



July 11, 2019

Reference No. 11148856

Ms. Shelley Wells
Plan Wells Associates
40 Connor Avenue
Collingwood, Ontario
L9Y 5K6

Dear Ms. Wells:

**Re: Road Traffic and Stationary Noise Impact Study
Proposed Residential Development – 295 Mountain Road, Collingwood, Ontario**

1. Introduction

GHD was retained by Ted North (295 Mountain Road) Ltd. (Applicant) to complete a Road Traffic and Stationary Noise Impact Study (Study) in support of the proposed residential development (Development) located at 295 Mountain Road, Collingwood, Ontario (Site).

The Development will consist of detached houses (up to 6 m height), townhouses (up to 12 m height), stacked townhouses (up to 15 m height), and four apartment buildings (up to 18 m height). GHD has evaluated noise impacts for residents and minimum design requirements to ensure that the noise sensitive spaces of the buildings meet the Ministry of the Environment, Conservation, and Parks (MECP) land use planning guidelines and requirements.

This Study has determined that the stationary noise impact from the nearby industrial facilities may be significant; however, these facilities are legally required to show compliance with the MECP the NPC-300 requirements at the Site due to the associated Environmental Compliance Approvals (ECA) for each Facility regulating the off-site air and noise emissions. For facilities without ECAs, noise modelling software was used to predict the noise impact at the Development.

This Study has also determined that the potential environmental noise impact from road traffic is significant. The proposed development will require noise barriers, upgraded building exterior components, installation of central air conditioning, and noise warning clauses to meet the applicable noise criteria. Noise control requirements for the Site were based on road volumes forecast to the year 2030. Based on site observations and the nature of the surrounding land uses vibration impacts to the development were deemed to be insignificant and not assessed.

The Study was prepared consistent with MECP NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning", August 2013.



The following attachments were included in support of this Study:

- Attachment A – Key Plan and Zoning Information
- Attachment B – Noise Modelling Results and Noise Control Recommendations
- Attachment C – Traffic Data, STAMSON Calculations, and STAMSON Receiver Location Figure
- Attachment D - MECP ECA Approvals for Adjacent Land Uses
- Attachment E – Stationary Noise Modelling Results and Figures

2. Land Development and Site Conditions

The Development will include detached houses (up to 6 m height), townhouses (up to 12 m height), stacked townhouses (up to 15 m height), and four apartment buildings (up to 18 m height). The Development will include a park at the north edge of the Site as well as potential amenity areas on the rooftops of the four apartment buildings -in addition to the large OLA park space provided for these buildings. There are two significant roadways abutting the East and South sides of the Site: Mountain Road, and Tenth Line. A site plan is provided in Attachment A as Figure A.1.

The properties surrounding the Site are residential- and commercial-zoned land to the south, and industrial- and commercial-zoned land to the east. A zoning map is provided in Attachment A. The Site and surrounding area is essentially flat.

The existing surrounding commercial/industrial land uses are as follows:

- County of Simcoe Landfill Site #2 (Collingwood)
- Custom Prefab Homes
- Ken Astill Public Works and Recreation Building
- The Justin & Eileen Cork Animal Shelter
- Lafarge Canada – Batch Plant
- Mountain Mini Storage
- CRS Contractors Rental Supply
- Banff Sports Rental and All Stone Landscaping
- Leased Industrial Building with multiple tenants (CrossFit Industries, Side Launch Brewery, etc.)

A key plan showing the locations of nearby commercial/industrial facilities is provided in Attachment A as Figure A.1.

The Facility is located in an Acoustical Class 2 area defined by NPC 300 as an acoustical environment that has qualities representative of both Class 1 and Class 3 areas, typical of a major population centre,



where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum" during the daytime hours of 7:00 to 19:00, and low evening and night background sound level defined by natural environment and infrequent human activity from 19:00 to 23:00.

3. Sound Level Criteria

There are two separate noise impact evaluations considered in this Study. Each evaluation has different criteria and/or assessment methodology. The separate noise evaluations are as follows:

1. Road Traffic Noise
2. Stationary Noise

3.1 Road Traffic Noise Criteria

Under NPC-300 road traffic noise impacts are evaluated separately for exterior noise and interior noise based on the average day (16 Hours) and night (8 Hours) noise impacts. The sound level limits for road traffic noise are as follows, expressed in terms of A-weighted 1-hour equivalent sound levels (L_{EQ}):

Road Traffic – Outdoor Sound Level Limits

Receiver Category	Sound Level Limit (L_{EQ})	
	Day (07:00 to 23:00)	Night (23:00 to 07:00)
Plane-of-Window (POW)	55 dBA	50 dBA
Outdoor Living Area (OLA)	55 dBA	N/A

For Plane-of-Window receptors (POWs), road traffic sound levels exceeding the corresponding criteria above would require additional provisions for MECP compliance. Depending on the magnitude of the exceedances, additional provisions may include ventilation requirements, requirements for building envelope elements, and/or special warning clauses.

For Outdoor Living Areas (OLAs), road traffic sound levels exceeding the daytime limit indicated above would require design of noise barriers to achieve the target, and/or warning clauses. As per NPC-300, private terraces/balconies that are minimum 4 m in depth are only considered OLAs if they are the only outdoor living area for the occupant.

Road Traffic – Indoor Sound Level Limits

Receiver Category	Sound Level Limit (L_{EQ})	
	Day (07:00 to 23:00)	Night (23:00 to 07:00)
Indoor Living Area (excluding sleeping quarters)	45 dBA	45 dBA
Sleeping Quarters	45 dBA	40 dBA



If POW sound levels from future road traffic exceed 65 dBA during the day or 60 dBA at night, building envelope components must be designed to achieve the indoor sound level criteria from Table C-2 of NPC-300, as summarized above.

3.2 Stationary Noise Criteria

NPC-300 defines stationary noise sources as sound generated by sources that are normally operated within the property lines of a facility. The noise impact from stationary sources is evaluated based on operations during a predictable worst-case hour, at the worst-case point(s)-of-reception (PORs).

As mentioned above, the Site is located in a Class 2 acoustic environment as defined by NPC-300. Accordingly, the Class 2 minimum exclusionary sound level limits would be the minimum criteria used to assess stationary noise impacts at the Site. The limits are expressed in terms of A-weighted 1-hour equivalent sound levels (L_{EQ}):

Stationary Noise Level Limits (Class 2)

Receiver Category	Sound Level Limit		
	Day (07:00 to 19:00)	Evening (19:00 to 23:00)	Night (23:00 to 07:00)
Plane of Window (POW)	50 dBA	50 dBA	45 dBA
Outdoor Point of Reception	50 dBA	45 dBA	N/A

4. Noise Impact Assessment

4.1 Road Traffic Noise Assessment

4.1.1 Road Traffic Noise Modelling Methodology

Future (2030) road traffic sound levels at the proposed development were predicted using the STAMSON v5.04 program, the computerized model of the MECP's ORNAMENT traffic noise prediction method. The computer model input parameters include, among other data, the number of road segments, number of house rows, the positional relationship of the receptor to a noise source or barrier in terms of distance, elevation and angle, the basic site topography, the ground surface type, traffic volumes, traffic composition and speed limit.

The predicted sound levels are based on the 1-hour equivalent sound level, designated as L_{EQ} , and is adjusted by the model program to the 16-hour daytime and the 8-hour nighttime equivalent sound level. The applicable noise criteria for noise sensitive spaces are specified in terms of the 16-hour daytime period (7:00 a.m. to 11:00 p.m.) and 8-hour nighttime period (11:00 p.m. to 7:00 a.m.) enabling a direct comparison between the model output and the noise criteria.



4.1.2 Road Traffic Modelling Parameters

The following information was used to model the road traffic noise impacts on the Development and was provided by Ainley Group at the request of the Town of Collingwood. Ainley Group provided AM and PM peak hour traffic volume data forecast to the year 2030, and advised that the AADT values were to be calculated as 10 times the PM peak values on both Mountain Road and Tenth Line Road. Road traffic data and correspondence between GHD and Ainley group are provided in Attachment C.

Mountain Road

- Average Annual Daily Traffic (AADT): 18,000 vehicles
- Commercial vehicle rates (Day/Night):
 - 0.0 percent medium trucks
 - 3.6 percent heavy trucks
- Posted Speed Limit: 60 kilometers per hour (km/h)
- Day and night splits: 90 percent day and 10 percent night

Tenth Line Road

- Average Annual Daily Traffic (AADT): 3,640 vehicles
- Commercial vehicle rates (Day/Night):
 - 0.0 percent medium trucks
 - 4.0 percent heavy trucks
- Posted Speed Limit: 60 kilometers per hour (km/h)
- Day and night splits: 90 percent day and 10 percent night

4.1.3 Road Traffic Noise Modelling Results

GHD calculated future road traffic sound levels at OLAs and POWs throughout the Development for daytime and nighttime periods.

Plane of Window Evaluations

NPC-300 defines POWs as the centre of a window/door of a noise sensitive space (i.e., such as a living space in a residential development). For the purposes of this Study, a typical floor height of 3 m has been assumed, such that the POW assessment points are at heights of 1.5 m, 4.5 m, 7.5 m, etc. above grade.

GHD evaluated road traffic sound levels at all of the façades of each building in the Development using the methodology described in Section 4.1 of this report. The maximum predicted road traffic sound levels at the worst-case POWs are up to 67 dBA during the day, and up to 60 dBA at night.



The results are summarized in Table B.1 and Figure B.1, and STAMSON calculations are provided in Attachment C. The locations of POW receivers for the STAMSON calculations are displayed in Figures C.1 to C.6 of Attachment C.

Outdoor Living Area Evaluations

NPC-300 defines OLAs as backyards, front yards, gardens, terraces or patios, balconies, and elevated terraces. NPC-300 stipulates that in order to be considered an Outdoor Living Area (OLA), elevated terraces or balconies must have a minimum depth of 4 meters.

Based on discussions with the Applicant, it is understood that all of the balconies of the apartment buildings are to be less than 4 m in depth. A large park (OLA-1) at the North boundary of the Site is to be provided as a shared OLA for residents of the apartment buildings. Additionally, potential rooftop amenity areas on each apartment building were evaluated. If larger OLAs are indicated in subsequent site plans the Study may have to be revised.

Townhouses fronting on Mountain Road will have elevated outdoor terraces on the North side, which are understood from conversations with the Applicant to be minimum 4 m in depth. Based on conversations with the Applicant, these are understood to be the only OLAs for residents of these townhouses.

In accordance with NPC-300, the OLA point of assessment is identified as follows:

- Equal to or greater than 6 m in depth: 3 m from the building façade, 1.5 m above grade, and aligned with the midpoint of the subject façade.
- Less than 6 m in depth: 1.5 m above grade/floor level, in the middle of the OLA.

GHD evaluated traffic sound levels at all OLAs in the development, however, the results for only the worst-case OLAs are presented in this Study. The highest predicted daytime sound levels from road traffic at the worst-case OLAs are up to 67 dBA.

The results are summarized in Table B.1 and Figure B.1, and STAMSON calculations are provided in Attachment C. The locations of OLA receivers for the STAMSON calculations are displayed in Figures C.1 to C.6 of Attachment C.

4.1.4 Plane of Window Noise Control Requirements (NPC-300, Sections C7.1.2 and C7.1.3)

This section describes the Noise Control Measures required to allow the development to meet the applicable MECP noise criteria for indoor living spaces. The need for noise controls was determined based on NPC-300 sound level limits for predicted POW sound levels from future road traffic. For any



excesses, NPC-300 specifies the following controls to protect the residents against future road noise impacts, dependent on the sound levels at the POW assessment points:

Daytime Level (dBA)	Nighttime Level (dBA)	Minimum Ventilation Requirements	Warning Clauses	Special Building Components
55 or lower	50 or lower	Not required	N/A	Not Required
56 to 65	51 to 60	Design with Provision for Adding Central Air Conditioning at Occupant's Discretion	Type C	Not Required
66 or higher	61 or higher	Central Air Conditioning Required	Type D	Yes

Plane of Window – Ventilation Requirements

As mentioned in Section 4.1.2 and summarized in Table B.1, the maximum predicted future road traffic sound levels at the worst-case POW assessment points are up to 67 dBA during the day and 60 dBA at night. As a minimum, all residences with future road traffic sound levels at POWs exceeding 55 dBA during the day and 50 dBA at night must be designed with the provision for adding central air conditioning at the occupant's discretion, with Warning Clause Type C included in the agreements of Offers of Purchase and Sale, lease/rental agreements, and/or condominium declarations.

Since it has been confirmed by the Applicant that residences in the Development will include central air conditioning by design, **Warning Clause Type D is used in place of Warning Clause Type C.**

Ventilation requirements and associated warning clauses for the various residences are included in Attachment B.

Indoor Living Areas – Building Components

As mentioned in Section 4.1.2 and summarized in Table B.1, the maximum predicted future road traffic sound levels at the worst-case POW assessment points are up to 67 dBA during the day and 60 dBA at night. As per NPC-300, these sound levels are sufficiently high enough that the design of special building components is required to achieve the applicable indoor sound level criteria for living spaces (i.e., standard Ontario Building Code compliant façade elements are expected to be insufficient).

The Sound Transmission Class (STC) requirements for the windows and exterior walls of the suites at the various facades are included in Attachment B.

4.1.5 Outdoor Living Area Noise Control Requirements (NPC-300, Section C7.1.1)

This section describes the Noise Control Measures required to allow the development to meet the applicable MECP noise criteria for OLAs. The need for noise controls was determined based on NPC-300 sound level limits for predicted OLA sound levels from future road traffic. For any excesses, NPC-300



specifies the following controls to protect the residents against future road noise impacts, dependent on the sound levels at the OLAs:

Daytime Level (dBA)	Noise Control Measures	Warning Clauses
55 or lower	Not Required	Not Required
56 to 60	Not Required	Type A (if noise control measures are not applied)
61 or higher	Barrier or Berm Required	Type B (if noise control measures are applied, but not feasible to achieve 55 dBA or lower)

As summarized in Table B.1, the highest predicted OLA sound levels from future road traffic are up to 67 dBA during the day. NPC-300 states that if the 16-hour equivalent daytime sound level is greater than 60 dBA then noise control measures (barriers or berms) must be applied to reduce the sound level to at least 60 dBA with Warning Clause Type B included in the agreements of Offers of Purchase and Sale, lease/rental agreements, and/or condominium declarations. If the required noise control measures reduce the sound level to 55 dBA or lower, then no warning clauses are required.

The results detailed in Table B.1 indicate that some residences have predicted OLA sound levels that are greater than 55 dBA. Noise control measures may be provided to reduce the sound level at these OLAs to 55 dBA. Alternatively, if noise control measures are not provided, Warning Clause Type A must be included in the agreements of Offers of Purchase and Sale, lease/rental agreements, and/or condominium declarations. GHD recommends using Warning Clause Type A and not providing noise control measures where applicable.

Noise control measures and applicable warning clauses are outlined in Attachment B. Location plans for the physical noise control measures for OLAs are provided in Figures C.2 and C.5 of Attachment C.

5. Stationary Noise Impact Assessment

The potential impact of the surrounding land uses on the proposed project has been examined. It should be noted that building ventilation systems associated with the Site have not been selected at this time, and as such, the potential noise impact of these systems was not assessed as a part of this Study.

The potential impact of the surrounding land uses on the proposed project has been examined. As noted in Section 2, the surrounding properties include residential uses to the south, a landscaping company to the south, a small proposed hydro substation at the southeast corner of the Site, a cement batch plant to the east, and the County of Simcoe Landfill Site #2 to the north. The Environmental Compliance Approvals (ECAs) of any surrounding industrial and commercial facilities were reviewed. If no ECAs were available for any of the surrounding facilities, stationary noise impacts were evaluated using CadnaA acoustical modelling software (CadnaA), version 2019. CadnaA is the industry standard for noise modelling for industrial and commercial facilities, and is based on ISO standard 9613-2 "Acoustics – Attenuation of Sound during Propagation Outdoors".



5.1 Review of Surrounding Facility ECAs

The Site currently has multiple residential zoning designations, which permit the following maximum building heights:

- **(H1) R2 – Holding Residential Second Density** - 12 metres (m)
- **(H1) R3 – Holding Residential Third Density** - 12 m for detached/duplex and 15 m for Apartment

The zoning by-law denotes that the holding provision (H1) which requires the completion of a D4 study acceptable to the appropriate approval authority prior to the development occurring.

These zoning designations are the foundation of the analysis for land use compatibility with regards to noise as the existing commercial/industrial land uses around the Site are legally obligated to show compliance with the noise limits at the approved heights of the current zoning upon receipt of an approved building permit for residential construction.

The official plan amendment application is to propose a change to **R4 - Residential Fourth Density** that allows for a maximum building height of 18 m for apartment buildings. The adjacent industrial uses will most likely still show compliance at the increased building height without additional noise abatement than would otherwise be required for the current approved building height (15 m), as the line-of-sight will be similar if not the same. To increase this maximum building height beyond 18 m further zoning changes would be required, as well as another noise impact study.

Any existing industrial uses surrounding the Site must show compliance with NPC-300 limits at the existing residential areas and approved heights of any vacant residential lots, and by doing so will show compliance at the proposed Site as a consequence.

A copy of the MECP ECA Approvals for adjacent land uses has been provided in Attachment D.

