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2022-01-13

752 Queen Street East
Town of St. Marys, N4X 1G2

Attn: Yao Zhang

**Re: Addendum – Noise Impact Study, 752 Queen Street East, St. Marys
Cambium Ref. 10699-001**

Dear Mr. Zhang,

As requested, Cambium is pleased to provide this addendum letter in order to satisfy a recommendation from Cambium's Noise Impact Study (NIS) for the proposed development at 752 Queen Street East, St. Marys.

This addendum should be read in conjunction with Cambium's report (The NIS):

- *Noise Impact Study, 752 Queen Street East, St. Marys – 10699-001, Cambium, July 30 2020.*

Within that report Cambium made the following recommendation:

“Cambium would recommend that the final design of this proposed operation be reviewed for compliance with this report and/or NPC-300 by a qualified professional”

This recommendation was made since some aspects of the initial analysis were based on assumed equipment, due to the fact that detailed design was not yet completed.

Cambium has been provided by the Project team with updated design data for the majority of mechanical systems on site. As well as clarification on a number of building design items. Cambium has updated our analysis to provide confirmation of compliance with NPC-300 with the new information. Within this letter, Cambium will use the headings and numbering from the original NIS report to present the updated information.



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3.0 IMPACT OF THE PROPOSED DEVELOPMENT ONTO THE ENVIRONMENT

The development has now been designed in detail, therefore this addendum is intended to confirm that the specific equipment selected for the site, complies with the original NIS report, and that the site is capable of complying with NPC-300 and local by-laws at the nearby sensitive receptors. The additional road traffic as a result of this proposed development will not be significant in comparison to existing traffic levels in the area.

The Town of St. Marys Noise By-Law may be applicable to certain activities at the site.

3.1 NOISE SOURCE SUMMARY

Detailed design of the facility has been completed, therefore Cambium has been provided equipment specific manufacturer sound data for the majority of the equipment on site. Some generic noise sources such as idling cars are based on Cambium's noise source library. Based on Cambium's experience assessing similar sites, the majority of the potential noise produced by this type of facility is produced by the drive through menu order box, the idling vehicles at the drive through and at the car wash, car wash doors, car wash vacuums, the kitchen ventilation fan, and the rooftop HVAC units. The gas bar itself is not considered a noise source as per NPC-300. Also, as per NPC-300 it has been assumed that general parking lot vehicle activity would not be considered as significant noise sources. This includes the occasional delivery and removal of goods and waste from convenience stores and fast-food partner.

All significant sources are summarized in The NIS and are detailed with these most recent updates again below.

- AH01, – A stationary point source representing the potential rooftop HVAC unit located on the existing Site buildings. The unit currently in use at the existing gas station with convenience store (AH01) is a Lennox, model LGH092. Manufacturer's sound specifications for this unit were utilized.



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AH01 is currently installed such that roof features of the building provide noise screening in certain directions.

- AH02– A rooftop HVAC unit located on the proposed retail building. The proposed unit is a Carrier 48HC A06 manufacturer’s sound specifications for this unit was utilized.
- EF03 – One stationary point source representing the rooftop exhaust servicing a kitchen area. The unit is a 1175 CFM. Manufacturer’s sound specifications for a larger 2500 CFM fan were utilized, to ensure conservative assessment.
- WD01_O – One stationary emitting façade sources representing the open exit doors of the self-serve automatic car wash. Manufacturer sound power level of the selected car wash dryer data was provided. The open entrance door of the car wash is assumed to be insignificant because the equipment will not be active at this point of the cycle.
- WD01_C, WD02_C – Two stationary emitting façade sources representing the closed doors of the self-serve automatic car wash. There are no manufacturer data for this type of source, therefore a representative sound power level from a similar operation measured by Cambium was utilized.
- VC01, VC02 – These stationary sources represent the potential noise emissions from the proposed vehicle cleaning vacuum stations. Manufacturer data for the Small Dome Model VS-11 sound level has been provided.
- VH01 – VH21 – 21 stationary point sources representing potential idling cars at the car wash and/or drive through lineup area. A generic idling car sound power was used with sound specifications from US Department of Transportation.
- MB01, MB02 – Two stationary point sources representing potential drive through menu order boxes located at the drive through lineup area. Manufacturer information for the proposed menu board has been provided to Cambium.



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- RTU-K1 – This rooftop unit will serve the fast-food building and is a York ZJ180 rooftop unit, manufacturer sound power level data has been provided.
- RTU-K2 - This rooftop unit will serve the fast-food building and is a York ZJ049 rooftop unit, manufacturer sound power level data has been provided.
- RTU-D1 - This rooftop unit will serve the fast-food building and is a York ZJ150 rooftop unit, manufacturer sound power level data has been provided.
- RTU-CU - A Freezer/Cooler condenser unit located on the rooftop

The following noise sources were considered insignificant:

- General ventilation of the buildings where fans are small or are located inside the building envelope such as for washroom vents are considered insignificant.

3.4 IMPACT ASSESSMENT

Cambium's acoustic analysis at the PORs incorporates the noise emission points as described in The NIS. We based sound power levels for equipment on measurements on site, measurements at similar sites for generally assumed equipment, engineering calculations, and/or the provided manufacturer's specifications for the detailed design.

Cambium detailed the corresponding sound power level calculations from each noise producing unit. The assumed, most conservative, sound power levels in accordance with the Ministry's requirement for "worst case" noise source sound power levels are summarized.

The predicted sound levels at the identified PORs due to each noise source in The NIS are summarized. The tables also include the distance from each source to the identified POR. Our updated impact assessment results are provided attached to this letter and the expected Site noise impacts at the identified PORs are summarized.



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3.4.1.1 *SOUND POWER LEVEL*

Sound power levels were based on calculations from measurements at the site and; at similar sites, engineering calculations, and the provided updated manufacturer's specifications; the supporting information can be found in The NIS and enclosed in this addendum. We completed all measurements following Ministry guidance for measurements including satisfactory weather conditions and pre-post calibrations.

3.4.1.2 *TONALITY ASSESSMENT*

Generally, we do not expect the sources to be tonal in nature. Manufacturer data does not indicate a tonality concern for equipment provided.

3.4.1.3 *VARIABLE OPERATIONS OF NOISE SOURCES*

For the purposes of NPC-300 assessment the following variability assumptions have been made.

Some noise sources are only active during defined times of the day, these time frames are treated as a noise control by this report since they must be complied with to achieve the required noise levels:

- WD01_O, WD01_C, WD02_C, (VH01 – VH05), VC01, VC02– Noise sources associated with the car wash and vacuums may occur during daytime hours only (07:00-19:00).

The following time restrictions have been selected by Cambium as realistic worst case scenarios. It is anticipated that these time restrictions will be met by the regular operations of the facility without implementing these items as formal controls:

- VH06 – VH21 – Noise sources associated with the idling cars in the line at the fast food partner operation. Cambium has assumed up to 12 vehicles could be idling in the evening and night (19:00-07:00). It was assumed up to 16 vehicles could be idling during daytime hours (07:00-19:00).



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- AH and RTU units - Point sources representing steady state HVAC noise are modelled as active only 75% of the time during daytime hours (07:00 – 19:00) and 50% of the time during evening and nighttime hours, when it is cooler. This represents the normal operating cycle of this type of equipment.
- WD01_O – The Noise source representing car wash open doors is active only 16% of the time (10 minutes of any given hour). This is a reasonable assumption since this door would only be open and emitting noise, when the cars are leaving the carwash.
- WD01_C, WD02_C –The closed doors are an active noise source for up to an additional 66% of the time (<=40 minutes of any given hour). Therefore, the car wash is not emitting significant noise for approximately 33% of the time (20 minutes of any given hour), this time of low emissions is consistent with the time it takes additional users to move into the carwash and wait for the carwash to begin operations. This represents a worst case scenario of the cycle during normal operation.
- VC01, VC02 - Noise sources representing vacuums were modelled as being active only 25% of the time (15 minutes of any given hour) which represents the normal operating cycle of this type of equipment.

These operating cycles were confirmed with the operator to be reasonable assumptions based on the expected maximum traffic flow through these processes.

3.4.1.4 NOISE CONTROL MEASURES

- The existing HVAC unit (AH01) located on the existing building is installed on the roof in such a way that roof features screen certain directions from the noise source. This roof feature screen was incorporated into the model as a barrier (BR01). This arrangement must remain in place. It is confirmed this is the intention of the updated detailed design.



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- Updated design information shows that the proposed retail building and fast food restaurant designs both include parapet walls at 0.7 metres above roof deck, vs the previously assumed 1 metre above the roof deck. Cambium has updated modelling based on the detailed design of 0.7 m parapet. The noise barrier parapet must be constructed to meet a surface density of 20 kilograms per square metre, and with no cracks or gaps, this appears to be achieved by the current parapet.
- Car wash noise sources VC01 and VC02 will require localized noise barriers to screen the noise of the currently proposed vacuums. Two 2 m tall noise barriers are required, located 0.5 m from the vacuums and blocking line of sight to the receptors to the west including POR03-POR06. The noise barriers must be constructed with a surface density of 20 kilograms per square meter and have no cracks or gaps.
- Car wash operations should be restricted to daytime hours (07:00-19:00). The car wash must operate with the doors closed, only opening for the dryer.

3.4.2 ALTERNATE VACUUM SCENARIO

As an alternative to noise barriers for the car wash vacuum stations could be removed from the site entirely. Or quieter vacuum stations could be selected. The current units have a sound power level of 104 dBA, if units could be selected with sound power of 97 dBA or lower, Cambium would predict compliance with the timing assumptions listed above.

4.0 RECOMMENDATIONS

In summary, with the updated confirmed detailed design information Cambium has made the following recommendations:

- Layout of equipment and building features may affect noise impacts, and therefore the controls required. The site should be laid out generally as shown in the NIS report and in this addendum letter or calculations may require revision.



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- The HVAC source AH01 on the existing roof, must remain installed as it is.
- The HVAC sources AH02, RTU-K2, RTU-D1, RTU-K1 must be screened from the receptors to the by the designed 0.7 m parapet wall for retail building and fast food building. The Parapet must be constructed to meet 20 kilograms per square metre, and be constructed with no cracks or gaps. Units must be laid out as shown in the design drawings provided to Cambium.

- Car wash operations must be limited to daytime hours only (07:00-19:00).
- Car wash vacuum noise sources VC01 and VC02 will require localized noise barriers to screen noise from the currently proposed vacuums. Two 2 m tall noise barriers are required located 0.5 m from the vacuums and blocking line of sight to the receptors to the west including POR03-POR06. Noise barriers must be constructed with a surface density of 20 kilograms per square meter and have no cracks or gaps. A conceptual sketch is attached to this letter.
- The Town of St. Marys Noise By-Law may be applicable to certain activities at the site. Some terms used in the by-law can be subjective, therefore it is assumed that compliance with the specific NPC-300 exclusionary sound level limits would also achieve compliance with the by-law definitions.





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5.0 CONCLUSIONS

Cambium Inc. was retained by Yao Zhang to complete our recommendation to confirm that detailed design of the development located at 752 Queen Street East, in the Town of St, Marys complies with Cambium’s original Noise Impact Study report.

The results of Cambium’s updated analysis, under the defined conditions and assumptions, and based on the information provided to Cambium, indicate that the predicted noise impacts from the proposed Site, at the identified most sensitive points of reception, are less than the applicable limits listed in Ministry noise guideline, NPC-300.

It is Cambium’s opinion that the proposed operation is capable of operating in compliance with NPC-300 and therefore is compatible with the surroundings.

Best regards,

Cambium Inc.

