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NOISE IMPACT STUDY – **Project: 10421.02**

Navan Quarry Extension
Noise Impact Study

Cumberland Ward, Ottawa, Ontario

Prepared for:

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January 15, 2021

Revision History

Version	Description	Author	Reviewed	Date
- -	Initial Report	DAF	DF	January 15, 2021

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Table of Contents

1 Introduction 1
2 Site Description 1
3 Noise Criteria 2
4 Quarry Operations 2
5 Noise Prediction and Controls 4
6 Truck Traffic Noise on Haul Route 7
7 Conclusion 7

Appendix A
Noise Control Recommendations

Appendix B
Sample Stationary Noise Calculations

Appendix C
Qualifications of the Authors

1 Introduction

Lafarge Canada Ltd. is applying for a Category 2 Class "A" licence for the proposed Navan Quarry Extension located in part of Lots 9 & 10, Concession 5 of the City of Ottawa, formerly the Township of Cumberland. The proposed extension consists of 28.4 Hectares (ha) to be licensed and 21.1 ha to be extracted.

Aercoustics Engineering Limited (Aercoustics) was retained by Lafarge Canada Inc. (Lafarge) to prepare a Noise Impact Study (NIS) for the proposed Lafarge Navan Quarry Extension. The purpose of this study is to provide noise control recommendations for the quarry operations to satisfy the Ministry of the Environment, Conservation, and Parks (MECP) noise guidelines.

Sound level limits for quarry noise on the nearby noise-sensitive receptors are described in the MECP publication entitled "Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning", dated August 2013 (NPC-300). Where the predicted levels were found to exceed the MECP sound level limits, noise control measures are proposed to satisfy these limits.

Figure 1 provides a key plan showing the location of the quarry. A site plan is provided as Figure 2, illustrating the quarry area and the locations of nearby receptors. Noise control recommendations are provided in Appendix A.

2 Site Description

The proposed quarry will be an eastward extension of the Existing Navan Quarry (Licence Nos. 4185, 4144, 10699). The proposed Navan Quarry Extension is situated immediately north of Colonial Road between Heuvelmans Road and Dunning Road. The surrounding land uses are primarily agricultural with the lands immediately to the south zoned as rural general industrial.

Figure 1 provides a key plan showing the location of the proposed Navan Quarry Extension and surrounding area. The existing single-family dwellings in the vicinity of the quarry are identified as receptors R01 through R31. The location of each receptor is identified in Figure 2.

The proposed Navan Quarry Extension addressed in this Noise Impact Study consists of operations within the lands of each phase identified in Figure 2. These operations include excavation, processing (crushing and screening), and aggregate haulage and shipping. A maximum annual tonnage of 750,000 tonnes is to be removed from the lands of the proposed Navan Quarry Extension.

3 Noise Criteria

3.1 Acoustic Classification

The appropriate noise criteria for the receptors in the vicinity of the proposed Navan Quarry Extension were based on the MECP Noise Pollution Control publication NPC-300.

The points of reception R01 through R31 have an acoustic environment consistent with the Class 2 (Urban) designation as defined by the MECP Publication NPC-300. In a class 2 area, the background sound levels during the daytime (07:00-19:00) are dominated by the activities of people, usually road traffic and defined by natural environment and infrequent human activity in the evening and nighttime periods (19:00-07:00).

The applicable limits for noise from a stationary source at a noise-sensitive point of reception (receptor) in a Class 2 (Urban) area are outlined in Table 1.

Table 1 - NPC-300 Exclusion Limits for Stationary Sources - Hourly L_{AEQ}

Time of Day	Class 2 (Urban)
Daytime (07:00 – 19:00)	50
Evening or Nighttime (19:00 – 07:00)	45

4 Quarry Operations

The site plans for the proposed Navan Quarry Extension outline the phases of extraction as well as the direction of operations in each phase. In general terms, the nature of the work consists of the following:

- Site preparation and rehabilitation
- Extraction and processing; and
- Shipment off-site.

4.1 Hours of Operation

The proposed hours of operation are from 07:00 to 19:00, Monday to Sunday, excluding statutory holidays. At no time shall blasting, extraction, processing or shipping take place on a statutory holiday. Equipment maintenance may take place outside these normal operating hours. The proposed hours of operation are summarized below in Table 2.

Table 2 - Operating Hours of Navan Quarry Extension

Time of Day	Day of Week	Operations
06:00 – 07:00	Monday to Sunday	Loading and Shipping Operations Only
07:00 – 19:00	Monday to Sunday	Full Operation – Extraction, Processing, Loading & Shipping

4.2 Site Preparation and Rehabilitation

Site preparation includes the construction of any required berms as specified on the site plan. Topsoil and overburden will be removed. This work will be done primarily with bulldozers, scrapers, trucks, loaders, and excavators. Rehabilitation phases will involve similar equipment in establishing the final grading for the site.

The site preparation and rehabilitation work described above is not part of the daily operation of the quarry and are of short duration. These construction activities are not considered in the noise control analysis. The equipment used for these activities must satisfy the noise emission requirements of the MECP document NPC-115 “Construction Equipment”. By defining a maximum permissible noise emission for construction equipment, rather than directly limiting the noise impact at a sensitive point of reception, the MECP recognizes that construction is a temporary and largely unavoidable source of noise.

In order to minimize the noise impact associated with the construction activities, it is suggested that operations should be restricted to the daytime hours. When possible, site preparation should be conducted during the fall, winter, or spring months when there is a reduced level of extraction and when residential windows are more likely to remain closed.

4.3 Extraction, Processing and Transport

The maximum annual tonnage to be removed by the proposed Navan Quarry Extension is 750,000 tonnes. The quarry extension will operate with a portable processing plant which follows the working face where permitted by the noise controls.

Aggregate will be extracted using two (2) front end loaders at the working face. Material will be transported directly into the portable processing plant. Processed materials will be stored in stockpiles in the vicinity of the processing area. Two shipping loaders will be used in the processing area to load highway trucks with finished aggregate product for transport to market.

4.4 Equipment

The extraction, processing, and shipment equipment operating in the proposed quarry extension is limited to:

- One (1) Quiet Rock Drill
- Two (2) Extraction Loaders
- Two (2) Shipment Loaders
- One (1) Portable Processing Plant
- 30 Highway truck trips/hr (60 passes/hr)
- 30 Off-Road truck trips/hr (60 passes/hr)

The single portable processing plant may consist of multiple pieces of equipment for purposes such as crushing, screening, and washing. Since the noise predictions considered a single worst-case location for all the plant equipment, the distribution of the plant equipment is permitted at various locations. However, the combined sum sound power from all equipment locations must be less than or equal to the permitted sound power for the portable processing plant, and any local noise controls specific to the portable processing plant shall apply at each location.

The quiet rock drill must be designed for use in noise sensitive areas, which typically requires that the drill be equipped with an enclosed tower and a down-the-hole drill head. If the drill is of the percussive type, it should be equipped with a down-the-hole, rather than top-down hammering mechanism.

5 Noise Prediction and Controls

5.1 Noise Prediction Methodology

The proposed aggregate quarry operations, as described above, have been modelled using DataKustik's noise prediction software *CadnaA*. This modelling is based on established noise prediction methods outlined in the ISO 9613-2 standard entitled *"Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method and calculation".*

The noise predictions are based on the predictable worst-case noise impact for each of the aggregate quarry operation areas at each noise-sensitive receptor. This represents a design case where the quarry is operating at full capacity with all of the equipment operating simultaneously and at locations where the noise impact is highest for each receptor. It is expected that a majority of the quarry operations would occur in other areas of the site, resulting in lower associated noise impacts.

Noise levels were predicted using existing topography under conditions of downwind propagation, generally with hard ground modelled in the quarry area and soft ground conditions elsewhere. Appendix B contains sample stationary noise source calculations.

Where noise predictions have indicated the potential of exceedance of the applicable sound level limits, noise control measures have been established to satisfy these limits.

5.2 Quarry Noise Sources

The reference sound levels used for the aggregate quarry equipment are outlined in Table 3. A site visit to the existing Navan Quarry was conducted on December 7, 2015 by Aercoustics personnel. Noise measurements were taken of the portable processing plant. It is understood that the portable processing plant measured at the existing quarry will be used within the Quarry Extension. The assumed sound levels for other quarry equipment

were based on Aercoustics' measurements of similar equipment at other aggregate operations.

Table 3 - Reference Sound Pressure Levels of Aggregate Quarry Equipment

Equipment	Reference Sound Pressure Level at 30m (dBA)
Portable Processing Plant (crushing & screening)	87
Extraction Loader	74
Shipment Loader	67*
Quiet Rock Drill	74
Highway Truck	66
Off-Road Truck	75

[1] – The shipment loaders were assumed to operate at a 50 % duty cycle.

5.3 Recommended Noise Controls

The recommended noise controls presented in this section and in Appendix A have been determined, through noise impact predictions, to be effective in limiting the noise impact from the aggregate quarry activities to levels which comply with the MECP sound level limits. It should be noted that there may be other effective noise controls that could replace or revise those put forth in this report. Prior to the implementation of any changes to the noise controls, appropriate studies should be undertaken to demonstrate that the MECP sound level limits will be satisfied.

An acoustic barrier is required to be solid, with no gates or openings, and shall satisfy a minimum area density of 20 kg/m^2. Such a barrier may take the form of a pit face, stockpile, acoustic fence, ISO container(s), some combination of these, or any other construction satisfying the requirements of an acoustic barrier.

Refer to Figures 3 through 6 for requirements at each of Phases 1 to 4, respectively. These figures include an illustration of the timing and implementation of noise controls such as local portable processing plant acoustical barriers.

Refer to Appendix A for a comprehensive summary of the recommended noise controls for the proposed Navan Quarry Extension.

5.4 Predicted Sound Levels with Controls

The predicted worst-case noise levels produced by operations within the proposed Navan Quarry Extension area are summarized in Table 4 below.

Table 4 - Navan Quarry Extension - Worst Case Predicted Sound Levels and Criterial - Hourly L_{EQ} (dBA)

Point of Reception	Extraction, Processing, and Shipping Operations (07:00 – 19:00)	
	Daytime Sound Level Limit	Maximum Predicted Sound Level
R01	50	50
R02	50	47
R03	50	46
R04	50	47
R05	50	48
R06	50	48
R07	50	46
R08	50	50
R09	50	48
R10	50	48
R11	50	46
R12	50	43
R13	50	44
R14	50	44
R15	50	43
R16	50	40
R17	50	43
R18	50	45
R19	50	43
R20	50	43
R21	50	38
R22	50	38
R23	50	40
R24	50	39
R25	50	40
R26	50	40
R27	50	43
R28	50	42
R29	50	41
R30	50	43
R31	50	43

With the incorporation of the recommended noise controls, the predicted noise impact will satisfy the MECP sound level limits at all receptor locations.

5.5 Cumulative Noise Impact

The predictable worst-case operation of the quarry was designed to satisfy the MECP sound level limits. This represents an operating condition when the equipment in the quarry is positioned such that the noise impact at a given noise-sensitive receptor is highest. This generally occurs when the quarry's extraction operation is at a location in the quarry that is closest to the receptor. This condition will only occur for a small portion of the quarry's operational life. For the other portion of the quarry's operational life, the predicted noise level will be lower.

6 Truck Traffic Noise on Haul Route

The noise impact of truck traffic on public roadways is not addressed by the MECP in their noise guidelines. However, the MECP requires consideration of the noise impact in choosing the off-property haul route.

The aggregate material from the proposed Navan Quarry Extension will be shipped to market through the existing Navan Quarry via the existing entrance. Trucks leaving site with aggregate material will then exit onto Colonial Road moving east or west using the existing haul routes.

Since the quarry extension truck traffic will use the same haul routes, no significant change in truck trips is expected to occur compared to the operation of the existing Navan Quarry.

With this, the proposed haul route is not expected to cause an objectionable increase in road traffic noise and is considered the preferred haul route in the context of noise impact.

