

Environmental Noise Assessment

521 & 525 Essa Road

Proposed Residential Development City of Barrie

October 3, 2018
Project: 117-315-100

Prepared for

Innovative Planning Solutions.

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VALCOUSTICS

Canada Ltd.

Revision History

Revision #	Date	Description of Changes
1.0	September 7, 2017	Issued for Use
2.0	October 3, 2018	Revised for Updated Site Plan

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Environmental Noise Assessment

521 & 525 Essa Road

Proposed Residential Development

City of Barrie

EXECUTIVE SUMMARY

Valcoustics Canada Ltd. (VCL) previously prepared an Environmental Noise Assessment, dated September 8, 2017, for the proposed development. This updated report has been prepared to address changes to the Site Plan. Previously, the development consisted of three 4-storey back-to-back townhouse buildings. In the current plan, the development will consist of three (3-storey) back to back townhouse buildings and one (3-storey) standard townhouse building.

The significant transportation noise source in the vicinity of the site is road traffic on Essa Road and Mapleton Avenue. The significant stationary noise source in the vicinity of the site is the Streamline Collision Repair and Holly Auto Service Centre building, located directly south of the site.

The sound levels on the site have been determined and compared with the applicable Ministry of the Environment, Conservation and Parks (MECP) noise guideline limits to determine the need for noise mitigation.

To meet the applicable transportation noise source guideline limits:

- Buildings 1 and 4 require the provision for adding air conditioning;
- Sound barriers are required at the two townhouse units closest to Essa Road in Building 4. See Figure 2.
- Exterior wall and window construction meeting the minimum non-acoustical requirements of the Ontario Building Code (OBC) will be sufficient to meet the indoor noise guideline criteria of the MECP.

The applicable stationary noise source guideline limits are predicted to be met at the subject site without additional mitigation measures.

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

VCL previously prepared an Environmental Noise Assessment, dated September 8, 2017, for the proposed development. This updated report has been prepared to address changes to the Site Plan.

The potential sound levels due to the nearby road traffic and stationary noise sources have been predicted on site and compared to the applicable MECP guideline limits. Where excesses occur, noise mitigation measures have been recommended.

1.2 SITE AND SURROUNDING AREA

The proposed development is located on the west side of Essa Road, approximately 150 m north of Mapleton Avenue. The site is bounded by:

- Robert Place Retirement Lodge to the north;
- Essa Road, with single family and townhouse dwellings beyond, to the east;
- The Streamline Collision Repair and Holly Auto Service Centre auto repair shops, with Mapleton Avenue beyond, to the south; and
- detached, semi-detached and townhouse dwellings to the west.

The site is currently occupied by single storey detached residential dwellings that will be demolished as part of the development.

Figure 1 shows a Key Plan.

The assessment is based on the Site Plan prepared by Innovative Planning Solutions, dated August 20, 2018. Figure 2 shows the Site Plan in reduced form

1.3 PROPOSED RESIDENTIAL DEVELOPMENT

Previously, the proposed development consisted of three 4-storey back-to-back townhouse buildings along the north side of the site with parking along the south side. In the current plan, the proposed development will consist of three 3-storey back-to-back townhouse buildings along the north side of the site (Buildings 1 to 3) and one 3-storey standard townhouse building along the south side of the site (Building 4). It is understood that for all townhouse blocks, the ground floor will be elevated by approximately 3 m. Each building will have 12 dwelling units for a total of 48 units. The back-to-back townhouses will be provided with small (less than 4 m in depth) private rooftop terraces and balconies, and the standard townhouse units will be provided with grade level rear yards. A common outdoor amenity area will be provided at the northwest corner of the site.

2.0 NOISE SOURCES

2.1 TRANSPORTATION NOISE SOURCES

The transportation noise source in the vicinity with the potential to impact the site is road traffic on Essa Road and Mapleton Avenue.

Existing (year 2017) 24-hour traffic volumes and truck percentages for Essa Road and Mapleton Avenue were obtained from the City of Barrie. A growth rate of 2%, compounded annually was used to project the traffic volumes to the year 2031, as directed by the City of Barrie. Medium and heavy trucks were assumed to be 60% and 40%, respectively, of the total truck volume. A day/night split of 90%/10% was used as is typical for well-travelled roadways.

The road traffic data is summarized in Table 1. Correspondence is included as Appendix A

2.2 STATIONARY NOISE SOURCES

The main stationary noise sources with the potential to impact the subject site are the existing Streamline Collision Repair and Holly Auto Service Centre auto repair shops located approximately 30 m to the south of the site. The main sources of noise at these facilities are the rooftop and grade level mechanical units.

The Roberta Place Retirement Lodge is located approximately 50 m to the north of the subject site. The main noise sources at this facility are anticipated to be the rooftop HVAC units. Due to distance separation, no significant noise impact from these sources is expected at the subject site. This was confirmed during a visit to the area by VCL staff on August 1, 2017, when noise from the Roberta Place retirement Lodge was not audible at the subject site over the ambient road traffic noise. As such, noise impact from the Roberta Place Retirement Lodge was not considered further in the assessment.

3.0 TRANSPORTATION NOISE IMPACT ASSESSMENT

3.1 ENVIRONMENTAL NOISE GUIDELINES

3.1.1 MECP Noise Guidelines

The applicable noise guidelines for new residential development are those in MECP Publication NPC-300, *“Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning”*.

The environmental noise guidelines of the MECP, as provided in Publication NPC-300, are discussed briefly below and summarized in Appendix B.

3.1.1.1 Architectural Elements

During daytime and evening hours (0700 to 2300), the indoor criterion for road noise is a 16-hour $L_{eq,Day}$ of 45 dBA for sensitive spaces such as living/dining rooms, dens, and bedrooms. At night (2300 to 0700), the indoor criterion for road noise is $L_{eq,Night}$ of 45 dBA for sensitive spaces such as living/dining rooms and dens, and 40 dBA for bedrooms and sleeping quarters.

The architectural design of the building envelopes (walls, windows, etc.) must provide adequate sound isolation to achieve these indoor sound level limits, based on the applicable outdoor sound levels predicted on the building facades.

3.1.1.2 Ventilation Requirements

In accordance with the MECP noise guideline for road traffic sources, if the daytime sound level, $L_{eq\ Day}$, at the exterior face of a noise sensitive window is greater than 65 dBA or if the nighttime sound level exceeds 60 dBA ($L_{eq\ Night}$), means must be provided so that windows can be kept closed for noise control purposes and central air conditioning is required. For daytime sound levels between 56 dBA and 65 dBA inclusive, or nighttime sound levels between 51 dBA and 60 dBA inclusive, there need only be the provision for adding air conditioning at a later date.

A warning clause advising the occupant of the potential interference with some activities is also required.

3.1.1.3 Outdoor Living Areas

For outdoor amenity areas ("Outdoor Living Areas" - OLA's), the traffic noise guideline is $L_{eq\ Day}$ of 55 dBA, with an excess not exceeding 5 dBA considered acceptable if it is technically not practicable to achieve the 55 dBA objective, provided warning clauses are registered on title.

Note that for road traffic sources, a balcony is not considered an OLA, unless it is the only OLA for the occupant and it is:

- at least 4 m in depth; and
- unenclosed.

There is a grade level common outdoor amenity area located at the northwest corner of the site. In addition, townhouse units in Building 4 will have rear yard amenity space on the south side of the building. On Buildings 1 to 3, the rooftop patios and balconies are less than 4 m in depth, and thus are not considered OLA's under the MECP guidelines.

3.1.2 Noise Impact Assessment

Using the road traffic data in Table 1, sound levels for the road traffic, in terms of $L_{eq\ Day}$ and $L_{eq\ Night}$, were determined using ORNAMENT/STAMSON, the road traffic noise prediction model of the MECP.

The daytime and nighttime sound levels at the building facades were assessed at a height of 10.5 m above grade, representing a worst case top storey window. At the common outdoor amenity area, the daytime OLA sound levels were assessed at standing height of 1.5 m above grade, at the center of the amenity area. At the rear yard, the daytime OLA sound levels were assessed 3 m from the rear façade of the townhouse units, in line with the center of the unit. Inherent screening of each building face due to its orientation to the noise sources was taken into account. To be conservative, screening from the neighbouring developments was not included in the assessment.

The highest unmitigated daytime and nighttime sound levels of 65 dBA and 58 dBA, respectively, are predicted to occur at the east facade of Building 1, closest to Essa Road.

The daytime OLA sound level at the common amenity area is predicted to be 46 dBA. At Building 4, the highest unmitigated daytime OLA sound level of 62 dBA is predicted to occur at the rear yard of the easterly unit, closest to Essa Road.

Table 2 summarizes the predicted sound levels outdoor at specific locations due to the transportation noise sources.

Appendix C contains a sample sound level calculation.

3.1.3 Noise Control Requirements

The noise control requirements can be generally classified into two categories which are interrelated, but which the designer can treat separately for the most part:

- (a) Architectural elements to achieve acceptable indoor noise guideline limits; and
- (b) Design features to protect the OLA's.

3.1.3.1 Architectural Elements

The indoor noise exposure guidelines for the transportation sources can be achieved by using appropriate construction for exterior walls, windows and doors. In determining the worst-case architectural requirements for the townhouse units, wall and window areas were assumed to be 80% and 30%, respectively, of the associated floor area, at each facade a corner unit with both facades directly exposed to or at an angle to the noise sources, for both living/dining rooms and bedrooms.

Based on the predicted sound levels, exterior wall and windows construction meeting the minimum non-acoustical requirements of the OBC will be sufficient to meet the indoor noise criteria of the MECP.

3.1.3.2 Ventilation Requirements

Based on the predicted daytime and nighttime sound levels, all dwelling units in Buildings 1 and 4 require the provision for adding air conditioning.

3.1.3.3 Outdoor Living Area Requirements

The unmitigated daytime OLA sound level at the grade-level common amenity area is predicted to be below the 55 dBA design objective. Thus, sound barriers are not required for noise control purposes.

The unmitigated daytime OLA sound levels in the rear yards of the five most easterly units of Building 4 exceed the 55 dBA design objective. Thus, sound barriers are required.

To meet the 55 dBA design objective, 2.0 m and 1.8 m high sound barriers are required at the 1st and 2nd most easterly units on Building 4, respectively. The sound barriers will provide acoustic screening for the remaining units in Building 4 and mitigate the daytime OLA sound levels to 55 dBA and below. Thus, additional sound barriers are not required at these units. The location and orientation of the sound barriers are shown on Figure 2.

The analysis is based on flat topography and should be confirmed when grading information is available.

The sound barriers/acoustic fences must be of solid construction with no gaps, cracks or holes (except for small openings required for water drainage) and must have a minimum surface weight of 20 kg/m². A variety of materials are available, including concrete, masonry, glass, wood, specialty composite materials, or a combination of the above.

4.0 STATIONARY SOURCE NOISE IMPACT ASSESSMENT

The main stationary noise sources with the potential to impact the residential dwellings on the proposed development are the existing Streamline Collision Repair and Holly Auto Service Centre auto repair shops to the south of the site. The main noise sources at these facilities are the rooftop and grade-level mechanical units.

4.1 ENVIRONMENTAL NOISE GUIDELINES

The applicable stationary noise source guidelines, as outlined in NPC-300, are summarized below.

4.1.1 Sound Level Criteria

The site and area are Class 1; i.e., an area where the ambient sound environment is dominated by “urban hum”, primarily traffic noise during the daytime, evening and nighttime.

The MECP requires a “worst case” one-hour operating scenario be analyzed. This would typically occur when the background ambient sound level is at a minimum and the noise generated from the stationary noise sources is at a maximum.

The guideline limits apply to the outdoor plane of window of habitable spaces such as living/dining/family rooms and sleep areas as well as at locations amenable for use outdoors. No indoor sound level guidelines are provided for stationary sources.

MECP Publication NPC-300 states that the guideline limits shall be defined by the higher of the ambient sound level, due to road traffic noise, or the minimum exclusion limits. For a Class 1 area, the minimum exclusion limits at a noise sensitive plane of window are 50 dBA in the daytime (0700 to 1900 hours) and evening (1900 to 2300 hours) and 45 dBA in the nighttime (2300 to 0700 hours). The minimum exclusion limits at an outdoor point of reception is 50 dBA in the daytime and evening. The sound level limits do not apply at an outdoor point of reception at night.

4.1.2 Applicable Guideline Limits

The ambient sound levels due to road traffic at the receptors closest to the roadways (Essa Road and Mapleton Avenue) are higher than the minimum exclusion limits.

For the buildings that are further removed from the roadways, or are screened by the development itself, the minimum exclusion limits were applied.

4.2 NOISE SENSITIVE RECEPTORS

Six noise sensitive receptor locations were used to assess the noise impact on the subject site. The receptors are described as:

- POW_01 to POW_04 - representing the plane of windows at the south facades of Building 1 to 4, respectively;
- OPOR_01 - representing the common outdoor amenity area; and
- OPOR_02 - representing a rear yard amenity area on Building 4.

Receptors representing the plane of windows (POW) were assessed at a top storey height of 10.5 m above grade. The receptors representing the outdoor point of reception (OPOR) were assessed at a height of 1.5 m above grade.

Figure 3 shows the locations of the assessment receptors.

The worst case locations at each building were determined using the building evaluation feature in CadnaA, where the highest sound level at any storey, at multiple points on the facade is assessed. The assessment receptors represent the worst case locations.

4.3 AMBIENT SOUND LEVEL

The minimum hourly traffic volumes for Essa Road and Mapleton Avenue were calculated from the 24-hour volumes (applicable to the year 2017) provided by the City of Barrie by applying a typical traffic distribution for well travelled roadways. According to the distribution, the minimum daytime hourly traffic volumes occur from 1000 to 1100 hours and includes 3.5% of the daily volume. Since the businesses operate during daytime hours (0800 to 1700 hours) only, the ambient sound level for the evenings/nighttime were not assessed.

Minimum ambient sound levels at the receptors were predicted using the CadnaA implementation of the RLS-90 traffic noise model. This is considered conservative as RLS-90 predicts sound levels that are typically lower than those predicted using the MECP ORNAMENT/STAMSON method.

Table 5 shows the applicable guideline limits at each receptor.

4.4 NOISE SOURCES

Streamline Collision Repair and Holly Auto Service Centre occupy the same building. Streamline Collision Repair operates in the northern portion of the building, and Holly Auto Service Centre operates in the southern portion. The businesses operate between 0800 to 1700 hours (daytime hours only).

The main noise sources associated with the two businesses are a paint stack, an air conditioning unit, a make up air unit and an exhaust fan (Source ID's: Paint_Stack, AC, MAU and Ex_Fan).

