REPORT

WALKER AGGREGATES INC.

NIAGARA FALLS, ONTARIO

UPPER'S QUARRY: ACOUSTIC ASSESSMENT REPORT

RWDI #1603157

January 11, 2024

SUBMITTED TO

Kevin Kehl
Environmental Lead | Specialist
kkehl@walkerind.com

Walker Aggregates Inc.
P.O. Box 100
Thorold, Ontario L2V 3Y8

T: 905.227.4142
F: 905.227.1034

SUBMITTED BY

Brad Bergeron, A.Sc.T., d.E.T.
Senior Project Manager | Principal
Brad.Bergeron@rwdi.com | ext. 2428

Slavi Grozev, P.Eng.
Senior Noise Engineer
Slavi.Grozev@rwdi.com | ext. 2609

RWDI AIR Inc.
Consulting Engineers & Scientists
600 Southgate Drive
Guelph, Ontario N1G 4P6

T: 519.823.1311
F: 519.823.1316

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VERSION HISTORY

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1	September 4, 2020	Acoustic Assessment Report	Ray Li	Khalid Hussein
2	October 28, 2021	Additional Modelling	Ray Li	Slavi Grozev
3	August 2, 2023	Response to Peer Review Comments	Slavi Grozev	Slavi Grozev
4	January 11, 2024	Response to Peer Review Comments	Caelan Weber-Martin	Slavi Grozev

Slavi Grozev, P.Eng.

1 INTRODUCTION

Walker Aggregates Inc. (WAI) has retained RWDI AIR Inc. (RWDI) to complete an Acoustic Assessment Report (AAR) for the Upper's Quarry (the Quarry) in Niagara Falls, Ontario.

This assessment is completed in respect of an application under the Aggregate Resources Act. Based on the Ministry of Natural Resources Policy #A.R. 2.01.09 (MNR, 2006), a detailed noise assessment is required since there are noise-sensitive lands within 150 m of the Quarry. The Aggregate Resources Act recommends referencing the Ontario Ministry of the Environment and Climate Change (MOECC) guidelines for stationary sources of sound. This AAR is completed using the applicable Ontario Ministry of the Environment, Conservation and Parks (MECP), previously known as the Ministry of the Environment and Climate Change (MOECC), guidance documents (MOECC, 2012 and 1995). Documents in this report still reference the MOECC.

Quarry operations will not include large sources of vibration. Therefore, an assessment of vibration impact is not required. Blasting is outside of the scope of this assessment and is addressed separately in the blast impact analysis by Explotech. The results of the acoustic assessment indicate that sound levels produced at the proposed quarry will comply with the applicable guidelines with the implementation of noise control recommendations summarized in **Section 6**.

2 FACILITY DESCRIPTION

The proposed Upper's Quarry is located on Part of Lots 119, 120, 136 and 137, and Part of the Road Allowance between Lots 120 and 136 (geographic township of Stamford) in the City of Niagara Falls, Regional Municipality of Niagara. Sensitive land uses adjacent to Upper's is shown on zoning maps in **Appendix A**.

2.1 Proposed Extraction Scenario

The layout of the site and phases for the Proposed Extraction Scenario can be found in **Figure 1**. Two municipal road allowances separate the proposed quarry site into three extraction areas:

i. North Extraction Area: extraction area north of Upper's Lane;
ii. Mid Extraction Area: extraction area south of Upper's Lane and north of the unopened road allowance between Township Lots 120 & 136 in the former Township of Stamford, now in the City of Niagara Falls ("unopened road allowance"); and
iii. South Extraction Area: extraction area south of the unopened road allowance.

The proposed extraction scenario avoids extraction within the road allowances. Operations at the proposed quarry will consist of overburden stripping; berm construction; drilling, blasting, extraction, transportation, processing, washing, stockpiling, and shipping of aggregate; and rehabilitation. The annual production limit will be 1,800,000 tonnes of aggregate per year, however during several phases of operation, the maximum annual tonnage will be lower due to operational constraints.

Clearing of overburden and berm construction will take place prior to drilling and blasting in each phase. At the start of extraction operations, four sinking cuts will be required to allow extraction to begin. Two sinking cuts are required in Phase 1A (one in the Mid Extraction Area, one in the South Extraction Area), one sinking cut is required in 2A.

During the sinking cuts and early phases of operation, the primary crusher is integrated into a single processing plant located near the working face. In later phases, the primary crusher will split from the single integrated plant and start to follow the working face. The processing plant, which contains the secondary and tertiary crushers, will remain close to the quarry entrance. The processing plant will be located at varying elevations, beginning at the top of rock during the sinking cut portion of operations, and moving to the first bench and then the final quarry floor as space becomes available.

Shot rock will be loaded by front-end loaders into the primary crusher adjacent of the working face. Conveyors will then transport the products from the primary crusher to the processing plant, where it will be further processed, washed and stockpiled, prior to loading into highway shipping trucks by front-end loaders.

Phases 1A, 2A, and 3 will be extracted in two benches down to the Quarry floor, which is at elevations of 141 to 149 metres above sea level (masl). The quarry floor has a gradual downward slope from the northeast corner (149 masl) to the southwest corner (141 masl). The first bench is between 175 to 178 masl and the second bench is between 160 to 162 masl. Phases 1B and 2B will be extracted to an elevation of 155 masl. They will then be backfilled with clay material up to approximately 176 to 177 masl for the watercourse realignment.

In addition to aggregate extraction and processing, the site will also include an asphalt plant (AP), to be located in mid-extraction area Phase 1A, capable of producing 4,900 tonnes per day of hot-mix asphalt (HMA). Operations include the receipt and drying of washed aggregate, receipt and storage of asphalt cement, mixing and storage of HMA, and loading highway trucks for shipment to the job site. The asphalt plant will become operational once Phases 1A and 1B have been fully extracted. This will allow room for the asphalt plant to be put in place.

The hours of operation at the Quarry for the Proposed Extraction Scenario are:

- Drilling and extraction at the working face: Monday to Saturday 0700 – 1900h;
- Aggregate processing at the primary crusher: Monday to Saturday 0700 – 1900h;
- Conveyor to the mobile crusher plants: Monday to Saturday 0700 – 1900h;
- Aggregate processing at the processing plant: Monday to Saturday 0700 – 1900h;
- Aggregate shipping from processing plant stockpile: 24 hours per day, 7 days a week;
- Hauling aggregates from processing plant stockpiles to the asphalt plant: 24 hours per day, 7 days a week;
- Asphalt plant: 24 hours per day, 7 days a week;
- HMA shipping from asphalt plant: 24 hours per day, 7 days a week; and
- Asphalt cement (AC) and reclaimed asphalt pavement (RAP) receiving at the asphalt plant: 24 hours per day, 7 days a week.

2.2 Modelled Phases

The receptors surrounding the Quarry will experience the most impact from the Quarry during different phases. Therefore, the modelled scenarios are selected based on the worst-case extraction location for the different receptors.

The modelled phases for the Proposed Extraction Scenario are:

- **Phase 1A Sinking Cut** (P1A_Sinkcut*):
  - Sinking cut in Mid Extraction Area
- **Phase 1A South Sinking Cut** (P1AS_Sinkcut*):
  - Sinking cut in South Extraction Area
- **Phase 2A Sinking Cut** (P2A_Sinkcut*):
  - Sinking cut in North Extraction Area
- **Phase 3A** (P3A*):
  - Extraction in northern portion of Phase 3A, with AP operational
- **Phase 3B Northeast** (P3B_NE*):
  - Extraction in the northeastern corner of North Extraction Area, with AP operational
- **Phase 4 Southeast** (P4_SE*):
  - Extraction in southeastern corner of Mid Extraction Area, with AP operational
- **Phase 5 East** (P5_E*):
  - Extraction in eastern corner of South Extraction Area, with AP operational

Sinking cut in Phase 3A was also assessed but was deemed to be less impactful than Phase 2A sinking cut. Phase 3B sinking cut is expected to have similar impacts. Therefore sinking cuts in Phases 3A/3B were not evaluated further. The operation overviews of the modelled scenarios are shown in **Figures 2a** through **2g**.

3 NOISE SOURCE SUMMARY

A summary of significant sound sources is provided in **Table 1**, including sound power levels, location, sound characteristics, operating duration, and vehicle route assumptions. Sound power levels for the proposed sources are based on historical measurement data on file at RWDI. The overview of the locations of the modelled sources are shown in **Figures 2a** through **2g**. Detailed examples of the significant source locations are shown in **Figures 2h** and **2i**.

3.1 Continuous Sources

The continuous sources modelled are:

- Working Face (WF) and Primary Crusher (PC) sources (daytime only, 0700 to 1900h):
  - One (1) silenced drill working on the 1st bench;
  - One (1) loader working on the 2nd bench;
  - Dumping of rocks into primary crusher;
  - One (1) primary crusher; and
  - One (1) primary screen.
- Conveyor from Working Face Primary Crusher to Processing Plant (daytime only, 0700 to 1900h).
- Processing Plant (PP) sources:
  - Two (2) secondary crushers (daytime only, 0700 to 1900h);
  - Two (2) secondary & tertiary screens (daytime only, 0700 to 1900h);
  - Two (2) tertiary crushers (daytime only, 0700 to 1900h);
  - One (1) loader working at piles (24h/day); and
  - Two (2) idling shipping trucks (24h/day).
- Asphalt Plant (AP) sources (operating continuously, 24 hours per day):
  - Two (2) loaders working;
  - Two (2) idling trucks;
  - One (1) compressor vent;
  - One (1) dust collector blower motor;
  - One (1) dust collector blower stack;
  - One (1) elevator motor;
  - One (1) conveyor motor;
  - One (1) oven motor;
  - One (1) pug mill door (pressure relief noise through the door); and
  - One (1) pug mill motor.
- Internal Haul Truck Routes:
  - Haul roads between PP and AP for aggregates (24h/day).
- Shipping Truck Routes (24h/day):
  - Shipping of aggregate from PP stockpiles to offsite;
  - Shipping of HMA from AP to offsite; and
  - Receiving of AC and RAP at AP.

Trucks with water spray system have an insignificant acoustical effect when compared to all other sources on site and thus were not included in the final list of notable sources of noise.

All continuous sources are assumed to be operating constantly in their respective operating periods. During the sinking cut, only one (1) secondary and one (1) tertiary crusher will be deployed. As the Quarry progresses to later phases, two (2) sets of secondary and tertiary crushers will be deployed at the processing plant. Asphalt plant noise sources were based on the existing asphalt plant at Walker Brothers Quarry and Asphalt Plant in Niagara Falls.

Shipping truck traffic modelled using moving point source calculation method. Shipping trucks on site are expected to travel at a mean speed of approximately 20 km/h. The number of vehicle trips per hour are calculated based on peak daily production rate and typical vehicle payload and are shown in **Table 1**.

3.2 Impulsive Sources

The only impulsive source considered in this study is the impulses associated with the asphalt plant silos (ASPH_imp_silo), which could operate up to 24 hours a day. As per NPC-300, the sound limits are based on the number of impulses per hour. Nine (9) or more impulses are anticipated to occur at a worst-case hour during daytime, evening, and nighttime.

3.3 Construction Sources

Temporary construction noise from the Quarry is anticipated for short periods throughout its lifespan. Activities considered to be construction noise include overburden removal and berm creation. Details on construction noise assessment are provided in **Section 5**.

3.4 Identifiable Source Characteristics

Continuous sources that warrant adjustment due to tonal, cyclically varying, quasi-steady impulsive or beating sound characteristics receive additional consideration in accordance with MOECC NPC-104 guidelines (MOECC, 1978). These guidelines specify that a penalty is applicable for tonal, cyclically varying, or quasi-steady impulsive sound characteristics. No sources were identified to exhibit tonal, cyclically varying, quasi-steady impulsive or beating sound characteristics per NPC-103.

4 POINTS OF RECEPTION

Sound levels from sources at the Quarry were determined at points of reception (PORs) located on noise sensitive land uses. Noise sensitive land uses are defined in the MOECC's environmental guideline, Publication NPC-300 (MOECC, 2013), as the property of a person that accommodates a dwelling, a noise sensitive commercial building or a noise sensitive institutional building. In some cases, a vacant lot may be considered noise sensitive provided it is zoned to allow a sensitive use.

A noise sensitive land use may have one or more POR. PORs for an acoustic assessment are those locations where sound from the facility is received and assessed against the applicable limits. Sound levels may be assessed at the façade of the building and/or outdoor areas, depending on the type of sensitive land use assessed. Outdoor PORs are only assessed for dwellings and are not assessed for commercial and institutional noise sensitive land uses.

4.1 Surrounding Noise Sensitive Land Uses

Representative receptors with noise-sensitive land uses were identified from zoning maps and aerial photography of the area surrounding the facility. Zoning information for the area surrounding the Quarry is provided in **Appendix A**. These receptors are:

- **R1**, Residence at 10148 Beaverdams Rd;
- **R2,** Residence at 9722 Beaverdams Rd;
- **R3,** Residence at 9602 Beaverdams Rd;
- **R4,** Residence at 5584 Beechwood Rd;
- **R5,** Residence at 5769 Beechwood Rd; and
- **R6,** Residence at 9944 Lundy's Ln.

Receptors R1 and R4 are owned by WAI. As a conservative measure, these receptors have been included in the assessment. There is a neighboring church on the southwest corner of the intersection of Upper's Lane and Beechwood Rd, approximately 60 m from the Quarry boundary. WAI has a special agreement in place with the Church to avoid noise disturbance. Therefore, the Church was not assessed as a noise sensitive receptor.

