DILLON CONSULTING

URBANMINE INC.

Acoustic Assessment Report

72 Rothwell Road, Winnipeg, Manitoba

December 2023 – 23-6711

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Executive Summary

Dillon Consulting Limited (Dillon) was retained by Urbanmine Inc. (Urbanmine) to prepare an updated Acoustic Assessment Report (AAR) for the Urbanmine facility (Facility) located at 72 Rothwell Road in the city of Winnipeg, Manitoba. This report has been prepared for submission to the Manitoba Environment and Climate Change (MECC), in support of Urbanmine's Environmental Act Licence (EAL) 3199R. The purpose of this assessment is to update the evaluation of the overall noise impact and mitigation thereof for the Facility by incorporating the recent changes at the Facility.

The Facility operates as a ferrous and non-ferrous metal processing plant under Environment Act Licence 3199, employing various industrial technologies for the sorting, shearing, grinding, and conveying of ferrous and non-ferrous materials.

Noise impacts from the Facility were predicted using sound levels from a combination of manufacturer's data, engineering calculations, and on-site sound level measurements. The sound levels were input into a predictive noise propagation model to assess environmental noise impacts associated with the worst-case operations at the Facility. The modelling accounts for the existing noise mitigation measures (e.g., enclosures, barrier wall, silencers) and provides a list of optimized noise mitigation measures that are required in order to achieve compliance with the maximum desirable daytime noise guideline level of 55 dBA. The 55 dBA criterion is stipulated in the MECC's (formerly Province of Manitoba, Environment) Guidelines for Sound Pollution for residential areas, issued September 21, 1992, and is used as a basis for assessment of sound emanating from industrial sources.

With consideration for the City of Winnipeg's Neighbourhood Liveability By-Law (part 5, Subsection 65), six (6) locations have been identified as the closest representative points of reception (i.e., noise-sensitive receptors) in the areas surrounding the Facility. The noise-sensitive receptors assessed in this report consisted of two-storey residential dwellings located approximately 100m to 200m northeast, east, and southeast of the Facility.

The results of this noise study indicate that under the worst-case noise emission scenario for the Facility, with the implementation of the noise mitigation measures identified in this report, the Facility will be in compliance with the applicable daytime, evening, and nighttime guideline limits at the identified nearest sensitive receptor locations.

1.0 Introduction

1.1 Purpose and Objectives

Dillon Consulting Limited (Dillon) was retained by Urbanmine Inc. (Urbanmine) to prepare an updated Acoustic Assessment Report (AAR) for the Urbanmine facility (Facility) located at 72 Rothwell Road in the City of Winnipeg, Manitoba. The report has been prepared for submission to the Manitoba Environment and Climate Change (MECC), in support of Urbanmine's Environmental Act Licence (EAL) 3199R. The purpose of this assessment is to update the evaluation of the overall noise impact and mitigation thereof for the Facility by incorporating the recent changes at the Facility.

The Facility is located within an M3-zoned (Industrial, Heavy) area and immediately adjacent to rail and hydro right-of-ways (on the east side) owned by Canadian Pacific Railway Limited (CP Rail), Canadian National Railway (CN Rail), and Manitoba Hydro (Hydro). There are large industrial/commercial establishments to the north, south and west of the Facility. The Facility is approximately 300 m from Kenaston Boulevard. The closest residential area to the Facility is the Linden Woods Community, located east of the right-of-way corridor.

This updated AAR provides the results of the noise modelling and acoustic assessment completed for the latest site plan, equipment and operations at the Urbanmine Facility.

1.2 Overview of Facility

Urbanmine has been operating a ferrous and non-ferrous metal processing facility in Winnipeg, Manitoba since 2009. The facility operates as a transfer depot, where recyclable materials are received, sorted, then processed and shipped to other facilities for further processing and refining.

The facility has a ferrous process (ferrous line) that starts with the sorting of materials as it is received. Then the material gets processed through an outdoor rotary shear (Bano Shear). The sheared materials are then transported via a conveyor to the inside of the ferrous building for processing through a vertical grinder for further size reduction. The grinded material is transported via a conveyor to a sorting area where magnetic separators and Eddy-current separators are utilized to separate the ferrous and non-ferrous materials. Ferrous materials are then organized by size at a sorting shaker table and stored in bunkers on the north side of the ferrous building. The building is equipped with a dust collection system with collection points throughout the building. The dust collection system consists of extensive ductwork that leads into a cyclone and filter baghouse located immediately south of the ferrous building.

The Facility also has a non-ferrous processing line which is located inside the warehouse and processing building and consists of similar material shearing and grinding equipment as the ferrous line but notably smaller in size and power. The non-ferrous line includes: an outdoor rotary shear, non-ferrous mills, dust collectors, cyclones, sorting shaker tables and a network of conveyors.

As a result of the ferrous and the new non-ferrous processing lines, the following processes were terminated at the Facility:

1. The Briquetter line;
2. The Pacific/Canton shearing process; and,
3. The car crusher.

The Facility's production operations typically occur weekdays from 7:00 am to 5:00 pm, with some maintenance activities occasionally extending beyond 5:00pm. The dominant noise sources at the facility include the operation of outdoor shears, mobile equipment including grapple cranes, cyclone and baghouse, conveyors, vertical grinder (ring mill), multi-purpose loaders, air compressors, shaker tables, material drop points, granulators, building exhausts and hydraulic system including cooling radiators.

As per the City of Winnipeg's Zoning By-Law, the Facility is located in an area zoned M3-zoned (Industrial, Heavy). The topography of the Facility and surrounding area has minor elevation changes and is considered to be generally flat.

1.3 Summary of Acoustic Environment and Applicable Noise Limits

With the implementation of the noise mitigation measures identified in this report, the Facility will comply with the maximum desirable daytime noise guideline level of 55 dBA, as stipulated in the MECC's (formerly Province of Manitoba, Environment) Guidelines for Sound Pollution for residential areas, issued September 21, 1992, for all sources assessed in this report.

In addition to provincial legislation, the City of Winnipeg's Neighbourhood Liveability By-Law Part 5 Subsection 70 dictates that air conditioning equipment and fans located on an occupant property must adhere to the following noise limits observed at points of reception:

- 55 dBA between 7:00 am and 9:00 pm; and
- 50 dBA between 9:00 pm and 7:00 am

In the event of the ambient noise level exceeding the above limits, the Neighbourhood Liveability By-law limits the sound levels produced to 5 dBA in exceedance of the ambient noise level.

An ambient noise monitoring program was conducted from May 6 to May 16, 2022, when the facility was operating and when it was not operating. Typical average hourly Leq noise levels during daytime hours for an urban centre range from high 40s dBA to low-mid 50s dBA.

Results from the ambient noise monitoring program showed average Leq levels between high 50s dBA and low 60s dBA. The daytime criterion (hourly) of 55 dBA was exceeded on several days during the monitoring campaign at all monitoring locations, both when the facility was operating and when it was not operating. The resulting high evening and weekend ambient noise data (when the facility was not in operation) is indicative of other dominant noise sources in the area that are contributing to elevated ambient noise levels. Average weekday noise levels when the facility was operating was 58 dBA ranging between 50 dBA and 68 dBA. Average evening (weekday) noise levels when the facility was not operating was 59 dBA, ranging between 48 dBA and 74 dBA.

The regulatory sound level threshold considered for this assessment is 55 dBA for both daytime and nighttime periods.

1.4 Statement of Compliance

This study confirms that with the implementation of the noise mitigation measures presented in this report, the Facility complies with the daytime, and nighttime sound level regulatory limits defined by MECC's Guidelines and the City of Winnipeg's Neighbourhood Liveability By-Law.

2.0 Facility Description

The Facility operates a transfer depot, where recyclable materials are brought to the site, sorted, sheared / cut, re-organized / packaged and shipped to the end processors.

Figure 1 illustrates an overview of the Facility, on-site structures, and the surrounding areas. A list of equipment and activities/operations that are considered dominant noise sources at the Facility is provided below. The noise levels for the dominant noise sources were obtained through onsite noise measurements (August 26 and August 28, 2023) and those that were gathered as part of the previously approved AAR (see **Section 3**).

Figure 1 - Facility Overview

2.1 Bano Slow Speed Rotary Shear

Hydraulically powered slow-speed rotary shear, used to cut scrap metal (ferrous and non-ferrous) to smaller sizes (approximately 6” x 6”). A grapple (one of the four at the site) is used to load a mix (ferrous and non-ferrous) of raw scrap metal into the top hopper of the unit. The hydraulic system for the shear is separately housed in a nearby enclosure with two roof-top radiator coolers units for the hydraulic system. The noise level for this source was obtained through onsite noise measurement.

Photograph 1: Bano Slow Speed Rotatory Shear

2.2 Bano Vertical Mill

The Bano vertical mill is loaded via a conveyor with ferrous and non-ferrous material processed through the slow-speed rotary shear. The mill increases the ferrous product density by grinding the material and producing a decreased product size. The vertical mill is located inside the ferrous building with acoustically insulated walls and an overhead baydoor (See **Photograph 2**). The baydoor is kept closed when the vertical mill is in operation. The manufacturer-specified noise data was used in the analysis.

Photograph 2: Bano Vertical Mill

2.3 Magnetic Separator – Eddy Current Separator and Shaker Tables

The mix of grinded ferrous and non-ferrous materials are transferred via conveyor belts to two-staged magnetic separation and eddy current separation processes as well as shaker tables where they are separated based on ferrous and non-ferrous materials as well as size fractions. Subsequently the products are transferred to bins/stockpiles immediately north of the ferrous building via conveyor belts that protrude through the building wall. The noise data for the shaker tables, separators, and material drop was from a combination of manufacturer specifications and Dillon in-house database.

Photograph 3: Magnetic Separator

2.4 Cyclone & Baghouse

A cyclone and a baghouse are used to gather dust from indoor operations within the ferrous building. The dust collector and baghouse are located side-by-side immediately south of the ferrous building. (See **Photograph 4**). The noise data for the cyclone was obtained through onsite noise measurements. For the baghouse, manufacturer-specified noise data was used in the analysis.

Photograph 4: Cyclone & Baghouse

2.5 Liebherr 934 Mobile Crane #1

The mobile crane is on steel tracks and is primarily involved with loading the Sierra shear hopper and material handling next to the shear. Noise from its engine and hydraulics systems is captured within the noise measurement data for the Sierra Shear process, however, conservatively it is modelled as a separate noise source (see **Photograph 5**).

Photograph 5: Mobile Crane

2.6 Liebherr 934 Mobile Crane #2 and #3

A second mobile crane equipped with grapple (Liebherr 934) is primarily involved with loading the ferrous outdoor shear and a new third mobile crane (Liebherr 934-LH40) is primarily involved with material handling near the ferrous operation. For noise modelling purposes, measured noise data for the L934 crane under high rev was used.

2.7 Liebherr 924 Mobile Crane (Rubber Tires)

This mobile crane is equipped with a grapple or a magnet and is mainly used for material handling on the northwest area of the site and is used to load scrap onto incoming empty B Train trailers. The noise data for this source was collected while the engine was at high rev.

2.8 Liebherr 904 (New)

This mobile crane is equipped with a grapple or a magnet and is mainly used for material handling near the main stockpile. The noise data for this source was collected while the engine was at high rev.

Photograph 6: Liebherr 904 Crane

2.9 JCB Lift (New)

This mobile lifter is equipped with a front extendable fork and is mainly used for material handling in proximity of the non-ferrous outdoor shear. The noise data for this source was collected while the engine was at high rev.

Photograph 7: JCB Lifter

2.10 Granulator

The granulator is located inside the warehouse building, processes waste cables and wires. The non-ferrous components are granulated and separated from the waste residue. Noise measurements were conducted at various locations along the length of the granulator and the highest measured noise level was used in the modelling (see **Photograph 8**). The dust generated at various parts of the granulator is collected using series of ducts and directed to a particulate cyclone located immediately outside of the warehouse building. Measured noise data for the cyclone was used in the noise modelling.

Photograph 8: Granulator – Indoor

2.11 Michigan L90 Loader

This multi-purpose loader operates at various locations within the yard and is mainly used for material handling and snow clearing. The noise data for this source was collected while the engine was at high rev (see **Photograph 9**).

Photograph 9: Michigan L90 Loader

2.12 Volvo L90 Loader

This multi-purpose loader operates at various locations within the yard and is mainly used for material handling for various operations. The noise data for this source was collected while the engine was at high rev.

2.13 John Deere Loader

This multi-purpose loader operates at various locations within the yard and is mainly used for material handling for the ferrous operation. The noise data for this source was collected while the engine was at high rev.

2.14 Hitachi Mobile Shear

This equipment is used on occasions and in the immediate vicinity of the warehouse building. The shear is used to cut elongated and/or odd-sized pieces of scrap metal. The noise data for this source was collected while the engine was at high rev.

2.15 EZ Crusher

The EZ crusher is a mobile unit that is used to bale stainless steel and aluminum. The unit is equipped with a light-duty crane, which is used for loading materials into the baler chamber and extracting baled material from the chamber. The baler is also equipped with a hydraulic system that compacts the loose materials into bales (see **Photograph 10**). For this source, measured noise data while operating under maximum load was used in the modelling.

Photograph 10: EZ Crusher

2.16 Non-Ferrous Outdoor Shear

A notably smaller hydraulically operated slow speed rotary shear is used to process the non-ferrous materials (See **Photograph 11**). Similar to the rotary shear for the ferrous line, the shear and its hydraulic system including the cooling radiators are situated outside of the existing warehouse building. The noise level for this source was obtained through onsite noise measurement.

Photograph 11: Non-Ferrous Outdoor Shear

2.17 Non-Ferrous Indoor Line

The Non-ferrous line includes sources discussed in subsections **2.14.1** to **2.14.3**. The noise level for the non-ferrous line was measured with all the sources operating simultaneously. The Non-Ferrous line is shown in **Photograph 12**.

Photograph 12: Non-Ferrous Indoor Line

2.17.1 Non-Ferrous Vertical Mills

Similar to the ferrous line, the products from the non-ferrous outdoor shear are transferred to a vertical mill inside the warehouse building for further grinding and size reduction. This unit is notably smaller than the ferrous line.

2.17.2 Non-Ferrous Dust Collector and Cyclones

Dust collectors and two cyclones are used to gather dust from indoor operations within the non-ferrous building. The dust collectors and cyclones are located side-by-side.

2.17.3 Non-ferrous Shaker Tables

The product from the non-ferrous mill is transferred to series of shaker tables via conveyors for size fraction separation (see **Photograph 13**). The final products are then transferred to separate bins / storage piles in preparation for shipping.

Photograph 13: Shaker Tables

2.18 Non-Ferrous Roof Top Sources

The non-ferrous roof top sources include two (2) mushroom vents, one (1) air makeup unit and one (1) exhaust fan. For these source, manufacturer-specified noise data was used in the analysis.

2.19 Negligible Noise Sources

During the site visit it was determined that the following on-site noise sources had negligible contribution to the overall noise impact from the Facility:

- Three (3) desktop sized indoor table shears;
- Four (4) electric / propane forklifts operating mainly inside the warehouse building;
- One (1) small Hustler conveyor operating inside the warehouse building for small aluminum pieces; and
- Five (5) building exhaust vents along the east facade of the warehouse building.

As such, these sources were not included in the noise modelling.

2.20 Operating Hours of Facility

The Facility's production operations typically occur weekdays from 7:00 am to 5:00 pm, with maintenance activities occasionally occurring after 5:00 pm. On rare occasions, due to unusual circumstances or operational conditions, the Facility may need to operate for extended hours (i.e., 6:00 am to 9:00 pm) Monday through Saturday.

For the purposes of this assessment, all dominant noise sources (discussed above) were conservatively assumed to operate simultaneously and continuously for the worst-case one-hour noise impact scenario.

2.21 Site Plan Identifying All Significant Sources

The location of the Site is illustrated in **Figure 1**. The location of the dominant noise sources at the Site (identified by Source IDs) is illustrated in **Figure 2**. The source IDs presented in **Figure 2** match those presented in **Table 2**.

3.0 Noise Source Summary

An on-site source-specific noise measurement program was undertaken by Dillon on February 18 and 19, 2015. Noise measurements were conducted in accordance with the Ontario Ministry of the Environment, Conservation and Parks (MECP)) noise publication NPC-103. Upon full commissioning of the facility, confirmatory noise measurements were conducted at the Facility on August 26 and 28, 2023 for the sources that were previously predicted as well as new noise sources.

3.1 Instrumentation

For noise source measurement programs, a Norsonic 140 Type I sound level analyzer (Serial No. 1403048) was utilized. The Norsonic 140 was field calibrated before and after measurements, using a Norsonic AS Sound Calibrator Type 1251 (Serial No. 31746). Laboratory calibration certificates for the instruments are presented in **Appendix C.**

3.2 Noise Source Measurement

For each noise source, at least triplicate measurements were logged, and their arithmetic averages were used for calculating the sound power level. Worst-case noise emission scenarios were simulated during all measurements. To facilitate accurate measurements, noise sources were turned on and off, and operated under different loads. This allowed for each source to be isolated (where applicable).

For multi-step operations, maximum measured noise level was converted to sound power level and used in noise propagation modelling.

The raw data from on-site measurements and sound power level calculations are presented in **Appendix B.**

3.3 Noise Source Summary Table

The dominant on-site noise sources are listed in **Table 1**. This table contains a listing of noise source sound power levels, source location, sound characteristics, and a summary of any noise abatement measures that may have been already implemented. Sound power calculations and manufacturer data from measurement data are presented in **Appendix B**.

Table 1: Noise Source Summary Table

Source ID	Source Description	Sound Power Level (dBA)	Source Location [1]	Sound Characteristics [2]	Noise Control Measures [3]
SS1	Sierra Shear – Processing No 1 Loose	121.6	O	I	U
LB934_MH	LB934 – Material Handling	114.4	O	S	U
BTL	B Train Loading – No 1 Material (LB 934)	105.3	O	S	U
NF_BH	Non-Ferrous Baghouse	97.8	O	S	U
MHRC	Material Handling - Hitachi mobile shear	120	O	S	U
CYCL	Cyclone (Overall)	101	O	S	U
ML90	Michigan L90 Loader	102.1	O	S	U
EZC	EZ Crusher	103.5	O	S	U
GRN	Granulator	92.5	I	S	U
EB	Excel Bailer – Indoor	75.9	I	S	U
RM	Ring Mill	98.8	I	S	U
DC	Dust Collector and Bags	91.9	O	S	U
ST	Shaker Tables x3	92	I	S	U
LB934_MH	LB934 – Material Handling	114.4	O	S	U
OS1	Bano Ferrous Outdoor Shear	121.6	O	I	U
BEX1	Building Exhaust	85.9	O	S	U
BEX2	Building Exhaust	85.9	O	S	U
BH	Baghouse – Pulsating	98.8	O	S	U
MD	Material Drop + Mag Sep + Eddie Current	75.1	I	S	U
MDB1	Material Drop Bins 1	100.1	O	S	U
OS2	Bano Non-Ferrous Outdoor Shear	112.1	O	S	U
RCF1	Rad Cooling Fan 1	102.2	O	S	S
RCF2	Rad Cooling Fan 2	102.2	O	S	S
LB934_MH	LB934 - Material Handling	114.4	O	S	U
JDL	John Deere - Small Loader	95.2	O	S	U
HE1	Hydraulic Enclosure 1 - Ferrous	90.8	O	S	U
HE2	Hydraulic Enclosure 2 - Ferrous	90.8	O	S	U
MDB2	Material Drop Bins 2	100.1	O	S	U
NFO_indoor	Non-ferrous Operation - All Cumulative - Indoor	89.3	I	S	U
NF_MUA	Non-ferrous Air Makeup Unit	82.8	O	S	U

Source ID	Source Description	Sound Power Level (dBA)	Source Location [1]	Sound Characteristics [2]	Noise Control Measures [3]
NF_MV1	Non-ferrous Mushroom Vent 1	66.8	O	S	U
NF_MV2	Non-ferrous Mushroom Vent 2	66.8	O	S	U
NF_Ex	16" Non-ferrous Bldg Exh.	59.8	O	S	U
JCB	JCB Lift	98.7	O	S	U
L90H	Volvo L90H	95.2	O	S	U
LB904	LB904 High Rev + Hydraulic	92.4	O	S	U
LB924_MH	Lib LB924 High Rev + Hydraulic	92.2	O	S	U

1. Source Locations

O – located/installed outside the building, including on the roof

I – located/installed inside the building

2. Sound Characteristics

S – Steady

Q – Quasi Steady Impulsive

I – Impulsive

B – Buzzing

T – Tonal

C – Cyclic

Int – Intermittent

3. Noise Control Measures

S – silencer, acoustic louver, muffler

A – acoustic lining, plenum

B – barrier, berm, screening

L – lagging

E – acoustic enclosure

O – other

U – uncontrolled

The sound power levels of the above sources were calculated based on on-site sound level measurements.

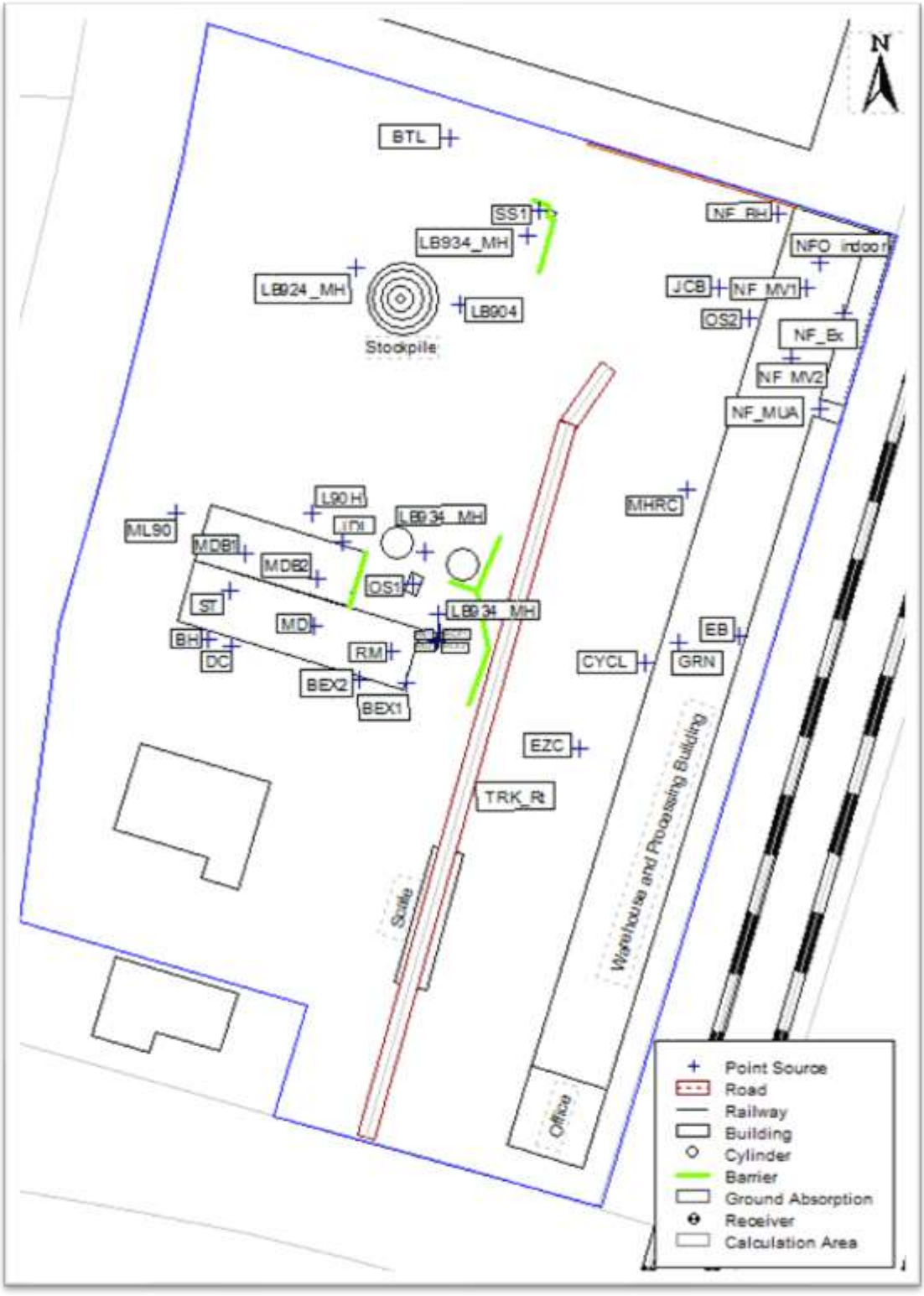


Figure 2 - Noise Source Layout

3.4 Background Noise

The background ambient noise, exclusive of that generated by the Facility, can be characterized as having qualities of an urban centre. The primary contributors to the background sound during the daytime and nighttime periods are transportation (both road and rail) as well as noise from industrial and commercial activities in the area.