The noise sources and associated ID's are shown on Figure 3 and the associated sound power levels are summarized in Table 4.

Sound level measurements of the noise sources were done by VCL staff on August 1, 2017.

Information regarding equipment operating hours at both facilities were provided by the employees at each shop.

4.5 OPERATING SCENARIOS

Since the businesses operate during daytime hours (0800 to 1700 hours) only, one operating scenario was considered. The scenario considered reflects the predictable worst case operating scenario, as required by the MECP guidelines.

Based on information provided by staff at the auto repair shops, all mechanical equipment operates for the full hour, during the worst case hour.

4.6 ANALYSIS METHOD

A 3-D acoustic model of the proposed development was created using CadnaA V2018 MR 1 environmental noise modelling software, which follows the protocol of ISO Standard 9613-2, "Acoustics – Attenuation of Sound During Propagation Outdoors", to predict sound levels at each of the receptor locations. Accounting for distance, atmospheric absorption and ground attenuation, the combined sound level from the noise sources (hourly L_{eq}) was determined at the worst case plane of window receptors and outdoor points of reception. Hard ground ($G = 0$) was used everywhere. Two orders of sound reflection from the building facades were included in the acoustical model.

4.7 UNMITIGATED SOUND LEVEL ASSESSMENT

Table 5 and Figure 3 show the predicted sound levels at the assessment receptors, together with the applicable guideline limits.

As can be seen from Table 5 and Figure 3, the sound levels at the subject site are predicted to meet the guideline limits at all receptors. Thus, noise mitigation is not required for Streamline Collision Repair and Holly Auto Service Centre.

5.0 CONCLUSION

With the incorporation of the recommended noise mitigation measures, the applicable MECP noise guidelines can be met and a suitable acoustic environment provided.

6.0 REFERENCES

1. PC STAMSON 5.04, "Computer Program for Road Traffic Noise Assessment", Ontario Ministry of the Environment, Conservation and Parks.
2. Building Practice Note No. 56: "Controlling Sound Transmission into Buildings", by J. D. Quirt, Division of Building Research, National Council of Canada, September 1985.

3. "Road and Rail Noise: Effects on Housing", Canada Mortgage and Housing Corporation, Publication NHA 5156, 81/10.
4. "Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning", Ontario Ministry of the Environment, Conservation and Parks, Publication NPC-300, October 21, 2013.
5. "Environmental Noise Assessment, 521 & 525 Essa Road, Proposed Residential Development, City of Barrie." Valcoustics Canada Ltd. Project: 117-0315. September 8, 2017.

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TABLE 1 ROAD TRAFFIC DATA

Roadway	Year ⁽¹⁾	AADT ⁽²⁾⁽³⁾	% Trucks		Speed Limit (km/hr)	Day/ Night Split
			Medium	Heavy		
Essa Road	2017	15 000	1.8	1.2	50	90%/10%
	2031	19 792				
Mapleton Avenue	2017	11 500	1.8	1.2	50	90%/10%
	2031	15 174				

Notes:

- (1) Traffic data volumes applicable to year 2017 obtained From the City of Barrie, See Appendix A
- (2) AADT – Annual Average Daily Traffic
- (3) Projected volumes obtained by applying a 2% growth rate, compounded annually until the year 2031.

TABLE 2: PREDICTED UNMITIGATED OUTDOOR SOUND LEVELS

Location	Source	Distance (m) ⁽¹⁾	L _{eq,Day} (dBA) ⁽²⁾⁽³⁾	L _{eq,Night} (dBA) ⁽²⁾⁽³⁾
Building 1 East Facade	Essa Road	15	65	58
	Mapleton Avenue	180	46	39
	TOTAL	-	65	58
Building 2 North Facade	Essa Road	41	55	49
Building 3 North Facade	Essa Road	68	52	46
Building 4 East Facade	Essa Road	16	64	58
	Mapleton Avenue	157	47	40
	TOTAL	-	64	58
Common Amenity Area (OLA)	Essa Road	98	46	-
	Mapleton Avenue	200	38	-
	TOTAL	-	46	-
Building 4 Most Easterly OLA	Essa Road	18	62	-
	Mapleton Avenue	154	45	-
	TOTAL	-	62	-
Building 4 6 th Most Easterly OLA	Essa Road	40	54	-
	Mapleton Avenue	155	42	-
	TOTAL	-	55	-

Notes:

- (1) Distance to the OLA/building facade, respectively, from the centreline of the noise source
- (2) Daytime sound levels for the OLA's assessed at a height of 1.5 m above grade or roof level. OLA nighttime levels are not applicable (N/A).
- (3) Daytime and Nighttime sound levels for the facades apply at a height of 10.5 m high bedroom window.

TABLE 3: MINIMUM NOISE ABATEMENT MEASURES

Location	Air Conditioning ⁽¹⁾	Exterior Walls ⁽²⁾	Exterior Windows ⁽³⁾	Sound Barriers ⁽⁴⁾	Warning Clauses ⁽⁵⁾
Building 4 (most easterly unit)	Provision for Adding	No special acoustical requirements		2.0 m high sound barrier	A + B + C
Building 4 (2 nd most easterly unit)	Provision for Adding	No special acoustical requirements		1.8 m high sound barrier	A + B + C
Building 1 and remaining units in Building 4	Provision for Adding	No special acoustical requirements			A + B + C
Buildings 2 and 3	No special acoustical requirements				C

Notes:

- 1) Where means must be provided to allow windows to remain closed for road noise control purposes, a commonly used technique is that of air conditioning.
- 2) STC - Sound Transmission Class Rating (Reference ASTM-E413).

The requirements are based on assumed percentages of wall and window area to associated floor area and should be checked once building plans are finalized.
- 3) STC - Sound Transmission Class Rating (Reference ASTM-E413). A sliding glass walkout door should be considered as a window and be included in the percentage of glazing.

The requirements are based on assumed percentages of wall and window area to associated floor area and should be checked once building plans are finalized.
- 4) Earthen berms, solid fences or combinations of berms/fences are acceptable

Sound barriers must be of solid construction having a minimum face density of 20 kg/m² with no gaps, cracks or holes.
- 5) Warning clauses to be included in Occupancy Agreements:
 - A. "Purchasers are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound level may exceed the noise guidelines of the Municipality and the Ministry of the Environment."
 - B. "This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of Environment."
 - C. "Purchasers are advised that due to the proximity of the adjacent commercial facilities, noise from these facilities may at times be audible."
- 6) Conventional ventilated attic roof construction meeting OBC requirements is satisfactory in all cases.
- 7) All exterior doors shall be fully weather-stripped.

TABLE 4: STATIONARY SOURCE – NOISE SOURCE DATA

Source Description	ID	Sound Power Level (dBA) ⁽¹⁾	Source Height (m) ⁽²⁾
Paint Stack	Paint_Stack	95	5
Make Up Air Unit	MAU	73	2
Air Conditioner	AC	73	1.5
Exhaust Fan	Ex_Fan	90	2

Note:

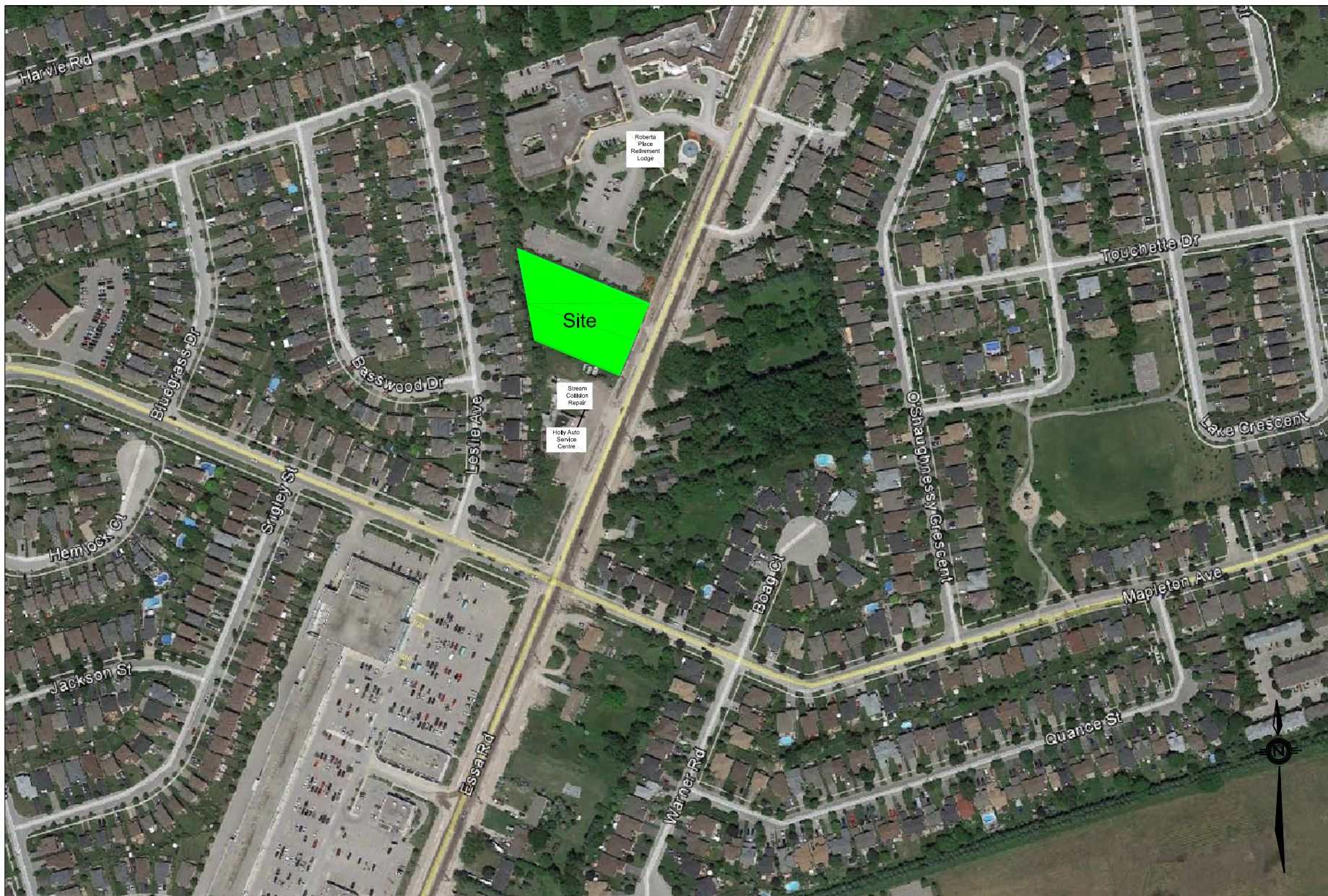
- (1) VCL onsite measurement (2017-08-01).
- (2) Source height relative to grade.
- (3) See Figure 3 for source locations.

TABLE 5: PREDICTED SOUND LEVELS – STATIONARY SOURCES

Receptor ⁽¹⁾	Sound Level L_{eq} 1hr Daytime ⁽²⁾	
	Predicted Sound Level (dBA) ⁽¹⁾	Guideline Limit (dBA) ⁽³⁾
POW_01 (Building 1 South Facade)	33	50
POW_02 (Building 2 South Facade)	33	50
POW_03 (Building 3 South Facade)	48	50
POW_04 (Building 4 South Facade)	53	53
OPOR_01 (Common Amenity Area)	45	50
OPOR_02 (Building 4 OLA)	53	54

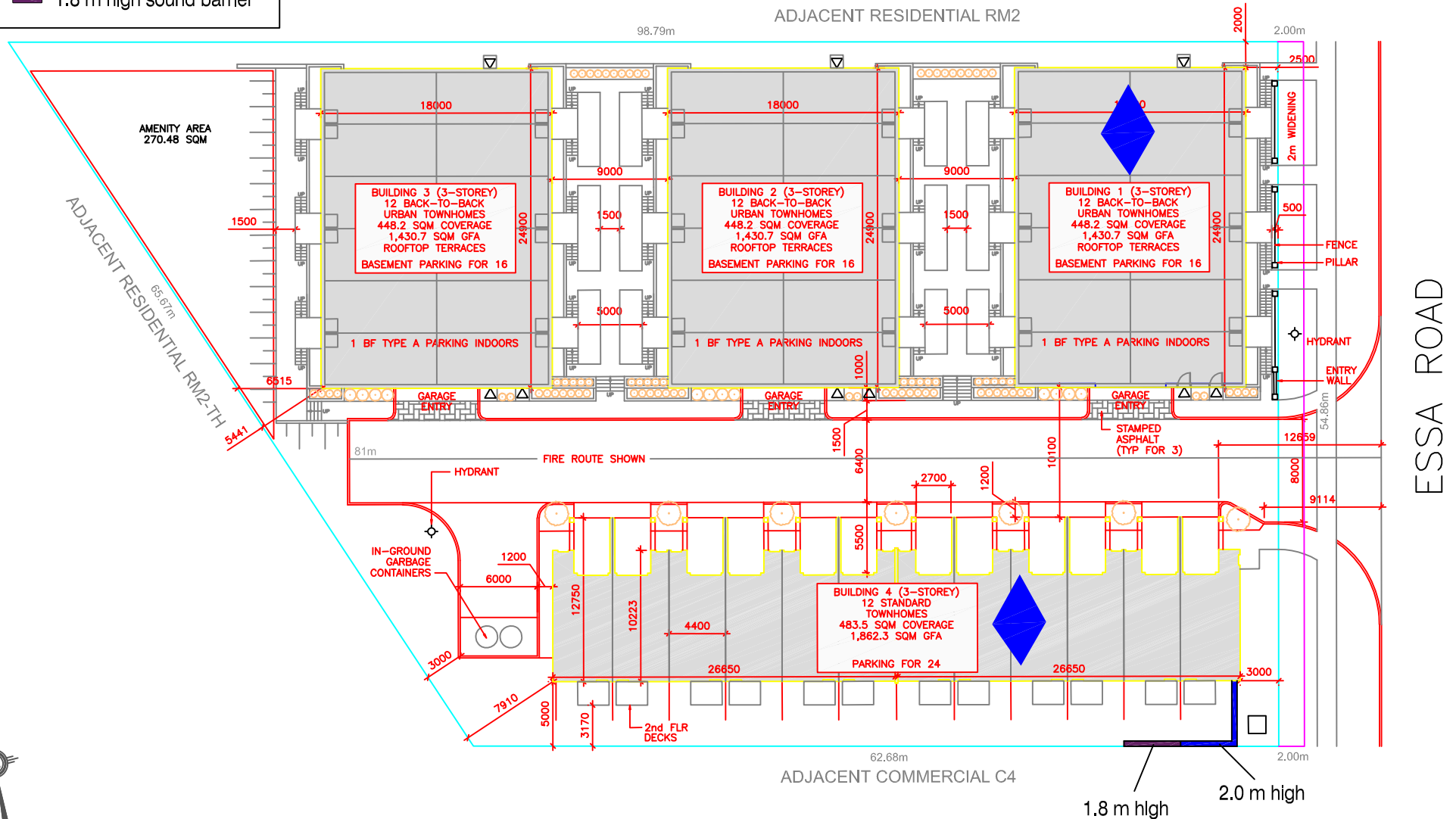
Note:

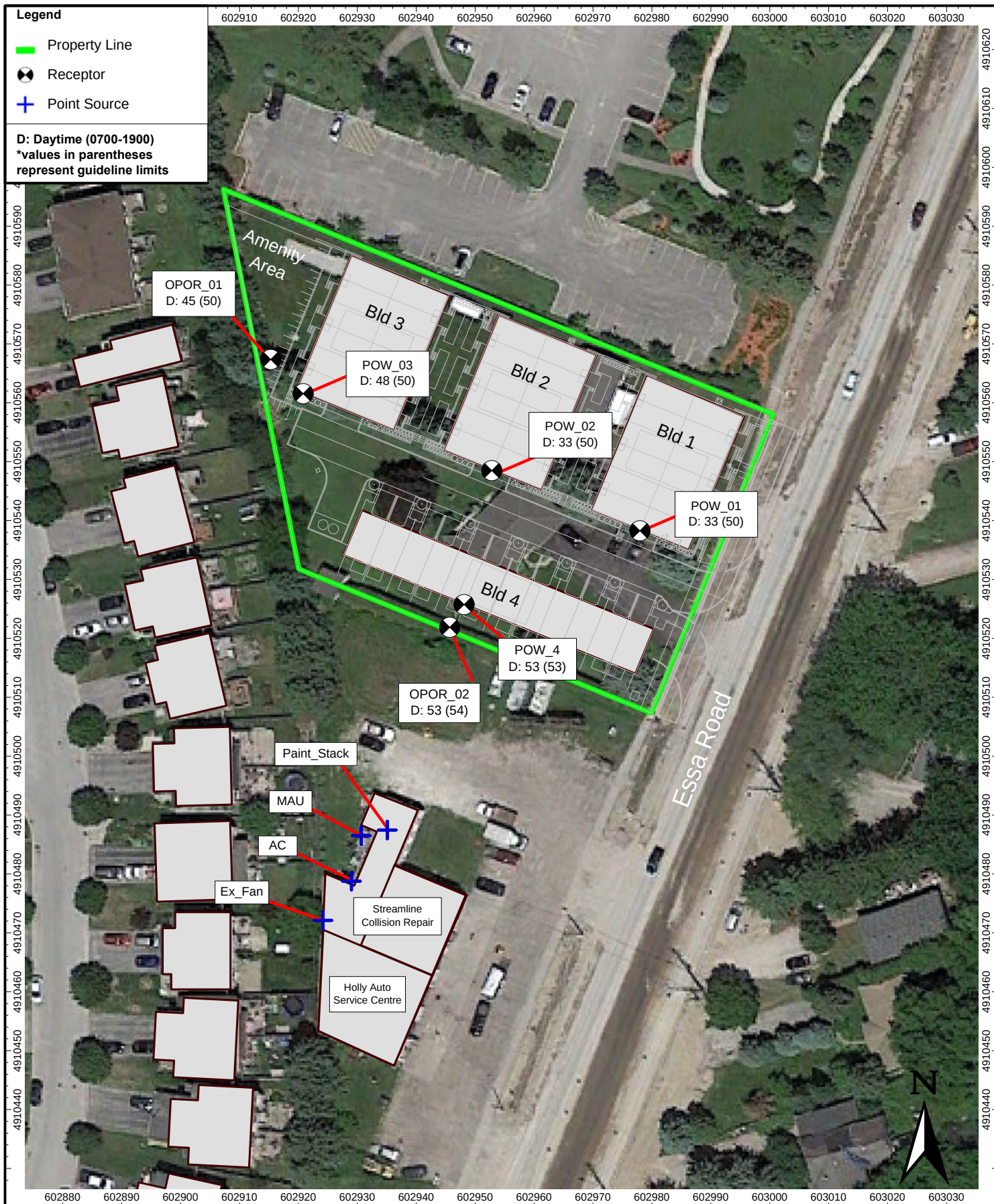
- (1) Daytime façade sound levels were assessed at a height of 10.5 m above grade, corresponding to top floor bedroom/living room window at the townhouse buildings. The daytime OPOR sound levels were assessed at a standing height of 1.5 m above grade. These locations are shown in Figure 3.
- (2) Daytime = 0700 to 1700 hours (operating hours for the business)
- (3) The higher of the ambient sound level due to road traffic or the minimum exclusion limits of the MECP (Class 1).



Key

- ◆ Provision for adding A/C
- 2.0 m high sound barrier
- 1.8 m high sound barrier





 VALCOUSTICS <i>Canada Ltd.</i> consulting acoustical engineers	Title		Date	Figure 3
	Predicted Sound Levels (dBA)		Oct 3, 2018	
	Project Name 521 & 525 Essa Road, Barrie		Project No. 117-0315-100	

APPENDIX A

ROAD TRAFFIC DATA CORRESPONDENCE

Greg Dennis

From: Justin MacDonald <Justin.MacDonald@barrie.ca>
Sent: July-20-17 10:42
To: Greg Dennis
Subject: RE: Traffic Data Request (VCL file: 117-0315)

Good morning Greg,

Please refer to below. Should you have any questions please let me know.

- Essa Road, north of Mapleton Avenue -15,000 vehicles per day with 3% commercial and heavy – growth rate of 2% per annum to a horizon year of 2031.
- Mapleton Avenue, west of Essa Road – 11,500 vehicles per day with 3% commercial and heavy – growth rate of 2% per annum to a horizon year of 2031.

Thanks,

Justin MacDonald, C.E.T.
Transportation Technologist
(705) 739-4220 ext. 5178

From: Greg Dennis [mailto:greg@valcoustics.com]
Sent: Tuesday, July 11, 2017 9:55 AM
To: Justin MacDonald <Justin.MacDonald@barrie.ca>
Subject: Traffic Data Request (VCL file: 117-0315)

Hi Justin,

Hope you are doing well. My company is working on an environmental noise study for a proposed site at 521 Essa Road in Barrie. I have attached a Key Plan for reference.

Can you please provide existing traffic volumes for:

- Essa Road, north of Mapleton Avenue
- Mapleton Avenue, west of Essa Road

Thank you,

Greg Dennis
Acoustic Specialist



30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
Tel: 905-764-5223 ext. 236
Fax: 905-764-6813
greg@valcoustics.com

To help us stop the spread of viruses, we request that all e-mail sent to our office includes project name, number and recipient's name in the subject line.

APPENDIX B

ENVIRONMENTAL NOISE GUIDELINES

APPENDIX B

ENVIRONMENTAL NOISE GUIDELINES

MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS (MECP)

Reference: MECP Publication NPC-300, October 2013: "Environmental Noise Guideline, Stationary and Transportation Source - Approval and Planning".

SPACE	SOURCE	TIME PERIOD	CRITERION
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	Road Rail Aircraft	07:00 to 23:00 07:00 to 23:00 24-hour period	45 dBA 40 dBA NEF/NEP 5
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	Road Rail Aircraft	23:00 to 07:00 23:00 to 07:00 24-hour period	45 dBA 40 dBA NEF/NEP 5
Sleeping quarters	Road Rail Aircraft	07:00 to 23:00 07:00 to 23:00 24-hour period	45 dBA 40 dBA NEF/NEP 0
Sleeping quarters	Road Rail Aircraft	23:00 to 07:00 23:00 to 07:00 24-hour period	40 dBA 35 dBA NEF/NEP 0
Outdoor Living Areas	Road and Rail	07:00 to 23:00	55 dBA up to 60 dBA allowed in some cases
Outdoor Point of Reception	Aircraft Stationary Source Class 1 Area Class 2 Area Class 3 Area Class 4 Area	24-hour period 07:00 to 19:00 ⁽¹⁾ 19:00 to 23:00 ⁽¹⁾ 07:00 to 19:00 ⁽²⁾ 19:00 to 23:00 ⁽²⁾ 07:00 to 19:00 ⁽³⁾ 19:00 to 23:00 ⁽³⁾ 07:00 to 19:00 ⁽⁴⁾ 19:00 to 23:00 ⁽⁴⁾	NEF/NEP 30 [#] 50* dBA 50* dBA 50* dBA 45* dBA 45* dBA 40* dBA 55* dBA 55* dBA

...../cont'd

SPACE	SOURCE	TIME PERIOD	CRITERION
Plane of a Window of Noise Sensitive Spaces	Stationary Source Class 1 Area	07:00 to 19:00 ⁽¹⁾	50* dBA
		19:00 to 23:00 ⁽¹⁾	50* dBA
		23:00 to 07:00 ⁽¹⁾	45* dBA
	Class 2 Area	07:00 to 19:00 ⁽²⁾	50* dBA
		19:00 to 23:00 ⁽²⁾	50* dBA
		23:00 to 07:00 ⁽²⁾	45* dBA
	Class 3 Area	07:00 to 19:00 ⁽³⁾	45* dBA
		19:00 to 23:00 ⁽³⁾	45* dBA
		23:00 to 07:00 ⁽³⁾	40* dBA
	Class 4 Area	07:00 to 19:00 ⁽⁴⁾	60* dBA
		19:00 to 23:00 ⁽⁴⁾	60* dBA
		23:00 to 07:00 ⁽⁴⁾	55* dBA

Notes:

- # may not apply to in-fill or re-development.
 * or the minimum hourly background sound level $L_{eq}(1)$, due to road traffic, if higher.
 (1) Class 1 Area : Urban
 (2) Class 2 Area : Urban during day; rural-like evening and night
 (3) Class 3 Area : Rural
 (4) Class 4 Area: Subject to land use planning authority's approval

APPENDIX C

SAMPLE CALCULATIONS

TRANSPORATION NOISE SOURCES

STAMSON 5.0 STAMSON 5.0 NORMAL REPORT Date: 03-10-2018 10:40:21
MINISTRY OF ENVIRONMENT, CONSERVATION AND PARKS/ NOISE ASSESSMENT

Filename: b1_ef.te Time Period: Day/Night 16/8 hours

Description: Building 1 East Facade

Road data, segment # 1: Essa (day/night)

Car traffic volume : 17279/1920 veh/TimePeriod *
Medium truck volume : 321/36 veh/TimePeriod *
Heavy truck volume : 214/24 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 15000
Percentage of Annual Growth : 2.00
Number of Years of Growth : 14.00
Medium Truck % of Total Volume : 1.80
Heavy Truck % of Total Volume : 1.20
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Essa (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Mapleton (day/night)

Car traffic volume : 13247/1472 veh/TimePeriod *
Medium truck volume : 164/18 veh/TimePeriod *
Heavy truck volume : 246/27 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 11500
Percentage of Annual Growth : 2.00
Number of Years of Growth : 14.00
Medium Truck % of Total Volume : 1.20
Heavy Truck % of Total Volume : 1.80
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Mapleton (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 180.00 / 180.00 m
Receiver height : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Essa (day)

Source height = 1.05 m

ROAD (0.00 + 64.56 + 0.00) = 64.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.40	65.55	0.00	0.00	-0.99	0.00	0.00	0.00	64.56

Segment Leq : 64.56 dBA

Results segment # 2: Mapleton (day)

Source height = 1.16 m

ROAD (0.00 + 45.88 + 0.00) = 45.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.40	64.98	0.00	-15.11	-3.99	0.00	0.00	0.00	45.88

Segment Leq : 45.88 dBA

Total Leq All Segments: 64.62 dBA

Results segment # 1: Essa (night)

Source height = 1.05 m

ROAD (0.00 + 58.05 + 0.00) = 58.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.40	59.04	0.00	0.00	-0.99	0.00	0.00	0.00	58.05

Segment Leq : 58.05 dBA

Results segment # 2: Mapleton (night)

Source height = 1.16 m

0

ROAD (0.00 + 39.31 + 0.00) = 39.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.40	58.42	0.00	-15.11	-3.99	0.00	0.00	0.00	39.31

Segment Leq : 39.31 dBA

Total Leq All Segments: 58.11 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.62
(NIGHT): 58.11

APPENDIX D

SAMPLE CALCULATIONS

STATIONARY NOISE SOURCES

117-0315-100 521 Essa Road

Point Sources

Name	M.	ID	Result. PWL			Lw / Li		Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
			Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area	Day	Special	Night						X	Y	Z
			(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)	(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Exhaust Fan		Ex_Fan	89.5	89.5	89.5	Lw	Ex_Fan		0.0	0.0	0.0			60.00	0.00	0.00	0.0		(none)	2.00	r	602924.18	4910472.11	2.00
Paint Stack		Paint_Stack	95.0	95.0	95.0	Lw	Pnt_Stk		0.0	0.0	0.0			60.00	0.00	0.00	0.0		(none)	2.00	g	602935.08	4910487.46	5.00
Air Conditioner		AC	72.5	72.5	72.5	Lw	AC		0.0	0.0	0.0			60.00	0.00	0.00	0.0		(none)	1.50	r	602929.01	4910478.77	1.50
Make Up Air Unit		MAU	73.1	73.1	73.1	Lw	MAU		0.0	0.0	0.0			60.00	0.00	0.00	0.0		(none)	2.00	r	602930.67	4910486.49	2.00

Receiver

Name: (untitled)