Trevor Copeland, P.Eng.
 Project Coordinator



TMC/tgr

- Encl. *Qualifications and Limitations*
- Updated Acoustic Assessment Tables*
- Site Plan Model Figure*
- Conceptual Vacuum Barrier Layout Figure*
- Updated Noise Modelling Contours*
- New Noise Source Supporting Information*

\\camfile\Projects\10600 to 10699\10699-001 Yao Zhang - Noise Impact Assessment 752 Queen Street St. Mary's\Deliverables\Noise Impact\Final - 2021-12-17 Update\2022-01-13 LTR Noise Study Addendum 752 Queen Street.docx





2022-01-13

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Site Assessments

A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Cambium's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

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Table 1 - Representative Noise Source Summary Table

Source ID	Description	A-Weighted Sound Power Level After Reduction								Total dBA	Data Source	Equipment Location	Operating Times/Limits day,evening,night (%)	Noise Quality ¹	Source Location	UTM Easting	UTM Northing	Height Above Rooftop or Ground
		63	125	250	500	1000	2000	4000	8000									
AH01	HVAC	0.0	76.0	79.0	84.0	83.0	79.0	73.0	66.0	88.3	Manufacturer's Specifications	BL01 - Existing	75,50,50	SS	Rooftop	490375	4789834	1.0
AH02	HVAC	61.3	66.4	67.5	70.4	71.3	68.3	65.1	58.9	76.7	Manufacturer's Specifications	BL01 - Expansion	75,50,50	SS	Rooftop	490307	4789849	1.0
RTU-K1	HVAC - 15 Ton	63.8	76.9	82.4	85.8	86.0	84.2	81.0	73.9	91.5	Manufacturer's Specifications	BL01 - Expansion	75,50,50	SS	Rooftop	490353	4789826	1.0
RTU-K2	HVAC - 4 Ton	0.0	71.9	73.9	78.3	78.0	74.2	70.0	60.9	83.2	Manufacturer's Specifications	BL01 - Expansion	75,50,50	SS	Rooftop	490347	4789834	1.0
RTU-D1	HVAC - 12.5 Ton	0.0	73.9	75.9	78.3	77.5	73.2	69.5	60.4	83.4	Manufacturer's Specifications	BL01 - Expansion	75,50,50	SS	Rooftop	490359	4789835	1.0
RTU-CU	Cooler Condenser Mac-8 insignificant	--	--	--	73.0	--	--	--	--	73.0	Manufacturer's Specifications	BL01 - Expansion	75,50,50	SS	Rooftop	490348	4789826	1.0
EF-3	Kitchen Fan - 1175 CFM	59.0	64.0	75.0	76.0	75.0	75.0	68.0	58.0	81.6	Manufacturer's Specifications	BL01 - Expansion	100,100,100	SS	Rooftop	490356	4789829	1.0
MB01	Menu Board	--	--	--	81.7	--	--	--	--	81.7	Manufacturer's Specifications	Drive	50,50,50	SS	At Grade	490330	4789845	1.0
MB02	Menu Board	--	--	--	81.7	--	--	--	--	81.7	Manufacturer's Specifications	Drive	50,50,50	SS	At Grade	490336	4789845	1.0
VC01	Vacuum	65.0	75.1	78.6	90.0	95.6	99.6	99.5	95.5	104.2	Manufacturer's Specifications	Car Wash	25,-,-	SS	At Grade	490356	4789805	1.5
VC02	Vacuum	65.0	75.1	78.6	90.0	95.6	99.6	99.5	95.5	104.2	Manufacturer's Specifications	Car Wash	25,-,-	SS	At Grade	490350	4789804	1.5
VH01	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Car Wash	100,-,-	SS	At Grade	490362	4789809	1.5
VH02	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Car Wash	100,-,-	SS	At Grade	490356	4789808	1.5
VH03	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Car Wash	100,-,-	SS	At Grade	490350	4789808	1.5
VH04	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Car Wash	100,-,-	SS	At Grade	490344	4789807	1.5
VH05	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Car Wash	100,-,-	SS	At Grade	490338	4789806	1.5
VH06	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490362	4789822	1.5
VH07	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490356	4789822	1.5
VH08	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490349	4789821	1.5
VH09	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490343	4789820	1.5
VH10	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490336	4789821	1.5
VH11	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490332	4789825	1.5
VH12	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,-,-	SS	At Grade	490329	4789832	1.5
VH13	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,-,-	SS	At Grade	490334	4789835	1.5
VH14	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,-,-	SS	At Grade	490328	4789838	1.5
VH15	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490334	4789841	1.5
VH16	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490328	4789844	1.5
VH17	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490332	4789848	1.5



Table 1 - Representative Noise Source Summary Table

Source ID	Description	A-Weighted Sound Power Level After Reduction								Total dBA	Data Source	Equipment Location	Operating Times/Limits day,evening,night (%)	Noise Quality ¹	Source Location	UTM Easting	UTM Northing	Height Above Rooftop or Ground
		63	125	250	500	1000	2000	4000	8000									
VH18	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490327	4789850	1.5
VH19	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490331	4789854	1.5
VH20	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,100,100	SS	At Grade	490327	4789857	1.5
VH21	Idling Vehicle	65.8	73.9	77.4	72.8	72.0	72.2	69.0	56.9	81.6	Manufacturer's Specifications	Drive	100,-,-	SS	At Grade	490331	4789861	1.5
WD01_C	Car Wash Door out - Closed	64.4	73.3	74.0	72.7	77.1	69.5	60.2	51.5	81.1	Manufacturer's Specifications	Car Wash	49,-,-	SS	At Grade	490381	4789812	3.0
WD01_O	Car Wash Door out - Open	78.8	88.9	92.4	103.8	109.4	113.4	113.3	109.3	118.0	Manufacturer's Specifications	Car Wash	16,-,-	SS	At Grade	490381	4789812	3.0
WD02_C	Car Wash Door in Closed	64.4	73.3	74.0	72.7	77.1	69.5	60.2	51.5	81.1	Manufacturer's Specifications	Car Wash	66,-,-	SS	At Grade	490365	4789809	3.0

¹ Noise Quality Descriptions:
 SS Steady State
 T Tonal
 I Impulse



Table 2 - Point of Reception Noise Impact

Receptor ID	Receptor Coordinates				Predicted SPL (dBA)			Predictor Source ID	Source ID	PWL (dBA)	Time Correction (%)			Source/Receptor Distance (m)	
	X (m)	Y (m)	Height	Ground Elevation	Daytime	Evening	Nighttime				Day	Evening	Night		
POR01 A	156938872.2	490710	4790024	4.5	319.8	20.71	20.71	20.71	243	EF-3	81.6	100.0	100.0	100.0	414
POR01 A	156938872.2	490710	4790024	4.5	319.8	27.84	26.08	26.08	244	AH01	88.3	75.0	50.0	50.0	404
POR01 A	156938872.2	490710	4790024	4.5	319.8	13.98	12.22	12.22	245	AH02	76.7	75.0	50.0	50.0	385
POR01 A	156938872.2	490710	4790024	4.5	319.8	10.77	-200	-200	253	VH01	81.6	100.0	--	--	392
POR01 A	156938872.2	490710	4790024	4.5	319.8	12.01	12.01	12.01	254	VH07	81.6	100.0	100.0	100.0	426
POR01 A	156938872.2	490710	4790024	4.5	319.8	18.67	18.67	18.67	257	MB01	--	--	50.0	50.0	427
POR01 A	156938872.2	490710	4790024	4.5	319.8	9.2	9.2	9.2	258	VH08	81.6	100.0	100.0	100.0	423
POR01 A	156938872.2	490710	4790024	4.5	319.8	16.55	-200	-200	261	VH12	81.6	100.0	--	--	420
POR01 A	156938872.2	490710	4790024	4.5	319.8	20.55	-200	-200	262	VH14	81.6	100.0	--	--	431
POR01 A	156938872.2	490710	4790024	4.5	319.8	14.06	14.06	14.06	266	VH06	81.6	100.0	100.0	100.0	421
POR01 A	156938872.2	490710	4790024	4.5	319.8	16.98	-200	-200	267	VH13	81.6	100.0	--	--	426
POR01 A	156938872.2	490710	4790024	4.5	319.8	47.19	-200	-200	297	WD01 O	118.0	16.0	--	--	399
POR01 A	156938872.2	490710	4790024	4.5	319.8	8.21	-200	-200	299	WD02 C	81.1	66.0	--	--	413
POR01 A	156938872.2	490710	4790024	4.5	319.8	19.11	-200	-200	300	WD01 C	81.1	49.0	--	--	410
POR01 A	156938872.2	490710	4790024	4.5	319.8	18.37	-200	-200	301	VCO1	104.2	25.0	--	--	403
POR01 A	156938872.2	490710	4790024	4.5	319.8	28.45	-200	-200	303	VCO2	104.2	25.0	--	--	421
POR01 A	156938872.2	490710	4790024	4.5	319.8	10.66	10.66	10.66	313	VH09	81.6	100.0	100.0	100.0	427
POR01 A	156938872.2	490710	4790024	4.5	319.8	11.36	11.36	11.36	314	VH10	81.6	100.0	100.0	100.0	415
POR01 A	156938872.2	490710	4790024	4.5	319.8	21.37	21.37	21.37	315	VH16	81.6	100.0	100.0	100.0	417
POR01 A	156938872.2	490710	4790024	4.5	319.8	12.69	12.69	12.69	316	VH11	81.6	100.0	100.0	100.0	415
POR01 A	156938872.2	490710	4790024	4.5	319.8	18.76	18.76	18.76	322	MB02	--	50.0	50.0	50.0	425
POR01 A	156938872.2	490710	4790024	4.5	319.8	14.54	-200	-200	344	VH02	81.6	100.0	--	--	406
POR01 A	156938872.2	490710	4790024	4.5	319.8	14.44	-200	-200	345	VH03	81.6	100.0	--	--	391
POR01 A	156938872.2	490710	4790024	4.5	319.8	14.39	-200	-200	346	VH04	81.6	100.0	--	--	416
POR01 A	156938872.2	490710	4790024	5	319.8	13.05	-200	-200	347	VH05	81.6	100.0	--	--	422
POR01 A	156938872.2	490710	4790024	5	319.8	21.41	21.41	21.41	348	VH18	81.6	100.0	100.0	100.0	413
POR01 A	156938872.2	490710	4790024	5	319.8	21.12	21.12	21.12	349	VH17	81.6	100.0	100.0	100.0	419
POR01 A	156938872.2	490710	4790024	5	319.8	21.08	21.08	21.08	350	VH15	81.6	100.0	100.0	100.0	421
POR01 A	156938872.2	490710	4790024	5	319.8	20.8	-200	-200	351	VH21	81.6	100.0	--	--	408
POR01 A	156938872.2	490710	4790024	5	319.8	21.12	21.12	21.12	352	VH20	81.6	100.0	100.0	100.0	415
POR01 A	156938872.2	490710	4790024	5	319.8	21.16	21.16	21.16	353	VH19	81.6	100.0	100.0	100.0	418
POR01 A	156938872.2	490710	4790024	5	319.8	29	27.24	27.24	354	RTU-K1	91.5	75.0	50.0	50.0	440
POR01 A	156938872.2	490710	4790024	5	319.8	21.14	19.38	19.38	357	RTU-K2	--	75.0	50.0	50.0	410
POR01 A	156938872.2	490710	4790024	5	319.8	21.63	19.87	19.87	358	RTU-D1	--	75.0	50.0	50.0	408
POR01 A	156938872.2	490710	4790024	5	319.8	11.65	9.89	9.89	359	RTU-CU	--	75.0	50.0	50.0	420
POR01 B	156157608.9	490691	4790014	2	318.2	19.3	19.3	19.3	243	EF-3	81.6	100.0	100.0	100.0	393
POR01 B	156157608.9	490691	4790014	2	318.2	27.03	25.27	25.27	244	AH01	88.3	75.0	50.0	50.0	383
POR01 B	156157608.9	490691	4790014	2	318.2	13.09	11.33	11.33	245	AH02	76.7	75.0	50.0	50.0	364
POR01 B	156157608.9	490691	4790014	2	318.2	9.59	-200	-200	253	VH01	81.6	100.0	--	--	370
POR01 B	156157608.9	490691	4790014	2	318.2	10.89	10.89	10.89	254	VH07	81.6	100.0	100.0	100.0	404
POR01 B	156157608.9	490691	4790014	2	318.2	15.81	15.81	15.81	257	MB01	--	50.0	50.0	50.0	405
POR01 B	156157608.9	490691	4790014	2	318.2	8.32	8.32	8.32	258	VH08	81.6	100.0	100.0	100.0	401
POR01 B	156157608.9	490691	4790014	2	318.2	14.86	-200	-200	261	VH12	81.6	100.0	--	--	399
POR01 B	156157608.9	490691	4790014	2	318.2	19.02	-200	-200	262	VH14	81.6	100.0	--	--	410
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	12.73	12.73	12.73	266	VH06	81.6	100.0	100.0	100.0	399
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	15.43	-200	-200	267	VH13	81.6	100.0	--	--	404
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	47.52	-200	-200	297	WD01 O	118.0	16.0	--	--	378
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	7.57	-200	-200	299	WD02 C	81.1	66.0	--	--	392
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	18.35	-200	-200	300	WD01 C	81.1	49.0	--	--	389
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	17.63	-200	-200	301	VCO1	104.2	25.0	--	--	381
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	28.35	-200	-200	303	VCO2	104.2	25.0	--	--	400
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	9.51	9.51	9.51	313	VH09	81.6	100.0	100.0	100.0	405
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	10.01	10.01	10.01	314	VH10	81.6	100.0	100.0	100.0	394
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	19.97	19.97	19.97	315	VH16	81.6	100.0	100.0	100.0	395
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	11.21	11.21	11.21	316	VH11	81.6	100.0	100.0	100.0	393
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	15.91	15.91	15.91	322	MB02	--	50.0	50.0	50.0	404
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	13.08	-200	-200	344	VH02	81.6	100.0	--	--	385
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	12.96	-200	-200	345	VH03	81.6	100.0	--	--	370
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	12.88	-200	-200	346	VH04	81.6	100.0	--	--	395
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	11.28	-200	-200	347	VH05	81.6	100.0	--	--	400
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	20.03	20.03	20.03	348	VH18	81.6	100.0	100.0	100.0	392
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	19.84	19.84	19.84	349	VH17	81.6	100.0	100.0	100.0	397
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	19.78	19.78	19.78	350	VH15	81.6	100.0	100.0	100.0	400
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	19.35	-200	-200	351	VH21	81.6	100.0	--	--	387
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	20.1	20.1	20.1	352	VH20	81.6	100.0	100.0	100.0	394
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	19.89	19.89	19.89	353	VH19	81.6	100.0	100.0	100.0	397
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	27.91	26.15	26.15	354	RTU-K1	91.5	75.0	50.0	50.0	418
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	19.97	18.21	18.21	357	RTU-K2	--	75.0	50.0	50.0	388
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	20.33	18.57	18.57	358	RTU-D1	--	75.0	50.0	50.0	387
POR01 B	156157608.9	490691.3	4790014	1.5	318.2	8.71	6.95	6.95	359	RTU-CU	--	75.0	50.0	50.0	399
POR02 A	159193984.2	490779	4789924	4.5	324.4	18.79	18.79	18.79	243	EF-3	81.6	100.0	100.0	100.0	442
POR02 A	159193984.2	490779	4789924	4.5	324.4	27.05	25.29	25.29	244	AH01	88.3	75.0	50.0	50.0	433
POR02 A	159193984.2	490779	4789924	4.5	324.4	11.39	9.63	9.63	245	AH02	76.7	75.0	50.0	50.0	414
POR02 A	159193984.2	490779	4789924	4.5	324.4	8.89	-200	-200	253	VH01	81.6	100.0	--	--	414
POR02 A	159193984.2	490779	4789924	4.5	324.4	18.5	18.5	18.5	254	VH07	81.6	100.0	100.0	100.0	455
POR02 A	159193984.2	490779	4789924	4.5	324.4	16.3	16.3	16.3	257	MB01	--	50.0	50.0	50.0	459
POR02 A	159193984.2	490779	4789924	4.5	324.4	15.89	15.89	15.89	258	VH08	81.6	100.0	100.0	100.0	459
POR02 A</															