7 Conclusion

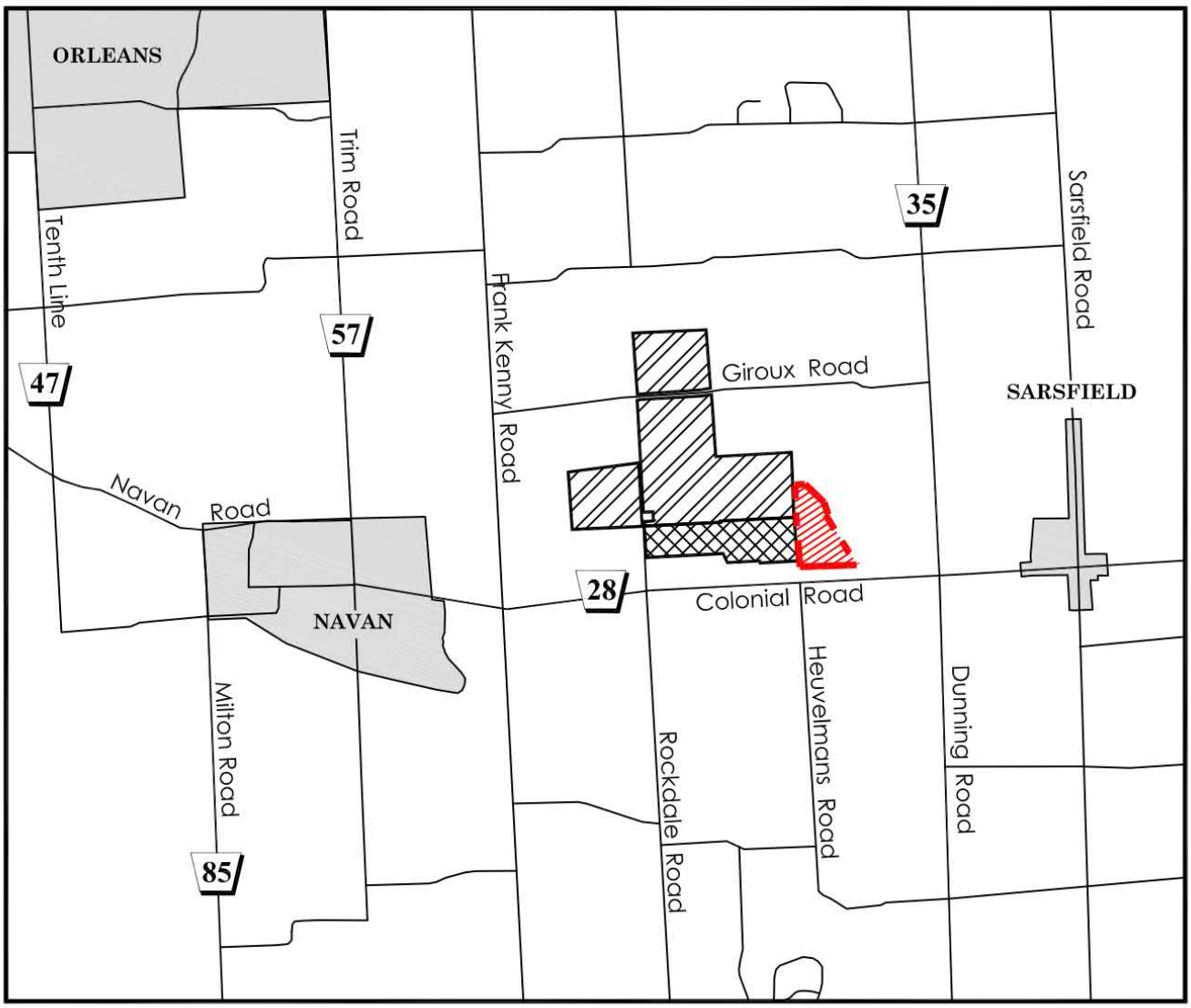
Aercoustics has conducted a noise impact study for the proposed Navan Quarry Extension. The purpose of this noise impact study was to provide noise control recommendations for the quarry operations to satisfy the MECP noise guidelines. Figure 2 provides a site plan outlining the aggregate quarry areas and the locations of nearby receptors.

Sound level limits were developed based on the MECP noise guidelines. Calculations were then carried out to determine the worst-case noise impact for each phase of the aggregate quarry operation, at each noise-sensitive receptor. Where noise predictions indicated the potential of exceedance of the MECP sound level limits, noise control recommendations were provided.

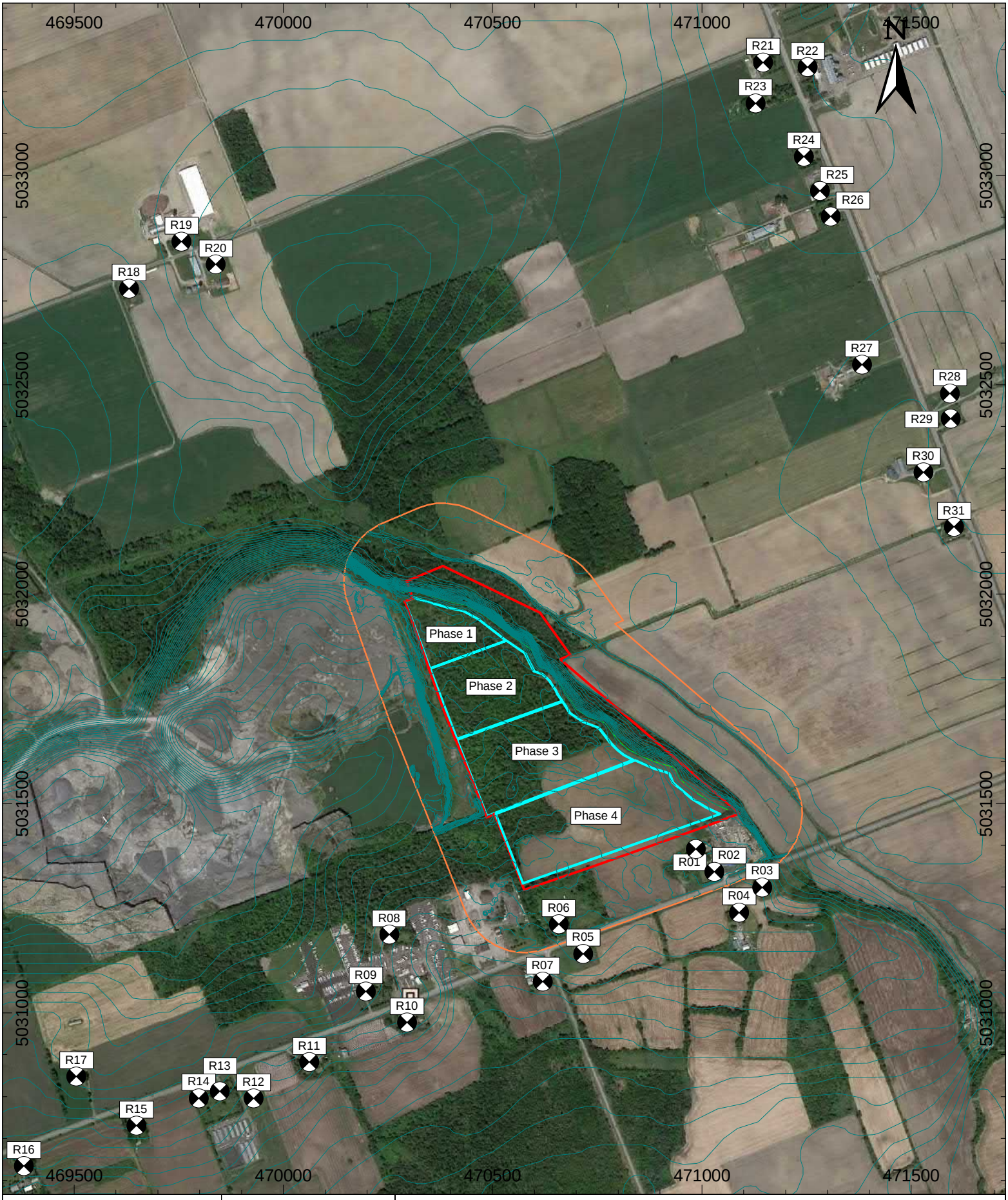
Appendix C provides a summary of the qualifications of the authors.

With the implementation of the recommended noise controls, the proposed aggregate quarry operation is predicted to satisfy the MECP noise guidelines.

Key Plan

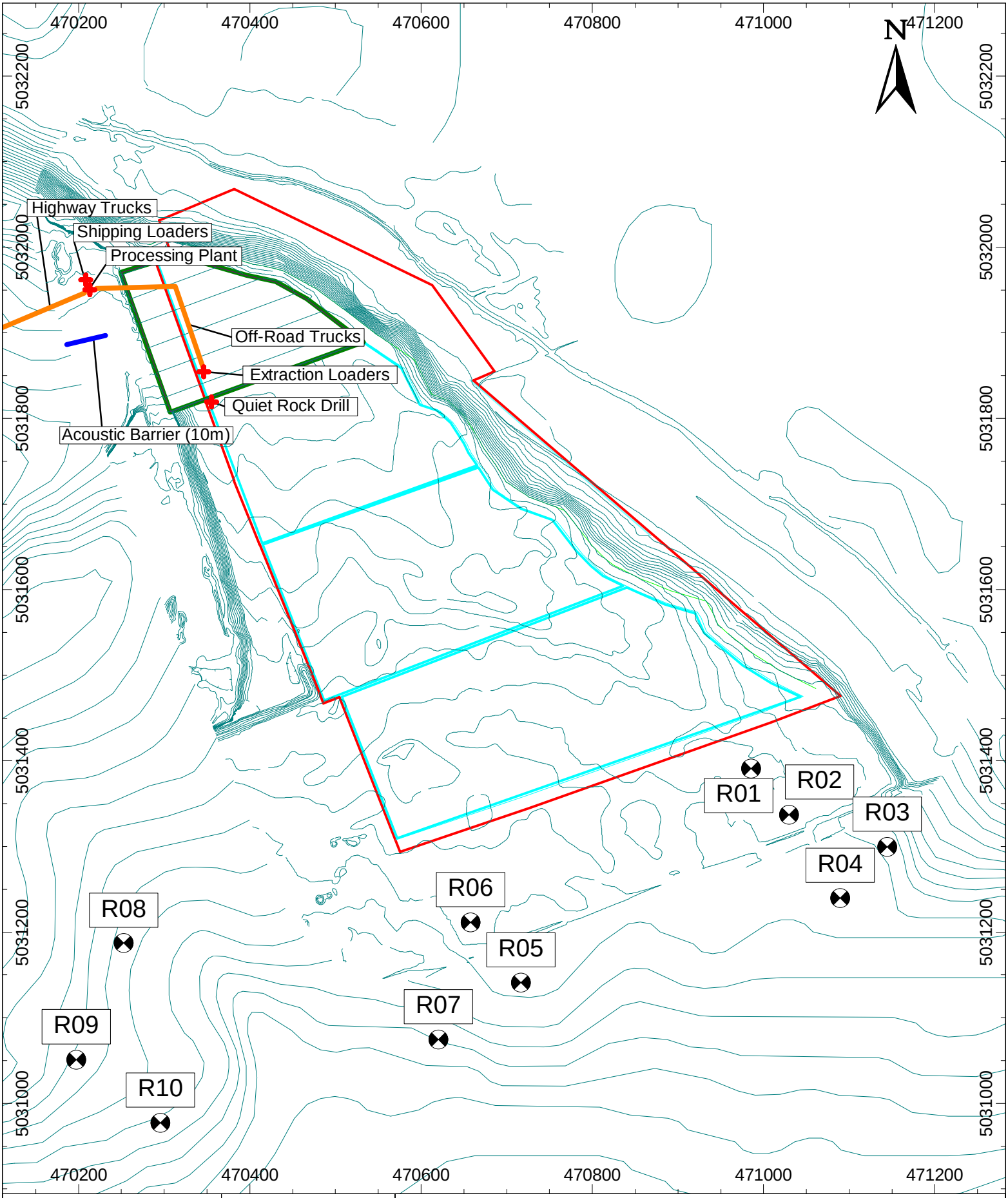


aercoustics	Project ID: 10421.02 Scale: NTS Drawn by: DAF Reviewed by: NSW Date: Nov 10, 2020 Revision: 1	**Project Name** Lafarge Navan - Quarry Extension	
		Figure Title Key Plan Showing Site Location	**Figure 1**