4.0 Point of Reception Noise Impact Analysis

A predictive noise modelling exercise was undertaken to determine the potential noise impact that the Urbanmine facility can have on the nearby receptors. The modelling was set to simulate worst-case noise emission scenario from the Facility, assuming all sources are operating at their maximum capacity (i.e., highest noise emission) and simultaneously.

The site-wide noise propagation modelling for the Facility, including the recent expansions and new equipment/operations was completed to determine receptor noise impacts from the facility and to determine if any noise mitigation measures are required in order to achieve the receptor noise objective of 55 dBA.

4.1 Scaled Area Location Plan

Figure 3 is an aerial photograph of the area which shows the location of the Site and the surrounding areas including the nearest points of reception.

4.2 Land Use Zoning Plan

The Urbanmine Facility is located on land that is zoned Industrial, Heavy. The lands surrounding the Facility are zoned identically. The nearest residential zoned lands are approximately 80 m east of the Facility, east of the rail/hydro right-of-ways. The zoning plan for the area is provided in **Appendix A.**

4.3 Points of Reception (PORs) List and Description

The City of Winnipeg's Neighbourhood Liveability By-Law (Part 5, Section 65) defines a Point of Reception (POR) / receptor as "Any point on any property where sound, originating from other property, is heard by a person who is engaged in normal activities." The MECC's (formerly Province of Manitoba, Environment) Guidelines for Sound Pollution for residential areas, defines residential areas as, "*Areas where human beings live, including apartments, hospitals, schools, seasonal residences, and mobile homes, as well as year-round residences, since these are places where people sleep and often spend extended periods of time.*"

A total of six (6) representative noise-sensitive PORs were identified as the basis for this acoustic assessment, as shown in **Figure 3**. All identified receptors are year-round permanent residences. A description of each receptor is provided in **Table 2.**

Table 2: Noise Sensitive Receptors

Receptor ID	Location	Comments
POR1	Approximately 200 m Northeast of the Facility	2-Storey Residential Dwelling
POR2	Approximately 120 m Northeast of the Facility	2-Storey Residential Dwelling
POR3	Approximately 100 m Northeast of the Facility	2-Storey Residential Dwelling
POR4	Approximately 90 m East of the Facility	2-Storey Residential Dwelling
POR5	Approximately 100 m Southeast of the Facility	2-Storey Residential Dwelling
POR6	Approximately 150 m Southeast of the Facility	2-Storey Residential Dwelling

Figure 3 - Receptor Locations

4.4 Procedure for Assessing Noise Impacts at Each Receptor

The worst-case noise emission scenario at each receptor was modelled using the CADNA/A software program from DataKustik GmbH. The outdoor noise propagation model is based on ISO 9613, Part 1: Calculation of the absorption of sound by the atmosphere, 1993 and Part 2: General method of

calculation (ISO-9613-2: 1996). The model is capable of incorporating various site-specific features such as elevation, berms, ground absorption and barriers to accurately predict noise levels at specific receptors, pertaining to noise emissions from a particular source(s). The ISO based model accounts for reduction in sound level due to increased distance and geometrical spreading, air absorption, ground attenuation, and acoustical shielding by intervening structures and topography. The model is considered conservative since it represents atmospheric conditions that promote propagation of sound from source to receiver.

A georeferenced digital site plan was used as the basis for model construction. Data from the noise source measurements and site-specific parameters, including site layout and building profiles were incorporated in the model.

4.5 Parameter/Assumptions for Calculations

Source specific noise data was input into the CADNA/A software to model the noise impact at the selected nearest receptors. All significant noise sources were modelled as point sources with hemispherical spreading. The following assumptions were incorporated in the analysis:

4.5.1 Receptors

A receptor height of 5.5m or 6m above ground, representing the second storey of a 2-storey residential dwelling was used for all sensitive receptors assessed. It was also noted that some dwellings are situated on top of a berm that is elevated between 1.0 and 1.5 metres. As such, receptor heights in the model were adjusted to reflect the higher elevation (i.e., depending on their locations, receptor heights were set to 5.5m and 6m in the model).

4.5.2 Reflections

Site specific sound-level measurements included the effects of nearby reflective surfaces (i.e., not a free-field measurement); however, conservatively, sources were modelled assuming a third-order reflection. The order of reflection identified the number of times sound ray is reflected off various surfaces. A higher order of reflection would result in greater noise impact at receptors.

4.5.3 Ground Absorption

For the noise modelling, a global ground absorption coefficient of 0.5 was used to represent a mix of soft and hard surfaces between the Facility and the receptor locations.

4.5.4 Noise Data

Measured sound pressure levels were converted to sound power levels for use in the model. In the original AAR some sources noise data from Dillon's in-house database was used. Confirmatory measurements were conducted onsite and the values were updated in the noise propagation model. A cumulative noise measurement was conducted at the baydoor of the ferrous building with all systems

operating and the results indicated values that were lower than the sum of sound levels for various equipment inside the building, provided by the manufacturer. As a conservative measure, the source-specific manufacturer noise data was used for the purposes of this updated AAR. A 10 dB penalty was applied to sources with quasi-steady impulsive sound characteristics.

4.5.5 Duty Cycle

Noise emissions from all dominant noise sources were assumed to occur continuously and simultaneously for the duration of 1 hour as the worst-case scenario.

4.5.6 Topography

The area surrounding the Facility and receptors is primarily flat ground. The Facility and the surrounding areas were modelled as such (i.e., topography was not incorporated in the modelling).

4.5.7 Noise Mitigation Measures

The following noise mitigation measures were determined and optimized through noise modelling iterations (Note: the list of noise mitigation measures provided below includes existing and planned future mitigation measures):

1. A noise barrier implemented on the north property boundary measured to be 45 metres in length and a height of 9 metres [Note: an existing noise mitigation measure]

2. A new configuration of a heavy rubber noise barrier wall of approximately 19 metres in total length and a height of 7.3 metres that is situated immediately adjacent to the Sierra Shear, on the north and east sides of the shear. This will eliminate the direct line-of-sight from the source to the receptors on the north, northeast and east side of the facility. [Note: this was previously an L-Shaped barrier 12 meters in length and 5.5 meters in height and will be extended to the above-mentioned dimensions].

3. A 36 metres long asymmetrical noise barrier wall approximately 36 metres in total length and a height of 10 metres, consisting of 4 stacked up shipping containers, situated east of the ferrous outdoor rotary shear [Note: this barrier wall is partially built and will be extended horizontally and vertically to the above-mentioned dimensions].

4. A concrete block noise barrier wall 6 meters in length and 4 meters in height, located northeast of the ferrous outdoor rotary shear. [Note: an existing noise mitigation measure].

5. A heavy rubber curtain noise barrier measured to be approximately 11.5 metres in length and a height of 10 metres extending from the canopy to the ground for the north product bin area of the ferrous building.

6. A concrete block noise barrier wall measured to be about 2.5 metres in length and a height of 4 metres situated immediately to the east of the ferrous hydraulic enclosures and rad cooling fans.

7. The modelling was set not to account for shielding for sources within buildings. However, a 20 dB reduction was assigned for sources within the warehouse building and 30 dB reduction was assigned for sources within the new ferrous building. The warehouse building is constructed of 7.5" thick concrete block walls and the ferrous building is constructed of concrete blocks for the lower portion of the building walls and insulated corrugated steel panels for the upper portion. In order to maintain the relatively low noise propagation to the outdoor environment, all doors for the buildings are to be kept closed when noise generating sources are operating inside the buildings.

8. Acoustic louver doors for the ferrous outdoor shear's hydraulic system enclosure. The acoustic louvers are to be installed on the full length of the north and south doors of the enclosure and are to achieve a minimum of a 10 dB overall attenuation.

4.5.8 Sound Quality

All dominant noise sources were considered to emit noise on a continuous, steady-state manner. An impulsive penalty of 10 dB was applied to the sources with quasi-steady impulsive sound characteristics, as per MECP's noise publication NPC-104.

4.6 Point of Reception Noise Impact Table

Table 3 summarizes the contribution of each noise source (partial level) to the overall noise level at each receptor.

Graphic output from the model illustrating sound level contours and predicted receptor noise levels are presented in **Figure 4**. A CADNA/A model sample output is provided in **Appendix D**.

Table 3: Point of Reception Noise Impact

Source ID	POR1			POR2			POR3		
	Daytime/ Evening Partial Level (dBA)	Night-time Partial Level (dBA)	Distance (m)	Daytime/ Evening Partial Level (dBA)	Night-time Partial Level (dBA)	Distance(m)	Daytime/ Evening Partial Level (dBA)	Night-time Partial Level (dBA)	Distance(m)
SS1	37.7	37.7	251.5	40.6	40.6	190.2	46.3	46.3	178.1
LB934_MH	31.1	31.1	266.2	33	33	203.5	33.7	33.7	190.1
BTL	28.5	28.5	260.3	35.3	35.3	205.9	41	41	197
NF_BH	26.8	26.8	213.6	42.2	42.2	143.7	43.1	43.1	131.1
MHRC	40.1	40.1	252.5	42	42	181	48.9	48.9	164.1
CYCL	22.6	22.6	293.2	24.5	24.5	206.8	25.5	25.5	180.4
ML90	31.9	31.9	283.9	32.6	32.6	209.9	32.6	32.6	190.2
EZC	32.4	32.4	315.3	33.4	33.4	227.7	33.8	33.8	200.3
GRN	31.2	31.2	285.9	34.8	34.8	198.8	36.2	36.2	172.1
EB	14	14	276.9	17.8	17.8	186.3	19.4	19.4	159.2
RM	23.6	23.6	328	19.9	19.9	243.3	25.1	25.1	225.6
DC	4.3	4.3	352.7	6	6	276.8	7.4	7.4	255.8
ST	26.1	26.1	346.1	26.3	26.3	272.6	27.7	27.7	253.2
LB934_MH	45.9	45.9	310.3	42	42	233.6	50	50	212.5
OS1	44.9	44.9	315.9	33	33	238.2	37.8	37.8	216.5
BEX1	15.4	15.4	330.5	19.4	19.4	249.2	20.1	20.1	225.4
BEX2	2.1	2.1	336.8	5.6	5.6	257	7	7	233.7
BH	12.6	12.6	355.9	14.6	14.6	280.5	15.6	15.6	259.6
MD	-6.5	-6.5	336.6	1.8	1.8	260	2	2	238.1
MDB1	28.5	28.5	339.4	28.4	28.4	267.7	28.2	28.2	247.4
OS2	40.5	40.5	228.9	38.6	38.6	154.4	39.4	39.4	137.1
RCF1	18.3	18.3	317.4	20.4	20.4	236	26.1	26.1	213.2
RCF2	17.4	17.4	317.4	20.6	20.6	236	21.5	21.5	213.2
LB934_MH	27.7	27.7	266.3	29.7	29.7	203.7	35.5	35.5	211.5
JDL	26.3	26.3	284.9	23.9	23.9	210.1	18.2	18.2	223.4
HE1	6.2	6.2	318.9	8.5	8.5	238.3	14.2	14.2	214.9
HE2	5.3	5.3	320.6	8.5	8.5	239.6	9.4	9.4	216
MDB2	30.8	30.8	331.2	15.3	15.3	255.6	21.1	21.1	234.5
NFO_indoor	29.9	29.9	213.9	20.1	20.1	137.8	17.5	17.5	121.5
NF_MUA	13.9	13.9	231.9	20.8	20.8	148.5	25	25	126.9
NF_MV1	6.3	6.3	216.9	2	2	140.9	1.9	1.9	124.3
NF_MV2	-0.6	-0.6	228.9	0.5	0.5	149.3	0.8	0.8	129.9
NF_Ex	-12.2	-12.2	214.7	-10.6	-10.6	135.7	-9.2	-9.2	117.7
JCB Truck	28.9	28.9	230.5	23.7	23.7	158	24.2	24.2	142.1
L90H	26.2	26.2	323.8	24.1	24.1	251.4	24.1	24.1	231.5
LB904	18.4	18.4	275.2	30	30	209.7	25.4	25.4	195
LB924_MH	22.3	22.3	295.8	23.1	23.1	236.9	23.1	23.1	224.9
TRK_Rt	24.1	24.1	257.2	27	27	184.5	29.1	29.1	166.8

Source ID	POR4			POR5			POR6		
	Daytime/ Evening Partial Level (dBA)	Night-time Partial Level (dBA)	Distance (m)	Daytime/ Evening Partial Level (dBA)	Night-time Partial Level (dBA)	Distance(m)	Daytime/ Evening Partial Level (dBA)	Night-time Partial Level (dBA)	Distance(m)
SS1	41.8	41.8	156	44.1	44.1	248.8	42.5	42.5	351.1
LB934_MH	34.1	34.1	172.6	36.5	36.5	245.3	44.8	44.8	345
BTL	35.8	35.8	188.5	39.5	39.5	270.4	36.5	36.5	369.6
NF_BH	29.7	29.7	123.9	30.9	30.9	228.8	32.5	32.5	340.6
MHRC	50.7	50.7	141	43.8	43.8	218.7	42.4	42.4	322.8
CYCL	28.2	28.2	126.8	22.4	22.4	158.6	19.2	19.2	257.3
ML90	34.8	34.8	156.1	20.1	20.1	209.6	17	17	304.4
EZC	35.6	35.6	142.8	32.3	32.3	153	30.1	30.1	243.8
GRN	39.8	39.8	119.5	37	37	157.7	32.2	32.2	259.3
EB	23.4	23.4	100.1	19.9	19.9	152.6	14.7	14.7	310.1
RM	27	27	106.03	35.5	35.5	153.29	33.3	33.3	257.88
DC	9.3	9.3	177.9	28	28	193.8	30.2	30.2	274.5
ST	18.2	18.2	208.8	30	30	218.2	30.2	30.2	289.1
LB934_MH	38.7	38.7	210.3	37.8	37.8	226.1	37.6	37.6	299.7
OS1	38.9	38.9	171.2	39.3	39.3	204	45.9	45.9	290.8
BEX1	21.8	21.8	173.1	29.2	29.2	200.1	25.7	25.7	285.9
BEX2	11.7	11.7	175.5	28.9	28.9	186.9	25.5	25.5	267.1
BH	17	17	184.9	36.7	36.7	194.5	39.3	39.3	271.1
MD	3.1	3.1	214.5	11.3	11.3	223	9.7	9.7	292.8
MDB1	19.2	19.2	193.5	16.4	16.4	208.5	13.6	13.6	285.8
OS2	40.8	40.8	207.1	37.7	37.7	228.6	35.7	35.7	304.7
RCF1	28.3	28.3	118.1	23	23	212.9	22.3	22.3	322.5
RCF2	23.7	23.7	164.9	22.7	22.7	187.1	20.7	20.7	271.4
LB934_MH	38	38	164.9	37.5	37.5	187.1	35.4	35.4	271.4
JDL	16.9	16.9	190	12.1	12.1	230.5	9.2	9.2	315.9
HE1	16.4	16.4	274.9	10.6	10.6	189.8	7.7	7.7	168
HE2	11.6	11.6	168.7	10.9	10.9	188.8	24.1	24.1	272.8
MDB2	18	18	192.3	16.9	16.9	213.4	13.9	13.9	292.8
NFO_indoor	15.5	15.5	108.9	13.9	13.9	215.6	17.6	17.6	328.8
NF_MUA	32.7	32.7	96.8	26.5	26.5	190.7	22.2	22.2	303.1
NF_MV1	2.5	2.5	110.1	2.3	2.3	215.2	6	6	327.2
NF_MV2	4	4	313.5	10.4	10.4	202.5	6.4	6.4	106
NF_Ex	-7.9	-7.9	101.2	-12	-12	207.8	-13.6	-13.6	321.1
JCB Truck	25.1	25.1	128.8	25.3	25.3	220.9	24.8	24.8	328.4
L90H	32.4	32.4	195.1	12.8	12.8	223.3	10.2	10.2	304.5
LB904	31.4	31.4	173.7	28.3	28.3	239.6	26.2	26.2	335.1
LB924_MH	30.3	30.3	207.7	27.7	27.7	268.2	23.1	23.1	357.9
TRK_Rt	32.1	32.1	140.2	26.4	26.4	148.9	28	28	189.7

The noise level contours (at 4.5m above-ground, in dBA) are presented graphically on **Figure 4**. This graphical output generated by CADNA indicates sound levels extending from the site during the worst-case daytime operating scenario. Also presented in the figure are the predicted receptor sound levels in dBA.

The modelling results indicate that with the implementation of the noise mitigation measures identified in this report, the Facility will be in compliance for all the noise sources assessed herein, when operating under the worst-case noise emission scenario.

5.0 Acoustic Assessment Summary

5.1 Acoustic Assessment Summary Table

Table 4 summarizes the predicted receptor noise levels and the applicable Performance Limits at the selected nearest Points of Reception. The results indicate that with the implementation of the above-mentioned noise mitigation measures, the predicted worst-case receptor noise levels meet the performance limits at the selected noise sensitive receptors.

Table 4: Acoustic Assessment Summary – With Mitigation

Point of Reception ID	Point of Reception Description	Time of Day	Sound Level at Point of Reception (dBA) (Leq) [1]	Verified by Acoustic Audit (Yes/No)	Performance Limit (dBA) (Leq) [2]	Compliance with Performance Limit (Yes/No)
POR1	Façade	Daytime/ Evening	50.5	No	55	Yes
		Nighttime	50.5	No	55	Yes
POR2	Façade	Daytime/ Evening	49.4	No	55	Yes
		Nighttime	49.4	No	55	Yes
POR3	Façade	Daytime/ Evening	54.6	No	55	Yes
		Nighttime	54.6	No	55	Yes
POR4	Façade	Daytime/ Evening	53	No	55	Yes
		Nighttime	53	No	55	Yes
POR5	Façade	Daytime/ Evening	50.5	No	55	Yes
		Nighttime	50.5	No	55	Yes
POR6	Façade	Daytime/ Evening	51.5	No	55	Yes
		Nighttime	51.5	No	55	Yes

The noise level contours and predicted receptor noise levels (in dBA) are presented graphically in **Figure 4**. This graphical output generated by CADNA/A indicates noise emanating from the site during the worst-case noise emission scenario.

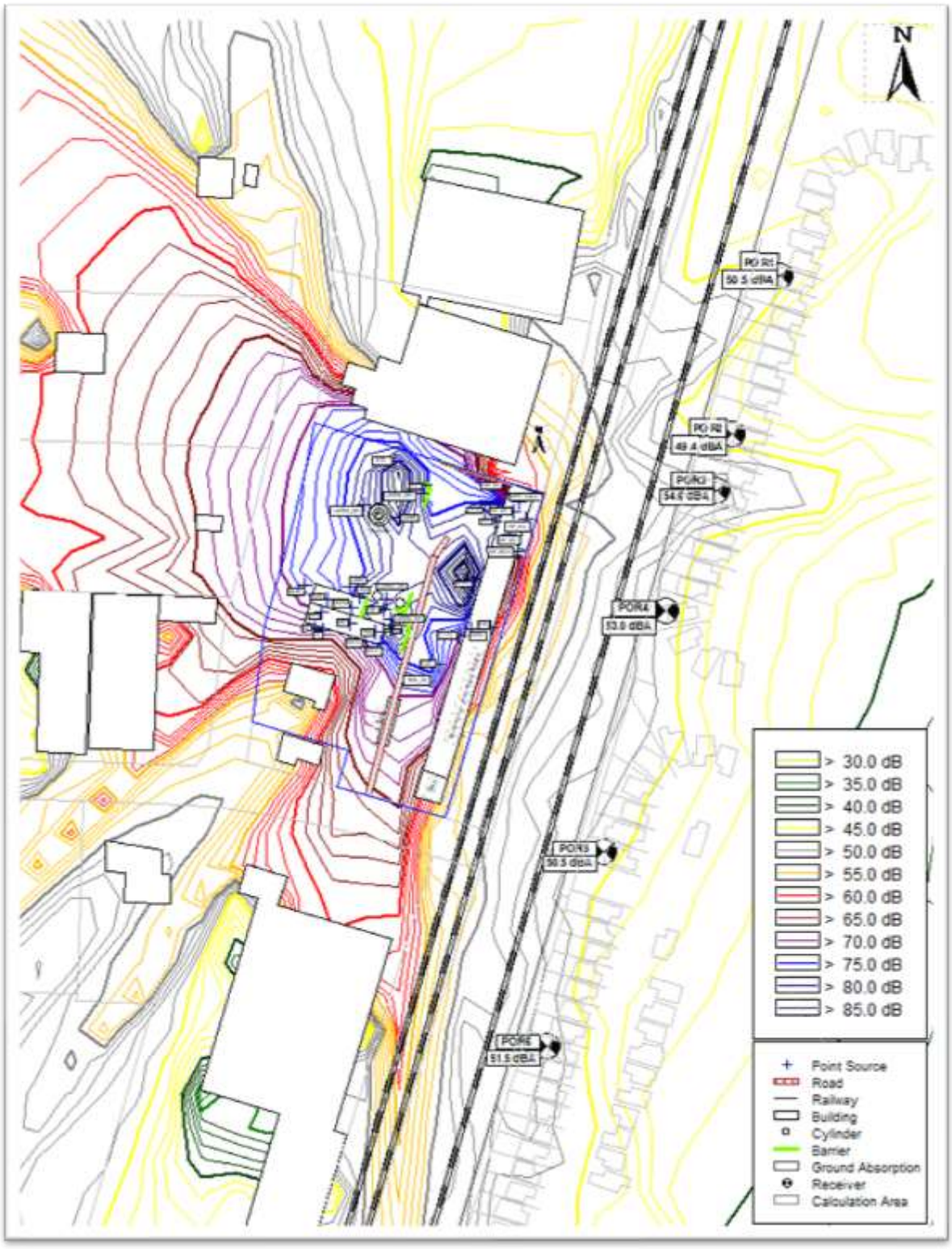


Figure 4 - Noise Level Contours and Receptor Noise Levels

6.0 Conclusion

Urbanmine Inc. has been operating a ferrous and non-ferrous metal processing facility (the Facility) in Winnipeg, Manitoba since 2009. The Facility essentially operates as a transfer depot, where recyclable materials are brought to the site, sorted, sheared / cut, re-organized / packaged and shipped to the end processors. This report has been prepared for submission to the Manitoba Conservation and Climate (MCC), in support of the Notice of Alteration (NoA) submitted on March 7, 2019. The purpose of this assessment was to evaluate the noise impact associated with the operations of the Facility (including new operations / expansion as outlined in the NoA) under a worst-case operating scenario and to identify and optimize noise mitigation measures that result in an improved noise environment at the nearby residential area and achieve the receptor noise level objective of 55 dBA.

With the implementation of the noise mitigation measures identified in this report, the Facility will comply with the maximum desirable daytime noise guideline level of 55 dBA, as stipulated in MECC's Guidelines for Sound Pollution for residential areas, issued September 21, 1992, for all sources assessed in this report.

7.0 Closure

Dillon Consulting Limited (Dillon) was retained Urbanmine Inc. to prepare an updated Acoustic Assessment Report (AAR) for the Urbanmine Inc. facility located at 72 Rothwell Road in the City of Winnipeg. The report has been prepared for submission to the Manitoba Environment and Climate Change for the purposes of permitting. The material in the report reflects Dillon's judgment in light of the information available to Dillon at the time of this report preparation. Noise sources assessed in this report are based on information provided to Dillon by Urbanmine Inc. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

We trust that the report is to your satisfaction. Please do not hesitate to contact the undersigned if you have any further questions on this report.