Lafarge

GHD has reviewed the Environmental Compliance Approval (ECA) #8276-APMNYQ granted to Lafarge on November 22, 2017 and a condition of approval is a noise abatement plan which limits existing operations to show compliance with existing residential homes and an additional noise abatement plan to be implemented no later than twelve months after the issuance of an above grade building permit under the Building Code Act, 1992, for a noise sensitive building on the vacant rural zoned lands west of the Facility (assumed to be the Site).

It should be noted that the apartment building and the stacked townhouses on the east side of the site that are closest to Lafarge will have central air conditioning systems installed within the units. The installation of central air conditioning would allow windows and exterior doors for these residences to be closed.

County of Simcoe Landfill Site #2

GHD has also reviewed the ECA #1949-9Z5R2Q dated January 13, 2016 for the County of Simcoe Landfill Site #2 (Collingwood) in which the shredder has been permitted for air and noise emissions. As



part of this approval, the shredder is restricted to daytime operation and must show compliance with the noise limits set out in Ministry Publication NPC-300. As there are two existing residences between the Site and the Shredder unit, it is assumed that the Development will be feasible as noise compliance will be achieved at the Site as a consequence of meeting the limits at the existing residences on Tenth Line.

Leased Industrial Building to Southeast of Site

To the southeast of the Site is a leased industrial building with multiple tenants (CrossFit Industries, Side Launch Brewery, etc.) and to the south there is the Banff Sports Rentals and All Stone Landscaping Office. Based on GHD's observations, there are no sources of significant noise at these facilities that would adversely affect the feasibility of the Development. GHD has reviewed the ECA #3829-9EHQ3F dated February 20, 2014 for the Side Launch Brewing Company Inc., in which the Facility has been permitted for air and noise emissions. As part of this approval the Facility must show compliance with the noise limits set out in Ministry Publication NPC-205. The already approved residential areas on Tenth Line have similar separation distance and line-of-sight as the Development to Side launch Brewing, and it is assumed that noise compliance will be achieved at the subject lands as a consequence of Side Launch Brewing meeting the limits at the already approved residential lot on Tenth Line.

5.2 Stationary Noise Modelling Results

The following facilities were assessed using the CadnaA modelling software:

- All Stone Landscape Design & Construction
- Proposed Hydro Substation

Representative sound power level data for noise sources associated with these facilities was taken from GHD's extensive library based on previous experience modelling similar facilities. The locations of all off-site stationary noise sources are included as Figures E.1 to E.3 in Attachment E. Additionally, a summary of sound power level data is included as Table E.1 of Attachment E.

The proposed hydro substation associated with the Site have not been designed at this time. Such equipment has the potential to result in noise impacts on noise sensitive spaces within the Development itself. Outdoor noise impacts from this equipment will comply with the guideline limits contained in

NPC-300 section C for stationary noise sources. Potential impacts should be assessed as part of the final building design in which the transformer will meet the limits by the appropriate selection of equipment, by locating equipment with sufficient setback from noise sensitive locations, and by incorporating control measures (e.g., barriers) into the design. GHD has assumed a representative transformer sound power level for the purposes of this current evaluation which shows compliance.

At the worst-case Plane of Window (POW) Point-of-Reception (POR), sound levels experienced from nearby facilities are 49 dBA during the day, 49 dBA during the evening, and 45 dBA during the night. Additionally, at the worst-case outdoor POR, sound levels experienced from nearby facilities are 45 dBA during the day and 45 dBA during the evening which are inclusive of the property line fence included for



perimeter fencing and site control acting as a barrier. These sound levels meet the applicable NPC-300 sound level limits as described in section 3.2. Noise contour plots for daytime, evening, and nighttime are included as Figures E.4 to E.6 in Attachment E.

It is anticipated that due to daytime road traffic volumes on Mountain Road that the ambient daytime levels will be well above the NPC-300 minimum daytime sound level limit of 50 dBA however GHD has assessed against this limit to be conservative.

5.3 Noise Impact Summary – On-Site Sources

The building ventilation systems associated with the Site have not been selected at this time. GHD anticipates that the Development would require small residential AC units. These units should be appropriately selected and designed during the Development's detailed design stage to meet the requirements outlined in MECP guideline NPC-216, "Residential Air-Conditioners".

5.4 Noise Impact Summary – Mitigation Requirements

In summary, it is assumed that the surrounding Facilities are within the MECP exclusion sound level limits at the nearby existing and approved residential areas, and therefore no mitigation is anticipated to be required to achieve compliance with the MECP sound level limits at the proposed Development. Regardless, GHD recommends that Warning Clause Type E be included in the agreements of Offers of Purchase and Sale, lease/rental agreements, and/or condominium declarations.

6. Recommendations

6.1 Acoustic Barriers/Berms

Recommended noise control measures for the Development are summarized in Table B.1 and Attachment C, and include one proposed berm (minimum 2.0 m height) to shield the OLAs in Block E (as referenced in Figure C.1) from noise due to future road traffic. This berm must be provided, and Warning Clause Type B must be applied to the residences of Block E. The layout of this berm is provided in Figure C.2.

Furthermore, three of the four apartment buildings will require a rooftop parapet to shield the potential rooftop OLAs from road traffic noise. These rooftop parapets should be 1.8 m tall and may include solid wood fencing, solid structures, or buildings. For the apartment building running parallel to Mountain Road, this parapet should be C-shaped and should be 18 m x 72 m x 18 m long. For the apartment building that is adjacent to Tenth Line and the apartment building west of the apartment building that is parallel to Mountain Road, this parapet should be L-shaped and should be 18 m x 72 m long. These rooftop parapets must be provided. Since the potential rooftop OLA sound levels are 55 dBA or lower with these rooftop parapets, Warning Clause Type B is **not required**. Further clarification regarding the locations and layout of the apartment building rooftop parapets is provided in Figure C.5.



Acoustic barriers mentioned in this study may vary in construction (increased elevation and berm combination, wood privacy fence, etc) as long as they meet the following requirements:

- A minimum surface density of 20 kg/m² or meet compliance with requirement and certification CAN/CSA-Z107.9-00 (R2004) – Standard for Certification of Noise Barriers (Reaffirmed 2004)
- Be structurally sound and appropriately designed to withstand wind and snow loading as applicable
- Constructed without any cracks or surface gaps at grade. If gaps are necessary for drainage purposes they should be minimized to mitigate the impact on the acoustical performance of the barrier

6.2 Building Exterior Components

Predicted future road traffic sound levels at building facades in the Development exceed 65 dBA during the day and 60 dBA at night for some residences. GHD has specified the STC ratings that are required for the windows and exterior walls of these residences in order to meet the indoor sound level limits described in Table C-2 of NPC-300. At the worst-case façade, these STC ratings are STC-30 for windows and STC-34 for exterior walls. Specifications of STC ratings for residences in the Development are provided in Table B.1 and Figure C.1. It should be noted that these STC rating requirements are to be applied to the entire blocks as indicated in Figure C.1.

6.3 Warning Clauses

As mentioned above, based on GHD's assessment of noise impacts from nearby transportation and industrial/commercial sources, Noise Warning Clauses are recommended for some residences as per NPC-300. GHD recommends that the following Noise Warning Clauses be included in the Offers of Purchase and Sale, lease/rental agreements and/or condominium declarations (where indicated in Table B.1 and Figure C.1):

Warning Clause Type A: "Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

Warning Clause Type B: "Purchasers/tenants 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 (rail traffic) (air traffic) may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

Warning Clause Type D: "This dwelling unit has been supplied with a central air conditioning system which 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 the Environment, Conservation and Parks."

Warning Clause Type E: "Purchasers/tenants are advised that due to the proximity of the adjacent industry (facility) (utility), noise from the industry (facility) (utility) may at times be audible."



7. Conclusions

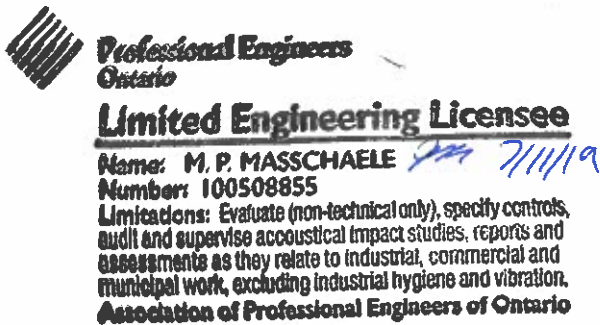
The results of the road traffic modelling indicate that, due to the noise impact from future road traffic, the Development will require that some of the residences be designed with upgraded exterior building components, central air conditioning, and warning clauses to meet the applicable MECP noise criteria. Additionally, berms/barriers are required for OLAs of some residences. A full summary including a table of sound level results and mitigation requirements as well as figures are provided in Attachment B of this letter.

The results of this Study indicate that the potential stationary noise impacts from existing off-site adjacent industrial and commercial area will be below the applicable NPC-300 noise exclusion limits as a condition of their ECA approval in order to show compliance with existing and proposed residential areas. For industrial and commercial facilities without ECAs, noise modelling results indicate that predicted sound levels at the proposed Development will meet compliance with the applicable NPC-300 sound level limits.

Should you have any questions on the above, please do not hesitate to contact us.

Yours truly,

GHD



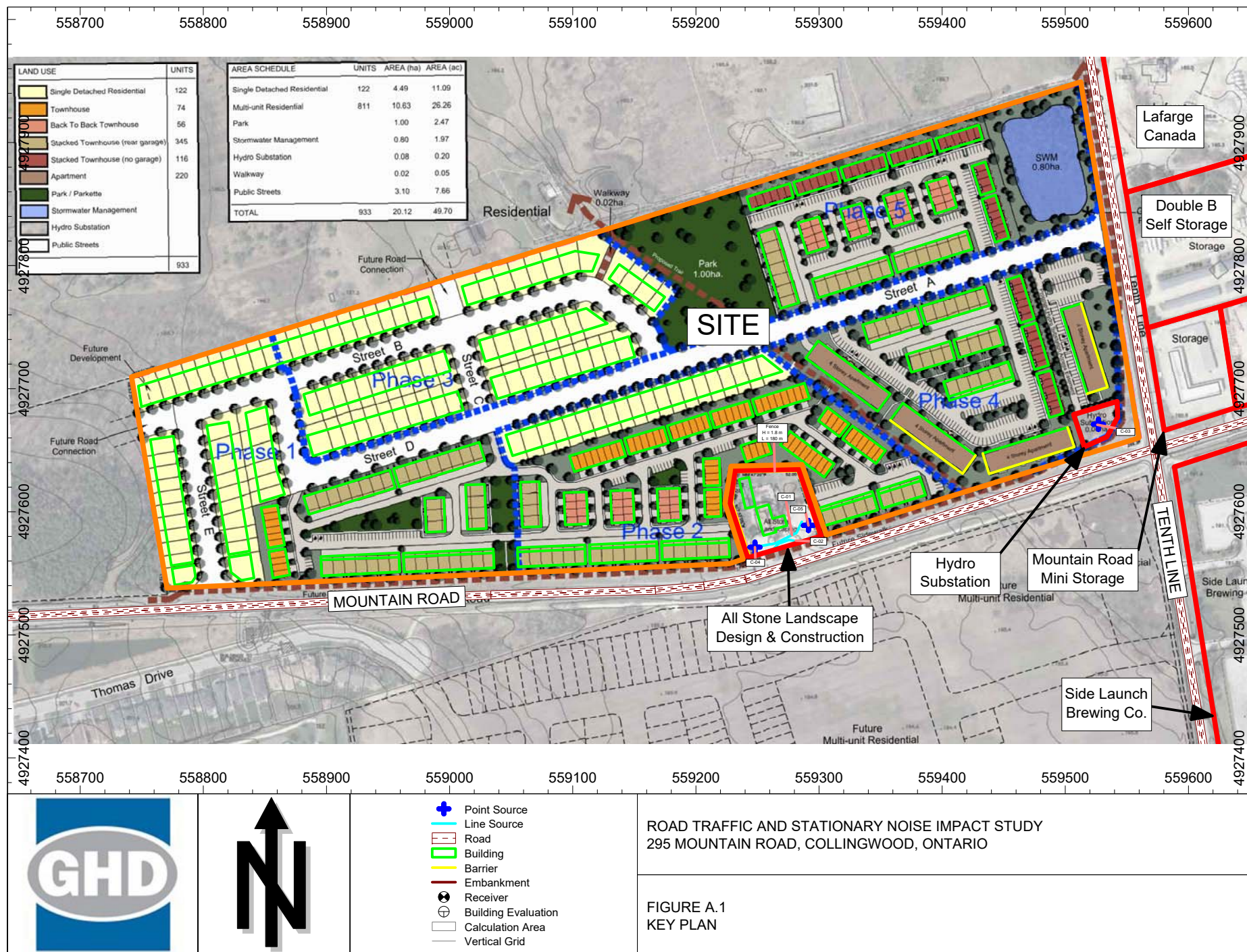
Michael Masschaele, BES LEL

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Encl.

Attachment A

Key Plan and Zoning Information



Attachment B

Noise Modelling Results and Noise Control Recommendations

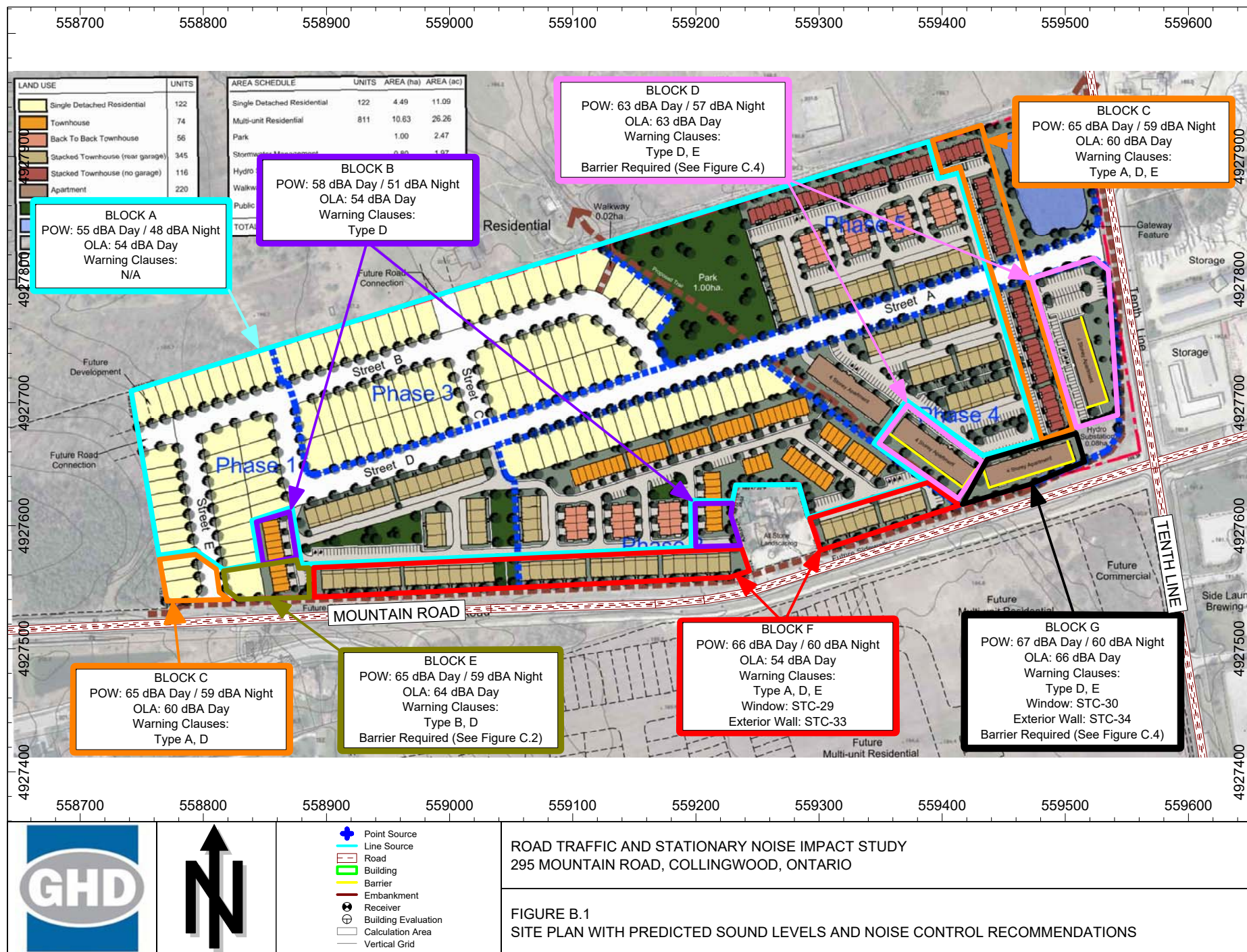


Table B.1
Road Traffic Noise Modelling Results
295 Mountain Road
Collingwood, Ontario