ID: POW_4

X: 602948.13 m

Y: 4910525.74 m

Z: 4.50 m

Point Source, ISO 9613, Name: "Paint Stack", ID: "Paint Stack"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	l/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
37	602935.08	4910487.46	5.00	0	D	32	50.0	0.0	0.0	0.0	0.0	43.1	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	9.9
37	602935.08	4910487.46	5.00	0	D	63	68.7	0.0	0.0	0.0	0.0	43.1	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	28.6
37	602935.08	4910487.46	5.00	0	D	125	79.8	0.0	0.0	0.0	0.0	43.1	0.0	2.8	0.0	0.0	0.0	0.0	0.0	33.9
37	602935.08	4910487.46	5.00	0	D	250	83.8	0.0	0.0	0.0	0.0	43.1	0.0	0.9	0.0	0.0	0.0	0.0	0.0	39.7
37	602935.08	4910487.46	5.00	0	D	500	92.3	0.0	0.0	0.0	0.0	43.1	0.1	-0.2	0.0	0.0	0.0	0.0	0.0	49.3
37	602935.08	4910487.46	5.00	0	D	1000	90.1	0.0	0.0	0.0	0.0	43.1	0.1	-0.2	0.0	0.0	0.0	0.0	0.0	47.1
37	602935.08	4910487.46	5.00	0	D	2000	80.5	0.0	0.0	0.0	0.0	43.1	0.4	-0.2	0.0	0.0	0.0	0.0	0.0	37.2
37	602935.08	4910487.46	5.00	0	D	4000	67.3	0.0	0.0	0.0	0.0	43.1	1.3	-0.2	0.0	0.0	0.0	0.0	0.0	23.1
37	602935.08	4910487.46	5.00	0	D	8000	57.0	0.0	0.0	0.0	0.0	43.1	4.7	-0.2	0.0	0.0	0.0	0.0	0.0	9.4
37	602935.08	4910487.46	5.00	0	N	32	50.0	0.0	-188.0	0.0	0.0	43.1	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	-178.1
37	602935.08	4910487.46	5.00	0	N	63	68.7	0.0	-188.0	0.0	0.0	43.1	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	-159.4
37	602935.08	4910487.46	5.00	0	N	125	79.8	0.0	-188.0	0.0	0.0	43.1	0.0	2.8	0.0	0.0	0.0	0.0	0.0	-154.1
37	602935.08	4910487.46	5.00	0	N	250	83.8	0.0	-188.0	0.0	0.0	43.1	0.0	0.9	0.0	0.0	0.0	0.0	0.0	-148.3
37	602935.08	4910487.46	5.00	0	N	500	92.3	0.0	-188.0	0.0	0.0	43.1	0.1	-0.2	0.0	0.0	0.0	0.0	0.0	-138.7
37	602935.08	4910487.46	5.00	0	N	1000	90.1	0.0	-188.0	0.0	0.0	43.1	0.1	-0.2	0.0	0.0	0.0	0.0	0.0	-140.9
37	602935.08	4910487.46	5.00	0	N	2000	80.5	0.0	-188.0	0.0	0.0	43.1	0.4	-0.2	0.0	0.0	0.0	0.0	0.0	-150.8
37	602935.08	4910487.46	5.00	0	N	4000	67.3	0.0	-188.0	0.0	0.0	43.1	1.3	-0.2	0.0	0.0	0.0	0.0	0.0	-164.9
37	602935.08	4910487.46	5.00	0	N	8000	57.0	0.0	-188.0	0.0	0.0	43.1	4.7	-0.2	0.0	0.0	0.0	0.0	0.0	-178.6
37	602935.08	4910487.46	5.00	0	E	32	50.0	0.0	-188.0	0.0	0.0	43.1	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	-178.1
37	602935.08	4910487.46	5.00	0	E	63	68.7	0.0	-188.0	0.0	0.0	43.1	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	-159.4
37	602935.08	4910487.46	5.00	0	E	125	79.8	0.0	-188.0	0.0	0.0	43.1	0.0	2.8	0.0	0.0	0.0	0.0	0.0	-154.1
37	602935.08	4910487.46	5.00	0	E	250	83.8	0.0	-188.0	0.0	0.0	43.1	0.0	0.9	0.0	0.0	0.0	0.0	0.0	-148.3
37	602935.08	4910487.46	5.00	0	E	500	92.3	0.0	-188.0	0.0	0.0	43.1	0.1	-0.2	0.0	0.0	0.0	0.0	0.0	-138.7
37	602935.08	4910487.46	5.00	0	E	1000	90.1	0.0	-188.0	0.0	0.0	43.1	0.1	-0.2	0.0	0.0	0.0	0.0	0.0	-140.9
37	602935.08	4910487.46	5.00	0	E	2000	80.5	0.0	-188.0	0.0	0.0	43.1	0.4	-0.2	0.0	0.0	0.0	0.0	0.0	-150.8
37	602935.08	4910487.46	5.00	0	E	4000	67.3	0.0	-188.0	0.0	0.0	43.1	1.3	-0.2	0.0	0.0	0.0	0.0	0.0	-164.9
37	602935.08	4910487.46	5.00	0	E	8000	57.0	0.0	-188.0	0.0	0.0	43.1	4.7	-0.2	0.0	0.0	0.0	0.0	0.0	-178.6
41	602935.08	4910487.46	5.00	1	D	500	92.3	0.0	0.0	0.0	0.0	48.7	0.1	0.0	0.0	0.0	0.0	0.0	2.0	41.5
41	602935.08	4910487.46	5.00	1	D	1000	90.1	0.0	0.0	0.0	0.0	48.7	0.3	0.0	0.0	0.0	0.0	0.0	2.0	39.1
41	602935.08	4910487.46	5.00	1	D	2000	80.5	0.0	0.0	0.0	0.0	48.7	0.7	0.0	0.0	0.0	0.0	0.0	2.0	29.1
41	602935.08	4910487.46	5.00	1	D	4000	67.3	0.0	0.0	0.0	0.0	48.7	2.5	0.0	0.0	0.0	0.0	0.0	2.0	14.1
41	602935.08	4910487.46	5.00	1	D	8000	57.0	0.0	0.0	0.0	0.0	48.7	9.0	0.0	0.0	0.0	0.0	0.0	2.0	-2.6
41	602935.08	4910487.46	5.00	1	N	500	92.3	0.0	-188.0	0.0	0.0	48.7	0.1	0.0	0.0	0.0	0.0	0.0	2.0	-146.5
41	602935.08	4910487.46	5.00	1	N	1000	90.1	0.0	-188.0	0.0	0.0	48.7	0.3	0.0	0.0	0.0	0.0	0.0	2.0	-148.9
41	602935.08	4910487.46	5.00	1	N	2000	80.5	0.0	-188.0	0.0	0.0	48.7	0.7	0.0	0.0	0.0	0.0	0.0	2.0	-158.9
41	602935.08	4910487.46	5.00	1	N	4000	67.3	0.0	-188.0	0.0	0.0	48.7	2.5	0.0	0.0	0.0	0.0	0.0	2.0	-173.9
41	602935.08	4910487.46	5.00	1	N	8000	57.0	0.0	-188.0	0.0	0.0	48.7	9.0	0.0	0.0	0.0	0.0	0.0	2.0	-190.6
41	602935.08	4910487.46	5.00	1	E	500	92.3	0.0	-188.0	0.0	0.0	48.7	0.1	0.0	0.0	0.0	0.0	0.0	2.0	-146.5
41	602935.08	4910487.46	5.00	1	E	1000	90.1	0.0	-188.0	0.0	0.0	48.7	0.3	0.0	0.0	0.0	0.0	0.0	2.0	-148.9
41	602935.08	4910487.46	5.00	1	E	2000	80.5	0.0	-188.0	0.0	0.0	48.7	0.7	0.0	0.0	0.0	0.0	0.0	2.0	-158.9
41	602935.08	4910487.46	5.00	1	E	4000	67.3	0.0	-188.0	0.0	0.0	48.7	2.5	0.0	0.0	0.0	0.0	0.0	2.0	-173.9
41	602935.08	4910487.46	5.00	1	E	8000	57.0	0.0	-188.0	0.0	0.0	48.7	9.0	0.0	0.0	0.0	0.0	0.0	2.0	-190.6

Point Source, ISO 9613, Name: "Exhaust Fan", ID: "Ex_Fan"

Nr.	X (m)	Y (m)	Z (m)	Refl.	DEN	Freq. (Hz)	Lw dB(A)	l/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
49	602924.18	4910472.11	2.00	0	D	32	35.4	0.0	0.0	0.0	0.0	46.4	0.0	-3.0	0.0	0.0	4.5	0.0	0.0	-12.5
49	602924.18	4910472.11	2.00	0	D	63	53.6	0.0	0.0	0.0	0.0	46.4	0.0	-3.0	0.0	0.0	5.7	0.0	0.0	4.6
49	602924.18	4910472.11	2.00	0	D	125	63.3	0.0	0.0	0.0	0.0	46.4	0.0	2.8	0.0	0.0	4.7	0.0	0.0	9.5
49	602924.18	4910472.11	2.00	0	D	250	74.8	0.0	0.0	0.0	0.0	46.4	0.1	5.1	0.0	0.0	5.3	0.0	0.0	18.0
49	602924.18	4910472.11	2.00	0	D	500	83.3	0.0	0.0	0.0	0.0	46.4	0.1	1.5	0.0	0.0	10.0	0.0	0.0	25.3
49	602924.18	4910472.11	2.00	0	D	1000	86.1	0.0	0.0	0.0	0.0	46.4	0.2	0.1	0.0	0.0	13.4	0.0	0.0	26.0
49	602924.18	4910472.11	2.00	0	D	2000	83.0	0.0	0.0	0.0	0.0	46.4	0.6	0.0	0.0	0.0	16.3	0.0	0.0	19.7
49	602924.18	4910472.11	2.00	0	D	4000	74.7	0.0	0.0	0.0	0.0	46.4	1.9	0.0	0.0	0.0	17.8	0.0	0.0	8.6