Table 2 - Point of Reception Noise Impact

Receptor ID	Receptor Coordinates				Predicted SPL (dBA)			Predictor Source ID	Source ID	PWL (dBA)	Time Correction (%)			Source/Receptor Distance (m)	
	X (m)	Y (m)	Height	Ground Elevation	Daytime	Evening	Nighttime				Day	Evening	Night		
	POR02 A	159193984.2	490779	4789924	4.5	324.4	13.47				-200	-200	346		VH04
POR02 A	159193984.2	490779	4789924	4.5	324.4	13.5	-200	-200	347	VH05	81.6	100.0	--	--	445
POR02 A	159193984.2	490779	4789924	4.5	324.4	18.53	-200	-200	348	VH18	81.6	100.0	100.0	100.0	453
POR02 A	159193984.2	490779	4789924	4.5	324.4	18.21	-200	-200	349	VH17	81.6	100.0	100.0	100.0	453
POR02 A	159193984.2	490779	4789924	4.5	324.4	17.76	-200	-200	350	VH15	81.6	100.0	100.0	100.0	459
POR02 A	159193984.2	490779	4789924	4.5	324.4	18.21	-200	-200	351	VH21	81.6	100.0	--	--	438
POR02 A	159193984.2	490779	4789924	4.5	324.4	18.55	-200	-200	352	VH20	81.6	100.0	100.0	100.0	454
POR02 A	159193984.2	490779	4789924	4.5	324.4	18.21	-200	-200	353	VH19	81.6	100.0	100.0	100.0	457
POR02 A	159193984.2	490779	4789924	4.5	324.4	27.17	-200	-200	354	RTU-K1	91.5	75.0	50.0	50.0	478
POR02 A	159193984.2	490779	4789924	4.5	324.4	18.69	-200	-200	357	RTU-K2	--	75.0	50.0	50.0	433
POR02 A	159193984.2	490779	4789924	4.5	324.4	19.2	-200	-200	358	RTU-D1	--	75.0	50.0	50.0	436
POR02 A	159193984.2	490779	4789924	4.5	324.4	10	-200	-200	359	RTU-CU	--	75.0	50.0	50.0	456
POR02 B	158437978.9	490748	4789918	1.5	322.9	15.51	-200	-200	243	EF-3	81.6	100.0	100.0	100.0	410
POR02 B	158437978.9	490748	4789918	1.5	322.9	25.44	-200	-200	244	AH01	88.3	75.0	50.0	50.0	402
POR02 B	158437978.9	490748	4789918	1.5	322.9	10.41	-200	-200	245	AH02	76.7	75.0	50.0	50.0	382
POR02 B	158437978.9	490748	4789918	1.5	322.9	8.76	-200	-200	253	VH01	81.6	100.0	--	--	382
POR02 B	158437978.9	490748	4789918	1.5	322.9	17.06	-200	-200	254	VH07	81.6	100.0	100.0	100.0	424
POR02 B	158437978.9	490748	4789918	1.5	322.9	12.1	-200	-200	257	MB01	--	50.0	50.0	50.0	428
POR02 B	158437978.9	490748	4789918	1.5	322.9	14.74	-200	-200	258	VH08	81.6	100.0	100.0	100.0	427
POR02 B	158437978.9	490748	4789918	1.5	322.9	10.95	-200	-200	261	VH12	81.6	100.0	--	--	413
POR02 B	158437978.9	490748	4789918	1.5	322.9	16.13	-200	-200	262	VH14	81.6	100.0	--	--	425
POR02 B	158437978.9	490748	4789918	1.5	322.9	17.2	-200	-200	266	VH06	81.6	100.0	100.0	100.0	417
POR02 B	158437978.9	490748	4789918	1.5	322.9	10.7	-200	-200	267	VH13	81.6	100.0	--	--	419
POR02 B	158437978.9	490748	4789918	1.5	322.9	46.27	-200	-200	297	WD01 O	118.0	16.0	--	--	398
POR02 B	158437978.9	490748	4789918	1.5	322.9	5.96	-200	-200	299	WD02 C	81.1	66.0	--	--	411
POR02 B	158437978.9	490748	4789918	1.5	322.9	16.86	-200	-200	300	WD01 C	81.1	49.0	--	--	410
POR02 B	158437978.9	490748	4789918	1.5	322.9	23.14	-200	-200	301	VCO1	104.2	25.0	--	--	398
POR02 B	158437978.9	490748	4789918	1.5	322.9	25.84	-200	-200	303	VCO2	104.2	25.0	--	--	423
POR02 B	158437978.9	490748	4789918	1.5	322.9	14.42	-200	-200	313	VH09	81.6	100.0	100.0	100.0	426
POR02 B	158437978.9	490748	4789918	1.5	322.9	10.24	-200	-200	314	VH10	81.6	100.0	100.0	100.0	419
POR02 B	158437978.9	490748	4789918	1.5	322.9	17.07	-200	-200	315	VH16	81.6	100.0	100.0	100.0	422
POR02 B	158437978.9	490748	4789918	1.5	322.9	8.02	-200	-200	316	VH11	81.6	100.0	100.0	100.0	407
POR02 B	158437978.9	490748	4789918	1.5	322.9	12.2	-200	-200	322	MB02	--	50.0	50.0	50.0	428
POR02 B	158437978.9	490748	4789918	1.5	322.9	11.18	-200	-200	344	VH02	81.6	100.0	--	--	398
POR02 B	158437978.9	490748	4789918	1.5	322.9	12.32	-200	-200	345	VH03	81.6	100.0	--	--	382
POR02 B	158437978.9	490748	4789918	1.5	322.9	13.15	-200	-200	346	VH04	81.6	100.0	--	--	408
POR02 B	158437978.9	490748	4789918	1.5	322.9	13.15	-200	-200	347	VH05	81.6	100.0	--	--	414
POR02 B	158437978.9	490748	4789918	1.5	322.9	17.07	-200	-200	348	VH18	81.6	100.0	100.0	100.0	422
POR02 B	158437978.9	490748	4789918	1.5	322.9	16.94	-200	-200	349	VH17	81.6	100.0	100.0	100.0	422
POR02 B	158437978.9	490748	4789918	1.5	322.9	16.25	-200	-200	350	VH15	81.6	100.0	100.0	100.0	427
POR02 B	158437978.9	490748	4789918	1.5	322.9	16.94	-200	-200	351	VH21	81.6	100.0	--	--	406
POR02 B	158437978.9	490748	4789918	1.5	322.9	17.08	-200	-200	352	VH20	81.6	100.0	100.0	100.0	422
POR02 B	158437978.9	490748	4789918	1.5	322.9	16.94	-200	-200	353	VH19	81.6	100.0	100.0	100.0	426
POR02 B	158437978.9	490748	4789918	1.5	322.9	25.8	-200	-200	354	RTU-K1	91.5	75.0	50.0	50.0	447
POR02 B	158437978.9	490748	4789918	1.5	322.9	17.22	-200	-200	357	RTU-K2	--	75.0	50.0	50.0	402
POR02 B	158437978.9	490748	4789918	1.5	322.9	17.59	-200	-200	358	RTU-D1	--	75.0	50.0	50.0	404
POR02 B	158437978.9	490748	4789918	1.5	322.9	5.76	-200	-200	359	RTU-CU	--	75.0	50.0	50.0	424
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	27.11	-200	-200	243	EF-3	81.6	100.0	100.0	100.0	152
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	29.35	-200	-200	244	AH01	88.3	75.0	50.0	50.0	162
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	20.67	-200	-200	245	AH02	76.7	75.0	50.0	50.0	179
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	28.22	-200	-200	253	VH01	81.6	100.0	--	--	167
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.05	-200	-200	254	VH07	81.6	100.0	100.0	100.0	144
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	24.91	-200	-200	257	MB01	--	50.0	50.0	50.0	149
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	25.9	-200	-200	258	VH08	81.6	100.0	100.0	100.0	159
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.31	-200	-200	261	VH12	81.6	100.0	--	--	142
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.34	-200	-200	262	VH14	81.6	100.0	--	--	133
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.08	-200	-200	266	VH06	81.6	100.0	100.0	100.0	147
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.88	-200	-200	267	VH13	81.6	100.0	--	--	138
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	37.06	-200	-200	297	WD01 O	118.0	16.0	--	--	169
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.26	-200	-200	299	WD02 C	81.1	66.0	--	--	154
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	12.74	-200	-200	300	WD01 C	81.1	49.0	--	--	160
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	32.32	-200	-200	301	VCO1	104.2	25.0	--	--	161
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	33.51	-200	-200	303	VCO2	104.2	25.0	--	--	154
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.27	-200	-200	313	VH09	81.6	100.0	100.0	100.0	145
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.09	-200	-200	314	VH10	81.6	100.0	100.0	100.0	163
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.42	-200	-200	315	VH16	81.6	100.0	100.0	100.0	165
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	26.03	-200	-200	316	VH11	81.6	100.0	100.0	100.0	147
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	24.8	-200	-200	322	MB02	--	50.0	50.0	50.0	154
POR03 A	153292470.6	490253.5	4789703	4.5	312.7	27.73	-200	-200	344	VH02	81.6	100.0	--	--	154
POR03 A	153292470.6</														

Table 2 - Point of Reception Noise Impact

Table with 15 columns: Receptor ID, Receptor Coordinates (X, Y, Height, Ground Elevation), Predicted SPL (dBA) (Daytime, Evening, Nighttime), Predictor Source ID, Source ID, PWL (dBA), Time Correction (%) (Day, Evening, Night), and Source/Receptor Distance (m). The table lists noise impact data for various receptors (POR03 B and POR04 A/B) across different source categories (e.g., WH01, RTU-K1).