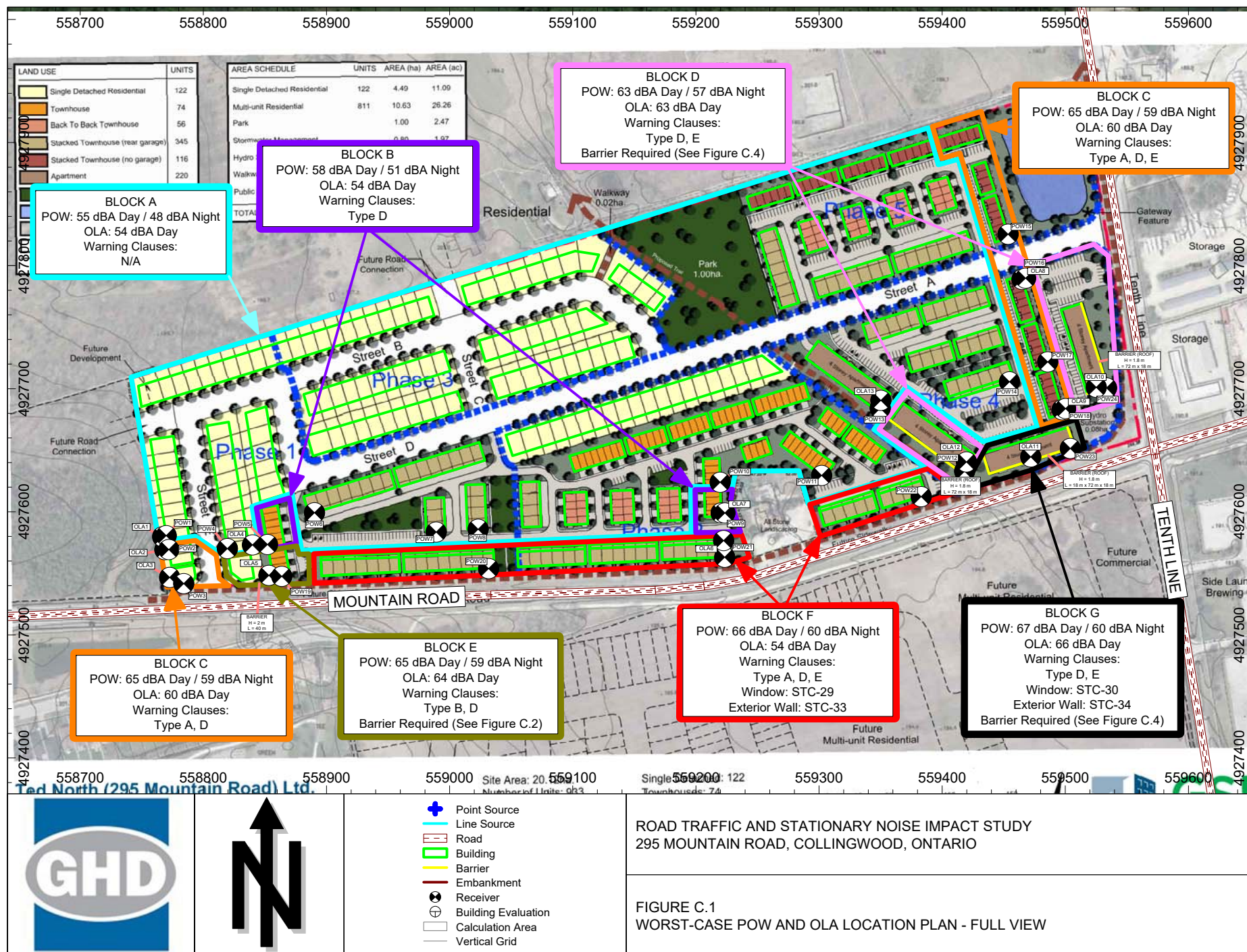
Block	Worst-Case Receiver ID	Worst-Case Receiver Description	Sound Level at Receptor (Day) (Average L _{EQ})	Sound Level at Receptor (Night) (Average L _{EQ})	Ventilation Requirements NPC-300	Recommended Warning Clauses NPC-300 ⁽¹⁾	Physical Noise Mitigation Controls ⁽²⁾
A	POW01	Detached Home	55 (dBA)	48 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW04	Detached Home	55 (dBA)	49 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW06	Stacked Townhome	55 (dBA)	49 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW07	Stacked Townhome	53 (dBA)	46 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW08	Stacked Townhome	55 (dBA)	48 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW10	Townhome	55 (dBA)	48 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW11	Townhome	54 (dBA)	47 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW13	Apartment Building	53 (dBA)	46 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW14	Stacked Townhome	53 (dBA)	47 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	OLA01	Detached Home Rear Yard	54 (dBA)	-	N/A	N/A	N/A
	OLA04	Detached Home Rear Yard	52 (dBA)	-	N/A	N/A	N/A
	OLA13	Apartment Rooftop Amenity Area	54 (dBA)	-	N/A	N/A	N/A
B	POW05	Townhome	58 (dBA)	51 (dBA)	Provisions for Air Conditioning	Type D	Compliance with Ontario Building Code
	POW09	Townhome	56 (dBA)	50 (dBA)	Provisions for Air Conditioning	Type D	Compliance with Ontario Building Code
	OLA07	Townhome Rear Yard	54 (dBA)	-	N/A	N/A	N/A
C	POW02	Detached Home	57 (dBA)	50 (dBA)	Provisions for Air Conditioning	Type D	Compliance with Ontario Building Code
	POW03	Detached Home	65 (dBA)	59 (dBA)	Provisions for Air Conditioning	Type D	Compliance with Ontario Building Code
	POW15	Stacked Townhome	54 (dBA)	47 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW16	Stacked Townhome	53 (dBA)	47 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW17	Stacked Townhome	53 (dBA)	48 (dBA)	Not Required	N/A	Compliance with Ontario Building Code
	POW18	Stacked Townhome	58 (dBA)	52 (dBA)	Provisions for Air Conditioning	Type D	Compliance with Ontario Building Code
	OLA02	Detached Home Rear Yard	56 (dBA)	-	N/A	Type A	N/A
	OLA03	Detached Home Rear Yard	60 (dBA)	-	N/A	Type A	N/A
	OLA08	Stacked Townhome Rear Yard	50 (dBA)	-	N/A	N/A	N/A
	OLA09	Stacked Townhome Rear Yard	56 (dBA)	-	N/A	Type A	N/A
D	POW12	Apartment Building	63 (dBA)	57 (dBA)	Provisions for Air Conditioning	Type D, Type E	Compliance with Ontario Building Code
	POW24	Apartment Building	62 (dBA)	55 (dBA)	Provisions for Air Conditioning	Type D, Type E	Compliance with Ontario Building Code
	OLA10	Apartment Rooftop Amenity Area	62 (dBA)	-	N/A	N/A	Rooftop Parapet (H = 1.8 m, L = 72 m x 18 m)
	OL10m	OLA10 With Mitigation	53 (dBA)	-	N/A	N/A	N/A
	OLA12	Apartment Rooftop Amenity Area	63 (dBA)	-	N/A	N/A	Rooftop Parapet (H = 1.8 m, L = 72 m x 18 m)
	OL12m	OLA12 With Mitigation	50 (dBA)	-	N/A	N/A	N/A
E	POW19	Townhome	65 (dBA)	59 (dBA)	Provisions for Air Conditioning	Type D	Compliance with Ontario Building Code
	OLA05	Townhome Rear Yard	64 (dBA)	-	N/A	Type B	Berm (H = 2 m, L = 40 m)
	OL05m	OLA05 with Mitigation	58 (dBA)	-	N/A	N/A	N/A
F	POW20	Stacked Townhome	66 (dBA)	59 (dBA)	Air Conditioning Required	Type D	Windows: STC-29, Exterior Walls: STC-33
	POW21	Stacked Townhome	66 (dBA)	60 (dBA)	Air Conditioning Required	Type D, Type E	Windows: STC-29, Exterior Walls: STC-33
	POW22	Stacked Townhome	66 (dBA)	60 (dBA)	Air Conditioning Required	Type D, Type E	Windows: STC-29, Exterior Walls: STC-33
	OLA06	Stacked Townhome Rear Yard	56 (dBA)	-	N/A	Type A	N/A
G	POW23	Apartment Building	67 (dBA)	60 (dBA)	Air Conditioning Required	Type D, Type E	Windows: STC-30, Exterior Walls: STC-34
	OLA11	Apartment Rooftop Amenity Area	66 (dBA)	-	N/A	N/A	Rooftop Parapet (H = 1.8 m, L = 18 m x 72 m x 18 m)
	OL11m	OLA11 with Mitigation	54 (dBA)	-	N/A	N/A	N/A

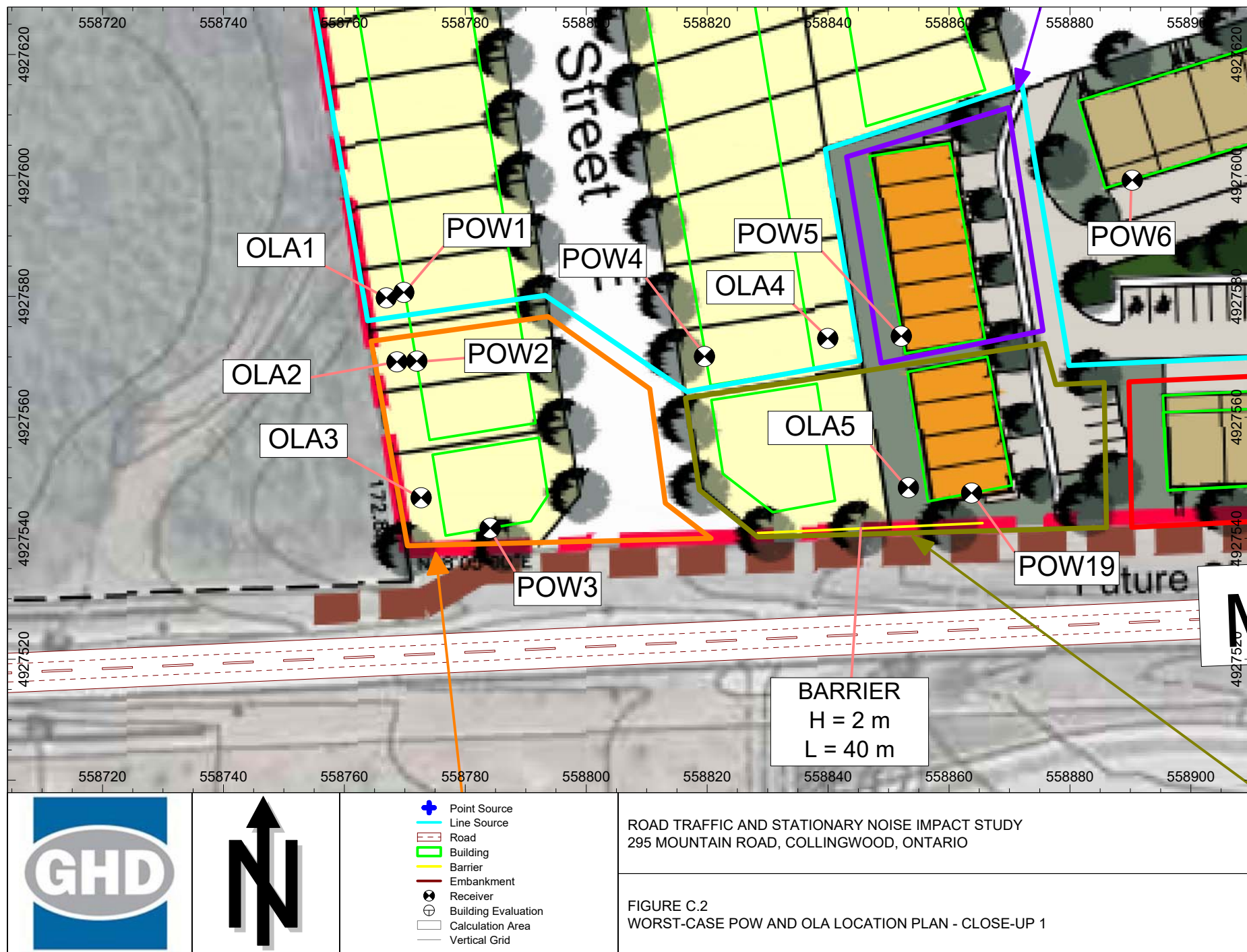
Notes:

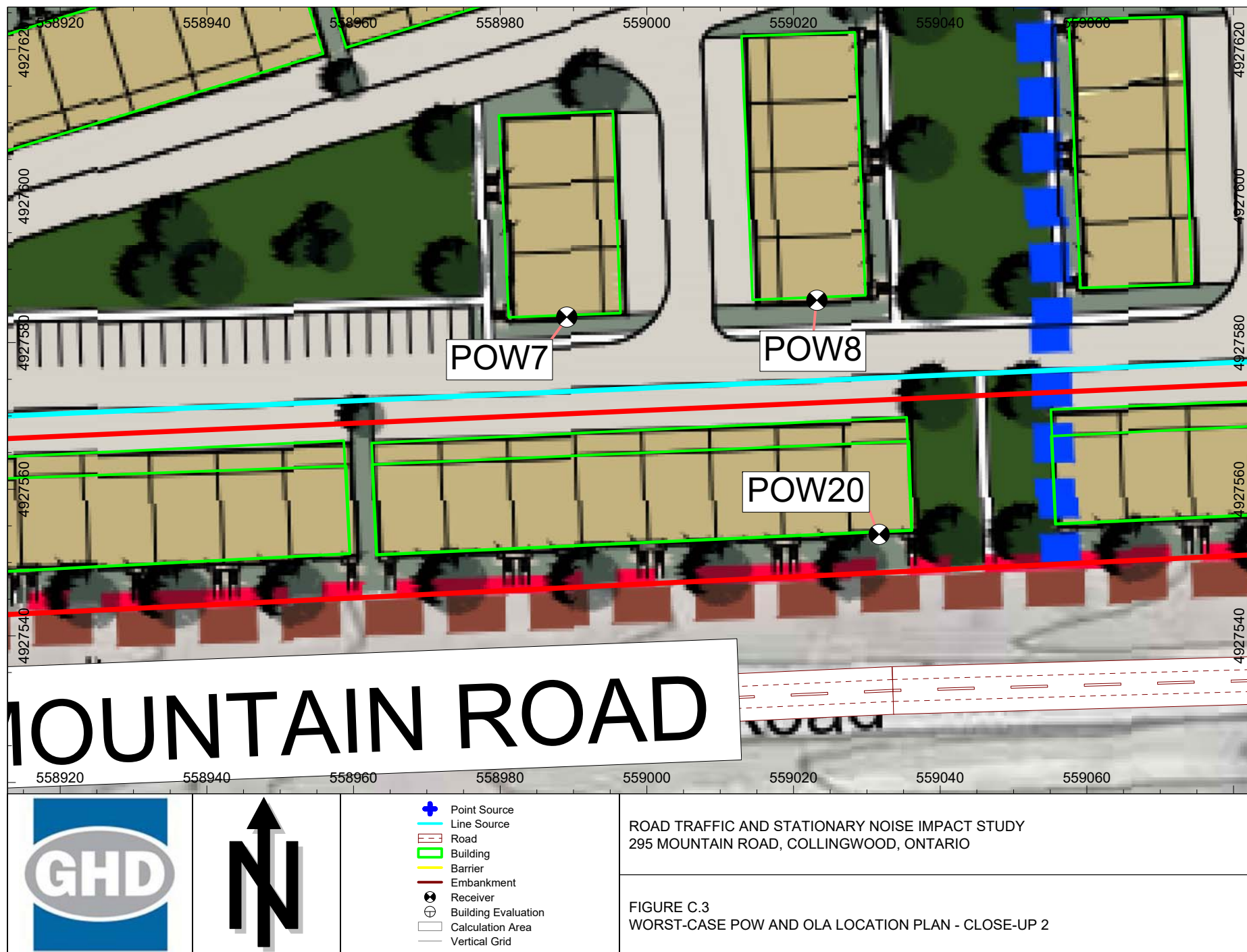
- (1) Warning Clause Type D should be used to replace Warning Clause Type C for any residences supplied with central air conditioning already installed.
(2) Compliance with the Ontario Building Code is approximately equivalent to a minimum STC rating of 25 for windows and 37 for walls.