Point Source, ISO 9613, Name: "Exhaust Fan", ID: "Ex_Fan"																				
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)
49	602924.18	4910472.11	2.00	0	D	8000	64.3	0.0	0.0	0.0	0.0	46.4	6.9	0.0	0.0	0.0	18.7	0.0	0.0	-7.7
49	602924.18	4910472.11	2.00	0	N	32	35.4	0.0	-188.0	0.0	0.0	46.4	0.0	-3.0	0.0	0.0	4.5	0.0	0.0	-200.5
49	602924.18	4910472.11	2.00	0	N	63	53.6	0.0	-188.0	0.0	0.0	46.4	0.0	-3.0	0.0	0.0	5.7	0.0	0.0	-183.4
49	602924.18	4910472.11	2.00	0	N	125	63.3	0.0	-188.0	0.0	0.0	46.4	0.0	2.8	0.0	0.0	4.7	0.0	0.0	-178.5
49	602924.18	4910472.11	2.00	0	N	250	74.8	0.0	-188.0	0.0	0.0	46.4	0.1	5.1	0.0	0.0	5.3	0.0	0.0	-170.0
49	602924.18	4910472.11	2.00	0	N	500	83.3	0.0	-188.0	0.0	0.0	46.4	0.1	1.5	0.0	0.0	10.0	0.0	0.0	-162.7
49	602924.18	4910472.11	2.00	0	N	1000	86.1	0.0	-188.0	0.0	0.0	46.4	0.2	0.1	0.0	0.0	13.4	0.0	0.0	-162.0
49	602924.18	4910472.11	2.00	0	N	2000	83.0	0.0	-188.0	0.0	0.0	46.4	0.6	0.0	0.0	0.0	16.3	0.0	0.0	-168.3
49	602924.18	4910472.11	2.00	0	N	4000	74.7	0.0	-188.0	0.0	0.0	46.4	1.9	0.0	0.0	0.0	17.8	0.0	0.0	-179.4
49	602924.18	4910472.11	2.00	0	N	8000	64.3	0.0	-188.0	0.0	0.0	46.4	6.9	0.0	0.0	0.0	18.7	0.0	0.0	-195.7
49	602924.18	4910472.11	2.00	0	E	32	35.4	0.0	-188.0	0.0	0.0	46.4	0.0	-3.0	0.0	0.0	4.5	0.0	0.0	-200.5
49	602924.18	4910472.11	2.00	0	E	63	53.6	0.0	-188.0	0.0	0.0	46.4	0.0	-3.0	0.0	0.0	5.7	0.0	0.0	-183.4
49	602924.18	4910472.11	2.00	0	E	125	63.3	0.0	-188.0	0.0	0.0	46.4	0.0	2.8	0.0	0.0	4.7	0.0	0.0	-178.5
49	602924.18	4910472.11	2.00	0	E	250	74.8	0.0	-188.0	0.0	0.0	46.4	0.1	5.1	0.0	0.0	5.3	0.0	0.0	-170.0
49	602924.18	4910472.11	2.00	0	E	500	83.3	0.0	-188.0	0.0	0.0	46.4	0.1	1.5	0.0	0.0	10.0	0.0	0.0	-162.7
49	602924.18	4910472.11	2.00	0	E	1000	86.1	0.0	-188.0	0.0	0.0	46.4	0.2	0.1	0.0	0.0	13.4	0.0	0.0	-162.0
49	602924.18	4910472.11	2.00	0	E	2000	83.0	0.0	-188.0	0.0	0.0	46.4	0.6	0.0	0.0	0.0	16.3	0.0	0.0	-168.3
49	602924.18	4910472.11	2.00	0	E	4000	74.7	0.0	-188.0	0.0	0.0	46.4	1.9	0.0	0.0	0.0	17.8	0.0	0.0	-179.4
49	602924.18	4910472.11	2.00	0	E	8000	64.3	0.0	-188.0	0.0	0.0	46.4	6.9	0.0	0.0	0.0	18.7	0.0	0.0	-195.7
53	602924.18	4910472.11	2.00	2	D	1000	86.1	0.0	0.0	0.0	0.0	52.8	0.4	0.1	0.0	0.0	0.0	0.0	4.0	28.7
53	602924.18	4910472.11	2.00	2	D	2000	83.0	0.0	0.0	0.0	0.0	52.8	1.2	0.0	0.0	0.0	0.0	0.0	4.0	25.0
53	602924.18	4910472.11	2.00	2	D	4000	74.7	0.0	0.0	0.0	0.0	52.8	4.0	0.0	0.0	0.0	0.0	0.0	4.0	13.9
53	602924.18	4910472.11	2.00	2	D	8000	64.3	0.0	0.0	0.0	0.0	52.8	14.3	0.0	0.0	0.0	0.0	0.0	4.0	-6.8
53	602924.18	4910472.11	2.00	2	N	1000	86.1	0.0	-188.0	0.0	0.0	52.8	0.4	0.1	0.0	0.0	0.0	0.0	4.0	-159.3
53	602924.18	4910472.11	2.00	2	N	2000	83.0	0.0	-188.0	0.0	0.0	52.8	1.2	0.0	0.0	0.0	0.0	0.0	4.0	-163.0
53	602924.18	4910472.11	2.00	2	N	4000	74.7	0.0	-188.0	0.0	0.0	52.8	4.0	0.0	0.0	0.0	0.0	0.0	4.0	-174.1
53	602924.18	4910472.11	2.00	2	N	8000	64.3	0.0	-188.0	0.0	0.0	52.8	14.3	0.0	0.0	0.0	0.0	0.0	4.0	-194.8
53	602924.18	4910472.11	2.00	2	E	1000	86.1	0.0	-188.0	0.0	0.0	52.8	0.4	0.1	0.0	0.0	0.0	0.0	4.0	-159.3
53	602924.18	4910472.11	2.00	2	E	2000	83.0	0.0	-188.0	0.0	0.0	52.8	1.2	0.0	0.0	0.0	0.0	0.0	4.0	-163.0
53	602924.18	4910472.11	2.00	2	E	4000	74.7	0.0	-188.0	0.0	0.0	52.8	4.0	0.0	0.0	0.0	0.0	0.0	4.0	-174.1
53	602924.18	4910472.11	2.00	2	E	8000	64.3	0.0	-188.0	0.0	0.0	52.8	14.3	0.0	0.0	0.0	0.0	0.0	4.0	-194.8
56	602924.18	4910472.11	2.00	1	D	500	83.3	0.0	0.0	0.0	0.0	48.7	0.1	1.7	0.0	0.0	0.0	0.0	2.0	30.7
56	602924.18	4910472.11	2.00	1	D	1000	86.1	0.0	0.0	0.0	0.0	48.7	0.3	0.1	0.0	0.0	0.0	0.0	2.0	35.0
56	602924.18	4910472.11	2.00	1	D	2000	83.0	0.0	0.0	0.0	0.0	48.7	0.7	0.0	0.0	0.0	0.0	0.0	2.0	31.5
56	602924.18	4910472.11	2.00	1	D	4000	74.7	0.0	0.0	0.0	0.0	48.7	2.5	0.0	0.0	0.0	0.0	0.0	2.0	21.4
56	602924.18	4910472.11	2.00	1	D	8000	64.3	0.0	0.0	0.0	0.0	48.7	9.0	0.0	0.0	0.0	0.0	0.0	2.0	4.5
56	602924.18	4910472.11	2.00	1	N	500	83.3	0.0	-188.0	0.0	0.0	48.7	0.1	1.7	0.0	0.0	0.0	0.0	2.0	-157.3
56	602924.18	4910472.11	2.00	1	N	1000	86.1	0.0	-188.0	0.0	0.0	48.7	0.3	0.1	0.0	0.0	0.0	0.0	2.0	-153.0
56	602924.18	4910472.11	2.00	1	N	2000	83.0	0.0	-188.0	0.0	0.0	48.7	0.7	0.0	0.0	0.0	0.0	0.0	2.0	-156.5
56	602924.18	4910472.11	2.00	1	N	4000	74.7	0.0	-188.0	0.0	0.0	48.7	2.5	0.0	0.0	0.0	0.0	0.0	2.0	-166.6
56	602924.18	4910472.11	2.00	1	N	8000	64.3	0.0	-188.0	0.0	0.0	48.7	9.0	0.0	0.0	0.0	0.0	0.0	2.0	-183.5
56	602924.18	4910472.11	2.00	1	E	500	83.3	0.0	-188.0	0.0	0.0	48.7	0.1	1.7	0.0	0.0	0.0	0.0	2.0	-157.3
56	602924.18	4910472.11	2.00	1	E	1000	86.1	0.0	-188.0	0.0	0.0	48.7	0.3	0.1	0.0	0.0	0.0	0.0	2.0	-153.0
56	602924.18	4910472.11	2.00	1	E	2000	83.0	0.0	-188.0	0.0	0.0	48.7	0.7	0.0	0.0	0.0	0.0	0.0	2.0	-156.5
56	602924.18	4910472.11	2.00	1	E	4000	74.7	0.0	-188.0	0.0	0.0	48.7	2.5	0.0	0.0	0.0	0.0	0.0	2.0	-166.6
56	602924.18	4910472.11	2.00	1	E	8000	64.3	0.0	-188.0	0.0	0.0	48.7	9.0	0.0	0.0	0.0	0.0	0.0	2.0	-183.5
58	602924.18	4910472.11	2.00	2	D	1000	86.1	0.0	0.0	0.0	0.0	55.5	0.6	0.0	0.0	0.0	0.0	0.0	4.0	26.0
58	602924.18	4910472.11	2.00	2	D	2000	83.0	0.0	0.0	0.0	0.0	55.5	1.6	-0.1	0.0	0.0	0.0	0.0	4.0	22.0
58	602924.18	4910472.11	2.00	2	D	4000	74.7	0.0	0.0	0.0	0.0	55.5	5.5	-0.1	0.0	0.0	0.0	0.0	4.0	9.8
58	602924.18	4910472.11	2.00	2	D	8000	64.3	0.0	0.0	0.0	0.0	55.5	19.6	-0.1	0.0	0.0	0.0	0.0	4.0	-14.7
58	602924.18	4910472.11	2.00	2	N	1000	86.1	0.0	-188.0	0.0	0.0	55.5	0.6	0.0	0.0	0.0	0.0	0.0	4.0	-162.0
58	602924.18	4910472.11	2.00	2	N	2000	83.0	0.0	-188.0	0.0	0.0	55.5	1.6	-0.1	0.0	0.0	0.0	0.0	4.0	-166.0
58	602924.18	4910472.11	2.00	2	N	4000	74.7	0.0	-188.0	0.0	0.0	55.5	5.5	-0.1	0.0	0.0	0.0	0.0	4.0	-178.2
58	602924.18	4910472.11	2.00	2	N	8000	64.3	0.0	-188.0	0.0	0.0	55.5	19.6	-0.1	0.0	0.0	0.0	0.0	4.0	-202.7
58	602924.18	4910472.11	2.00	2	E	1000	86.1	0.0	-188.0	0.0	0.0	55.5	0.6	0.0	0.0	0.0	0.0	0.0	4.0	-162.0
58	602924.18	4910472.11	2.00	2	E	2000	83.0	0.0	-188.0	0.0	0.0	55.5	1.6	-0.1	0.0	0.0	0.0	0.0	4.0	-166.0
58	602924.18	4910472.11	2.00	2	E	4000	74.7	0.0	-188.0	0.0	0.0	55.5	5.5	-0.1	0.0	0.0	0.0	0.0	4.0	-178.2
58	602924.18	4910472.11	2.00	2	E	8000	64.3	0.0	-188.0	0.0	0.0	55.5	19.6	-0.1	0.0	0.0	0.0	0.0	4.0	-202.7

Point Source, ISO 9613, Name: "Make Up Air Unit", ID: "MAU"																				
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)
62	602930.67	4910486.49	2.00	0	D	32	47.8	0.0	0.0	0.0	0.0	43.7	0.0	-3.0	0.0	0.0	3.5	0.0	0.0	3.6
62	602930.67	4910486.49	2.00	0	D	63	60.7	0.0	0.0	0.0	0.0	43.7	0.0	-3.0	0.0	0.0	4.0	0.0	0.0	16.1

Point Source, ISO 9613, Name: "Make Up Air Unit", ID: "MAU"																				
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)
62	602930.67	4910486.49	2.00	0	D	125	67.6	0.0	0.0	0.0	0.0	43.7	0.0	2.3	0.0	0.0	2.3	0.0	0.0	19.3
62	602930.67	4910486.49	2.00	0	D	250	61.8	0.0	0.0	0.0	0.0	43.7	0.0	4.3	0.0	0.0	2.4	0.0	0.0	11.4
62	602930.67	4910486.49	2.00	0	D	500	62.7	0.0	0.0	0.0	0.0	43.7	0.1	1.3	0.0	0.0	6.7	0.0	0.0	10.9
62	602930.67	4910486.49	2.00	0	D	1000	65.5	0.0	0.0	0.0	0.0	43.7	0.2	0.1	0.0	0.0	10.2	0.0	0.0	11.4
62	602930.67	4910486.49	2.00	0	D	2000	65.6	0.0	0.0	0.0	0.0	43.7	0.4	0.0	0.0	0.0	13.0	0.0	0.0	8.4
62	602930.67	4910486.49	2.00	0	D	4000	63.6	0.0	0.0	0.0	0.0	43.7	1.4	0.0	0.0	0.0	15.9	0.0	0.0	2.6
62	602930.67	4910486.49	2.00	0	D	8000	56.8	0.0	0.0	0.0	0.0	43.7	5.0	0.0	0.0	0.0	18.6	0.0	0.0	-10.5
62	602930.67	4910486.49	2.00	0	N	32	47.8	0.0	-188.0	0.0	0.0	43.7	0.0	-3.0	0.0	0.0	3.5	0.0	0.0	-184.4
62	602930.67	4910486.49	2.00	0	N	63	60.7	0.0	-188.0	0.0	0.0	43.7	0.0	-3.0	0.0	0.0	4.0	0.0	0.0	-171.9
62	602930.67	4910486.49	2.00	0	N	125	67.6	0.0	-188.0	0.0	0.0	43.7	0.0	2.3	0.0	0.0	2.3	0.0	0.0	-168.7
62	602930.67	4910486.49	2.00	0	N	250	61.8	0.0	-188.0	0.0	0.0	43.7	0.0	4.3	0.0	0.0	2.4	0.0	0.0	-176.6
62	602930.67	4910486.49	2.00	0	N	500	62.7	0.0	-188.0	0.0	0.0	43.7	0.1	1.3	0.0	0.0	6.7	0.0	0.0	-177.1
62	602930.67	4910486.49	2.00	0	N	1000	65.5	0.0	-188.0	0.0	0.0	43.7	0.2	0.1	0.0	0.0	10.2	0.0	0.0	-176.6
62	602930.67	4910486.49	2.00	0	N	2000	65.6	0.0	-188.0	0.0	0.0	43.7	0.4	0.0	0.0	0.0	13.0	0.0	0.0	-179.6
62	602930.67	4910486.49	2.00	0	N	4000	63.6	0.0	-188.0	0.0	0.0	43.7	1.4	0.0	0.0	0.0	15.9	0.0	0.0	-185.4
62	602930.67	4910486.49	2.00	0	N	8000	56.8	0.0	-188.0	0.0	0.0	43.7	5.0	0.0	0.0	0.0	18.6	0.0	0.0	-198.5
62	602930.67	4910486.49	2.00	0	E	32	47.8	0.0	-188.0	0.0	0.0	43.7	0.0	-3.0	0.0	0.0	3.5	0.0	0.0	-184.4
62	602930.67	4910486.49	2.00	0	E	63	60.7	0.0	-188.0	0.0	0.0	43.7	0.0	-3.0	0.0	0.0	4.0	0.0	0.0	-171.9
62	602930.67	4910486.49	2.00	0	E	125	67.6	0.0	-188.0	0.0	0.0	43.7	0.0	2.3	0.0	0.0	2.3	0.0	0.0	-168.7
62	602930.67	4910486.49	2.00	0	E	250	61.8	0.0	-188.0	0.0	0.0	43.7	0.0	4.3	0.0	0.0	2.4	0.0	0.0	-176.6
62	602930.67	4910486.49	2.00	0	E	500	62.7	0.0	-188.0	0.0	0.0	43.7	0.1	1.3	0.0	0.0	6.7	0.0	0.0	-177.1
62	602930.67	4910486.49	2.00	0	E	1000	65.5	0.0	-188.0	0.0	0.0	43.7	0.2	0.1	0.0	0.0	10.2	0.0	0.0	-176.6
62	602930.67	4910486.49	2.00	0	E	2000	65.6	0.0	-188.0	0.0	0.0	43.7	0.4	0.0	0.0	0.0	13.0	0.0	0.0	-179.6
62	602930.67	4910486.49	2.00	0	E	4000	63.6	0.0	-188.0	0.0	0.0	43.7	1.4	0.0	0.0	0.0	15.9	0.0	0.0	-185.4
62	602930.67	4910486.49	2.00	0	E	8000	56.8	0.0	-188.0	0.0	0.0	43.7	5.0	0.0	0.0	0.0	18.6	0.0	0.0	-198.5
64	602930.67	4910486.49	2.00	2	D	1000	65.5	0.0	0.0	0.0	0.0	53.8	0.5	0.1	0.0	0.0	6.3	0.0	4.0	0.7
64	602930.67	4910486.49	2.00	2	D	2000	65.6	0.0	0.0	0.0	0.0	53.8	1.3	0.0	0.0	0.0	7.7	0.0	4.0	-1.3
64	602930.67	4910486.49	2.00	2	D	4000	63.6	0.0	0.0	0.0	0.0	53.8	4.5	0.0	0.0	0.0	9.4	0.0	4.0	-8.2
64	602930.67	4910486.49	2.00	2	D	8000	56.8	0.0	0.0	0.0	0.0	53.8	16.2	0.0	0.0	0.0	11.6	0.0	4.0	-28.8
64	602930.67	4910486.49	2.00	2	N	1000	65.5	0.0	-188.0	0.0	0.0	53.8	0.5	0.1	0.0	0.0	6.3	0.0	4.0	-187.3
64	602930.67	4910486.49	2.00	2	N	2000	65.6	0.0	-188.0	0.0	0.0	53.8	1.3	0.0	0.0	0.0	7.7	0.0	4.0	-189.3
64	602930.67	4910486.49	2.00	2	N	4000	63.6	0.0	-188.0	0.0	0.0	53.8	4.5	0.0	0.0	0.0	9.4	0.0	4.0	-196.2
64	602930.67	4910486.49	2.00	2	N	8000	56.8	0.0	-188.0	0.0	0.0	53.8	16.2	0.0	0.0	0.0	11.6	0.0	4.0	-216.8
64	602930.67	4910486.49	2.00	2	E	1000	65.5	0.0	-188.0	0.0	0.0	53.8	0.5	0.1	0.0	0.0	6.3	0.0	4.0	-187.3
64	602930.67	4910486.49	2.00	2	E	2000	65.6	0.0	-188.0	0.0	0.0	53.8	1.3	0.0	0.0	0.0	7.7	0.0	4.0	-189.3
64	602930.67	4910486.49	2.00	2	E	4000	63.6	0.0	-188.0	0.0	0.0	53.8	4.5	0.0	0.0	0.0	9.4	0.0	4.0	-196.2
64	602930.67	4910486.49	2.00	2	E	8000	56.8	0.0	-188.0	0.0	0.0	53.8	16.2	0.0	0.0	0.0	11.6	0.0	4.0	-216.8
66	602930.67	4910486.49	2.00	1	D	1000	65.5	0.0	0.0	0.0	0.0	46.5	0.2	0.1	0.0	0.0	4.7	0.0	2.0	12.0
66	602930.67	4910486.49	2.00	1	D	2000	65.6	0.0	0.0	0.0	0.0	46.5	0.6	0.0	0.0	0.0	4.8	0.0	2.0	11.6
66	602930.67	4910486.49	2.00	1	D	4000	63.6	0.0	0.0	0.0	0.0	46.5	2.0	0.0	0.0	0.0	4.9	0.0	2.0	8.2
66	602930.67	4910486.49	2.00	1	D	8000	56.8	0.0	0.0	0.0	0.0	46.5	7.0	0.0	0.0	0.0	5.1	0.0	2.0	-3.7
66	602930.67	4910486.49	2.00	1	N	1000	65.5	0.0	-188.0	0.0	0.0	46.5	0.2	0.1	0.0	0.0	4.7	0.0	2.0	-176.0
66	602930.67	4910486.49	2.00	1	N	2000	65.6	0.0	-188.0	0.0	0.0	46.5	0.6	0.0	0.0	0.0	4.8	0.0	2.0	-176.4
66	602930.67	4910486.49	2.00	1	N	4000	63.6	0.0	-188.0	0.0	0.0	46.5	2.0	0.0	0.0	0.0	4.9	0.0	2.0	-179.8
66	602930.67	4910486.49	2.00	1	N	8000	56.8	0.0	-188.0	0.0	0.0	46.5	7.0	0.0	0.0	0.0	5.1	0.0	2.0	-191.7
66	602930.67	4910486.49	2.00	1	E	1000	65.5	0.0	-188.0	0.0	0.0	46.5	0.2	0.1	0.0	0.0	4.7	0.0	2.0	-176.0
66	602930.67	4910486.49	2.00	1	E	2000	65.6	0.0	-188.0	0.0	0.0	46.5	0.6	0.0	0.0	0.0	4.8	0.0	2.0	-176.4
66	602930.67	4910486.49	2.00	1	E	4000	63.6	0.0	-188.0	0.0	0.0	46.5	2.0	0.0	0.0	0.0	4.9	0.0	2.0	-179.8
66	602930.67	4910486.49	2.00	1	E	8000	56.8	0.0	-188.0	0.0	0.0	46.5	7.0	0.0	0.0	0.0	5.1	0.0	2.0	-191.7
67	602930.67	4910486.49	2.00	2	D	1000	65.5	0.0	0.0	0.0	0.0	47.0	0.2	0.1	0.0	0.0	4.7	0.0	4.0	9.6
67	602930.67	4910486.49	2.00	2	D	2000	65.6	0.0	0.0	0.0	0.0	47.0	0.6	0.0	0.0	0.0	4.8	0.0	4.0	9.2
67	602930.67	4910486.49	2.00	2	D	4000	63.6	0.0	0.0	0.0	0.0	47.0	2.1	0.0	0.0	0.0	4.8	0.0	4.0	5.7
67	602930.67	4910486.49	2.00	2	D	8000	56.8	0.0	0.0	0.0	0.0	47.0	7.3	0.0	0.0	0.0	4.8	0.0	4.0	-6.3
67	602930.67	4910486.49	2.00	2	N	1000	65.5	0.0	-188.0	0.0	0.0	47.0	0.2	0.1	0.0	0.0	4.7	0.0	4.0	-178.4
67	602930.67	4910486.49	2.00	2	N	2000	65.6	0.0	-188.0	0.0	0.0	47.0	0.6	0.0	0.0	0.0	4.8	0.0	4.0	-178.8
67	602930.67	4910486.49	2.00	2	N	4000	63.6	0.0	-188.0	0.0	0.0	47.0	2.1	0.0	0.0	0.0	4.8	0.0	4.0	-182.3
67	602930.67	4910486.49	2.00	2	N	8000	56.8	0.0	-188.0	0.0	0.0	47.0	7.3	0.0	0.0	0.0	4.8	0.0	4.0	-194.3
67	602930.67	4910486.49	2.00	2	E	1000	65.5	0.0	-188.0	0.0	0.0	47.0	0.2	0.1	0.0	0.0	4.7	0.0	4.0	-178.4
67	602930.67	4910486.49	2.00	2	E	2000	65.6	0.0	-188.0	0.0	0.0	47.0	0.6	0.0	0.0	0.0	4.8	0.0	4.0	-178.8
67	602930.67	4910486.49	2.00	2	E	4000	63.6	0.0	-188.0	0.0	0.0	47.0	2.1	0.0	0.0	0.0	4.8	0.0	4.0	-182.3
67	602930.67	4910486.49	2.00	2	E	8000	56.8	0.0	-188.0	0.0	0.0	47.0	7.3	0.0	0.0	0.0	4.8	0.0	4.0	-194.3
68	602930.67	4910486.49	2.00	1	D	500	62.7	0.0	0.0	0.0	0.0	48.3	0.1	1.7	0.0	0.0	0.0	0.0	2.0	10.5
68	602930.67	4910486.49	2.00	1	D	1000	65.5	0.0	0.0	0.0	0.0	48.3	0.3	0.1	0.0	0.0	0.0	0.0	2.0	14.9
68	602930.67	4910486.49	2.00																	