Sincerely,

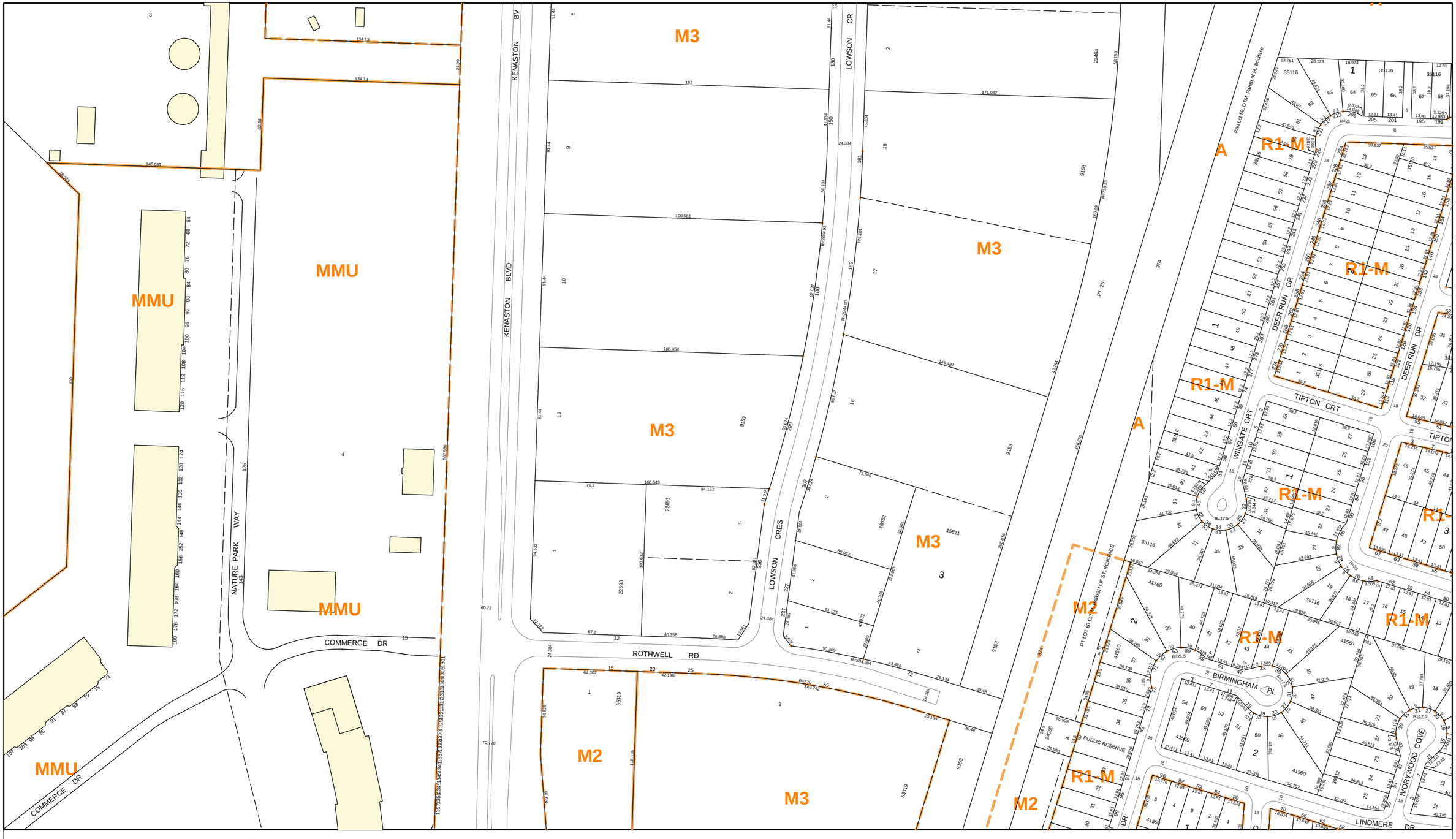
DILLON CONSULTING LIMITED

[redacted]

Amir A. Iravani, Ph.D., P.Eng.
Associate

Appendix A

Zoning Plan for the Site and Surrounding Area



CITY OF WINNIPEG
PLANNING, PROPERTY AND DEVELOPMENT DEPT.
Property and Information Services Division - MAPPING

Scale: 1:2500

N
W E
S

Appendix B

Noise Source Data

Source Name	Briquetter - normal operation					
Measurement Distance (m)	3					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
	Read 1	Read 2	Read 3	Avg.	Avg.	
Frq (Hz)						
25	65.1	65.5	63.5	64.7		
31.5	79.4	78.9	79	79.1	**80.2**	**97.7**
40	71.1	78.9	68.8	72.9		
50	72.8	78	69.2	73.3		
63	74.2	82.4	73.6	76.7	**80.0**	**97.5**
80	72.8	79.6	72.7	75.0		
100	77.3	80.8	76.6	78.2		
125	83.3	86.9	83.8	84.7	**86.4**	**103.9**
160	77.4	81.6	78	79.0		
200	81.3	82.2	80.7	81.4		
250	80.5	83.7	81.5	81.9	**85.8**	**103.4**
315	78.8	81.2	78.8	79.6		
400	81	82.6	80.6	81.4		
500	81.8	83.7	81.3	82.3	**87.2**	**104.7**
630	83.3	83.8	82.9	83.3		
800	85.8	86.2	85.2	85.7		
1000	84.9	85.6	84.8	85.1	**89.3**	**106.8**
1250	81.6	82	81.3	81.6		
1600	82.9	82.7	82.1	82.6		
2000	80.4	81.2	80.1	80.6	**86.7**	**104.2**
2500	82	82.7	82.2	82.3		
3150	80.8	81.7	80.5	81.0		
4000	81.3	81.7	80.7	81.2	**85.8**	**103.4**
5000	81	81.6	80.2	80.9		
6300	81.6	82.1	80.9	81.5		
8000	81.1	81.3	80.6	81.0	**85.5**	**103.0**
10000	79.5	79.7	78.7	79.3		

Source Name	Excel baler - combined												
Measurement Distance (m)	3												
Data Type	1/3 Octave											1/1 Octave	PWL (dB)
	Read 7	Read 8	Read 9	Read 10	Read 11	Read 12	Read 13	Read 14	Read 15	Read 16	Avg.	Avg.	
Frq (Hz)													
25	63.3	69.5	68.1	68.5	80.1	66.7	67.5	68.4	75	64.4	69.2		
31.5	71.4	83.8	84.4	78.8	81.7	79.1	78.2	76.8	86.3	76.1	79.7	**80.4**	**97.9**
40	59.3	74.2	72.4	63.6	81	69.3	63.6	72.7	75.2	61.1	69.2		
50	62.8	79.7	77.6	62.4	72	81.8	68.7	77.1	68	56.8	70.7		
63	71.9	80.1	77.7	68.7	73.2	74.6	72.5	75.6	67.7	63.9	72.6	**76.3**	**93.8**
80	56.6	80.8	74.8	74.4	75.8	71.1	68.4	73.2	69.6	65.2	71.0		
100	57.2	79	74.3	74.4	75.5	73.3	68	70.2	70.3	64.8	70.7		
125	61.8	81.3	80.4	78.9	77.4	76.9	67.2	75.8	76.1	63.6	73.9	**77.2**	**94.8**
160	67.7	81.4	72.3	77.5	73.6	76.5	67.4	70	72.7	62.1	72.1		
200	64.3	84.2	71.5	76.1	74.1	75.9	68.7	70.3	73.2	63	72.1		
250	79.5	87	80.2	81.7	77.6	82.8	78.7	84.3	82.6	81.1	81.6	**82.9**	**100.4**
315	68.5	85.4	74.3	79.6	76.4	78.3	70.6	75.2	76.1	70.3	75.5		
400	58.5	84.8	71.2	80.8	77.9	80.7	70.2	73.8	75.2	65.4	73.9		
500	66.4	86.6	75.5	83.6	77.9	82.2	74.2	75.6	78	75.2	77.5	**80.9**	**98.4**
630	62	86.6	74.8	81.8	76.1	83.4	72.1	77.3	79.6	67.6	76.1		
800	70.2	87.9	82.2	83	79.8	83.9	77.4	81.6	83.2	77.3	80.7		
1000	74	87.4	76.3	81.6	76.3	83.6	72	77.1	79.7	65.6	77.4	**83.5**	**101.0**
1250	77.4	86.9	79.1	80.6	74.3	83.9	71.7	76.6	79.2	63.7	77.3		
1600	64.6	87.6	79	81.7	74.2	84.6	72.4	78.3	80.5	62.8	76.6		
2000	71.3	87.5	80.4	81.8	76.4	84.3	71.5	78.9	82	64	77.8	**82.1**	**99.6**
2500	73.1	86.1	78.7	81.4	77.4	83.3	71.6	78.6	80.8	63.3	77.4		
3150	63.5	85.8	80.5	80	76.1	82.8	71.4	77.8	79.8	61.3	75.9		
4000	63	85.3	79.4	79.4	76	82.5	69.8	76.9	79	62.2	75.4	**80.0**	**97.5**
5000	62.4	84.3	77.8	78	76	80.8	68.7	75.3	77.8	60.8	74.2		
6300	65.6	83	76.2	76.9	75.4	79.9	68	73.7	76	62.1	73.7		
8000	66.5	81.5	74.8	75.7	73.9	78.3	66.1	73	74.2	58.3	72.2	**77.0**	**94.5**
10000	60.3	79.2	73.2	73.2	72.1	76.6	64.2	71.8	72.8	57.4	70.1		

Source Name	Air compressor					
Measurement Distance (m)	2					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
	Read 17	Read 18	Read 19	Avg.	Avg.	
Frq (Hz)						
25	59	59.7	59.7	59.5		
31.5	74.3	75.1	75.2	74.9	**75.3**	**89.3**
40	63.2	63.4	62.8	63.1		
50	61.3	61.6	61	61.3		
63	60	59.1	58.7	59.3	**65.3**	**79.3**
80	60.7	60.8	60.7	60.7		
100	66	65.4	66.9	66.1		
125	65.1	65.1	64.8	65.0	**71.5**	**85.5**
160	68.6	68.3	68.3	68.4		
200	70.3	70.4	70.5	70.4		
250	65.6	65.8	65.8	65.7	**73.1**	**87.1**
315	68.2	67.4	66.9	67.5		
400	73.6	73.2	73.3	73.4		
500	65.1	65.2	65.2	65.2	**74.4**	**88.4**
630	63.9	64.2	62.7	63.6		
800	61	60.6	60.7	60.8		
1000	58.8	59	59.4	59.1	**63.9**	**77.9**
1250	56.3	56.1	56.9	56.4		
1600	57.8	58.3	58.4	58.2		
2000	61.3	61.3	61.4	61.3	**65.0**	**79.0**
2500	60.7	60.8	60.2	60.6		
3150	60	60.2	60.3	60.2		
4000	61.2	61.4	61.5	61.4	**65.0**	**79.0**
5000	59	58.5	58.8	58.8		
6300	51.9	51.2	51.2	51.4		
8000	51.9	51.7	51.7	51.8	**57.4**	**71.4**
10000	53.7	54.2	54.3	54.1		

Source Name	Briquetter - normal operation (from outside door 12)					
Measurement Distance (m)		5				
Data Type		1/3 Octave			1/1 Octave	PWL (dB)
	Read 20	Read 21	Read 22	Avg.	Avg.	
Frq (Hz)						
25	65.5	69.1	65.8	66.8		
31.5	67	74.7	67.7	69.8	**72.9**	**94.9**
40	61.7	77.5	62.7	67.3		
50	59.6	71.4	59.9	63.6		
63	65.2	73	65	67.7	**70.1**	**92.0**
80	58.5	73	56.7	62.7		
100	59.2	73	58.5	63.6		
125	67.7	76.5	66.7	70.3	**72.8**	**94.7**
160	64.4	74.7	64.1	67.7		
200	66.9	75	70.7	70.9		
250	62.2	73.6	62.4	66.1	**72.9**	**94.8**
315	62.2	71.1	61.6	65.0		
400	61.9	68.5	61.9	64.1		
500	61.3	68	60.8	63.4	**68.9**	**90.8**
630	63.2	68.8	62.3	64.8		
800	62.7	66.6	62.6	64.0		
1000	62.8	65.3	62.5	63.5	**67.5**	**89.5**
1250	58	62.8	57.6	59.5		
1600	58.5	63.6	58.6	60.2		
2000	58.6	64.1	58.1	60.3	**64.2**	**86.2**
2500	55.4	61.5	54.5	57.1		
3150	55.9	62.2	55.2	57.8		
4000	53.8	61.1	53.7	56.2	**61.2**	**83.1**
5000	52.7	58.3	53.2	54.7		
6300	49.9	56	51.1	52.3		
8000	49.3	54.3	50.7	51.4	**56.6**	**78.6**
10000	50	53.4	51.8	51.7		

Source Name	Liebherr 934 mobile crane on steel tracks dropping material, engine and hydraulics						
Measurement Distance (m)			10				
Data Type			1/3 Octave			1/1 Octave	PWL (dB)
	Read 26	Read 27	Read 28	Read 29	Avg.	Avg.	
Frq (Hz)							
25	61.1	61.3	58.8	60.6	60.5		
31.5	76	76	72	68.6	73.2	**73.6**	**101.6**
40	61.4	62	62.3	58.9	61.2		
50	63.1	62.7	69.3	66	65.3		
63	70.7	70	78.6	75.5	73.7	**74.5**	**102.5**
80	61.2	61.2	62.8	62	61.8		
100	65.7	65.9	67.8	68.6	67.0		
125	72.8	73.4	72.7	75	73.5	**74.8**	**102.8**
160	64	65.4	65	63.1	64.4		
200	62.8	64.8	63.8	62.7	63.5		
250	61.7	62.3	59.3	59.1	60.6	**70.0**	**98.0**
315	68.3	69.4	67.4	67.8	68.2		
400	71.6	73.4	67.5	70.7	70.8		
500	75.6	76.6	68.2	73.7	73.5	**77.5**	**105.5**
630	75.9	76.8	69.9	70.8	73.4		
800	72.7	74.2	67.3	69.4	70.9		
1000	75.8	77.7	69	71.6	73.5	**78.0**	**106.0**
1250	77.8	79.2	68.9	72.4	74.6		
1600	79.2	80.6	71.2	73.6	76.2		
2000	78.2	79.8	70.6	73.8	75.6	**80.7**	**108.7**
2500	80.3	81	69.7	72.9	76.0		
3150	80.3	81.7	70.6	73.9	76.6		
4000	80.2	81.1	69.5	73.1	76.0	**80.7**	**108.7**
5000	79.4	80	68.8	71.9	75.0		
6300	78	78.9	67.7	70.4	73.8		
8000	76.1	77.4	66	68.8	72.1	**77.0**	**105.0**
10000	74.8	75.6	63.9	66.3	70.2		

Source Name	Sierra electric shear - combined, #1 loose									
Measurement Distance (m)	15									
Data Type	1/3 Octave								1/1 Octave	PWL (dB)
	Read 30	Read 31	Read 32	Read 33	Read 34	Read 35	Read 36	Avg.	Avg.	
Frq (Hz)										
25	65.4	75.8	81.1	62.3	64.4	61.2	61.8	67.4		
31.5	73	80	83.3	76.6	73.7	76.2	77.3	77.2	**78.3**	**109.8**
40	70.9	73.2	78.2	67.1	65.5	65	70.4	70.0		
50	69	67.8	72.2	67	62.4	63	65	66.6		
63	74.5	68.9	71.6	75.3	63.8	61.1	64.2	68.5	**73.8**	**105.3**
80	75.2	68.7	72.7	73.9	68.5	68.1	69.8	71.0		
100	77	72.1	78.7	76.3	70.9	68.2	72.6	73.7		
125	69.7	66.8	72.1	77	68.9	64.7	69.1	69.8	**75.9**	**107.5**
160	70.7	65.1	68.7	74.3	67.1	63.5	67.6	68.1		
200	71.5	64.2	67.3	74.5	63.3	64.5	64.7	67.1		
250	69.2	61.1	63.3	74.1	59.7	59.9	62.3	64.2	**70.9**	**102.4**
315	70.8	63.1	65.6	71.6	64.3	64.4	65.2	66.4		
400	76.3	70.9	71.6	74.6	71.2	71.4	73.6	72.8		
500	79.9	65.1	67.6	72.6	64.6	62.2	64.2	68.0	**75.7**	**107.2**
630	81.1	69.3	71.3	72.8	66.8	66.9	67.7	70.8		
800	81.3	68.3	72.8	75	66.6	65.1	65.7	70.7		
1000	82.8	67.2	71.7	73.9	65.9	65.1	65.5	70.3	**75.2**	**106.7**
1250	84.8	66.3	71.3	71.8	66.6	65	66	70.3		
1600	84	67.3	71.6	71.6	66.8	65.2	67.3	70.5		
2000	82.8	66.2	70.6	70.4	65.2	64.7	65.5	69.3	**74.1**	**105.6**
2500	83.2	65.4	70.5	67	61.8	62	63.7	67.7		
3150	81.8	65	70.1	64.9	62	61.1	62.9	66.8		
4000	80.8	63.6	68.9	62.9	59.1	59.6	61.2	65.2	**70.1**	**101.6**
5000	78.5	61.6	66.7	60.6	57.8	57.3	59.4	63.1		
6300	77.1	60.7	65.9	58.9	57.6	54.9	56.9	61.7		
8000	74.5	57.8	63.2	55.4	51.4	52	54.3	58.4	**64.0**	**95.5**
10000	71.8	55.1	60.5	52	48.8	48.9	52.2	55.6		

Source Name	Liebherr 934 tracks placing #1 loose material on Sierra hopper tray, Sierra shear off				
Measurement Distance (m)	10				
Data Type	1/3 Octave			1/1 Octave	PWL (dB)
	Read 37	Read 38	Avg.	Avg.	
Frq (Hz)					
25	66.6	64.6	65.6		
31.5	72.4	71.7	72.1	**73.7**	**101.7**
40	67.9	63.9	65.9		
50	68.3	70	69.2		
63	75.5	72.8	74.2	**75.9**	**103.9**
80	69.4	64.1	66.8		
100	73.6	71	72.3		
125	72.7	71.6	72.2	**75.9**	**103.9**
160	66.5	68.5	67.5		
200	69.7	66.9	68.3		
250	70.1	66.6	68.4	**73.5**	**101.5**
315	72.6	66.3	69.5		
400	77.7	73.2	75.5		
500	75.5	69.5	72.5	**77.9**	**105.9**
630	72.7	66.8	69.8		
800	74.2	68.8	71.5		
1000	70.9	64.8	67.9	**74.1**	**102.1**
1250	71.3	63.7	67.5		
1600	74.1	67.2	70.7		
2000	72.6	64.7	68.7	**73.5**	**101.5**
2500	69.5	61.7	65.6		
3150	67.9	61.5	64.7		
4000	68.3	61.6	65.0	**69.5**	**97.5**
5000	68.2	60.9	64.6		
6300	67.5	59.9	63.7		
8000	65.1	58	61.6	**66.6**	**94.6**
10000	62.2	55.9	59.1		

Source Name	Liebherr 934 rubber loading #2 prepared into B train					
Measurement Distance (m)	10					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
	Read 39	Read 40	Read 41	Avg.	Avg.	
Frq (Hz)						
25	57.3	57.2	64.1	59.5		
31.5	63.7	63.7	75.3	67.6	**78.1**	**106.1**
40	78.6	78.3	76	77.6		
50	68.8	68	74	70.3		
63	68.5	65.9	73	69.1	**73.5**	**101.5**
80	65.3	60.1	71.3	65.6		
100	64.7	59.4	70.1	64.7		
125	67.6	59.9	64.9	64.1	**68.6**	**96.6**
160	64.4	56.6	65.5	62.2		
200	60.7	56.4	64.6	60.6		
250	62.6	59.3	60.4	60.8	**68.0**	**96.0**
315	66.4	66.1	65.4	66.0		
400	68.2	67.7	66.8	67.6		
500	66.1	66.3	64.2	65.5	**71.6**	**99.6**
630	67	69.3	65.3	67.2		
800	67.5	69.4	66	67.6		
1000	63.8	67.8	63.5	65.0	**71.1**	**99.1**
1250	65.4	68.4	64.3	66.0		
1600	65.8	69.2	65	66.7		
2000	65.1	70.3	65.6	67.0	**71.5**	**99.5**
2500	63.7	70.2	65.7	66.5		
3150	62.8	70.8	64.6	66.1		
4000	61.3	69.9	63.5	64.9	**69.8**	**97.7**
5000	59.4	69.5	62.1	63.7		
6300	58.3	67.7	60.6	62.2		
8000	56.8	66.2	58.4	60.5	**65.5**	**93.5**
10000	54.9	64.7	57.7	59.1		

Source Name	Michigan L90 loader engine rev					
Measurement Distance (m)	5					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
	Read 42	Read 43	Read 44	Avg.	Avg.	
Frq (Hz)						
25	63	62.6	59.1	61.6		
31.5	68.5	70.4	68.4	69.1	**80.3**	**102.2**
40	79.7	80.1	79.8	79.9		
50	65.8	65.9	65.2	65.6		
63	68.5	69.4	69.6	69.2	**73.7**	**95.7**
80	70.7	70	71.4	70.7		
100	69.6	70.1	69.3	69.7		
125	71.6	71.7	71.5	71.6	**77.3**	**99.2**
160	74.5	75	74.7	74.7		
200	72.7	72.5	71.5	72.2		
250	73.2	74.1	72.7	73.3	**80.8**	**102.8**
315	77.9	79.3	80.3	79.2		
400	68.5	68.2	68.7	68.5		
500	70.4	70.2	70.4	70.3	**76.6**	**98.5**
630	74.1	73.9	75.3	74.4		
800	72.7	72.8	71.1	72.2		
1000	69.3	68.6	68.1	68.7	**75.7**	**97.6**
1250	71.8	71.4	70.1	71.1		
1600	72.2	72.3	72.1	72.2		
2000	73.6	73.9	73.6	73.7	**77.1**	**99.0**
2500	70.9	70.9	69.4	70.4		
3150	68.9	68.4	68.2	68.5		
4000	65.2	65.3	64.5	65.0	**70.7**	**92.7**
5000	62.1	61.8	61.2	61.7		
6300	59.3	59.4	58	58.9		
8000	55.3	55.4	54.5	55.1	**61.3**	**83.2**
10000	54.3	54.1	53.2	53.9		

Source Name	Liebherr 924 rubber dropping rail cut offs					
Measurement Distance (m)		7				
Data Type		1/3 Octave			1/1 Octave	PWL (dB)
	Read 45	Read 46	Read 47	Avg.	Avg.	
Frq (Hz)						
25	64	63.8	66.6	64.8		
31.5	66.3	65.1	66	65.8	**69.5**	**94.4**
40	62.5	62.6	64.8	63.3		
50	67.2	66.9	67.9	67.3		
63	78.9	79.4	80.1	79.5	**79.9**	**104.8**
80	66.1	66.5	66.8	66.5		
100	67.7	67.3	68.1	67.7		
125	74.3	76.3	75.5	75.4	**76.7**	**101.6**
160	66.4	68.9	69.5	68.3		
200	69.2	70.3	72.1	70.5		
250	69.7	70	72.3	70.7	**75.5**	**100.4**
315	70.3	70.3	72.7	71.1		
400	72.8	75.3	75.9	74.7		
500	79.1	83	84.6	82.2	**88.3**	**113.2**
630	86.1	87.6	86.9	86.9		
800	84.4	86	86.3	85.6		
1000	79.6	83.5	85.4	82.8	**88.7**	**113.6**
1250	82.2	82.5	83.2	82.6		
1600	81.7	81.5	80.8	81.3		
2000	86.5	88.2	87.5	87.4	**90.6**	**115.5**
2500	84	87	88.9	86.6		
3150	82.4	81.2	82.3	82.0		
4000	82.7	83.4	82.6	82.9	**86.4**	**111.3**
5000	80.8	78	79.1	79.3		
6300	79	78	78.4	78.5		
8000	76	74.1	73.5	74.5	**80.5**	**105.3**
10000	73	70	70	71.0		

Source Name	Liebherr 924 rubber loading B train with #1 prepared						
Measurement Distance (m)			8				
Data Type			1/3 Octave			1/1 Octave	PWL (dB)
	Read 48	Read 49	Read 50	Read 51	Avg.	Avg.	
Frq (Hz)							
25	66.5	62.6	63.5	64.7	64.3		
31.5	75.9	63.9	65.7	69.1	68.7	**71.2**	**97.2**
40	74.6	59.6	61.2	64	64.9		
50	78.8	67.6	65.8	69	70.3		
63	83.9	74.6	77	77.9	78.4	**79.9**	**105.9**
80	87.5	68.7	63	70.8	72.5		
100	87.3	72.6	62.2	69.2	72.8		
125	88.4	73.4	68.8	69.6	75.1	**78.9**	**105.0**
160	89.6	75.8	63.8	67.8	74.3		
200	82.9	71.4	66.3	69.5	72.5		
250	79.2	71.1	69.1	69.7	72.3	**77.6**	**103.7**
315	80.6	70.3	72.1	71.7	73.7		
400	81.3	72.6	74.3	75.4	75.9		
500	79.3	75.5	76.4	77.5	77.2	**81.7**	**107.8**
630	75.8	76.3	77.9	80.4	77.6		
800	76.9	73	80.9	79.2	77.5		
1000	74.4	73.9	77.5	78	76.0	**81.3**	**107.4**
1250	74.7	73.8	76.7	78.8	76.0		
1600	73.9	73.6	76	76.9	75.1		
2000	72.8	73.8	76.5	78.2	75.3	**79.9**	**105.9**
2500	71.9	74.3	75.6	77.5	74.8		
3150	70.1	73.8	73.7	76	73.4		
4000	66.9	73.3	70.6	74.7	71.4	**76.4**	**102.4**
5000	63.8	71.6	68.4	72.3	69.0		
6300	61.1	70.2	66.4	70.5	67.1		
8000	57.1	67.8	62.6	67.9	63.9	**69.4**	**95.5**
10000	53.7	65.2	59.7	65.2	61.0		