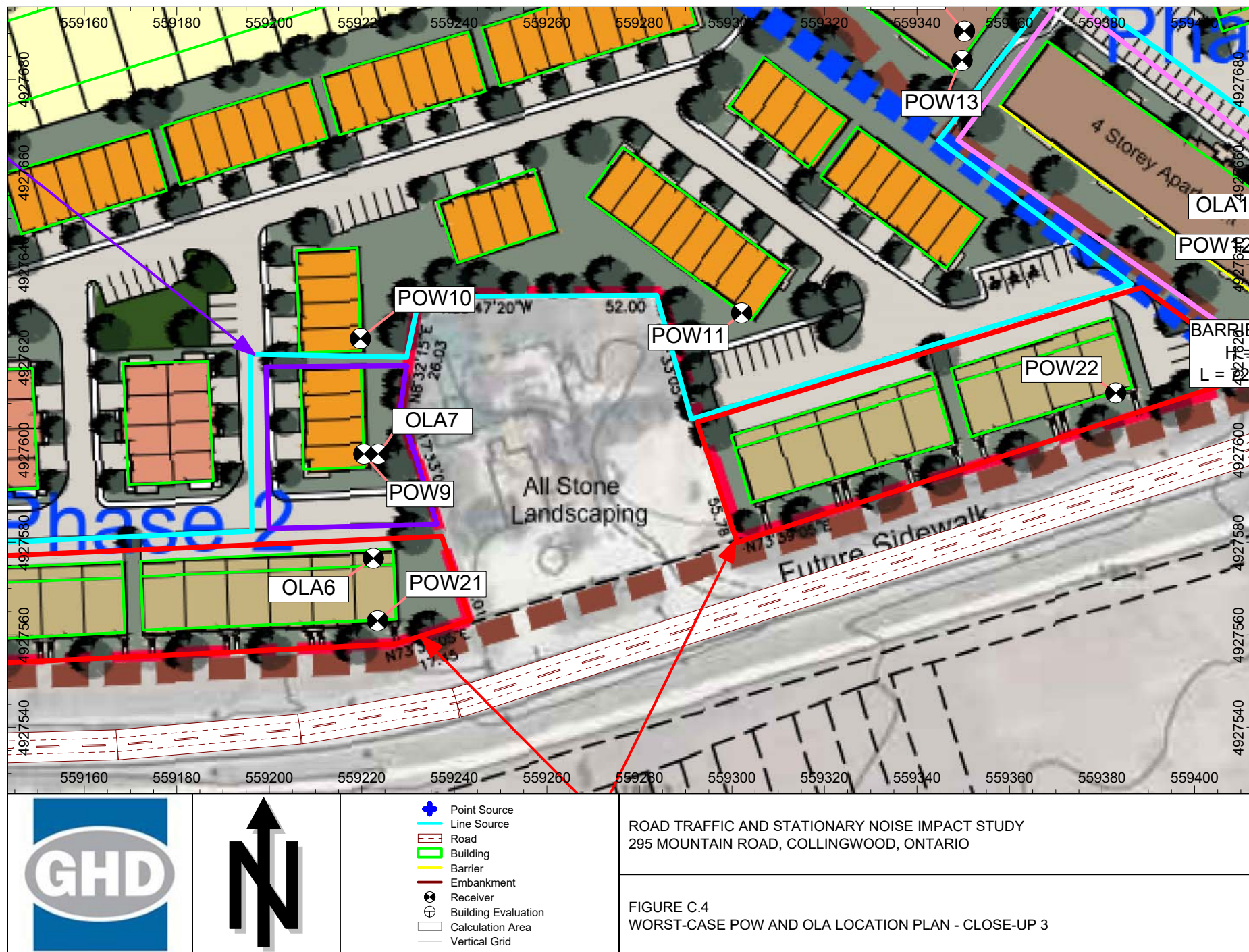
Attachment C

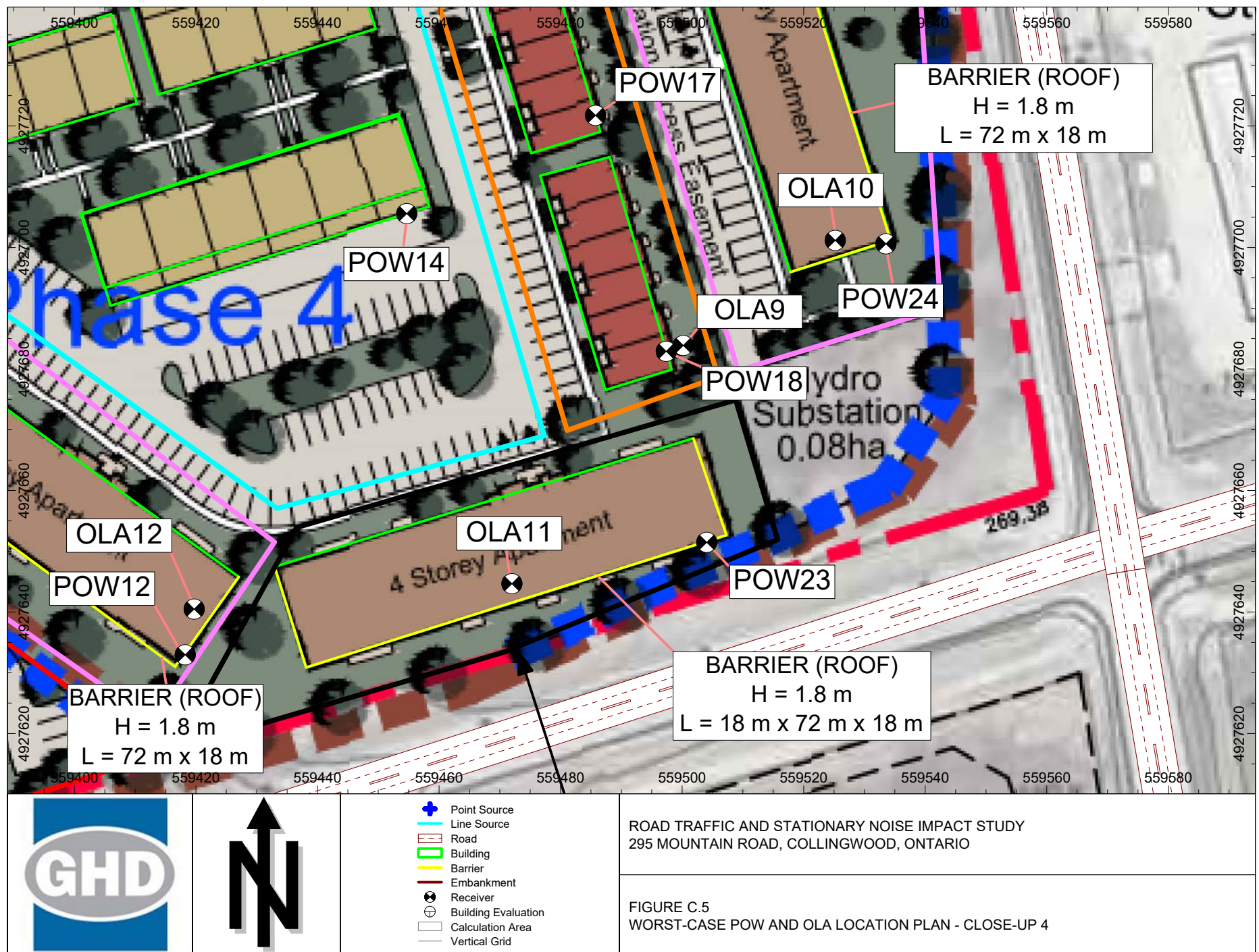
Traffic Data, STAMSON Calculations, and STAMSON Receiver Location Figure

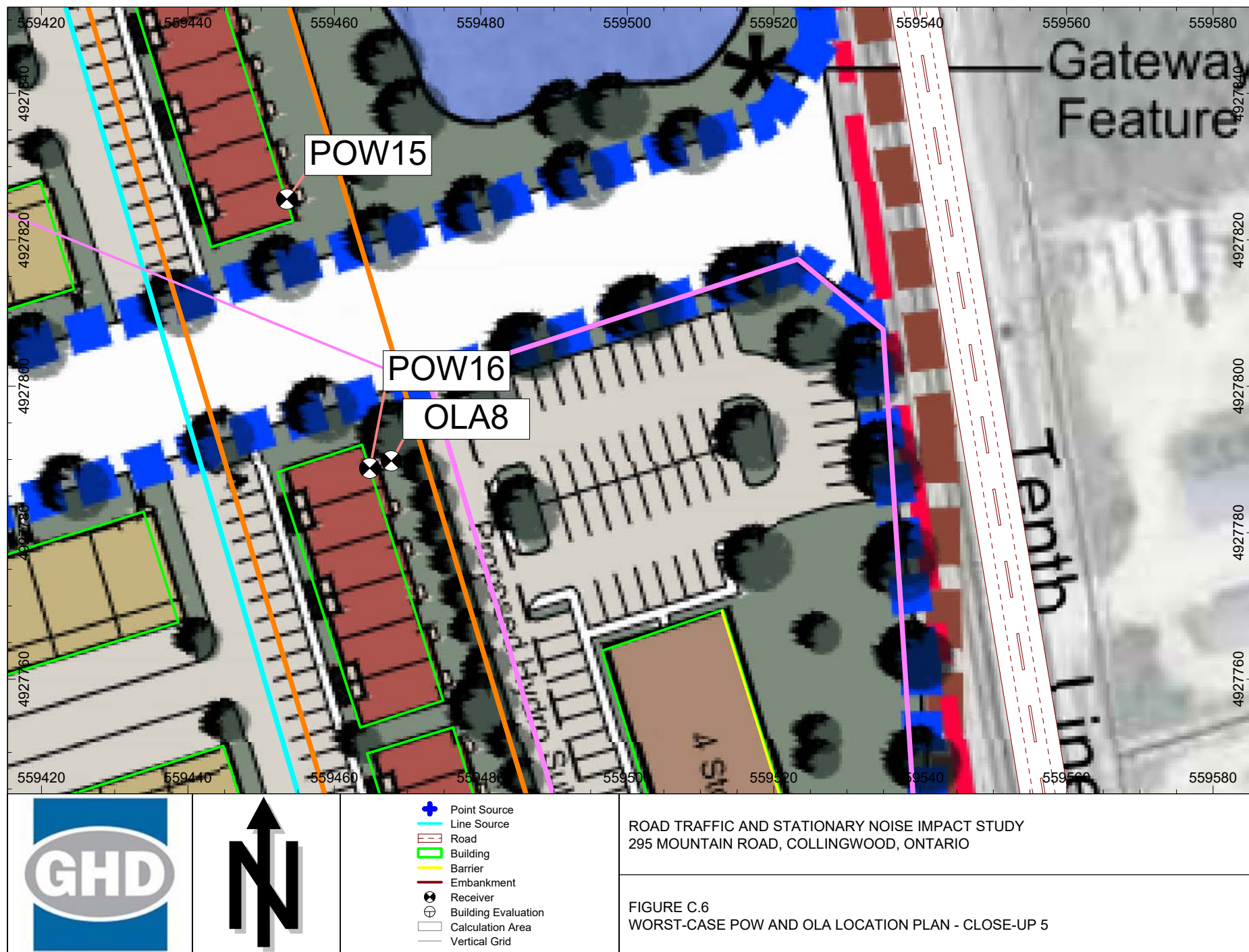












Filename: pan_powl.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 60.00 / 60.00 m
 Receiver height : 4.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	54.94	! 54.94
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			54.94 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	48.42	!	48.42
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				48.42 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.94

(NIGHT): 48.42

Filename: panpow02.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 48.00 / 48.00 m
 Receiver height : 4.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	56.46	! 56.46
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			56.46 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	49.94	!	49.94
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				49.94 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.46

(NIGHT): 49.94

Filename: panpow03.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 20.30 / 20.30 m
 Receiver height : 4.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	65.36	! 65.36
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			65.36 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	58.83	!	58.83
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				58.83 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.36
(NIGHT): 58.83

Filename: panpow04.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 51.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 46.00 / 46.00 m
 Receiver height : 4.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	55.25	! 55.25
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			55.25 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	48.73	!	48.73
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				48.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.25

(NIGHT): 48.73

Filename: panpow05.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 49.00 / 49.00 m
 Receiver height : 10.50 / 10.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	57.59	! 57.59
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			57.59 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	51.07	!	51.07
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				51.07 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.59

(NIGHT): 51.07

Filename: panpow06.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 1
 House density : 60 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 73.00 / 73.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	55.44	! 55.44
2.Tenth Line	! 1.41 !	19.70	! 19.70
	-----	-----	-----
Total			55.44 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	48.92	!	48.92
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				48.92 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.44
(NIGHT): 48.92

Filename: panpow07.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 1
 House density : 90 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 53.00 / 53.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total
	! height !	Leq !	Leq
	! (m) !	(dBA) !	(dBA)
1.Mountain Rd	! 1.38 !	52.79 !	52.79
2.Tenth Line	! 1.41 !	19.70 !	19.70
Total			52.79 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	46.27	!	46.27
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				46.27 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.79
(NIGHT): 46.27

Filename: panpow08.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 1
 House density : 80 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 53.00 / 53.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	54.84	! 54.84
2.Tenth Line	! 1.41 !	19.70	! 19.70
	Total		54.84 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	48.32	!	48.32
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				48.32 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.84
(NIGHT): 48.32

Filename: panpow09.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 67.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 56.00 / 56.00 m
 Receiver height : 10.50 / 10.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	56.03	! 56.03
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			56.03 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	49.50	!	49.50
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				49.50 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.03

(NIGHT): 49.50

Filename: panpow10.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 81.00 / 81.00 m
 Receiver height : 10.50 / 10.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	54.55	! 54.55
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			54.55 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	48.03	!	48.03
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				48.03 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.55

(NIGHT): 48.03

Filename: panpow11.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 40.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 61.00 / 61.00 m
 Receiver height : 10.50 / 10.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	53.57	! 53.57
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			53.57 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	47.04	!	47.04
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				47.04 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.57

(NIGHT): 47.04

Filename: panpow12.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -53.00 deg 67.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 29.30 / 29.30 m
 Receiver height : 16.50 / 16.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 155.00 / 155.00 m
 Receiver height : 16.50 / 16.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	63.24	! 63.24
2.Tenth Line	! 1.41 !	46.21	! 46.21
Total			63.33 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	56.72	!	56.72
2.Tenth Line	!	1.42	!	39.77	!	39.77
	!		!		!	
		Total				56.81 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.33

(NIGHT): 56.81

Filename: panpow13.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 1
 House density : 80 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 98.00 / 98.00 m
 Receiver height : 16.50 / 16.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 16.50 / 16.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	52.56	! 52.56
2.Tenth Line	! 1.41 !	21.07	! 21.07
	-----	-----	-----
	Total		52.56 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	46.04	!	46.04
2.Tenth Line	!	1.42	!	14.63	!	14.63
	!		!		!	
		Total				46.04 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.56
(NIGHT): 46.04

Filename: panpow14.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 1
 House density : 80 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 87.00 / 87.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 107.00 / 107.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	52.24	! 52.24
2.Tenth Line	! 1.41 !	47.19	! 47.19
	Total		53.42 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	45.72	!	45.72
2.Tenth Line	!	1.42	!	40.74	!	40.74
	!		!		!	
		Total				46.92 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.42
(NIGHT): 46.92

Filename: panpow15.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 202.00 / 202.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (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 : 89.00 / 89.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	50.22	! 50.22
2.Tenth Line	! 1.41 !	51.24	! 51.24
Total			53.77 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	43.70	!	43.70
2.Tenth Line	!	1.42	!	44.80	!	44.80
	!		!		!	
		Total				47.30 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.77

(NIGHT): 47.30

Filename: panpow16.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 52.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 164.00 / 164.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : -34.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 83.00 / 83.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	49.60	! 49.60
2.Tenth Line	! 1.41 !	50.22	! 50.22
Total			52.93 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	43.08	!	43.08
2.Tenth Line	!	1.42	!	43.77	!	43.77
	!		!		!	
		Total				46.45 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.93

(NIGHT): 46.45

Filename: panpow17.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 34.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 93.00 / 93.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 74.00 / 74.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	51.09	! 51.09
2.Tenth Line	! 1.41 !	49.61	! 49.61
Total			53.42 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	44.56	!	44.56
2.Tenth Line	!	1.42	!	45.84	!	45.84
	!		!		!	
		Total				48.26 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.42
(NIGHT): 48.26

Filename: panpow18.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 53.00 / 53.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 66.00 / 66.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	57.80	! 57.80
2.Tenth Line	! 1.41 !	49.92	! 49.92
	+	+	+
Total			58.46 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	51.28	!	51.28
2.Tenth Line	!	1.42	!	43.48	!	43.48
	!		!		!	
		Total				51.95 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.46

(NIGHT): 51.95

Filename: panpow19.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 22.50 / 22.50 m
 Receiver height : 10.50 / 10.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	65.31	! 65.31
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			65.31 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	58.79	!	58.79
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				58.79 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.31

(NIGHT): 58.79

Filename: panpow20.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 21.60 / 21.60 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	65.89	! 65.89
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			65.89 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	59.37	!	59.37
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				59.37 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.89

(NIGHT): 59.37

Filename: panpow21.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 20.30 / 20.30 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 357.00 / 357.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	66.24	! 66.24
2.Tenth Line	! 1.41 !	40.37	! 40.37
	+	+	+
Total			66.25 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	59.72	!	59.72
2.Tenth Line	!	1.42	!	33.93	!	33.93
	!		!		!	
		Total				59.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.25

(NIGHT): 59.73

Filename: panpow22.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 20.60 / 20.60 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 192.70 / 192.70 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	66.16	! 66.16
2.Tenth Line	! 1.41 !	43.86	! 43.86
	+	+	+
Total			66.19 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	59.64	!	59.64
2.Tenth Line	!	1.42	!	37.42	!	37.42
	!		!		!	
		Total				59.67 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.19

(NIGHT): 59.67

Filename: panpow23.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 21.10 / 21.10 m
 Receiver height : 16.50 / 16.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 67.10 / 67.10 m
 Receiver height : 16.50 / 16.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	66.37	! 66.37
2.Tenth Line	! 1.41 !	50.62	! 50.62
Total			66.48 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	59.84	!	59.84
2.Tenth Line	!	1.42	!	44.18	!	44.18
	!		!		!	
		Total				59.96 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.48

(NIGHT): 59.96

Filename: panpow24.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 59.00 / 59.00 m
 Receiver height : 16.50 / 16.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 30.20 / 30.20 m
 Receiver height : 16.50 / 16.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	60.95	! 60.95
2.Tenth Line	! 1.41 !	54.82	! 54.82
	+	+	+
Total			61.90 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	54.42	!	54.42
2.Tenth Line	!	1.42	!	48.38	!	48.38
	!		!		!	
		Total				55.39 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.90

(NIGHT): 55.39

Filename: panola01.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 60.00 / 60.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	54.27	! 54.27
2.Tenth Line	! 1.41 !	19.70	! 19.70
Total			54.27 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	47.75	!	47.75
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				47.75 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.27

(NIGHT): 47.75

Filename: panola02.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 48.00 / 48.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	55.88	! 55.88
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			55.88 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	49.36	!	49.36
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				49.36 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.88