Table 2 - Point of Reception Noise Impact

Receptor ID	Receptor Coordinates			Predicted SPL (dBA)			Predictor Source ID	Source ID	PWL (dBA)	Time Correction (%)			Source/Receptor Distance (m)		
	X (m)	Y (m)	Height	Ground Elevation	Daytime	Evening				Nighttime	Day	Evening		Night	
POR04 B	152544003.8	490258.7	4789737	1.5	311.2	15.66	13.9	13.9	359	RTU-CU	--	75.0	50.0	50.0	129
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.07	31.07	31.07	243	EF-3	81.6	100.0	100.0	100.0	105
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	30.43	28.67	28.67	244	AH01	88.3	75.0	50.0	50.0	114
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	26.32	24.56	24.56	245	AH02	76.7	75.0	50.0	50.0	133
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	32.45	-200	-200	253	VH01	81.6	100.0	--	--	132
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.27	31.27	31.27	254	VH07	81.6	100.0	100.0	100.0	92
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	29.57	29.57	29.57	257	MB01	--	50.0	50.0	50.0	92
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.16	31.16	31.16	258	VH08	81.6	100.0	100.0	100.0	98
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	32.25	-200	-200	261	VH12	81.6	100.0	--	--	101
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.95	-200	-200	262	VH14	81.6	100.0	--	--	89
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	30.86	30.86	30.86	266	VH06	81.6	100.0	100.0	100.0	98
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	32.31	-200	-200	267	VH13	81.6	100.0	--	--	95
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	39.31	-200	-200	297	WD01 O	118.0	16.0	--	--	119
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	29.59	-200	-200	299	WD02 C	81.1	66.0	--	--	105
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	14.99	-200	-200	300	WD01 C	81.1	49.0	--	--	108
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	43.23	-200	-200	301	VCO1	104.2	25.0	--	--	116
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	43.85	-200	-200	303	VCO2	104.2	25.0	--	--	97
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.07	31.07	31.07	313	VH09	81.6	100.0	100.0	100.0	91
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.16	31.16	31.16	314	VH10	81.6	100.0	100.0	100.0	104
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.47	31.47	31.47	315	VH16	81.6	100.0	100.0	100.0	104
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	32.24	32.24	32.24	316	VH11	81.6	100.0	100.0	100.0	107
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	29.25	29.25	29.25	322	MB02	--	50.0	50.0	50.0	94
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.47	-200	-200	344	VH02	81.6	100.0	--	--	116
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.06	-200	-200	345	VH03	81.6	100.0	--	--	132
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31	-200	-200	346	VH04	81.6	100.0	--	--	106
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.03	-200	-200	347	VH05	81.6	100.0	--	--	100
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	27.06	27.06	27.06	348	VH18	81.6	100.0	100.0	100.0	111
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.6	31.6	31.6	349	VH17	81.6	100.0	100.0	100.0	101
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.48	31.48	31.48	350	VH15	81.6	100.0	100.0	100.0	101
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	25.8	-200	-200	351	VH21	81.6	100.0	--	--	110
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	25.22	25.22	25.22	352	VH20	81.6	100.0	100.0	100.0	107
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	28.32	28.32	28.32	353	VH19	81.6	100.0	100.0	100.0	106
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	39.86	38.1	38.1	354	RTU-K1	91.5	75.0	50.0	50.0	87
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.88	30.12	30.12	357	RTU-K2	--	75.0	50.0	50.0	112
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	31.3	29.54	29.54	358	RTU-D1	--	75.0	50.0	50.0	111
POR05 A	151978343.2	490252.7	4789781	7.5	310.0	22.22	20.46	20.46	359	RTU-CU	--	75.0	50.0	50.0	100
POR05 B	151987094.5	490281	4789794	1.5	310.0	28.08	28.08	28.08	243	EF-3	81.6	100.0	100.0	100.0	74
POR05 B	151987094.5	490281	4789794	1.5	310.0	26.31	24.55	24.55	244	AH01	88.3	75.0	50.0	50.0	83
POR05 B	151987094.5	490281	4789794	1.5	310.0	24.45	22.69	22.69	245	AH02	76.7	75.0	50.0	50.0	103
POR05 B	151987094.5	490281	4789794	1.5	310.0	32.87	-200	-200	253	VH01	81.6	100.0	--	--	102
POR05 B	151987094.5	490281	4789794	1.5	310.0	32.29	32.29	32.29	254	VH07	81.6	100.0	100.0	100.0	62
POR05 B	151987094.5	490281	4789794	1.5	310.0	29.71	29.71	29.71	257	MB01	--	50.0	50.0	50.0	62
POR05 B	151987094.5	490281	4789794	1.5	310.0	32.67	32.67	32.67	258	VH08	81.6	100.0	100.0	100.0	69
POR05 B	151987094.5	490281	4789794	1.5	310.0	34.78	-200	-200	261	VH12	81.6	100.0	--	--	71
POR05 B	151987094.5	490281	4789794	1.5	310.0	34.13	-200	-200	262	VH14	81.6	100.0	--	--	59
POR05 B	151987094.5	490281	4789794	1.5	310.0	31.49	31.49	31.49	266	VH06	81.6	100.0	100.0	100.0	67
POR05 B	151987094.5	490281	4789794	1.5	310.0	34.25	-200	-200	267	VH13	81.6	100.0	--	--	65
POR05 B	151987094.5	490281	4789794	1.5	310.0	37.13	-200	-200	297	WD01 O	118.0	16.0	--	--	88
POR05 B	151987094.5	490281	4789794	1.5	310.0	30.88	-200	-200	299	WD02 C	81.1	66.0	--	--	74
POR05 B	151987094.5	490281	4789794	1.5	310.0	14.84	-200	-200	300	WD01 C	81.1	49.0	--	--	77
POR05 B	151987094.5	490281	4789794	1.5	310.0	40.95	-200	-200	301	VCO1	104.2	25.0	--	--	86
POR05 B	151987094.5	490281	4789794	1.5	310.0	41.91	-200	-200	303	VCO2	104.2	25.0	--	--	67
POR05 B	151987094.5	490281	4789794	1.5	310.0	33.39	33.39	33.39	313	VH09	81.6	100.0	100.0	100.0	60
POR05 B	151987094.5	490281	4789794	1.5	310.0	33.98	33.98	33.98	314	VH10	81.6	100.0	100.0	100.0	75
POR05 B	151987094.5	490281	4789794	1.5	310.0	33.2	33.2	33.2	315	VH16	81.6	100.0	100.0	100.0	75
POR05 B	151987094.5	490281	4789794	1.5	310.0	34.97	34.97	34.97	316	VH11	81.6	100.0	100.0	100.0	77
POR05 B	151987094.5	490281	4789794	1.5	310.0	29.22	29.22	29.22	322	MB02	--	50.0	50.0	50.0	65
POR05 B	151987094.5	490281	4789794	1.5	310.0	32.69	-200	-200	344	VH02	81.6	100.0	--	--	86
POR05 B	151987094.5	490281	4789794	1.5	310.0	32.85	-200	-200	345	VH03	81.6	100.0	--	--	102
POR05 B	151987094.5	490281	4789794	1.5	310.0	33.28	-200	-200	346	VH04	81.6	100.0	--	--	76
POR05 B	151987094.5	490281	4789794	1.5	310.0	33.82	-200	-200	347	VH05	81.6	100.0	--	--	70
POR05 B	151987094.5	490281	4789794	1.5	310.0	32.9	32.9	32.9	348	VH18	81.6	100.0	100.0	100.0	84
POR05 B	151987094.5	490281	4789794	1.5	310.0	32.82	32.82	32.82	349	VH17	81.6	100.0	100.0	100.0	71
POR05 B	151987094.5	490281	4789794	1.5	310.0	33.05	33.05	33.05	350	VH15	81.6	100.0	100.0	100.0	73
POR05 B	151987094.5	490281	4789794	1.5	310.0	26.78	-200	-200	351	VH21	81.6	100.0	--	--	79
POR05 B	151987094.5	490281	4789794	1.5	310.0	26.39	26.39	26.39	352	VH20	81.6	100.0	100.0	100.0	79
POR05 B	151987094.5	490281	4789794	1.5	310.0	32.52	32.52	32.52	353	VH19	81.6	100.0	100.0	100.0	79
POR05 B	151987094.5	490281	4789794	1.5	310.0	37.61	35.85	35.85	354	RTU-K1	91.5	75.0	50.0	50.0	61
POR05 B	151987094.5	490281	4789794	1.5	310.0	29.03	27.27	27.27	357	RTU-K2	--	75.0	50.0	50.0	82
POR05 B	151987094.5	490281	4789794	1.5	310.0	27.93	26.17	26.17	358	RTU-D1	--	75.0	50.0	50.0	80
POR05 B	151987094.5	490281	4789794	1.5	310.0	18.43	16.67	16.67	359	RTU-CU	--	75.0	50.0	50.0	71
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	30.54	30.54	30.54	243	EF-3	81.6	100.0	100.0	100.0	115
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	30.09	28.33	28.33	244	AH01	88.3	75.0	50.0	50.0	122
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	27.76	26	26	245	AH02	76.7	75.0	50.0	50.0	141
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	27.85	-200	-200	253	VH01	81.6	100.0	--	--	147
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	27.31	27.31	27.31	254	VH07	8				