Source Name	Cyclone outside door 4					
Measurement Distance (m)	5					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
	Read 52	Read 53	Read 54	Avg.	Avg.	
Frq (Hz)						
25	74.1	73.4	73.1	73.5		
31.5	72.1	71.5	71.6	71.7	**76.3**	**98.2**
40	66.7	66.8	67.1	66.9		
50	68.3	67.4	66.5	67.4		
63	73.4	72.2	72.7	72.8	**75.2**	**97.1**
80	70.1	68.6	69	69.2		
100	75.6	73.5	73.7	74.3		
125	75.7	73.9	74.2	74.6	**78.1**	**100.0**
160	69.4	69.1	69.4	69.3		
200	77.4	77.2	78	77.5		
250	69	68.3	68.6	68.6	**78.4**	**100.3**
315	66.8	66.6	66.7	66.7		
400	72.1	71.3	72	71.8		
500	67.1	66.2	67	66.8	**73.7**	**95.6**
630	66.4	64.6	64.9	65.3		
800	64.3	63.2	63.3	63.6		
1000	63.3	64.2	64.7	64.1	**69.1**	**91.0**
1250	65.2	65	65.2	65.1		
1600	65.4	65	65.3	65.2		
2000	65.1	64.9	65.2	65.1	**70.2**	**92.1**
2500	65.6	66	66	65.9		
3150	68.8	68.9	69	68.9		
4000	72	71.8	71.7	71.8	**75.3**	**97.3**
5000	70.6	70.5	70.4	70.5		
6300	71.1	71.2	71.2	71.2		
8000	72	72.3	72.2	72.2	**76.7**	**98.7**
10000	72.3	72.6	72.5	72.5		

Source Name	Liebherr 934 loading Sierra shear hopper with #2 loose					
Measurement Distance (m)		10				
Data Type		1/3 Octave			1/1 Octave	PWL (dB)
	Read 55	Read 56	Read 57	Avg.	Avg.	
Frq (Hz)						
25	62.2	65	65.3	64.2		
31.5	65.3	65.2	69.5	66.7	**71.1**	**99.0**
40	60.8	65.9	75.5	67.4		
50	68.9	71.2	79	73.0		
63	78.1	76.3	78.9	77.8	**79.4**	**107.4**
80	65.5	67.2	74.2	69.0		
100	71.5	71.7	74.7	72.6		
125	71.3	72.7	74.5	72.8	**77.1**	**105.1**
160	68.9	71.1	74.5	71.5		
200	68.1	70.2	71.7	70.0		
250	65.2	67.7	69.8	67.6	**74.6**	**102.6**
315	68.5	73.3	71.6	71.1		
400	69.4	78.3	74.6	74.1		
500	69.4	79.7	75.2	74.8	**78.9**	**106.8**
630	68.5	78.2	73.2	73.3		
800	68.6	79.4	74.1	74.0		
1000	70.4	79.4	74.4	74.7	**79.6**	**107.6**
1250	69.6	81.6	75.4	75.5		
1600	69.8	81.6	74.7	75.4		
2000	69.7	81.6	74	75.1	**79.8**	**107.8**
2500	68.8	81.4	73.4	74.5		
3150	68.5	81.7	73.3	74.5		
4000	68.5	81	71.8	73.8	**78.6**	**106.6**
5000	68.4	80.3	71.1	73.3		
6300	66.7	79.3	69.4	71.8		
8000	65.1	77.7	67.6	70.1	**75.1**	**103.1**
10000	63.2	76.4	65.8	68.5		

Source Name	Sierra electric shear - combined, #2 loose							
Measurement Distance (m)	10							
Data Type	1/3 Octave						1/1 Octave	PWL (dB)
	Read 58	Read 59	Read 60	Read 61	Read 62	Avg.	Avg.	
Frq (Hz)								
25	71.5	75.1	61.6	61.5	58.8	65.7		
31.5	75.1	73.3	67.9	67.5	66.3	70.02	**72.5**	**100.5**
40	74	69.8	60.1	65.5	61.6	66.2		
50	76.7	62.1	57.9	64	60.6	64.26		
63	80.6	66.9	64.8	65.7	65.1	68.62	**72.4**	**100.4**
80	78.7	65.3	64.5	69.1	66.2	68.76		
100	79.3	67.9	64.7	70.1	66.3	69.66		
125	75.2	62.4	59.7	71.4	62.3	66.2	**72.2**	**100.2**
160	73.7	63.4	61.1	66	61.6	65.16		
200	71	60.9	62.7	65.3	60.7	64.12		
250	69	54.4	53.6	57.9	53.6	57.7	**66.3**	**94.3**
315	67.7	56.9	56.7	60.7	59.4	60.28		
400	76.9	74.5	72.5	71.7	69.8	73.08		
500	74.4	63.9	66.1	68.1	62.6	67.02	**75.0**	**103.0**
630	74	66.1	66.8	68.4	65.5	68.16		
800	71.6	63.5	66.5	66.7	63.2	66.3		
1000	73.2	61.5	67.6	68.2	63.6	66.82	**70.7**	**98.7**
1250	71.7	60	63	65.5	61.3	64.3		
1600	70.7	60.8	64.9	67.2	67.1	66.14		
2000	69.5	58.4	61.8	64.8	63.3	63.56	**69.0**	**97.0**
2500	68.4	57.4	60	63.6	60.4	61.96		
3150	67.4	57.2	58.9	62.3	60.2	61.2		
4000	65.8	56.4	57.8	61.4	58.8	60.04	**64.6**	**92.6**
5000	64.7	53.5	55.2	58.6	56.3	57.66		
6300	62.8	52.6	53.2	56.3	54.3	55.84		
8000	61.1	50.3	52.2	53.8	52.6	54	**58.8**	**86.8**
10000	58.7	48.3	47.2	51	49.1	50.86		

Source Name	EZ crusher, cyclone off						
Measurement Distance (m)	6						
Data Type	1/3 Octave					1/1 Octave	PWL (dB)
	Read 1	Read 2	Read 3	Read 4	Avg.	Avg.	
Frq (Hz)							
25	69.6	61.7	64.5	60.3	64.0		
31.5	67.2	64.8	66.4	63.8	65.6	**70.3**	**93.8**
40	65.7	66.2	68.5	65.8	66.6		
50	80.5	89.8	89	83.3	85.7		
63	80.8	90.6	90.5	86.3	87.1	**89.6**	**113.2**
80	86.7	67.3	68	84.3	76.6		
100	71.5	73.3	75.9	71.6	73.1		
125	71.9	75.3	75	72.8	73.8	**77.0**	**100.6**
160	69.8	66.9	66.7	68.9	68.1		
200	67.8	65.5	65.8	68.7	67.0		
250	70.1	66.4	68.1	68.6	68.3	**73.1**	**96.6**
315	72	66.9	66	72.4	69.3		
400	69.6	64.2	64.2	69.7	66.9		
500	69.7	69.1	68.4	69.7	69.2	**74.5**	**98.1**
630	76.2	71.1	67.8	72.1	71.8		
800	74	68.8	65.3	69.1	69.3		
1000	66.9	68.1	65	67.9	67.0	**73.0**	**96.5**
1250	68.3	70.1	66.5	67.1	68.0		
1600	69.4	73	66.2	66.2	68.7		
2000	68.4	74.8	65.8	64.9	68.5	**73.2**	**96.7**
2500	65.3	74.2	68.8	63.8	68.0		
3150	65.3	77.3	68.7	63.1	68.6		
4000	61.3	77.4	68.8	59.5	66.8	**72.3**	**95.9**
5000	61	78.6	69.5	59.2	67.1		
6300	59.9	79.3	70.5	58.6	67.1		
8000	58.3	80.7	71.3	57.4	66.9	**71.5**	**95.0**
10000	55.9	81.2	71.5	55.4	66.0		

Source Name	Granulator					
Measurement Distance (m)	3					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
	Read 5	Read 6	Read 7	Avg.	Avg.	
Frq (Hz)						
25	69.1	69.1	70.2	69.5		
31.5	66.8	65.3	67.3	66.5	**74.4**	**91.9**
40	72	70.9	71.8	71.6		
50	76.7	75.2	78.1	76.7		
63	78.7	79.3	79.7	79.2	**81.4**	**98.9**
80	68.4	67.8	68.8	68.3		
100	73.9	73.4	74.7	74.0		
125	76.2	75.3	77.1	76.2	**80.1**	**97.6**
160	77.1	74.4	75.1	75.5		
200	77.5	75.9	76.9	76.8		
250	76.4	75.5	77.7	76.5	**82.9**	**100.4**
315	80.2	79	80.9	80.0		
400	87.7	85	86.7	86.5		
500	85.7	86.3	89	87.0	**90.5**	**108.1**
630	83	82.1	83	82.7		
800	80.6	82.4	83.4	82.1		
1000	88	88.5	87.8	88.1	**90.2**	**107.7**
1250	83.7	83.8	84.1	83.9		
1600	82.1	83.3	85	83.5		
2000	82.3	81.2	84	82.5	**87.8**	**105.3**
2500	83	81.4	84.5	83.0		
3150	84.4	82.9	85.5	84.3		
4000	80.7	81.8	83.6	82.0	**87.2**	**104.7**
5000	78.6	79.1	81.3	79.7		
6300	75.8	76.4	78.9	77.0		
8000	73.5	73.8	76.8	74.7	**79.7**	**97.2**
10000	70.3	70.6	73.2	71.4		

Source Name	Pacific Canton shear line with shaker tables - indoors					
Measurement Distance (m)	3					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
	Read 8	Read 9	Read 10	Avg.	Avg.	
Frq (Hz)						
25	66.9	68	69	68.0		
31.5	79.5	79.1	78.6	79.1	**81.2**	**98.7**
40	74.1	78.4	77.2	76.6		
50	83.1	84.3	83.5	83.6		
63	83.4	83.8	83.1	83.4	**87.5**	**105.0**
80	79.2	82.3	79.5	80.3		
100	82.6	87.6	82.9	84.4		
125	86.9	88.2	86.1	87.1	**92.5**	**110.0**
160	90.1	90.4	89.3	89.9		
200	89.7	90.1	89.2	89.7		
250	85.6	86.4	85.1	85.7	**92.4**	**109.9**
315	85.7	87.7	86.2	86.5		
400	92.6	92.4	92.6	92.5		
500	87.5	88.4	87.3	87.7	**95.2**	**112.8**
630	89.1	90.5	89.8	89.8		
800	88	89.8	89.4	89.1		
1000	88.4	89	89	88.8	**93.7**	**111.2**
1250	87.4	90	89.2	88.9		
1600	88.1	91.5	90.4	90.0		
2000	87.7	91.4	91.3	90.1	**94.7**	**112.2**
2500	87.8	90	91.1	89.6		
3150	87.7	90.7	91.4	89.9		
4000	86.3	89.2	91.1	88.9	**93.7**	**111.2**
5000	84.8	88.1	90.1	87.7		
6300	82.5	86.3	89.1	86.0		
8000	80.7	84.4	87.1	84.1	**89.0**	**106.5**
10000	78.2	81.8	84.3	81.4		

Source Name	Pacific Canton shear line with shaker tables - combined outdoors							
Measurement Distance (m)	3							
Data Type	1/3 Octave						1/1 Octave	PWL (dB)
	Read 11	Read 12	Read 13	Read 14	Read 15	Avg.	Avg.	
Frq (Hz)								
25	63.9	65	62	65.6	63.3	64.0		
31.5	70.8	70.8	69.3	72.1	73.1	71.2	**72.9**	**90.4**
40	63.9	63.1	61.6	69.1	70.3	65.6		
50	65.1	64.8	64.9	70.9	71.6	67.5		
63	67	66	66.4	73.2	72.9	69.1	**73.7**	**91.2**
80	67.9	65.1	62.9	76.6	77	69.9		
100	68.7	67.6	67.5	71.6	72.3	69.5		
125	71.7	70.9	70.9	74.8	75.1	72.7	**76.0**	**93.5**
160	69.2	68.1	68	74.5	74.3	70.8		
200	65.2	64.7	64.8	75.4	75.3	69.1		
250	64.9	65.3	64.5	73.3	73.8	68.4	**75.0**	**92.5**
315	70.1	70.6	70.2	75	74.8	72.1		
400	72.6	73.7	72.7	75.3	75.2	73.9		
500	73.2	74.6	73.8	75.6	75.9	74.6	**78.8**	**96.4**
630	72.7	73.7	73.3	73.8	74.5	73.6		
800	72.8	75.4	74.7	74.3	74.3	74.3		
1000	76.6	78.3	78.6	76.4	76.8	77.3	**81.5**	**99.0**
1250	76.2	79.8	78.7	76.7	77.2	77.7		
1600	78.5	81	80.4	78.4	78.9	79.4		
2000	79.9	82.5	82.3	79.4	80.2	80.9	**85.6**	**103.1**
2500	81.2	83	82.9	80.4	81.6	81.8		
3150	81.5	83.8	83.5	81.2	81.7	82.3		
4000	82	84.4	84.1	81.5	82.1	82.8	**87.3**	**104.9**
5000	82.1	84.3	83.9	80.8	81.5	82.5		
6300	81.3	83.9	83.4	80.2	80.9	81.9		
8000	79.3	81.8	81.6	78.5	79.1	80.1	**85.0**	**102.5**
10000	77	79.2	78.8	75.9	76.5	77.5		

Source Name	Building exhaust vent (x5)					
Measurement Distance (m)	3					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
	Read 17	Read 18	Read 19	Avg.	Avg.	
Frq (Hz)						
25	65.9	78.3	72.8	72.3		
31.5	62.5	76.9	70.4	69.9	**75.2**	**98.7**
40	60	76	67.2	67.7		
50	58.1	73.2	63.9	65.1		
63	56.7	70.6	61.6	63.0	**68.3**	**91.9**
80	58.4	66.8	60.9	62.0		
100	55.6	64	59.8	59.8		
125	61.4	63.6	62.2	62.4	**68.2**	**91.8**
160	67.1	66	64.8	66.0		
200	66.5	65.2	64.2	65.3		
250	60.2	60.8	60.2	60.4	**66.9**	**90.5**
315	55	57.4	57.4	56.6		
400	57.1	56.5	56.1	56.6		
500	57.5	61	61.2	59.9	**63.0**	**86.5**
630	57.7	57.2	57.7	57.5		
800	60	58.2	57.5	58.6		
1000	54.2	56	55	55.1	**61.1**	**84.6**
1250	53.4	54.5	53.3	53.7		
1600	51.5	53.4	53.5	52.8		
2000	53.4	53.3	54.6	53.8	**60.3**	**83.8**
2500	58.1	57.5	58.4	58.0		
3150	57.7	58.7	58.4	58.3		
4000	55.5	57.2	56	56.2	**62.0**	**85.5**
5000	56.1	57.3	57.2	56.9		
6300	55.6	56.2	57	56.3		
8000	53.6	54.4	54.5	54.2	**59.2**	**82.7**
10000	50.7	51.9	52.1	51.6		

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Source Name	**Oil Cooler Hydraulic - Southside**					
Measurement Distance (m)	3					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
Measure Addres	1	2	3	**Avg.**	**Avg.**	
Frq (Hz)						
25	67.3	67.2	68	67.5		
31.5	78.2	77.8	79.6	78.5	**79.3**	**96.8**
40	69.2	69.4	69.1	69.2		
50	67.3	66.8	67	67.0		
63	71.3	71.6	71.4	71.4	**74.7**	**92.3**
80	70.2	70.2	70.7	70.4		
100	70.4	71	70.2	70.5		
125	75.4	75.1	74.9	75.1	**77.7**	**95.2**
160	71.7	72.4	71.3	71.8		
200	70.9	70.5	71.1	70.8		
250	86.9	79.2	85.9	84.0	**84.8**	**102.4**
315	78.1	73.2	77.3	76.2		
400	69.3	69.7	70.1	69.7		
500	77.3	78.5	77.8	77.9	**79.9**	**97.4**
630	74	74.4	74.8	74.4		
800	75.3	74.9	76.9	75.7		
1000	72.9	73.3	71.4	72.5	**78.5**	**96.0**
1250	72.9	72.6	70.1	71.9		
1600	73.1	72.4	70.9	72.1		
2000	69.9	70.8	71.6	70.8	**75.2**	**92.7**
2500	65.9	66.5	67.7	66.7		
3150	63.4	63.9	64.1	63.8		
4000	62.9	62.9	62.9	62.9	**67.5**	**85.1**
5000	61	61.4	61.3	61.2		
6300	58.5	58.7	58.8	58.7		
8000	56.9	57.2	57.1	57.1	**62.1**	**79.7**
10000	55.9	56	55.8	55.9		

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Source Name	Outdoor Ferrous Shear - Operating Loading and Running						
Measurement Distance (m)	5						
Data Type	1/3 Octave					1/1 Octave	PWL (dB)
Measure Addres	15	16	17	18	Avg.	Avg.	
Frq (Hz)							
25	83.1	83.3	84.1	86.8	84.3		
31.5	83.5	84	85.4	86.7	84.9	**89.0**	**111.0**
40	81.4	81.8	84.4	86	83.4		
50	85.2	82.6	86.5	88.3	85.7		
63	84.2	83.3	85.9	87.9	85.3	**89.6**	**111.5**
80	80.9	81.5	83.9	85.3	82.9		
100	79.1	80.7	82.2	84.6	81.7		
125	79.5	79.3	81.1	82.6	80.6	**85.3**	**107.3**
160	77.6	78.2	79.4	80.8	79.0		
200	81.1	81.3	82.6	84.1	82.3		
250	83	82.7	84.8	85.3	84.0	**87.1**	**109.1**
315	79.3	79.8	80	81.1	80.1		
400	77.9	79.4	83	80.9	80.3		
500	78.7	79.5	81.6	81.3	80.3	**84.6**	**106.6**
630	78.5	78.8	78.2	79.4	78.7		
800	78.1	79.2	80.9	81	79.8		
1000	78.9	79.1	78.1	79.6	78.9	**84.0**	**106.0**
1250	78.6	79.2	78.5	79.5	79.0		
1600	78.8	79	78.2	79.4	78.9		
2000	78.9	79.7	78.2	79.7	79.1	**83.6**	**105.6**
2500	78.3	78.9	78.1	78.8	78.5		
3150	79	79.2	78.9	79.1	79.1		
4000	78.3	78.2	78.1	78.4	78.3	**83.2**	**105.2**
5000	78.2	77.6	77.6	78.5	78.0		
6300	76.3	76.1	75.8	77	76.3		
8000	74.2	73.8	74.3	75.6	74.5	**79.2**	**101.2**
10000	70.5	70.3	71.3	72	71.0		

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Source Name	**Outdoor Bano Non-ferrous Shear + dust collectors _ Conveyors (x3)**						
Measurement Distance (m)	15						
Data Type	1/3 Octave					1/1 Octave	PWL (dB)
Measure Addres	19	20	21	22	**Avg.**	**Avg.**	
Frq (Hz)							
25	69.4	70.4	73.1	69.8	70.7		
31.5	75	76.2	76.1	75.2	75.6	**80.6**	**112.1**
40	76.3	78.2	79.9	78.8	78.3		
50	82	82.6	84.6	82.3	82.9		
63	80.5	81.7	82.1	80.2	81.1	**90.0**	**121.6**
80	87.1	87.7	89.8	88.9	88.4		
100	82.4	83	84.3	83.2	83.2		
125	81.1	82.2	83.1	80.9	81.8	**86.8**	**118.3**
160	79.4	80.5	82.3	80	80.6		
200	78.6	78.5	80.5	78.9	79.1		
250	75.4	75	77.3	74.8	75.6	**81.2**	**112.7**
315	70.6	71	73.1	70.7	71.4		
400	71	71.7	73.4	71.5	71.9		
500	73.4	73.9	76.3	74.6	74.6	**77.6**	**109.1**
630	70	70.2	73.3	71.8	71.3		
800	69.1	69.6	71.9	70.5	70.3		
1000	67.4	67.9	70.5	68.2	68.5	**73.9**	**105.4**
1250	67.3	67.8	70.3	68.3	68.4		
1600	66.3	66.6	69.2	67.1	67.3		
2000	66.6	66.7	68.6	66.7	67.2	**71.4**	**102.9**
2500	64.8	64.8	66.8	64.8	65.3		
3150	64.5	64.6	66.5	64.8	65.1		
4000	63.4	62.8	64.3	62.8	63.3	**68.5**	**100.0**
5000	62.5	62.2	63.4	61.8	62.5		
6300	62.2	62.1	62.9	61.4	62.2		
8000	61	60.5	61	59.4	60.5	**65.1**	**96.6**
10000	58.1	56.9	56.3	55.1	56.6		

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Source Name	**Rooftop_Nonferrous Dust Collector_Impulsive**					
Measurement Distance (m)	4					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
Measure Addres	52	53	54	**Avg.**	**Avg.**	
Frq (Hz)						
25	73.7	73.9	74.9	74.2		
31.5	72.5	70.6	69.9	71.0	**78.2**	**98.3**
40	71.9	74.2	77.3	74.5		
50	75.1	76.5	76.4	76.0		
63	73.5	75	77.4	75.3	**79.4**	**99.5**
80	71	71.1	72.4	71.5		
100	72.5	72.8	73.3	72.9		
125	68.7	68.1	68.3	68.4	**75.4**	**95.5**
160	69.6	69.5	69.3	69.5		
200	68.8	68.7	69	68.8		
250	67.4	68	66.7	67.4	**71.8**	**91.8**
315	63.4	63.1	63	63.2		
400	61.2	64.9	62.8	63.0		
500	60.7	61	60.5	60.7	**67.7**	**87.7**
630	62.6	65	65.6	64.4		
800	62.2	63.4	64.6	63.4		
1000	63.4	64.1	67.2	64.9	**68.9**	**88.9**
1250	62.5	65.6	64	64.0		
1600	63.9	66	65.4	65.1		
2000	65.1	67.7	68	66.9	**70.9**	**90.9**
2500	65.7	66.4	66.6	66.2		
3150	66.1	68.8	66.3	67.1		
4000	67.1	68.1	68.3	67.8	**72.6**	**92.6**
5000	67.6	68.7	69.1	68.5		
6300	64.4	66.6	67.2	66.1		
8000	62.9	65	66.2	64.7	**69.8**	**89.9**
10000	62.3	64.4	66	64.2		

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Source Name	**Non-Ferrous Line - Inside the Bldg with all the Sources Operating - Cumulative**					
Measurement Distance (m)	3					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
Measure Addres	1	2	3	**Avg.**	**Avg.**	
Frq (Hz)						
25	76.2	76	76.3	76.2		
31.5	74.2	73.7	74.3	74.1	**80.1**	**97.6**
40	76.3	75.2	75.1	75.5		
50	82.9	83.1	82.5	82.8		
63	76.9	76.4	76.6	76.6	**84.5**	**102.0**
80	76.7	76.2	76.6	76.5		
100	91.5	91.4	91.7	91.5		
125	82	81.9	81.9	81.9	**92.4**	**109.9**
160	81.6	82.4	82.7	82.2		
200	81.6	81.1	81.3	81.3		
250	77.8	76.8	77.3	77.3	**84.9**	**102.4**
315	81.5	80.6	80.2	80.8		
400	83.4	83.6	82.8	83.3		
500	78.2	78.1	77.9	78.1	**85.3**	**102.8**
630	77.7	77.9	77.7	77.8		
800	79.1	79.2	79	79.1		
1000	78.6	78.6	78.6	78.6	**83.7**	**101.2**
1250	79.1	79.1	79	79.1		
1600	80.3	80.8	80.1	80.4		
2000	79.9	81.2	80.3	80.5	**85.2**	**102.7**
2500	80.3	80.7	80.3	80.4		
3150	80.9	81.7	81.3	81.3		
4000	80.7	81.5	81.1	81.1	**85.6**	**103.1**
5000	79.6	80.3	80	80.0		
6300	78.4	79.2	78.8	78.8		
8000	77.5	78.6	78	78.0	**82.5**	**100.0**
10000	75.1	76.1	75.7	75.6		

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Source Name	**LB904 High Rev + Hydraulic**					
Measurement Distance (m)	3					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
Measure Addres	4	5	6	**Avg.**	**Avg.**	
Frq (Hz)						
25	76.6	73.6	75	75.1		
31.5	76.8	72.5	73.5	74.3	**79.1**	**96.6**
40	74	71.7	74.6	73.4		
50	73.6	74.4	77.2	75.1		
63	86.8	87.2	87.6	87.2	**87.5**	**105.0**
80	69.5	68.5	68.9	69.0		
100	63.4	63.8	65.7	64.3		
125	74.8	75.8	75.7	75.4	**76.1**	**93.7**
160	63.3	65.4	67.2	65.3		
200	70.3	69.5	69.1	69.6		
250	70.4	71.3	71.7	71.1	**74.6**	**92.1**
315	67.3	68.3	68.7	68.1		
400	69.4	69.5	69.6	69.5		
500	65.4	66.8	67.3	66.5	**72.3**	**89.8**
630	65.3	65.7	66	65.7		
800	64.6	66.4	67.1	66.0		
1000	65.9	66.5	66.4	66.3	**70.2**	**87.8**
1250	63.1	63.9	64	63.7		
1600	61.3	62	62.5	61.9		
2000	61.9	61.8	61.9	61.9	**65.9**	**83.4**
2500	58.6	59.2	59.3	59.0		
3150	56	56.7	56.7	56.5		
4000	56.3	56.4	56.2	56.3	**60.5**	**78.1**
5000	53.8	54.4	54.5	54.2		
6300	53.5	54.2	54.3	54.0		
8000	52.4	53.7	53.3	53.1	**57.6**	**75.2**
10000	49.6	51.7	51.4	50.9		