(NIGHT): 49.36

Filename: panola03.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 25.80 / 25.80 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	60.36	!	60.36
Total						60.36 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	53.83	!	53.83
Total						53.83 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.36
 (NIGHT): 53.83

Filename: panola05.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -90.00 deg 58.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 23.70 / 23.70 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	63.52	!	63.52
Total						63.52 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	57.00	!	57.00
Total						57.00 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.52
 (NIGHT): 57.00

Filename: panol05m.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -90.00 deg 58.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 23.70 / 23.70 m
 Receiver height : 1.50 / 1.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 58.00 deg
 Barrier height : 2.00 m
 Barrier receiver distance : 7.50 / 7.50 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	57.94	! 57.94
Total			57.94 dBA

Result summary (night)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	51.42	! 51.42
Total			51.42 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.94
 (NIGHT): 51.42

Filename: panola06.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 61.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 33.70 / 33.70 m
 Receiver height : 13.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	54.15	! 54.15
Total			54.15 dBA

Result summary (night)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	44.24	! 44.24
Total			44.24 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.15
 (NIGHT): 44.24

Filename: panola07.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 67.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 56.00 / 56.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 1.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 500.00 / 500.00 m
 Receiver height : 13.50 / 13.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	54.23	! 54.23
2.Tenth Line	! 1.41 !	19.70	! 19.70
	+	+	+
Total			54.23 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	47.71	!	47.71
2.Tenth Line	!	1.42	!	13.26	!	13.26
	!		!		!	
		Total				47.71 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.23

(NIGHT): 47.71

Filename: panola08.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 52.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 164.00 / 164.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : -34.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 80.70 / 80.70 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	45.68	! 45.68
2.Tenth Line	! 1.41 !	47.27	! 47.27
	+	+	+
Total			49.56 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	39.16	!	39.16
2.Tenth Line	!	1.42	!	40.83	!	40.83
	!		!		!	
		Total				43.09 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 49.56

(NIGHT): 43.09

Filename: panola09.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 53.00 / 53.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 63.00 / 63.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	55.17	!	55.17
2.Tenth Line	!	1.41	!	47.27	!	47.27
Total						55.82 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
-----+-----+-----+-----						
1.Mountain Rd	!	1.38	!	48.64	!	48.64
2.Tenth Line	!	1.42	!	40.83	!	40.83
-----+-----+-----+-----						
Total						49.31 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.82
(NIGHT): 49.31

Filename: panola10.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 62.00 / 62.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 3 (Elevated; no barrier)
 Elevation : 18.00 m
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 38.00 / 38.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 3 (Elevated; no barrier)
 Elevation : 18.00 m
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	61.46	! 61.46
2.Tenth Line	! 1.41 !	54.20	! 54.20

Total

62.21 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
-----	+	-----	+	-----	+	-----
1.Mountain Rd	!	1.38	!	54.94	!	54.94
2.Tenth Line	!	1.42	!	47.76	!	47.76
-----	+	-----	+	-----	+	-----
		Total				55.70 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.21

(NIGHT): 55.70

Filename: panol10m.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 15617/1735 veh/TimePeriod
Medium truck volume : 0/0 veh/TimePeriod
Heavy truck volume : 583/65 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 62.00 / 62.00 m
Receiver height : 1.50 / 19.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 1.80 m
Elevation : 18.00 m
Barrier receiver distance : 3.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 18.00 m
Barrier elevation : 18.00 m
Reference angle : 0.00

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

Car traffic volume : 3145/349 veh/TimePeriod
Medium truck volume : 0/0 veh/TimePeriod
Heavy truck volume : 131/15 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 1.50 / 19.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 90.00 deg
Barrier height : 1.80 m
Elevation : 18.00 m
Barrier receiver distance : 8.80 / 8.80 m
Source elevation : 0.00 m
Receiver elevation : 18.00 m
Barrier elevation : 18.00 m

Reference angle : 0.00

Result summary (day)

	! source	! Road	! Total
	! height	! Leq	! Leq
	! (m)	! (dBA)	! (dBA)
-----+-----+-----+-----			
1.Mountain Rd	! 1.38	! 53.20	! 53.20
2.Tenth Line	! 1.41	! 40.71	! 40.71
-----+-----+-----+-----			
	Total		53.44 dBA

Result summary (night)

	! source	! Road	! Total
	! height	! Leq	! Leq
	! (m)	! (dBA)	! (dBA)
-----+-----+-----+-----			
1.Mountain Rd	! 1.38	! 56.05	! 56.05 *
2.Tenth Line	! 1.42	! 48.59	! 48.59 *
-----+-----+-----+-----			
	Total		56.77 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 53.44
(NIGHT): 56.77

Filename: panola11.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 24.10 / 24.10 m
 Receiver height : 1.50 / 1.50 m
 Topography : 3 (Elevated; no barrier)
 Elevation : 18.00 m
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 67.10 / 67.10 m
 Receiver height : 1.50 / 1.50 m
 Topography : 3 (Elevated; no barrier)
 Elevation : 18.00 m
 Reference angle : 0.00

Result summary (day)

	! source !	Road !	Total
	! height !	Leq !	Leq
	! (m) !	(dBA) !	(dBA)
-----+-----+-----+-----			
1.Mountain Rd	! 1.38 !	66.08 !	66.08
2.Tenth Line	! 1.41 !	51.43 !	51.43
-----+-----+-----+-----			

Total

66.23 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
-----	+	-----	+	-----	+	-----
1.Mountain Rd	!	1.38	!	59.55	!	59.55
2.Tenth Line	!	1.42	!	44.99	!	44.99
-----	+	-----	+	-----	+	-----
		Total				59.70 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.23

(NIGHT): 59.70

Filename: panoll1m.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 15617/1735 veh/TimePeriod
Medium truck volume : 0/0 veh/TimePeriod
Heavy truck volume : 583/65 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (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 : 24.10 / 24.10 m
Receiver height : 1.50 / 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 1.80 m
Elevation : 18.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 0.00 m
Receiver elevation : 18.00 m
Barrier elevation : 18.00 m
Reference angle : 0.00

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

Car traffic volume : 3145/349 veh/TimePeriod
Medium truck volume : 0/0 veh/TimePeriod
Heavy truck volume : 131/15 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 67.10 / 67.10 m
Receiver height : 1.50 / 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 90.00 deg
Barrier height : 1.80 m
Elevation : 18.00 m
Barrier receiver distance : 36.00 / 36.00 m
Source elevation : 0.00 m
Receiver elevation : 18.00 m
Barrier elevation : 18.00 m

Reference angle : 0.00

Result summary (day)

	! source	! Road	! Total
	! height	! Leq	! Leq
	! (m)	! (dBA)	! (dBA)
-----+-----+-----+-----			
1.Mountain Rd	! 1.38	! 53.46	! 53.46
2.Tenth Line	! 1.41	! 35.88	! 35.88
-----+-----+-----+-----			
	Total		53.54 dBA

Result summary (night)

	! source	! Road	! Total
	! height	! Leq	! Leq
	! (m)	! (dBA)	! (dBA)
-----+-----+-----+-----			
1.Mountain Rd	! 1.38	! 46.94	! 46.94
2.Tenth Line	! 1.42	! 29.44	! 29.44
-----+-----+-----+-----			
	Total		47.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.54
(NIGHT): 47.02

Filename: panola12.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -53.00 deg 67.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 32.00 / 32.00 m
 Receiver height : 19.50 / 19.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

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

 Car traffic volume : 3145/349 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 131/15 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

 Angle1 Angle2 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 151.00 / 151.00 m
 Receiver height : 19.50 / 19.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	63.16	! 63.16
2.Tenth Line	! 1.41 !	47.48	! 47.48
	+	+	+
Total			63.28 dBA

Result summary (night)

	!	source	!	Road	!	Total
	!	height	!	Leq	!	Leq
	!	(m)	!	(dBA)	!	(dBA)
1.Mountain Rd	!	1.38	!	56.64	!	56.64
2.Tenth Line	!	1.42	!	41.03	!	41.03
	!		!		!	
		Total				56.76 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.28

(NIGHT): 56.76

Filename: panol12m.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 15617/1735 veh/TimePeriod
Medium truck volume : 0/0 veh/TimePeriod
Heavy truck volume : 583/65 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

Angle1 Angle2 : -53.00 deg 67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 32.00 / 32.00 m
Receiver height : 1.50 / 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : -53.00 deg Angle2 : 67.00 deg
Barrier height : 1.80 m
Elevation : 18.00 m
Barrier receiver distance : 3.50 / 3.50 m
Source elevation : 0.00 m
Receiver elevation : 18.00 m
Barrier elevation : 18.00 m
Reference angle : 0.00

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

Car traffic volume : 3145/349 veh/TimePeriod
Medium truck volume : 0/0 veh/TimePeriod
Heavy truck volume : 131/15 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Tenth Line (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 151.00 / 151.00 m
Receiver height : 1.50 / 1.50 m
Topography : 4 (Elevated; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 90.00 deg
Barrier height : 1.80 m
Elevation : 18.00 m
Barrier receiver distance : 4.50 / 4.50 m
Source elevation : 0.00 m
Receiver elevation : 18.00 m
Barrier elevation : 18.00 m

Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	48.74	! 48.74
2.Tenth Line	! 1.41 !	41.81	! 41.81
Total			49.54 dBA

Result summary (night)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	42.22	! 42.22
2.Tenth Line	! 1.42 !	35.37	! 35.37
Total			43.04 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 49.54
(NIGHT): 43.04

Filename: panola13.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 15617/1735 veh/TimePeriod
 Medium truck volume : 0/0 veh/TimePeriod
 Heavy truck volume : 583/65 veh/TimePeriod
 Posted speed limit : 60 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Mountain Rd (day/night)

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 98.00 / 98.00 m
 Receiver height : 1.50 / 16.50 m
 Topography : 3 (Elevated; no barrier)
 Elevation : 18.00 m
 Reference angle : 0.00

Result summary (day)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	53.52	! 53.52
Total			53.52 dBA

Result summary (night)

	! source !	Road	! Total
	! height !	Leq	! Leq
	! (m) !	(dBA)	! (dBA)
1.Mountain Rd	! 1.38 !	54.06	! 54.06
Total			54.06 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.52
 (NIGHT): 54.06

Wed 9/26/2018 4:14 PM

 Tom Nollert <nollert@ainleygroup.com>
RE: Mountain Road / Tenth Line Municipal Class EA - Traffic Counts

To  Mike Masschaele

Cc  Trevor Harvey;  Ahmed Atia;  Allan Brownridge;  Patrick Wojcieszynski

Hi Allan

Further to your request attached are 3 figures representing peak am and pm turning movements throughout the study area for 3 horizon years.

They represent the combined estimated traffic volumes including the developments based on proposed build out rates together with background traffic from both the Town as well as to the west in the Town of The Blue Mountains.

It would be reasonable to take the pm peak volumes and factor them by 10 as an estimate of the AADT.

Hope this helps, let me know if you need anything else.

Regards

Tom

Tom Nollert, C.E.T.
Senior Technologist



www.ainleygroup.com
Tel: (705) 445-3451 Ext. 156
Cell: (705) 444-4863

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Wed 9/26/2018 4:14 PM

Tom Nollert <nollert@ainleygroup.com>

RE: Mountain Road / Tenth Line Municipal Class EA - Traffic Counts

To  Mike Masschaele

Cc  Trevor Harvey;  Ahmed Atia;  Allan Brownridge;  Patrick Wojcieszynski

Hi Michael

Mountain Road truck percentage 3.6%
Tenth Line 4%

Regards
Tom

Tom Nollert, C.E.T.
Senior Technologist



www.ainleygroup.com

Tel: (705) 445-3451 Ext. 156

Cell: (705) 444-4863

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Attachment D

MECP ECA Approvals for Adjacent Land Uses



Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement climatique

ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 1949-9Z5R2Q

Issue Date: January 13, 2016

The Corporation of the County of Simcoe
1110 Highway 26 Administration Centre
Midhurst, Ontario
L0L 1X0

Site Location: County of Simcoe Landfill Site No. 2
470 Tenth Line
Collingwood Town, County of Simcoe

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

- one (1) shredder, equipped with a 319 kilowatt diesel-fired engine, for the shredding of waste and stumps, discharging to the air at a maximum volumetric flow rate of 1.18 cubic metres per second, through a stack, having an exit diameter of 0.15 metres, and extending 3.5 metres above grade;

all in accordance with the Application for Approval (Air) submitted by the Corporation of the County of Simcoe, dated July 16, 2013 and signed by Robert McCullough, Director - Solid Waste Management; and the supporting information, including the Emission Summary and Dispersion Modelling Report, submitted by GENIVAR Inc., dated July 8, 2013 and signed by Bhuwan Prasad, the Acoustic Assessment Report prepared by Golder Associates Ltd., dated November 2015 and signed by Ryan Bessey, P.Eng., the additional information submitted by Golder Associates Ltd., dated July 31, 2015, and the additional information submitted by Golder Associates Ltd., dated August 6, 2015.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "Approval" means this Environmental Compliance Approval, including the application and supporting documentation listed above;
2. "Company" means The Corporation of the County of Simcoe, that is responsible for the construction or operation of the Facility and includes any successors and assigns;
3. "District Manager" means the District Manager of the appropriate local district office of the Ministry, where the Facility is geographically located;
4. "EPA" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;
5. "Equipment" means the Shredder described in the Company's application, this Approval and in the supporting documentation submitted with the application, to the extent approved by this Approval;
6. "Facility" means the entire operation located on the property where the Equipment is located;
7. "Manual" means a document or a set of documents that provide written instructions to staff of the Company;

8. "Ministry" means the ministry of the government of Ontario responsible for the EPA and includes all officials, employees or other persons acting on its behalf; and
9. "Publication NPC-300" means the Ministry Publication NPC-300, " Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300", August, 2013, as amended.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

OPERATION AND MAINTENANCE

1. The Company shall ensure that the Equipment is properly operated and maintained at all times. The Company shall:

(1) prepare, not later than three (3) months after the date of this Approval, and update, as necessary, a Manual outlining the operating procedures and a maintenance program for the Equipment, including:

(a) routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;

(b) emergency procedures, including spill clean-up procedures;

(c) procedures for any record keeping activities relating to operation and maintenance of the Equipment;

(d) all appropriate measures to minimize noise and odorous emissions from all potential sources; and

(e) the frequency of inspection and replacement of the filter material in the Equipment;

(2) implement the recommendations of the Manual.

RECORD RETENTION

2. The Company shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this Approval, and make these records available for review by staff of the Ministry upon request. The Company shall retain:

(1) all records on the maintenance, repair and inspection of the Equipment; and

(2) all records of any environmental complaints; including:

(a) a description, time and date of each incident to which the complaint relates;

(b) wind direction at the time of the incident to which the complaint relates; and

(c) a description of the measures taken to address the cause of the incident to which the complaint relates and to prevent a similar occurrence in the future.

NOTIFICATION OF COMPLAINTS

3. The Company shall notify the District Manager, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:

- (1) a description of the nature of the complaint; and
- (2) the time and date of the incident to which the complaint relates.

NOISE

4. The Company shall, at all times, ensure that the noise emissions from the Facility comply with the limits set out in Ministry Publication NPC-300.
5. The Company shall restrict the operation of the Equipment to the daytime hours from 7 a.m. to 7 p.m.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition No. 1 is included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the EPA, the Regulations and this Approval.
2. Condition No. 2 is included to require the Company to keep records and to provide information to staff of the Ministry so that compliance with the EPA, the Regulations and this Approval can be verified.
3. Condition No. 3 is included to require the Company to notify staff of the Ministry so as to assist the Ministry with the review of the site's compliance.
4. Condition No. 4 is included to provide the minimum performance requirement considered necessary to prevent an adverse effect resulting from the operation of the Facility.
5. Condition No. 5 is included to ensure that the operation of the Equipment, is not extended beyond the specified hours to prevent an adverse effect resulting from the operation of the Equipment.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the
purposes of Part II.1 of the
Environmental Protection Act
Ministry of the Environment and
Climate Change
135 St. Clair Avenue West, 1st
Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal 's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-3717 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 13th day of January, 2016

Ian Greason, P.Eng.
Director
appointed for the purposes of Part II.1 of
the *Environmental Protection Act*

AB/
c: District Manager, MOECC Barrie
Katie Armstrong, Golder Associates Ltd.

ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 8276-APMNYQ

Issue Date: November 22, 2017

Lafarge Canada Inc.
6509 Airport Road
Mississauga, Ontario
L4V 1S7

Site Location: 555 Tenth Line
Collingwood Town, County of Simcoe
L9Y 0W1

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

One (1) ready-mix concrete batching plant having a maximum production rate of 500 cubic metres per day, and consisting of the following:

- One (1) baghouse dust collector controlling emissions from a 70 tonne capacity storage silo designated as Silo #1, equipped with 10.6 square metres of polyester filter material and a reverse pulse-jet type cleaning system, discharging to the air at a volumetric flow rate of 0.5 cubic metre per second through a vent having an exit diameter of 0.13 metre, extending 13.1 metres above grade;
- One (1) baghouse dust collector controlling emissions from a 55 tonne capacity storage silo designated as Silo #2, equipped with 10.6 square metres of polyester filter material and a reverse pulse-jet type cleaning system, discharging to the air at a volumetric flow rate of 0.5 cubic metre per second through a vent having an exit diameter of 0.13 metre, extending 22.6 metres above grade;
- One (1) baghouse dust collector controlling emissions from the transfer of cementitious material to the cement weigh scale, equipped with 10.6 square metres of polyester filter material and a reverse pulse-jet type cleaning system, discharging to the air at a volumetric flow rate of 0.5 cubic metre per second through a vent having an exit diameter of 0.13 metre, extending 12.6 metres above grade;
- One (1) No. 2 fuel oil fired hot water boiler having a maximum heat input of 2.2 million kilojoules per hour, discharging to the air at a volumetric flow rate of 0.41 cubic metre per second through a stack having an exit diameter of 0.3 metre, extending 7.3 metres above the roof and 11 metres above grade;

- Fugitive dust emissions resulting from the delivery, storage, and transfer of materials associated with ready-mix concrete batching operations, including controls and enclosures as described in the *ESDM Report* and *Best Management Practices Plan*.