Point Source, ISO 9613, Name: "Make Up Air Unit", ID: "MAU"																				
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)
68	602930.67	4910486.49	2.00	1	D	4000	63.6	0.0	0.0	0.0	0.0	48.3	2.4	0.0	0.0	0.0	0.0	0.0	2.0	10.9
68	602930.67	4910486.49	2.00	1	D	8000	56.8	0.0	0.0	0.0	0.0	48.3	8.6	0.0	0.0	0.0	0.0	0.0	2.0	-2.1
68	602930.67	4910486.49	2.00	1	N	500	62.7	0.0	-188.0	0.0	0.0	48.3	0.1	1.7	0.0	0.0	0.0	0.0	2.0	-177.5
68	602930.67	4910486.49	2.00	1	N	1000	65.5	0.0	-188.0	0.0	0.0	48.3	0.3	0.1	0.0	0.0	0.0	0.0	2.0	-173.1
68	602930.67	4910486.49	2.00	1	N	2000	65.6	0.0	-188.0	0.0	0.0	48.3	0.7	0.0	0.0	0.0	0.0	0.0	2.0	-173.5
68	602930.67	4910486.49	2.00	1	N	4000	63.6	0.0	-188.0	0.0	0.0	48.3	2.4	0.0	0.0	0.0	0.0	0.0	2.0	-177.1
68	602930.67	4910486.49	2.00	1	N	8000	56.8	0.0	-188.0	0.0	0.0	48.3	8.6	0.0	0.0	0.0	0.0	0.0	2.0	-190.1
68	602930.67	4910486.49	2.00	1	E	500	62.7	0.0	-188.0	0.0	0.0	48.3	0.1	1.7	0.0	0.0	0.0	0.0	2.0	-177.5
68	602930.67	4910486.49	2.00	1	E	1000	65.5	0.0	-188.0	0.0	0.0	48.3	0.3	0.1	0.0	0.0	0.0	0.0	2.0	-173.1
68	602930.67	4910486.49	2.00	1	E	2000	65.6	0.0	-188.0	0.0	0.0	48.3	0.7	0.0	0.0	0.0	0.0	0.0	2.0	-173.5
68	602930.67	4910486.49	2.00	1	E	4000	63.6	0.0	-188.0	0.0	0.0	48.3	2.4	0.0	0.0	0.0	0.0	0.0	2.0	-177.1
68	602930.67	4910486.49	2.00	1	E	8000	56.8	0.0	-188.0	0.0	0.0	48.3	8.6	0.0	0.0	0.0	0.0	0.0	2.0	-190.1
69	602930.67	4910486.49	2.00	2	D	1000	65.5	0.0	0.0	0.0	0.0	48.8	0.3	0.1	0.0	0.0	0.0	0.0	4.0	12.3
69	602930.67	4910486.49	2.00	2	D	2000	65.6	0.0	0.0	0.0	0.0	48.8	0.7	0.0	0.0	0.0	0.0	0.0	4.0	12.0
69	602930.67	4910486.49	2.00	2	D	4000	63.6	0.0	0.0	0.0	0.0	48.8	2.5	0.0	0.0	0.0	0.0	0.0	4.0	8.2
69	602930.67	4910486.49	2.00	2	D	8000	56.8	0.0	0.0	0.0	0.0	48.8	9.1	0.0	0.0	0.0	0.0	0.0	4.0	-5.1
69	602930.67	4910486.49	2.00	2	N	1000	65.5	0.0	-188.0	0.0	0.0	48.8	0.3	0.1	0.0	0.0	0.0	0.0	4.0	-175.7
69	602930.67	4910486.49	2.00	2	N	2000	65.6	0.0	-188.0	0.0	0.0	48.8	0.7	0.0	0.0	0.0	0.0	0.0	4.0	-176.0
69	602930.67	4910486.49	2.00	2	N	4000	63.6	0.0	-188.0	0.0	0.0	48.8	2.5	0.0	0.0	0.0	0.0	0.0	4.0	-179.8
69	602930.67	4910486.49	2.00	2	N	8000	56.8	0.0	-188.0	0.0	0.0	48.8	9.1	0.0	0.0	0.0	0.0	0.0	4.0	-193.1
69	602930.67	4910486.49	2.00	2	E	1000	65.5	0.0	-188.0	0.0	0.0	48.8	0.3	0.1	0.0	0.0	0.0	0.0	4.0	-175.7
69	602930.67	4910486.49	2.00	2	E	2000	65.6	0.0	-188.0	0.0	0.0	48.8	0.7	0.0	0.0	0.0	0.0	0.0	4.0	-176.0
69	602930.67	4910486.49	2.00	2	E	4000	63.6	0.0	-188.0	0.0	0.0	48.8	2.5	0.0	0.0	0.0	0.0	0.0	4.0	-179.8
69	602930.67	4910486.49	2.00	2	E	8000	56.8	0.0	-188.0	0.0	0.0	48.8	9.1	0.0	0.0	0.0	0.0	0.0	4.0	-193.1

Point Source, ISO 9613, Name: "Air Conditioner", ID: "AC"																				
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)
73	602929.01	4910478.77	1.50	0	D	32	41.7	0.0	0.0	0.0	0.0	45.1	0.0	-3.0	0.0	0.0	3.5	0.0	0.0	-3.9
73	602929.01	4910478.77	1.50	0	D	63	49.9	0.0	0.0	0.0	0.0	45.1	0.0	-3.0	0.0	0.0	3.9	0.0	0.0	3.8
73	602929.01	4910478.77	1.50	0	D	125	55.7	0.0	0.0	0.0	0.0	45.1	0.0	2.3	0.0	0.0	1.5	0.0	0.0	6.6
73	602929.01	4910478.77	1.50	0	D	250	59.5	0.0	0.0	0.0	0.0	45.1	0.1	5.4	0.0	0.0	0.0	0.0	0.0	9.0
73	602929.01	4910478.77	1.50	0	D	500	67.5	0.0	0.0	0.0	0.0	45.1	0.1	3.2	0.0	0.0	2.8	0.0	0.0	16.3
73	602929.01	4910478.77	1.50	0	D	1000	68.4	0.0	0.0	0.0	0.0	45.1	0.2	0.4	0.0	0.0	6.7	0.0	0.0	16.0
73	602929.01	4910478.77	1.50	0	D	2000	64.8	0.0	0.0	0.0	0.0	45.1	0.5	0.0	0.0	0.0	8.9	0.0	0.0	10.3
73	602929.01	4910478.77	1.50	0	D	4000	58.3	0.0	0.0	0.0	0.0	45.1	1.7	0.0	0.0	0.0	11.2	0.0	0.0	0.4
73	602929.01	4910478.77	1.50	0	D	8000	49.2	0.0	0.0	0.0	0.0	45.1	5.9	0.0	0.0	0.0	13.7	0.0	0.0	-15.5
73	602929.01	4910478.77	1.50	0	N	32	41.7	0.0	-188.0	0.0	0.0	45.1	0.0	-3.0	0.0	0.0	3.5	0.0	0.0	-191.9
73	602929.01	4910478.77	1.50	0	N	63	49.9	0.0	-188.0	0.0	0.0	45.1	0.0	-3.0	0.0	0.0	3.9	0.0	0.0	-184.2
73	602929.01	4910478.77	1.50	0	N	125	55.7	0.0	-188.0	0.0	0.0	45.1	0.0	2.3	0.0	0.0	1.5	0.0	0.0	-181.4
73	602929.01	4910478.77	1.50	0	N	250	59.5	0.0	-188.0	0.0	0.0	45.1	0.1	5.4	0.0	0.0	0.0	0.0	0.0	-179.0
73	602929.01	4910478.77	1.50	0	N	500	67.5	0.0	-188.0	0.0	0.0	45.1	0.1	3.2	0.0	0.0	2.8	0.0	0.0	-171.7
73	602929.01	4910478.77	1.50	0	N	1000	68.4	0.0	-188.0	0.0	0.0	45.1	0.2	0.4	0.0	0.0	6.7	0.0	0.0	-172.0
73	602929.01	4910478.77	1.50	0	N	2000	64.8	0.0	-188.0	0.0	0.0	45.1	0.5	0.0	0.0	0.0	8.9	0.0	0.0	-177.7
73	602929.01	4910478.77	1.50	0	N	4000	58.3	0.0	-188.0	0.0	0.0	45.1	1.7	0.0	0.0	0.0	11.2	0.0	0.0	-187.6
73	602929.01	4910478.77	1.50	0	N	8000	49.2	0.0	-188.0	0.0	0.0	45.1	5.9	0.0	0.0	0.0	13.7	0.0	0.0	-203.5
73	602929.01	4910478.77	1.50	0	E	32	41.7	0.0	-188.0	0.0	0.0	45.1	0.0	-3.0	0.0	0.0	3.5	0.0	0.0	-191.9
73	602929.01	4910478.77	1.50	0	E	63	49.9	0.0	-188.0	0.0	0.0	45.1	0.0	-3.0	0.0	0.0	3.9	0.0	0.0	-184.2
73	602929.01	4910478.77	1.50	0	E	125	55.7	0.0	-188.0	0.0	0.0	45.1	0.0	2.3	0.0	0.0	1.5	0.0	0.0	-181.4
73	602929.01	4910478.77	1.50	0	E	250	59.5	0.0	-188.0	0.0	0.0	45.1	0.1	5.4	0.0	0.0	0.0	0.0	0.0	-179.0
73	602929.01	4910478.77	1.50	0	E	500	67.5	0.0	-188.0	0.0	0.0	45.1	0.1	3.2	0.0	0.0	2.8	0.0	0.0	-171.7
73	602929.01	4910478.77	1.50	0	E	1000	68.4	0.0	-188.0	0.0	0.0	45.1	0.2	0.4	0.0	0.0	6.7	0.0	0.0	-172.0
73	602929.01	4910478.77	1.50	0	E	2000	64.8	0.0	-188.0	0.0	0.0	45.1	0.5	0.0	0.0	0.0	8.9	0.0	0.0	-177.7
73	602929.01	4910478.77	1.50	0	E	4000	58.3	0.0	-188.0	0.0	0.0	45.1	1.7	0.0	0.0	0.0	11.2	0.0	0.0	-187.6
73	602929.01	4910478.77	1.50	0	E	8000	49.2	0.0	-188.0	0.0	0.0	45.1	5.9	0.0	0.0	0.0	13.7	0.0	0.0	-203.5
74	602929.01	4910478.77	1.50	2	D	1000	68.4	0.0	0.0	0.0	0.0	53.3	0.5	0.6	0.0	0.0	21.8	0.0	4.0	-11.8
74	602929.01	4910478.77	1.50	2	D	2000	64.8	0.0	0.0	0.0	0.0	53.3	1.3	0.0	0.0	0.0	25.0	0.0	4.0	-18.8
74	602929.01	4910478.77	1.50	2	D	4000	58.3	0.0	0.0	0.0	0.0	53.3	4.3	0.0	0.0	0.0	25.0	0.0	4.0	-28.3
74	602929.01	4910478.77	1.50	2	D	8000	49.2	0.0	0.0	0.0	0.0	53.3	15.3	0.0	0.0	0.0	25.0	0.0	4.0	-48.4
74	602929.01	4910478.77	1.50	2	N	1000	68.4	0.0	-188.0	0.0	0.0	53.3	0.5	0.6	0.0	0.0	21.8	0.0	4.0	-199.8
74	602929.01	4910478.77	1.50	2	N	2000	64.8	0.0	-188.0	0.0	0.0	53.3	1.3	0.0	0.0	0.0	25.0	0.0	4.0	-206.8
74	602929.01	4910478.77	1.50	2	N	4000	58.3	0.0	-188.0	0.0	0.0	53.3	4.3	0.0	0.0	0.0	25.0	0.0	4.0	-216.3
74	602929.01	4910478.77	1.50	2	N	8000	49.2	0.0	-188.0	0.0	0.0	53.3	15.3	0.0	0.0	0.0	25.0	0.0	4.0	-236.4
74	602929.01	4910478.77	1.50	2	E	1000	68.4	0.0	-188.0	0.0	0.0	53.3	0.5	0.6	0.0	0.0	21.8	0.0	4.0	-199.8