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Source Name						
Measurement Distance (m)	3					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
Measure Addres	7	8	9	**Avg.**	**Avg.**	
Frq (Hz)						
25	67.5	72.1	67	68.9		
31.5	67.3	69	66.4	67.6	**72.6**	**90.1**
40	66.3	69.3	64.8	66.8		
50	68.8	72.2	71.7	70.9		
63	72.5	77.7	63	71.1	**75.1**	**92.6**
80	68.8	72.8	63.9	68.5		
100	70.5	78.2	74.7	74.5		
125	71	69.1	66	68.7	**77.1**	**94.6**
160	73	70.9	71.8	71.9		
200	79.1	74.5	74	75.9		
250	75.7	74	74.2	74.6	**79.7**	**97.2**
315	74.7	73.5	73.6	73.9		
400	73.7	69.2	69.6	70.8		
500	71.4	68.6	67.8	69.3	**75.2**	**92.7**
630	73.1	69.5	70.2	70.9		
800	73.2	69.5	68.3	70.3		
1000	71.5	69.9	70.7	70.7	**75.4**	**92.9**
1250	72.1	69.2	71	70.8		
1600	71.2	68.1	69.2	69.5		
2000	74.3	70.6	71.7	72.2	**75.6**	**93.2**
2500	72.3	68.6	70.5	70.5		
3150	69.8	65.9	68.3	68.0		
4000	65.6	61.9	65.4	64.3	**70.5**	**88.0**
5000	65.3	61.3	63.2	63.3		
6300	63	57	61.9	60.6		
8000	65.7	57.1	61.2	61.3	**65.2**	**82.7**
10000	64.2	54.1	58.6	59.0		

Date: August 28, 2023

Source Name	**Liebherr LB924 High Rev + Hydraulic**					
Measurement Distance (m)	3					
Data Type	1/3 Octave				1/1 Octave	PWL (dB)
Measure Addres	10	11	12	**Avg.**	**Avg.**	
Frq (Hz)						
25	61.1	67.5	59.7	62.8		
31.5	66.8	69.7	66.9	67.8	**71.0**	**88.5**
40	67.1	67.3	65.3	66.6		
50	76.2	77	73.4	75.5		
63	89.9	90	88.6	89.5	**89.7**	**107.2**
80	70.5	70.7	69.1	70.1		
100	68.4	69.2	66.4	68.0		
125	74.9	74	73	74.0	**76.1**	**93.6**
160	70.8	71.5	67	69.8		
200	72.9	73.6	71.4	72.6		
250	68.5	69.1	65.4	67.7	**75.2**	**92.7**
315	70	69.6	69.1	69.6		
400	62.6	66.1	60.2	63.0		
500	66.8	70.9	64.5	67.4	**71.0**	**88.5**
630	66.7	68.8	65.7	67.1		
800	61.6	65.9	59.5	62.3		
1000	61.2	64.7	59.9	61.9	**66.5**	**84.0**
1250	60	64	58.4	60.8		
1600	60	65.6	58.6	61.4		
2000	62.3	65	61	62.8	**67.2**	**84.7**
2500	62.6	64.4	61.8	62.9		
3150	56.5	62.2	56	58.2		
4000	61.4	63.9	59.9	61.7	**65.0**	**82.5**
5000	60.3	60.7	59	60.0		
6300	55.7	57.4	54.4	55.8		
8000	53.4	54.4	52.5	53.4	**58.8**	**76.3**
10000	51.9	52.1	51	51.7		

Date: August 28, 2023

Source Name	**Volvo L90H High-Rev + Hydraulic**						
Measurement Distance (m)	3						
Data Type	1/3 Octave					1/1 Octave	PWL (dB)
Measure Addres	13	14	15	16	**Avg.**	**Avg.**	
Frq (Hz)							
25	58.6	60.4	60.8	58.8	59.9		
31.5	61.8	61.7	60.8	62	61.4	**68.6**	**86.1**
40	70	68.3	62.4	67.7	66.9		
50	60.5	60.9	62.6	62.7	61.3		
63	62	61.1	63.3	64.4	62.1	**66.2**	**83.7**
80	60.2	59.2	62.2	61.3	60.5		
100	58.1	58.2	60.2	60.8	58.8		
125	59.8	59.1	61.4	61.6	60.1	**65.0**	**82.5**
160	60.7	61.4	61.9	61.7	61.3		
200	64.8	65.5	66.6	65.6	65.6		
250	68.4	67.4	67.2	68.7	67.7	**71.4**	**88.9**
315	67	66	65.7	66.6	66.2		
400	67.6	67.5	68.3	68	67.8		
500	63.2	62.8	63.1	63.2	63.0	**71.0**	**88.5**
630	67.3	66.1	66.5	66.8	66.6		
800	69	68.4	68.6	68.8	68.7		
1000	67.7	67.6	68	68	67.8	**72.3**	**89.9**
1250	65.2	65.7	66.4	66.2	65.8		
1600	66.9	66.7	66.7	67.4	66.8		
2000	67.9	69.1	69.1	68.4	68.7	**71.9**	**89.4**
2500	64.8	65.1	65.4	65.5	65.1		
3150	65.8	65.9	66.4	66.3	66.0		
4000	64.8	64.8	65	64.9	64.9	**69.5**	**87.0**
5000	62.2	62.9	62.9	63	62.7		
6300	59.3	60.2	60	59.6	59.8		
8000	56.5	57	57.4	57	57.0	**63.3**	**80.9**
10000	58.1	58.6	58.5	57.8	58.4		

Appendix C

Sound Level Meter Calibration Certificate

CERTIFICATE of CALIBRATION

Make :	Norsonic	Reference # :	133811
Model :	NOR140	Customer :	Dillon Consulting Ltd Burlington, ON
Descr. :	SLM Type 1		
Serial # :	1403048	P. Order :	73000
Asset # :	NAN		

Cal. status : Received in spec's, no adjustment made.

Navair Technologies certifies that the above listed instrument was calibrated on date noted and was released from this laboratory performing in accordance with the specifications set forth by the manufacturer.

Unless otherwise noted in the calibration report a 4:1 accuracy ratio was maintained for this calibration.

Our calibration system complies with the requirements of ISO-17025 standard, working standards used for calibration are certified by or traceable to the National Research Council of Canada or the National Institute of Standards and Technology.

Calibrated : Mar 18, 2014 By : [redacted]

Cal. Due : Mar 18, 2015 T. Beilin

Temperature : 23 °C ± 2 °C Relative Humidity : 30% to 70%

Standards used : J-216 J-303 J-512

Navair Technologies

REPAIR AND CALIBRATION TRACEABLE TO NRC AND NIST

6375 Dixie Rd. Mississauga, ON, L5T 2E7 http: // www.navair.com

Phone : 905 565 1584 Fax: 905 565 8325 e-Mail: navair @ navair.com

6375 Dixie Rd Unit# 7,
Mississauga, ON L5T 2E7
Tel: (905)565-1583
Fax: (905)565-8325

Form:NOR140	Approved by:JR	Date:Nov/10	ver1.0

Calibration Report part of Certificate: 133811

Make	Model	Serial	Asset
Norsonic	NOR140	1403048	nan

With mike NOR1225 s# 72837 preamp 1209 s#12539
TYPE 1 Specs

Test	Reading	In/Out

Freq.Response
Tested with dummy mike IEC61672-1 limits
WTG Curve Check

kHz	Min	A	Max	
31.5	72.6	74.4	76.6	In
63	86.3	87.8	89.3	In
0.125	96.4	97.8	99.4	In
0.25	103.9	105.3	106.8	In
0.5	109.4	110.8	112.2	In
1	112.9	114.0	115.1	In
2	113.6	115.1	116.8	In
4	113.4	114.9	116.6	In
8	109.8	112.8	115.0	In
12.5	103.7	109.8	112.7	In
		C		
31.5	109.0	110.9	113.0	In
63	111.7	113.2	114.7	In
0.125	112.3	113.8	115.3	In
0.25	112.5	114.0	115.4	In
0.5	112.6	114.0	115.4	In
1	112.9	114.0	115.1	In
2	112.2	113.8	115.4	In
4	111.6	113.1	114.8	In
8	107.9	110.9	113.1	In
12.5	101.8	107.9	110.8	In

6375 Dixie Rd Unit# 7,
Mississauga, ON L5T 2E7
Tel: (905)565-1583
Fax: (905)565-8325

133811

Test		Reading		In/Out
		Z		
31.5	112.0	113.9	116.0	In
63	112.5	114.0	115.5	In
0.125	112.5	114.0	115.5	In
0.25	112.5	114.0	115.4	In
0.5	112.6	114.0	115.4	In
1	112.9	114.0	115.1	In
2	112.4	114.0	115.6	In
4	112.4	114.0	115.6	In
8	110.9	114.0	116.1	In
12.5	108.0	114.0	117.0	In
Scale Test with microphone				
Scale				
dBc @1kHz				
I/P dB				
120dB Range				
114	113.5	114.0	114.5	In
104	103.5	104.1	104.5	In
94	93.5	94.1	94.5	In
130dB Range				
114	113.0	114.0	115.0	In
114.1				
110dB Range				
104	103.0	104.1	105.0	In
94	93.0	94.1	95.0	In
100dB Range				
94	83.0	94.1	95.0	In
Impulse Test				Pass
Fast/Slow				Pass
AC O/P				Pass

CERTIFICATE of CALIBRATION

Make :	Norsonic	Reference # :	133812
Model :	1251	Customer :	Dillon Consulting Ltd Oakville, ON
Descr. :	Sound cal 114dB 1KHz		
Serial # :	31746	P. Order :	73000
Asset # :	NAN		

Cal. status : Received in spec's, no adjustment made.

Navair Technologies certifies that the above listed instrument was calibrated on date noted and was released from this laboratory performing in accordance with the specifications set forth by the manufacturer.

Unless otherwise noted in the calibration report a 4:1 accuracy ratio was maintained for this calibration.

Our calibration system complies with the requirements of ISO-17025 standard, working standards used for calibration are certified by or traceable to the National Research Council of Canada or the National Institute of Standards and Technology.

Calibrated : Mar 19, 2014 By : [redacted]

Cal. Due : Mar 19, 2015 J. Raposo

Temperature : 23 °C ± 2 °C Relative Humidity : 30% to 70%

Standards used : J-163 J-261 J-282 J-508

Navair Technologies

REPAIR AND CALIBRATION TRACEABLE TO NRC AND NIST

6375 Dixie Rd. Mississauga, ON, L5T 2E7 http: // www.navair.com

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Mississauga, ON L5T 2E7
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Fax: (905)565-8325

Form:NOR1251	Approved By:JR Sep07	ver 1.0

Calibration Report part of Certificate #: 133812

Make	Model	Serial	Asset	Cal. By
Norsonic	1251	31746	nan	jr

Test		Min	Reading	Max	In/Out
SPL					
114dB	98.9kPa	113.8	114.0	114.2	In
Freq. Accuracy					
1000Hz		998.0	1000.5	1002	In

CERTIFICATE of CALIBRATION

Make :	Norsonic	Reference # :	170269
Model :	1251	Customer :	Dillon Consulting Limited Oakville, ON
Descr. :	Sound cal 114dB 1KHz		
Serial # :	31746	P. Order :	VISA
Asset # :	NAN		

Cal. status : Received in spec's, no adjustment made.

Navair Technologies certifies that the above listed instrument was calibrated on date noted and was released from this laboratory performing in accordance with the specifications set forth by the manufacturer.

Unless otherwise noted in the calibration report a 4:1 accuracy ratio was maintained for this calibration.

Our calibration system complies with the requirements of ISO-17025 standard, working standards used for calibration are certified by or traceable to the National Research Council of Canada or the National Institute of Standards and Technology.

Calibrated : Apr 06, 2022 By : [redacted]

Cal. Due : Apr 06, 2023 Petro Onasko

Temperature : 23 °C ± 2 °C Relative Humidity : 30% to 70%

Standards used : J-163 J-261 J-282 J-420 J-512

Navair Technologies

REPAIR AND CALIBRATION TRACEABLE TO NRC AND NIST

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NT NAVAIR TECHNOLOGIES

6375 Dixie Rd Unit # 7
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Tel: (905) 565-1583
Fax: (905) 565-8325

Form: NOR 1251	Approved by: J.R.	Sep-07	Ver 1.0

Calibration Report part of Certificate # **170269**

Make	Model	Serial	Asset	Cal by
Norsonic	1251	31746	NAN	P.O.

Test	Setting	Min	Reading	Max	In/Out
Tested at			98.4 kPa		
Sound Pressure Level					
	114 dB	113.8	114.0 dB	114.2	In
Frequency Accuracy					
	1000 Hz	998.0	1000.7 Hz	1002.0	In

CERTIFICATE of CALIBRATION

Make : Norsonic

Model : NOR140

Descr. : Sound Level Meter Type 1

Serial # : 1403048

Asset # : NAN

Reference # : 170268

Customer : Dillon Consulting Limited
Oakville, ON

P. Order :

Cal. status : Received in spec's, no adjustment made.
Cal with 1225 Mic s#72837 & 1209 Preamp s#12539

Navair Technologies certifies that the above listed instrument was calibrated on date noted and was released from this laboratory performing in accordance with the specifications set forth by the manufacturer.

Unless otherwise noted in the calibration report a 4:1 accuracy ratio was maintained for this calibration.

Our calibration system complies with the requirements of ISO-9001-2015 and is registered under certificate CA96/269, working standards used for calibration are certified by or traceable to the National Research Council of Canada or the National Institute of Standards and Technology.

Calibrated : Mar 25, 2022

Cal. Due : Mar 25, 2024

By : [redacted] T. Beilin

Temperature : 23 °C ± 2 °C Relative Humidity : 30% to 70%

Standards used : J-216 J-303 J-512

Navair Technologies

REPAIR AND CALIBRATION TRACEABLE TO NRC AND NIST
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Form: NOR140	Approved by: J.R.	Jan-15	Ver 1.1

Calibration Report for Certificate : **170268**

Make	Model	Serial №	Asset
Norsonic	NOR140	1403048	NAN

Test	Input	Min	Reading	Max	In/Out

With mike NOR1225 s# 72837 preamp 1209 s# 12539
TYPE 1 Specs

Frequency Response

Tested with dummy mike
WTG Curve Check

		A		
31.5 Hz	72.6	74.4	76.6	In
63.0 Hz	86.3	87.8	89.3	In
125 Hz	96.4	97.8	99.4	In
250 Hz	103.9	105.3	106.8	In
500 Hz	109.4	110.8	112.2	In
1.0 kHz	112.9	114.0	115.1	In
2.0 kHz	113.6	115.2	116.8	In
4.0 kHz	113.4	114.9	116.6	In
8.0 kHz	109.8	112.9	115.0	In
12.5 kHz	103.7	109.8	112.7	In

		C		
31.5 Hz	109.0	110.9	113.0	In
63.0 Hz	111.7	113.2	114.7	In
125 Hz	112.3	113.8	115.3	In
250 Hz	112.5	114.0	115.4	In
500 Hz	112.6	114.0	115.4	In
1.0 kHz	112.9	114.0	115.1	In
2.0 kHz	112.2	113.8	115.4	In
4.0 kHz	111.6	113.1	114.8	In
8.0 kHz	107.9	110.9	113.1	In
12.5 kHz	101.8	107.9	110.8	In

NT NAVAIR TECHNOLOGIES

6375 Dixie Rd Unit# 7
Mississauga, ON L5T 2E7
Tel: (905)565-1583
Fax: (905)565-8325

Test	Input	Min	Reading	Max	In/Out
			Z		
	31.5 Hz	112.0	113.9	116.0	In
	63.0 Hz	112.5	114.0	115.5	In
	125 Hz	112.5	114.0	115.5	In
	250 Hz	112.5	114.0	115.4	In
	500 Hz	112.6	114.0	115.4	In
	1.0 kHz	112.9	114.0	115.1	In
	2.0 kHz	112.4	114.0	115.6	In
	4.0 kHz	112.4	114.0	115.6	In
	8.0 kHz	110.9	114.0	116.1	In
	12.5 kHz	108.0	114.0	117.0	In
Scale Test with microphone					
Scale					
	dBc @1kHz				
	120 dB Range				
	114 dB	113.5	113.8	114.5	In
	104 dB	103.5	103.8	104.5	In
	94 dB	93.5	93.8	94.5	In
	130 dB Range				
	114 dB	113.0	113.8	115.0	In
	110 dB Range				
	104 dB	103.0	103.8	105.0	In
	94 dB	93.0	93.8	95.0	In
	100 dB Range				
	94 dB	83.0	93.8	95.0	In
Impulse Test					Pass
Fast/Slow					Pass
AC O/P					Pass

Appendix D

Sample CADNA/A Output File

Receiver
Name: POR3
ID: POR3
X: 629234.30 m
Y: 5521688.62 m
Z: 6.00 m

Point Source, ISO 9613, Name: "Sierra Shear - Processing No 1 loose", ID: "SS1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
5	629056.05	5521692.33	3.00	0	DEN	32	80.4	0.0	0.0	0.0	0.0	56.0	0.0	-3.0	0.0	0.0	7.6	0.0	0.0	19.8
5	629056.05	5521692.33	3.00	0	DEN	63	89.1	0.0	0.0	0.0	0.0	56.0	0.0	-3.0	0.0	0.0	9.9	0.0	0.0	26.1
5	629056.05	5521692.33	3.00	0	DEN	125	101.4	0.0	0.0	0.0	0.0	56.0	0.1	1.2	0.0	0.0	11.7	0.0	0.0	32.5
5	629056.05	5521692.33	3.00	0	DEN	250	103.8	0.0	0.0	0.0	0.0	56.0	0.2	0.7	0.0	0.0	15.0	0.0	0.0	31.9
5	629056.05	5521692.33	3.00	0	DEN	500	114.0	0.0	0.0	0.0	0.0	56.0	0.3	-1.3	0.0	0.0	18.5	0.0	0.0	40.4
5	629056.05	5521692.33	3.00	0	DEN	1000	116.7	0.0	0.0	0.0	0.0	56.0	0.7	-1.4	0.0	0.0	19.7	0.0	0.0	41.6
5	629056.05	5521692.33	3.00	0	DEN	2000	116.8	0.0	0.0	0.0	0.0	56.0	1.7	-1.4	0.0	0.0	19.9	0.0	0.0	40.5
5	629056.05	5521692.33	3.00	0	DEN	4000	112.6	0.0	0.0	0.0	0.0	56.0	5.8	-1.4	0.0	0.0	19.9	0.0	0.0	32.2
5	629056.05	5521692.33	3.00	0	DEN	8000	104.4	0.0	0.0	0.0	0.0	56.0	20.8	-1.4	0.0	0.0	20.0	0.0	0.0	8.9

Point Source, ISO 9613, Name: "Material Handling - Hitachi mobile shear", ID: "MHRC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
13	629085.95	5521635.37	3.50	0	DEN	32	55.0	0.0	0.0	0.0	0.0	55.0	0.0	-3.0	0.0	0.0	5.9	0.0	0.0	-2.8
13	629085.95	5521635.37	3.50	0	DEN	63	78.6	0.0	0.0	0.0	0.0	55.0	0.0	-3.0	0.0	0.0	6.7	0.0	0.0	19.9
13	629085.95	5521635.37	3.50	0	DEN	125	85.5	0.0	0.0	0.0	0.0	55.0	0.1	1.8	0.0	0.0	6.3	0.0	0.0	22.4
13	629085.95	5521635.37	3.50	0	DEN	250	91.8	0.0	0.0	0.0	0.0	55.0	0.2	0.7	0.0	0.0	9.2	0.0	0.0	26.8
13	629085.95	5521635.37	3.50	0	DEN	500	110.0	0.0	0.0	0.0	0.0	55.0	0.3	-1.1	0.0	0.0	12.2	0.0	0.0	43.7
13	629085.95	5521635.37	3.50	0	DEN	1000	113.6	0.0	0.0	0.0	0.0	55.0	0.6	-1.2	0.0	0.0	14.8	0.0	0.0	44.5
13	629085.95	5521635.37	3.50	0	DEN	2000	116.7	0.0	0.0	0.0	0.0	55.0	1.5	-1.2	0.0	0.0	17.6	0.0	0.0	43.8
13	629085.95	5521635.37	3.50	0	DEN	4000	112.3	0.0	0.0	0.0	0.0	55.0	5.2	-1.2	0.0	0.0	20.0	0.0	0.0	33.4
13	629085.95	5521635.37	3.50	0	DEN	8000	104.2	0.0	0.0	0.0	0.0	55.0	18.4	-1.2	0.0	0.0	20.0	0.0	0.0	12.0

Point Source, ISO 9613, Name: "Bano Outdoor non-ferrous Shear", ID: "OS2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
16	629098.68	5521670.42	3.00	0	DEN	32	72.7	0.0	0.0	0.0	0.0	53.7	0.0	-3.0	0.0	0.0	8.2	0.0	0.0	13.8
16	629098.68	5521670.42	3.00	0	DEN	63	95.4	0.0	0.0	0.0	0.0	53.7	0.0	-3.0	0.0	0.0	10.8	0.0	0.0	33.9
16	629098.68	5521670.42	3.00	0	DEN	125	102.2	0.0	0.0	0.0	0.0	53.7	0.1	1.5	0.0	0.0	13.0	0.0	0.0	33.9
16	629098.68	5521670.42	3.00	0	DEN	250	104.1	0.0	0.0	0.0	0.0	53.7	0.1	1.2	0.0	0.0	17.2	0.0	0.0	31.9
16	629098.68	5521670.42	3.00	0	DEN	500	105.9	0.0	0.0	0.0	0.0	53.7	0.3	-1.0	0.0	0.0	21.7	0.0	0.0	31.2
16	629098.68	5521670.42	3.00	0	DEN	1000	105.4	0.0	0.0	0.0	0.0	53.7	0.5	-1.2	0.0	0.0	24.8	0.0	0.0	27.5
16	629098.68	5521670.42	3.00	0	DEN	2000	104.1	0.0	0.0	0.0	0.0	53.7	1.3	-1.2	0.0	0.0	25.0	0.0	0.0	25.2
16	629098.68	5521670.42	3.00	0	DEN	4000	101.0	0.0	0.0	0.0	0.0	53.7	4.5	-1.2	0.0	0.0	25.0	0.0	0.0	19.0
16	629098.68	5521670.42	3.00	0	DEN	8000	95.5	0.0	0.0	0.0	0.0	53.7	16.0	-1.2	0.0	0.0	25.0	0.0	0.0	1.9

Point Source, ISO 9613, Name: "LB934 - Material Handling", ID: "LB934_MH"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
21	629053.59	5521687.02	4.00	0	DEN	32	62.2	0.0	0.0	0.0	0.0	56.1	0.0	-3.0	0.0	0.0	7.1	0.0	0.0	2.0
21	629053.59	5521687.02	4.00	0	DEN	63	76.3	0.0	0.0	0.0	0.0	56.1	0.0	-3.0	0.0	0.0	10.0	0.0	0.0	13.1
21	629053.59	5521687.02	4.00	0	DEN	125	86.7	0.0	0.0	0.0	0.0	56.1	0.1	1.7	0.0	0.0	11.7	0.0	0.0	17.0
21	629053.59	5521687.02	4.00	0	DEN	250	89.4	0.0	0.0	0.0	0.0	56.1	0.2	-0.0	0.0	0.0	16.4	0.0	0.0	16.7
21	629053.59	5521687.02	4.00	0	DEN	500	102.3	0.0	0.0	0.0	0.0	56.1	0.3	-1.3	0.0	0.0	19.4	0.0	0.0	27.7
21	629053.59	5521687.02	4.00	0	DEN	1000	106.0	0.0	0.0	0.0	0.0	56.1	0.7	-1.3	0.0	0.0	22.4	0.0	0.0	28.1
21	629053.59	5521687.02	4.00	0	DEN	2000	109.9	0.0	0.0	0.0	0.0	56.1	1.7	-1.3	0.0	0.0	24.7	0.0	0.0	28.6
21	629053.59	5521687.02	4.00	0	DEN	4000	109.7	0.0	0.0	0.0	0.0	56.1	5.9	-1.3	0.0	0.0	24.8	0.0	0.0	24.1
21	629053.59	5521687.02	4.00	0	DEN	8000	103.9	0.0	0.0	0.0	0.0	56.1	21.1	-1.3	0.0	0.0	24.9	0.0	0.0	3.0

Point Source, ISO 9613, Name: "LB934 - Material Handling", ID: "LB934_MH"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
27	629032.63	5521622.88	4.00	0	DEN	32	62.2	0.0	0.0	0.0	0.0	57.5	0.0	-3.0	0.0	0.0	4.8	0.0	0.0	2.9