Table 2 - Point of Reception Noise Impact

Receptor ID	Receptor Coordinates				Predicted SPL (dBA)			Predictor Source ID	Source ID	PWL (dBA)	Time Correction (%)			Source/Receptor Distance (m)	
	X (m)	Y (m)	Height	Ground Elevation	Daytime	Evening	Nighttime				Day	Evening	Night		
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	27.11	-200	-200	345	VH03	81.6	100.0	--	--	147
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	27.59	-200	-200	346	VH04	81.6	100.0	--	--	123
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	29.9	-200	-200	347	VH05	81.6	100.0	--	--	117
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	24.8	24.8	24.8	348	VH18	81.6	100.0	100.0	100.0	104
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	26.96	26.96	26.96	349	VH17	81.6	100.0	100.0	100.0	101
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	32.18	32.18	32.18	350	VH15	81.6	100.0	100.0	100.0	97
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	25.4	-200	-200	351	VH21	81.6	100.0	--	--	118
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	24.67	24.67	24.67	352	VH20	81.6	100.0	100.0	100.0	102
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	25.64	25.64	25.64	353	VH19	81.6	100.0	100.0	100.0	99
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	39.26	37.5	37.5	354	RTU-K1	91.5	75.0	50.0	50.0	77
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	31.55	29.79	29.79	357	RTU-K2	--	75.0	50.0	50.0	128
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	30.96	29.2	29.2	358	RTU-D1	--	75.0	50.0	50.0	121
POR06 A	151972670.2	490234.4	4789822	7.5	310.0	21.63	19.87	19.87	359	RTU-CU	--	75.0	50.0	50.0	99
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	27.16	27.16	27.16	243	EF-3	81.6	100.0	100.0	100.0	86
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	25.05	23.29	23.29	244	AH01	88.3	75.0	50.0	50.0	93
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	25.99	24.23	24.23	245	AH02	76.7	75.0	50.0	50.0	113
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	26.59	-200	-200	253	VH01	81.6	100.0	--	--	119
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	26.85	26.85	26.85	254	VH07	81.6	100.0	100.0	100.0	73
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	25.56	25.56	25.56	257	MB01	--	50.0	50.0	50.0	67
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	31.51	31.51	31.51	258	VH08	81.6	100.0	100.0	100.0	67
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	34.44	-200	-200	261	VH12	81.6	100.0	--	--	89
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	34.04	-200	-200	262	VH14	81.6	100.0	--	--	77
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	25.33	25.33	25.33	266	VH06	81.6	100.0	100.0	100.0	80
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	34.37	-200	-200	267	VH13	81.6	100.0	--	--	83
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	37.76	-200	-200	297	WD01 O	118.0	16.0	--	--	96
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	29.5	-200	-200	299	WD02 C	81.1	66.0	--	--	84
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	14.97	-200	-200	300	WD01 C	81.1	49.0	--	--	84
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	36.79	-200	-200	301	VC01	104.2	25.0	--	--	98
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	36.2	-200	-200	303	VC02	104.2	25.0	--	--	71
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	32.24	32.24	32.24	313	VH09	81.6	100.0	100.0	100.0	69
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	33.59	33.59	33.59	314	VH10	81.6	100.0	100.0	100.0	75
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	29.76	29.76	29.76	315	VH16	81.6	100.0	100.0	100.0	73
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	33.96	33.96	33.96	316	VH11	81.6	100.0	100.0	100.0	94
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	29.87	29.87	29.87	322	MB02	--	50.0	50.0	50.0	66
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	25.89	-200	-200	344	VH02	81.6	100.0	--	--	103
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	26.51	-200	-200	345	VH03	81.6	100.0	--	--	119
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	27.52	-200	-200	346	VH04	81.6	100.0	--	--	95
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	31.07	-200	-200	347	VH05	81.6	100.0	--	--	90
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	23.89	23.89	23.89	348	VH18	81.6	100.0	100.0	100.0	76
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	27.29	27.29	27.29	349	VH17	81.6	100.0	100.0	100.0	72
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	33.75	33.75	33.75	350	VH15	81.6	100.0	100.0	100.0	68
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	23.03	-200	-200	351	VH21	81.6	100.0	--	--	90
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	22.92	22.92	22.92	352	VH20	81.6	100.0	100.0	100.0	74
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	23.9	23.9	23.9	353	VH19	81.6	100.0	100.0	100.0	71
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	36.21	34.45	34.45	354	RTU-K1	91.5	75.0	50.0	50.0	50
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	33.06	31.3	31.3	357	RTU-K2	--	75.0	50.0	50.0	100
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	27.52	25.76	25.76	358	RTU-D1	--	75.0	50.0	50.0	93
POR06 B	151981585.8	490263.2	4789825	1.5	310.0	21.41	19.65	19.65	359	RTU-CU	--	75.0	50.0	50.0	70
POR07 A	153121335.5	490051	4790274	4.5	312.5	15.32	15.32	15.32	243	EF-3	81.6	100.0	100.0	100.0	543
POR07 A	153121335.5	490051	4790274	4.5	312.5	20.98	19.22	19.22	244	AH01	88.3	75.0	50.0	50.0	540
POR07 A	153121335.5	490051	4790274	4.5	312.5	9.95	8.19	8.19	245	AH02	76.7	75.0	50.0	50.0	547
POR07 A	153121335.5	490051	4790274	4.5	312.5	5.52	-200	-200	253	VH01	81.6	100.0	--	--	568
POR07 A	153121335.5	490051	4790274	4.5	312.5	3.85	3.85	3.85	254	VH07	81.6	100.0	100.0	100.0	535
POR07 A	153121335.5	490051	4790274	4.5	312.5	14.14	14.14	14.14	257	MB01	--	50.0	50.0	50.0	523
POR07 A	153121335.5	490051	4790274	4.5	312.5	4.71	4.71	4.71	258	VH08	81.6	100.0	100.0	100.0	511
POR07 A	153121335.5	490051	4790274	4.5	312.5	12.36	-200	-200	261	VH12	81.6	100.0	--	--	554
POR07 A	153121335.5	490051	4790274	4.5	312.5	13.35	-200	-200	262	VH14	81.6	100.0	--	--	549
POR07 A	153121335.5	490051	4790274	4.5	312.5	3.7	3.7	3.7	266	VH06	81.6	100.0	100.0	100.0	540
POR07 A	153121335.5	490051	4790274	4.5	312.5	15.51	-200	-200	267	VH13	81.6	100.0	--	--	552
POR07 A	153121335.5	490051	4790274	4.5	312.5	21.22	-200	-200	297	WD01 O	118.0	16.0	--	--	536
POR07 A	153121335.5	490051	4790274	4.5	312.5	9.83	-200	-200	299	WD02 C	81.1	66.0	--	--	537
POR07 A	153121335.5	490051	4790274	4.5	312.5	0.63	-200	-200	300	WD01 C	81.1	49.0	--	--	530
POR07 A	153121335.5	490051	4790274	4.5	312.5	9.74	-200	-200	301	VC01	104.2	25.0	--	--	548
POR07 A	153121335.5	490051	4790274	4.5	312.5	12.05	-200	-200	303	VC02	104.2	25.0	--	--	522
POR07 A	153121335.5	490051	4790274	4.5	312.5	15.33	15.33	15.33	313	VH09	81.6	100.0	100.0	100.0	530
POR07 A	153121335.5	490051	4790274	4.5	312.5	12.56	12.56	12.56	314	VH10	81.6	100.0	100.0	100.0	515
POR07 A	153121335.5	490051	4790274	4.5	312.5	15.66	15.66	15.66	315	VH16	81.6	100.0	100.0	100.0	517
POR07 A	153121335.5	490051	4790274	4.5	312.5	12.24	12.24	12.24	316	VH11	81.6	100.0	100.0	100.0	557
POR07 A	153121335.5	490051	4790274	4.5	312.5	14.08	14.08	14.08	322	MB02	--	50.0	50.0	50.0	517
POR07 A	153121335.5	490051	4790274	4.5	312.5	5.34	-200	-200	344	VH02	81.6	100.0	--	--	561
POR07 A	153121335.5	490051	4790274	4.5	312.5	8.19	-200	-200	345	VH03	81.6	100.0	--	--	568
POR07 A	153121335.5	490051	4790274	4.5	312.5	5.84	-200	-200	346	VH04	81.6	100.0	--	--	560
POR07 A	153121335.5	490051	4790274	4.5	312.5	6.13	-200	-200	347	VH05	81.6	100.0	--	--	557
POR07 A	153121335.5	490051	4790274	4.5	312.5	15.28	15.28	15.28	348	VH18	81.6	100.0	100.0	100.0	499
POR07 A	153121335.5	490051	4790274	4.5	312.5	15.65	15.65	15.65	349	VH17	81.6	100.0	100.0	100.0	517
POR07 A	153121335.5	490051	4790274	4.5	312.5	15.58	15.58	15.58	350	VH15	81.6	100.0</			



Table 2 - Point of Reception Noise Impact

Receptor ID	Receptor Coordinates				Predicted SPL (dBA)			Predictor Source ID	Source ID	PWL (dBA)	Time Correction (%)			Source/Receptor Distance (m)	
	X (m)	Y (m)	Height	Ground Elevation	Daytime	Evening	Nighttime				Day	Evening	Night		
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	13.79	-200	-200	267	VH13	81.6	100.0	--	--	520
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	20.95	-200	-200	297	WD01 O	118.0	16.0	--	--	504
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	9.29	-200	-200	299	WD02 C	81.1	66.0	--	--	506
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	0.62	-200	-200	300	WD01 C	81.1	49.0	--	--	499
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	9.17	-200	-200	301	VC01	104.2	25.0	--	--	517
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	11.38	-200	-200	303	VC02	104.2	25.0	--	--	491
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	13.59	13.59	13.59	313	VH09	81.6	100.0	100.0	100.0	498
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	11.63	11.63	11.63	314	VH10	81.6	100.0	100.0	100.0	484
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	13.97	13.97	13.97	315	VH16	81.6	100.0	100.0	100.0	479
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	11.41	11.41	11.41	316	VH11	81.6	100.0	100.0	100.0	525
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	9.73	9.73	9.73	322	MB02	--	50.0	50.0	50.0	485
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	4.89	-200	-200	344	VH02	81.6	100.0	--	--	530
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	8.26	-200	-200	345	VH03	81.6	100.0	--	--	537
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	5.78	-200	-200	346	VH04	81.6	100.0	--	--	528
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	5.78	-200	-200	347	VH05	81.6	100.0	--	--	526
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	13.76	13.76	13.76	348	VH18	81.6	100.0	100.0	100.0	467
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	13.96	13.96	13.96	349	VH17	81.6	100.0	100.0	100.0	485
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	13.87	13.87	13.87	350	VH15	81.6	100.0	100.0	100.0	474
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	13.09	-200	-200	351	VH21	81.6	100.0	--	--	508
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	13.32	13.32	13.32	352	VH20	81.6	100.0	100.0	100.0	473
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	13.52	13.52	13.52	353	VH19	81.6	100.0	100.0	100.0	468
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	22.07	20.31	20.31	354	RTU-K1	91.5	75.0	50.0	50.0	465
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	14.15	12.39	12.39	357	RTU-K2	--	75.0	50.0	50.0	528
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	14.11	12.35	12.35	358	RTU-D1	--	75.0	50.0	50.0	514
POR07 B	151632465.9	490069.7	4790249	1.5	309.4	2.46	0.7	0.7	359	RTU-CU	--	75.0	50.0	50.0	480



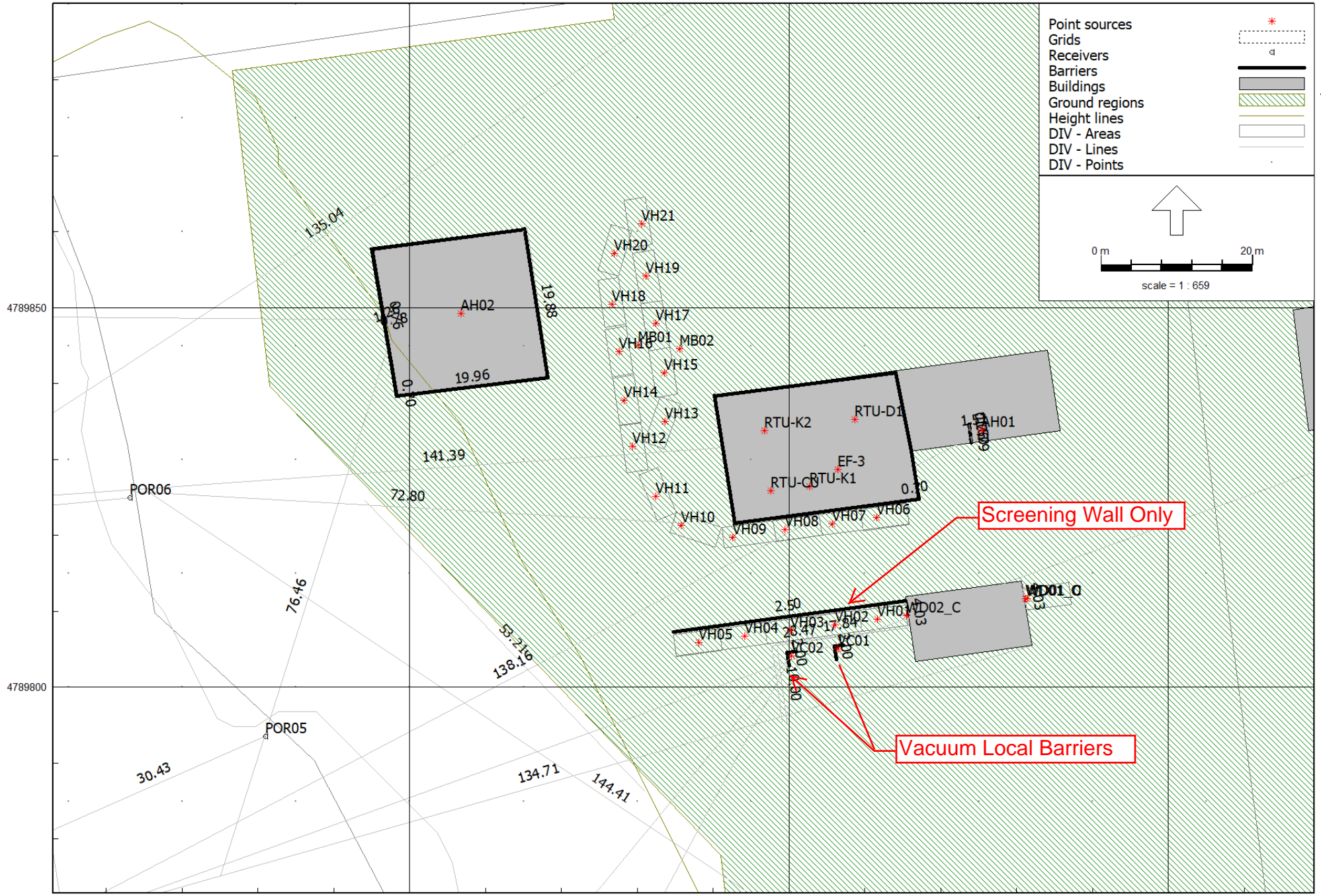
Table 3 - Acoustic Assessment Summary - Vacuum Barrier