Zoning maps are included in **Appendix B**. Lands surrounding the subject lands and west of Thorold Townline Road are within the City of Thorold and are subject to Zoning By-law 60-2019. Lands surrounding the subject lands and east of Thorold Townline Road are within the City of Niagara Falls and are subject to Zoning By-law 79-200.

It is noted that the lands west of Thorold Townline Road and 500 m of the bedrock resource area (including the subject lands) are identified as "Aggregate Resource Buffer Lands" by the City of Thorold's Rolling Meadows Secondary Plan and any future development of those lands are subject to policy B.8.12.3 of the Rolling Meadows Secondary Plan. The policy is included in **Appendix B**. Furthermore, these lands are currently vacant of any sensitive land use and are currently zoned:

- Future Development (FD); or
- Environmental Protection Two (EP2).

A noise sensitive land use is not permitted to be developed as-of-right in these zones and any development of sensitive land uses within these zones would need to be rezoned to a Residential zone (or similar) to permit the development of a sensitive land use and subject to policy B.8.12.2 of the Secondary Plan. Given this, the vacant properties west of Thorold Townline Road would not be considered a noise sensitive zoned lot according to NPC-300.

4.2 Modelled Points of Reception

Two PORs were used to assess the sound level at residential receptors (**R1** through **R6**): the façade POR and the outdoor POR. The façade PORs are placed at the closest window facing the Quarry. For two-storey residences, the façade POR is modelled 4.5 m above ground. For one-storey residence, the POR is modelled 1.5 m above ground. All outdoor PORs are modelled at a height of 1.5 m.

The locations of the modelled PORs are shown in **Figure 1**. The location of the PORs are also shown on the zoning map **Figure A.1** in **Appendix A**.

5 ASSESSMENT CRITERIA

The assessment criteria for sound levels at the receptors is the higher of either the exclusion limit per NPC-300 or the minimum background sound level that occurs or is likely to occur. The exclusion limit is the highest sound level limit that may be used for a receptor when the background sound level is lower than the exclusion limit.

The sound from the facility was assessed during a given worst-case hour occurring in three time periods in NPC 300:

- **Daytime**, 0700 – 1900h;
- **Evening**, 1900 – 2300h; and
- **Nighttime**, 2300 – 0700h.

The outdoor location is only assessed during daytime and evening periods and may have a different evening sound level limit than the corresponding façade depending on the Class. The type of acoustic environment, or "Class", defines the set of sound level limits based on the level of urbanization.

- **Class 1**, an acoustical environment which is typical of a major population centre that is dominated by sounds of human activity and traffic.
- **Class 2**, an acoustical environment which is dominated by sounds of human activity and traffic during the daytime (07:00 - 19:00) and defined by the environmental and infrequent human activity at night (19:00 - 07:00).
- **Class 3**, an acoustical environment defined by the environmental and infrequent human activity.

Different types of sources are also assessed separately. There are separate assessment criteria for continuous sources vs. impulsive sources.

5.1 Exclusion Limits for Continuous Sources

The exclusion limits are determined from the level of urbanization, or 'Class', at the noise-sensitive land use. The acoustic environment surround the Quarry is characterized primarily by CN rail to the south and road traffic surrounding the site. Noise sensitive land uses for the receptors are therefore in a Class 2 acoustical environment, which is typical of a suburban area that is dominated by sounds of human activity and road traffic. As such, the MOECC Publication NPC-300 Class 2 exclusion limits apply to PORs in this study. The exclusion limits for each POR are shown in **Tables 3a** through **3g**.

5.2 Exclusion Limits for Impulsive Sources

The effect of impulsive sources of sound is evaluated separately from that of continuous sources. The sound level limits for impulsive sources are determined by the number of impulses expected to occur during a worst-case hour.

Since there is only one impulsive source on site (ASPH_imp_silo), it is evaluated against the limit associated with the number of impulses per hour for this individual source. There is expected to be nine or more impulses per hour. Therefore, the strictest Class 2 impulsive limits apply. The worst-case impulsive sound level impacts and associated limits for each POR are summarized in **Tables 3h**.

5.3 Construction Limits

Overburden-clearing and berm construction are considered short-term construction activities and are not examined explicitly in this assessment. Construction activities are generally temporary in nature and is not part of the day-to-day operation of the site. The sound level due to temporary construction events are not generally assessed at the surrounding receptors.

The following best practice recommendations have been provided in order to minimize the potential for construction noise impacts:

- Construction should be limited to the time periods allowed by the locally applicable bylaws. If construction activities are required outside of these hours, WAI must seek permits / exemptions directly from the municipalities in advance.
- Ensure that all internal combustion engines are fitted with appropriate muffler systems.
- WAI operating procedures should contain a provision that any initial noise complaint will trigger verification that the general noise control measures agreed to are in effect.
- In the event of verified noise complaints, all construction equipment should be verified to comply with MOECC NPC-115 guidelines, as outlined below.
- In the event of verified noise complaints, alternative noise control measured may be required, where reasonably available. In selecting appropriate noise control and mitigation measures, consideration should be given to the technical, administrative, and economic feasibility of the various alternatives.

All construction equipment must meet the sound emission standards defined in MOECC publication NPC-115 (MOECC, 1977). The applicable guidelines for sound emissions from construction equipment are:

- For equipment manufactured after January 1, 1981:
  - 83 dBA at 15 m for equipment under 75 kW; and
  - 85 dBA at 15 m for equipment 75 kW or larger.
- For equipment manufactured January 1, 1979 to December 31, 1980:
  - 85 dBA at 15 m for equipment under 75 kW; and
  - 88 dBA at 15 m for equipment 75 kW or larger.

6 NOISE CONTROL RECOMMENDATIONS

The following recommendations are provided in order to meet the applicable compliance criteria:

1. Minimum 3 m tall perimeter berms shall be constructed around the Quarry as shown in **Figure 1.** The perimeter berms shall be constructed as soon as possible during site preparation prior to extraction to provide additional noise attenuation, particularly around the north and south perimeters of the site during work near R1 and R6, while also serving to provide for visual screening.
2. The primary crusher shall stay within 30 m of the working face to maximize shielding effect of the Quarry terrain.
3. Material extracted from the South Extraction Area shall be processed in the Mid Extraction Area.
4. While processing in Phase 4, the licensee shall maintain an 8 m tall barrier at a radius of 40 m to the southeast of the processing plant secondary crushers as shown in **Figures 2f** and **2g**. The barrier can be material stockpiles, noise walls, or a combination of both. The barrier shall extend long enough to shield R4 and R5 from the secondary crushers. If crushers need to be moved for operational reasons, the barrier must be extended to block the additional line-of-sight to both R4 and R5. The 40m radius from the barrier to the processing plant secondary crushers must also be maintained.

Although construction noise is not part of the assessment, RWDI recommends the following best practices to minimize potential for construction noise impacts and complaints:

5. All construction equipment shall meet the sound emission standards defined in MECP Publication NPC-115.
6. Construction will be limited to time periods allowed by the City's applicable by-laws. If construction activities are required outside of these hours, the licensee will seek permits / exemptions directly from the City in advance.
7. All internal combustion engines will be fitted with appropriate muffler systems.
8. The licensee's operating procedures will contain a provision that any initial complaint will trigger verification that the general noise control measures agreed to on this Plan are in effect.
9. In the presences of persistent noise complaints, all construction equipment will be verified to comply with MECP's NPC-115 guidelines.
10. In the presence of persistent noise complaints and subject to the results of a field investigation, alternative noise control measures may be required, where reasonably available. In selecting appropriate noise control and mitigation measures, consideration will be given to the technical, administrative, and economic feasibility of the various alternatives.

7 IMPACT ASSESSMENT

The Quarry sound emissions were modelled based on the operating scenarios as described in **Section 2**. The sound levels at surrounding PORs are calculated by modelling the sound propagation from the significant sources at the Quarry. The modelled sound levels at the PORs were assessed against the applicable limits.

Modelling of sound level propagation to the PORs was completed using Cadna/A, a commercially available implementation of the ISO 9613 (ISO, 1994b and ISO, 1996) algorithms. Cadna/A is produced by Datakustik GmbH. The modelling took into account the following factors:

- Source sound power level;
- Distance attenuation;
- Source-receptor geometry including heights, elevations, and topography;
- Barrier effects of terrains, berms, and surrounding buildings;
- Duration of events;
- Ground and air (atmospheric) attenuation; and
- Meteorological effects on sound propagation.

Sample calculations showing step-by-step calculation parameters is included in **Appendix C**. Key modelling parameters are also summarized in **Appendix C**.

Ground absorption surrounding the Quarry is modelled as 0.8, to account for the predominantly soft ground. Ground absorption within the Quarry boundary is modelled as 0.2 to account for the hard rock surfaces.

Existing terrain surrounding the quarry was extracted from the Southwestern Ontario Orthophotography Project (SWOOP) 2015 Digital Elevation Model (MNRF, 2015).

The individual contribution of each source at the modelled PORs are presented for Proposed Phase 1A Sinking Cut and Proposed Phase 4 Southeast in **Tables 2a** and **2b**, respectively, as representative sample results.

The predicted sound levels at PORs were assessed using applicable sound level limits, as shown in **Tables 3a** to **3g** for continuous sources, and **Table 3h** for impulsive source. The predicted sound levels at each POR complies with the applicable NPC-300 exclusion limits for all scenarios.

Predicted sound level contours (isopleths of equal sound level) for continuous sources were generated for the worst-case operating scenario for the modelled phases described in **Section 2**. The sound level contours are shown in **Figures 3a** through **3n**.

8 ALTERNATE EXTRACTION SCENARIO

In the event that Walker obtains permission from the City of Niagara Falls, extraction will include the two road allowances bisecting the proposed quarry site:

i. Upper's Lane, between the North Extraction Area and the Mid Extraction Area; and
ii. the unopened road allowance between Lots 120 and 136, between the Mid Extraction Area and the South Extraction Area.

The assessment results and recommendations for the alternate extraction scenario are included in **Appendix D**.

9 CONCLUSIONS

An assessment of the sound levels from the Upper's Quarry operation was completed by modelling the contribution of the significant sources at the representative receptors. The sound levels due the Quarry are predicted to comply with MOECC NPC-300 Class 2 exclusion limits at the representative receptors with the implementation of the mitigation measures described in **Section 6**.

10 STATEMENT OF LIMITATIONS

This report entitled Walker Aggregates Inc. – Upper's Quarry: Acoustic Assessment Report was prepared by RWDI AIR Inc. ("RWDI") for Walker Aggregates Inc. ("Client"). The findings and conclusions presented in this report have been prepared for the Client and are specific to the project described herein ("Project"). The conclusions and recommendations contained in this report are based on the information available to RWDI when this report was prepared. Because the contents of this report may not reflect the final design of the Project or subsequent changes made after the date of this report, RWDI recommends that it be retained by Client during the final stages of the project to verify that the results and recommendations provided in this report have been correctly interpreted in the final design of the Project.

The conclusions and recommendations contained in this report have also been made for the specific purpose(s) set out herein. Should the Client or any other third party utilize the report and/or implement the conclusions and recommendations contained therein for any other purpose or project without the involvement of RWDI, the Client or such third party assumes any and all risk of any and all consequences arising from such use and RWDI accepts no responsibility for any liability, loss, or damage of any kind suffered by Client or any other third party arising therefrom.

Finally, it is imperative that the Client and/or any party relying on the conclusions and recommendations in this report carefully review the stated assumptions contained herein and to understand the different factors which may impact the conclusions and recommendations provided.

11 REFERENCES

1. Aggregate Resources Act (ARA), 1996, Ontario Regulation 244/97, Bill 52, Aggregate and Petroleum Resources Statue Law Amendment Act.
2. International Organization for Standardization (ISO), 1994, International Standard ISO 9613-1:1994, Acoustics –Attenuation of Sound during propagation outdoors. Part 1: Calculation of the absorption of sound by the atmosphere.
3. International Organization for Standardization (ISO), 1996, International Standard ISO 9613-2:1996, Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation.
4. Ministry of Natural Resources (MNR), 2006, Policy #A.R. 2.01.09, Licence Applications: Noise Assessment and Blast Design Report Standards.
5. Ontario Ministry of Natural Resources and Forestry (MNRF), 2015, Southwestern Ontario Orthophotography (SWOOP) 2015 Digital Elevation Model
6. Ontario Ministry of the Environment and Climate Change (MOECC), 1977, Publication NPC-115, Construction Equipment, published under the Model Municipal Noise Control Bylaw
7. Ontario Ministry of the Environment and Climate Change (MOECC), 1978, Model Municipal Noise Control Bylaw, which includes Publication NPC-103 – Procedures, and Publication NPC-104 – Sound Level Adjustments.
8. Ontario Ministry of the Environment and Climate Change (MOECC), 1995, Publication NPC-233, Information to be Submitted for Approval of Stationary Sources of Sound.
9. Ontario Ministry of the Environment and Climate Change (MOECC), 2012, Guide to Applying for an Environmental Compliance Approval.
10. Ontario Ministry of the Environment and Climate Change (MOECC), August 2013, Publication NPC-300, Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning.
11. RWDI AIR Inc. (RWDI), 2020, Upper's Quarry: Air Quality Assessment

TABLES

Table 1: Noise Source Summary - Proposed Extraction Scenario

Upper's Quarry, 1603157

Notes to Table:

1. Wherever possible, the Source ID matches the identifiers used in the ESDM report.

2. Sound Power Level of Source, in dBA, not including sound characteristic adjustments per NPC-104.

3. Source Location: O = Outside of building, including the roof, I = Inside of building.

4. Sound Characteristic, per NPC-104:
   - S = Steady
   - I = Impulsive
   - T = Tonal
   - Q = Quasi-Steady Impulsive
   - B = Buzzing
   - C = Cyclic

5. Noise control measures currently in place or specified in construction drawings:
   - S = Silencer/Muffler
   - L = Lagging
   - O = Other
   - A = Acoustic lining, plenum
   - E = Acoustic enclosure
   - U = Uncontrolled
   - B = Barrier/Berm

   Where noise control measures are specified in construction drawings or were found on existing equipment, octave band sound power levels include the effects of the noise control measures. Noise control measures recommended in the mitigation section of this report are not included in this table.