Point Source, ISO 9613, Name: "LB934 - Material Handling", ID: "LB934_MH"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
27	629032.63	5521622.88	4.00	0	DEN	63	76.3	0.0	0.0	0.0	0.0	57.5	0.0	-3.0	0.0	0.0	4.8	0.0	0.0	17.0
27	629032.63	5521622.88	4.00	0	DEN	125	86.7	0.0	0.0	0.0	0.0	57.5	0.1	1.7	0.0	0.0	3.1	0.0	0.0	24.3
27	629032.63	5521622.88	4.00	0	DEN	250	89.4	0.0	0.0	0.0	0.0	57.5	0.2	-0.1	0.0	0.0	4.8	0.0	0.0	26.9
27	629032.63	5521622.88	4.00	0	DEN	500	102.3	0.0	0.0	0.0	0.0	57.5	0.4	-1.3	0.0	0.0	4.8	0.0	0.0	40.9
27	629032.63	5521622.88	4.00	0	DEN	1000	106.0	0.0	0.0	0.0	0.0	57.5	0.8	-1.3	0.0	0.0	4.8	0.0	0.0	44.2
27	629032.63	5521622.88	4.00	0	DEN	2000	109.9	0.0	0.0	0.0	0.0	57.5	2.0	-1.3	0.0	0.0	4.9	0.0	0.0	46.7
27	629032.63	5521622.88	4.00	0	DEN	4000	109.7	0.0	0.0	0.0	0.0	57.5	7.0	-1.3	0.0	0.0	5.0	0.0	0.0	41.5
27	629032.63	5521622.88	4.00	0	DEN	8000	103.9	0.0	0.0	0.0	0.0	57.5	24.8	-1.3	0.0	0.0	5.3	0.0	0.0	17.6

Point Source, ISO 9613, Name: "LB934 - Material Handling", ID: "LB934_MH"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
36	629035.43	5521610.37	4.00	0	DEN	32	62.2	0.0	0.0	0.0	0.0	57.6	0.0	-3.0	0.0	0.0	7.7	0.0	0.0	-0.1
36	629035.43	5521610.37	4.00	0	DEN	63	76.3	0.0	0.0	0.0	0.0	57.6	0.0	-3.0	0.0	0.0	9.4	0.0	0.0	12.2
36	629035.43	5521610.37	4.00	0	DEN	125	86.7	0.0	0.0	0.0	0.0	57.6	0.1	1.7	0.0	0.0	9.9	0.0	0.0	17.4
36	629035.43	5521610.37	4.00	0	DEN	250	89.4	0.0	0.0	0.0	0.0	57.6	0.2	-0.0	0.0	0.0	14.1	0.0	0.0	17.5
36	629035.43	5521610.37	4.00	0	DEN	500	102.3	0.0	0.0	0.0	0.0	57.6	0.4	-1.3	0.0	0.0	16.9	0.0	0.0	28.7
36	629035.43	5521610.37	4.00	0	DEN	1000	106.0	0.0	0.0	0.0	0.0	57.6	0.8	-1.3	0.0	0.0	19.8	0.0	0.0	29.2
36	629035.43	5521610.37	4.00	0	DEN	2000	109.9	0.0	0.0	0.0	0.0	57.6	2.1	-1.3	0.0	0.0	20.0	0.0	0.0	31.5
36	629035.43	5521610.37	4.00	0	DEN	4000	109.7	0.0	0.0	0.0	0.0	57.6	7.0	-1.3	0.0	0.0	20.0	0.0	0.0	26.4
36	629035.43	5521610.37	4.00	0	DEN	8000	103.9	0.0	0.0	0.0	0.0	57.6	25.0	-1.3	0.0	0.0	20.0	0.0	0.0	2.6

Point Source, ISO 9613, Name: "Bano Ferrous Outdoor Shear", ID: "OS1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
42	629030.36	5521616.49	4.00	0	DEN	32	71.6	0.0	0.0	0.0	0.0	57.7	0.0	-3.0	0.0	0.0	6.5	0.0	0.0	10.4
42	629030.36	5521616.49	4.00	0	DEN	63	85.3	0.0	0.0	0.0	0.0	57.7	0.0	-3.0	0.0	0.0	7.7	0.0	0.0	22.9
42	629030.36	5521616.49	4.00	0	DEN	125	91.2	0.0	0.0	0.0	0.0	57.7	0.1	1.7	0.0	0.0	7.7	0.0	0.0	24.0
42	629030.36	5521616.49	4.00	0	DEN	250	100.5	0.0	0.0	0.0	0.0	57.7	0.2	-0.1	0.0	0.0	11.6	0.0	0.0	31.0
42	629030.36	5521616.49	4.00	0	DEN	500	103.4	0.0	0.0	0.0	0.0	57.7	0.4	-1.3	0.0	0.0	14.1	0.0	0.0	32.5
42	629030.36	5521616.49	4.00	0	DEN	1000	106.0	0.0	0.0	0.0	0.0	57.7	0.8	-1.3	0.0	0.0	16.9	0.0	0.0	31.9
42	629030.36	5521616.49	4.00	0	DEN	2000	106.8	0.0	0.0	0.0	0.0	57.7	2.1	-1.3	0.0	0.0	19.8	0.0	0.0	28.6
42	629030.36	5521616.49	4.00	0	DEN	4000	106.2	0.0	0.0	0.0	0.0	57.7	7.1	-1.3	0.0	0.0	20.0	0.0	0.0	22.7
42	629030.36	5521616.49	4.00	0	DEN	8000	100.1	0.0	0.0	0.0	0.0	57.7	25.3	-1.3	0.0	0.0	20.0	0.0	0.0	-1.6

Point Source, ISO 9613, Name: "B Train loading - No 1 material (LB 934)", ID: "BTL"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
47	629038.07	5521707.05	4.00	0	DEN	32	66.7	0.0	0.0	0.0	0.0	56.9	0.0	-3.0	0.0	0.0	2.1	0.0	0.0	10.7
47	629038.07	5521707.05	4.00	0	DEN	63	75.3	0.0	0.0	0.0	0.0	56.9	0.0	-3.0	0.0	0.0	2.4	0.0	0.0	19.0
47	629038.07	5521707.05	4.00	0	DEN	125	80.5	0.0	0.0	0.0	0.0	56.9	0.1	1.6	0.0	0.0	2.1	0.0	0.0	19.9
47	629038.07	5521707.05	4.00	0	DEN	250	87.4	0.0	0.0	0.0	0.0	56.9	0.2	-0.1	0.0	0.0	3.6	0.0	0.0	26.8
47	629038.07	5521707.05	4.00	0	DEN	500	96.4	0.0	0.0	0.0	0.0	56.9	0.4	-1.3	0.0	0.0	4.7	0.0	0.0	35.7
47	629038.07	5521707.05	4.00	0	DEN	1000	99.1	0.0	0.0	0.0	0.0	56.9	0.7	-1.4	0.0	0.0	6.3	0.0	0.0	36.6
47	629038.07	5521707.05	4.00	0	DEN	2000	100.7	0.0	0.0	0.0	0.0	56.9	1.9	-1.4	0.0	0.0	8.2	0.0	0.0	35.0
47	629038.07	5521707.05	4.00	0	DEN	4000	98.7	0.0	0.0	0.0	0.0	56.9	6.5	-1.4	0.0	0.0	10.6	0.0	0.0	26.1
47	629038.07	5521707.05	4.00	0	DEN	8000	92.4	0.0	0.0	0.0	0.0	56.9	23.0	-1.4	0.0	0.0	13.2	0.0	0.0	0.6

Point Source, ISO 9613, Name: "EZ Crusher", ID: "EZC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
53	629064.13	5521582.94	2.50	0	DEN	32	54.4	0.0	0.0	0.0	0.0	57.0	0.0	-3.0	0.0	0.0	5.4	0.0	0.0	-5.0
53	629064.13	5521582.94	2.50	0	DEN	63	87.0	0.0	0.0	0.0	0.0	57.0	0.0	-3.0	0.0	0.0	5.9	0.0	0.0	27.0
53	629064.13	5521582.94	2.50	0	DEN	125	84.5	0.0	0.0	0.0	0.0	57.0	0.1	1.2	0.0	0.0	5.6	0.0	0.0	20.6
53	629064.13	5521582.94	2.50	0	DEN	250	88.0	0.0	0.0	0.0	0.0	57.0	0.2	1.4	0.0	0.0	6.8	0.0	0.0	22.5
53	629064.13	5521582.94	2.50	0	DEN	500	94.9	0.0	0.0	0.0	0.0	57.0	0.4	-0.9	0.0	0.0	10.1	0.0	0.0	28.3
53	629064.13	5521582.94	2.50	0	DEN	1000	96.5	0.0	0.0	0.0	0.0	57.0	0.7	-1.3	0.0	0.0	12.4	0.0	0.0	27.6
53	629064.13	5521582.94	2.50	0	DEN	2000	97.9	0.0	0.0	0.0	0.0	57.0	1.9	-1.3	0.0	0.0	15.0	0.0	0.0	25.2
53	629064.13	5521582.94	2.50	0	DEN	4000	96.9	0.0	0.0	0.0	0.0	57.0	6.6	-1.3	0.0	0.0	17.8	0.0	0.0	16.8
53	629064.13	5521582.94	2.50	0	DEN	8000	93.9	0.0	0.0	0.0	0.0	57.0	23.4	-1.3	0.0	0.0	20.0	0.0	0.0	-5.3

Point Source, ISO 9613, Name: "Cyclone (overall)", ID: "CYCL"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
59	629077.47	5521600.32	3.00	0	DEN	32	56.9	0.0	0.0	0.0	0.0	56.1	0.0	-3.0	0.0	0.0	7.0	0.0	0.0	-3.2
59	629077.47	5521600.32	3.00	0	DEN	63	69.0	0.0	0.0	0.0	0.0	56.1	0.0	-3.0	0.0	0.0	8.5	0.0	0.0	7.4
59	629077.47	5521600.32	3.00	0	DEN	125	82.0	0.0	0.0	0.0	0.0	56.1	0.1	1.6	0.0	0.0	8.9	0.0	0.0	15.4
59	629077.47	5521600.32	3.00	0	DEN	250	89.8	0.0	0.0	0.0	0.0	56.1	0.2	1.2	0.0	0.0	11.7	0.0	0.0	20.7
59	629077.47	5521600.32	3.00	0	DEN	500	90.5	0.0	0.0	0.0	0.0	56.1	0.3	-1.1	0.0	0.0	15.5	0.0	0.0	19.7
59	629077.47	5521600.32	3.00	0	DEN	1000	89.1	0.0	0.0	0.0	0.0	56.1	0.7	-1.2	0.0	0.0	18.3	0.0	0.0	15.3
59	629077.47	5521600.32	3.00	0	DEN	2000	91.4	0.0	0.0	0.0	0.0	56.1	1.7	-1.2	0.0	0.0	20.0	0.0	0.0	14.8
59	629077.47	5521600.32	3.00	0	DEN	4000	96.4	0.0	0.0	0.0	0.0	56.1	5.9	-1.2	0.0	0.0	20.0	0.0	0.0	15.6
59	629077.47	5521600.32	3.00	0	DEN	8000	95.7	0.0	0.0	0.0	0.0	56.1	21.0	-1.2	0.0	0.0	20.0	0.0	0.0	-0.2

Point Source, ISO 9613, Name: "JCB Lift", ID: "JCB"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
61	629092.58	5521676.64	2.50	0	DEN	32	50.7	0.0	0.0	0.0	0.0	54.1	0.0	-3.0	0.0	0.0	6.6	0.0	0.0	-6.9
61	629092.58	5521676.64	2.50	0	DEN	63	66.4	0.0	0.0	0.0	0.0	54.1	0.0	-3.0	0.0	0.0	8.5	0.0	0.0	6.8
61	629092.58	5521676.64	2.50	0	DEN	125	78.5	0.0	0.0	0.0	0.0	54.1	0.1	1.2	0.0	0.0	10.5	0.0	0.0	12.7
61	629092.58	5521676.64	2.50	0	DEN	250	88.6	0.0	0.0	0.0	0.0	54.1	0.1	1.6	0.0	0.0	13.7	0.0	0.0	19.1
61	629092.58	5521676.64	2.50	0	DEN	500	89.5	0.0	0.0	0.0	0.0	54.1	0.3	-0.8	0.0	0.0	18.5	0.0	0.0	17.5
61	629092.58	5521676.64	2.50	0	DEN	1000	92.9	0.0	0.0	0.0	0.0	54.1	0.5	-1.2	0.0	0.0	21.5	0.0	0.0	18.0
61	629092.58	5521676.64	2.50	0	DEN	2000	94.4	0.0	0.0	0.0	0.0	54.1	1.4	-1.2	0.0	0.0	24.5	0.0	0.0	15.7
61	629092.58	5521676.64	2.50	0	DEN	4000	89.0	0.0	0.0	0.0	0.0	54.1	4.7	-1.2	0.0	0.0	24.9	0.0	0.0	6.6
61	629092.58	5521676.64	2.50	0	DEN	8000	81.6	0.0	0.0	0.0	0.0	54.1	16.6	-1.2	0.0	0.0	25.0	0.0	0.0	-12.8

Point Source, ISO 9613, Name: "Non-ferrous baghouse", ID: "NF_BH"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
65	629104.64	5521691.60	7.00	0	DEN	32	58.9	0.0	0.0	0.0	0.0	53.3	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	8.6
65	629104.64	5521691.60	7.00	0	DEN	63	73.3	0.0	0.0	0.0	0.0	53.3	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	23.0
65	629104.64	5521691.60	7.00	0	DEN	125	79.4	0.0	0.0	0.0	0.0	53.3	0.1	1.4	0.0	0.0	0.0	0.0	0.0	24.7
65	629104.64	5521691.60	7.00	0	DEN	250	83.2	0.0	0.0	0.0	0.0	53.3	0.1	-0.9	0.0	0.0	0.0	0.0	0.0	30.7
65	629104.64	5521691.60	7.00	0	DEN	500	84.5	0.0	0.0	0.0	0.0	53.3	0.3	-1.2	0.0	0.0	0.0	0.0	0.0	32.2
65	629104.64	5521691.60	7.00	0	DEN	1000	88.9	0.0	0.0	0.0	0.0	53.3	0.5	-1.2	0.0	0.0	0.0	0.0	0.0	36.3
65	629104.64	5521691.60	7.00	0	DEN	2000	92.1	0.0	0.0	0.0	0.0	53.3	1.3	-1.2	0.0	0.0	0.0	0.0	0.0	38.8
65	629104.64	5521691.60	7.00	0	DEN	4000	93.6	0.0	0.0	0.0	0.0	53.3	4.3	-1.2	0.0	0.0	0.0	0.0	0.0	37.3
65	629104.64	5521691.60	7.00	0	DEN	8000	88.8	0.0	0.0	0.0	0.0	53.3	15.2	-1.2	0.0	0.0	0.0	0.0	0.0	21.6

Point Source, ISO 9613, Name: "Rad cooling fan 1", ID: "RCF1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
71	629035.51	5521606.34	3.10	0	DEN	63	69.7	0.0	0.0	0.0	0.0	57.7	0.0	-3.0	0.0	0.0	10.0	0.0	0.0	5.0
71	629035.51	5521606.34	3.10	0	DEN	125	84.8	0.0	0.0	0.0	0.0	57.7	0.1	1.3	0.0	0.0	10.9	0.0	0.0	14.8
71	629035.51	5521606.34	3.10	0	DEN	250	89.5	0.0	0.0	0.0	0.0	57.7	0.2	0.6	0.0	0.0	14.2	0.0	0.0	16.8
71	629035.51	5521606.34	3.10	0	DEN	500	95.5	0.0	0.0	0.0	0.0	57.7	0.4	-1.3	0.0	0.0	17.6	0.0	0.0	21.1
71	629035.51	5521606.34	3.10	0	DEN	1000	99.0	0.0	0.0	0.0	0.0	57.7	0.8	-1.4	0.0	0.0	20.0	0.0	0.0	21.9
71	629035.51	5521606.34	3.10	0	DEN	2000	94.7	0.0	0.0	0.0	0.0	57.7	2.1	-1.4	0.0	0.0	20.0	0.0	0.0	16.3
71	629035.51	5521606.34	3.10	0	DEN	4000	87.0	0.0	0.0	0.0	0.0	57.7	7.1	-1.4	0.0	0.0	20.0	0.0	0.0	3.6
71	629035.51	5521606.34	3.10	0	DEN	8000	84.9	0.0	0.0	0.0	0.0	57.7	25.1	-1.4	0.0	0.0	20.0	0.0	0.0	-16.5

Point Source, ISO 9613, Name: "Rad cooling fan 2", ID: "RCF2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
77	629035.58	5521604.96	3.10	0	DEN	63	69.7	0.0	0.0	0.0	0.0	57.7	0.0	-3.0	0.0	0.0	11.3	0.0	0.0	3.7
77	629035.58	5521604.96	3.10	0	DEN	125	84.8	0.0	0.0	0.0	0.0	57.7	0.1	1.3	0.0	0.0	13.1	0.0	0.0	12.6
77	629035.58	5521604.96	3.10	0	DEN	250	89.5	0.0	0.0	0.0	0.0	57.7	0.2	0.6	0.0	0.0	18.1	0.0	0.0	12.9
77	629035.58	5521604.96	3.10	0	DEN	500	95.5	0.0	0.0	0.0	0.0	57.7	0.4	-1.3	0.0	0.0	22.8	0.0	0.0	15.8
77	629035.58	5521604.96	3.10	0	DEN	1000	99.0	0.0	0.0	0.0	0.0	57.7	0.8	-1.4	0.0	0.0	25.0	0.0	0.0	16.9
77	629035.58	5521604.96	3.10	0	DEN	2000	94.7	0.0	0.0	0.0	0.0	57.7	2.1	-1.4	0.0	0.0	25.0	0.0	0.0	11.3
77	629035.58	5521604.96	3.10	0	DEN	4000	87.0	0.0	0.0	0.0	0.0	57.7	7.1	-1.4	0.0	0.0	25.0	0.0	0.0	-1.4

Point Source, ISO 9613, Name: "Michigan L90 loader", ID: "ML90"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
90	628982.17	5521630.87	2.50	0	DEN	32	60.9	0.0	0.0	0.0	0.0	59.3	0.0	-3.0	0.0	0.0	4.9	0.0	0.0	-0.2

Point Source, ISO 9613, Name: "Michigan L90 loader", ID: "ML90"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
90	628982.17	5521630.87	2.50	0	DEN	63	67.6	0.0	0.0	0.0	0.0	59.3	0.0	-3.0	0.0	0.0	5.0	0.0	0.0	6.3
90	628982.17	5521630.87	2.50	0	DEN	125	81.2	0.0	0.0	0.0	0.0	59.3	0.1	1.2	0.0	0.0	4.1	0.0	0.0	16.5
90	628982.17	5521630.87	2.50	0	DEN	250	92.2	0.0	0.0	0.0	0.0	59.3	0.3	1.2	0.0	0.0	4.8	0.0	0.0	26.7
90	628982.17	5521630.87	2.50	0	DEN	500	93.4	0.0	0.0	0.0	0.0	59.3	0.5	-1.0	0.0	0.0	7.7	0.0	0.0	27.0
90	628982.17	5521630.87	2.50	0	DEN	1000	95.7	0.0	0.0	0.0	0.0	59.3	0.9	-1.4	0.0	0.0	10.2	0.0	0.0	26.7
90	628982.17	5521630.87	2.50	0	DEN	2000	98.3	0.0	0.0	0.0	0.0	59.3	2.5	-1.4	0.0	0.0	12.9	0.0	0.0	25.1
90	628982.17	5521630.87	2.50	0	DEN	4000	91.7	0.0	0.0	0.0	0.0	59.3	8.5	-1.4	0.0	0.0	15.7	0.0	0.0	9.7

Point Source, ISO 9613, Name: "Material drop Bins 2", ID: "MDB2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
98	629010.86	5521617.31	1.50	0	DEN	125	63.9	0.0	0.0	0.0	0.0	58.4	0.1	0.8	0.0	0.0	12.7	0.0	0.0	-8.1
98	629010.86	5521617.31	1.50	0	DEN	250	76.4	0.0	0.0	0.0	0.0	58.4	0.2	2.3	0.0	0.0	14.1	0.0	0.0	1.4
98	629010.86	5521617.31	1.50	0	DEN	500	91.8	0.0	0.0	0.0	0.0	58.4	0.5	1.0	0.0	0.0	18.1	0.0	0.0	13.8
98	629010.86	5521617.31	1.50	0	DEN	1000	95.0	0.0	0.0	0.0	0.0	58.4	0.9	-1.1	0.0	0.0	19.9	0.0	0.0	16.9
98	629010.86	5521617.31	1.50	0	DEN	2000	96.2	0.0	0.0	0.0	0.0	58.4	2.3	-1.4	0.0	0.0	20.0	0.0	0.0	17.0
98	629010.86	5521617.31	1.50	0	DEN	4000	91.0	0.0	0.0	0.0	0.0	58.4	7.7	-1.4	0.0	0.0	20.0	0.0	0.0	6.3

Point Source, ISO 9613, Name: "Material drop Bins 1", ID: "MDB1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
106	628996.13	5521622.46	1.50	0	DEN	125	63.9	0.0	0.0	0.0	0.0	58.9	0.1	0.8	0.0	0.0	4.9	0.0	0.0	-0.7
106	628996.13	5521622.46	1.50	0	DEN	250	76.4	0.0	0.0	0.0	0.0	58.9	0.3	2.2	0.0	0.0	4.6	0.0	0.0	10.5
106	628996.13	5521622.46	1.50	0	DEN	500	91.8	0.0	0.0	0.0	0.0	58.9	0.5	1.0	0.0	0.0	8.0	0.0	0.0	23.5
106	628996.13	5521622.46	1.50	0	DEN	1000	95.0	0.0	0.0	0.0	0.0	58.9	0.9	-1.2	0.0	0.0	12.0	0.0	0.0	24.4
106	628996.13	5521622.46	1.50	0	DEN	2000	96.2	0.0	0.0	0.0	0.0	58.9	2.4	-1.5	0.0	0.0	14.9	0.0	0.0	21.5
106	628996.13	5521622.46	1.50	0	DEN	4000	91.0	0.0	0.0	0.0	0.0	58.9	8.1	-1.5	0.0	0.0	17.8	0.0	0.0	7.7

Point Source, ISO 9613, Name: "Ring Mill", ID: "RM"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
110	629025.94	5521602.68	3.50	0	DEN	32	48.6	0.0	0.0	0.0	0.0	58.1	0.0	-3.0	0.0	0.0	6.4	0.0	0.0	-12.9
110	629025.94	5521602.68	3.50	0	DEN	63	70.8	0.0	0.0	0.0	0.0	58.1	0.0	-3.0	0.0	0.0	7.6	0.0	0.0	8.1
110	629025.94	5521602.68	3.50	0	DEN	125	81.9	0.0	0.0	0.0	0.0	58.1	0.1	1.5	0.0	0.0	7.8	0.0	0.0	14.4
110	629025.94	5521602.68	3.50	0	DEN	250	89.4	0.0	0.0	0.0	0.0	58.1	0.2	0.3	0.0	0.0	11.2	0.0	0.0	19.6
110	629025.94	5521602.68	3.50	0	DEN	500	90.8	0.0	0.0	0.0	0.0	58.1	0.4	-1.3	0.0	0.0	14.0	0.0	0.0	19.6
110	629025.94	5521602.68	3.50	0	DEN	1000	93.0	0.0	0.0	0.0	0.0	58.1	0.8	-1.4	0.0	0.0	16.7	0.0	0.0	18.7
110	629025.94	5521602.68	3.50	0	DEN	2000	93.2	0.0	0.0	0.0	0.0	58.1	2.2	-1.4	0.0	0.0	19.6	0.0	0.0	14.7
110	629025.94	5521602.68	3.50	0	DEN	4000	89.0	0.0	0.0	0.0	0.0	58.1	7.4	-1.4	0.0	0.0	20.0	0.0	0.0	4.9
110	629025.94	5521602.68	3.50	0	DEN	8000	86.9	0.0	0.0	0.0	0.0	58.1	26.3	-1.4	0.0	0.0	20.0	0.0	0.0	-16.1