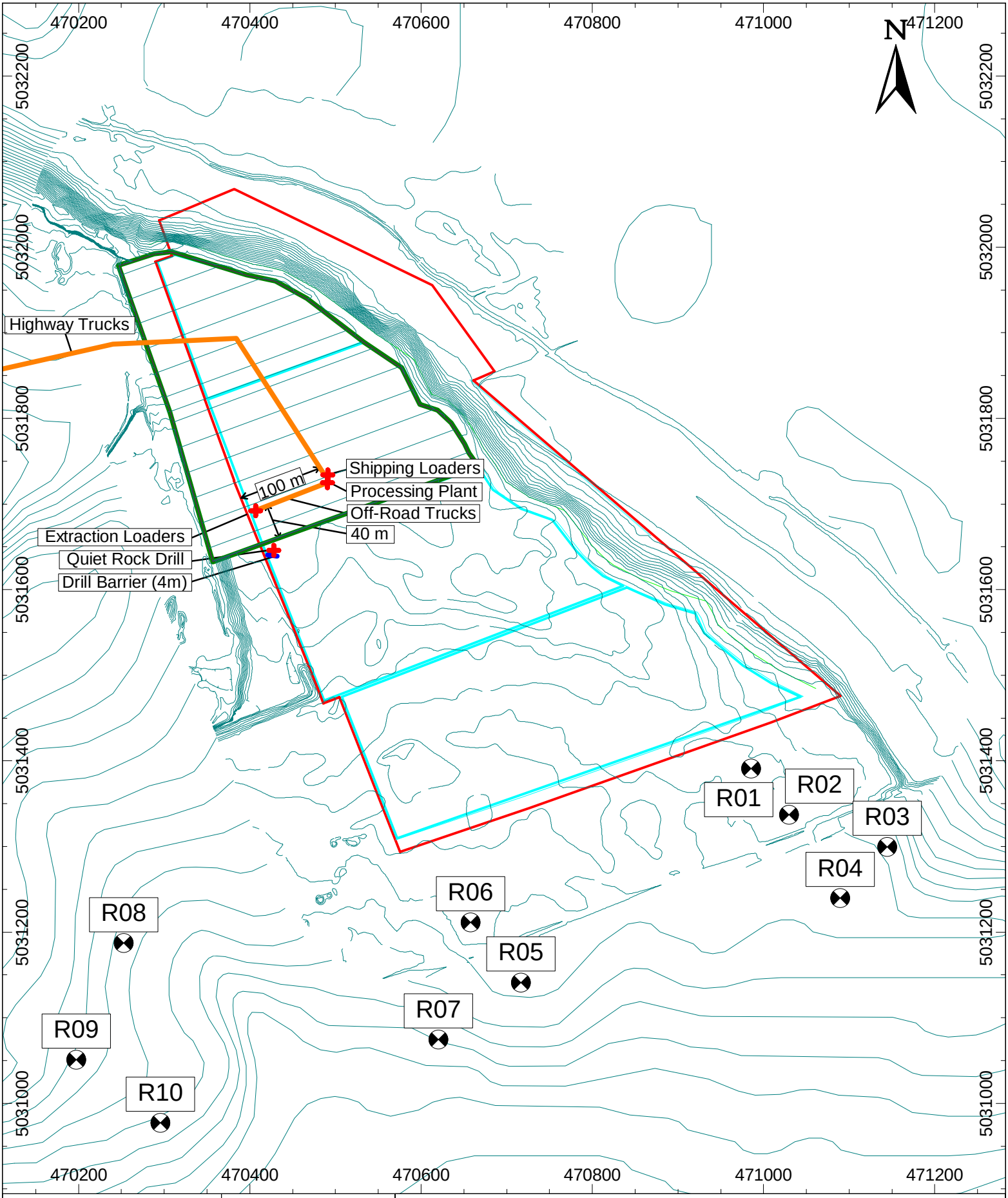


aercoustics	Project ID: 10421.02 Scale: NTS Drawn by: DAF Reviewed by: NSW Date: Nov 10, 2020 Revision: 1	**Project Name** Lafage Navan - Quarry Extension **Figure Title** Noise Sensitive Receptors

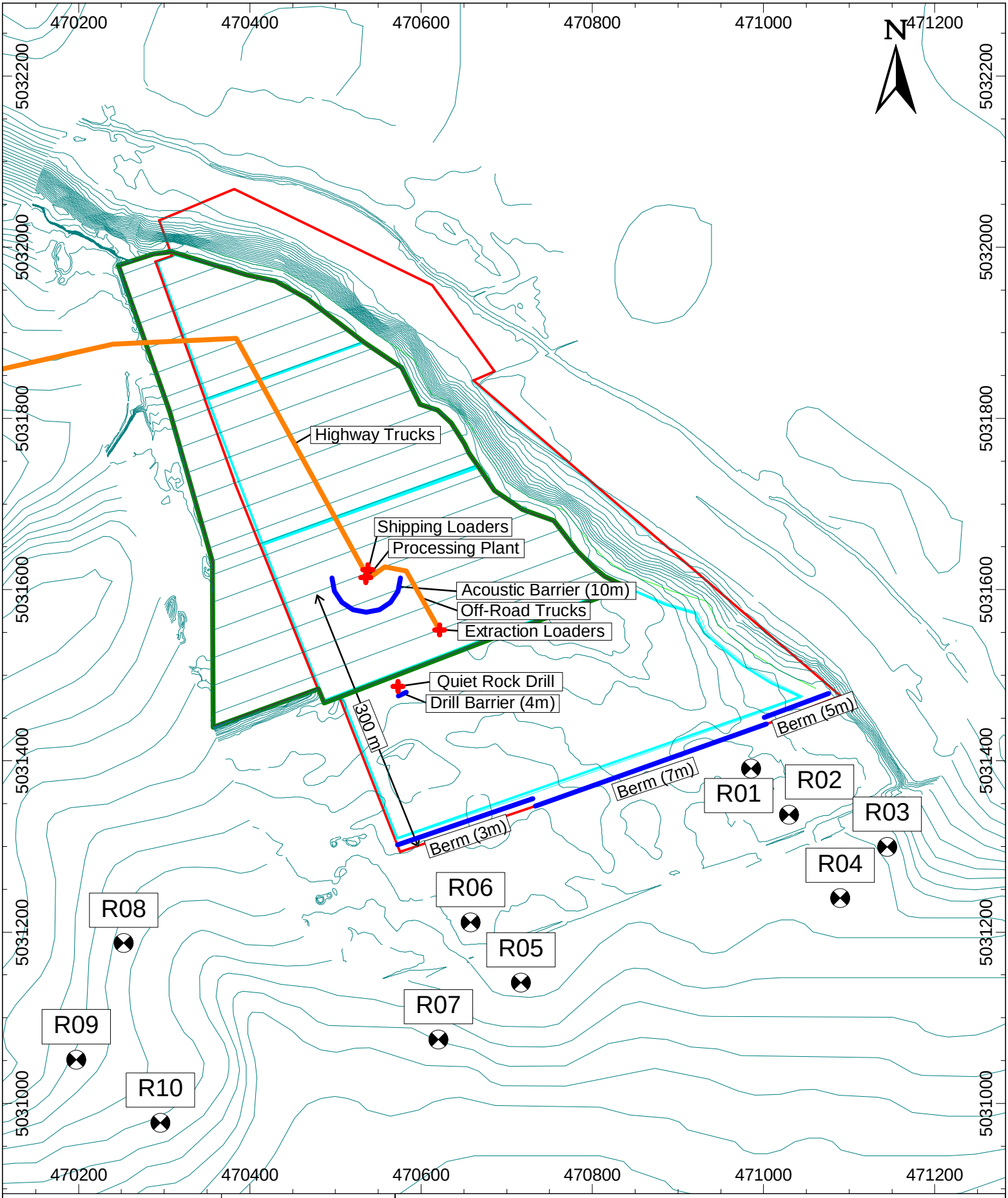
Figure 2



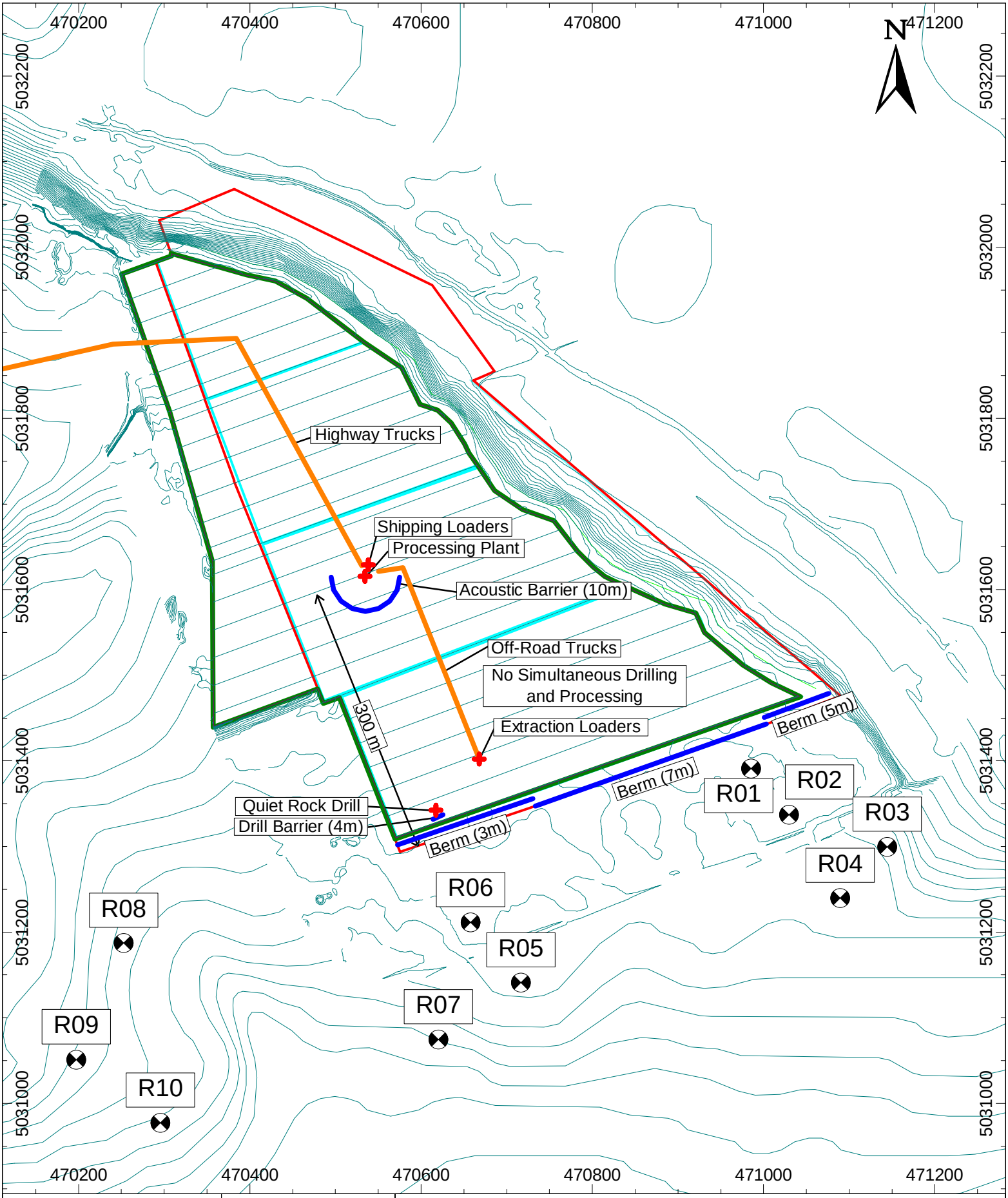
aercoustics	Project ID: 10421.02 Scale: NTS Drawn by: DAF Reviewed by: NSW Date: Nov 10, 2020 Revision: 1	**Project Name** Lafage Navan - Quarry Extension	
		Figure Title Noise Control Implementation - Phase 1	**Figure 3**



aercoustics	Project ID: 10421.02 Scale: NTS Drawn by: DAF Reviewed by: NSW Date: Nov 10, 2020 Revision: 1	**Project Name** Lafage Navan - Quarry Extension **Figure Title** Noise Control Implementation - Phase 2	**Figure 4**



aercoustics	Project ID: 10421.02 Scale: NTS Drawn by: DAF Reviewed by: NSW Date: Nov 10, 2020 Revision: 1	**Project Name** Lafage Navan - Quarry Extension **Figure Title** Noise Control Implementation - Phase 3	**Figure 5**



aercoustics	Project ID: 10421.02 Scale: NTS Drawn by: DAF Reviewed by: NSW Date: Nov 10, 2020 Revision: 1	**Project Name** Lafage Navan - Quarry Extension **Figure Title** Noise Control Implementation - Phase 4	**Figure 6**

Appendix A
Noise Control Recommendations

General Noise Controls:

1. The hours of extraction, processing and shipping operations shall be limited to daytime hours only (07:00 to 19:00). Shipping and loading operations are permitted outside these hours.