All in accordance with the Environmental Compliance Approval application signed by Doug England, dated July 23, 2013, and submitted by the Company, the Emission Summary and Dispersion Modelling Report prepared by Adam Draper of BCX Environmental Consulting, dated July 2013, and submitted in support of the application, the supporting information submitted via e-mail by Susanne Pyda of BCX Environmental Consulting on July 20, 2017; the Acoustic Assessment Report prepared by HGC Engineering, dated November 17, 2017 and signed by Corey Kinart, P.Eng.; and all other supporting information and documentation submitted in support of the application.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "*Acoustic Assessment Report*" means the report, prepared in accordance with *Publication NPC-233* submitted in support of the application, that documents all sources of noise emissions and *Noise Control Measures* present at the *Facility*. "*Acoustic Assessment Report*" also means the Acoustic Assessment Report prepared by HGC Engineering, dated November 17, 2017 and signed by Corey Kinart, P.Eng.;
2. "*Approval*" means this Environmental Compliance Approval, including the application and supporting documentation listed above;
3. "*Best Management Practices Plan*" means a document or a set of documents which describe measures to minimize dust emissions from the *Facility* and/or *Equipment*;
4. "*Building Code Act, 1992*" means the Building Code Act, S.O. 1992, c.23, as amended and any replacement or successor legislation;
5. "*Company*" means Lafarge Canada Inc., that is responsible for the construction or operation of the *Facility* and includes any successors and assigns;
6. "*Director*" means a person appointed for the purpose of section 20.3 of the *EPA* by the *Minister* pursuant to section 5 of the *EPA*;
7. "*District Manager*" means the District Manager of the appropriate local district office of the *Ministry*, where the *Facility* is geographically located;
8. "*ESDM Report*" means the Emission Summary and Dispersion Modelling Report

prepared by Adam Draper of BCX Environmental Consulting, dated July 2013, and submitted in support of the application, and includes any changes to the report made up to the date of issuance of this *Approval*;

9. "*EPA*" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended;
10. "*Equipment*" means the equipment and processes described in the *Company's* application, this *Approval* and in the supporting documentation submitted with the application, to the extent approved by this *Approval*;
11. "*Facility*" means the entire operation located on the property where the *Equipment* is located;
12. "*Manual*" means a document or a set of documents that provide written instructions to staff of the *Company*;
13. "*Minister*" means the Minister of the Environment and Climate Change or such other member of the Executive Council as may be assigned the administration of the *EPA* under the Executive Council Act;
14. "*Ministry*" means the ministry of the government of Ontario responsible for the *EPA* and includes all officials, employees or other persons acting on its behalf;
15. "*Noise Control Measures*" means measures to reduce the noise emission from the *Facility* including, but not limited to silencers, acoustic louvres, enclosures, absorptive treatment, plenums and barriers. It also means the noise control measures outlined in the *Acoustic Assessment Report*;
16. "*Publication NPC-233*" means the *Ministry* Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended;
17. "*Publication NPC-300*" means the *Ministry* Publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning, Publication NPC-300", August, 2013, as amended;
18. "*RMC Plant Batch Building*" means the building containing the aggregate bins and aggregate weigh scale; and
19. "*Truck(s)*" means ready-mix truck(s), sand truck(s), or cementitious material tanker truck(s).

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. OPERATION AND MAINTENANCE

1. The *Company* shall ensure that the *Equipment* is properly operated and maintained at all times. The *Company* shall:
 - a. prepare, not later than three (3) months after the date of this *Approval*, and update, as necessary, a *Manual* outlining the operating procedures and a maintenance program for the *Equipment*, including:
 - i. routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the *Equipment* suppliers;
 - ii. emergency procedures; including spill clean-up procedures;
 - iii. procedures for any record keeping activities relating to operation and maintenance of the *Equipment*;
 - iv. the frequency of inspection and replacement of the filter material in the *Equipment*; and
 - v. all appropriate measures to minimize noise and odorous emissions from all potential sources;
 - b. implement the recommendations of the *Manual*.
2. The *Company* shall ensure that all doors of the *RMC Plant Batch Building* remain fully closed when the *Facility* is in operation, except when being used for personnel ingress and egress.

2. FUGITIVE DUST CONTROL

1. The *Company* shall develop in consultation with the *District Manager*, a *Best Management Practices Plan* for the control of fugitive dust emissions. This *Best Management Practices Plan* shall include, but not be limited to:
 - a. identification of the main sources of fugitive dust emissions such as:
 - i. on-site traffic;
 - ii. paved roads/areas;
 - iii. unpaved roads/areas;
 - iv. material stock piles;
 - v. loading/unloading areas and loading/unloading techniques;
 - vi. material spills;
 - vii. material conveyance systems;
 - viii. exposed openings in process and storage buildings; and
 - ix. general work areas.

- b. potential causes for high dust emissions and opacity resulting from these sources;
 - c. procedures for assessing the moisture level of aggregate material, and application of liquid dust suppressant to dry aggregate material;
 - d. preventative and control measures in place or under development to minimize the likelihood of high dust emissions and opacity from the sources of fugitive dust emissions identified above. Details of the preventative and control measures shall include:
 - i. a description of the control equipment to be installed;
 - ii. a description of the preventative procedures to be implemented; and/or
 - iii. the frequency of occurrence of periodic preventative activities, including material application rates, as applicable.
 - e. an implementation schedule for the *Best Management Practices Plan*, including training of facility personnel;
 - f. inspection and maintenance procedures and monitoring initiatives to ensure effective implementation of the preventative and control measures; and
 - g. a list of all *Ministry* comments received, if any, on the development of the *Best Management Practices Plan*, and a description of how each *Ministry* comment was addressed in the *Best Management Practices Plan*.
2. The *Company* shall submit the *Best Management Practices Plan* to the *District Manager* not later than six months after the date of this *Approval*.
- a. The *District Manager* may not accept the *Best Management Practices Plan* if the minimum requirements described in Condition 2.1 were not included in the *Best Management Practices Plan*.
 - b. If the *Best Management Practices Plan* is not accepted by the *District Manager*, the *Company* shall submit a *Best Management Practices Plan* acceptable to the *District Manager* not later than nine months after the date of this *Approval*;
3. Upon acceptance of the *Best Management Practices Plan* by the *District Manager*, the *Company* shall immediately implement the *Best Management Practices Plan* for the control of fugitive dust emissions to provide effective dust suppression measures to any potential sources of fugitive dust emissions resulting from the operation of the *Facility*.

4. The *Best Management Practices Plan* shall be updated as necessary or at the direction of the *District Manager*.

3. RECORD RETENTION

1. The *Company* shall retain, for a minimum of two (2) years from the date of their creation, all records and information related to or resulting from the recording activities required by this *Approval*, and make these records available for review by staff of the *Ministry* upon request. The *Company* shall retain:
 - a. all records on the maintenance, repair and inspection of the *Equipment*;
 - b. all records on the environmental complaints; including:
 - i. a description, time, date and location of each incident;
 - ii. wind direction and other weather conditions at the time of the incident;
 - iii. a description of the measures taken to address the cause of the incident and to prevent a similar occurrence in the future, and the outcome of the measures taken.

4. NOTIFICATION OF COMPLAINTS

1. The *Company* shall notify the *District Manager*, in writing, of each environmental complaint within two (2) business days of the complaint. The notification shall include:
 - a. a description of the nature of the complaint;
 - b. the time, date and location of the incident.

5. NOISE

1. The *Company* shall:
 - a. implement the *Noise Control Measures* not later than twelve (12) months after the issuance of an above grade building permit under the *Building Code Act, 1992*, for a noise sensitive building on the vacant rural zoned lands west of the *Facility*;
 - b. at all times, ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-300*;
 - c. limit *Trucks* arrivals and departures during the day-time hours of 7 a.m. to 7 p.m., in accordance with the following:
 - i. a maximum of seven (7) ready-mix trucks per sixty (60) minute period;
 - ii. a maximum of four (4) aggregate trucks per sixty (60) minute

- period;
 - iii. a maximum of one (1) cementitious material tanker truck per sixty (60) minute period;
 - d. limit *Trucks* arrivals and departures during the evening-time hours of 7 p.m to 11 p.m., in accordance with the following:
 - i. a maximum of two (2) ready-mix trucks per sixty (60) minute period;
 - ii. a maximum of two (2) aggregate trucks per sixty (60) minute period;
 - e. limit *Trucks* arrivals and departures during the night-time hours of 11 p.m. to 7 a.m., in accordance with the following:
 - i. a maximum of two (2) ready-mix trucks per sixty (60) minute period;
 - ii. a maximum of two (2) aggregate trucks per sixty (60) minute period;
2. The *Company* shall restrict the operation of the cementitious material tanker trucks to the daytime hours from 7 a.m. to 7 p.m.

The reasons for the imposition of these terms and conditions are as follows:

1. Conditions No. 1 and 2 are included to emphasize that the *Equipment* must be maintained and operated according to a procedure that will result in compliance with the *EPA*, the regulations and this *Approval*.
2. Condition No. 3 is included to require the *Company* to keep records and to provide information to staff of the *Ministry* so that compliance with the *EPA*, the regulations and this *Approval* can be verified.
3. Condition No. 4 is included to require the *Company* to notify staff of the *Ministry* so that compliance with the *EPA*, the regulations and this *Approval* can be verified.
4. Condition No. 5.1 is included to provide the minimum performance requirement considered necessary to prevent an adverse effect resulting from operation of the *Facility*.
5. Condition No. 5.2 is included to ensure that operation of the cementitious material tanker trucks is not extended beyond the stated hours to prevent an adverse effect resulting from the operation of the *Equipment*.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

- a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

1. The name of the appellant;
2. The address of the appellant;
3. The environmental compliance approval number;
4. The date of the environmental compliance approval;
5. The name of the Director, and;
6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Environmental
Commissioner
1075 Bay Street, Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director appointed for the purposes of
Part II.1 of the Environmental Protection Act
Ministry of the Environment and Climate
Change
135 St. Clair Avenue West, 1st Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 22nd day of
November, 2017

Rudolf Wan, P.Eng.
Director
appointed for the purposes of Part
II.1 of the *Environmental Protection
Act*

NR/
c: District Manager, MOECC Barrie District Office
Adam Draper, BCX Consulting



Ministry of the Environment
Ministère de l'Environnement

ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 3829-9EHQ3F

Issue Date: February 20, 2014

Side Launch Brewing Company Inc.
200 Mountain Road, Unit 1
Collingwood, Ontario
L9Y 4V5

Site Location: 200 Mountain Road
Collingwood, Ontario

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

Description Section

A brewery, consisting of the following processes and support units:

- malting;

- mashing;
- lautering;
- boiling;
- wort settling/cooling;
- fermentation; and
- bottling, canning and kegging

including the *Equipment* and any other ancillary and support processes and activities, operating at a *Facility Production Limit* of up to **2,000,000 litres of beer per year** discharging to the air as described in the *Original ESDM Report*.

For the purpose of this environmental compliance approval, the following definitions apply:

1. " *Acceptable Maximum Ground Level Concentration*" means a concentration accepted by the *Ministry*, as described in the Guide to Applying for Approval (Air & Noise), for a *Compound of Concern* listed in the *Original ESDM Report* that:

(a) has no *Ministry Point of Impingement Limit* and no *Jurisdictional Screening Level*, or

(b) has a concentration at a *Point of Impingement* that exceeds the *Jurisdictional Screening Level*.

2. " *Acoustic Assessment Report*" means the report, prepared in accordance with *Publication NPC-233* and Appendix A of the *Basic Comprehensive User Guide*, by Stephen Kuchma, P.Eng. of Church & Trought Inc., and dated August 2013 submitted in support of the application, that documents all sources of noise emissions and *Noise Control Measures* present at the *Facility* and includes all updated *Acoustic Assessment Reports* as required by the Documentation Requirements conditions of this *Approval* to demonstrate continued compliance with the *Performance Limits* following the implementation of any *Modification*.

3. "*Acoustic Assessment Summary Table*" means a table prepared in accordance with the *Basic Comprehensive User Guide* summarising the results of the *Acoustic Assessment Report*, up-dated as required by the Documentation Requirements conditions of this *Approval*.
4. "*Acoustic Audit*" means an investigative procedure consisting of measurements and/or acoustic modelling of all sources of noise emissions due to the operation of the *Facility*, assessed to determine compliance with the Performance Limits for the *Facility* regarding noise emissions, completed in accordance with the procedures set in *Publication NPC-103* and reported in accordance with *Publication NPC-233*.
5. "*Acoustic Audit Report*" means a report presenting the results of an *Acoustic Audit*, prepared in accordance with *Publication NPC-233*.
6. "*Acoustical Consultant*" means a person currently active in the field of environmental acoustics and noise/vibration control, who is familiar with *Ministry* noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from a *Facility*.
7. "*Air Standards Manager*" means the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, as those duties relate to the conditions of this *Approval*.
8. "*Approval*" means this entire Environmental Compliance Approval and any *Schedules* to it.
9. "*Basic Comprehensive User Guide*" means the *Ministry* document titled "Basic Comprehensive Certificates of Approval (Air) User Guide" dated March 2011, as amended.
10. "*Company*" means Side Launch Brewing Company that is responsible for the construction or operation of the *Facility* and includes any successors and assigns in accordance with section 19 of the *EPA*.
11. "*Compound of Concern*" means a contaminant that, based on generally available information, may be discharged to the air in a quantity from the *Facility* that:
 - (a) is non-negligible in accordance with section 26(1)4 of *O. Reg. 419/05* in comparison to the relevant *Ministry Point of Impingement Limit*; or
 - (b) if a *Ministry Point of Impingement Limit* is not available for the compound, may cause an adverse effect at a *Point of Impingement* based on generally available toxicological information.
12. "*Description Section*" means the section on page one of this *Approval* describing the *Company's* operations and the *Equipment* located at the *Facility* and specifying the *Facility Production Limit* for the *Facility*.
13. "*Director*" means a person appointed by the Minister pursuant to section 5 of the *EPA*.
14. "*District Manager*" means the District Manager of the appropriate local district office of the *Ministry*, where the *Facility* is geographically located.
15. "*Emission Summary Table*" means the most updated table contained in the *ESDM Report*, which is prepared in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* listing the appropriate *Point of Impingement* concentration for each *Compound of Concern* from the *Facility* and providing comparison to the corresponding *Ministry Point of Impingement Limit* or *Maximum Concentration Level Assessment*, or *Jurisdictional Screening Level*.
16. "*Environmental Assessment Act*" means the Environmental Assessment Act, R.S.O. 1990, c.E.18, as amended.

17. "*EPA*" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended.

18. "*Equipment*" means equipment or processes described in the *ESDM Report*, this *Approval* and in the *Schedules* referred to herein and any other equipment or processes.

19. "*Equipment with Specific Operational Limits*" means any *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other *Equipment* that is specifically referenced in any published *Ministry* document that outlines specific operational guidance that must be considered by the *Director* in issuing an *Approval*.

20. "*ESDM Report*" means the most current Emission Summary and Dispersion Modelling Report that describes the *Facility*. The *ESDM Report* is based on the *Original ESDM Report*, is prepared after the issuance of this *Approval* in accordance with section 26 of O. Reg. 419/05 and the *Procedure Document* by the *Company* or its consultant.

21. "*Facility*" means the entire operation located on the property where the *Equipment* is located.

22. "*Facility Production Limit*" means the production limit placed by the *Director* on the main product(s) or raw materials used by the *Facility*.

23. "*Independent Acoustical Consultant*" means an *Acoustical Consultant* who is not representing the *Company* and was not involved in preparing the *Acoustic Assessment Report* or the design/implementation of *Noise Control Measures* for the *Facility* and/or *Equipment*. The *Independent Acoustical Consultant* shall not be retained by the *Acoustical Consultant* involved in the noise impact assessment or the design/implementation of *Noise Control Measures* for the *Facility* and/or *Equipment*.

24. "*Jurisdictional Screening Level*" means a screening level for a *Compound of Concern* that is listed in the *Ministry* publication titled "Jurisdictional Screening Level (JSL) List, A Screening Tool for Ontario Regulation 419: Air Pollution - Local Air Quality", dated February 2008, as amended.

25. "*Log*" means the up-to-date log that is used to track all *Modifications* to the *Facility* since the date of this *Approval* as required by the Documentation Requirements conditions of this *Approval*.

26. "*Maximum Concentration Level Assessment*" means the Maximum Concentration Level Assessment for the purposes of an *Approval*, described in the *Basic Comprehensive User Guide*, prepared by a *Toxicologist* using currently available toxicological information, that demonstrates that the concentration at any *Point of Impingement* for a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* is not likely to cause an adverse effect as defined by the *EPA*.