Table 1: Additional Data

Upper's Quarry, 1603157

6. Source type indicates Cadna/A modelling methodology. For Point, Line, and Area sources, PWLs represent the overall level for the entire source. Where source type is Mobile Equipment, the source is modelled as a moving point source, and PWL is calculated from a single-vehicle passby.

7. Sound Power Level Data Source:
   - Man = Manufacturer's Data
   - EC = Engineering Calc based on specifications
   - Mea = Measured Directly
   - Same ### = same type as source no. ###
   - Hist = Historical Data on File at RWDI

8 For loader dumping into primary crusher, it is assumed each dump takes approximately 10s

Source ID [1]	Source Description	Sound Power Level [2]	Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	1/1 Octave Band Sound Power Level Data if available (dB)									Source Type [6]	PWL Data Source [7]	Height Above Roof	Local Roof Height Ab. Grade	Height Above Grade	Source Co-ordinates for point sources (m)			Operating Time during Worst-case hour for Point Sources, [8] OR Vehicle Passby per Hour & Speed for Line Sources		
		(dBA)	(I or O)	(S,Q,I,B,T,C)	(S,A,B,L,E,O,U)	31.5	63	125	250	500	1000	2000	4000	8000			(m)	(m)	(m)	X	Y	Z	Daytime	Evening	Nighttime
Point Sources																									
P1A_Sinkcut_PC_CrusherDump	P1A_Sinkcut, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	648673	4772848	180.0	30 dumps/hr	-	-
P1A_Sinkcut_PC_Ldr	P1A_Sinkcut, PC Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648672	4772850	179.5	60 min	-	-
P1A_Sinkcut_PC_PrimaryCrush	P1A_Sinkcut, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	648675	4772847	180.0	60 min	-	-
P1A_Sinkcut_PC_PrimaryScreen	P1A_Sinkcut, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648676	4772845	180.0	60 min	-	-
P1A_Sinkcut_PP_Ldr	P1A_Sinkcut, PP Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648802	4772799	179.5	60 min	60 min	60 min
P1A_Sinkcut_PP_SecondaryCrush	P1A_Sinkcut, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648791	4772793	180.0	60 min	-	-
P1A_Sinkcut_PP_SecondaryTertiaryScreen	P1A_Sinkcut, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648793	4772792	180.0	60 min	-	-
P1A_Sinkcut_PP_TertiaryCrush	P1A_Sinkcut, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648794	4772790	180.0	60 min	-	-
P1A_Sinkcut_PP_Trk1	P1A_Sinkcut, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648804	4772810	180.0	60 min	60 min	60 min
P1A_Sinkcut_PP_Trk2	P1A_Sinkcut, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648807	4772811	180.0	60 min	60 min	60 min
P1A_Sinkcut_WF_Drill	P1A_Sinkcut, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	648631	4772870	179.5	60 min	-	-
P1AS_Sinkcut_PC_CrusherDump	P1AS_Sinkcut, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	648618	4772517	180.0	30 dumps/hr	-	-
P1AS_Sinkcut_PC_Ldr	P1AS_Sinkcut, PC Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648618	4772516	179.5	60 min	-	-
P1AS_Sinkcut_PC_PrimaryCrush	P1AS_Sinkcut, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	648619	4772520	180.0	60 min	-	-
P1AS_Sinkcut_PC_PrimaryScreen	P1AS_Sinkcut, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648619	4772523	180.0	60 min	-	-
P1AS_Sinkcut_PP_Ldr	P1AS_Sinkcut, PP Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648705	4772726	179.5	60 min	60 min	60 min
P1AS_Sinkcut_PP_SecondaryCrush	P1AS_Sinkcut, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648705	4772706	180.0	60 min	-	-
P1AS_Sinkcut_PP_SecondaryTertiaryScreen	P1AS_Sinkcut, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648705	4772708	180.0	60 min	-	-
P1AS_Sinkcut_PP_TertiaryCrush	P1AS_Sinkcut, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648706	4772710	180.0	60 min	-	-
P1AS_Sinkcut_PP_Trk1	P1AS_Sinkcut, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648703	4772742	180.0	60 min	60 min	60 min
P1AS_Sinkcut_PP_Trk2	P1AS_Sinkcut, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648707	4772743	180.0	60 min	60 min	60 min
P1AS_Sinkcut_WF_Drill	P1AS_Sinkcut, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	648633	4772485	179.5	60 min	-	-
P2A_Sinkcut_PC_CrusherDump	P2A_Sinkcut, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	648657	4773006	180.0	30 dumps/hr	-	-
P2A_Sinkcut_PC_Ldr	P2A_Sinkcut, PC Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648657	4773005	179.5	60 min	-	-
P2A_Sinkcut_PC_PrimaryCrush	P2A_Sinkcut, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	648657	4773007	180.0	60 min	-	-
P2A_Sinkcut_PC_PrimaryScreen	P2A_Sinkcut, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648657	4773008	180.0	60 min	-	-
P2A_Sinkcut_PP_Ldr	P2A_Sinkcut, PP Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648692	4773095	179.5	60 min	60 min	60 min
P2A_Sinkcut_PP_SecondaryCrush	P2A_Sinkcut, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648685	4773094	180.0	60 min	-	-
P2A_Sinkcut_PP_SecondaryTertiaryScreen	P2A_Sinkcut, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648685	4773095	180.0	60 min	-	-
P2A_Sinkcut_PP_TertiaryCrush	P2A_Sinkcut, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648686	4773095	180.0	60 min	-	-
P2A_Sinkcut_PP_Trk1	P2A_Sinkcut, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648698	4773094	180.0	60 min	60 min	60 min
P2A_Sinkcut_PP_Trk2	P2A_Sinkcut, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648696	4773094	180.0	60 min	60 min	60 min
P2A_Sinkcut_WF_Drill	P2A_Sinkcut, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	648630	4773018	179.5	60 min	-	-
P3A_PC_CrusherDump	P3A, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	648874	4773392	164.0	60 dumps/hr	-	-
P3A_PC_Ldr	P3A, PC Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648872	4773395	163.5	60 min	-	-
P3A_PC_PrimaryCrush	P3A, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	648875	4773391	164.0	60 min	-	-
P3A_PC_PrimaryScreen	P3A, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648875	4773391	164.0	60 min	-	-
P3A_PP_Ldr	P3A, PP Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648708	4773140	147.5	60 min	60 min	60 min
P3A_PP_SecondaryCrush1	P3A, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648709	4773151	148.0	60 min	-	-
P3A_PP_SecondaryCrush2	P3A, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648710	4773151	148.0	60 min	-	-
P3A_PP_SecondaryTertiaryScreen1	P3A, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648710	4773149	148.0	60 min	-	-
P3A_PP_SecondaryTertiaryScreen2	P3A, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648710	4773149	148.0	60 min	-	-

Table 1: Noise Source Summary - Proposed Extraction Scenario

Upper's Quarry, 1603157

Notes to Table:

1. Wherever possible, the Source ID matches the identifiers used in the ESDM report.

2. Sound Power Level of Source, in dBA, not including sound characteristic adjustments per NPC-104.

3. Source Location: O = Outside of building, including the roof, I = Inside of building.

4. Sound Characteristic, per NPC-104:
   - S = Steady
   - I = Impulsive
   - T = Tonal
   - Q = Quasi-Steady Impulsive
   - B = Buzzing
   - C = Cyclic

5. Noise control measures currently in place or specified in construction drawings:
   - S = Silencer/Muffler
   - L = Lagging
   - O = Other
   - A = Acoustic lining, plenum
   - E = Acoustic enclosure
   - U = Uncontrolled
   - B = Barrier/Berm

   Where noise control measures are specified in construction drawings or were found on existing equipment, octave band sound power levels include the effects of the noise control measures. Noise control measures recommended in the mitigation section of this report are not included in this table.

Table 1: Additional Data

Upper's Quarry, 1603157

6. Source type indicates Cadna/A modelling methodology. For Point, Line, and Area sources, PWLs represent the overall level for the entire source. Where source type is Mobile Equipment, the source is modelled as a moving point source, and PWL is calculated from a single-vehicle passby.

7. Sound Power Level Data Source:
   - Man = Manufacturer's Data
   - EC = Engineering Calc based on specifications
   - Mea = Measured Directly
   - Same ### = same type as source no. ###
   - Hist = Historical Data on File at RWDI

8 For loader dumping into primary crusher, it is assumed each dump takes approximately 10s

Source ID [1]	Source Description	Sound Power Level [2]	Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	1/1 Octave Band Sound Power Level Data if available (dB)									Source Type [6]	PWL Data Source [7]	Height Above Roof	Local Roof Height Ab. Grade	Height Above Grade	Source Co-ordinates for point sources (m)			Operating Time during Worst-case hour for Point Sources, [8] OR Vehicle Passby per Hour & Speed for Line Sources		
		(dBA)	(I or O)	(S,Q,I,B,T,C)	(S,A,B,L,E,O,U)	31.5	63	125	250	500	1000	2000	4000	8000			(m)	(m)	(m)	X	Y	Z	Daytime	Evening	Nighttime
P3A_PP_TertiaryCrush1	P3A, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648709	4773148	148.0	60 min	-	-
P3A_PP_TertiaryCrush2	P3A, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648710	4773148	148.0	60 min	-	-
P3A_PP_Trk1	P3A, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648709	4773130	148.0	60 min	60 min	60 min
P3A_PP_Trk2	P3A, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648706	4773131	148.0	60 min	60 min	60 min
P3A_WF_Drill	P3A, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	648850	4773416	177.5	60 min	-	-
P3B_NE_PC_CrusherDump	P3B_NE, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	649442	4773420	164.5	60 dumps/hr	-	-
P3B_NE_PC_Ldr	P3B_NE, PC Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	649443	4773421	164.0	60 min	-	-
P3B_NE_PC_PrimaryCrush	P3B_NE, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	649441	4773419	164.5	60 min	-	-
P3B_NE_PC_PrimaryScreen	P3B_NE, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649440	4773419	164.5	60 min	-	-
P3B_NE_PP_Ldr	P3B_NE, PP Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648896	4773262	150.5	60 min	60 min	60 min
P3B_NE_PP_SecondaryCrush1	P3B_NE, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648908	4773261	151.0	60 min	-	-
P3B_NE_PP_SecondaryCrush2	P3B_NE, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648908	4773260	151.0	60 min	-	-
P3B_NE_PP_SecondaryTertiaryScreen1	P3B_NE, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648907	4773261	151.0	60 min	-	-
P3B_NE_PP_SecondaryTertiaryScreen2	P3B_NE, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648907	4773260	151.0	60 min	-	-
P3B_NE_PP_TertiaryCrush1	P3B_NE, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648906	4773261	151.0	60 min	-	-
P3B_NE_PP_TertiaryCrush2	P3B_NE, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648906	4773260	151.0	60 min	-	-
P3B_NE_PP_Trk1	P3B_NE, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648884	4773262	151.0	60 min	60 min	60 min
P3B_NE_PP_Trk2	P3B_NE, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648884	4773264	151.0	60 min	60 min	60 min
P3B_NE_WF_Drill	P3B_NE, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	649462	4773462	177.5	60 min	-	-
P4_SE_PC_CrusherDump	P4_SE, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	649481	4772802	164.5	60 dumps/hr	-	-
P4_SE_PC_Ldr	P4_SE, PC Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	649484	4772801	164.0	60 min	-	-
P4_SE_PC_PrimaryCrush	P4_SE, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	649480	4772803	164.5	60 min	-	-
P4_SE_PC_PrimaryScreen	P4_SE, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649479	4772804	164.5	60 min	-	-
P4_SE_PP_Ldr	P4_SE, PP Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	649152	4772897	148.5	60 min	60 min	60 min
P4_SE_PP_SecondaryCrush1	P4_SE, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	649166	4772899	149.0	60 min	-	-
P4_SE_PP_SecondaryCrush2	P4_SE, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	649166	4772898	149.0	60 min	-	-
P4_SE_PP_SecondaryTertiaryScreen1	P4_SE, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649165	4772899	149.0	60 min	-	-
P4_SE_PP_SecondaryTertiaryScreen2	P4_SE, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649165	4772898	149.0	60 min	-	-
P4_SE_PP_TertiaryCrush1	P4_SE, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	649163	4772898	149.0	60 min	-	-
P4_SE_PP_TertiaryCrush2	P4_SE, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	649164	4772897	149.0	60 min	-	-
P4_SE_PP_Trk1	P4_SE, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	649143	4772895	149.0	60 min	60 min	60 min
P4_SE_PP_Trk2	P4_SE, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	649142	4772897	149.0	60 min	60 min	60 min
P4_SE_WF_Drill	P4_SE, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	649523	4772782	180.5	60 min	-	-
P5_E_PC_CrusherDump	P5_E, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	649208	4772601	163.0	60 dumps/hr	-	-
P5_E_PC_Ldr	P5_E, PC Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	649211	4772602	162.5	60 min	-	-
P5_E_PC_PrimaryCrush	P5_E, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	649204	4772601	163.0	60 min	-	-
P5_E_PC_PrimaryScreen	P5_E, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649200	4772601	163.0	60 min	-	-
P5_E_PP_Ldr	P5_E, PP Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	649153	4772896	148.5	60 min	60 min	60 min
P5_E_PP_SecondaryCrush1	P5_E, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	649170	4772897	149.0	60 min	-	-
P5_E_PP_SecondaryCrush2	P5_E, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	649170	4772896	149.0	60 min	-	-
P5_E_PP_SecondaryTertiaryScreen1	P5_E, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649168	4772897	149.0	60 min	-	-
P5_E_PP_SecondaryTertiaryScreen2	P5_E, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649168	4772896	149.0	60 min	-	-
P5_E_PP_TertiaryCrush1	P5_E, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	649166	4772897	149.0	60 min	-	-
P5_E_PP_TertiaryCrush2	P5_E, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	649166	4772896	149.0	60 min	-	-
P5_E_PP_Trk1	P5_E, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	649137	4772894	149.0	60 min	60 min	60 min
P5_E_PP_Trk2	P5_E, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	649137	4772897	149.0	60 min	60 min	60 min
P5_E_WF_Drill	P5_E, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	649269	4772608	177.5	60 min	-	-