Point of Reception ID	Point of Reception Information					Noise Characteristic	Noise Level Limits			Predicted Impacts			Verified by Acoustic Audit (Yes or No)	Compliant with Limit?
	Description	UTM Easting	UTM Northing	Height POW	Height OLA		Daytime (dBA)	Evening (dBA)	Nighttime (dBA)	Daytime (dBA)	Evening (dBA)	Nighttime (dBA)		
POR01_A	Window	490710	4790024	4.5	-	Steady State Leq	50	50	45	48	34	34	N	Yes
POR01_B	Outdoor Living Area	490691	4790014	-	1.5	Steady State Leq	50	45	-	48	32	-	N	Yes
POR02_A	Window	490779	4789924	4.5	-	Steady State Leq	50	50	45	46	32	32	N	Yes
POR02_B	Outdoor Living Area	490748	4789918	-	1.5	Steady State Leq	50	45	-	47	30	-	N	Yes
POR03_A	Window	490254	4789703	4.5	-	Steady State Leq	45	40	40	44	40	40	N	Yes
POR03_B	Outdoor Living Area	490279	4789719	-	1.5	Steady State Leq	45	40	-	45	40	-	N	Yes
POR04_A	Window	490230	4789726	1.5	-	Steady State Leq	45	40	40	42	38	38	N	Yes
POR04_B	Outdoor Living Area	490259	4789737	-	1.5	Steady State Leq	45	40	-	44	40	-	N	Yes
POR05_A	Window	490253	4789781	7.5	-	Steady State Leq	50	50	45	50	44	44	N	Yes
POR05_B	Outdoor Living Area	490281	4789794	-	1.5	Steady State Leq	50	45	-	49	45	-	N	Yes
POR06_A	Window	490234	4789822	7.5	-	Steady State Leq	50	50	45	48	43	43	N	Yes
POR06_B	Outdoor Living Area	490263	4789825	-	1.5	Steady State Leq	50	45	-	47	43	-	N	Yes
POR07_A	Window	490051	4790274	4.5	-	Steady State Leq	45	40	40	30	28	28	N	Yes
POR07_B	Outdoor Living Area	490070	4790249	-	1.5	Steady State Leq	45	40	-	29	26	-	N	Yes

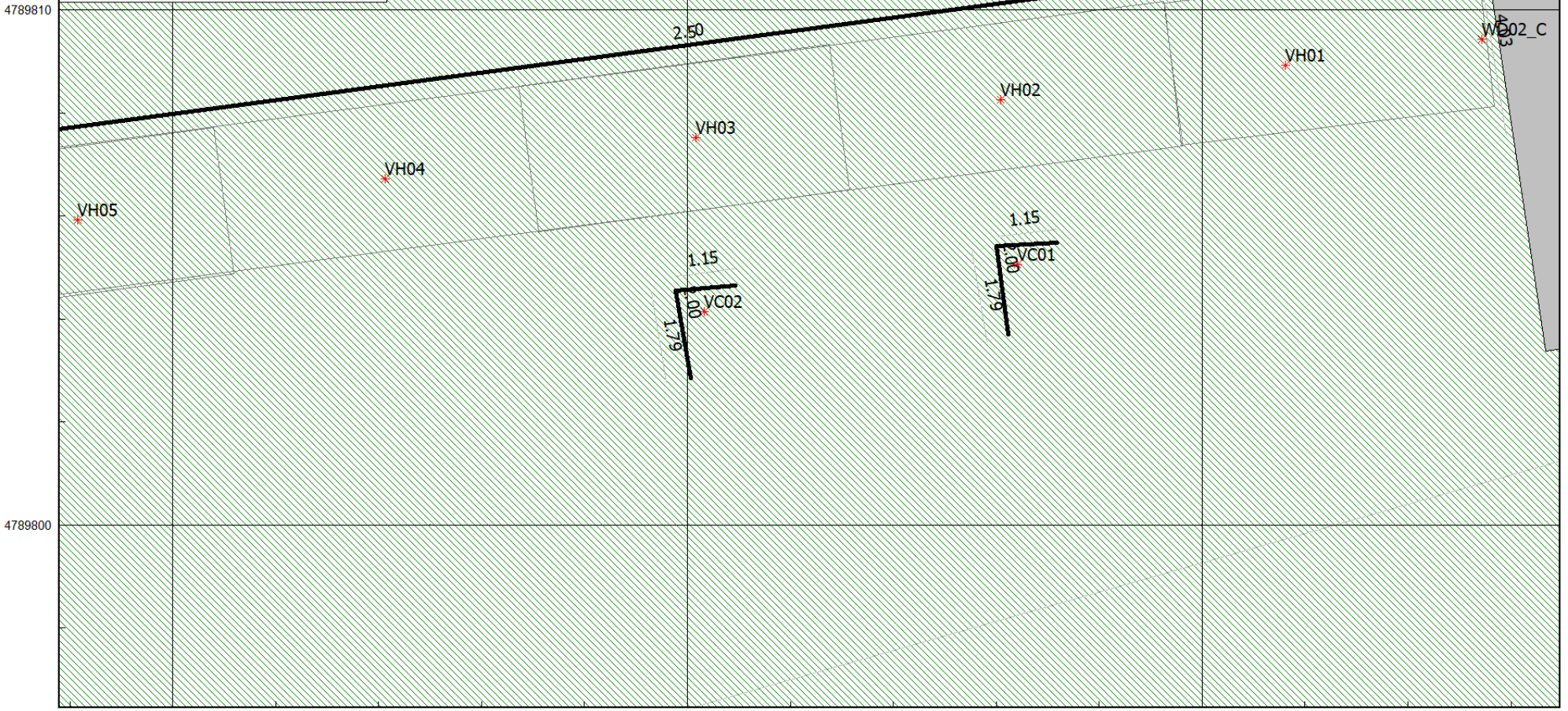
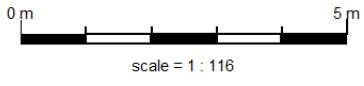



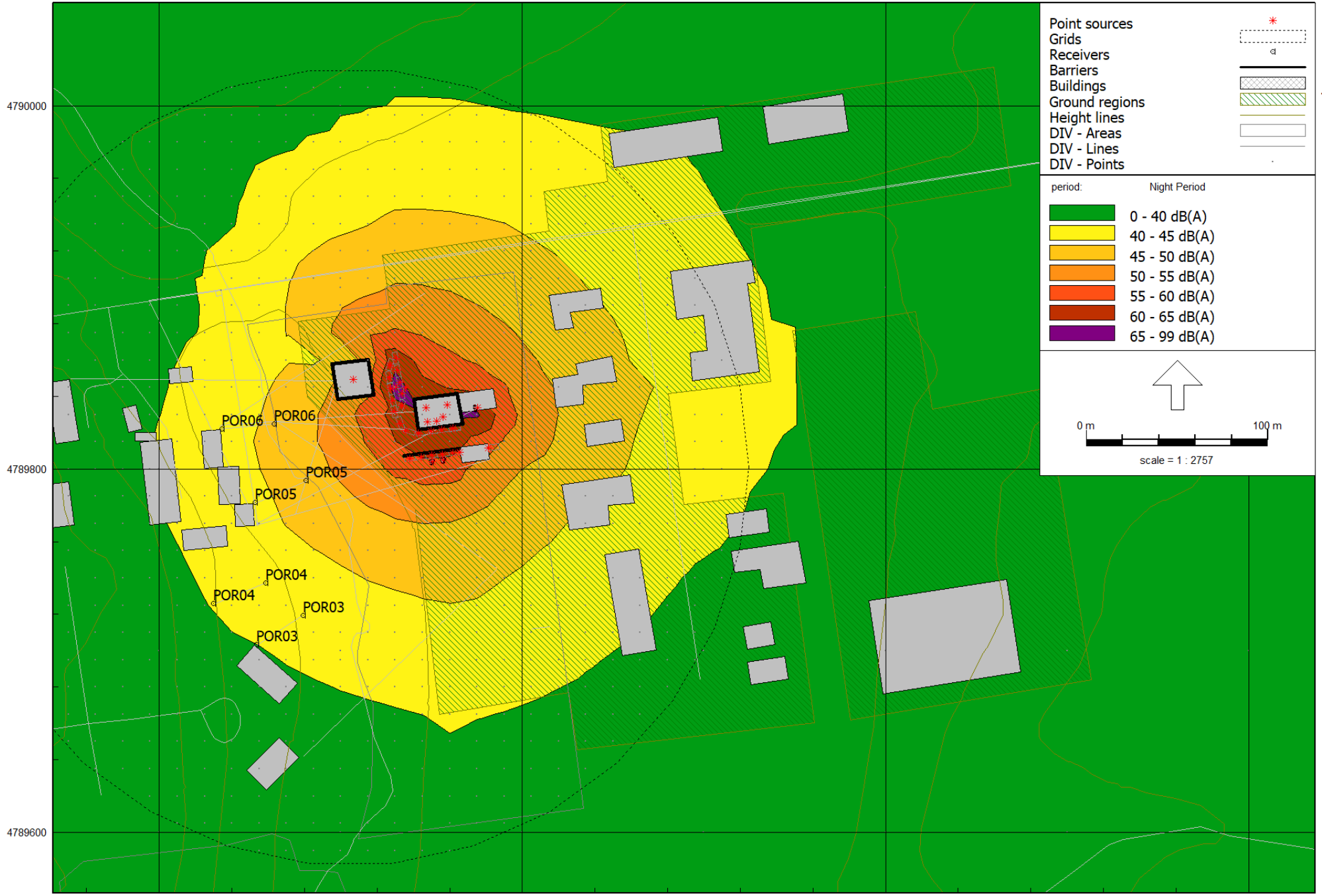
Table 3B - Acoustic Assessment Summary - With Optional lower noise Vacuum

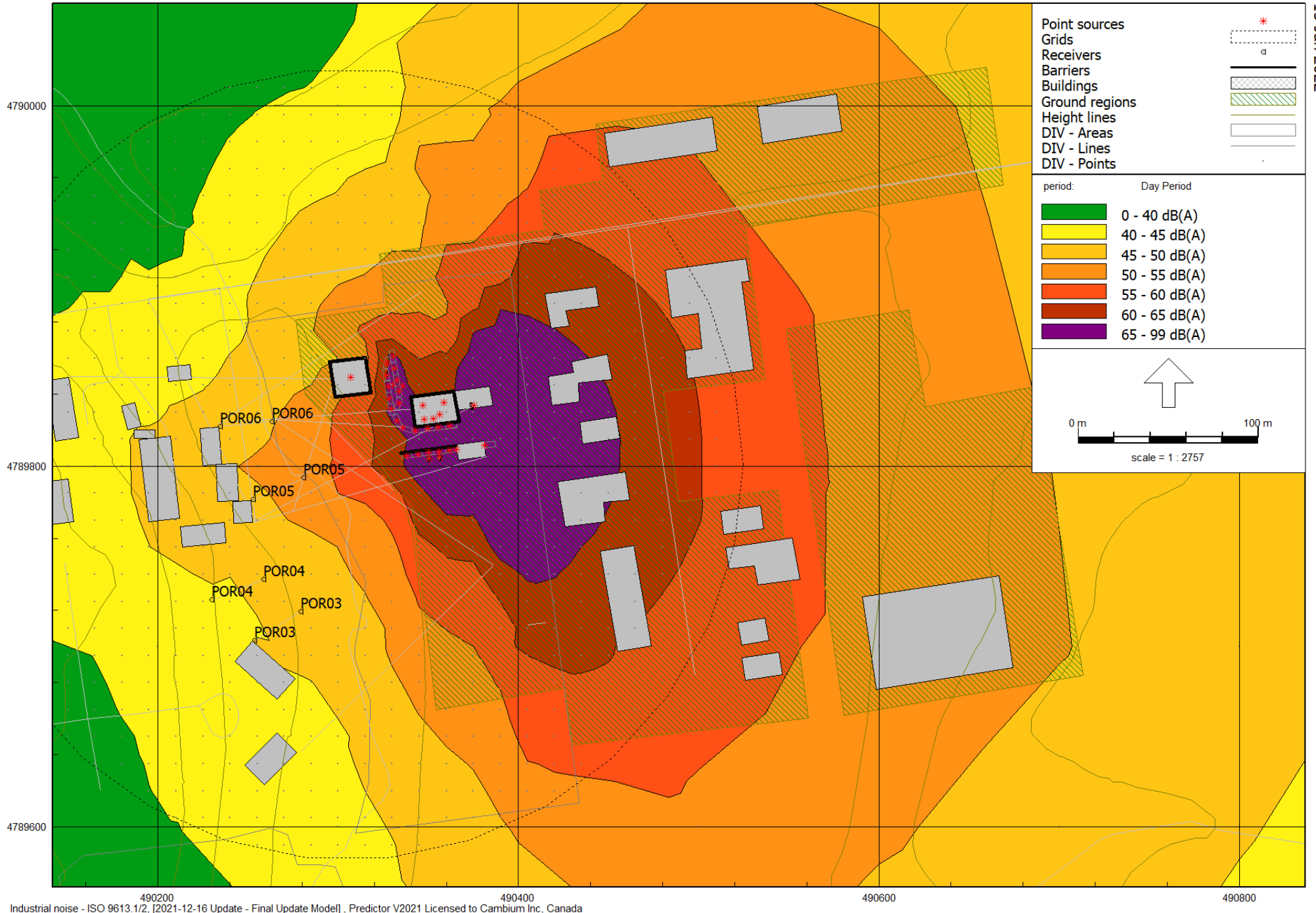
Point of Reception ID	Point of Reception Information					Noise Characteristic	Noise Level Limits			Predicted Impacts			Verified by Acoustic Audit (Yes or No)	Compliant with Limit?
	Description	UTM Easting	UTM Northing	Height POW	Height OLA		Daytime (dBA)	Evening (dBA)	Nighttime (dBA)	Daytime (dBA)	Evening (dBA)	Nighttime (dBA)		
POR01_A	Window	490710	4790024	4.5	-	Steady State Leq	50	50	45	47	32	32	N	Yes
POR01_B	Outdoor Living Area	490691	4790014	-	1.5	Steady State Leq	50	45	-	47	31	-	N	Yes
POR02_A	Window	490779	4789924	4.5	-	Steady State Leq	50	50	45	46	31	31	N	Yes
POR02_B	Outdoor Living Area	490748	4789918	-	1.5	Steady State Leq	50	45	-	46	29	-	N	Yes
POR03_A	Window	490254	4789703	4.5	-	Steady State Leq	45	40	40	44	39	39	N	Yes
POR03_B	Outdoor Living Area	490279	4789719	-	1.5	Steady State Leq	45	40	-	45	39	-	N	Yes
POR04_A	Window	490230	4789726	1.5	-	Steady State Leq	45	40	40	43	38	38	N	Yes
POR04_B	Outdoor Living Area	490259	4789737	-	1.5	Steady State Leq	45	40	-	45	39	-	N	Yes
POR05_A	Window	490253	4789781	7.5	-	Steady State Leq	50	50	45	48	43	43	N	Yes
POR05_B	Outdoor Living Area	490281	4789794	-	1.5	Steady State Leq	50	45	-	50	44	-	N	Yes
POR06_A	Window	490234	4789822	7.5	-	Steady State Leq	50	50	45	47	42	42	N	Yes
POR06_B	Outdoor Living Area	490263	4789825	-	1.5	Steady State Leq	50	45	-	46	42	-	N	Yes
POR07_A	Window	490051	4790274	4.5	-	Steady State Leq	45	40	40	29	27	27	N	Yes
POR07_B	Outdoor Living Area	490070	4790249	-	1.5	Steady State Leq	45	40	-	28	26	-	N	Yes