2. The extraction, processing and shipping equipment operating in the quarry is limited to:
   - One (1) Quiet Rock Drill
   - Two (2) Extraction Loaders
   - Two (2) Shipment Loaders
   - One (1) Portable Processing Plant
   - 30 Highway truck trips/hr (60 passes/hr)
   - 30 Off-Road truck trips/hr (60 passes/hr)

3. The quarry equipment shall satisfy the noise emission levels listed in Table A. If desired, a regular Extraction Loader (maximum 74 dBA) may be replaced with two Quiet Extraction Loaders (maximum 70 dBA) wherever a regular Extraction Loader is permitted.

Table E: Reference Sound Pressure Levels of Quarry Equipment

Equipment	Reference Sound Pressure Level at 30 m (dBA)
Portable Processing Plant (crushing & screening)	87
Extraction Loader	74
Shipment Loader	67*
Quiet Rock Drill	74
Highway Truck	66
Off-Road Truck	75

*The shipment loaders were assumed to operate at a 50 % duty cycle.

4. The sound emissions of all construction equipment involved in site preparation and rehabilitation activities shall comply with the sound level limits specified in the MECP publication NPC-115 “Construction Equipment”.

5. New equipment technology or different configurations may allow proposed changes to any portion of the extraction and processing operations including additional equipment to operate on the site, equipment to be substituted, and/or different berm heights, while still meeting the applicable sound level limits. Changes may be permitted to the site operations and noise controls provided that the changes still meet the sound level limits, as confirmed through documentation prepared by a Professional Engineer specializing in noise control.

6. An acoustic barrier is required to be solid, with no gaps or openings, and shall satisfy a minimum area density of 20 kg/m^2. It could take the form of a quarry face, stockpile, acoustic fence, ISO containers, a combination of these, or any other construction satisfying the requirements of an acoustic barrier.

7. The operation shall proceed from north to south in two separate lifts. The first lift extraction elevation shall slope generally between 105 m a.s.l. at the northern site extraction limit to 81 m a.s.l. at the southern site extraction limit.

Phase 1

8. During Phase 1, an acoustical barrier with a minimum height of 10 m shall be located within 50 m of the Portable Processing Plant, between the plant and Receptor R08 to the south.

Phase 2

9. During Phase 2, the Portable Processing Plant shall be located within 40 m of an acoustic barrier with a minimum height of 10 m.

Phase 3

10. The Portable Processing Plant shall remain a minimum of 300 m from the southern licensed boundary.

11. Prior to the extraction of Phase 3, an acoustic barrier with a minimum top-of-barrier elevation of 100 m a.s.l. shall be installed along the southern boundary of the licensed lands. The central portion of the berm, beginning 165 m from the southwest corner and extending 290 m along the middle portion of the southern boundary as shown on the Operational Plan, shall have a minimum top-of-barrier elevation of 104 m a.s.l.

12. An acoustic barrier of a minimum height of 10 m shall be located within 40 m of the Portable Processing Plant, between the plant and Receptors R01, R06 and R08.

13. Drilling shall occur behind a 4 m high acoustical barrier of a minimum length of 10 m located within 10 m from the drilling location between the drill and R01 and R06.

Phase 4

14. During extraction operations in Phase 4, the Portable Processing plant shall be located in the Phase 3 area, a minimum of 300 m from the southern licenced boundary.

15. An acoustic barrier of a minimum height of 10 m shall be located within 40 m of the Portable Processing Plant, between the plant and Receptors R01, R06 and R08.

16. Drilling shall occur behind a 4 m high acoustical barrier of a minimum length of 10 m located within 10 m from the drilling location between the drill and R01 and R06.

17. During extraction operations in Phase 4, operation of the Quiet Rock Drill and the Portable Processing Plant (even while located outside the Phase 4 area) shall not occur concurrently.

Appendix B
Sample Stationary Noise Calculations

Receiver: R01
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	45

Receiver Name	Receiver ID	X	Y	Z
R01	R01	470985.5 m	5031391.2 m	101.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	65.0	0.0	-2.1	17.6	3.4	0.0	0.0	0.0	0.0	0.0	41
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	63.0	0.0	-0.2	14.8	1.6	0.0	0.0	0.0	0.0	0.0	35
D12_	Off-road Truck	470602.1	5031587.6	91.7	0	85	18.9	A	63.7	0.0	-1.5	12.3	2.3	0.0	0.0	0.0	0.0	0.0	27
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	64.6	0.0	-1.8	8.0	2.5	0.0	0.0	0.0	0.0	0.0	26
D12_	Off-road Truck	470556.5	5031625.7	93.4	0	85	4.8	A	64.8	0.0	-1.9	7.3	2.6	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470416.5	5031834.9	101.4	0	77	21.3	A	68.2	0.0	-2.9	4.8	3.0	0.0	0.0	0.0	0.0	0.0	26
D12_	Highway Truck	470485.6	5031709.4	96.7	0	77	21.8	A	66.5	0.0	-2.4	4.9	2.6	0.0	0.0	0.0	0.0	0.0	28
D12_	Highway Truck	469893.2	5031808.9	103.8	0	77	17.7	A	72.4	0.0	-3.2	4.8	4.4	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470022.0	5031837.8	102.4	0	77	23.1	A	71.5	0.0	-3.2	4.8	4.1	0.0	0.0	0.0	0.0	0.0	23
D12_	Highway Truck	470180.9	5031873.3	100.7	0	77	20.8	A	70.4	0.0	-3.1	4.8	3.7	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	470265.7	5031887.8	100.7	0	77	17.1	A	69.8	0.0	-2.8	7.0	3.5	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470337.8	5031891.4	102.4	0	77	19.7	A	69.3	0.0	-3.0	4.8	3.3	0.0	0.0	0.0	0.0	0.0	23
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	72.9	0.0	-3.2	4.8	4.7	0.0	0.0	0.0	0.0	0.0	21
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	63.5	0.0	0.8	3.8	3.1	0.0	0.0	0.0	0.0	0.0	40
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	65.1	0.0	-1.8	13.5	2.1	0.0	0.0	0.0	0.0	0.0	28

Receiver: R02
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	44

Receiver Name	Receiver ID	X	Y	Z
R02	R02	471029.7 m	5031337.2 m	101.3 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	66.1	0.0	-1.9	16.2	3.7	0.0	0.0	0.0	0.0	0.0	40
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	64.3	0.0	-0.1	13.9	1.8	0.0	0.0	0.0	0.0	0.0	35
D12_	Off-road Truck	470602.1	5031587.6	91.7	0	85	18.9	A	64.9	0.0	-1.4	10.5	2.6	0.0	0.0	0.0	0.0	0.0	28
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	65.7	0.0	-1.7	6.1	2.8	0.0	0.0	0.0	0.0	0.0	27
D12_	Off-road Truck	470557.0	5031626.1	93.4	0	85	2.3	A	65.9	0.0	-1.8	5.6	2.8	0.0	0.0	0.0	0.0	0.0	15
D12_	Highway Truck	470411.3	5031844.5	101.8	0	77	20.5	A	69.1	0.0	-2.7	4.8	3.3	0.0	0.0	0.0	0.0	0.0	23
D12_	Highway Truck	470478.9	5031721.7	97.2	0	77	22.3	A	67.5	0.0	-2.4	4.8	2.8	0.0	0.0	0.0	0.0	0.0	27
D12_	Highway Truck	469924.0	5031815.8	103.4	0	77	20.9	A	72.6	0.0	-3.0	4.8	4.5	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470070.9	5031848.7	101.8	0	77	22.5	A	71.7	0.0	-3.0	4.8	4.2	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	470199.0	5031877.4	100.5	0	77	19.2	A	70.9	0.0	-2.9	4.8	3.9	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470350.0	5031892.0	102.7	0	77	18.4	A	69.9	0.0	-2.9	4.8	3.5	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	469819.4	5031770.3	103.3	0	77	20.4	A	73.2	0.0	-3.0	4.8	4.8	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	74.1	0.0	-3.0	6.2	5.2	0.0	0.0	0.0	0.0	0.0	17
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	64.6	0.0	0.8	3.8	3.4	0.0	0.0	0.0	0.0	0.0	39
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	66.1	0.0	-1.7	12.1	2.3	0.0	0.0	0.0	0.0	0.0	28

Receiver: R03
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	42

Receiver Name	Receiver ID	X	Y	Z
R03	R03	471144.6 m	5031299.7 m	99.1 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	67.7	0.0	-1.8	15.1	4.3	0.0	0.0	0.0	0.0	0.0	39
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	66.3	0.0	-0.1	12.9	2.2	0.0	0.0	0.0	0.0	0.0	33
D12_	Off-road Truck	470602.1	5031587.6	91.7	0	85	18.9	A	66.8	0.0	-1.4	9.3	3.0	0.0	0.0	0.0	0.0	0.0	27
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	67.4	0.0	-1.6	5.6	3.2	0.0	0.0	0.0	0.0	0.0	25
D12_	Off-road Truck	470556.5	5031625.8	93.4	0	85	4.5	A	67.6	0.0	-1.7	5.3	3.2	0.0	0.0	0.0	0.0	0.0	15
D12_	Highway Truck	470392.0	5031879.5	103.1	0	77	15.1	A	70.6	0.0	-2.7	4.8	3.8	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470428.1	5031813.9	100.6	0	77	20.7	A	69.9	0.0	-2.5	4.8	3.5	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	470489.2	5031703.0	96.5	0	77	21.3	A	68.7	0.0	-2.2	4.8	3.2	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	469913.4	5031813.4	103.5	0	77	20.0	A	73.5	0.0	-2.9	4.8	4.9	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470067.0	5031847.8	101.9	0	77	20.5	A	72.6	0.0	-2.9	4.8	4.6	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470183.6	5031873.9	100.6	0	77	20.6	A	72.0	0.0	-2.8	4.8	4.3	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470316.8	5031890.4	101.9	0	77	19.7	A	71.1	0.0	-2.8	4.8	4.0	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	469820.0	5031770.7	103.4	0	77	20.4	A	74.0	0.0	-2.9	4.8	5.1	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	74.8	0.0	-2.9	5.6	5.5	0.0	0.0	0.0	0.0	0.0	16
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	66.6	0.0	0.9	3.8	3.9	0.0	0.0	0.0	0.0	0.0	36
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	67.7	0.0	-1.5	11.2	2.7	0.0	0.0	0.0	0.0	0.0	27

Receiver: R04
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	43

Receiver Name	Receiver ID	X	Y	Z
R04	R04	471089.4 m	5031239.7 m	99.4 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	67.5	0.0	-1.8	14.8	4.2	0.0	0.0	0.0	0.0	0.0	40
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	66.0	0.0	-0.1	13.3	2.2	0.0	0.0	0.0	0.0	0.0	33
D12_	Off-road Truck	470602.1	5031587.6	91.7	0	85	18.9	A	66.5	0.0	-1.4	9.5	3.0	0.0	0.0	0.0	0.0	0.0	27
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	67.2	0.0	-1.6	5.5	3.2	0.0	0.0	0.0	0.0	0.0	25
D12_	Highway Truck	470398.8	5031867.1	102.6	0	77	17.8	A	70.4	0.0	-2.6	4.8	3.7	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470463.3	5031749.9	98.2	0	77	23.2	A	69.1	0.0	-2.3	4.8	3.3	0.0	0.0	0.0	0.0	0.0	26
D12_	Highway Truck	470522.6	5031642.3	94.2	0	77	15.9	A	67.8	0.0	-1.9	8.6	2.9	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	469977.0	5031827.7	102.9	0	77	22.5	A	73.0	0.0	-2.8	4.8	4.7	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470135.0	5031863.1	101.2	0	77	20.4	A	72.1	0.0	-2.8	4.8	4.4	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470369.7	5031893.0	103.2	0	77	14.6	A	70.8	0.0	-2.7	4.8	3.8	0.0	0.0	0.0	0.0	0.0	15
D12_	Highway Truck	469793.1	5031751.5	102.9	0	77	22.3	A	73.9	0.0	-2.8	4.8	5.1	0.0	0.0	0.0	0.0	0.0	19
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	66.2	0.0	0.9	3.8	3.8	0.0	0.0	0.0	0.0	0.0	37
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	67.5	0.0	-1.5	10.6	2.6	0.0	0.0	0.0	0.0	0.0	28