Table 1: Noise Source Summary - Proposed Extraction Scenario

Upper's Quarry, 1603157

Notes to Table:

1. Wherever possible, the Source ID matches the identifiers used in the ESDM report.

2. Sound Power Level of Source, in dBA, not including sound characteristic adjustments per NPC-104.

3. Source Location: O = Outside of building, including the roof, I = Inside of building.

4. Sound Characteristic, per NPC-104:
   - S = Steady
   - I = Impulsive
   - T = Tonal
   - Q = Quasi-Steady Impulsive
   - B = Buzzing
   - C = Cyclic

5. Noise control measures currently in place or specified in construction drawings:
   - S = Silencer/Muffler
   - L = Lagging
   - O = Other
   - A = Acoustic lining, plenum
   - E = Acoustic enclosure
   - U = Uncontrolled
   - B = Barrier/Berm

   Where noise control measures are specified in construction drawings or were found on existing equipment, octave band sound power levels include the effects of the noise control measures. Noise control measures recommended in the mitigation section of this report are not included in this table.

Table 1: Additional Data

Upper's Quarry, 1603157

6. Source type indicates Cadna/A modelling methodology. For Point, Line, and Area sources, PWLs represent the overall level for the entire source. Where source type is Mobile Equipment, the source is modelled as a moving point source, and PWL is calculated from a single-vehicle passby.

7. Sound Power Level Data Source:
   - Man = Manufacturer's Data
   - EC = Engineering Calc based on specifications
   - Mea = Measured Directly
   - Same ### = same type as source no. ###
   - Hist = Historical Data on File at RWDI

8 For loader dumping into primary crusher, it is assumed each dump takes approximately 10s

Source ID [1]	Source Description	Sound Power Level [2]	Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	1/1 Octave Band Sound Power Level Data if available (dB)									Source Type [6]	PWL Data Source [7]	Height Above Roof	Local Roof Height Ab. Grade	Height Above Grade	Source Co-ordinates for point sources (m)			Operating Time during Worst-case hour for Point Sources, [8] OR Vehicle Passby per Hour & Speed for Line Sources		
		(dBA)	(I or O)	(S,Q,I,B,T,C)	(S,A,B,L,E,O,U)	31.5	63	125	250	500	1000	2000	4000	8000			(m)	(m)	(m)	X	Y	Z	Daytime	Evening	Nighttime
ASPH_comp	Asphalt Plant - Compressor Vent	96	O	S	U	91.4	88.5	99.4	96.2	93.0	90.2	87.4	84.9	81.3	Point	Hist	-	-	0.6	648875	4772829	143.6	60 min	60 min	60 min
ASPH_DC_m	Asphalt Plant - Dust Collector Blower (motor)	105	O	S	U	110.8	113.6	105.4	104.1	102.2	99.8	94.9	93.4	91.5	Point	Hist	-	-	2.0	648856	4772826	145.0	60 min	60 min	60 min
ASPH_DC_s	Asphalt Plant - Dust Collector Blower (stack)	110	O	S	U	125.3	126.2	117.0	110.0	105.8	103.5	98.5	93.6	86.1	Point	Hist	0.1	20.0	20.1	648855	4772826	163.1	60 min	60 min	60 min
ASPH_elev	Asphalt Plant - Elevator Motor	100	O	S	U	95.7	97.7	95.1	95.2	97.8	95.5	91.5	87.3	77.2	Point	Hist	-	-	19.0	648861	4772835	162.0	60 min	60 min	60 min
ASPH_IDLE_TRK1	Asphalt Plant - Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.5	648880	4772826	146.5	60 min	60 min	60 min
ASPH_IDLE_TRK2	Asphalt Plant - Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.5	648880	4772825	146.5	60 min	60 min	60 min
ASPH_imp_silo	Asphalt Plant - Silo - Impulsive	127	O	I	U	122.0	127.9	114.5	107.6	106.6	108.5	117.9	122.3	123.2	Point	Hist	1.0	21.0	22.0	648888	4772842	165.0	60 min	60 min	60 min
ASPH_Ldr_Act1	Asphalt Plant - Loader Activity	102	O	S	U	103.6	109.2	104.1	99.2	97.3	95.8	94.2	93.1	88.0	Point	Hist	-	-	2.5	648870	4772830	145.5	60 min	60 min	60 min
ASPH_Ldr_Act2	Asphalt Plant - Loader Activity	102	O	S	U	103.6	109.2	104.1	99.2	97.3	95.8	94.2	93.1	88.0	Point	Hist	-	-	2.5	648864	4772827	145.5	60 min	60 min	60 min
ASPH_motor	Asphalt Plant - Conveyor motor, gravel hitting metal plate	107	O	S	U	100.5	102.5	94.2	95.5	98.9	103.0	102.0	95.1	91.4	Point	Hist	-	-	4.0	648854	4772834	147.0	60 min	60 min	60 min
ASPH_oven	Asphalt Plant - Oven Motor	102	O	S	U	111.4	110.7	104.0	100.1	98.3	97.8	93.9	91.9	89.9	Point	Hist	-	-	5.8	648858	4772832	148.8	60 min	60 min	60 min
ASPH_pugdoor	Asphalt Plant - Pug Mill door (pressure relief noise)	107	O	S	U	114.6	112.8	109.9	106.3	105.2	101.2	96.8	94.9	93.4	Point	Hist	-	-	4.0	648863	4772834	147.0	60 min	60 min	60 min
ASPH_pugmill	Asphalt Plant - Pug Mill Motor	105	O	S	U	0.0	105.0	104.6	100.8	94.8	94.7	96.6	99.5	99.3	Point	Hist	-	-	5.0	648870	4772837	148.0	60 min	60 min	60 min
Line Sources																									
P1A_Sinkcut_Conveyor	P1A_Sinkcut, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
P1A_Sinkcut_RD_SHP_Aggr_Em	P1A_Sinkcut, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	4/hr, 20kph	4/hr, 20kph	4/hr, 20kph
P1A_Sinkcut_RD_SHP_Aggr_Fu	P1A_Sinkcut, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	4/hr, 20kph	4/hr, 20kph	4/hr, 20kph
P1AS_Sinkcut_Conveyor	P1AS_Sinkcut, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
P1AS_Sinkcut_RD_SHP_Aggr_Em	P1AS_Sinkcut, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	4/hr, 20kph	4/hr, 20kph	4/hr, 20kph
P1AS_Sinkcut_RD_SHP_Aggr_Fu	P1AS_Sinkcut, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	4/hr, 20kph	4/hr, 20kph	4/hr, 20kph
P2A_Sinkcut_Conveyor	P2A_Sinkcut, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
P2A_Sinkcut_RD_SHP_Aggr_Em	P2A_Sinkcut, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	4/hr, 20kph	4/hr, 20kph	4/hr, 20kph
P2A_Sinkcut_RD_SHP_Aggr_Fu	P2A_Sinkcut, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	4/hr, 20kph	4/hr, 20kph	4/hr, 20kph
P3A_Conveyor	P3A, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
P3A_RD_Haul_PP_AP_Em	P3A, Aggregate Haul road b/w PP and AP, Empty	108	O	S	U	110.2	113.9	109.7	105.1	104.6	102.7	101.6	92.5	89.4	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
P3A_RD_Haul_PP_AP_Fu	P3A, Aggregate Haul road b/w PP and AP, Full	112	O	S	U	108.8	108.3	109.9	109.0	106.2	108.2	104.3	98.4	94.8	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
P3A_RD_SHP_Aggr_Em	P3A, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
P3A_RD_SHP_Aggr_Fu	P3A, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
P3B_NE_Conveyor	P3B_NE, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
P3B_NE_RD_Haul_PP_AP_Em	P3B NE, Aggregate Haul road b/w PP and AP, Empty	108	O	S	U	110.2	113.9	109.7	105.1	104.6	102.7	101.6	92.5	89.4	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
P3B_NE_RD_Haul_PP_AP_Fu	P3B NE, Aggregate Haul road b/w PP and AP, Full	112	O	S	U	108.8	108.3	109.9	109.0	106.2	108.2	104.3	98.4	94.8	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
P3B_NE_RD_SHP_Aggr_Em	P3B_NE, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
P3B_NE_RD_SHP_Aggr_Fu	P3B_NE, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
P4_SE_Conveyor	P4_SE, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
P4_SE_RD_Haul_PP_AP_Em	P4 SE, Aggregate Haul road b/w PP and AP, Empty	108	O	S	U	110.2	113.9	109.7	105.1	104.6	102.7	101.6	92.5	89.4	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
P4_SE_RD_Haul_PP_AP_Fu	P4 SE, Aggregate Haul road b/w PP and AP, Full	112	O	S	U	108.8	108.3	109.9	109.0	106.2	108.2	104.3	98.4	94.8	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
P4_SE_RD_SHP_Aggr_Em	P4_SE, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
P4_SE_RD_SHP_Aggr_Fu	P4_SE, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
P5_E_Conveyor	P5_E, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
P5_E_RD_Haul_PP_AP_Em	P5 E, Aggregate Haul road b/w PP and AP, Empty	108	O	S	U	110.2	113.9	109.7	105.1	104.6	102.7	101.6	92.5	89.4	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
P5_E_RD_Haul_PP_AP_Fu	P5 E, Aggregate Haul road b/w PP and AP, Full	112	O	S	U	108.8	108.3	109.9	109.0	106.2	108.2	104.3	98.4	94.8	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
P5_E_RD_SHP_Aggr_Em	P5_E, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
P5_E_RD_SHP_Aggr_Fu	P5_E, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
AP_RD_SHP_AC_RAP_Em	AP, AC and RAP shipped from Offsite, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	6/hr, 20kph	6/hr, 20kph	6/hr, 20kph
AP_RD_SHP_AC_RAP_Fu	AP, AC and RAP shipped from Offsite, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	6/hr, 20kph	6/hr, 20kph	6/hr, 20kph
AP_RD_SHP_HMA_Em	AP, HMA product shipping, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	6/hr, 20kph	6/hr, 20kph	6/hr, 20kph
AP_RD_SHP_HMA_Fu	AP, HMA product shipping, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	6/hr, 20kph	6/hr, 20kph	6/hr, 20kph

Table 2a: Point of Reception Noise Impact (Sample Calculation for Proposed Phase 1A Sinking Cut)

Upper's Quarry, 1603157

Notes to Table:

- "Table A2" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes operating time corrections and sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300.

2. Wherever possible, the Source ID matches the identifiers used in the ESDM report.

3. Sound Level units:
   - dBA = 1-hour energy equivalent sound level (L_{eq} (1-hr)), in terms of A-Weighted decibels.
   - dBAI = Logarithmic mean impulsive noise level (L_{LM}), in terms of A-Weighted decibels incorporating an impulsive time weighting.