Point Source, ISO 9613, Name: "Air Conditioner", ID: "AC"																				
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)
74	602929.01	4910478.77	1.50	2	E	2000	64.8	0.0	-188.0	0.0	0.0	53.3	1.3	0.0	0.0	0.0	25.0	0.0	4.0	-206.8
74	602929.01	4910478.77	1.50	2	E	4000	58.3	0.0	-188.0	0.0	0.0	53.3	4.3	0.0	0.0	0.0	25.0	0.0	4.0	-216.3
74	602929.01	4910478.77	1.50	2	E	8000	49.2	0.0	-188.0	0.0	0.0	53.3	15.3	0.0	0.0	0.0	25.0	0.0	4.0	-236.4
75	602929.01	4910478.77	1.50	1	D	63	49.9	0.0	0.0	0.0	0.0	45.3	0.0	-3.0	0.0	0.0	8.0	0.0	2.0	-2.4
75	602929.01	4910478.77	1.50	1	D	125	55.7	0.0	0.0	0.0	0.0	45.3	0.0	2.4	0.0	0.0	2.8	0.0	2.0	3.2
75	602929.01	4910478.77	1.50	1	D	250	59.5	0.0	0.0	0.0	0.0	45.3	0.1	5.4	0.0	0.0	0.1	0.0	2.0	6.6
75	602929.01	4910478.77	1.50	1	D	500	67.5	0.0	0.0	0.0	0.0	45.3	0.1	3.2	0.0	0.0	2.9	0.0	2.0	14.0
75	602929.01	4910478.77	1.50	1	D	1000	68.4	0.0	0.0	0.0	0.0	45.3	0.2	0.4	0.0	0.0	6.7	0.0	2.0	13.8
75	602929.01	4910478.77	1.50	1	D	2000	64.8	0.0	0.0	0.0	0.0	45.3	0.5	0.0	0.0	0.0	8.7	0.0	2.0	8.4
75	602929.01	4910478.77	1.50	1	D	4000	58.3	0.0	0.0	0.0	0.0	45.3	1.7	0.0	0.0	0.0	10.7	0.0	2.0	-1.3
75	602929.01	4910478.77	1.50	1	D	8000	49.2	0.0	0.0	0.0	0.0	45.3	6.1	0.0	0.0	0.0	13.1	0.0	2.0	-17.2
75	602929.01	4910478.77	1.50	1	N	63	49.9	0.0	-188.0	0.0	0.0	45.3	0.0	-3.0	0.0	0.0	8.0	0.0	2.0	-190.4
75	602929.01	4910478.77	1.50	1	N	125	55.7	0.0	-188.0	0.0	0.0	45.3	0.0	2.4	0.0	0.0	2.8	0.0	2.0	-184.8
75	602929.01	4910478.77	1.50	1	N	250	59.5	0.0	-188.0	0.0	0.0	45.3	0.1	5.4	0.0	0.0	0.1	0.0	2.0	-181.4
75	602929.01	4910478.77	1.50	1	N	500	67.5	0.0	-188.0	0.0	0.0	45.3	0.1	3.2	0.0	0.0	2.9	0.0	2.0	-174.0
75	602929.01	4910478.77	1.50	1	N	1000	68.4	0.0	-188.0	0.0	0.0	45.3	0.2	0.4	0.0	0.0	6.7	0.0	2.0	-174.2
75	602929.01	4910478.77	1.50	1	N	2000	64.8	0.0	-188.0	0.0	0.0	45.3	0.5	0.0	0.0	0.0	8.7	0.0	2.0	-179.6
75	602929.01	4910478.77	1.50	1	N	4000	58.3	0.0	-188.0	0.0	0.0	45.3	1.7	0.0	0.0	0.0	10.7	0.0	2.0	-189.3
75	602929.01	4910478.77	1.50	1	N	8000	49.2	0.0	-188.0	0.0	0.0	45.3	6.1	0.0	0.0	0.0	13.1	0.0	2.0	-205.2
75	602929.01	4910478.77	1.50	1	E	63	49.9	0.0	-188.0	0.0	0.0	45.3	0.0	-3.0	0.0	0.0	8.0	0.0	2.0	-190.4
75	602929.01	4910478.77	1.50	1	E	125	55.7	0.0	-188.0	0.0	0.0	45.3	0.0	2.4	0.0	0.0	2.8	0.0	2.0	-184.8
75	602929.01	4910478.77	1.50	1	E	250	59.5	0.0	-188.0	0.0	0.0	45.3	0.1	5.4	0.0	0.0	0.1	0.0	2.0	-181.4
75	602929.01	4910478.77	1.50	1	E	500	67.5	0.0	-188.0	0.0	0.0	45.3	0.1	3.2	0.0	0.0	2.9	0.0	2.0	-174.0
75	602929.01	4910478.77	1.50	1	E	1000	68.4	0.0	-188.0	0.0	0.0	45.3	0.2	0.4	0.0	0.0	6.7	0.0	2.0	-174.2
75	602929.01	4910478.77	1.50	1	E	2000	64.8	0.0	-188.0	0.0	0.0	45.3	0.5	0.0	0.0	0.0	8.7	0.0	2.0	-179.6
75	602929.01	4910478.77	1.50	1	E	4000	58.3	0.0	-188.0	0.0	0.0	45.3	1.7	0.0	0.0	0.0	10.7	0.0	2.0	-189.3
75	602929.01	4910478.77	1.50	1	E	8000	49.2	0.0	-188.0	0.0	0.0	45.3	6.1	0.0	0.0	0.0	13.1	0.0	2.0	-205.2
76	602929.01	4910478.77	1.50	2	D	2000	64.8	0.0	0.0	0.0	0.0	48.0	0.7	0.0	0.0	0.0	4.8	0.0	4.0	7.4
76	602929.01	4910478.77	1.50	2	D	4000	58.3	0.0	0.0	0.0	0.0	48.0	2.3	0.0	0.0	0.0	4.8	0.0	4.0	-0.8
76	602929.01	4910478.77	1.50	2	D	8000	49.2	0.0	0.0	0.0	0.0	48.0	8.3	0.0	0.0	0.0	4.9	0.0	4.0	-15.9
76	602929.01	4910478.77	1.50	2	N	2000	64.8	0.0	-188.0	0.0	0.0	48.0	0.7	0.0	0.0	0.0	4.8	0.0	4.0	-180.6
76	602929.01	4910478.77	1.50	2	N	4000	58.3	0.0	-188.0	0.0	0.0	48.0	2.3	0.0	0.0	0.0	4.8	0.0	4.0	-188.8
76	602929.01	4910478.77	1.50	2	N	8000	49.2	0.0	-188.0	0.0	0.0	48.0	8.3	0.0	0.0	0.0	4.9	0.0	4.0	-203.9
76	602929.01	4910478.77	1.50	2	E	2000	64.8	0.0	-188.0	0.0	0.0	48.0	0.7	0.0	0.0	0.0	4.8	0.0	4.0	-180.6
76	602929.01	4910478.77	1.50	2	E	4000	58.3	0.0	-188.0	0.0	0.0	48.0	2.3	0.0	0.0	0.0	4.8	0.0	4.0	-188.8
76	602929.01	4910478.77	1.50	2	E	8000	49.2	0.0	-188.0	0.0	0.0	48.0	8.3	0.0	0.0	0.0	4.9	0.0	4.0	-203.9
78	602929.01	4910478.77	1.50	1	D	500	67.5	0.0	0.0	0.0	0.0	47.9	0.1	3.7	0.0	0.0	11.3	0.0	2.0	2.4
78	602929.01	4910478.77	1.50	1	D	1000	68.4	0.0	0.0	0.0	0.0	47.9	0.3	0.5	0.0	0.0	17.4	0.0	2.0	0.4
78	602929.01	4910478.77	1.50	1	D	2000	64.8	0.0	0.0	0.0	0.0	47.9	0.7	0.0	0.0	0.0	20.0	0.0	2.0	-5.7
78	602929.01	4910478.77	1.50	1	D	4000	58.3	0.0	0.0	0.0	0.0	47.9	2.3	0.0	0.0	0.0	20.0	0.0	2.0	-13.8
78	602929.01	4910478.77	1.50	1	D	8000	49.2	0.0	0.0	0.0	0.0	47.9	8.1	0.0	0.0	0.0	20.0	0.0	2.0	-28.8
78	602929.01	4910478.77	1.50	1	N	500	67.5	0.0	-188.0	0.0	0.0	47.9	0.1	3.7	0.0	0.0	11.3	0.0	2.0	-185.6
78	602929.01	4910478.77	1.50	1	N	1000	68.4	0.0	-188.0	0.0	0.0	47.9	0.3	0.5	0.0	0.0	17.4	0.0	2.0	-187.6
78	602929.01	4910478.77	1.50	1	N	2000	64.8	0.0	-188.0	0.0	0.0	47.9	0.7	0.0	0.0	0.0	20.0	0.0	2.0	-193.7
78	602929.01	4910478.77	1.50	1	N	4000	58.3	0.0	-188.0	0.0	0.0	47.9	2.3	0.0	0.0	0.0	20.0	0.0	2.0	-201.8
78	602929.01	4910478.77	1.50	1	N	8000	49.2	0.0	-188.0	0.0	0.0	47.9	8.1	0.0	0.0	0.0	20.0	0.0	2.0	-216.8
78	602929.01	4910478.77	1.50	1	E	500	67.5	0.0	-188.0	0.0	0.0	47.9	0.1	3.7	0.0	0.0	11.3	0.0	2.0	-185.6
78	602929.01	4910478.77	1.50	1	E	1000	68.4	0.0	-188.0	0.0	0.0	47.9	0.3	0.5	0.0	0.0	17.4	0.0	2.0	-187.6
78	602929.01	4910478.77	1.50	1	E	2000	64.8	0.0	-188.0	0.0	0.0	47.9	0.7	0.0	0.0	0.0	20.0	0.0	2.0	-193.7
78	602929.01	4910478.77	1.50	1	E	4000	58.3	0.0	-188.0	0.0	0.0	47.9	2.3	0.0	0.0	0.0	20.0	0.0	2.0	-201.8
78	602929.01	4910478.77	1.50	1	E	8000	49.2	0.0	-188.0	0.0	0.0	47.9	8.1	0.0	0.0	0.0	20.0	0.0	2.0	-216.8
80	602929.01	4910478.77	1.50	2	D	1000	68.4	0.0	0.0	0.0	0.0	49.9	0.3	0.5	0.0	0.0	5.0	0.0	4.0	8.6
80	602929.01	4910478.77	1.50	2	D	2000	64.8	0.0	0.0	0.0	0.0	49.9	0.9	0.0	0.0	0.0	6.3	0.0	4.0	3.8
80	602929.01	4910478.77	1.50	2	D	4000	58.3	0.0	0.0	0.0	0.0	49.9	2.9	0.0	0.0	0.0	7.4	0.0	4.0	-5.9
80	602929.01	4910478.77	1.50	2	D	8000	49.2	0.0	0.0	0.0	0.0	49.9	10.3	0.0	0.0	0.0	9.0	0.0	4.0	-24.1
80	602929.01	4910478.77	1.50	2	N	1000	68.4	0.0	-188.0	0.0	0.0	49.9	0.3	0.5	0.0	0.0	5.0	0.0	4.0	-179.4
80	602929.01	4910478.77	1.50	2	N	2000	64.8	0.0	-188.0	0.0	0.0	49.9	0.9	0.0	0.0	0.0	6.3	0.0	4.0	-184.2
80	602929.01	4910478.77	1.50	2	N	4000	58.3	0.0	-188.0	0.0	0.0	49.9	2.9	0.0	0.0	0.0	7.4	0.0	4.0	-193.9
80	602929.01	4910478.77	1.50	2	N	8000	49.2	0.0	-188.0	0.0	0.0	49.9	10.3	0.0	0.0	0.0	9.0	0.0	4.0	-212.1
80	602929.01	4910478.77	1.50	2	E	1000	68.4	0.0	-188.0	0.0	0.0	49.9	0.3	0.5	0.0	0.0	5.0	0.0	4.0	-179.4
80	602929.01	4910478.77	1.50	2	E	2000	64.8	0.0	-188.0	0.0	0.0	49.9	0.9	0.0	0.0	0.0	6.3	0.0	4.0	-184.2
80	602929.01	4910478.77	1.50	2	E	4000	58.3	0.0	-188.0	0.0	0.0	49.9	2.9	0.0	0.0	0.0	7.4	0.0	4.0	-193.9
80	602929.01	4910478.77	1.50	2	E	8000	49.2	0.0	-188.0	0.0	0.0	49.9	10.3	0.0	0.0	0.0	9.0	0.0	4.0	-212.1
81	602929.01	4910478.77																		