Point Source, ISO 9613, Name: "John Deere - Small Loader", ID: "JDL"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
112	629015.92	5521624.80	2.50	0	DEN	32	46.7	0.0	0.0	0.0	0.0	58.1	0.0	-3.0	0.0	0.0	6.3	0.0	0.0	-14.8
112	629015.92	5521624.80	2.50	0	DEN	63	57.5	0.0	0.0	0.0	0.0	58.1	0.0	-3.0	0.0	0.0	8.0	0.0	0.0	-5.7
112	629015.92	5521624.80	2.50	0	DEN	125	66.4	0.0	0.0	0.0	0.0	58.1	0.1	1.1	0.0	0.0	9.0	0.0	0.0	-2.0
112	629015.92	5521624.80	2.50	0	DEN	250	80.3	0.0	0.0	0.0	0.0	58.1	0.2	1.3	0.0	0.0	11.3	0.0	0.0	9.3
112	629015.92	5521624.80	2.50	0	DEN	500	85.3	0.0	0.0	0.0	0.0	58.1	0.4	-1.0	0.0	0.0	15.2	0.0	0.0	12.5
112	629015.92	5521624.80	2.50	0	DEN	1000	89.9	0.0	0.0	0.0	0.0	58.1	0.8	-1.4	0.0	0.0	18.1	0.0	0.0	14.2
112	629015.92	5521624.80	2.50	0	DEN	2000	90.6	0.0	0.0	0.0	0.0	58.1	2.2	-1.4	0.0	0.0	21.0	0.0	0.0	10.7
112	629015.92	5521624.80	2.50	0	DEN	4000	88.0	0.0	0.0	0.0	0.0	58.1	7.5	-1.4	0.0	0.0	23.9	0.0	0.0	-0.2

Point Source, ISO 9613, Name: "Volvo L90H", ID: "L90H"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
122	629010.02	5521630.59	2.50	0	DEN	32	46.7	0.0	0.0	0.0	0.0	58.3	0.0	-3.0	0.0	0.0	5.0	0.0	0.0	-13.6
122	629010.02	5521630.59	2.50	0	DEN	63	57.5	0.0	0.0	0.0	0.0	58.3	0.0	-3.0	0.0	0.0	5.2	0.0	0.0	-3.0
122	629010.02	5521630.59	2.50	0	DEN	125	66.4	0.0	0.0	0.0	0.0	58.3	0.1	1.1	0.0	0.0	4.5	0.0	0.0	2.3
122	629010.02	5521630.59	2.50	0	DEN	250	80.3	0.0	0.0	0.0	0.0	58.3	0.2	1.3	0.0	0.0	5.5	0.0	0.0	15.0
122	629010.02	5521630.59	2.50	0	DEN	500	85.3	0.0	0.0	0.0	0.0	58.3	0.4	-1.0	0.0	0.0	9.0	0.0	0.0	18.5
122	629010.02	5521630.59	2.50	0	DEN	1000	89.9	0.0	0.0	0.0	0.0	58.3	0.8	-1.4	0.0	0.0	12.0	0.0	0.0	20.1
122	629010.02	5521630.59	2.50	0	DEN	2000	90.6	0.0	0.0	0.0	0.0	58.3	2.2	-1.4	0.0	0.0	14.9	0.0	0.0	16.5

Point Source, ISO 9613, Name: "Volvo L90H", ID: "L90H"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
122	629010.02	5521630.59	2.50	0	DEN	4000	88.0	0.0	0.0	0.0	0.0	58.3	7.6	-1.4	0.0	0.0	17.9	0.0	0.0	5.6

Point Source, ISO 9613, Name: "Granulator", ID: "GRN"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
147	629084.36	5521604.32	2.50	0	DEN	63	52.7	0.0	0.0	0.0	0.0	55.7	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	-0.0
147	629084.36	5521604.32	2.50	0	DEN	125	61.5	0.0	0.0	0.0	0.0	55.7	0.1	1.3	0.0	0.0	0.0	0.0	0.0	4.4
147	629084.36	5521604.32	2.50	0	DEN	250	71.8	0.0	0.0	0.0	0.0	55.7	0.2	1.7	0.0	0.0	0.0	0.0	0.0	14.2
147	629084.36	5521604.32	2.50	0	DEN	500	84.9	0.0	0.0	0.0	0.0	55.7	0.3	-0.8	0.0	0.0	0.0	0.0	0.0	29.6
147	629084.36	5521604.32	2.50	0	DEN	1000	87.7	0.0	0.0	0.0	0.0	55.7	0.6	-1.2	0.0	0.0	0.0	0.0	0.0	32.6
147	629084.36	5521604.32	2.50	0	DEN	2000	86.5	0.0	0.0	0.0	0.0	55.7	1.7	-1.2	0.0	0.0	0.0	0.0	0.0	30.3
147	629084.36	5521604.32	2.50	0	DEN	4000	85.7	0.0	0.0	0.0	0.0	55.7	5.6	-1.2	0.0	0.0	0.0	0.0	0.0	25.6
147	629084.36	5521604.32	2.50	0	DEN	8000	76.1	0.0	0.0	0.0	0.0	55.7	20.1	-1.2	0.0	0.0	0.0	0.0	0.0	1.5

Point Source, ISO 9613, Name: "Non-ferrous operation - all cumulative - indoor", ID: "NFO_indoor"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
150	629113.27	5521681.77	2.50	0	DEN	32	38.2	0.0	0.0	0.0	0.0	52.7	0.0	-3.0	0.0	0.0	5.2	0.0	0.0	-16.6
150	629113.27	5521681.77	2.50	0	DEN	63	55.8	0.0	0.0	0.0	0.0	52.7	0.0	-3.0	0.0	0.0	7.2	0.0	0.0	-1.1
150	629113.27	5521681.77	2.50	0	DEN	125	73.8	0.0	0.0	0.0	0.0	52.7	0.0	1.3	0.0	0.0	9.1	0.0	0.0	10.7
150	629113.27	5521681.77	2.50	0	DEN	250	73.8	0.0	0.0	0.0	0.0	52.7	0.1	1.9	0.0	0.0	11.9	0.0	0.0	7.2
150	629113.27	5521681.77	2.50	0	DEN	500	79.6	0.0	0.0	0.0	0.0	52.7	0.2	-0.7	0.0	0.0	15.9	0.0	0.0	11.4
150	629113.27	5521681.77	2.50	0	DEN	1000	81.2	0.0	0.0	0.0	0.0	52.7	0.4	-1.1	0.0	0.0	19.0	0.0	0.0	10.2
150	629113.27	5521681.77	2.50	0	DEN	2000	83.9	0.0	0.0	0.0	0.0	52.7	1.2	-1.1	0.0	0.0	21.0	0.0	0.0	10.2
150	629113.27	5521681.77	2.50	0	DEN	4000	84.1	0.0	0.0	0.0	0.0	52.7	4.0	-1.1	0.0	0.0	22.5	0.0	0.0	6.0
150	629113.27	5521681.77	2.50	0	DEN	8000	78.9	0.0	0.0	0.0	0.0	52.7	14.2	-1.1	0.0	0.0	23.6	0.0	0.0	-10.4

Point Source, ISO 9613, Name: "LB904 High Rev + Hydraulic", ID: "LB904"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
156	629039.84	5521673.02	2.50	0	DEN	32	57.2	0.0	0.0	0.0	0.0	56.8	0.0	-3.0	0.0	0.0	4.8	0.0	0.0	-1.4
156	629039.84	5521673.02	2.50	0	DEN	63	78.8	0.0	0.0	0.0	0.0	56.8	0.0	-3.0	0.0	0.0	5.4	0.0	0.0	19.6
156	629039.84	5521673.02	2.50	0	DEN	125	77.6	0.0	0.0	0.0	0.0	56.8	0.1	1.0	0.0	0.0	5.2	0.0	0.0	14.5
156	629039.84	5521673.02	2.50	0	DEN	250	83.5	0.0	0.0	0.0	0.0	56.8	0.2	1.2	0.0	0.0	6.7	0.0	0.0	18.6
156	629039.84	5521673.02	2.50	0	DEN	500	86.6	0.0	0.0	0.0	0.0	56.8	0.4	-1.0	0.0	0.0	10.8	0.0	0.0	19.6
156	629039.84	5521673.02	2.50	0	DEN	1000	87.8	0.0	0.0	0.0	0.0	56.8	0.7	-1.4	0.0	0.0	14.2	0.0	0.0	17.4
156	629039.84	5521673.02	2.50	0	DEN	2000	83.6	0.0	0.0	0.0	0.0	56.8	1.9	-1.4	0.0	0.0	17.5	0.0	0.0	8.8
156	629039.84	5521673.02	2.50	0	DEN	4000	79.1	0.0	0.0	0.0	0.0	56.8	6.4	-1.4	0.0	0.0	20.5	0.0	0.0	-3.2

Point Source, ISO 9613, Name: "Lib LB924 High Rev + Hydraulic", ID: "LB924_MH"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
161	629018.66	5521680.47	2.50	0	DEN	32	49.1	0.0	0.0	0.0	0.0	57.7	0.0	-3.0	0.0	0.0	4.8	0.0	0.0	-10.4
161	629018.66	5521680.47	2.50	0	DEN	63	81.0	0.0	0.0	0.0	0.0	57.7	0.0	-3.0	0.0	0.0	6.3	0.0	0.0	20.0
161	629018.66	5521680.47	2.50	0	DEN	125	77.5	0.0	0.0	0.0	0.0	57.7	0.1	1.1	0.0	0.0	7.3	0.0	0.0	11.4
161	629018.66	5521680.47	2.50	0	DEN	250	84.1	0.0	0.0	0.0	0.0	57.7	0.2	1.2	0.0	0.0	9.4	0.0	0.0	15.6
161	629018.66	5521680.47	2.50	0	DEN	500	85.3	0.0	0.0	0.0	0.0	57.7	0.4	-1.0	0.0	0.0	13.1	0.0	0.0	15.1
161	629018.66	5521680.47	2.50	0	DEN	1000	84.0	0.0	0.0	0.0	0.0	57.7	0.8	-1.4	0.0	0.0	15.8	0.0	0.0	11.1
161	629018.66	5521680.47	2.50	0	DEN	2000	85.9	0.0	0.0	0.0	0.0	57.7	2.1	-1.4	0.0	0.0	18.7	0.0	0.0	8.8
161	629018.66	5521680.47	2.50	0	DEN	4000	83.5	0.0	0.0	0.0	0.0	57.7	7.1	-1.4	0.0	0.0	21.6	0.0	0.0	-1.5

Point Source, ISO 9613, Name: "Hydraulic Enclosure 1 - Ferrous", ID: "HE1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
167	629035.86	5521606.46	1.75	0	DEN	32	47.4	0.0	0.0	0.0	0.0	57.6	0.0	-3.0	0.0	0.0	9.0	0.0	0.0	-16.3
167	629035.86	5521606.46	1.75	0	DEN	63	56.1	0.0	0.0	0.0	0.0	57.6	0.0	-3.0	0.0	0.0	11.1	0.0	0.0	-9.7
167	629035.86	5521606.46	1.75	0	DEN	125	69.1	0.0	0.0	0.0	0.0	57.6	0.1	0.9	0.0	0.0	12.7	0.0	0.0	-2.2
167	629035.86	5521606.46	1.75	0	DEN	250	83.8	0.0	0.0	0.0	0.0	57.6	0.2	2.1	0.0	0.0	14.2	0.0	0.0	9.6
167	629035.86	5521606.46	1.75	0	DEN	500	84.2	0.0	0.0	0.0	0.0	57.6	0.4	0.3	0.0	0.0	18.8	0.0	0.0	7.0
167	629035.86	5521606.46	1.75	0	DEN	1000	86.0	0.0	0.0	0.0	0.0	57.6	0.8	-1.2	0.0	0.0	20.0	0.0	0.0	8.8
167	629035.86	5521606.46	1.75	0	DEN	2000	83.9	0.0	0.0	0.0	0.0	57.6	2.1	-1.4	0.0	0.0	20.0	0.0	0.0	5.5
167	629035.86	5521606.46	1.75	0	DEN	4000	76.1	0.0	0.0	0.0	0.0	57.6	7.0	-1.4	0.0	0.0	20.0	0.0	0.0	-7.2

Point Source, ISO 9613, Name: "Hydraulic Enclosure 2 - Ferrous", ID: "HE2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
174	629035.27	5521604.84	1.75	0	DEN	32	47.4	0.0	0.0	0.0	0.0	57.7	0.0	-3.0	0.0	0.0	10.0	0.0	0.0	-17.3
174	629035.27	5521604.84	1.75	0	DEN	63	56.1	0.0	0.0	0.0	0.0	57.7	0.0	-3.0	0.0	0.0	12.7	0.0	0.0	-11.3
174	629035.27	5521604.84	1.75	0	DEN	125	69.1	0.0	0.0	0.0	0.0	57.7	0.1	0.9	0.0	0.0	15.4	0.0	0.0	-5.0
174	629035.27	5521604.84	1.75	0	DEN	250	83.8	0.0	0.0	0.0	0.0	57.7	0.2	2.1	0.0	0.0	18.6	0.0	0.0	5.2
174	629035.27	5521604.84	1.75	0	DEN	500	84.2	0.0	0.0	0.0	0.0	57.7	0.4	0.3	0.0	0.0	24.3	0.0	0.0	1.5
174	629035.27	5521604.84	1.75	0	DEN	1000	86.0	0.0	0.0	0.0	0.0	57.7	0.8	-1.2	0.0	0.0	25.0	0.0	0.0	3.7
174	629035.27	5521604.84	1.75	0	DEN	2000	83.9	0.0	0.0	0.0	0.0	57.7	2.1	-1.4	0.0	0.0	25.0	0.0	0.0	0.5
174	629035.27	5521604.84	1.75	0	DEN	4000	76.1	0.0	0.0	0.0	0.0	57.7	7.1	-1.4	0.0	0.0	25.0	0.0	0.0	-12.3

Point Source, ISO 9613, Name: "Shaker Tables x 3", ID: "ST"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
181	628993.08	5521614.98	3.50	0	DEN	500	92.0	0.0	0.0	0.0	0.0	59.0	0.5	-1.3	0.0	0.0	6.2	0.0	0.0	27.7

Point Source, ISO 9613, Name: "Dust collector and bags", ID: "DC"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
187	628993.61	5521603.69	3.50	0	DEN	32	52.2	0.0	0.0	0.0	0.0	59.1	0.0	-3.0	0.0	0.0	11.3	0.0	0.0	-15.3
187	628993.61	5521603.69	3.50	0	DEN	63	68.4	0.0	0.0	0.0	0.0	59.1	0.0	-3.0	0.0	0.0	14.7	0.0	0.0	-2.5
187	628993.61	5521603.69	3.50	0	DEN	125	70.5	0.0	0.0	0.0	0.0	59.1	0.1	1.5	0.0	0.0	17.4	0.0	0.0	-7.7
187	628993.61	5521603.69	3.50	0	DEN	250	80.6	0.0	0.0	0.0	0.0	59.1	0.3	0.3	0.0	0.0	22.7	0.0	0.0	-1.7
187	628993.61	5521603.69	3.50	0	DEN	500	83.8	0.0	0.0	0.0	0.0	59.1	0.5	-1.3	0.0	0.0	24.7	0.0	0.0	0.8
187	628993.61	5521603.69	3.50	0	DEN	1000	83.4	0.0	0.0	0.0	0.0	59.1	0.9	-1.4	0.0	0.0	24.9	0.0	0.0	-0.2
187	628993.61	5521603.69	3.50	0	DEN	2000	87.5	0.0	0.0	0.0	0.0	59.1	2.5	-1.4	0.0	0.0	24.9	0.0	0.0	2.3
187	628993.61	5521603.69	3.50	0	DEN	4000	85.0	0.0	0.0	0.0	0.0	59.1	8.4	-1.4	0.0	0.0	25.0	0.0	0.0	-6.1

Point Source, ISO 9613, Name: "Non-ferrous Air makeup unit", ID: "NF_MUA"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
192	629113.01	5521652.00	7.50	0	DEN	63	55.8	0.0	0.0	0.0	0.0	53.1	0.0	-3.0	0.0	0.0	2.9	0.0	0.0	2.8
192	629113.01	5521652.00	7.50	0	DEN	125	66.9	0.0	0.0	0.0	0.0	53.1	0.1	1.2	0.0	0.0	3.2	0.0	0.0	9.4
192	629113.01	5521652.00	7.50	0	DEN	250	80.4	0.0	0.0	0.0	0.0	53.1	0.1	-0.9	0.0	0.0	4.5	0.0	0.0	23.6
192	629113.01	5521652.00	7.50	0	DEN	500	72.8	0.0	0.0	0.0	0.0	53.1	0.2	-1.1	0.0	0.0	5.7	0.0	0.0	14.9
192	629113.01	5521652.00	7.50	0	DEN	1000	75.0	0.0	0.0	0.0	0.0	53.1	0.5	-1.1	0.0	0.0	7.3	0.0	0.0	15.3
192	629113.01	5521652.00	7.50	0	DEN	2000	73.2	0.0	0.0	0.0	0.0	53.1	1.2	-1.1	0.0	0.0	9.2	0.0	0.0	10.8
192	629113.01	5521652.00	7.50	0	DEN	4000	67.0	0.0	0.0	0.0	0.0	53.1	4.2	-1.1	0.0	0.0	11.5	0.0	0.0	-0.6

Point Source, ISO 9613, Name: "bldg exh", ID: "BEX1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
196	629028.97	5521596.21	8.00	0	DEN	32	42.3	0.0	0.0	0.0	0.0	58.1	0.0	-3.0	0.0	0.0	3.8	0.0	0.0	-16.5
196	629028.97	5521596.21	8.00	0	DEN	63	62.2	0.0	0.0	0.0	0.0	58.1	0.0	-3.0	0.0	0.0	4.3	0.0	0.0	2.8
196	629028.97	5521596.21	8.00	0	DEN	125	73.6	0.0	0.0	0.0	0.0	58.1	0.1	0.9	0.0	0.0	4.0	0.0	0.0	10.5
196	629028.97	5521596.21	8.00	0	DEN	250	75.2	0.0	0.0	0.0	0.0	58.1	0.2	-1.0	0.0	0.0	5.6	0.0	0.0	12.4
196	629028.97	5521596.21	8.00	0	DEN	500	77.4	0.0	0.0	0.0	0.0	58.1	0.4	-1.2	0.0	0.0	6.5	0.0	0.0	13.6
196	629028.97	5521596.21	8.00	0	DEN	1000	81.1	0.0	0.0	0.0	0.0	58.1	0.8	-1.2	0.0	0.0	7.9	0.0	0.0	15.5
196	629028.97	5521596.21	8.00	0	DEN	2000	79.6	0.0	0.0	0.0	0.0	58.1	2.2	-1.2	0.0	0.0	9.8	0.0	0.0	10.8
196	629028.97	5521596.21	8.00	0	DEN	4000	76.6	0.0	0.0	0.0	0.0	58.1	7.4	-1.2	0.0	0.0	12.1	0.0	0.0	0.3

Point Source, ISO 9613, Name: "bldg exh", ID: "BEX2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
202	629019.42	5521596.96	8.00	0	DEN	63	62.2	0.0	0.0	0.0	0.0	58.4	0.0	-3.0	0.0	0.0	9.7	0.0	0.0	-2.9
202	629019.42	5521596.96	8.00	0	DEN	125	73.6	0.0	0.0	0.0	0.0	58.4	0.1	0.9	0.0	0.0	12.6	0.0	0.0	1.6
202	629019.42	5521596.96	8.00	0	DEN	250	75.2	0.0	0.0	0.0	0.0	58.4	0.2	-1.0	0.0	0.0	17.6	0.0	0.0	0.0
202	629019.42	5521596.96	8.00	0	DEN	500	77.4	0.0	0.0	0.0	0.0	58.4	0.5	-1.2	0.0	0.0	21.6	0.0	0.0	-1.8
202	629019.42	5521596.96	8.00	0	DEN	1000	81.1	0.0	0.0	0.0	0.0	58.4	0.9	-1.2	0.0	0.0	23.6	0.0	0.0	-0.5
202	629019.42	5521596.96	8.00	0	DEN	2000	79.6	0.0	0.0	0.0	0.0	58.4	2.3	-1.2	0.0	0.0	24.3	0.0	0.0	-4.1
202	629019.42	5521596.96	8.00	0	DEN	4000	76.6	0.0	0.0	0.0	0.0	58.4	7.7	-1.2	0.0	0.0	24.6	0.0	0.0	-12.8

Point Source, ISO 9613, Name: "Baghouse - pulsating", ID: "BH"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
205	628988.82	5521604.99	3.00	0	DEN	500	98.8	0.0	0.0	0.0	0.0	59.3	0.5	-1.3	0.0	0.0	24.7	0.0	0.0	15.6

Point Source, ISO 9613, Name: "Excel Bailer - indoor", ID: "EB"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
206	629096.57	5521605.73	1.00	0	DEN	63	37.6	0.0	0.0	0.0	0.0	55.1	0.0	-3.0	0.0	0.0	0.0	0.0	0.0	-14.5
206	629096.57	5521605.73	1.00	0	DEN	125	48.7	0.0	0.0	0.0	0.0	55.1	0.1	0.7	0.0	0.0	0.0	0.0	0.0	-7.2
206	629096.57	5521605.73	1.00	0	DEN	250	61.8	0.0	0.0	0.0	0.0	55.1	0.2	2.7	0.0	0.0	0.0	0.0	0.0	3.8
206	629096.57	5521605.73	1.00	0	DEN	500	65.2	0.0	0.0	0.0	0.0	55.1	0.3	3.0	0.0	0.0	0.0	0.0	0.0	6.8
206	629096.57	5521605.73	1.00	0	DEN	1000	71.0	0.0	0.0	0.0	0.0	55.1	0.6	-0.3	0.0	0.0	0.0	0.0	0.0	15.6
206	629096.57	5521605.73	1.00	0	DEN	2000	70.8	0.0	0.0	0.0	0.0	55.1	1.6	-1.3	0.0	0.0	0.0	0.0	0.0	15.4
206	629096.57	5521605.73	1.00	0	DEN	4000	68.5	0.0	0.0	0.0	0.0	55.1	5.3	-1.3	0.0	0.0	0.0	0.0	0.0	9.4
206	629096.57	5521605.73	1.00	0	DEN	8000	63.4	0.0	0.0	0.0	0.0	55.1	18.8	-1.3	0.0	0.0	0.0	0.0	0.0	-9.2

Point Source, ISO 9613, Name: "Material drop + mag sep + eddy current", ID: "MD"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
212	629010.25	5521607.73	3.00	0	DEN	250	51.4	0.0	0.0	0.0	0.0	58.5	0.2	0.7	0.0	0.0	8.5	0.0	0.0	-16.6
212	629010.25	5521607.73	3.00	0	DEN	500	66.8	0.0	0.0	0.0	0.0	58.5	0.5	-1.2	0.0	0.0	11.4	0.0	0.0	-2.4
212	629010.25	5521607.73	3.00	0	DEN	1000	70.0	0.0	0.0	0.0	0.0	58.5	0.9	-1.4	0.0	0.0	13.9	0.0	0.0	-2.0
212	629010.25	5521607.73	3.00	0	DEN	2000	71.2	0.0	0.0	0.0	0.0	58.5	2.3	-1.4	0.0	0.0	16.7	0.0	0.0	-5.0
212	629010.25	5521607.73	3.00	0	DEN	4000	66.0	0.0	0.0	0.0	0.0	58.5	7.8	-1.4	0.0	0.0	19.5	0.0	0.0	-18.5

Point Source, ISO 9613, Name: "Non-ferrous Mushroom vent 1", ID: "NF_MV1"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
213	629110.48	5521676.40	7.00	0	DEN	500	66.8	0.0	0.0	0.0	0.0	52.9	0.2	-1.1	0.0	0.0	12.9	0.0	0.0	1.9

Point Source, ISO 9613, Name: "Non-ferrous Mushroom vent 2", ID: "NF_MV2"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
219	629107.17	5521662.28	7.00	0	DEN	500	66.8	0.0	0.0	0.0	0.0	53.3	0.3	-1.1	0.0	0.0	13.6	0.0	0.0	0.8

Point Source, ISO 9613, Name: "16" Non-ferrous bldg exh.", ID: "NF_Ex"																				
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
221	629117.89	5521671.52	8.50	0	DEN	500	59.8	0.0	0.0	0.0	0.0	52.4	0.2	-1.1	0.0	0.0	17.5	0.0	0.0	-9.2