27. "*Ministry*" means the ministry of the government of Ontario responsible for the *EPA* and its regulations and includes all officials, employees or other persons acting on its behalf.

28. "*Ministry Point of Impingement Limit*" means the applicable Standard set out in Schedule 2 or 3 of O.Reg. 419/05 or a limit set out in the *Ministry* publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution - Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)", dated April 2012, as amended.

29. "*Modification*" means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the *Facility* that may discharge or alter the rate or manner of discharge of a *Compound of Concern* to the air or discharge or alter noise or vibration emissions from the *Facility*.

30. "*Noise Control Measures*" means measures to reduce the noise emissions from the *Facility* and/or *Equipment* including, but not limited to, silencers, acoustic louvres, enclosures, absorptive treatment, plenums and barriers.

31. "*O. Reg. 419/05*" means the Ontario Regulation 419/05, Air Pollution – Local Air Quality, as amended.
32. "*Original ESDM Report*" means the Emission Summary and Dispersion Modelling Report which was prepared in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* by Church & Trought Inc. and dated August 2013 submitted in support of the application, and includes any changes to the report made up to the date of issuance of this *Approval*.
33. "*Performance Limits*" means the performance limits specified in Condition 3.2 of this *Approval* titled Performance Limits.
34. "*Point of Impingement*" has the same meaning as in section 2 of *O. Reg. 419/05*.
35. "*Point of Reception*" means Point of Reception as defined by *Publication NPC-205* and/or *Publication NPC-232*, as applicable.
36. "*Procedure Document*" means *Ministry* guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2009, as amended.
37. "*Processes with Significant Environmental Aspects*" means the *Equipment* which, during regular operation, would discharge a contaminant or contaminants into the air at an amount which is not considered as negligible in accordance with section 26(1)4 of *O. Reg. 419/05* and the *Procedure Document*.
38. "*Publication NPC-103*" means the *Ministry* Publication NPC-103 of the Model Municipal Noise Control By-Law, Final Report, August 1978, published by the *Ministry* as amended.
39. "*Publication NPC-205*" means the *Ministry* Publication NPC-205, "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October, 1995, as amended.
40. "*Publication NPC-207*" means the *Ministry* draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model Municipal Noise Control By-Law, Final Report, published by the *Ministry*, August 1978, as amended.
41. "*Publication NPC-232*" means the *Ministry* Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995, as amended.
42. "*Publication NPC-233*" means the *Ministry* Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended.
43. "*Schedules*" means the following schedules attached to this *Approval* and forming part of this *Approval* namely:
- Schedule A - Supporting Documentation.
44. "*Toxicologist*" means a qualified professional currently active in the field of risk assessment and toxicology that has a combination of formal university education, training and experience necessary to assess contaminants.
45. "*Written Summary Form*" means the electronic questionnaire form, available on the *Ministry* website, and supporting documentation, that documents the activities undertaken at the *Facility* in the previous calendar year that must be submitted annually to the *Ministry* as required by the section of this *Approval* titled Reporting Requirements.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL

1.1 Except as otherwise provided by this *Approval*, the *Facility* shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this *Approval* and in accordance with the following *Schedules* attached hereto:

Schedule A - Supporting Documentation.

2. LIMITED OPERATIONAL FLEXIBILITY

2.1 Pursuant to section 20.6(1) of the *EPA* and subject to Conditions 2.2 and 2.3 of this *Approval*, future construction, alterations, extensions or replacements are approved in this *Approval* if the future construction, alterations, extensions or replacements are *Modifications* to the *Facility* that:

(a) are within the scope of the operations of the *Facility* as described in the *Description Section* of this *Approval*;

(b) do not result in an increase of the *Facility Production Limit* above the level specified in the *Description Section* of this *Approval*; and

(c) result in compliance with the *Performance Limits*.

2.2 Condition 2.1 does not apply to:

(a) the addition of any new *Equipment with Specific Operational Limits* or to the *Modification* of any existing *Equipment with Specific Operational Limits* at the *Facility*; or

(b) *Modifications* to the *Facility* that would be subject to the *Environmental Assessment Act*.

2.3 Condition 2.1 of this *Approval* shall expire on February 1, 2020, unless this *Approval* is revoked prior to the expiry date. The *Company* may apply for renewal of Condition 2.1 of this *Approval* by including an *ESDM Report* and an *Acoustic Assessment Report* that describes the *Facility* as of the date of the renewal application.

3. REQUEST FOR MAXIMUM CONCENTRATION LEVEL ASSESSMENT AND PERFORMANCE LIMITS

3.1 REQUEST FOR MAXIMUM CONCENTRATION LEVEL ASSESSMENT

3.1.1 If the *Company* proposes to make a *Modification* to the *Facility*, the *Company* shall determine if the proposed *Modification* will result in:

(a) a discharge of a *Compound of Concern* that was not previously discharged; or

(b) an increase in the concentration at a *Point of Impingement* of a *Compound of Concern*.

3.1.2 If a proposed *Modification* mentioned in Condition 3.1.1 will result in the discharge of a *Compound of Concern* that was not previously discharged, the *Company* shall submit a *Maximum Concentration Level Assessment* to the *Director* for review by the *Air Standards Manager* in the following circumstances:

(a) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level*.

(b) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level*.

(c) Prior to the proposed *Modification*, a contaminant was discharged in a negligible amount and the proposed *Modification* will result in the discharge of the contaminant being considered a *Compound of Concern* and the *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level*.

(d) Prior to the proposed *Modification*, a contaminant was discharged in a negligible amount and the proposed *Modification* will result in the discharge of the contaminant being considered a *Compound of Concern*. Additionally, the *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level*.

3.1.3 If a proposed *Modification* mentioned in Condition 3.1.1 will result in an increase in the concentration at a *Point of Impingement* of a *Compound of Concern*, the *Company* shall submit a *Maximum Concentration Level Assessment* to the *Director* for review by the *Air Standards Manager* in the following circumstances:

(a) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level* and the concentration at a *Point of Impingement* will exceed the *Acceptable Maximum Ground Level Concentration*.

(b) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level* and the concentration at a *Point of Impingement* will exceed the most recently accepted *Maximum Concentration Level Assessment* submitted under Condition 3.1.2 or this Condition.

(c) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level* and the *Acceptable Maximum Ground Level Concentration*.

(d) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level* and the most recently accepted *Maximum Concentration Level Assessment* submitted under Condition 3.1.2 or this Condition.

(e) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit*, *Acceptable Maximum Ground Level Concentration* or a *Maximum Concentration Level Assessment* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level*.

3.1.4 Subject to the Operational Flexibility set out in Condition 2 of this *Approval*, the *Company* may make the *Modification* if the submission of a *Maximum Concentration Level Assessment* under Condition 3.1.2 or 3.1.3 is not required.

3.1.5 A *Company* that is required to submit an assessment under Condition 3.1.2 or 3.1.3 shall submit the assessment at least thirty (30) days before the proposed *Modification* occurs.

3.1.6 The *Ministry* shall provide to the *Company* written confirmation of the receipt of the assessment under Condition 3.1.2 or 3.1.3.

3.1.7 If an assessment is submitted under Condition 3.1.2 or 3.1.3, the *Company* shall not modify the *Facility* unless the *Ministry* accepts the assessment.

3.1.8 If the *Ministry* notifies the *Company* that it does not accept the assessment submitted under Condition 3.1.2 or 3.1.3, the *Company* shall:

(a) revise and resubmit the assessment; or

(b) notify the *Ministry* that the *Company* will not be modifying the *Facility*.

3.1.9 The re-submission under Condition 3.1.8 (a) is considered by the *Ministry* as a new submission.

3.2. **PERFORMANCE LIMITS**

3.2.1 Subject to Condition 3.2.2, the *Company* shall, at all times, ensure that all *Equipment* that is a source of a *Compound of Concern* is operated to comply with the following *Performance Limits*:

- (a) for a *Compound of Concern* that has a *Ministry Point of Impingement Limit*, the maximum concentration of that *Compound of Concern* at any *Point of Impingement* shall not exceed the corresponding *Ministry Point of Impingement Limit*;
- (b) for a *Compound of Concern* that has an *Acceptable Maximum Ground Level Concentration* and no *Maximum Concentration Level Assessment*, the maximum concentration of that *Compound of Concern* at any *Point of Impingement* shall not exceed the corresponding *Acceptable Maximum Ground Level Concentration*; and
- (c) for a *Compound of Concern* that has a *Maximum Concentration Level Assessment*, the maximum concentration of that *Compound of Concern* at any *Point of Impingement* shall not exceed the most recently accepted corresponding *Maximum Concentration Level Assessment*.

3.2.2 If the *Company* has modified the *Facility* and was not required to submit a *Maximum Concentration Level Assessment* with respect to a *Compound of Concern* under Condition 3.1.2 or 3.1.3, the *Company* shall, at all times, ensure that all *Equipment* that is a source of the *Compound of Concern* is operated such that the maximum concentration of the *Compound of Concern* shall not exceed the concentration listed for the *Compound of Concern* in the most recent version of the *ESDM Report*.

3.2.3 The *Company* shall, at all times, ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-205* or *Publication NPC-232*, as applicable.

3.2.4 The *Company* shall, at all times, ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207*.

3.2.5 The *Company* shall, at all times, operate any *Equipment with Specific Operational Limits* approved by this *Approval* in accordance with the *Original ESDM Report*.

4. **DOCUMENTATION REQUIREMENTS**

4.1 The *Company* shall, at all times, maintain documentation that describes the current operations of the *Facility*, including but not limited to:

- (a) an *ESDM Report* that demonstrates compliance with the *Performance Limits* for the *Facility*;
- (b) an *Acoustic Assessment Report* that demonstrates compliance with the *Performance Limits* for the *Facility*;
- (c) an up-to-date *Log* that describes each *Modification* to the *Facility*; and
- (d) a record of the changes to the *ESDM Report* and the *Acoustic Assessment Report* that documents how each *Modification* is in compliance with the *Performance Limits*.

4.2 The *Company* shall, during regular business hours, make the current *Emission Summary Table* and *Acoustic Assessment Summary Table* available for inspection at the *Facility* by any interested member of the public.

4.3 Subject to Condition 4.5, the *Company* shall prepare and complete no later than August 15 of each year documentation that describes the activities undertaken at the *Facility* in the previous calendar year, including but not limited to:

- (a) a list of all *Compounds of Concern* for which a *Maximum Concentration Level Assessment* was submitted to the *Director* for review by the *Air Standards Manager* pursuant to Condition 3.1.2 or 3.1.3

of this *Approval*;

(b) if the *Company* has modified the *Facility* and was not required to submit a *Maximum Concentration Level Assessment* with respect to a *Compound of Concern* under Condition 3.1.2 or 3.1.3, a list and concentration level of all such *Compounds of Concern*;

(c) a review of any changes to *Ministry Point of Impingement Limits* that affect any *Compounds of Concern* emitted from the *Facility*; and

(d) a table of the changes in the emission rate of any *Compound of Concern* and the resultant increase or decrease in the *Point of Impingement* concentration reported in the *ESDM Report*.

4.4 Subject to Condition 4.5, the *Company* shall, at all times, maintain the documentation described in Condition 4.3.

4.5 Conditions 4.3 and 4.4 do not apply if Condition 2.1 has expired.

4.6 The *Company* shall, within three (3) months after the expiry of Condition 2.1 of this *Approval*, update the *ESDM Report* and the *Acoustic Assessment Report* such that they describe the *Facility* as it was at the time that Condition 2.1 of this *Approval* expired.

5. REPORTING REQUIREMENTS

5.1 Subject to Condition 5.2, the *Company* shall provide the *Ministry* and the *Director* no later than August 15 of each year, a *Written Summary Form* that shall include the following:

(a) a declaration of whether the *Facility* was in compliance with section 9 of the *EPA, O.Reg. 419/05* and the conditions of this *Approval*;

(b) a summary of each *Modification* that took place in the previous calendar year that resulted in a change in the previously calculated concentration at the *Point of Impingement* for any *Compound of Concern* or resulted in a change in the sound levels reported in the *Acoustic Assessment Summary Table* at any *Point of Reception*.

5.2 Condition 5.1 does not apply if Condition 2.1 has expired.

6. OPERATION AND MAINTENANCE

6.1 The *Company* shall prepare and implement, not later than three (3) months from the date of this *Approval*, operating procedures and maintenance programs for all *Processes with Significant Environmental Aspects*, which shall specify as a minimum:

(a) frequency of inspections and scheduled preventative maintenance;

(b) procedures to prevent upset conditions;

(c) procedures to minimize all fugitive emissions;

(d) procedures to prevent and/or minimize odorous emissions;

(e) procedures to prevent and/or minimize noise emissions; and

(f) procedures for record keeping activities relating to the operation and maintenance programs.

6.2 The *Company* shall ensure that all *Processes with Significant Environmental Aspects* are operated and maintained at all times in accordance with this *Approval*, the operating procedures and maintenance programs.

7. COMPLAINTS RECORDING PROCEDURE

7.1 If at any time, the *Company* receives any environmental complaints from the public regarding the operation of the *Equipment* approved by this *Approval*, the *Company* shall respond to these complaints according to the following procedure:

(a) the *Company* shall record and number each complaint, either electronically or in a log book, and shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and, if known, the address of the complainant;

(b) the *Company*, upon notification of a complaint, shall initiate appropriate steps to determine all possible causes of the complaint, and shall proceed to take the necessary actions to appropriately deal with the cause of the subject matter of the complaint; and

(c) the *Company* shall complete and retain on-site a report written within one (1) week of the complaint date, listing the actions taken to appropriately deal with the cause of the subject matter of the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

8. RECORD KEEPING REQUIREMENTS

8.1 Any information requested by any employee in or agent of the *Ministry* concerning the *Facility* and its operation under this *Approval*, including, but not limited to, any records required to be kept by this *Approval*, shall be provided to the employee in or agent of the *Ministry*, upon request, in a timely manner.

8.2 The *Company* shall retain, for a minimum of five (5) years from the date of their creation, except as noted below, all reports, records and information described in this *Approval* and shall include but not be limited to:

(a) If the *Company* has updated the *ESDM Report* in order to comply with Condition 4.1(a) of this *Approval*, a copy of each new version of the *ESDM Report*;

(b) If the *Company* has updated the *Acoustic Assessment Report*, in order to comply with Condition 4.1(b) of this *Approval*, a copy of each new version of the *Acoustic Assessment Report*;

(c) supporting information used in the emission rate calculations performed in the *ESDM Reports* and *Acoustic Assessment Reports* to document compliance with the *Performance Limits*(superseded information must be retained for a period of three (3) years after *Modification*);

(d) the *Log* that describes each *Modification* to the *Facility*;

(e) all documentation prepared in accordance with Condition 4.3 of this *Approval*;

(f) copies of any *Written Summary Forms* provided to the *Ministry* under Condition 5.1 of this *Approval*;

(g) the operating procedures and maintenance programs, including records on the maintenance, repair and inspection of the *Equipment* related to all *Processes with Significant Environmental Aspects*; and

(h) the complaints recording procedure, including records related to all environmental complaints made by the public as required by Condition 7.1 of this *Approval*.

9. ACOUSTIC AUDIT

9.1 The *Company* shall carry out *Acoustic Audit* measurements on the actual noise emissions due to the operation of the *Facility* . The *Company* :

(a) shall carry out *Acoustic Audit* measurements in accordance with the procedures in *Publication*

NPC-103 ;

(b) shall submit an *Acoustic Audit Report* on the results of the *Acoustic Audit* , prepared by an *Independent Acoustical Consultant* , in accordance with the requirements of *Publication NPC-233* , to the *District Manager* and the *Director* , not later than three (3) months after the commencement of operation of the *Facility*.

9.2 The *Director* :

(a) may not accept the results of the *Acoustic Audit* if the requirements of *Publication NPC-233* were not followed;

(b) may require the *Company* to repeat the *Acoustic Audit* if the results of the *Acoustic Audit* are found unacceptable to the *Director* .

10. REVOCATION OF PREVIOUS APPROVALS

10.1 This *Approval* replaces and revokes all Certificates of Approval (Air) issued under section 9 *EPA* and Environmental Compliance Approvals issued under Part II.1 *EPA* to the *Facility* in regards to the activities mentioned in subsection 9(1) of the *EPA* and dated prior to the date of this *Approval*.

SCHEDULE A

Supporting Documentation

(a) Application for Approval (Air & Noise), dated August 12, 2013, signed by Garnet Pratt Siddall, President & CEO, and submitted by the *Company*;

(b) Emission Summary and Dispersion Modelling Report, prepared by Church and Trought Inc. and dated August 2013;

(c) Acoustic Assessment Report prepared by Church & Trought Inc., dated August 2013 and signed by Stephen Kuchma, P.Eng.

(d) Additional information provided by Church & Trought Inc., dated February 7, 2014 and signed by Christopher Scullion.

The reasons for the imposition of these terms and conditions are as follows:

GENERAL

1. Condition No. 1 is included to require the *Approval* holder to build, operate and maintain the *Facility* in accordance with the Supporting Documentation in Schedule A considered by the *Director* in issuing this *Approval*.