-- Noise and vibration receptors representative of worst-case potential impacts have been selected. For the purposes of noise and vibration impact assessment, the following land uses (existing or zoned for future use) have been considered:
   - permanent , seasonal, or rental residences
   - hotels, motels and campgrounds
   - nursing / retirement homes
   - hospitals and clinics
   - schools, universities, libraries and daycare centres
   - churches and places of worship

Point of Reception ID	R1f	R1o	R2f	R2o	R3f	R3o	R4f	R4o	R5f	R5o	R6f	R6o
Point of Reception Description	Facade of dwelling (10148 Beaverdams Rd)	Outdoor area of dwelling (10148 Beaverdams Rd)	Facade of dwelling (9722 Beaverdams Rd)	Outdoor area of dwelling (9722 Beaverdams Rd)	Facade of dwelling (9602 Beaverdams Rd)	Outdoor area of dwelling (9602 Beaverdams Rd)	Facade of dwelling (5584 Beechwood Rd)	Outdoor area of dwelling (5584 Beechwood Rd)	Facade of dwelling (5769 Beechwood Rd)	Outdoor area of dwelling (5769 Beechwood Rd)	Facade of dwelling (9944 Lundy's Ln)	Outdoor area of dwelling (9944 Lundy's Ln)
Point of Reception Coordinates X	648766	648766	649394	649391	649571	649553	649611	649594	649553	649532	649084	649070
Point of Reception Coordinates Y	4773660	4773629	4773728	4773698	4773645	4773620	4772698	4772727	4772408	4772429	4771672	4771693
Point of Reception Coordinates Z	181.91	179.5	184.5	178.69	184.4	179.77	190.5	186.76	189.5	185.95	186.5	182.43

Source ID [1]	Source Description	Point of Reception 1			Point of Reception 2			Point of Reception 3			Point of Reception 4			Point of Reception 5			Point of Reception 6			Point of Reception 7			Point of Reception 8			Point of Reception 9			Point of Reception 10			Point of Reception 11			Point of Reception 12		
		Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)	Distance (m)	Sound Level at PoR	Units [3] (dBA)
P1A_Sinkcut_PC_CrusherDump	P1A_Sinkcut, PC loader dumping into crusher	817	37	dBA	786	37	dBA	1137	37	dBA	1112	32	dBA	1200	36	dBA	1170	31	dBA	949	39	dBA	929	34	dBA	984	39	dBA	956	34	dBA	1246	36	dBA	1221	31	dBA
P1A_Sinkcut_PC_Ldr	P1A_Sinkcut, PC Loader	815	29	dBA	785	29	dBA	1137	25	dBA	1112	24	dBA	1200	29	dBA	1170	24	dBA	951	31	dBA	930	26	dBA	985	31	dBA	957	26	dBA	1248	28	dBA	1223	23	dBA
P1A_Sinkcut_PC_PrimaryCrush	P1A_Sinkcut, PC Primary Crusher	818	43	dBA	788	42	dBA	1138	43	dBA	1113	38	dBA	1200	43	dBA	1170	37	dBA	948	46	dBA	927	40	dBA	982	45	dBA	954	40	dBA	1244	42	dBA	1219	37	dBA
P1A_Sinkcut_PC_PrimaryScreen	P1A_Sinkcut, PC Primary Screen	819	38	dBA	789	37	dBA	1138	39	dBA	1113	33	dBA	1200	38	dBA	1170	32	dBA	946	41	dBA	926	35	dBA	980	40	dBA	952	35	dBA	1242	38	dBA	1217	32	dBA
P1A_Sinkcut_PP_Ldr	P1A_Sinkcut, PP Loader	861	28	dBA	831	28	dBA	1102	30	dBA	1075	25	dBA	1143	29	dBA	1112	24	dBA	815	33	dBA	795	28	dBA	847	28	dBA	819	28	dBA	1162	24	dBA	1138	24	dBA
P1A_Sinkcut_PP_SecondaryCrush	P1A_Sinkcut, PP Secondary Crusher	867	43	dBA	837	38	dBA	1112	40	dBA	1086	34	dBA	1155	39	dBA	1124	34	dBA	825	43	dBA	805	38	dBA	853	38	dBA	825	38	dBA	1158	39	dBA	1134	34	dBA
P1A_Sinkcut_PP_SecondaryTertiaryScreen	P1A_Sinkcut, PP Secondary & Tertiary Screen	869	42	dBA	838	37	dBA	1113	39	dBA	1086	33	dBA	1155	38	dBA	1124	33	dBA	823	42	dBA	804	37	dBA	852	37	dBA	824	36	dBA	1157	38	dBA	1133	33	dBA
P1A_Sinkcut_PP_TertiaryCrush	P1A_Sinkcut, PP Tertiary Crusher	870	28	dBA	839	23	dBA	1113	25	dBA	1086	20	dBA	1155	25	dBA	1124	19	dBA	822	28	dBA	803	23	dBA	850	23	dBA	822	23	dBA	1155	24	dBA	1131	19	dBA
P1A_Sinkcut_PP_Trk1	P1A_Sinkcut, PP Idling Truck	850	25	dBA	820	20	dBA	1091	22	dBA	1064	17	dBA	1133	21	dBA	1102	16	dBA	814	25	dBA	794	20	dBA	850	25	dBA	822	20	dBA	1172	21	dBA	1148	16	dBA
P1A_Sinkcut_PP_Trk2	P1A_Sinkcut, PP Idling Truck	850	25	dBA	819	20	dBA	1089	22	dBA	1062	17	dBA	1131	21	dBA	1101	16	dBA	812	25	dBA	792	20	dBA	848	25	dBA	820	20	dBA	1172	16	dBA	1148	16	dBA
P1A_Sinkcut_WF_Drill	P1A_Sinkcut, WF Drill	801	33	dBA	771	32	dBA	1148	28	dBA	1124	28	dBA	1218	27	dBA	1188	27	dBA	995	35	dBA	973	30	dBA	1031	34	dBA	1003	29	dBA	1280	31	dBA	1256	26	dBA
P1A_Sinkcut_Conveyor	P1A_Sinkcut, Conveyor	varies	32	dBA	varies	28	dBA	varies	29	dBA	varies	24	dBA	varies	28	dBA	varies	23	dBA	varies	32	dBA	varies	26	dBA	varies	31	dBA	varies	26	dBA	varies	28	dBA	varies	23	dBA
P1A_Sinkcut_RD_SHP_Aggr_Em	P1A_Sinkcut, Aggregate Shipping from PP, Empty	varies	22	dBA	varies	18	dBA	varies	18	dBA	varies	13	dBA	varies	17	dBA	varies	12	dBA	varies	20	dBA	varies	15	dBA	varies	19	dBA	varies	16	dBA	varies	16	dBA	varies	13	dBA
P1A_Sinkcut_RD_SHP_Aggr_Fu	P1A_Sinkcut, Aggregate Shipping from PP, Full	varies	22	dBA	varies	18	dBA	varies	18	dBA	varies	13	dBA	varies	17	dBA	varies	12	dBA	varies	20	dBA	varies	15	dBA	varies	19	dBA	varies	16	dBA	varies	16	dBA	varies	13	dBA

Table 2b: Point of Reception Noise Impact (Sample Calculation for Proposed Phase 4 Southeast)

Upper's Quarry, 1603157

Notes to Table:

- "Table A2" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes operating time corrections and sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300.

2. Wherever possible, the Source ID matches the identifiers used in the ESDM report.

3. Sound Level units:
   - dBA = 1-hour energy equivalent sound level (L_{eq} (1-hr)), in terms of A-Weighted decibels.
   - dBAI = Logarithmic mean impulsive noise level (L_{LM}), in terms of A-Weighted decibels incorporating an impulsive time weighting.

-- Noise and vibration receptors representative of worst-case potential impacts have been selected. For the purposes of noise and vibration impact assessment, the following land uses (existing or zoned for future use) have been considered:
   - permanent , seasonal, or rental residences
   - hotels, motels and campgrounds
   - nursing / retirement homes
   - hospitals and clinics
   - schools, universities, libraries and daycare centres
   - churches and places of worship

Point of Reception ID	Point of Reception Description	Point of Reception Coordinates X	Y	Z
R1f	Facade of dwelling (10148 Beaverdams Rd)	648766	4773660	181.91
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	648766	4773629	179.5
R2f	Facade of dwelling (9722 Beaverdams Rd)	649394	4773728	184.5
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	649391	4773698	178.69
R3f	Facade of dwelling (9602 Beaverdams Rd)	649571	4773645	184.4
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	649553	4773620	179.77
R4f	Facade of dwelling (5584 Beechwood Rd)	649611	4772698	190.5
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	649594	4772727	186.76
R5f	Facade of dwelling (5769 Beechwood Rd)	649553	4772408	189.5
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	649532	4772429	185.95
R6f	Facade of dwelling (9944 Lundy's Ln)	649084	4771672	186.5
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	649070	4771693	182.43