Receiver: R05
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	43

Receiver Name	Receiver ID	X	Y	Z
R05	R05	470716.5 m	5031141.2 m	96.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	65.1	0.0	-0.8	15.5	3.4	0.0	0.0	0.0	0.0	0.0	41
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	63.5	0.0	1.3	14.0	1.7	0.0	0.0	0.0	0.0	0.0	34
D12_	Off-road Truck	470602.1	5031587.6	91.7	0	85	18.9	A	64.3	0.0	0.4	10.3	2.5	0.0	0.0	0.0	0.0	0.0	27
D12_	Off-road Truck	470577.9	5031622.6	93.0	0	85	10.0	A	65.0	0.0	0.2	5.6	2.6	0.0	0.0	0.0	0.0	0.0	22
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	65.1	0.0	0.1	13.4	2.6	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470397.7	5031869.2	102.7	0	77	17.5	A	69.0	0.0	-0.9	4.2	3.3	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470421.1	5031826.7	101.1	0	77	16.1	A	68.5	0.0	-0.8	4.2	3.1	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470469.2	5031739.2	97.8	0	77	22.0	A	67.2	0.0	-0.6	4.1	2.8	0.0	0.0	0.0	0.0	0.0	26
D12_	Highway Truck	470519.7	5031647.6	94.4	0	77	17.1	A	65.7	0.0	-0.3	7.0	2.4	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	469970.0	5031826.1	102.9	0	77	23.4	A	71.1	0.0	-0.9	4.2	4.0	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	470157.7	5031868.1	100.9	0	77	22.3	A	70.2	0.0	-0.9	4.2	3.7	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	71.9	0.0	-0.7	4.1	4.3	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	72.7	0.0	-0.7	4.8	4.6	0.0	0.0	0.0	0.0	0.0	18
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	62.5	0.0	1.1	10.2	2.9	0.0	0.0	0.0	0.0	0.0	35
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	65.2	0.0	-0.1	9.7	2.2	0.0	0.0	0.0	0.0	0.0	30

Receiver: R06
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	44

Receiver Name	Receiver ID	X	Y	Z
R06	R06	470657.9 m	5031211.4 m	97.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	63.5	0.0	-0.9	17.2	3.0	0.0	0.0	0.0	0.0	0.0	42
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	61.7	0.0	1.2	14.7	1.5	0.0	0.0	0.0	0.0	0.0	35
D12_	Off-road Truck	470602.1	5031587.6	91.7	0	85	18.9	A	62.6	0.0	0.3	11.5	2.1	0.0	0.0	0.0	0.0	0.0	28
D12_	Off-road Truck	470578.4	5031622.5	93.0	0	85	9.5	A	63.4	0.0	0.0	6.7	2.3	0.0	0.0	0.0	0.0	0.0	22
D12_	Off-road Truck	470550.9	5031621.7	93.3	0	85	12.2	A	63.5	0.0	0.0	14.4	2.3	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470395.6	5031872.9	102.8	0	77	16.8	A	68.0	0.0	-1.1	4.2	3.0	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470461.9	5031752.6	98.3	0	77	23.6	A	66.2	0.0	-0.9	4.2	2.5	0.0	0.0	0.0	0.0	0.0	29
D12_	Highway Truck	470524.3	5031639.2	94.1	0	77	15.0	A	64.0	0.0	-0.4	10.9	2.0	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	469957.4	5031823.3	103.1	0	77	22.8	A	70.4	0.0	-1.1	4.2	3.7	0.0	0.0	0.0	0.0	0.0	23
D12_	Highway Truck	470145.2	5031865.3	101.0	0	77	22.9	A	69.4	0.0	-1.1	4.2	3.4	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	470308.9	5031890.0	101.7	0	77	21.4	A	68.7	0.0	-1.2	4.3	3.2	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	71.2	0.0	-0.9	4.2	4.0	0.0	0.0	0.0	0.0	0.0	21
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	72.0	0.0	-0.8	5.0	4.3	0.0	0.0	0.0	0.0	0.0	19
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	60.2	0.0	1.0	11.1	2.4	0.0	0.0	0.0	0.0	0.0	37
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	63.7	0.0	-0.3	11.2	1.9	0.0	0.0	0.0	0.0	0.0	30

Receiver: R07
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	42

Receiver Name	Receiver ID	X	Y	Z
R07	R07	470620.2 m	5031074.5 m	93.6 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	65.7	0.0	-0.8	15.8	3.6	0.0	0.0	0.0	0.0	0.0	40
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	64.6	0.0	1.3	13.4	1.9	0.0	0.0	0.0	0.0	0.0	33
D12_	Off-road Truck	470602.1	5031587.6	91.7	0	85	18.9	A	65.2	0.0	0.4	10.0	2.7	0.0	0.0	0.0	0.0	0.0	26
D12_	Off-road Truck	470579.0	5031622.4	93.0	0	85	8.9	A	65.8	0.0	0.2	5.9	2.8	0.0	0.0	0.0	0.0	0.0	20
D12_	Off-road Truck	470549.0	5031620.3	93.3	0	85	12.3	A	65.8	0.0	0.2	12.9	2.8	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470424.3	5031820.9	100.9	0	77	22.2	A	68.7	0.0	-0.7	4.1	3.2	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	470475.6	5031727.8	97.4	0	77	16.7	A	67.5	0.0	-0.5	4.1	2.8	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470509.3	5031666.4	95.1	0	77	19.7	A	66.6	0.0	-0.3	6.1	2.6	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	70.6	0.0	-0.9	4.2	3.8	0.0	0.0	0.0	0.0	0.0	25
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	69.8	0.0	-0.8	4.2	3.5	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	71.6	0.0	-0.7	4.1	4.1	0.0	0.0	0.0	0.0	0.0	21
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	72.3	0.0	-0.7	5.6	4.4	0.0	0.0	0.0	0.0	0.0	18
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	63.4	0.0	1.1	9.8	3.1	0.0	0.0	0.0	0.0	0.0	34
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	65.9	0.0	-0.1	9.6	2.3	0.0	0.0	0.0	0.0	0.0	29

Receiver: R08
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	48

Receiver Name	Receiver ID	X	Y	Z
R08	R08	470252.7 m	5031187.1 m	101.1 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	65.2	0.0	-2.1	15.0	3.5	0.0	0.0	0.0	0.0	0.0	43
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	65.3	0.0	-0.6	5.0	2.0	0.0	0.0	0.0	0.0	0.0	43
D12_	Off-road Truck	470584.9	5031617.9	92.8	0	85	9.3	A	65.7	0.0	-1.9	12.7	2.8	0.0	0.0	0.0	0.0	0.0	15
D12_	Off-road Truck	470604.2	5031583.9	91.5	0	85	18.4	A	65.5	0.0	-1.7	4.8	2.7	0.0	0.0	0.0	0.0	0.0	33
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	65.7	0.0	-1.9	8.6	2.8	0.0	0.0	0.0	0.0	0.0	24
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	65.4	0.0	-1.9	10.2	2.7	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	470450.9	5031772.6	99.1	0	77	24.4	A	66.8	0.0	-2.8	4.8	2.7	0.0	0.0	0.0	0.0	0.0	30
D12_	Highway Truck	470524.8	5031638.4	94.1	0	77	14.7	A	65.4	0.0	-2.2	10.9	2.3	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	469958.3	5031823.5	103.1	0	77	22.8	A	67.9	0.0	-3.1	4.8	2.9	0.0	0.0	0.0	0.0	0.0	28
D12_	Highway Truck	470146.0	5031865.5	101.0	0	77	22.8	A	67.7	0.0	-3.0	4.8	2.9	0.0	0.0	0.0	0.0	0.0	28
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	68.2	0.0	-3.1	4.8	3.0	0.0	0.0	0.0	0.0	0.0	27
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	68.0	0.0	-2.9	4.8	3.0	0.0	0.0	0.0	0.0	0.0	26
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	69.0	0.0	-3.1	7.5	3.3	0.0	0.0	0.0	0.0	0.0	23
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	63.8	0.0	0.8	0.0	3.2	0.0	0.0	0.0	0.0	0.0	44
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	65.3	0.0	-1.8	9.9	2.2	0.0	0.0	0.0	0.0	0.0	31

Receiver: R09
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	45

Receiver Name	Receiver ID	X	Y	Z
R09	R09	470197.4 m	5031051.2 m	99.3 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	67.3	0.0	-0.8	13.3	4.1	0.0	0.0	0.0	0.0	0.0	40
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	67.4	0.0	1.0	4.4	2.4	0.0	0.0	0.0	0.0	0.0	39
D12_	Off-road Truck	470603.6	5031585.0	91.6	0	85	18.6	A	67.5	0.0	0.4	3.7	3.2	0.0	0.0	0.0	0.0	0.0	29
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	67.7	0.0	0.2	6.6	3.3	0.0	0.0	0.0	0.0	0.0	22
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	67.5	0.0	0.2	8.0	3.2	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470450.5	5031773.3	99.1	0	77	24.4	A	68.7	0.0	-0.8	4.2	3.2	0.0	0.0	0.0	0.0	0.0	26
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	69.1	0.0	-1.1	4.2	3.3	0.0	0.0	0.0	0.0	0.0	28
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	69.2	0.0	-1.2	4.3	3.3	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	69.6	0.0	-1.2	9.0	3.5	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	69.6	0.0	-0.8	4.1	3.4	0.0	0.0	0.0	0.0	0.0	23
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	66.2	0.0	1.2	0.0	3.8	0.0	0.0	0.0	0.0	0.0	40
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	67.5	0.0	-0.1	7.5	2.6	0.0	0.0	0.0	0.0	0.0	29

Receiver: R10
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	48

Receiver Name	Receiver ID	X	Y	Z
R10	R10	470295.5 m	5030977.2 m	99.3 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	67.7	0.0	-1.8	8.7	4.2	0.0	0.0	0.0	0.0	0.0	46
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	67.4	0.0	-0.2	6.7	2.4	0.0	0.0	0.0	0.0	0.0	38
D12_	Off-road Truck	470600.9	5031589.7	91.8	0	85	18.7	A	67.7	0.0	-1.4	4.8	3.3	0.0	0.0	0.0	0.0	0.0	30
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	67.9	0.0	-1.7	5.9	3.4	0.0	0.0	0.0	0.0	0.0	24
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	67.8	0.0	-1.7	6.2	3.3	0.0	0.0	0.0	0.0	0.0	23
D12_	Highway Truck	470447.8	5031778.1	99.3	0	77	24.2	A	69.2	0.0	-2.3	4.8	3.3	0.0	0.0	0.0	0.0	0.0	27
D12_	Highway Truck	470521.7	5031644.0	94.3	0	77	16.3	A	68.0	0.0	-1.8	7.5	3.0	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	70.1	0.0	-2.6	4.8	3.6	0.0	0.0	0.0	0.0	0.0	27
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	70.3	0.0	-2.7	4.8	3.7	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	70.8	0.0	-2.8	7.6	3.8	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	70.2	0.0	-2.5	4.8	3.6	0.0	0.0	0.0	0.0	0.0	23
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	66.3	0.0	0.9	0.0	3.8	0.0	0.0	0.0	0.0	0.0	41
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	67.8	0.0	-1.5	6.0	2.7	0.0	0.0	0.0	0.0	0.0	32

Receiver: R11
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	44

Receiver Name	Receiver ID	X	Y	Z
R11	R11	470062.3 m	5030882.1 m	99.2 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	69.8	0.0	-1.8	11.4	5.1	0.0	0.0	0.0	0.0	0.0	40
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	69.8	0.0	-0.4	4.7	3.1	0.0	0.0	0.0	0.0	0.0	37
D12_	Off-road Truck	470603.8	5031584.7	91.6	0	85	18.6	A	70.0	0.0	-1.4	4.7	4.0	0.0	0.0	0.0	0.0	0.0	27
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	70.1	0.0	-1.6	6.0	4.0	0.0	0.0	0.0	0.0	0.0	21
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	69.9	0.0	-1.6	7.0	4.0	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	70.7	0.0	-2.7	4.8	3.8	0.0	0.0	0.0	0.0	0.0	27
D12_	Highway Truck	470451.1	5031772.2	99.1	0	77	24.4	A	70.7	0.0	-2.2	4.8	3.8	0.0	0.0	0.0	0.0	0.0	25
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	70.2	0.0	-2.8	4.8	3.6	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	70.3	0.0	-2.8	11.0	3.7	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	71.3	0.0	-2.3	4.7	4.0	0.0	0.0	0.0	0.0	0.0	21
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	69.0	0.0	0.9	0.0	4.7	0.0	0.0	0.0	0.0	0.0	37
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	69.9	0.0	-1.5	7.1	3.2	0.0	0.0	0.0	0.0	0.0	28