LIMITED OPERATIONAL FLEXIBILITY, REQUEST FOR MAXIMUM CONCENTRATION LEVEL ASSESSMENT AND PERFORMANCE LIMITS

2. Conditions No. 2 and 3 are included to limit and define the *Modifications* permitted by this *Approval*, and to set out the circumstances in which the *Company* shall submit a *Maximum Concentration Level Assessment* prior to making *Modifications*. The holder of the *Approval* is approved for operational flexibility for the *Facility* that is consistent with the description of the operations included with the application up to the *Facility Production Limit*. In return for the operational

flexibility, the *Approval* places performance based limits that cannot be exceeded under the terms of this *Approval*. *Approval* holders will still have to obtain other relevant approvals required to operate the *Facility*, including requirements under other environmental legislation such as the *Environmental Assessment Act*.

DOCUMENTATION REQUIREMENTS

3. Condition No. 4 is included to require the *Company* to maintain ongoing documentation that demonstrates compliance with the *Performance Limits* of this *Approval* and allows the *Ministry* to monitor on-going compliance with these *Performance Limits*. The *Company* is required to have an up to date *ESDM Report* and *Acoustic Assessment Report* that describe the *Facility* at all times and make the *Emission Summary Table* and *Acoustic Assessment Summary Table* from these reports available to the public on an ongoing basis in order to maintain public communication with regard to the emissions from the *Facility*.

REPORTING REQUIREMENTS

4. Condition No. 5 is included to require the *Company* to provide a yearly *Written Summary Form* to the *Ministry*, to assist the *Ministry* with the review of the site's compliance with the *EPA*, the regulations and this *Approval*.

OPERATION AND MAINTENANCE

5. Condition No. 6 is included to require the *Company* to properly operate and maintain the *Processes with Significant Environmental Aspects* to minimize the impact to the environment from these processes.

COMPLAINTS RECORDING PROCEDURE

6. Condition No. 7 is included to require the *Company* to respond to any environmental complaints regarding the operation of the *Equipment*, according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.

RECORD KEEPING REQUIREMENTS

7. Condition No. 8 is included to require the *Company* to retain all documentation related to this *Approval* and provide access to employees in or agents of the *Ministry*, upon request, so that the *Ministry* can determine if a more detailed review of compliance with the *Performance Limits* is necessary.

ACOUSTIC AUDIT

8. Condition No. 9 is included to require the *Company* to gather accurate information and submit an *Acoustic Audit Report* in accordance with procedures set in the *Ministry* 's noise guidelines, so that the environmental impact and subsequent compliance with this *Approval* can be verified.

REVOCATION OF PREVIOUS APPROVALS

9. Condition No. 10 is included to identify that this *Approval* replaces all Section 9 Certificate(s) of Approval and Part II.1 Approvals in regards to the activities mentioned in subsection 9(1) of the *EPA* and dated prior to the date of this *Approval*.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental

Bill of Rights, 1993 , S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review
Tribunal
655 Bay Street, Suite
1500
Toronto, Ontario
M5G 1E5

AND

The Environmental
Commissioner
1075 Bay Street, Suite
605
Toronto, Ontario
M5S 2B1

AND

The Director appointed for the
purposes of Part II.1 of the
Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor
12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal 's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca , you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 20th day of February,
2014

Rudolf Wan, P.Eng.
Director
appointed for the purposes of Part II.1 of
the *Environmental Protection Act*

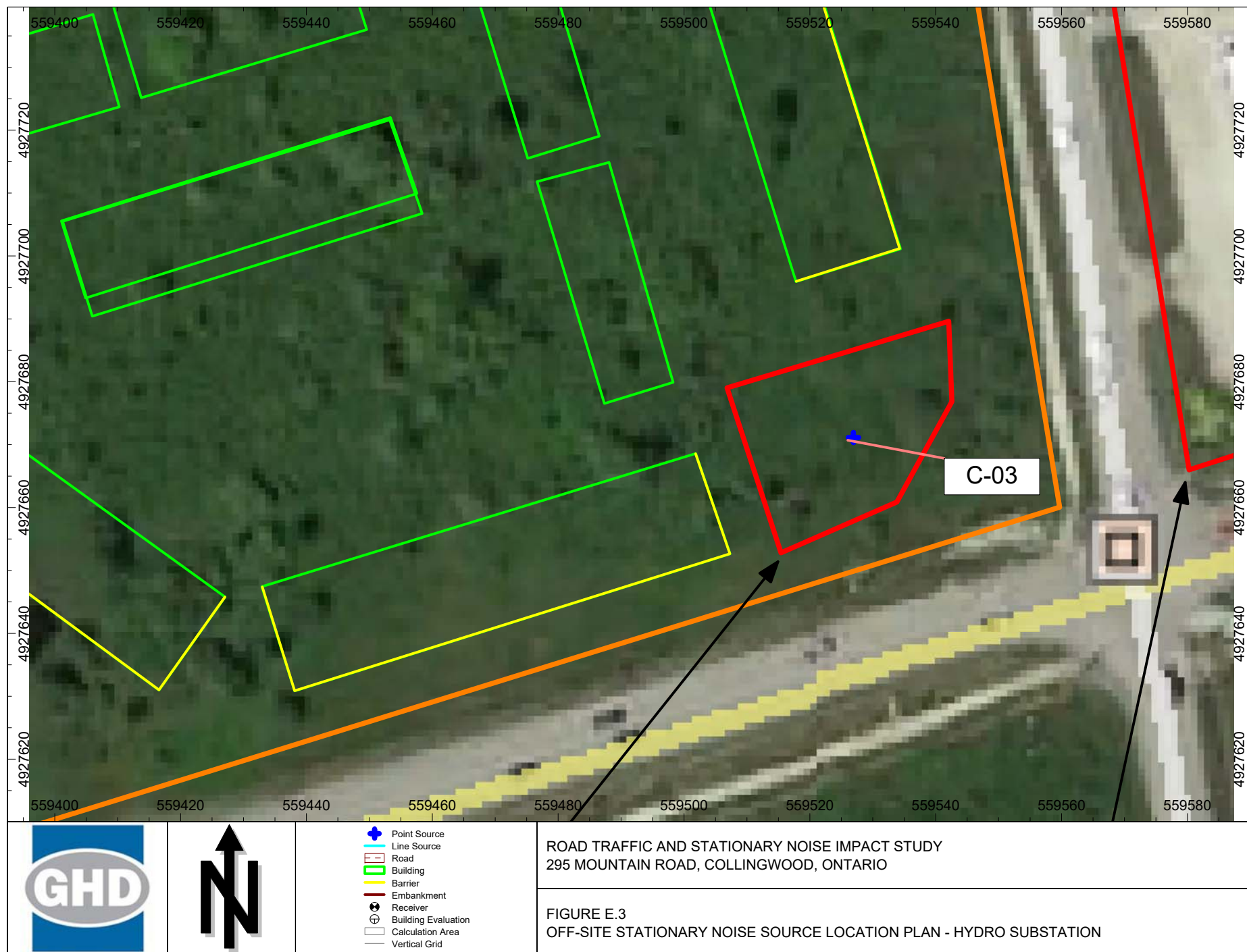
CL/
c: District Manager, MOE Barrie
Christopher Scullion, Church and Trought Inc.

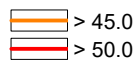
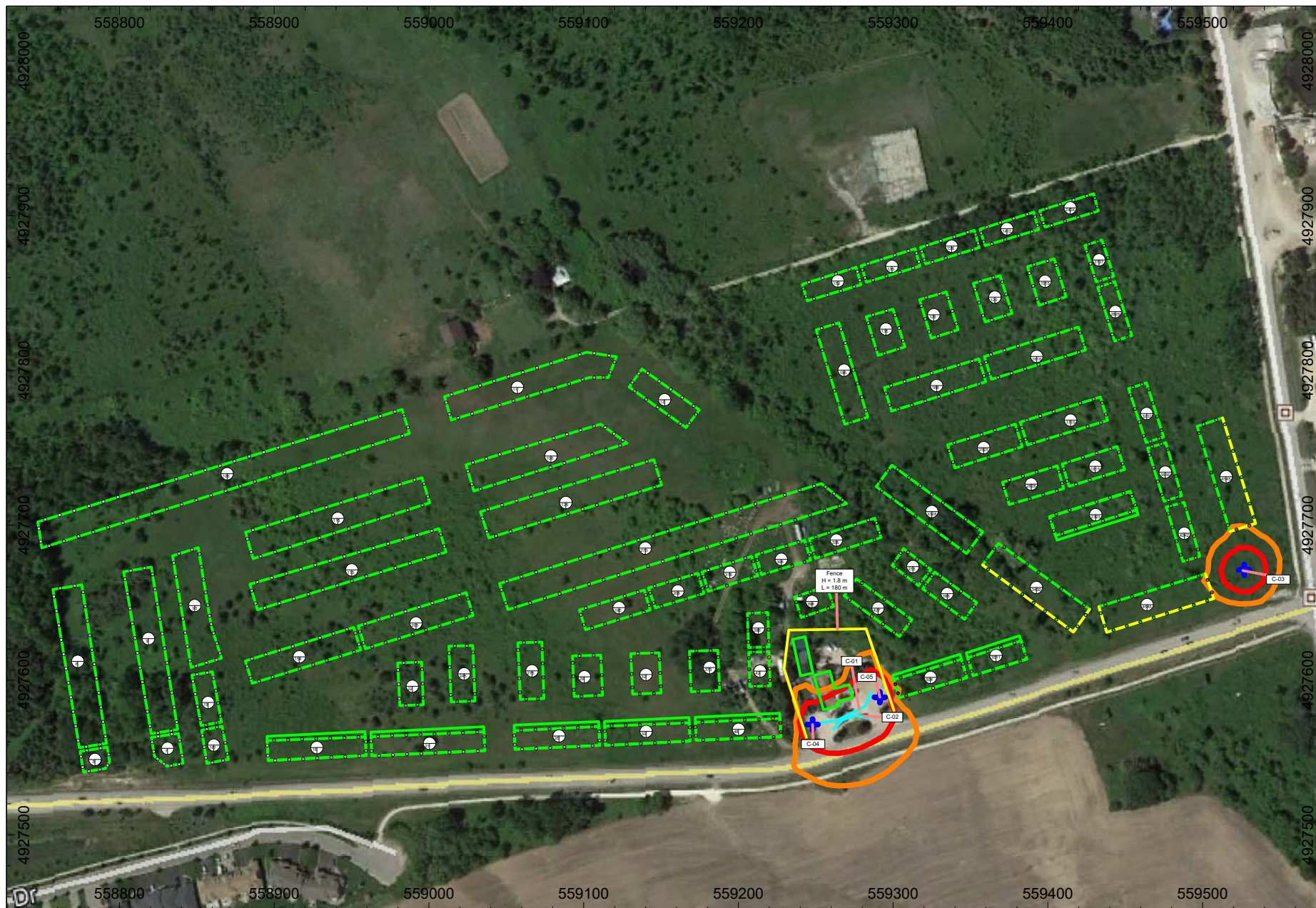
Attachment E

Stationary Noise Modelling Results and Figures









ROAD TRAFFIC AND STATIONARY NOISE IMPACT STUDY
295 MOUNTAIN ROAD, COLLINGWOOD, ONTARIO

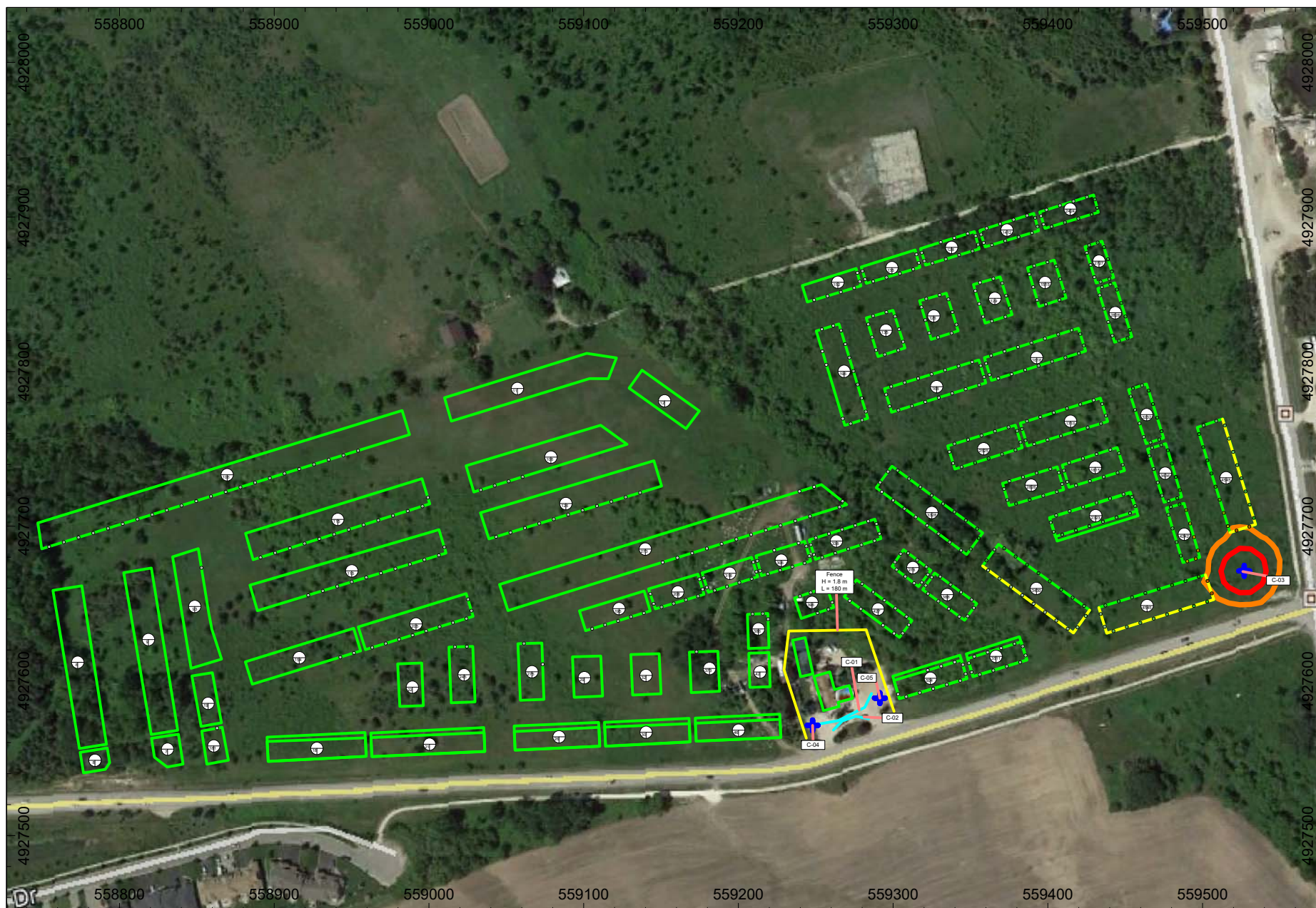
FIGURE E.4
OFF-SITE STATIONARY NOISE SOURCES - DAYTIME NOISE CONTOUR PLOT (10.5 m A.G.)



- > 45.0
- > 50.0

ROAD TRAFFIC AND STATIONARY NOISE IMPACT STUDY
295 MOUNTAIN ROAD, COLLINGWOOD, ONTARIO

FIGURE E.5
OFF-SITE STATIONARY NOISE SOURCES - EVENING NOISE CONTOUR PLOT (10.5 m A.G.)



- > 45.0
- > 50.0

ROAD TRAFFIC AND STATIONARY NOISE IMPACT STUDY
295 MOUNTAIN ROAD, COLLINGWOOD, ONTARIO

FIGURE E.6
OFF-SITE STATIONARY NOISE SOURCES - NIGHTTIME NOISE CONTOUR PLOT (10.5 m A.G.)

Table E.1
Noise Source Sound Level Summary
Proposed Development
295 Mountain Road, Collingwood, Ontario

Cadna A ID	Noise Source Description		1/1 Octave Band Data								Unadjusted Total Sound Power Level (dBA)	Tonal Penalty Assessment (dBA)		Height Absolute (m)	Operating Time Day (min)	Operating Time Evening (min)	Operating Time Night (min)	Reference/Comments
			32	63	125	250	500	1000	2000	4000								
C-01	Moving Loader	PWL (dB)	31	105	97	95	95	94	91	90	81	106.8	No	0	2.0	60	—	— GHD Reference Spectra
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	-8.4	78.8	80.9	86.4	91.8	94.0	92.2	91.0	79.9	98.9						
C-02	Transport Truck Moving Slowly	PWL (dB)	31	117	112	105	107	104	103	100	91	119.0	No	0	2.0	60	—	— GHD Reference Spectra
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	-8.4	90.8	95.9	96.4	103.8	104.0	104.2	101.0	89.9	109.9						
C-03	Hydro Substation Transformer	PWL (dB)	78.6	84.6	86.6	81.6	81.6	75.6	70.6	65.6	58.6	90.6	No	0	3.0	60	—	— GHD Reference Spectra and Calculation
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	39.2	58.4	70.5	73.0	78.4	75.6	71.8	66.6	57.5	82.0						
C-04	Dumping of Material	PWL (dB)	31	99	98	94	93	93	92	85	78	103.6	No	0	0	1	—	— GHD Reference Spectra
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	-8.4	72.8	81.9	85.4	89.8	93.0	93.2	86.0	76.9	97.8						
C-05	Dumping of Material	PWL (dB)	31	99	98	94	93	93	92	85	78	103.6	No	0	0	1	—	— GHD Reference Spectra
		A-weighted correction	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1							
		PWL (dBA)	-8.4	72.8	81.9	85.4	89.8	93.0	93.2	86.0	76.9	97.8						