Source ID [3]	Source Description	Point of Reception 1 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 2 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 3 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 4 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 5 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 6 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 7 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 8 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 9 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 10 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 11 Distance (m)	Sound Level at PoR	Units [3] (dBA)	Point of Reception 12 Distance (m)	Sound Level at PoR	Units [3] (dBA)
ASPH_comp	Asphalt Plant - Compressor Vent	838	15	dBA	808	12	dBA	1038	3	dBA	1011	3	dBA	1072	4	dBA	1042	0	dBA	1042	0	dBA	747	8	dBA	726	8	dBA	798	8	dBA	770	8	dBA	1152	11	dBA
ASPH_DC_m	Asphalt Plant - Dust Collector Blower (motor)	838	23	dBA	808	20	dBA	1050	25	dBA	1023	18	dBA	1086	12	dBA	1056	10	dBA	1056	10	dBA	765	32	dBA	744	31	dBA	813	29	dBA	784	28	dBA	1177	23	dBA
ASPH_DC_s	Asphalt Plant - Dust Collector Blower (stack)	838	34	dBA	808	34	dBA	1051	33	dBA	1023	32	dBA	1088	33	dBA	1057	32	dBA	1057	32	dBA	767	36	dBA	746	36	dBA	814	35	dBA	785	35	dBA	1177	32	dBA
ASPH_elev	Asphalt Plant - Elevator Motor	830	22	dBA	800	19	dBA	1040	22	dBA	1013	18	dBA	1077	22	dBA	1046	19	dBA	1046	19	dBA	762	25	dBA	741	24	dBA	813	24	dBA	784	24	dBA	1184	20	dBA
ASPH_IDLE_TRK1	Asphalt Plant - Idling Truck	842	13	dBA	812	9	dBA	1039	-1	dBA	1011	-2	dBA	1072	4	dBA	1041	1	dBA	1041	1	dBA	742	23	dBA	721	22	dBA	792	19	dBA	764	17	dBA	1172	13	dBA
ASPH_IDLE_TRK2	Asphalt Plant - Idling Truck	843	13	dBA	813	9	dBA	1039	-1	dBA	1012	-2	dBA	1072	4	dBA	1042	2	dBA	1042	2	dBA	742	23	dBA	721	22	dBA	792	19	dBA	763	17	dBA	1171	13	dBA
ASPH_Ldr_Act1	Asphalt Plant - Loader Activity	836	19	dBA	806	16	dBA	1039	21	dBA	1012	14	dBA	1075	23	dBA	1044	15	dBA	1044	15	dBA	753	20	dBA	732	18	dBA	803	25	dBA	774	23	dBA	1178	19	dBA
ASPH_Ldr_Act2	Asphalt Plant - Loader Activity	838	8	dBA	808	8	dBA	1045	21	dBA	1018	14	dBA	1081	23	dBA	1050	15	dBA	1050	15	dBA	758	27	dBA	737	27	dBA	806	25	dBA	778	23	dBA	1176	19	dBA
ASPH_motor	Asphalt Plant - Conveyor motor, gravel hitting metal plate	830	21	dBA	800	16	dBA	1044	25	dBA	1017	15	dBA	1082	27	dBA	1051	17	dBA	1051	17	dBA	769	31	dBA	748	26	dBA	818	29	dBA	790	28	dBA	1185	23	dBA
ASPH_oven	Asphalt Plant - Oven Motor	833	21	dBA	803	18	dBA	1044	23	dBA	1017	16	dBA	1081	24	dBA	1051	17	dBA	1051	17	dBA	764	28	dBA	743	29	dBA	814	26	dBA	785	25	dBA	1181	21	dBA
ASPH_pugdoor	Asphalt Plant - Pug Mill door (pressure relief noise)	831	26	dBA	801	22	dBA	1040	11	dBA	1012	10	dBA	1076	11	dBA	1046	10	dBA	1046	10	dBA	760	20	dBA	739	20	dBA	811	15	dBA	782	14	dBA	1183	26	dBA
ASPH_pugmill	Asphalt Plant - Pug Mill Motor	830	19	dBA	800	15	dBA	1034	21	dBA	1006	13	dBA	1069	22	dBA	1039	15	dBA	1039	15	dBA	753	27	dBA	732	25	dBA	806	25	dBA	777	23	dBA	1184	19	dBA
P4_SE_PC_CrusherDump	P4_SE_PC loader dumping into crusher	1117	37	dBA	1094	35	dBA	930	37	dBA	900	29	dBA	847	37	dBA	820	31	dBA	820	31	dBA	166	37	dBA	135	38	dBA	401	29	dBA	377	29	dBA	1198	24	dBA
P4_SE_PC_Ldr	P4_SE_PC Loader	1119	26	dBA	1096	25	dBA	932	26	dBA	901	19	dBA	848	26	dBA	822	21	dBA	822	21	dBA	163	27	dBA	133	29	dBA	399	19	dBA	375	19	dBA	1182	14	dBA
P4_SE_PC_PrimaryCrush	P4_SE_PC Primary Crusher	1115	40	dBA	1092	38	dBA	929	40	dBA	899	33	dBA	846	40	dBA	820	35	dBA	820	35	dBA	168	41	dBA	137	42	dBA	402	33	dBA	378	33	dBA	1199	29	dBA
P4_SE_PC_PrimaryScreen	P4_SE_PC Primary Screen	1114	35	dBA	1090	33	dBA	928	36	dBA	897	27	dBA	845	36	dBA	819	29	dBA	819	29	dBA	169	36	dBA	139	37	dBA	403	28	dBA	380	28	dBA	1199	24	dBA
P4_SE_PP_Ldr	P4_SE_PP Loader	855	22	dBA	828	21	dBA	865	24	dBA	835	16	dBA	857	26	dBA	826	17	dBA	826	17	dBA	500	29	dBA	473	26	dBA	632	29	dBA	603	27	dBA	1227	23	dBA
P4_SE_PP_SecondaryCrush1	P4_SE_PP Secondary Crusher	859	32	dBA	832	31	dBA	859	34	dBA	830	24	dBA	848	36	dBA	818	26	dBA	818	26	dBA	488	38	dBA	462	35	dBA	626	39	dBA	596	37	dBA	1230	31	dBA
P4_SE_PP_SecondaryCrush2	P4_SE_PP Secondary Crusher	860	32	dBA	833	31	dBA	860	34	dBA	830	25	dBA	849	36	dBA	818	26	dBA	818	26	dBA	488	38	dBA	461	35	dBA	625	30	dBA	595	28	dBA	1229	31	dBA
P4_SE_PP_SecondaryTertiaryScreen1	P4_SE_PP Secondary & Tertiary Screen	859	32	dBA	832	30	dBA	860	33	dBA	830	24	dBA	849	35	dBA	819	25	dBA	819	25	dBA	489	38	dBA	463	34	dBA	626	38	dBA	597	36	dBA	1230	31	dBA
P4_SE_PP_SecondaryTertiaryScreen2	P4_SE_PP Secondary & Tertiary Screen	860	32	dBA	833	30	dBA	861	33	dBA	831	24	dBA	850	35	dBA	819	25	dBA	819	25	dBA	489	38	dBA	462	34	dBA	625	38	dBA	596	36	dBA	1229	30	dBA
P4_SE_PP_TertiaryCrush1	P4_SE_PP Tertiary Crusher	859	18	dBA	832	17	dBA	861	20	dBA	831	12	dBA	851	22	dBA	820	13	dBA	820	13	dBA	490	24	dBA	464	21	dBA	626	24	dBA	597	23	dBA	1229	17	dBA
P4_SE_PP_TertiaryCrush2	P4_SE_PP Tertiary Crusher	860	18	dBA	833	17	dBA	862	20	dBA	832	12	dBA	851	22	dBA	821	13	dBA	821	13	dBA	489	24	dBA	463	21	dBA	625	24	dBA	596	23	dBA	1228	17	dBA
P4_SE_PP_Trk1	P4_SE_PP Idling Truck	853	13	dBA	826	12	dBA	870	15	dBA	840	7	dBA	863	17	dBA	832	8	dBA	832	8	dBA	507	26	dBA	481	24	dBA	637	21	dBA	607	19	dBA	1225	15	dBA
P4_SE_PP_Trk2	P4_SE_PP Idling Truck	850	13	dBA	823	12	dBA	868	15	dBA	839	7	dBA	862	17	dBA	831	8	dBA	831	8	dBA	509	26	dBA	483	24	dBA	639	21	dBA	610	19	dBA	1226	15	dBA
P4_SE_WF_Drill	P4_SE_WF Drill	1159	29	dBA	1136	28	dBA	955	31	dBA	925	30	dBA	864	31	dBA	838	31	dBA	838	31	dBA	121	40	dBA	90	42	dBA	375	30	dBA	353	30	dBA	1193	25	dBA
AP_RD_SHP_AC_RAP_Em	AP, AC and RAP shipped from Offsite, Empty	varies	23	dBA	varies	21	dBA	varies	20	dBA	varies	14	dBA	varies	19	dBA	varies	13	dBA	varies	13	dBA	varies	23	dBA	varies	20	dBA	varies	21	dBA	varies	20	dBA	varies	18	dBA
AP_RD_SHP_AC_RAP_Fu	AP, AC and RAP shipped from Offsite, Full	varies	23	dBA	varies	20	dBA	varies	20	dBA	varies	14	dBA	varies	19	dBA	varies	13	dBA	varies	13	dBA	varies	23	dBA	varies	20	dBA	varies	21	dBA	varies	20	dBA	varies	18	dBA
AP_RD_SHP_HMA_Em	AP, HMA product shipping, Empty	varies	23	dBA	varies	20	dBA	varies	20	dBA	varies	14	dBA	varies	19	dBA	varies	13	dBA	varies	13	dBA	varies	23	dBA	varies	20	dBA	varies	21	dBA	varies	20	dBA	varies	18	dBA
AP_RD_SHP_HMA_Fu	AP, HMA product shipping, Full	varies	23	dBA	varies	21	dBA	varies	20	dBA	varies	14	dBA	varies	19	dBA	varies	13	dBA	varies	13	dBA	varies	23	dBA	varies	20	dBA	varies	21	dBA	varies	20	dBA	varies	18	dBA
P4_SE_Conveyor	P4_SE_Conveyor	varies	27	dBA	varies	25	dBA	varies	30	dBA	varies	21	dBA	varies	29	dBA	varies	20	dBA	varies	20	dBA	varies	35	dBA	varies	33	dBA	varies	28	dBA	varies	27	dBA	varies	22	dBA
P4_SE_RD_Haul_PP_AP_Em	P4_SE, Aggregate Haul road b/w PP and AP, Empty	varies	14	dBA	varies	10	dBA	varies	16	dBA	varies	8	dBA	varies	17	dBA	varies	9	dBA	varies	9	dBA	varies	23	dBA	varies	22	dBA	varies	18	dBA	varies	16	dBA	varies	12	dBA
P4_SE_RD_Haul_PP_AP_Fu	P4_SE, Aggregate Haul road b/w PP and AP, Full	varies	17	dBA	varies	12	dBA	varies	19	dBA	varies	10	dBA	varies	20	dBA	varies	12	dBA	varies	12	dBA	varies	26	dBA	varies	25	dBA	varies	21	dBA	varies	19	dBA	varies	15	dBA
P4_SE_RD_SHP_Aggr_Em	P4_SE, Aggregate Shipping from PP, Empty	varies	27	dBA	varies	24	dBA	varies	24	dBA	varies	19	dBA	varies	24	dBA	varies	19	dBA	varies	19	dBA	varies	29	dBA	varies	27	dBA	varies	25	dBA	varies	24	dBA	varies	21	dBA
P4_SE_RD_SHP_Aggr_Fu	P4_SE, Aggregate Shipping from PP, Full	varies	27	dBA	varies	24	dBA	varies	24	dBA	varies	19	dBA	varies	24	dBA	varies	19	dBA	varies	19	dBA	varies	29	dBA	varies	27	dBA	varies	25	dBA	varies	24	dBA	varies	21	dBA

Table 3a: Acoustic Assessment Summary, Proposed Phase 1A Sinking Cut

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	49	No	50	D	Yes	648766	4773660	4.5
		Evening	32	No	50		Yes			
		Nighttime	32	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	46	No	50	D	Yes	648766	4773629	1.5
		Evening	30	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	47	No	50	D	Yes	649394	4773728	4.5
		Evening	31	No	50		Yes			
		Nighttime	31	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	42	No	50	D	Yes	649391	4773698	1.5
		Evening	26	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	47	No	50	D	Yes	649571	4773645	4.5
		Evening	31	No	50		Yes			
		Nighttime	31	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	42	No	50	D	Yes	649553	4773620	1.5
		Evening	26	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	50	No	50	D	Yes	649611	4772698	4.5
		Evening	35	No	50		Yes			
		Nighttime	35	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	45	No	50	D	Yes	649594	4772727	1.5
		Evening	29	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	48	No	50	D	Yes	649553	4772408	4.5
		Evening	31	No	50		Yes			
		Nighttime	31	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	44	No	50	D	Yes	649532	4772429	1.5
		Evening	29	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	47	No	50	D	Yes	649084	4771672	4.5
		Evening	27	No	50		Yes			
		Nighttime	27	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	41	No	50	D	Yes	649070	4771693	1.5
		Evening	25	No	45		Yes			

Table 3b: Acoustic Assessment Summary, Proposed Phase 1A South Sinking Cut

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	44	No	50	D	Yes	648766	4773660	4.5
		Evening	30	No	50		Yes			
		Nighttime	30	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	43	No	50	D	Yes	648766	4773629	1.5
		Evening	29	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	43	No	50	D	Yes	649394	4773728	4.5
		Evening	30	No	50		Yes			
		Nighttime	30	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	40	No	50	D	Yes	649391	4773698	1.5
		Evening	25	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	43	No	50	D	Yes	649571	4773645	4.5
		Evening	30	No	50		Yes			
		Nighttime	30	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	40	No	50	D	Yes	649553	4773620	1.5
		Evening	25	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	49	No	50	D	Yes	649611	4772698	4.5
		Evening	34	No	50		Yes			
		Nighttime	34	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	44	No	50	D	Yes	649594	4772727	1.5
		Evening	28	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	49	No	50	D	Yes	649553	4772408	4.5
		Evening	29	No	50		Yes			
		Nighttime	29	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	47	No	50	D	Yes	649532	4772429	1.5
		Evening	29	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	47	No	50	D	Yes	649084	4771672	4.5
		Evening	31	No	50		Yes			
		Nighttime	31	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	44	No	50	D	Yes	649070	4771693	1.5
		Evening	26	No	45		Yes			

Table 3c: Acoustic Assessment Summary, Proposed Phase 2A Sinking Cut

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	50	No	50	D	Yes	648766	4773660	4.5
		Evening	35	No	50		Yes			
		Nighttime	35	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	50	No	50	D	Yes	648766	4773629	1.5
		Evening	34	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	47	No	50	D	Yes	649394	4773728	4.5
		Evening	30	No	50		Yes			
		Nighttime	30	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	43	No	50	D	Yes	649391	4773698	1.5
		Evening	28	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	48	No	50	D	Yes	649571	4773645	4.5
		Evening	32	No	50		Yes			
		Nighttime	32	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	43	No	50	D	Yes	649553	4773620	1.5
		Evening	27	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	49	No	50	D	Yes	649611	4772698	4.5
		Evening	32	No	50		Yes			
		Nighttime	32	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	43	No	50	D	Yes	649594	4772727	1.5
		Evening	27	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	45	No	50	D	Yes	649553	4772408	4.5
		Evening	31	No	50		Yes			
		Nighttime	31	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	43	No	50	D	Yes	649532	4772429	1.5
		Evening	26	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	40	No	50	D	Yes	649084	4771672	4.5
		Evening	24	No	50		Yes			
		Nighttime	24	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	39	No	50	D	Yes	649070	4771693	1.5
		Evening	23	No	45		Yes			

Table 3d: Acoustic Assessment Summary, Proposed Phase 3A

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	47	No	50	D	Yes	648766	4773660	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	47	No	50	D	Yes	648766	4773629	1.5
		Evening	36	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	43	No	50	D	Yes	649394	4773728	4.5
		Evening	36	No	50		Yes			
		Nighttime	36	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	42	No	50	D	Yes	649391	4773698	1.5
		Evening	33	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	45	No	50	D	Yes	649571	4773645	4.5
		Evening	35	No	50		Yes			
		Nighttime	35	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	44	No	50	D	Yes	649553	4773620	1.5
		Evening	31	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	47	No	50	D	Yes	649611	4772698	4.5
		Evening	35	No	50		Yes			
		Nighttime	35	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	43	No	50	D	Yes	649594	4772727	1.5
		Evening	33	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	44	No	50	D	Yes	649553	4772408	4.5
		Evening	35	No	50		Yes			
		Nighttime	35	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	42	No	50	D	Yes	649532	4772429	1.5
		Evening	34	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	40	No	50	D	Yes	649084	4771672	4.5
		Evening	34	No	50		Yes			
		Nighttime	34	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	38	No	50	D	Yes	649070	4771693	1.5
		Evening	33	No	45		Yes			

Table 3e: Acoustic Assessment Summary, Proposed Phase 3B Northeast

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	46	No	50	D	Yes	648766	4773660	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	44	No	50	D	Yes	648766	4773629	1.5
		Evening	37	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	47	No	50	D	Yes	649394	4773728	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	45	No	50	D	Yes	649391	4773698	1.5
		Evening	35	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	48	No	50	D	Yes	649571	4773645	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	47	No	50	D	Yes	649553	4773620	1.5
		Evening	35	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	49	No	50	D	Yes	649611	4772698	4.5
		Evening	41	No	50		Yes			
		Nighttime	41	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	45	No	50	D	Yes	649594	4772727	1.5
		Evening	39	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	46	No	50	D	Yes	649553	4772408	4.5
		Evening	39	No	50		Yes			
		Nighttime	39	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	43	No	50	D	Yes	649532	4772429	1.5
		Evening	38	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	41	No	50	D	Yes	649084	4771672	4.5
		Evening	36	No	50		Yes			
		Nighttime	36	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	39	No	50	D	Yes	649070	4771693	1.5
		Evening	34	No	45		Yes			

Table 3f: Acoustic Assessment Summary, Proposed Phase 4 Southeast

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	45	No	50	D	Yes	648766	4773660	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	43	No	50	D	Yes	648766	4773629	1.5
		Evening	36	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	46	No	50	D	Yes	649394	4773728	4.5
		Evening	37	No	50		Yes			
		Nighttime	37	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	39	No	50	D	Yes	649391	4773698	1.5
		Evening	33	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	46	No	50	D	Yes	649571	4773645	4.5
		Evening	37	No	50		Yes			
		Nighttime	37	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	40	No	50	D	Yes	649553	4773620	1.5
		Evening	33	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	49	No	50	D	Yes	649611	4772698	4.5
		Evening	41	No	50		Yes			
		Nighttime	41	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	48	No	50	D	Yes	649594	4772727	1.5
		Evening	40	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	46	No	50	D	Yes	649553	4772408	4.5
		Evening	40	No	50		Yes			
		Nighttime	40	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	44	No	50	D	Yes	649532	4772429	1.5
		Evening	39	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	40	No	50	D	Yes	649084	4771672	4.5
		Evening	36	No	50		Yes			
		Nighttime	36	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	39	No	50	D	Yes	649070	4771693	1.5
		Evening	34	No	45		Yes			