Point Source, ISO 9613, Name: "Air Conditioner", ID: "AC"																				
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)
81	602929.01	4910478.77	1.50	2	D	4000	58.3	0.0	0.0	0.0	0.0	55.7	5.6	0.0	0.0	0.0	12.1	0.0	4.0	-19.0
81	602929.01	4910478.77	1.50	2	D	8000	49.2	0.0	0.0	0.0	0.0	55.7	20.0	0.0	0.0	0.0	14.7	0.0	4.0	-45.1
81	602929.01	4910478.77	1.50	2	N	2000	64.8	0.0	-188.0	0.0	0.0	55.7	1.7	0.0	0.0	0.0	9.8	0.0	4.0	-194.3
81	602929.01	4910478.77	1.50	2	N	4000	58.3	0.0	-188.0	0.0	0.0	55.7	5.6	0.0	0.0	0.0	12.1	0.0	4.0	-207.0
81	602929.01	4910478.77	1.50	2	N	8000	49.2	0.0	-188.0	0.0	0.0	55.7	20.0	0.0	0.0	0.0	14.7	0.0	4.0	-233.1
81	602929.01	4910478.77	1.50	2	E	2000	64.8	0.0	-188.0	0.0	0.0	55.7	1.7	0.0	0.0	0.0	9.8	0.0	4.0	-194.3
81	602929.01	4910478.77	1.50	2	E	4000	58.3	0.0	-188.0	0.0	0.0	55.7	5.6	0.0	0.0	0.0	12.1	0.0	4.0	-207.0
81	602929.01	4910478.77	1.50	2	E	8000	49.2	0.0	-188.0	0.0	0.0	55.7	20.0	0.0	0.0	0.0	14.7	0.0	4.0	-233.1
82	602929.01	4910478.77	1.50	1	D	500	67.5	0.0	0.0	0.0	0.0	48.6	0.1	3.9	0.0	0.0	0.0	0.0	2.0	12.8
82	602929.01	4910478.77	1.50	1	D	1000	68.4	0.0	0.0	0.0	0.0	48.6	0.3	0.5	0.0	0.0	0.0	0.0	2.0	17.0
82	602929.01	4910478.77	1.50	1	D	2000	64.8	0.0	0.0	0.0	0.0	48.6	0.7	0.0	0.0	0.0	0.0	0.0	2.0	13.5
82	602929.01	4910478.77	1.50	1	D	4000	58.3	0.0	0.0	0.0	0.0	48.6	2.5	0.0	0.0	0.0	0.0	0.0	2.0	5.2
82	602929.01	4910478.77	1.50	1	D	8000	49.2	0.0	0.0	0.0	0.0	48.6	8.9	0.0	0.0	0.0	0.0	0.0	2.0	-10.3
82	602929.01	4910478.77	1.50	1	N	500	67.5	0.0	-188.0	0.0	0.0	48.6	0.1	3.9	0.0	0.0	0.0	0.0	2.0	-175.2
82	602929.01	4910478.77	1.50	1	N	1000	68.4	0.0	-188.0	0.0	0.0	48.6	0.3	0.5	0.0	0.0	0.0	0.0	2.0	-171.0
82	602929.01	4910478.77	1.50	1	N	2000	64.8	0.0	-188.0	0.0	0.0	48.6	0.7	0.0	0.0	0.0	0.0	0.0	2.0	-174.5
82	602929.01	4910478.77	1.50	1	N	4000	58.3	0.0	-188.0	0.0	0.0	48.6	2.5	0.0	0.0	0.0	0.0	0.0	2.0	-182.8
82	602929.01	4910478.77	1.50	1	N	8000	49.2	0.0	-188.0	0.0	0.0	48.6	8.9	0.0	0.0	0.0	0.0	0.0	2.0	-198.3
82	602929.01	4910478.77	1.50	1	E	500	67.5	0.0	-188.0	0.0	0.0	48.6	0.1	3.9	0.0	0.0	0.0	0.0	2.0	-175.2
82	602929.01	4910478.77	1.50	1	E	1000	68.4	0.0	-188.0	0.0	0.0	48.6	0.3	0.5	0.0	0.0	0.0	0.0	2.0	-171.0
82	602929.01	4910478.77	1.50	1	E	2000	64.8	0.0	-188.0	0.0	0.0	48.6	0.7	0.0	0.0	0.0	0.0	0.0	2.0	-174.5
82	602929.01	4910478.77	1.50	1	E	4000	58.3	0.0	-188.0	0.0	0.0	48.6	2.5	0.0	0.0	0.0	0.0	0.0	2.0	-182.8
82	602929.01	4910478.77	1.50	1	E	8000	49.2	0.0	-188.0	0.0	0.0	48.6	8.9	0.0	0.0	0.0	0.0	0.0	2.0	-198.3
83	602929.01	4910478.77	1.50	2	D	500	67.5	0.0	0.0	0.0	0.0	48.8	0.1	3.9	0.0	0.0	0.0	0.0	4.0	10.6
83	602929.01	4910478.77	1.50	2	D	1000	68.4	0.0	0.0	0.0	0.0	48.8	0.3	0.5	0.0	0.0	0.0	0.0	4.0	14.8
83	602929.01	4910478.77	1.50	2	D	2000	64.8	0.0	0.0	0.0	0.0	48.8	0.7	0.0	0.0	0.0	0.0	0.0	4.0	11.3
83	602929.01	4910478.77	1.50	2	D	4000	58.3	0.0	0.0	0.0	0.0	48.8	2.5	0.0	0.0	0.0	0.0	0.0	4.0	3.0
83	602929.01	4910478.77	1.50	2	D	8000	49.2	0.0	0.0	0.0	0.0	48.8	9.1	0.0	0.0	0.0	0.0	0.0	4.0	-12.6
83	602929.01	4910478.77	1.50	2	N	500	67.5	0.0	-188.0	0.0	0.0	48.8	0.1	3.9	0.0	0.0	0.0	0.0	4.0	-177.4
83	602929.01	4910478.77	1.50	2	N	1000	68.4	0.0	-188.0	0.0	0.0	48.8	0.3	0.5	0.0	0.0	0.0	0.0	4.0	-173.2
83	602929.01	4910478.77	1.50	2	N	2000	64.8	0.0	-188.0	0.0	0.0	48.8	0.7	0.0	0.0	0.0	0.0	0.0	4.0	-176.7
83	602929.01	4910478.77	1.50	2	N	4000	58.3	0.0	-188.0	0.0	0.0	48.8	2.5	0.0	0.0	0.0	0.0	0.0	4.0	-185.0
83	602929.01	4910478.77	1.50	2	N	8000	49.2	0.0	-188.0	0.0	0.0	48.8	9.1	0.0	0.0	0.0	0.0	0.0	4.0	-200.6
83	602929.01	4910478.77	1.50	2	E	500	67.5	0.0	-188.0	0.0	0.0	48.8	0.1	3.9	0.0	0.0	0.0	0.0	4.0	-177.4
83	602929.01	4910478.77	1.50	2	E	1000	68.4	0.0	-188.0	0.0	0.0	48.8	0.3	0.5	0.0	0.0	0.0	0.0	4.0	-173.2
83	602929.01	4910478.77	1.50	2	E	2000	64.8	0.0	-188.0	0.0	0.0	48.8	0.7	0.0	0.0	0.0	0.0	0.0	4.0	-176.7
83	602929.01	4910478.77	1.50	2	E	4000	58.3	0.0	-188.0	0.0	0.0	48.8	2.5	0.0	0.0	0.0	0.0	0.0	4.0	-185.0
83	602929.01	4910478.77	1.50	2	E	8000	49.2	0.0	-188.0	0.0	0.0	48.8	9.1	0.0	0.0	0.0	0.0	0.0	4.0	-200.6
84	602929.01	4910478.77	1.50	2	D	1000	68.4	0.0	0.0	0.0	0.0	48.7	0.3	0.5	0.0	0.0	0.0	0.0	4.0	14.9
84	602929.01	4910478.77	1.50	2	D	2000	64.8	0.0	0.0	0.0	0.0	48.7	0.7	0.0	0.0	0.0	0.0	0.0	4.0	11.4
84	602929.01	4910478.77	1.50	2	D	4000	58.3	0.0	0.0	0.0	0.0	48.7	2.5	0.0	0.0	0.0	0.0	0.0	4.0	3.2
84	602929.01	4910478.77	1.50	2	D	8000	49.2	0.0	0.0	0.0	0.0	48.7	8.9	0.0	0.0	0.0	0.0	0.0	4.0	-12.4
84	602929.01	4910478.77	1.50	2	N	1000	68.4	0.0	-188.0	0.0	0.0	48.7	0.3	0.5	0.0	0.0	0.0	0.0	4.0	-173.1
84	602929.01	4910478.77	1.50	2	N	2000	64.8	0.0	-188.0	0.0	0.0	48.7	0.7	0.0	0.0	0.0	0.0	0.0	4.0	-176.6
84	602929.01	4910478.77	1.50	2	N	4000	58.3	0.0	-188.0	0.0	0.0	48.7	2.5	0.0	0.0	0.0	0.0	0.0	4.0	-184.8
84	602929.01	4910478.77	1.50	2	N	8000	49.2	0.0	-188.0	0.0	0.0	48.7	8.9	0.0	0.0	0.0	0.0	0.0	4.0	-200.4
84	602929.01	4910478.77	1.50	2	E	1000	68.4	0.0	-188.0	0.0	0.0	48.7	0.3	0.5	0.0	0.0	0.0	0.0	4.0	-173.1
84	602929.01	4910478.77	1.50	2	E	2000	64.8	0.0	-188.0	0.0	0.0	48.7	0.7	0.0	0.0	0.0	0.0	0.0	4.0	-176.6
84	602929.01	4910478.77	1.50	2	E	4000	58.3	0.0	-188.0	0.0	0.0	48.7	2.5	0.0	0.0	0.0	0.0	0.0	4.0	-184.8
84	602929.01	4910478.77	1.50	2	E	8000	49.2	0.0	-188.0	0.0	0.0	48.7	8.9	0.0	0.0	0.0	0.0	0.0	4.0	-200.4
86	602929.01	4910478.77	1.50	2	D	1000	68.4	0.0	0.0	0.0	0.0	49.8	0.3	0.5	0.0	0.0	16.7	0.0	4.0	-3.0
86	602929.01	4910478.77	1.50	2	D	2000	64.8	0.0	0.0	0.0	0.0	49.8	0.8	0.0	0.0	0.0	20.0	0.0	4.0	-9.8
86	602929.01	4910478.77	1.50	2	D	4000	58.3	0.0	0.0	0.0	0.0	49.8	2.9	0.0	0.0	0.0	20.0	0.0	4.0	-18.3
86	602929.01	4910478.77	1.50	2	D	8000	49.2	0.0	0.0	0.0	0.0	49.8	10.2	0.0	0.0	0.0	20.0	0.0	4.0	-34.8
86	602929.01	4910478.77	1.50	2	N	1000	68.4	0.0	-188.0	0.0	0.0	49.8	0.3	0.5	0.0	0.0	16.7	0.0	4.0	-191.0
86	602929.01	4910478.77	1.50	2	N	2000	64.8	0.0	-188.0	0.0	0.0	49.8	0.8	0.0	0.0	0.0	20.0	0.0	4.0	-197.8
86	602929.01	4910478.77	1.50	2	N	4000	58.3	0.0	-188.0	0.0	0.0	49.8	2.9	0.0	0.0	0.0	20.0	0.0	4.0	-206.3
86	602929.01	4910478.77	1.50	2	N	8000	49.2	0.0	-188.0	0.0	0.0	49.8	10.2	0.0	0.0	0.0	20.0	0.0	4.0	-222.8
86	602929.01	4910478.77	1.50	2	E	1000	68.4	0.0	-188.0	0.0	0.0	49.8	0.3	0.5	0.0	0.0	16.7	0.0	4.0	-191.0
86	602929.01	4910478.77	1.50	2	E	2000	64.8	0.0	-188.0	0.0	0.0	49.8	0.8	0.0	0.0	0.0	20.0	0.0	4.0	-197.8
86	602929.01	4910478.77	1.50	2	E	4000	58.3	0.0	-188.0	0.0	0.0	49.8	2.9	0.0	0.0	0.0	20.0	0.0	4.0	-206.3
86	602929.01	4910478.77	1.50	2	E	8000	49.2	0.0	-188.0	0.0	0.0	49.8	10.2	0.0	0.0	0.0	20.0	0.0	4.0	-222.8
88	602929.01	4910478.77	1.50	2	D	1000	68.4	0.0	0.0	0.0	0.0	55.1	0.6	0.5	0.0	0.0	0.0	0.0	4.0	8.2
88	602929.01	491																		

Point Source, ISO 9613, Name: "Air Conditioner", ID: "AC"																				
Nr.	X	Y	Z	Ref.	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)
88	602929.01	4910478.77	1.50	2	D	4000	58.3	0.0	0.0	0.0	0.0	55.1	5.3	-0.1	0.0	0.0	0.0	0.0	4.0	-5.9
88	602929.01	4910478.77	1.50	2	D	8000	49.2	0.0	0.0	0.0	0.0	55.1	18.8	-0.1	0.0	0.0	0.0	0.0	4.0	-28.6
88	602929.01	4910478.77	1.50	2	N	1000	68.4	0.0	-188.0	0.0	0.0	55.1	0.6	0.5	0.0	0.0	0.0	0.0	4.0	-179.8
88	602929.01	4910478.77	1.50	2	N	2000	64.8	0.0	-188.0	0.0	0.0	55.1	1.6	-0.1	0.0	0.0	0.0	0.0	4.0	-183.7
88	602929.01	4910478.77	1.50	2	N	4000	58.3	0.0	-188.0	0.0	0.0	55.1	5.3	-0.1	0.0	0.0	0.0	0.0	4.0	-193.9
88	602929.01	4910478.77	1.50	2	N	8000	49.2	0.0	-188.0	0.0	0.0	55.1	18.8	-0.1	0.0	0.0	0.0	0.0	4.0	-216.6
88	602929.01	4910478.77	1.50	2	E	1000	68.4	0.0	-188.0	0.0	0.0	55.1	0.6	0.5	0.0	0.0	0.0	0.0	4.0	-179.8
88	602929.01	4910478.77	1.50	2	E	2000	64.8	0.0	-188.0	0.0	0.0	55.1	1.6	-0.1	0.0	0.0	0.0	0.0	4.0	-183.7
88	602929.01	4910478.77	1.50	2	E	4000	58.3	0.0	-188.0	0.0	0.0	55.1	5.3	-0.1	0.0	0.0	0.0	0.0	4.0	-193.9
88	602929.01	4910478.77	1.50	2	E	8000	49.2	0.0	-188.0	0.0	0.0	55.1	18.8	-0.1	0.0	0.0	0.0	0.0	4.0	-216.6