Point sources *
Grids □
Receivers □
Barriers —
Buildings ■
Ground regions ▨
Height lines —
DIV - Areas □
DIV - Lines —
DIV - Points *









Point Source Sound Power Level Calculations

$$L_w = L_p + 20 \log(r) + 11 - 10 \log(Q)$$

$$L_p(\text{total}) = 10 \log(10(L_p(31\text{Hz})/10) + 10(L_p(63\text{Hz})/10) + \dots + 10(L_p(8\text{kHz})/10))$$

r is distance measurement was taken, Q is directivity index, t is operating time

File Name	Source ID	Source Description	Source Directionality	Operating Condition	Horizontal Measurement Distance (m)	SLM Height (m)	Source Height (m)	Total Measurement Distance (m)	Measurement Directionality (deg)	Source To Receptor Directionality (deg)	Directivity Factor (Q)	Tonal (Yes/No)	Octave Band (Hz)									
													63	125	250	500	1000	2000	4000	8000	Total	
Specs05	MB01	Menu Board, HME Electronics Inc.	None	Steady State	1.2192	0	0	1.22	N/A	N/A	2	No	Defined SPL (dBA)	0.00	0.00	0.00	72.00	0.00	0.00	0.00	0.00	72.00
													Calculated PWL (dBA)	9.71	9.71	9.71	81.71	9.71	9.71	9.71	9.71	81.71
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	-	-	-	81.71	-	-	-	-	81.71
Specs06	VH01	Reference to US Dept. of Transportation	None	Steady State	0	0	0	0	N/A	N/A	0	No	Defined PWL (dBA)	65.80	73.90	77.40	72.80	72.00	72.20	69.00	56.90	81.56
													Calculated PWL (dBA)	65.80	73.90	77.40	72.80	72.00	72.20	69.00	56.90	81.56
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	65.80	73.90	77.40	72.80	72.00	72.20	69.00	56.90	81.56
L_00082	WD01_O	Auto Wash Door - Open	None	Steady State	15	1.5	1.5	15	N/A	N/A	2	No	Measured SPL (dB)	68.61	68.19	65.46	63.39	62.28	59.28	55.27	51.82	73.54
													Calculated PWL (dBA)	74.12	83.70	87.97	91.90	93.79	91.79	87.78	82.33	98.52
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	74.12	83.70	87.97	91.90	93.79	91.79	87.78	82.33	98.52
Specs07	EF03	Cook CPA, 2500 cfm	None	Steady State	0	0	0	0	N/A	N/A	0	No	Defined PWL (dB)	85.00	80.00	84.00	79.00	75.00	74.00	67.00	59.00	89.08
													Calculated PWL (dBA)	59.00	64.00	75.00	76.00	75.00	75.00	68.00	58.00	81.61
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	59.00	64.00	75.00	76.00	75.00	75.00	68.00	58.00	81.61
Specs08	AH01	Lennox, LGH092	None	Steady State	0	0	0	0	N/A	N/A	0	No	Defined PWL (dBA)	0.00	76.00	79.00	84.00	83.00	79.00	73.00	66.00	88.28
													Calculated PWL (dBA)	0.00	76.00	79.00	84.00	83.00	79.00	73.00	66.00	88.28
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	0.00	76.00	79.00	84.00	83.00	79.00	73.00	66.00	88.28
L_00084	WD01_C	Area Scan Garage door open with Compressor	None	Steady State	0	0	0	0	N/A	N/A	0	No	Measured SPL (dB)	75.66	76.15	72.69	71.57	66.82	67.06	65.11	57.56	80.96
													Calculated PWL (dBA)	-	-	-	-	-	-	-	-	-
													Msmnt Directionality Correction (dB)	-	-	-	-	-	-	-	-	-
													Receptor Directionality Correction (dB)	-	-	-	-	-	-	-	-	-
													Applied PWL with Penalties (dBA)	-	-	-	-	-	-	-	-	-
L_00085	WD01_C	Area Scan Door closed with Compressor	None	Steady State	0	0	0	0	N/A	N/A	0	No	Measured SPL (dB)	65.94	65.72	58.69	52.38	50.10	44.79	37.53	26.71	69.40
													Calculated PWL (dBA)	-	-	-	-	-	-	-	-	-
													Msmnt Directionality Correction (dB)	-	-	-	-	-	-	-	-	-
													Receptor Directionality Correction (dB)	-	-	-	-	-	-	-	-	-
													Applied PWL with Penalties (dBA)	-	-	-	-	-	-	-	-	-
Specs10	RTU-K1	York ZJ180	None	Steady State	0	0	0	0	N/A	N/A	0	No	Measured SPL (dB)	4.77	4.77	4.77	4.77	4.77	4.77	4.77	4.77	13.80
													Manufacturer PWL (dB)	90.00	93.00	91.00	89.00	86.00	83.00	80.00	75.00	97.62
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	64.00	77.00	82.00	86.00	86.00	84.00	81.00	74.00	91.49
Specs11	RTU-K2	York ZJ049	None	Steady State	0	0	0	0	N/A	N/A	0	No	Measured SPL (dB)	4.77	4.77	4.77	4.77	4.77	4.77	4.77	4.77	13.80
													Manufacturer PWL (dB)	0.00	88.00	82.50	81.50	78.00	73.00	69.00	62.00	90.18
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	0.00	72.00	73.50	78.50	78.00	74.00	70.00	61.00	83.19
Specs12	RTU-D1	York ZJ150	None	Steady State	0	0	0	0	N/A	N/A	0	No	Measured SPL (dB)	4.77	4.77	4.77	4.77	4.77	4.77	4.77	4.77	13.80
													Manufacturer PWL (dB)	0.00	90.00	84.50	81.50	77.50	72.00	68.50	61.50	91.77
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	0.00	74.00	75.50	78.50	77.50	73.00	69.50	60.50	83.38



Point Source Sound Power Level Calculations

$$L_w = L_p + 20 \log(r) + 11 - 10 \log(Q)$$

$$L_p(\text{total}) = 10 \log(10(L_p(31\text{Hz})/10) + 10(L_p(63\text{Hz})/10) + \dots + 10(L_p(8\text{kHz})/10))$$

r is distance measurement was taken, *Q* is directivity index, *t* is operating time

File Name	Source ID	Source Description	Source Directionality	Operating Condition	Horizontal Measurement Distance (m)	SLM Height (m)	Source Height (m)	Total Measurement Distance (m)	Measurement Directionality (deg)	Source To Receptor Directionality (deg)	Directivity Factor (Q)	Tonal (Yes/No)	Octave Band (Hz)									
													63	125	250	500	1000	2000	4000	8000	Total	
Specs19	VC01	2 Motor Vac - Small Dome Model VS-11	None	Steady State	10	1.75	1.75	10	N/A	N/A	2	No	Measured SPL (dB)	63.05	63.13	59.59	65.03	67.58	70.58	70.53	68.46	76.40
													Calculated PWL (dBA)	65.04	75.12	78.58	90.02	95.57	99.57	99.52	95.45	104.19
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	65.04	75.12	78.58	90.02	95.57	99.57	99.52	95.45	104.19
Specs 21	WD01_O	Dryer blower	None	Steady State	10	3	3	10	N/A	N/A	2	No	Measured SPL (dBA)	50.85	60.93	64.39	75.83	81.38	85.38	85.33	81.26	90.00
													Calculated PWL (dBA)	78.84	88.92	92.38	103.82	109.37	113.37	113.32	109.25	117.99
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	78.84	88.92	92.38	103.82	109.37	113.37	113.32	109.25	117.99
0	RTU-CU	MAC-8 Condenser	None	Steady State	1	1.5	1.5	1	N/A	N/A	2	No	Measured SPL (dB)	0.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00	65.00
													Calculated PWL (dBA)	-18.01	-8.01	-1.01	4.99	72.99	8.99	8.99	6.99	72.99
													Msmnt Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Receptor Directionality Correction (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													Applied PWL with Penalties (dBA)	-18.01	-8.01	-1.01	4.99	72.99	8.99	8.99	6.99	72.99



TECHNICAL GUIDE

R-410A ZJ/ZR/ZF SERIES 15 - 25 TON 60 Hertz



ZJ/ZR Shown

Description

YORK® ZJ Series Sunline Magnum™ /ZR Series MagnaDRY™/ZF Series Sunline™ units are convertible single package high efficiency rooftops. All models have independent refrigeration circuits for efficient part load operation.

Although the units are primarily designed for curb mounting on a roof, they can also be mounted at ground level or set on steel beams above a finished roof.

All ZJ/ZR/ZF units are self-contained and assembled on rigid full perimeter base rails allowing for overhead rigging. Every unit is completely charged, wired, piped, and tested at the factory to provide a quick and easy field installation.

All models (including those with an economizer) are convertible between bottom and horizontal duct connections.

ZJ/ZR/ZF units are available in the following configurations: cooling only, cooling with electric heat, and cooling with gas heat. Electric heaters are available as field-installed accessory only.

Tested in accordance with:



Indoor Blower Specifications

180 (15)	ZR	5	1725	0.89	1.15	184T	5.2 - 6.4	1 1/8	1VP65	10.4	1	BK110	BX83
		7.5	1725	0.91	1.15	213T	5.2 - 6.4	1 3/8	1VP65	8.4	1	BK090	BX81
240 (20)	ZR	7.5	1725	0.91	1.15	213T	4.2 - 5.5	1 3/8	1VP60	10.4	1 3/16	BK110	BX78
		10	1725	0.89	1.15	215T	4.2 - 5.5	1 3/8	1VP60	8.4	1 3/16	BK090	BX75
300 (25)	ZR	7.5	1725	0.91	1.15	213T	4.2 - 5.5	1 3/8	1VP60	9.5	1 7/16	1B5V94	BX78
		10	1725	0.89	1.15	215T	5.8 - 7.0	1 3/8	1VP75X	11.1	1 7/16	1B5V110	5VX840
		15	1725	0.91	1.15	254T	6.2 - 7.4	1 5/8	1VP75X	9.5	1 7/16	1B5V94	5VX860

Power Exhaust Specifications

Voltage	Motor			Motor			CFM @ 0.2 ESP
	HP	RPM ¹	QTY	LRA	FLA	MCA	
208/230-1-60	3/4	1075	1	7.7	5.0	6.25	5250
460-1-60	3/4	1075	1	4.1	2.2	2.75	5250
575-1-60	3/4	1050	1	2.84	1.5	1.875	5250

1. Motors are multi-tapped and factory wired for high speed.

Electric Heat Multipliers

Voltage		kW Capacity Multipliers ¹
Nominal	Applied	
240	208	0.75
	230	0.92
480	460	0.92
	575	0.92

1. Electric heaters are rated at nominal voltage. Use this table to determine the electric heat capacity for heaters applied at lower voltages.