Table 3g: Acoustic Assessment Summary, Proposed Phase 5 East

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	41	No	50	D	Yes	648766	4773660	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	40	No	50	D	Yes	648766	4773629	1.5
		Evening	36	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	42	No	50	D	Yes	649394	4773728	4.5
		Evening	37	No	50		Yes			
		Nighttime	37	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	36	No	50	D	Yes	649391	4773698	1.5
		Evening	33	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	43	No	50	D	Yes	649571	4773645	4.5
		Evening	37	No	50		Yes			
		Nighttime	37	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	36	No	50	D	Yes	649553	4773620	1.5
		Evening	33	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	47	No	50	D	Yes	649611	4772698	4.5
		Evening	41	No	50		Yes			
		Nighttime	41	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	45	No	50	D	Yes	649594	4772727	1.5
		Evening	40	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	43	No	50	D	Yes	649553	4772408	4.5
		Evening	40	No	50		Yes			
		Nighttime	40	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	42	No	50	D	Yes	649532	4772429	1.5
		Evening	39	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	40	No	50	D	Yes	649084	4771672	4.5
		Evening	36	No	50		Yes			
		Nighttime	36	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	38	No	50	D	Yes	649070	4771693	1.5
		Evening	34	No	45		Yes			

Table 3h: Acoustic Assessment Summary, Proposed Scenario Impulsive Source

Upper's Quarry, 1603157

Notes to Table:

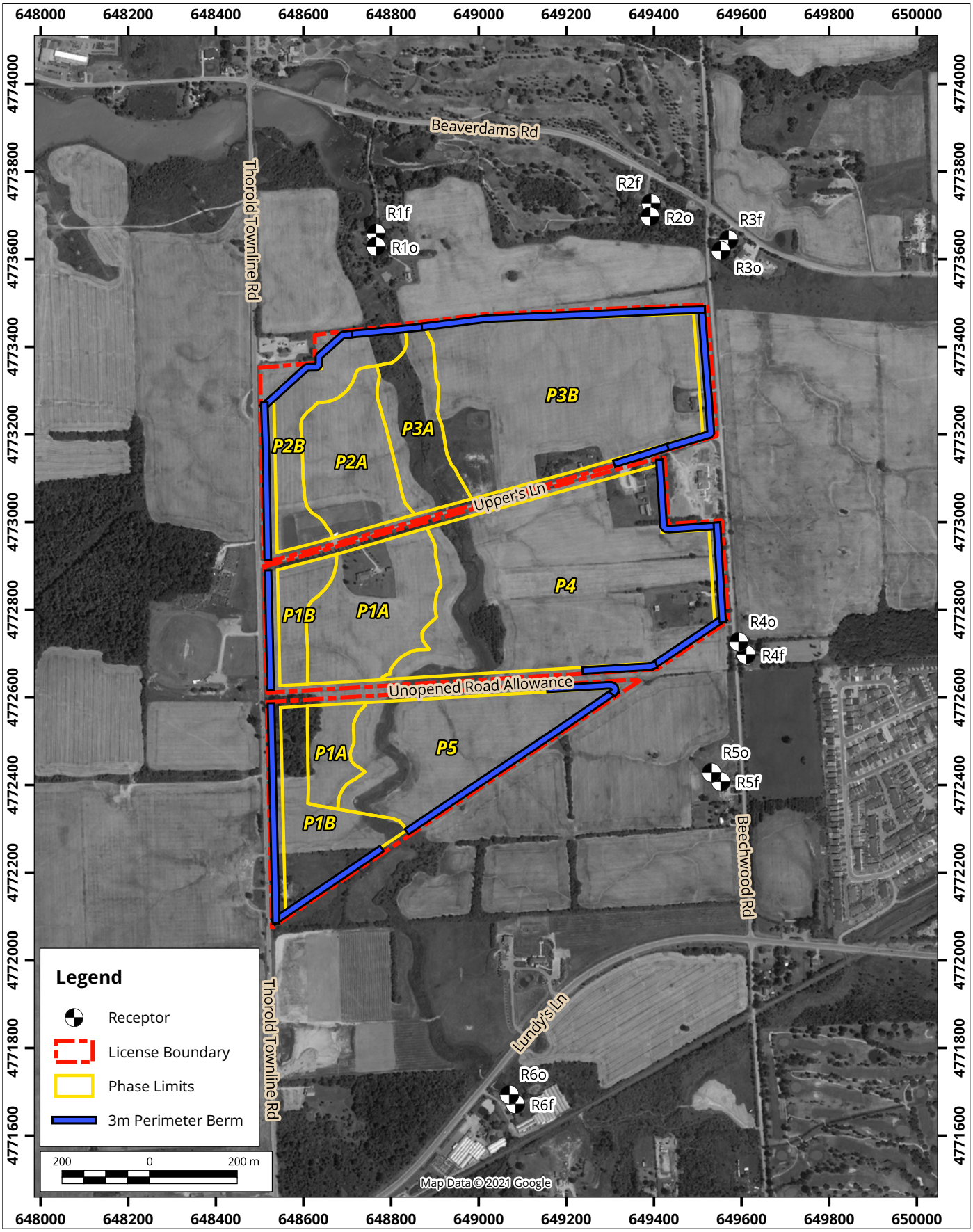
- "Table A3" in Appendix A of Basic CCofA Guide.

1. Impulsive noise sources are assessed separately from continuous noise sources.
2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.
3. Worst-case cumulative sound level from all applicable sources operating.
4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?
5. Applicable worst-case NPC-300 sound level limit, based on more than 9 impulses per hour in a Class 2 area.
6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Impulsive" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	39	No	50	D	Yes	648766	4773660	4.5
		Evening	39	No	50		Yes			
		Nighttime	39	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	38	No	50	D	Yes	648766	4773629	1.5
		Evening	38	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	38	No	50	D	Yes	649394	4773728	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	36	No	50	D	Yes	649391	4773698	1.5
		Evening	36	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	38	No	50	D	Yes	649571	4773645	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	36	No	50	D	Yes	649553	4773620	1.5
		Evening	36	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	42	No	50	D	Yes	649611	4772698	4.5
		Evening	42	No	50		Yes			
		Nighttime	42	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	43	No	50	D	Yes	649594	4772727	1.5
		Evening	43	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	41	No	50	D	Yes	649553	4772408	4.5
		Evening	41	No	50		Yes			
		Nighttime	41	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	41	No	50	D	Yes	649532	4772429	1.5
		Evening	41	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	35	No	50	D	Yes	649084	4771672	4.5
		Evening	35	No	50		Yes			
		Nighttime	35	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	35	No	50	D	Yes	649070	4771693	1.5
		Evening	35	No	45		Yes			

FIGURES



Site Overview and Sensitive Receptor Locations
Proposed Extraction Scenario

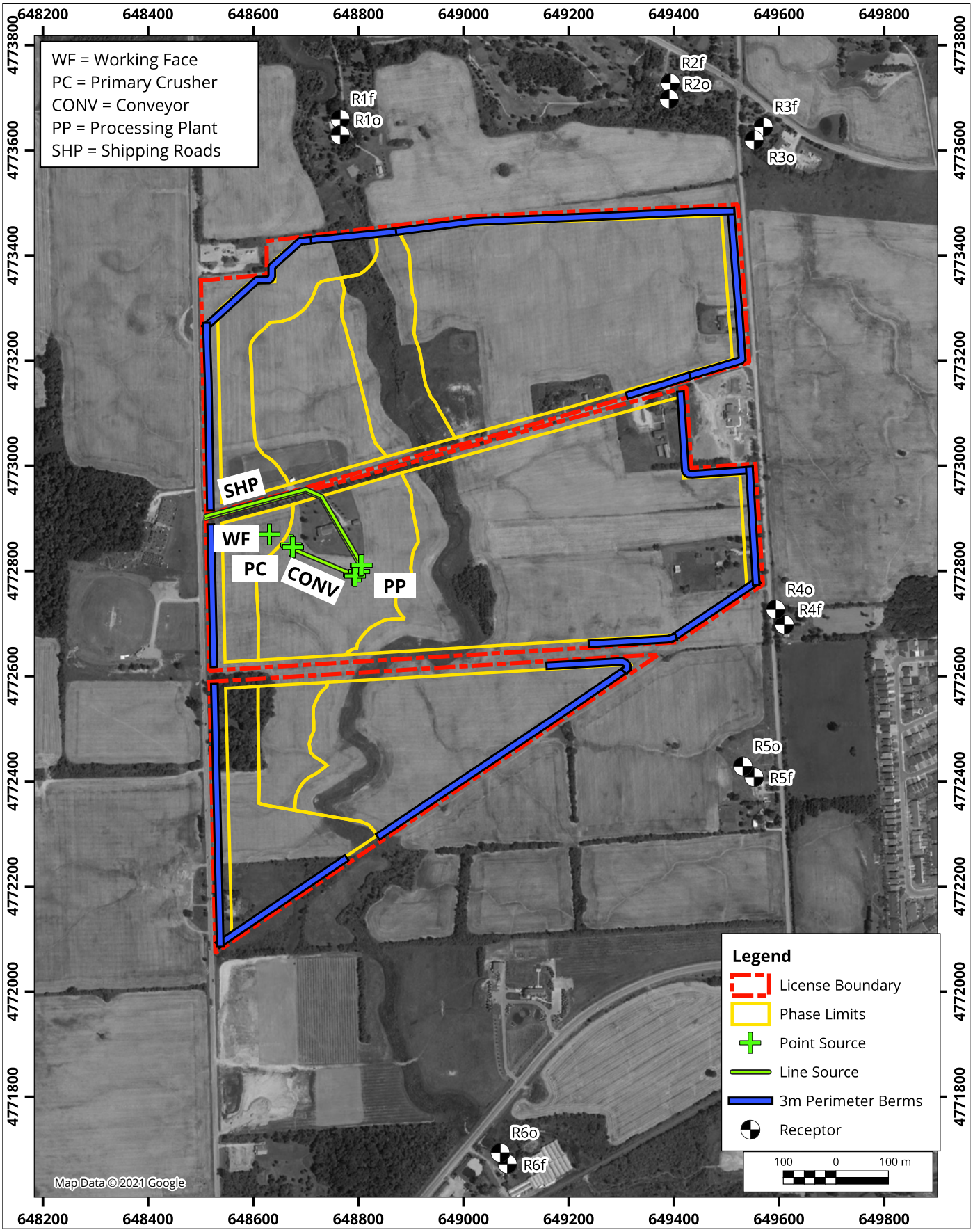
Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

True North

Drawn by: RNL	Figure: 1
Approx. Scale:	1:12000
Date Revised:	Sep 22, 2021



Proposed Phase 1A Sinking Cut Operation Overview

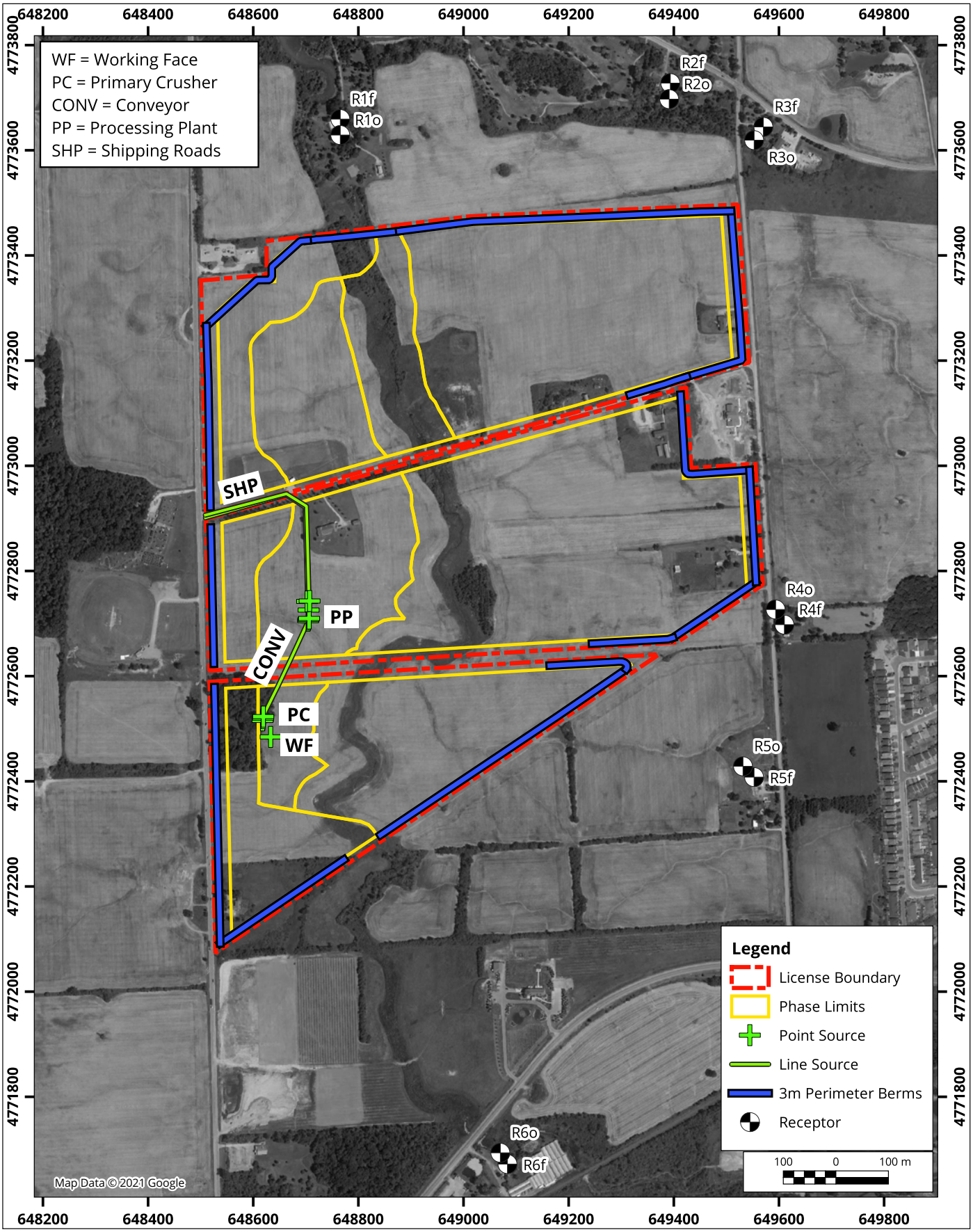
True North

Drawn by: DJK	Figure: 2a
Approx. Scale:	1:10,000
Date Revised:	Jul 13, 2023

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Proposed Phase 1A South Sinking Cut Operation Overview