Receiver: R12
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	38

Receiver Name	Receiver ID	X	Y	Z
R12	R12	469928.9 m	5030795.4 m	95.6 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	71.2	0.0	-0.5	13.9	5.7	0.0	0.0	0.0	0.0	0.0	34
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	71.2	0.0	1.2	5.8	3.5	0.0	0.0	0.0	0.0	0.0	33
D12_	Off-road Truck	470604.3	5031583.7	91.5	0	85	18.4	A	71.3	0.0	0.8	3.6	4.4	0.0	0.0	0.0	0.0	0.0	24
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	71.4	0.0	0.7	7.2	4.5	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	71.5	0.0	-0.8	4.1	4.1	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	470451.9	5031770.7	99.0	0	77	24.5	A	71.9	0.0	-0.2	3.9	4.3	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	70.7	0.0	-0.9	4.2	3.8	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	72.3	0.0	-0.4	4.0	4.4	0.0	0.0	0.0	0.0	0.0	19
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	70.5	0.0	1.3	3.9	5.2	0.0	0.0	0.0	0.0	0.0	31
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	71.2	0.0	0.3	7.7	3.5	0.0	0.0	0.0	0.0	0.0	24

Receiver: R13
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	42

Receiver Name	Receiver ID	X	Y	Z
R13	R13	469848.5 m	5030812.7 m	101.2 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	71.5	0.0	-1.8	10.0	5.8	0.0	0.0	0.0	0.0	0.0	39
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	71.6	0.0	-0.6	5.1	3.6	0.0	0.0	0.0	0.0	0.0	35
D12_	Off-road Truck	470605.0	5031582.5	91.5	0	85	18.2	A	71.7	0.0	-1.4	4.7	4.6	0.0	0.0	0.0	0.0	0.0	24
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	71.7	0.0	-1.6	5.2	4.6	0.0	0.0	0.0	0.0	0.0	20
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	71.6	0.0	-1.6	6.1	4.5	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	71.4	0.0	-2.8	4.8	4.1	0.0	0.0	0.0	0.0	0.0	26
D12_	Highway Truck	470452.7	5031769.2	99.0	0	77	24.5	A	72.1	0.0	-2.2	4.8	4.3	0.0	0.0	0.0	0.0	0.0	23
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	70.5	0.0	-2.8	4.8	3.7	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	70.2	0.0	-2.8	8.6	3.6	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	72.4	0.0	-2.5	4.8	4.5	0.0	0.0	0.0	0.0	0.0	20
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	70.9	0.0	0.8	0.0	5.3	0.0	0.0	0.0	0.0	0.0	35
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	71.5	0.0	-1.6	6.4	3.6	0.0	0.0	0.0	0.0	0.0	27

Receiver: R14
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	42

Receiver Name	Receiver ID	X	Y	Z
R14	R14	469797.8 m	5030795.8 m	101.8 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	71.8	0.0	-1.8	9.6	6.0	0.0	0.0	0.0	0.0	0.0	39
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	72.0	0.0	-0.6	4.8	3.7	0.0	0.0	0.0	0.0	0.0	35
D12_	Off-road Truck	470605.2	5031582.1	91.5	0	85	18.2	A	72.0	0.0	-1.5	4.7	4.7	0.0	0.0	0.0	0.0	0.0	24
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	72.1	0.0	-1.6	5.1	4.7	0.0	0.0	0.0	0.0	0.0	19
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	72.0	0.0	-1.6	5.9	4.7	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	71.7	0.0	-2.8	4.8	4.2	0.0	0.0	0.0	0.0	0.0	25
D12_	Highway Truck	470453.0	5031768.7	98.9	0	77	24.6	A	72.4	0.0	-2.1	4.7	4.5	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	70.6	0.0	-2.8	4.8	3.8	0.0	0.0	0.0	0.0	0.0	23
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	70.2	0.0	-2.8	8.6	3.7	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	72.6	0.0	-2.5	4.7	4.6	0.0	0.0	0.0	0.0	0.0	19
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	71.3	0.0	0.8	0.0	5.5	0.0	0.0	0.0	0.0	0.0	34
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	71.9	0.0	-1.6	6.3	3.7	0.0	0.0	0.0	0.0	0.0	27

Receiver: R15
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	39

Receiver Name	Receiver ID	X	Y	Z
R15	R15	469648.9 m	5030730.3 m	101.6 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	73.0	0.0	-1.8	11.0	6.5	0.0	0.0	0.0	0.0	0.0	36
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	73.1	0.0	-0.8	4.6	4.1	0.0	0.0	0.0	0.0	0.0	34
D12_	Off-road Truck	470605.7	5031581.3	91.4	0	85	18.1	A	73.1	0.0	-1.4	4.7	5.1	0.0	0.0	0.0	0.0	0.0	22
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	73.2	0.0	-1.6	5.4	5.1	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	72.5	0.0	-2.8	4.8	4.5	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	470453.6	5031767.7	98.9	0	77	24.6	A	73.4	0.0	-2.2	4.7	4.9	0.0	0.0	0.0	0.0	0.0	21
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	71.3	0.0	-2.8	4.8	4.0	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	70.7	0.0	-2.8	8.5	3.8	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	73.5	0.0	-2.5	4.7	4.9	0.0	0.0	0.0	0.0	0.0	18
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	72.5	0.0	0.8	3.7	5.9	0.0	0.0	0.0	0.0	0.0	29
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	73.0	0.0	-1.6	7.1	4.0	0.0	0.0	0.0	0.0	0.0	24

Receiver: R16
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	35

Receiver Name	Receiver ID	X	Y	Z
R16	R16	469379.8 m	5030633.9 m	95.7 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	74.6	0.0	-0.2	12.2	7.5	0.0	0.0	0.0	0.0	0.0	30
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	74.8	0.0	0.8	3.6	4.8	0.0	0.0	0.0	0.0	0.0	31
D12_	Off-road Truck	470606.3	5031580.2	91.4	0	85	17.9	A	74.8	0.0	1.3	3.4	5.8	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	73.8	0.0	-0.7	4.1	5.1	0.0	0.0	0.0	0.0	0.0	21
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	72.5	0.0	-0.9	4.1	4.5	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470454.4	5031766.2	98.8	0	77	24.6	A	74.9	0.0	-0.3	3.9	5.6	0.0	0.0	0.0	0.0	0.0	18
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	74.3	0.0	1.1	4.0	6.6	0.0	0.0	0.0	0.0	0.0	26
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	74.7	0.0	0.4	6.6	4.5	0.0	0.0	0.0	0.0	0.0	21

Receiver: R17
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	37

Receiver Name	Receiver ID	X	Y	Z
R17	R17	469505.4 m	5030848.4 m	101.7 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	73.2	0.0	-0.4	12.3	6.7	0.0	0.0	0.0	0.0	0.0	33
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	73.4	0.0	0.6	3.6	4.2	0.0	0.0	0.0	0.0	0.0	33
D12_	Off-road Truck	470606.9	5031579.2	91.4	0	85	17.7	A	73.4	0.0	0.9	3.3	5.2	0.0	0.0	0.0	0.0	0.0	20
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	73.4	0.0	0.7	4.9	5.2	0.0	0.0	0.0	0.0	0.0	15
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	72.1	0.0	-1.2	4.2	4.3	0.0	0.0	0.0	0.0	0.0	24
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	70.5	0.0	-1.3	4.3	3.8	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	69.7	0.0	-1.3	11.5	3.5	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470455.0	5031765.1	98.8	0	77	24.7	A	73.4	0.0	-0.6	4.0	4.9	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	73.4	0.0	-0.8	4.1	4.9	0.0	0.0	0.0	0.0	0.0	17
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	72.9	0.0	1.2	3.9	6.0	0.0	0.0	0.0	0.0	0.0	28
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	73.2	0.0	0.3	6.8	4.0	0.0	0.0	0.0	0.0	0.0	23

Receiver: R18
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	41

Receiver Name	Receiver ID	X	Y	Z
R18	R18	469631.2 m	5032729.8 m	89.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	74.1	0.0	-0.7	4.2	7.2	0.0	0.0	0.0	0.0	0.0	40
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	74.7	0.0	0.0	5.3	4.8	0.0	0.0	0.0	0.0	0.0	30
D12_	Off-road Truck	470596.6	5031597.3	92.0	0	85	17.5	A	74.5	0.0	0.5	3.4	5.7	0.0	0.0	0.0	0.0	0.0	19
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	74.2	0.0	0.5	3.4	5.6	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	70.8	0.0	0.0	3.9	3.9	0.0	0.0	0.0	0.0	0.0	25
D12_	Highway Truck	470426.3	5031817.2	100.7	0	77	22.4	A	72.7	0.0	0.2	3.8	4.6	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470500.2	5031683.1	95.7	0	77	21.2	A	73.7	0.0	0.0	3.8	5.0	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	70.9	0.0	0.8	4.8	3.9	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	71.3	0.0	1.9	0.0	4.0	0.0	0.0	0.0	0.0	0.0	22
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	71.7	0.0	0.3	3.9	4.2	0.0	0.0	0.0	0.0	0.0	19
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	74.9	0.0	-0.5	3.7	6.8	0.0	0.0	0.0	0.0	0.0	27
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	74.1	0.0	0.1	3.4	4.3	0.0	0.0	0.0	0.0	0.0	25

Receiver: R19
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	42

Receiver Name	Receiver ID	X	Y	Z
R19	R19	469756.5 m	5032841.7 m	94.1 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	74.3	0.0	-2.2	4.8	7.3	0.0	0.0	0.0	0.0	0.0	40
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	74.8	0.0	-1.8	4.7	4.8	0.0	0.0	0.0	0.0	0.0	32
D12_	Off-road Truck	470602.1	5031587.6	91.7	0	85	18.9	A	74.6	0.0	-2.0	4.7	5.8	0.0	0.0	0.0	0.0	0.0	21
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	74.3	0.0	-2.0	4.7	5.6	0.0	0.0	0.0	0.0	0.0	17
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	74.3	0.0	-2.0	4.7	5.6	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	71.3	0.0	-1.8	4.7	4.0	0.0	0.0	0.0	0.0	0.0	25
D12_	Highway Truck	470402.1	5031861.2	102.4	0	77	18.7	A	72.4	0.0	-1.6	4.7	4.5	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470476.0	5031727.0	97.4	0	77	23.7	A	73.5	0.0	-1.9	4.7	4.9	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	71.8	0.0	-1.2	4.9	4.2	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	71.8	0.0	-1.5	4.8	4.2	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	72.2	0.0	0.2	0.0	4.4	0.0	0.0	0.0	0.0	0.0	23
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	75.0	0.0	-1.4	4.3	6.8	0.0	0.0	0.0	0.0	0.0	27
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	74.2	0.0	-1.8	4.6	4.3	0.0	0.0	0.0	0.0	0.0	26

Receiver: R20
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	41

Receiver Name	Receiver ID	X	Y	Z
R20	R20	469838.4 m	5032787.7 m	92.3 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	73.7	0.0	-0.7	4.2	6.9	0.0	0.0	0.0	0.0	0.0	40
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	74.3	0.0	0.0	3.7	4.6	0.0	0.0	0.0	0.0	0.0	32
D12_	Off-road Truck	470602.1	5031587.6	91.7	0	85	18.9	A	74.1	0.0	0.5	3.5	5.5	0.0	0.0	0.0	0.0	0.0	21
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	73.8	0.0	0.5	3.5	5.4	0.0	0.0	0.0	0.0	0.0	16
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	73.7	0.0	0.5	3.5	5.4	0.0	0.0	0.0	0.0	0.0	15
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	70.7	0.0	0.0	3.9	3.8	0.0	0.0	0.0	0.0	0.0	25
D12_	Highway Truck	470458.1	5031759.5	98.6	0	77	24.9	A	72.6	0.0	0.1	3.8	4.5	0.0	0.0	0.0	0.0	0.0	21
D12_	Highway Truck	469794.1	5031752.2	102.9	0	77	22.4	A	71.3	0.0	0.6	4.0	4.0	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	71.1	0.0	0.4	4.0	4.0	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	469643.5	5031699.6	100.6	0	77	22.1	A	71.9	0.0	1.9	0.0	4.2	0.0	0.0	0.0	0.0	0.0	21
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	74.5	0.0	-0.4	3.7	6.7	0.0	0.0	0.0	0.0	0.0	27
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	73.7	0.0	0.1	3.4	4.2	0.0	0.0	0.0	0.0	0.0	26