Sound Performance

ZJ/ZR/ZF Indoor Sound Power Levels

Size (Tons)	CFM	ESP (IWG)	Blower		Sound Power, dB (10 ⁻¹²) Watts								
					Sound Rating ¹ dB (A)	Octave Band Centerline Frequency (Hz)							
			RPM	BHP		63	125	250	500	1000	2000	4000	8000
180 (15)	6000	1.0	1,080	4.6	91	88	90	90	87	85	81	81	76
210 (17.5)	7000	1.0	940	5.1	85	84	84	82	81	81	77	74	69
240 (20)	8000	1.0	1,020	6.6	86	85	85	83	82	82	78	75	70
300 (25)	10000	1.3	1,160	12.5	92	91	91	89	88	88	84	81	76

1. These values have been accessed using a model of sound propagation from a point source into the hemispheric/free field. The dBA values provided are to be used for reference only. Calculation of dBA values cover matters of system design and the fan manufacturer has no way of knowing the details of each system. This constitutes an exception to any specification or guarantee requiring a dBA value of sound data in any other form than sound power level ratings.

ZJ/ZR/ZF Outdoor Sound Power Levels

Size (Tons)	Sound Rating ¹ dB (A)	Sound Power, dB (10 ⁻¹²) Watts							
		Octave Band Centerline Frequency (Hz)							
		63	125	250	500	1000	2000	4000	8000
180 (15)	92	90	93	91	89	86	83	80	75
210 (17.5)	92	91	94	92	89	86	83	81	76
240 (20)	92	91	94	92	89	87	83	81	76
300 (25)	92	92	95	93	89	87	84	81	77

1. Rated in accordance with AHRI 270 standard.



Heating and Air Conditioning TECHNICAL GUIDE

R-410A ZH/ZJ SERIES 3 - 12-1/2 TON 60 Hertz



ZH/ZJ 3 THROUGH 10 TON



ZH 12-1/2 TON



ZJ 12-1/2 TON

PREDATOR[®]

Description

ASHRAE 90.1 COMPLIANT

YORK[®] Predator[®] units are convertible single packages with a common footprint cabinet and common roof curb for all 3 through 12-1/2 ton models. All 6-1/2 through 12-1/2 ton units have two compressors with independent refrigeration circuits to provide 2 stages of cooling. The units were designed for light commercial applications and can be easily installed on a roof curb, slab, or frame.

All Predator[®] units are self-contained and assembled on rigid full perimeter base rails allowing for 3-way forklift access and overhead rigging. Every unit is completely charged, wired, piped, and tested at the factory to provide a quick and easy field installation.

All units are convertible between side and down airflow. Independent economizer designs are used on side and down discharge applications, as well as all tonnage sizes.

Predator[®] units are available in the following configurations: cooling only, cooling with electric heat, and cooling with gas heat. Electric heaters are available as factory-installed options or field-installed accessories.

All units provide constant supply air volume. A variable air volume (VAV) option, featuring a variable frequency drive, is available on 6-1/2 through 12-1/2 ton models only.

Tested in accordance with:



ARI Standard 340/360
Commercial and Industrial Unitary
Air Conditioning Equipment



Sound Performance

Indoor Sound Power Levels

Size (Tons)	Model	CFM	ESP (IWG)	Blower		Sound Power, dB (10^{-12}) Watts								
				RPM	BHP	Sound Rating ¹ dB (A)	Octave Band Centerline Frequency (Hz)							
							63	125	250	500	1000	2000	4000	8000
078 (6.5)	ZH/ZJ	2600	0.6	812	1.14	74	71	73	73	71	69	65	65	60
090 (7.5)	ZH/ZJ	3000	0.6	854	1.47	77	74	76	76	74	72	68	68	63
102 (8.5)	ZH/ZJ	3400	0.6	872	1.65	80	77	79	79	77	75	71	71	66
120 (10)	ZH/ZJ	4000	0.6	959	2.29	83	80	82	82	80	78	74	74	69
150 (12.5)	ZH/ZJ	5000	0.6	1132	3.74	87	84	86	86	84	82	78	78	73

1. These values have been accessed using a model of sound propagation from a point source into the hemispheric/free field. The dBA values provided are to be used for reference only. Calculation of dBA values cover matters of system design and the fan manufacture has no way of knowing the details of each system. This constitutes an exception to any specification or guarantee requiring a dBA value of sound data in any other form than sound power level ratings.

Outdoor Sound Power Levels

ZH/ZJ078-150

Size (Tons)	Model	Sound Rating ¹ dB (A)	Octave Band Centerline Frequency (Hz)						
			125	250	500	1000	2000	4000	8000
078 (6.5)	ZH	83	88.0	82.5	81.5	78.0	73.0	69.0	62.0
090 (7.5)	ZH	83	89.5	83.5	82.0	78.0	72.5	68.0	60.5
102 (8.5)	ZH	90	93.5	92.5	88.0	84.5	79.0	74.5	68.0
120 (10)	ZH	90	94.0	92.0	88.5	84.5	80.0	75.5	68.5
150 (12.5)	ZH	84	90.0	84.5	81.5	77.5	72.0	68.5	61.5
078 (6.5)	ZJ	83	88.0	82.5	81.5	78.0	73.0	69.0	62.0
090 (7.5)	ZJ	83	89.5	83.5	82.0	78.0	72.5	68.0	60.5
102 (8.5)	ZJ	83	89.0	84.5	81.5	78.0	72.5	68.5	70.5
120 (10)	ZJ	83	89.5	83.5	81.0	78.0	72.0	68.5	70.5
150 (12.5)	ZJ	84	90.0	84.5	81.5	77.5	72.0	68.5	61.5

1. Rated in accordance with ARI 270 standard.

Calculated Sound Levels at Typical Distances

- 1) All calculations based on data obtained from testing on standard VS-11 vacuum models with metal domes and AS7-SS Tire Inflator to assume a worst case scenario.
- 2) Calculations assume an open field condition on a reflective surface (i.e. concrete). Nearby reflective surfaces such as walls may affect actual sound levels.
- 3) Data is to be used as an approximation only. Actual sound levels may vary based on environmental and site-related conditions.

2 Motor Vac - Small Dome Model VS-11						
Wide Open With Attachment	Distance From Vac in Feet					
	10	20	30	40	50	60
Sound Level (dB)	76.4	70.4	66.9	64.4	62.4	60.9
Sealed Attachment	Distance From Vac in Feet					
	10	20	30	40	50	60
Sound Level (dB)	80.5	74.5	71.0	68.5	66.5	64.9

Twin cylinder Tire Inflator Model AS7-SS						
Wide Open With Attachment	Distance From Vac in Feet					
	10	20	30	40	50	60
Sound Level (dB)	66.0	59.0	54.0	48.0	45.0	43.0
Sealed Attachment	Distance From Vac in Feet					
	10	20	30	40	50	60
Sound Level (dB)	71.0	68.0	63.0	58.0	55.0	50.0

Trevor Copeland

Subject: FW: 752 Queen st - Noise Study (10699-001) - Dryer

From: Yao Zhang <macula2002@msn.com>

Sent: December-15-21 4:10 PM

To: Trevor Copeland <TREVOR.COPELAND@cambium-inc.com>; Joshua Salama-Frakes <jsalamafrakes@blueprint2build.com>; Trevor Ross <TREVOR.ROSS@cambium-inc.com>

Cc: Simon Jones <sjones@blueprint2build.com>; Anthony Vergalito <anthonyvergalito@hotmail.com>; Neil Martin <accounts@blueprint2build.com>

Subject: Re: 752 Queen st - Noise Study (10699-001) - Dryer

Sorry Trevor,

It's a 4 x dryer system.

Not 3.

Thanks,

Yao

From: Yao Zhang <macula2002@msn.com>

Sent: December 15, 2021 4:05 PM

To: Trevor Copeland <TREVOR.COPELAND@cambium-inc.com>; Joshua Salama-Frakes <jsalamafrakes@blueprint2build.com>; Trevor Ross <TREVOR.ROSS@cambium-inc.com>

Cc: Simon Jones <sjones@blueprint2build.com>; Anthony Vergalito <anthonyvergalito@hotmail.com>; Neil Martin <accounts@blueprint2build.com>

Subject: Re: 752 Queen st - Noise Study (10699-001) - Dryer

Hi Trevor,

Please see the noise reading in the image below.

We are having a 3 motor dryer system setup.

Environmental Noise with Dryer OFF: 70 dba

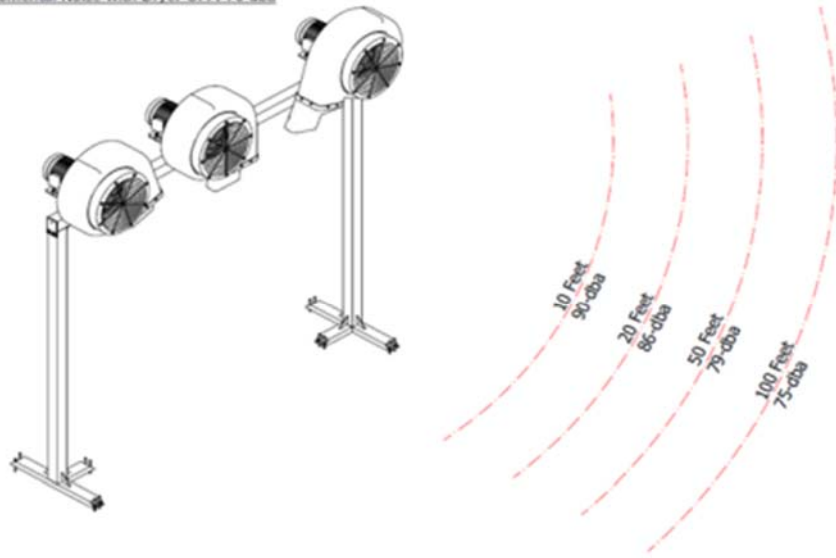


Figure 15. Dryer Noise DBA Reading

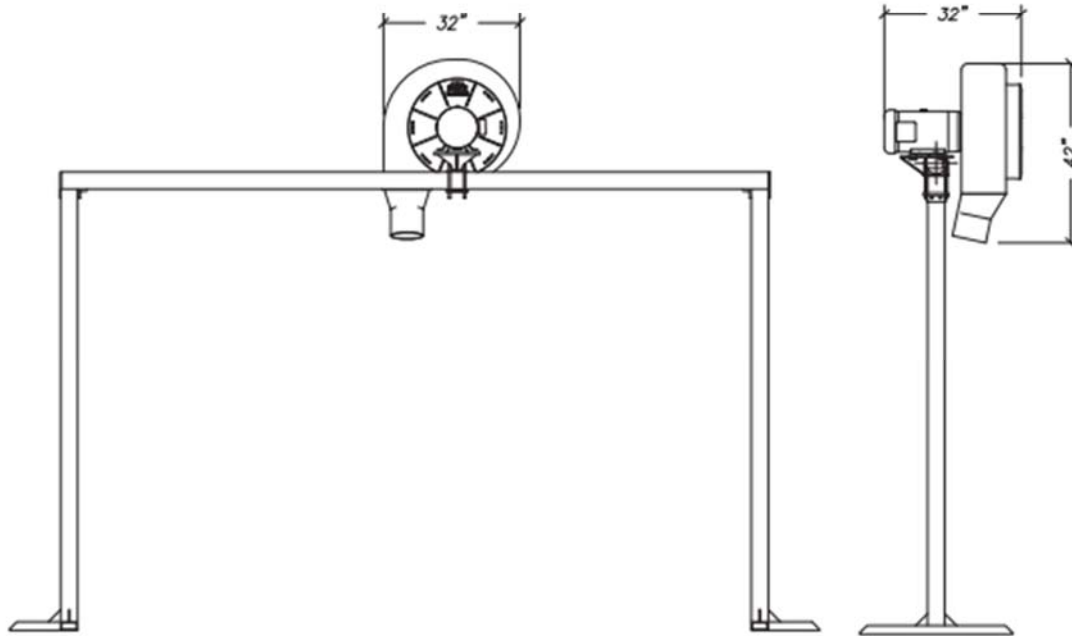


Figure 16. Producer Dimensions