first two rounds of peer review comments. The purpose of this letter is to provide responses and supporting information to address the comments received in the third round of peer review (dated December 1, 2023). The comments are provided in italics in the following subsections, with responses immediately following the comments. A copy of the letter report from Valcoustics Canada Ltd. is included for reference in **Attachment A**. A revised report has also been prepared, dated January 17, 2024.

Peer Review Comment #1

22. The response provided addresses the concern.

No further comment is required from SLR.

Peer Review Comment #2

23. The updated report is still only recommending that exterior windows in climate controlled spaces remain closed. As per the SLR response, all indoor spaces where dogs could be located should have exterior doors and windows closed at all times for noise control purposes.

The revised report dated January 17, 2024 (**Section 4.1.1**) includes updated language reflecting the recommendation that exterior windows to indoor spaces where dogs could be located should have exterior doors and windows closed at all times for noise control purposes.

Peer Review Comment #3

24. The updated report is still only recommending that the a/c selections comply with MECP Publication NPC-216. As per the SLR response, the recommendation should be changed to each a/c unit should have an ARI sound rating not exceeding 7.6 bels.

The report (**Section 4.1.2**) notes that the a/c unit selection should meet the sound emission standards and maximum ARI sound rating noted in Table 216-4 of NPC-216 (i.e., 7.6 bels).

Peer Review Comment #4

25. The response to c) indicates there is a Figure B1 attached to the response letter. The indicated figure was not provided as part of the response matrix. Thus, we cannot comment on the information provided in this figure.

SLR has included Figure B1 as **Figure 6** in the revised report dated January 17, 2024.

Peer Review Comment #5

26. The response provided does not address the question/concern. As an example of the issue, in the table provided in the response matrix, Dog Run 2 is about equidistant from POR1 and POR 3 and both PORs are predicted to receive the same 40 dBA sound level yet POR 1 appears to be fully screened from Dog Run 2 by Shed No. 2 and the Barns and POR 3 has full exposure to Dog Run 2. The report states that the acoustical screening from the existing buildings on the site has been included. Why is the predicted sound level at POR 1 from Dog Run 2 not significantly lower than the predicted sound level at POR 3?

Sample calculations were provided as part of the responses to round 2 of peer review comment (refer to **Appendix B**). These are also included as part of the revised report dated January 17, 2024. The sample calculations provided the necessary information to address the comment.

With respect to Dog Run 2:

- POR 1 (bungalow to west) is screened from Dog Run 2 by nearby buildings. The sample calculation shows the influence of the barriers, Abar (dB), following the ISO 9613-2 standard.
- POR 3 (bungalow to south) is not screened by nearby buildings. The same calculation shows no influence of barriers, Abar (dB), following the ISO 9613-2 standard.
- Ground attenuation, Agr (dB), is higher for POR 3 (no barriers) compared to POR 2 (with barriers), following the ISO 9613-2 standard. The lower 'Agr (dB)' for POR 1 (compared to POR 3) is offset by higher 'Abar (dB)'. This results in a similar sound level prediction of 40 dBA.

Peer Review Comment #6 (f)

27. The response provided addresses the concern.

No further comment is required from SLR.

Conclusions

We trust that the responses included within the response letter and the corresponding Revised Environmental Noise Study address the third round of peer review comments. Please do not hesitate to contact the undersigned if you have any further questions or comments.

Yours sincerely,

SLR Consulting (Canada) Ltd.

Keni Mallinen, M.A.Sc., P.Eng.
Senior Acoustics Engineer
kmallinen@slrconsulting.com

Arthur Küpper, P.Eng.
Principal Acoustics Engineer
akupper@slrconsulting.com

Attachments

Statement of Limitations

This report has been prepared by SLR Consulting (Canada) Ltd. (SLR) for Usman Aziz (Client) in accordance with the scope of work and all other terms and conditions of the agreement between such parties. SLR acknowledges and agrees that the Client may provide this report to government agencies, interest holders, and/or Indigenous communities as part of project planning or regulatory approval processes. Copying or distribution of this report, in whole or in part, for any other purpose other than as aforementioned is not permitted without the prior written consent of SLR.

Any findings, conclusions, recommendations, or designs provided in this report are based on conditions and criteria that existed at the time work was completed and the assumptions and qualifications set forth herein.

This report may contain data or information provided by third party sources on which SLR is entitled to rely without verification and SLR does not warranty the accuracy of any such data or information.

Nothing in this report constitutes a legal opinion nor does SLR make any representation as to compliance with any laws, rules, regulations, or policies established by federal, provincial territorial, or local government bodies, other than as specifically set forth in this report. Revisions to legislative or regulatory standards referred to in this report may be expected over time and, as a result, modifications to the findings, conclusions, or recommendations may be necessary.

Attachment A – Peer Review Comments

Peer Review Response 3

6706 Gore Road, Puslinch

Usman Aziz

SLR Project No. 241.030733.00001

January 17, 2024

VALCOUSTICS
Canada Ltd.
Sound solutions to acoustical challenges
Celebrating over 60 years
30 Wertheim Court, Unit 25
Richmond Hill, Ontario, Canada, L4B 1B9
email • solutions@valcoustics.com
web • www.valcoustics.com
telephone • 905 764 5223
fax • 905 764 6813

December 1, 2023

Township of Puslinch
7404 Wellington Road 34
Puslinch, Ontario
N0B 2J0

Attention: Lynne Banks **VIA E-MAIL**
lbanks@puslinch.ca

Re: Peer Review of Environmental Noise Study and Peer Review Responses
Proposed Dog Breeding Kennel
6706 Gore Road
Puslinch, Ontario
VCL File: 123-0140

Dear Ms. Banks:

We have completed our review of these documents:

- "Environmental *Noise Study, Dog Breeding Kennel, 6706 Gore Road, Puslinch, Ontario*", dated November 8, 2023, prepared by SLR Consulting (Canada) Ltd. (SLR); and
- The responses to the acoustically related comments (i.e., 21 to 27) in the Comment Response Matrix, dated November 13, 2023.

Our comments are outlined below.

22. The response provided addresses the concern.

23. The updated report is still only recommending that exterior windows in climate controlled spaces remain closed. As per the SLR response, all indoor spaces where dogs could be located should have exterior doors and windows closed at all times for noise control purposes.

24. The updated report is still only recommending that the a/c selections comply with MECP Publication NPC-216. As per the SLR response, the recommendation should be changed to each a/c unit should have an ARI sound rating not exceeding 7.6 bels.

25. The response to c) indicates there is a Figure B1 attached to the response letter. The indicated figure was not provided as part of the response matrix. Thus, we cannot comment on the information provided in this figure.

26. The response provided does not address the question/concern. As an example of the issue, in the table provided in the response matrix, Dog Run 2 is about equidistant from POR1 and POR 3 and both PORs are predicted to receive the same 40 dBA sound level

yet POR 1 appears to be fully screened from Dog Run 2 by Shed No. 2 and the Barns and POR 3 has full exposure to Dog Run 2. The report states that the acoustical screening from the existing buildings on the site has been included. Why is the predicted sound level at POR 1 from Dog Run 2 not significantly lower than the predicted sound level at POR 3?

27. The response provided addresses the concern.

If there are any questions, please do not hesitate to call.

Yours truly,

VALCOUSTICS CANADA LTD.

Per: [redacted]
John Emeljanow, P.Eng.

JE\
J:\2023\1230140\000\Letters\2023-12-01 Peer Review V3.0.docx