Receiver: R21
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	37

Receiver Name	Receiver ID	X	Y	Z
R21	R21	471146.5 m	5033269.9 m	85.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	75.9	0.0	0.1	3.9	8.3	0.0	0.0	0.0	0.0	0.0	36
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	76.1	0.0	0.8	3.4	5.4	0.0	0.0	0.0	0.0	0.0	29
D12_	Off-road Truck	470599.8	5031591.6	91.8	0	85	18.4	A	75.9	0.0	1.4	3.0	6.4	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	76.1	0.0	0.6	3.5	6.2	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470448.9	5031776.1	99.2	0	77	24.3	A	75.3	0.0	0.7	3.5	5.8	0.0	0.0	0.0	0.0	0.0	16
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	76.5	0.0	0.0	3.7	7.4	0.0	0.0	0.0	0.0	0.0	24
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	75.9	0.0	0.5	3.2	4.9	0.0	0.0	0.0	0.0	0.0	22

Receiver: R22
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	37

Receiver Name	Receiver ID	X	Y	Z
R22	R22	471252.9 m	5033258.7 m	85.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	76.1	0.0	0.1	3.9	8.4	0.0	0.0	0.0	0.0	0.0	36
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	76.2	0.0	0.8	3.4	5.4	0.0	0.0	0.0	0.0	0.0	29
D12_	Off-road Truck	470598.2	5031594.4	91.9	0	85	18.0	A	76.0	0.0	1.4	3.0	6.4	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	76.4	0.0	0.6	3.5	6.3	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470449.7	5031774.6	99.2	0	77	24.3	A	75.5	0.0	0.7	3.5	5.9	0.0	0.0	0.0	0.0	0.0	16
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	76.6	0.0	0.0	3.8	7.5	0.0	0.0	0.0	0.0	0.0	24
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	76.0	0.0	0.5	3.1	4.9	0.0	0.0	0.0	0.0	0.0	22

Receiver: R23
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	39

Receiver Name	Receiver ID	X	Y	Z
R23	R23	471128.0 m	5033172.4 m	88.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	75.4	0.0	-1.6	4.7	8.0	0.0	0.0	0.0	0.0	0.0	38
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	75.6	0.0	-1.2	4.6	5.1	0.0	0.0	0.0	0.0	0.0	30
D12_	Off-road Truck	470599.6	5031592.0	91.8	0	85	18.3	A	75.4	0.0	-1.4	4.7	6.1	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	75.7	0.0	-1.7	4.7	6.0	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470449.1	5031775.8	99.2	0	77	24.3	A	74.8	0.0	-1.5	4.7	5.5	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	74.6	0.0	-1.4	4.7	5.4	0.0	0.0	0.0	0.0	0.0	16
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	76.0	0.0	-0.9	4.0	7.2	0.0	0.0	0.0	0.0	0.0	25
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	75.4	0.0	-1.4	4.5	4.7	0.0	0.0	0.0	0.0	0.0	24

Receiver: R24
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	39

Receiver Name	Receiver ID	X	Y	Z
R24	R24	471244.0 m	5033045.3 m	85.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	75.1	0.0	0.0	4.0	7.7	0.0	0.0	0.0	0.0	0.0	38
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	75.2	0.0	0.7	3.5	5.0	0.0	0.0	0.0	0.0	0.0	30
D12_	Off-road Truck	470597.2	5031596.2	92.0	0	85	17.7	A	75.0	0.0	1.3	3.1	5.9	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	75.6	0.0	0.5	3.5	5.9	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470450.4	5031773.4	99.1	0	77	24.4	A	74.5	0.0	0.6	3.6	5.4	0.0	0.0	0.0	0.0	0.0	18
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	75.6	0.0	0.1	3.8	7.1	0.0	0.0	0.0	0.0	0.0	25
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	75.0	0.0	0.5	3.2	4.6	0.0	0.0	0.0	0.0	0.0	24

Receiver: R25
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	39

Receiver Name	Receiver ID	X	Y	Z
R25	R25	471281.9 m	5032963.6 m	85.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	74.8	0.0	-0.1	4.0	7.6	0.0	0.0	0.0	0.0	0.0	38
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	74.8	0.0	0.7	3.5	4.8	0.0	0.0	0.0	0.0	0.0	31
D12_	Off-road Truck	470596.2	5031598.0	92.1	0	85	17.3	A	74.7	0.0	1.2	3.2	5.8	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	75.4	0.0	0.5	3.6	5.8	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470451.0	5031772.4	99.1	0	77	24.4	A	74.2	0.0	0.6	3.6	5.3	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	74.2	0.0	0.6	3.6	5.2	0.0	0.0	0.0	0.0	0.0	15
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	75.3	0.0	0.1	3.8	7.0	0.0	0.0	0.0	0.0	0.0	25
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	74.7	0.0	0.5	3.2	4.5	0.0	0.0	0.0	0.0	0.0	24

Receiver: R26
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	40

Receiver Name	Receiver ID	X	Y	Z
R26	R26	471307.7 m	5032902.0 m	85.9 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	74.5	0.0	-0.1	4.0	7.4	0.0	0.0	0.0	0.0	0.0	39
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	74.6	0.0	0.7	3.5	4.7	0.0	0.0	0.0	0.0	0.0	31
D12_	Off-road Truck	470595.5	5031599.3	92.1	0	85	17.1	A	74.4	0.0	1.2	3.2	5.7	0.0	0.0	0.0	0.0	0.0	18
D12_	Off-road Truck	470614.8	5031565.3	90.8	0	85	14.3	A	74.6	0.0	1.2	3.2	5.7	0.0	0.0	0.0	0.0	0.0	15
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	74.4	0.0	1.2	3.2	5.7	0.0	0.0	0.0	0.0	0.0	15
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	75.3	0.0	0.5	3.6	5.8	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470451.4	5031771.6	99.0	0	77	24.5	A	74.0	0.0	0.6	3.6	5.2	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	74.0	0.0	0.6	3.6	5.2	0.0	0.0	0.0	0.0	0.0	16
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	75.1	0.0	0.1	3.8	6.9	0.0	0.0	0.0	0.0	0.0	26
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	74.5	0.0	0.5	3.2	4.4	0.0	0.0	0.0	0.0	0.0	24

Receiver: R27
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	43

Receiver Name	Receiver ID	X	Y	Z
R27	R27	471382.8 m	5032548.4 m	89.3 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	73.0	0.0	-1.7	4.8	6.6	0.0	0.0	0.0	0.0	0.0	42
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	73.0	0.0	-1.2	4.6	4.1	0.0	0.0	0.0	0.0	0.0	34
D12_	Off-road Truck	470591.8	5031605.7	92.4	0	85	15.6	A	72.8	0.0	-1.4	4.7	5.0	0.0	0.0	0.0	0.0	0.0	20
D12_	Off-road Truck	470611.1	5031571.7	91.1	0	85	16.2	A	72.9	0.0	-1.4	4.7	5.0	0.0	0.0	0.0	0.0	0.0	20
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	72.8	0.0	-1.4	4.7	5.0	0.0	0.0	0.0	0.0	0.0	18
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	72.9	0.0	-1.5	4.7	5.0	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	74.6	0.0	-1.9	4.7	5.4	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470453.5	5031767.8	98.9	0	77	24.6	A	72.7	0.0	-1.6	4.7	4.6	0.0	0.0	0.0	0.0	0.0	21
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	73.0	0.0	-1.6	4.7	4.7	0.0	0.0	0.0	0.0	0.0	18
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	73.5	0.0	-0.4	3.9	6.3	0.0	0.0	0.0	0.0	0.0	28
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	73.0	0.0	-1.4	4.5	4.0	0.0	0.0	0.0	0.0	0.0	27

Receiver: R28
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	42

Receiver Name	Receiver ID	X	Y	Z
R28	R28	471592.9 m	5032479.5 m	88.9 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	73.7	0.0	-1.6	4.7	7.0	0.0	0.0	0.0	0.0	0.0	41
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	73.6	0.0	-1.2	4.6	4.3	0.0	0.0	0.0	0.0	0.0	33
D12_	Off-road Truck	470589.3	5031610.2	92.5	0	85	14.2	A	73.5	0.0	-1.4	4.7	5.3	0.0	0.0	0.0	0.0	0.0	17
D12_	Off-road Truck	470608.6	5031576.2	91.3	0	85	17.2	A	73.5	0.0	-1.4	4.7	5.3	0.0	0.0	0.0	0.0	0.0	20
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	73.5	0.0	-1.4	4.7	5.3	0.0	0.0	0.0	0.0	0.0	17
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	73.6	0.0	-1.4	4.7	5.3	0.0	0.0	0.0	0.0	0.0	16
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	75.4	0.0	-1.8	4.7	5.8	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470454.9	5031765.3	98.8	0	77	24.7	A	73.6	0.0	-1.6	4.7	4.9	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	74.0	0.0	-1.6	4.7	5.1	0.0	0.0	0.0	0.0	0.0	17
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	74.1	0.0	0.0	3.8	6.5	0.0	0.0	0.0	0.0	0.0	27
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	73.7	0.0	-1.3	4.5	4.2	0.0	0.0	0.0	0.0	0.0	26

Receiver: R29
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	41

Receiver Name	Receiver ID	X	Y	Z
R29	R29	471594.5 m	5032419.6 m	85.9 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	73.5	0.0	-0.2	4.1	6.8	0.0	0.0	0.0	0.0	0.0	40
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	73.3	0.0	0.5	3.6	4.2	0.0	0.0	0.0	0.0	0.0	33
D12_	Off-road Truck	470588.7	5031611.2	92.6	0	85	13.8	A	73.2	0.0	1.0	3.3	5.2	0.0	0.0	0.0	0.0	0.0	16
D12_	Off-road Truck	470608.0	5031577.2	91.3	0	85	17.4	A	73.3	0.0	1.0	3.3	5.2	0.0	0.0	0.0	0.0	0.0	20
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	73.3	0.0	1.0	3.3	5.2	0.0	0.0	0.0	0.0	0.0	17
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	73.4	0.0	1.0	3.3	5.2	0.0	0.0	0.0	0.0	0.0	15
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	75.3	0.0	0.3	3.6	5.8	0.0	0.0	0.0	0.0	0.0	18
D12_	Highway Truck	470455.2	5031764.7	98.8	0	77	24.7	A	73.4	0.0	0.5	3.6	4.9	0.0	0.0	0.0	0.0	0.0	20
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	73.8	0.0	0.5	3.6	5.1	0.0	0.0	0.0	0.0	0.0	16
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	73.8	0.0	0.7	4.1	6.4	0.0	0.0	0.0	0.0	0.0	27
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	73.4	0.0	0.4	3.3	4.1	0.0	0.0	0.0	0.0	0.0	26

Receiver: R30
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	43

Receiver Name	Receiver ID	X	Y	Z
R30	R30	471529.6 m	5032290.8 m	85.5 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	72.6	0.0	-0.3	4.2	6.4	0.0	0.0	0.0	0.0	0.0	42
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	72.4	0.0	0.5	3.7	3.9	0.0	0.0	0.0	0.0	0.0	34
D12_	Off-road Truck	470587.9	5031612.6	92.6	0	85	13.2	A	72.3	0.0	0.9	3.4	4.8	0.0	0.0	0.0	0.0	0.0	17
D12_	Off-road Truck	470607.2	5031578.6	91.3	0	85	17.6	A	72.3	0.0	0.9	3.4	4.8	0.0	0.0	0.0	0.0	0.0	22
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	72.4	0.0	0.9	3.4	4.8	0.0	0.0	0.0	0.0	0.0	18
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	72.5	0.0	0.9	3.4	4.9	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470455.7	5031763.9	98.8	0	77	24.7	A	72.6	0.0	0.4	3.7	4.5	0.0	0.0	0.0	0.0	0.0	21
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	74.8	0.0	0.2	3.7	5.5	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	73.2	0.0	0.4	3.7	4.8	0.0	0.0	0.0	0.0	0.0	17
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	72.9	0.0	0.8	4.1	6.1	0.0	0.0	0.0	0.0	0.0	28
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	72.6	0.0	0.4	3.3	3.8	0.0	0.0	0.0	0.0	0.0	27

Receiver: R31
Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Time Period	Total (dBA)
Day	43