Road, TNM, Name: "Onsite Truck Route", ID: "TRK_Rt"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
225	629059.89	5521641.59	0.10	0	D	50	19.6	-26.4	0.0	4.7	0.0	0.0	-11.6
225	629059.89	5521641.59	0.10	0	D	63	23.9	-26.4	0.0	5.0	0.0	0.0	-7.5
225	629059.89	5521641.59	0.10	0	D	80	27.4	-26.4	0.0	5.1	0.0	0.0	-4.2
225	629059.89	5521641.59	0.10	0	D	100	30.0	-26.4	0.0	5.4	0.0	0.0	-1.8
225	629059.89	5521641.59	0.10	0	D	125	32.2	-26.4	0.0	5.9	0.0	0.0	-0.2
225	629059.89	5521641.59	0.10	0	D	160	34.1	-26.4	0.0	6.8	0.0	0.0	0.8
225	629059.89	5521641.59	0.10	0	D	200	35.6	-26.4	0.0	8.8	0.0	0.0	0.4
225	629059.89	5521641.59	0.10	0	D	250	36.8	-26.4	0.0	17.9	0.0	0.0	-7.5
225	629059.89	5521641.59	0.10	0	D	315	37.9	-26.4	0.0	20.5	0.0	0.0	-9.1
225	629059.89	5521641.59	0.10	0	D	400	38.7	-26.4	0.0	21.9	0.0	0.0	-9.6
225	629059.89	5521641.59	0.10	0	D	500	39.3	-26.4	0.0	21.7	0.0	0.0	-8.8
225	629059.89	5521641.59	0.10	0	D	630	38.7	-26.4	0.0	21.7	0.0	0.0	-9.4
225	629059.89	5521641.59	0.10	0	D	800	40.0	-26.4	0.0	23.1	0.0	0.0	-9.5
225	629059.89	5521641.59	0.10	0	D	1000	40.2	-26.4	0.0	26.5	0.0	0.0	-12.8
225	629059.89	5521641.59	0.10	0	D	1250	39.9	-26.4	0.0	31.4	0.0	0.0	-18.0
225	629059.89	5521641.59	0.10	0	D	1600	39.5	-26.4	0.0	32.4	0.0	0.0	-19.4
227	629048.14	5521599.97	0.10	0	D	50	19.6	-20.9	0.0	-6.0	0.0	0.0	4.7
227	629048.14	5521599.97	0.10	0	D	63	23.9	-20.9	0.0	-5.8	0.0	0.0	8.8
227	629048.14	5521599.97	0.10	0	D	80	27.4	-20.9	0.0	-5.6	0.0	0.0	12.2
227	629048.14	5521599.97	0.10	0	D	100	30.0	-20.9	0.0	-5.4	0.0	0.0	14.6
227	629048.14	5521599.97	0.10	0	D	125	32.2	-20.9	0.0	-5.1	0.0	0.0	16.4
227	629048.14	5521599.97	0.10	0	D	160	34.1	-20.9	0.0	-4.3	0.0	0.0	17.6
227	629048.14	5521599.97	0.10	0	D	200	35.6	-20.9	0.0	-2.9	0.0	0.0	17.6
227	629048.14	5521599.97	0.10	0	D	250	36.8	-20.9	0.0	0.9	0.0	0.0	15.0
227	629048.14	5521599.97	0.10	0	D	315	37.9	-20.9	0.0	3.2	0.0	0.0	13.8
227	629048.14	5521599.97	0.10	0	D	400	38.7	-20.9	0.0	4.8	0.0	0.0	13.1
227	629048.14	5521599.97	0.10	0	D	500	39.3	-20.9	0.0	5.6	0.0	0.0	12.8

Road, TNM, Name: "Onsite Truck Route", ID: "TRK_Rt"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
227	629048.14	5521599.97	0.10	0	D	630	38.7	-20.9	0.0	6.9	0.0	0.0	10.9
227	629048.14	5521599.97	0.10	0	D	800	40.0	-20.9	0.0	10.4	0.0	0.0	8.7
227	629048.14	5521599.97	0.10	0	D	1000	40.2	-20.9	0.0	17.1	0.0	0.0	2.2
227	629048.14	5521599.97	0.10	0	D	1250	39.9	-20.9	0.0	19.0	0.0	0.0	-0.0
227	629048.14	5521599.97	0.10	0	D	1600	39.5	-20.9	0.0	23.7	0.0	0.0	-5.1
227	629048.14	5521599.97	0.10	0	D	2000	40.0	-20.9	0.0	34.5	0.0	0.0	-15.4
227	629048.14	5521599.97	0.10	0	D	5000	39.0	-20.9	0.0	35.3	0.0	0.0	-17.2
227	629048.14	5521599.97	0.10	0	D	6300	37.8	-20.9	0.0	35.3	0.0	0.0	-18.4
233	629033.40	5521547.77	0.10	0	D	50	19.6	-25.2	0.0	-6.0	0.0	0.0	0.4
233	629033.40	5521547.77	0.10	0	D	63	23.9	-25.2	0.0	-5.8	0.0	0.0	4.5
233	629033.40	5521547.77	0.10	0	D	80	27.4	-25.2	0.0	-5.6	0.0	0.0	7.8
233	629033.40	5521547.77	0.10	0	D	100	30.0	-25.2	0.0	-5.3	0.0	0.0	10.1
233	629033.40	5521547.77	0.10	0	D	125	32.2	-25.2	0.0	-4.9	0.0	0.0	11.9
233	629033.40	5521547.77	0.10	0	D	160	34.1	-25.2	0.0	-4.0	0.0	0.0	12.9
233	629033.40	5521547.77	0.10	0	D	200	35.6	-25.2	0.0	-2.3	0.0	0.0	12.6
233	629033.40	5521547.77	0.10	0	D	250	36.8	-25.2	0.0	4.3	0.0	0.0	7.4
233	629033.40	5521547.77	0.10	0	D	315	37.9	-25.2	0.0	8.4	0.0	0.0	4.3
233	629033.40	5521547.77	0.10	0	D	400	38.7	-25.2	0.0	12.1	0.0	0.0	1.4
233	629033.40	5521547.77	0.10	0	D	500	39.3	-25.2	0.0	12.9	0.0	0.0	1.2
233	629033.40	5521547.77	0.10	0	D	630	38.7	-25.2	0.0	13.0	0.0	0.0	0.5
233	629033.40	5521547.77	0.10	0	D	800	40.0	-25.2	0.0	15.7	0.0	0.0	-0.9
233	629033.40	5521547.77	0.10	0	D	1000	40.2	-25.2	0.0	25.0	0.0	0.0	-10.0
233	629033.40	5521547.77	0.10	0	D	1250	39.9	-25.2	0.0	24.4	0.0	0.0	-9.8
233	629033.40	5521547.77	0.10	0	D	1600	39.5	-25.2	0.0	22.4	0.0	0.0	-8.1
233	629033.40	5521547.77	0.10	0	D	2000	40.0	-25.2	0.0	31.3	0.0	0.0	-16.5
233	629033.40	5521547.77	0.10	0	D	2500	39.7	-25.2	0.0	26.2	0.0	0.0	-11.8
233	629033.40	5521547.77	0.10	0	D	3150	39.8	-25.2	0.0	31.8	0.0	0.0	-17.1
243	629027.47	5521526.78	0.10	0	D	50	19.6	-33.5	0.0	-6.0	0.0	0.0	-7.9
243	629027.47	5521526.78	0.10	0	D	63	23.9	-33.5	0.0	-5.8	0.0	0.0	-3.8
243	629027.47	5521526.78	0.10	0	D	80	27.4	-33.5	0.0	-5.6	0.0	0.0	-0.5
243	629027.47	5521526.78	0.10	0	D	100	30.0	-33.5	0.0	-5.4	0.0	0.0	1.9
243	629027.47	5521526.78	0.10	0	D	125	32.2	-33.5	0.0	-5.0	0.0	0.0	3.6
243	629027.47	5521526.78	0.10	0	D	160	34.1	-33.5	0.0	-4.1	0.0	0.0	4.8
243	629027.47	5521526.78	0.10	0	D	200	35.6	-33.5	0.0	-2.5	0.0	0.0	4.6
243	629027.47	5521526.78	0.10	0	D	250	36.8	-33.5	0.0	2.7	0.0	0.0	0.6
243	629027.47	5521526.78	0.10	0	D	315	37.9	-33.5	0.0	6.7	0.0	0.0	-2.3
243	629027.47	5521526.78	0.10	0	D	400	38.7	-33.5	0.0	11.1	0.0	0.0	-5.9
243	629027.47	5521526.78	0.10	0	D	500	39.3	-33.5	0.0	13.6	0.0	0.0	-7.8
243	629027.47	5521526.78	0.10	0	D	630	38.7	-33.5	0.0	14.2	0.0	0.0	-9.0
243	629027.47	5521526.78	0.10	0	D	800	40.0	-33.5	0.0	16.4	0.0	0.0	-9.9
243	629027.47	5521526.78	0.10	0	D	1000	40.2	-33.5	0.0	24.1	0.0	0.0	-17.4
243	629027.47	5521526.78	0.10	0	D	1600	39.5	-33.5	0.0	23.1	0.0	0.0	-17.1
243	629027.47	5521526.78	0.10	0	D	2500	39.7	-33.5	0.0	24.9	0.0	0.0	-18.7
248	629023.78	5521513.71	0.10	0	D	50	19.6	-28.7	0.0	-6.0	0.0	0.0	-3.1
248	629023.78	5521513.71	0.10	0	D	63	23.9	-28.7	0.0	-5.8	0.0	0.0	1.0
248	629023.78	5521513.71	0.10	0	D	80	27.4	-28.7	0.0	-5.6	0.0	0.0	4.3
248	629023.78	5521513.71	0.10	0	D	100	30.0	-28.7	0.0	-5.4	0.0	0.0	6.7
248	629023.78	5521513.71	0.10	0	D	125	32.2	-28.7	0.0	-5.0	0.0	0.0	8.4
248	629023.78	5521513.71	0.10	0	D	160	34.1	-28.7	0.0	-4.1	0.0	0.0	9.5
248	629023.78	5521513.71	0.10	0	D	200	35.6	-28.7	0.0	-2.5	0.0	0.0	9.4
248	629023.78	5521513.71	0.10	0	D	250	36.8	-28.7	0.0	2.7	0.0	0.0	5.4
248	629023.78	5521513.71	0.10	0	D	315	37.9	-28.7	0.0	6.8	0.0	0.0	2.4
248	629023.78	5521513.71	0.10	0	D	400	38.7	-28.7	0.0	11.5	0.0	0.0	-1.5
248	629023.78	5521513.71	0.10	0	D	500	39.3	-28.7	0.0	14.4	0.0	0.0	-3.8
248	629023.78	5521513.71	0.10	0	D	630	38.7	-28.7	0.0	15.0	0.0	0.0	-4.9
248	629023.78	5521513.71	0.10	0	D	800	40.0	-28.7	0.0	16.8	0.0	0.0	-5.5
248	629023.78	5521513.71	0.10	0	D	1000	40.2	-28.7	0.0	23.5	0.0	0.0	-12.0
248	629023.78	5521513.71	0.10	0	D	1250	39.9	-28.7	0.0	29.8	0.0	0.0	-18.7
248	629023.78	5521513.71	0.10	0	D	1600	39.5	-28.7	0.0	22.6	0.0	0.0	-11.8
248	629023.78	5521513.71	0.10	0	D	2000	40.0	-28.7	0.0	30.0	0.0	0.0	-18.7
248	629023.78	5521513.71	0.10	0	D	2500	39.7	-28.7	0.0	25.5	0.0	0.0	-14.5
258	629059.89	5521641.59	1.52	0	D	50	17.3	-26.4	0.0	5.0	0.0	0.0	-14.2
258	629059.89	5521641.59	1.52	0	D	63	21.8	-26.4	0.0	5.3	0.0	0.0	-10.0

Road, TNM, Name: "Onsite Truck Route", ID: "TRK_Rt"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
258	629059.89	5521641.59	1.52	0	D	80	25.3	-26.4	0.0	5.5	0.0	0.0	-6.7
258	629059.89	5521641.59	1.52	0	D	100	28.0	-26.4	0.0	5.8	0.0	0.0	-4.2
258	629059.89	5521641.59	1.52	0	D	125	30.5	-26.4	0.0	6.3	0.0	0.0	-2.2
258	629059.89	5521641.59	1.52	0	D	160	32.9	-26.4	0.0	7.3	0.0	0.0	-0.9
258	629059.89	5521641.59	1.52	0	D	200	34.9	-26.4	0.0	9.4	0.0	0.0	-0.9
258	629059.89	5521641.59	1.52	0	D	250	37.2	-26.4	0.0	29.5	0.0	0.0	-18.7
258	629059.89	5521641.59	1.52	0	D	315	39.3	-26.4	0.0	32.3	0.0	0.0	-19.5
258	629059.89	5521641.59	1.52	0	D	400	41.1	-26.4	0.0	23.8	0.0	0.0	-9.2
258	629059.89	5521641.59	1.52	0	D	500	43.1	-26.4	0.0	21.1	0.0	0.0	-4.5
258	629059.89	5521641.59	1.52	0	D	630	44.7	-26.4	0.0	20.4	0.0	0.0	-2.1
258	629059.89	5521641.59	1.52	0	D	800	38.6	-26.4	0.0	22.7	0.0	0.0	-10.6
258	629059.89	5521641.59	1.52	0	D	1250	34.9	-26.4	0.0	26.2	0.0	0.0	-17.8
262	629048.14	5521599.97	1.52	0	D	50	17.3	-20.9	0.0	-6.0	0.0	0.0	2.4
262	629048.14	5521599.97	1.52	0	D	63	21.8	-20.9	0.0	-5.7	0.0	0.0	6.7
262	629048.14	5521599.97	1.52	0	D	80	25.3	-20.9	0.0	-5.6	0.0	0.0	10.0
262	629048.14	5521599.97	1.52	0	D	100	28.0	-20.9	0.0	-5.3	0.0	0.0	12.5
262	629048.14	5521599.97	1.52	0	D	125	30.5	-20.9	0.0	-4.8	0.0	0.0	14.4
262	629048.14	5521599.97	1.52	0	D	160	32.9	-20.9	0.0	-3.8	0.0	0.0	15.8
262	629048.14	5521599.97	1.52	0	D	200	34.9	-20.9	0.0	-1.8	0.0	0.0	15.9
262	629048.14	5521599.97	1.52	0	D	250	37.2	-20.9	0.0	9.5	0.0	0.0	6.8
262	629048.14	5521599.97	1.52	0	D	315	39.3	-20.9	0.0	20.5	0.0	0.0	-2.1
262	629048.14	5521599.97	1.52	0	D	400	41.1	-20.9	0.0	15.1	0.0	0.0	5.1
262	629048.14	5521599.97	1.52	0	D	500	43.1	-20.9	0.0	9.1	0.0	0.0	13.1
262	629048.14	5521599.97	1.52	0	D	630	44.7	-20.9	0.0	7.0	0.0	0.0	16.9
262	629048.14	5521599.97	1.52	0	D	800	38.6	-20.9	0.0	10.6	0.0	0.0	7.1
262	629048.14	5521599.97	1.52	0	D	1000	38.8	-20.9	0.0	26.9	0.0	0.0	-9.0
262	629048.14	5521599.97	1.52	0	D	1250	34.9	-20.9	0.0	17.6	0.0	0.0	-3.6
262	629048.14	5521599.97	1.52	0	D	1600	36.0	-20.9	0.0	22.7	0.0	0.0	-7.5
262	629048.14	5521599.97	1.52	0	D	2000	34.4	-20.9	0.0	22.2	0.0	0.0	-8.6
270	629033.40	5521547.77	1.52	0	D	50	17.3	-25.2	0.0	-6.0	0.0	0.0	-1.9
270	629033.40	5521547.77	1.52	0	D	63	21.8	-25.2	0.0	-5.7	0.0	0.0	2.3
270	629033.40	5521547.77	1.52	0	D	80	25.3	-25.2	0.0	-5.6	0.0	0.0	5.6
270	629033.40	5521547.77	1.52	0	D	100	28.0	-25.2	0.0	-5.3	0.0	0.0	8.1
270	629033.40	5521547.77	1.52	0	D	125	30.5	-25.2	0.0	-4.8	0.0	0.0	10.1
270	629033.40	5521547.77	1.52	0	D	160	32.9	-25.2	0.0	-3.8	0.0	0.0	11.5
270	629033.40	5521547.77	1.52	0	D	200	34.9	-25.2	0.0	-1.8	0.0	0.0	11.5
270	629033.40	5521547.77	1.52	0	D	250	37.2	-25.2	0.0	9.0	0.0	0.0	3.0
270	629033.40	5521547.77	1.52	0	D	315	39.3	-25.2	0.0	19.3	0.0	0.0	-5.2
270	629033.40	5521547.77	1.52	0	D	400	41.1	-25.2	0.0	22.0	0.0	0.0	-6.1
270	629033.40	5521547.77	1.52	0	D	500	43.1	-25.2	0.0	14.1	0.0	0.0	3.8
270	629033.40	5521547.77	1.52	0	D	630	44.7	-25.2	0.0	10.8	0.0	0.0	8.7
270	629033.40	5521547.77	1.52	0	D	800	38.6	-25.2	0.0	12.4	0.0	0.0	0.9
270	629033.40	5521547.77	1.52	0	D	1000	38.8	-25.2	0.0	26.7	0.0	0.0	-13.2
270	629033.40	5521547.77	1.52	0	D	1250	34.9	-25.2	0.0	22.4	0.0	0.0	-12.7
270	629033.40	5521547.77	1.52	0	D	1600	36.0	-25.2	0.0	17.5	0.0	0.0	-6.6
270	629033.40	5521547.77	1.52	0	D	2000	34.4	-25.2	0.0	26.4	0.0	0.0	-17.2
270	629033.40	5521547.77	1.52	0	D	2500	33.6	-25.2	0.0	19.3	0.0	0.0	-10.9
270	629033.40	5521547.77	1.52	0	D	3150	32.8	-25.2	0.0	22.1	0.0	0.0	-14.6
276	629027.47	5521526.78	1.52	0	D	50	17.3	-33.5	0.0	-6.0	0.0	0.0	-10.2
276	629027.47	5521526.78	1.52	0	D	63	21.8	-33.5	0.0	-5.7	0.0	0.0	-6.0
276	629027.47	5521526.78	1.52	0	D	80	25.3	-33.5	0.0	-5.6	0.0	0.0	-2.6
276	629027.47	5521526.78	1.52	0	D	100	28.0	-33.5	0.0	-5.3	0.0	0.0	-0.1
276	629027.47	5521526.78	1.52	0	D	125	30.5	-33.5	0.0	-4.8	0.0	0.0	1.8
276	629027.47	5521526.78	1.52	0	D	160	32.9	-33.5	0.0	-3.8	0.0	0.0	3.2
276	629027.47	5521526.78	1.52	0	D	200	34.9	-33.5	0.0	-1.8	0.0	0.0	3.3
276	629027.47	5521526.78	1.52	0	D	250	37.2	-33.5	0.0	8.7	0.0	0.0	-5.0
276	629027.47	5521526.78	1.52	0	D	315	39.3	-33.5	0.0	18.8	0.0	0.0	-13.0
276	629027.47	5521526.78	1.52	0	D	400	41.1	-33.5	0.0	23.9	0.0	0.0	-16.2
276	629027.47	5521526.78	1.52	0	D	500	43.1	-33.5	0.0	15.8	0.0	0.0	-6.2
276	629027.47	5521526.78	1.52	0	D	630	44.7	-33.5	0.0	12.2	0.0	0.0	-1.0
276	629027.47	5521526.78	1.52	0	D	800	38.6	-33.5	0.0	12.9	0.0	0.0	-7.8
276	629027.47	5521526.78	1.52	0	D	1000	38.8	-33.5	0.0	23.9	0.0	0.0	-18.6
276	629027.47	5521526.78	1.52	0	D	1600	36.0	-33.5	0.0	16.2	0.0	0.0	-13.7

Road, TNM, Name: "Onsite Truck Route", ID: "TRK_Rt"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
276	629027.47	5521526.78	1.52	0	D	2500	33.6	-33.5	0.0	17.9	0.0	0.0	-17.8
280	629023.78	5521513.71	1.52	0	D	50	17.3	-28.7	0.0	-6.0	0.0	0.0	-5.4
280	629023.78	5521513.71	1.52	0	D	63	21.8	-28.7	0.0	-5.7	0.0	0.0	-1.2
280	629023.78	5521513.71	1.52	0	D	80	25.3	-28.7	0.0	-5.6	0.0	0.0	2.1
280	629023.78	5521513.71	1.52	0	D	100	28.0	-28.7	0.0	-5.3	0.0	0.0	4.6
280	629023.78	5521513.71	1.52	0	D	125	30.5	-28.7	0.0	-4.8	0.0	0.0	6.6
280	629023.78	5521513.71	1.52	0	D	160	32.9	-28.7	0.0	-3.8	0.0	0.0	8.0
280	629023.78	5521513.71	1.52	0	D	200	34.9	-28.7	0.0	-1.8	0.0	0.0	8.1
280	629023.78	5521513.71	1.52	0	D	250	37.2	-28.7	0.0	8.6	0.0	0.0	-0.1
280	629023.78	5521513.71	1.52	0	D	315	39.3	-28.7	0.0	18.6	0.0	0.0	-8.0
280	629023.78	5521513.71	1.52	0	D	400	41.1	-28.7	0.0	25.2	0.0	0.0	-12.8
280	629023.78	5521513.71	1.52	0	D	500	43.1	-28.7	0.0	16.7	0.0	0.0	-2.4
280	629023.78	5521513.71	1.52	0	D	630	44.7	-28.7	0.0	12.9	0.0	0.0	3.1
280	629023.78	5521513.71	1.52	0	D	800	38.6	-28.7	0.0	13.0	0.0	0.0	-3.1
280	629023.78	5521513.71	1.52	0	D	1000	38.8	-28.7	0.0	22.1	0.0	0.0	-12.0
280	629023.78	5521513.71	1.52	0	D	1250	34.9	-28.7	0.0	24.9	0.0	0.0	-18.7
280	629023.78	5521513.71	1.52	0	D	1600	36.0	-28.7	0.0	16.2	0.0	0.0	-8.8
280	629023.78	5521513.71	1.52	0	D	2000	34.4	-28.7	0.0	24.6	0.0	0.0	-19.0
280	629023.78	5521513.71	1.52	0	D	2500	33.6	-28.7	0.0	18.9	0.0	0.0	-14.0
283	629066.00	5521654.64	0.10	0	D	50	19.6	-26.4	0.0	5.1	0.0	0.0	-11.9
283	629066.00	5521654.64	0.10	0	D	63	23.9	-26.4	0.0	5.4	0.0	0.0	-7.8
283	629066.00	5521654.64	0.10	0	D	80	27.4	-26.4	0.0	5.5	0.0	0.0	-4.5
283	629066.00	5521654.64	0.10	0	D	100	30.0	-26.4	0.0	5.8	0.0	0.0	-2.2
283	629066.00	5521654.64	0.10	0	D	125	32.2	-26.4	0.0	6.3	0.0	0.0	-0.5
283	629066.00	5521654.64	0.10	0	D	160	34.1	-26.4	0.0	7.2	0.0	0.0	0.5
283	629066.00	5521654.64	0.10	0	D	200	35.6	-26.4	0.0	9.2	0.0	0.0	0.1
283	629066.00	5521654.64	0.10	0	D	250	36.8	-26.4	0.0	18.2	0.0	0.0	-7.7
283	629066.00	5521654.64	0.10	0	D	315	37.9	-26.4	0.0	20.9	0.0	0.0	-9.4
283	629066.00	5521654.64	0.10	0	D	400	38.7	-26.4	0.0	22.1	0.0	0.0	-9.8
283	629066.00	5521654.64	0.10	0	D	500	39.3	-26.4	0.0	21.9	0.0	0.0	-9.0
283	629066.00	5521654.64	0.10	0	D	630	38.7	-26.4	0.0	21.9	0.0	0.0	-9.5
283	629066.00	5521654.64	0.10	0	D	800	40.0	-26.4	0.0	23.3	0.0	0.0	-9.7
283	629066.00	5521654.64	0.10	0	D	1000	40.2	-26.4	0.0	26.8	0.0	0.0	-13.0
283	629066.00	5521654.64	0.10	0	D	1250	39.9	-26.4	0.0	31.7	0.0	0.0	-18.2
283	629066.00	5521654.64	0.10	0	D	1600	39.5	-26.4	0.0	32.7	0.0	0.0	-19.6
285	629066.00	5521654.64	1.52	0	D	50	17.3	-26.4	0.0	5.3	0.0	0.0	-14.4
285	629066.00	5521654.64	1.52	0	D	63	21.8	-26.4	0.0	5.6	0.0	0.0	-10.2
285	629066.00	5521654.64	1.52	0	D	80	25.3	-26.4	0.0	5.8	0.0	0.0	-6.9
285	629066.00	5521654.64	1.52	0	D	100	28.0	-26.4	0.0	6.1	0.0	0.0	-4.4
285	629066.00	5521654.64	1.52	0	D	125	30.5	-26.4	0.0	6.6	0.0	0.0	-2.4
285	629066.00	5521654.64	1.52	0	D	160	32.9	-26.4	0.0	7.6	0.0	0.0	-1.1
285	629066.00	5521654.64	1.52	0	D	200	34.9	-26.4	0.0	9.7	0.0	0.0	-1.2
285	629066.00	5521654.64	1.52	0	D	315	39.3	-26.4	0.0	29.6	0.0	0.0	-16.7
285	629066.00	5521654.64	1.52	0	D	400	41.1	-26.4	0.0	22.9	0.0	0.0	-8.2
285	629066.00	5521654.64	1.52	0	D	500	43.1	-26.4	0.0	20.7	0.0	0.0	-4.0
285	629066.00	5521654.64	1.52	0	D	630	44.7	-26.4	0.0	20.4	0.0	0.0	-2.1
285	629066.00	5521654.64	1.52	0	D	800	38.6	-26.4	0.0	24.2	0.0	0.0	-12.0
285	629066.00	5521654.64	1.52	0	D	1250	34.9	-26.4	0.0	25.5	0.0	0.0	-17.0

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