Receiver Name	Receiver ID	X	Y	Z
R31	R31	471602.9 m	5032160.8 m	86.1 m

Source ID	Source Name	X	Y	Z	Refl.	Lw	L/A	Freq	Adiv	K0	Agr	Abar	Aatm	Afol	Ahous	Cmet	Dc	RL	Lr
D12_	Portable Processing Plant	470535.7	5031614.0	92.9	0	124	0.0	A	72.6	0.0	-0.3	4.2	6.4	0.0	0.0	0.0	0.0	0.0	42
D12_	Extraction Loaders	470621.5	5031553.1	92.0	0	115	0.0	A	72.2	0.0	0.4	3.7	3.8	0.0	0.0	0.0	0.0	0.0	34
D12_	Off-road Truck	470585.9	5031616.1	92.7	0	85	11.0	A	72.2	0.0	0.9	3.4	4.8	0.0	0.0	0.0	0.0	0.0	15
D12_	Off-road Truck	470605.2	5031582.1	91.5	0	85	18.2	A	72.2	0.0	0.8	3.4	4.8	0.0	0.0	0.0	0.0	0.0	22
D12_	Off-road Truck	470570.2	5031624.1	93.2	0	85	14.1	A	72.3	0.0	0.9	3.4	4.8	0.0	0.0	0.0	0.0	0.0	18
D12_	Off-road Truck	470549.9	5031621.0	93.3	0	85	12.8	A	72.5	0.0	0.8	3.4	4.9	0.0	0.0	0.0	0.0	0.0	17
D12_	Highway Truck	470456.8	5031761.9	98.7	0	77	24.8	A	72.7	0.0	0.4	3.7	4.6	0.0	0.0	0.0	0.0	0.0	21
D12_	Highway Truck	470052.1	5031844.5	102.1	0	77	25.9	A	75.0	0.0	0.1	3.7	5.6	0.0	0.0	0.0	0.0	0.0	19
D12_	Highway Truck	470312.0	5031890.1	101.8	0	77	21.6	A	73.4	0.0	0.4	3.7	4.9	0.0	0.0	0.0	0.0	0.0	17
D12_	Quiet Drill	470572.9	5031487.1	99.8	0	112	0.0	A	72.8	0.0	1.0	4.1	6.0	0.0	0.0	0.0	0.0	0.0	28
D12_	Shipment Loaders	470537.8	5031623.4	93.0	0	107	0.0	A	72.5	0.0	0.4	3.3	3.8	0.0	0.0	0.0	0.0	0.0	27

Project: Lafarge Navan Quarry Extension
Project Number: 10421.02

Source ID	Source Name	Point of Reception R01		Point of Reception R02		Point of Reception R03		Point of Reception R04		Point of Reception R05		Point of Reception R06		Point of Reception R07	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
D12_	Portable Processing Plant	502	41	566	40	685	39	668	40	506	41	421	42	546	40
D12_	Extraction Loaders	398	35	462	35	581	33	563	33	423	34	344	35	479	33
D12_	Off-road Truck	472	30	537	30	656	29	635	29	494	28	413	29	545	27
D12_	Highway Truck	964	32	1032	31	1135	30	1167	29	833	31	753	33	828	31
D12_	Quiet Drill	424	40	481	39	602	36	573	37	374	35	288	37	415	34
D12_	Shipment Loaders	504	28	569	28	688	27	672	28	514	30	429	30	555	29
Total Level [dBA]			**45**		**44**		**42**		**43**		**43**		**44**		**42**

Source ID	Source Name	Point of Reception R08		Point of Reception R09		Point of Reception R10		Point of Reception R11		Point of Reception R12		Point of Reception R13		Point of Reception R14	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
D12_	Portable Processing Plant	512	43	657	40	681	46	872	40	1019	34	1056	39	1102	39
D12_	Extraction Loaders	520	43	657	39	662	38	873	37	1027	33	1070	35	1119	35
D12_	Off-road Truck	535	33	677	30	685	31	893	28	1042	25	1081	26	1128	26
D12_	Highway Truck	605	35	719	32	808	32	887	31	991	28	993	30	1025	30
D12_	Quiet Drill	439	44	575	40	580	41	792	37	945	31	990	35	1039	34
D12_	Shipment Loaders	521	31	666	29	690	32	881	28	1028	24	1064	27	1110	27
Total Level [dBA]			**48**		**45**		**48**		**44**		**38**		**42**		**42**

Source ID	Source Name	Point of Reception R15		Point of Reception R16		Point of Reception R17		Point of Reception R18		Point of Reception R19		Point of Reception R20		Point of Reception R21	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
D12_	Portable Processing Plant	1252	36	1515	30	1284	33	1436	40	1454	40	1365	40	1765	36
D12_	Extraction Loaders	1274	34	1545	31	1320	33	1538	30	1552	32	1462	32	1795	29
D12_	Off-road Truck	1280	24	1546	20	1316	22	1476	22	1478	23	1388	23	1763	20
D12_	Highway Truck	1141	29	1357	25	1109	28	1068	29	1105	29	1021	29	1815	22
D12_	Quiet Drill	1194	29	1467	26	1244	28	1559	27	1582	27	1494	27	1873	24
D12_	Shipment Loaders	1260	24	1523	21	1291	23	1430	25	1447	26	1358	26	1755	22
Total Level [dBA]			**39**		**35**		**37**		**41**		**42**		**41**		**37**

Source ID	Source Name	Point of Reception R22		Point of Reception R23		Point of Reception R24		Point of Reception R25		Point of Reception R26		Point of Reception R27		Point of Reception R28	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
D12_	Portable Processing Plant	1794	36	1667	38	1597	38	1542	38	1502	39	1261	42	1366	41
D12_	Extraction Loaders	1819	29	1697	30	1617	30	1557	31	1513	31	1253	34	1342	33
D12_	Off-road Truck	1789	19	1665	21	1588	21	1531	21	1488	22	1238	25	1337	24
D12_	Highway Truck	1868	21	1724	23	1696	23	1662	23	1637	23	1477	26	1628	24
D12_	Quiet Drill	1898	24	1774	25	1697	25	1638	25	1594	26	1335	28	1423	27
D12_	Shipment Loaders	1785	22	1658	24	1588	24	1533	24	1493	24	1253	27	1359	26
Total Level [dBA]			**37**		**39**		**39**		**39**		**40**		**43**		**42**

Source ID	Source Name	Point of Reception R29		Point of Reception R30		Point of Reception R31	
		Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day	Distance to POR (m)	Sound Level at POR (dBA) Day
D12_	Portable Processing Plant	1330	40	1202	42	1199	42
D12_	Extraction Loaders	1303	33	1170	34	1154	34
D12_	Off-road Truck	1300	23	1170	25	1163	25
D12_	Highway Truck	1604	24	1495	25	1524	24
D12_	Quiet Drill	1383	27	1250	28	1231	28
D12_	Shipment Loaders	1323	26	1195	27	1193	27
Total Level [dBA]			**41**		**43**		**43**

Appendix C
Qualifications of the Authors

aercoustics

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Derek Flake M.Sc., P.Eng.

Profile

Derek is an employee of Aercoustics Engineering Limited, an engineering consulting company specializing in acoustics, noise and vibration. Prior to that, he worked for several years at another acoustics, noise and vibration firm and he completed a Master of Science in the field of ultrasound transducer design. Derek is a Professional Engineer with the Professional Engineers Ontario.

Derek has been recognized by the Local Planning Appeal Tribunal (LPAT) and previously by the Ontario Municipal Board (OMB) as an expert in environmental noise and has provided expert opinion testimony to the Board and in civil litigation.

Employment History

2012 – Present	Acoustical Engineer, Aercoustics Engineering Limited
2009 – 2012	Engineering Intern, Jade Acoustics Incorporated

Additional Activities / Committees

2019 – Present	Officer on the Board of Directors and Chair of the Membership Committee at the Air & Waste Management Association (A&WMA) Ontario Section (OS)
2018 – Present	Member of Environment Committee at the Ontario Sand, Stone and Gravel Association (OSSGA)
2014 – Present	Member of Training and Development Committee at the Ontario Sand, Stone and Gravel Association (OSSGA)

Education

Master of Science (M.Sc.)	Medical Biophysics (Ultrasound Physics) University of Toronto
Bachelor of Applied Science (B.A.Sc.)	Engineering Physics (Mechanical) Queen's University

Professional Registration / Affiliations

Licensed Professional Engineer with the Professional Engineers of Ontario (PEO)

Courses and Speaking Events

Instructor, Municipal Law Enforcement Officers' Association (MLEOA) Environmental Noise training courses. This is an annual four-day training program which provides the officers with an understanding of sound measurement and its relationship with environmental noise impact. The officer is trained in the utilization of technical equipment required in the application of sound measurement theories. This course also covers the unique elements of qualitative noise regulations and is authorized by the Ministry of the Environment and Climate Change.

Speaker, "Overview of Noise & Vibration Issues in Land-Use Planning", A&WMA OS Environment Issues in Land-Use Planning, Guelph, October 30, 2019.

Attended A&WMA Course "Consultant Liability and Expert Witness Testimony", Guelph, 2019.

Speaker, "Environmental Noise: Modelling Techniques to Quiet your Acoustic Troubles", ACE 2019, Quebec City, 2019.

Attended PSMJ Resources Project Management Bootcamp, Toronto, 2016.

Attended OSSGA Health and Safety Seminar courses *"Aggregates 101" and "Aggregates 201"*, Toronto, 2015. Mr. Flake both attended and aided in the development for parts of the course.

Speaker, "*The New NPC-300 Noise Guideline: What does it mean for your noise by-law?*" MLEOA Annual General Meeting, Kingston, 2014.

Professional Activities

Land Use Planning

In the field of environmental acoustics, Mr. Flake has completed numerous projects involving noise impact from planned stationary sources as well as noise impact studies for proposed new noise sensitive uses. These projects included conducting studies for proposed operations and developments and addressing noise concerns for existing operations. Peer reviews of noise studies prepared by other acoustic consultants were also conducted by Mr. Flake. In the land use planning process, Mr. Flake has completed studies which provide assessments of the noise impact on proposed residential, commercial, institutional and industrial developments from the local environment which includes noise from road, rail, and aircraft traffic and stationary noise sources such as industrial and commercial uses. Also, vibration measurements and studies were conducted to assess vibration from rail traffic such as trains, streetcars and subways. The studies include recommendations for noise control of the sources, dwelling building components, wall, window, and door constructions to satisfy the Ministry of Environment, Conservation and Parks noise guidelines.

In addition, Mr. Flake has conducted architectural drawing reviews and provided design advice for residential and commercial developments. These have ensured the construction plans will meet the municipal and Ontario Building Code requirements.

Environmental Compliance Approvals & EASR
Mr. Flake was involved in noise and vibration impact studies for industrial, institutional and commercial uses. He has prepared Acoustic Assessment Reports for use in applications for Environmental Compliance Approvals (ECA) and the Environmental Activity & Sector Registry (EASR). These studies provided conceptual as well as detailed designs of noise mitigation to reduce in-plant noise or noise emission into the environment. In-plant projects generally involved noise surveys, detailed noise and vibration measurements of equipment, data analysis and computer modelling of noise controls to evaluate effectiveness. In some cases, detailed designs and specifications have been provided. Mr. Flake has a good record of submitting applications that are accepted as fully complete according to MECP records.

Aggregates
Mr. Flake has done work in the aggregates industry which involved the preparation and support of noise impact studies to determine technical feasibility of aggregate licence applications to the Ministry of Natural Resources & Forestry. This work included preparing the noise impact studies, supporting the findings at public meetings, and performing acoustic audits to confirm compliance with the noise requirements.

Mining
Mr. Flake has acted as a third-party peer reviewer for the City of Timmins, overseeing all aspects of environmental compliance (including acoustics, noise & vibration) for the Hollinger Pit Open Mine in Timmins.

Acoustic Audits were also conducted at Goldcorp's Red Lake Balmerton & Cochenour sites.

Renewable Energy
Mr. Flake has performed IEC 61400 testing of Wind Turbines and Transformer Station noise audits.

Noise Source Investigations and Room Acoustics
Mr. Flake has completed several projects involving design of spaces where sound privacy and room acoustics were critical. These projects have included noise complaint investigation, room acoustics, mechanical noise, noise measurements to quantify sound isolation, and environmental noise impact. Examples of spaces include cinemas, offices, hospitals and residential condominiums.

End of Report