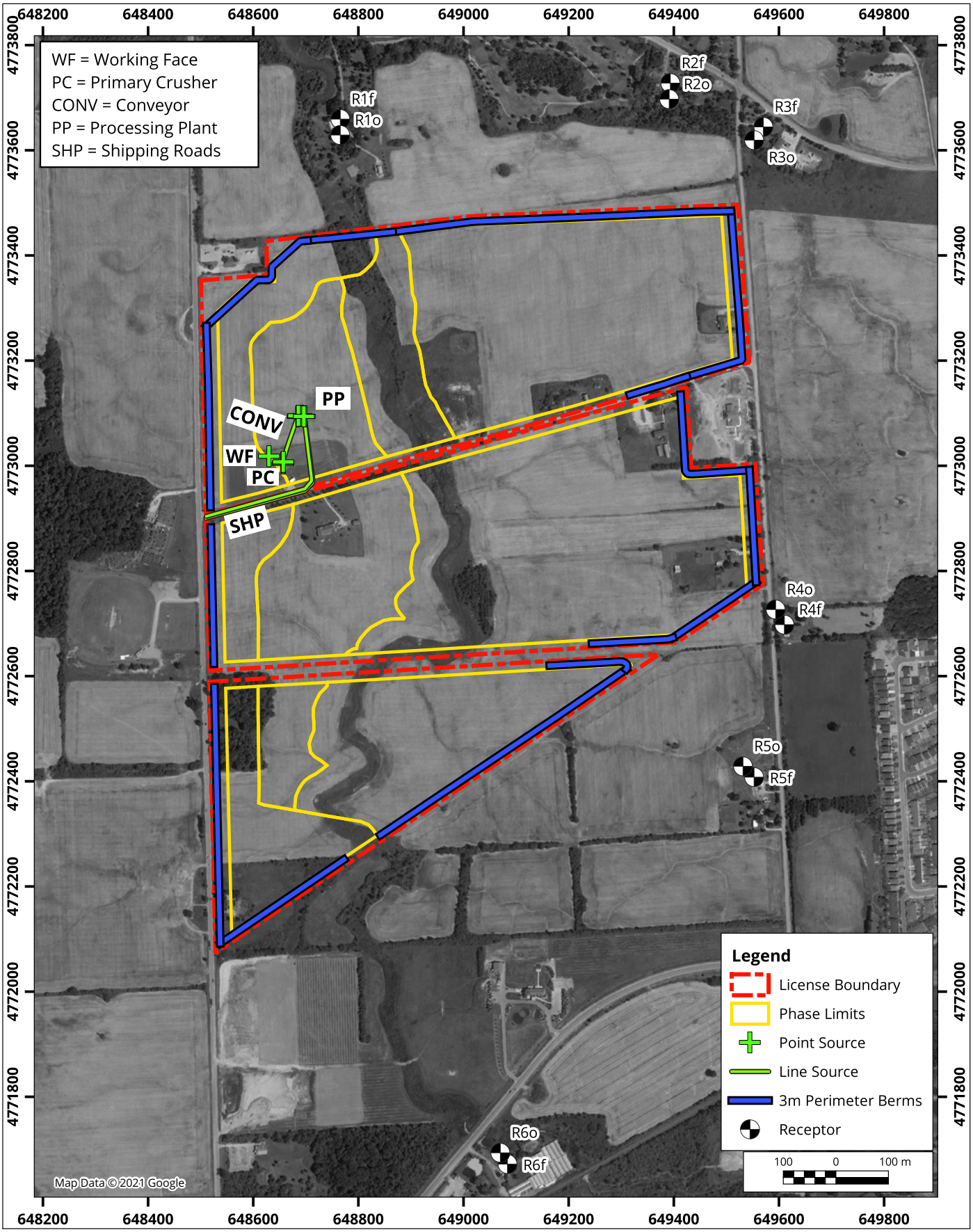
True North

Drawn by: DJK	Figure: 2b
Approx. Scale:	1:10,000
Date Revised:	Jul 13, 2023

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Proposed Phase 2A Sinking Cut Operation Overview

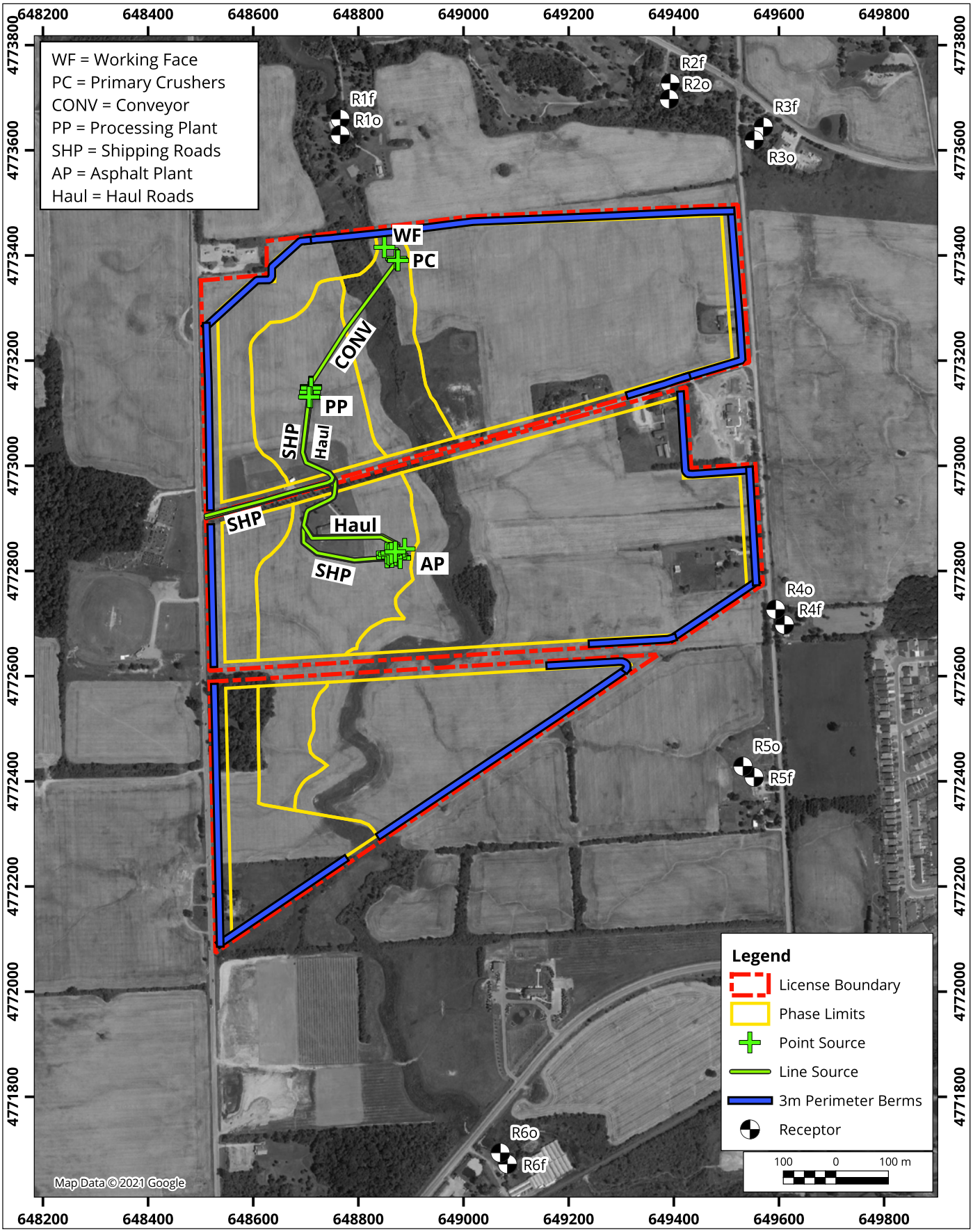
True North

Drawn by: DJK	Figure: 2c
Approx. Scale:	1:10,000
Date Revised:	Jul 13, 2023

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Proposed Phase 3A Operation Overview

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

True North

Drawn by: DJK	Figure: 2d
Approx. Scale:	1:10,000
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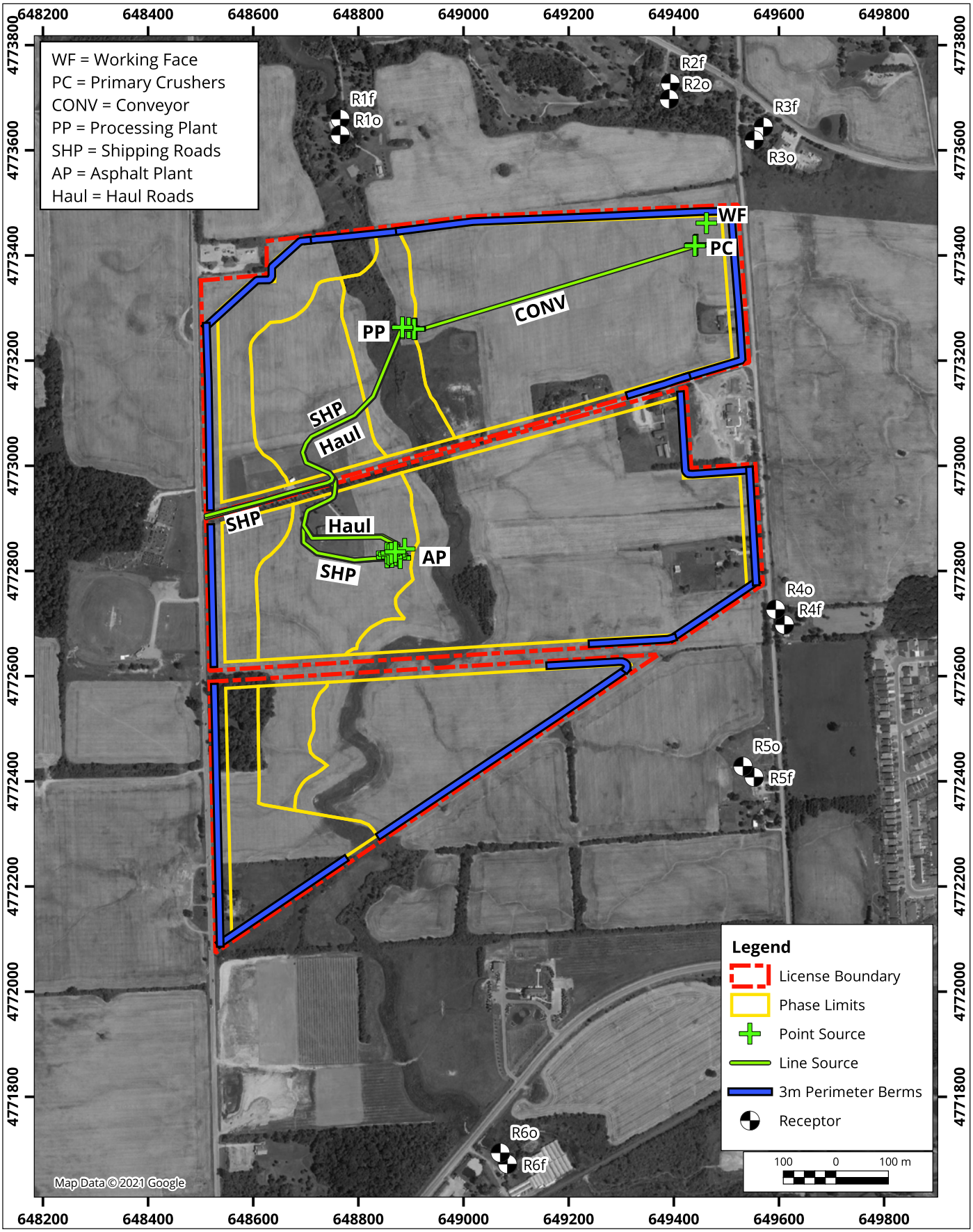


Proposed Phase 3B Northeast Operation Overview

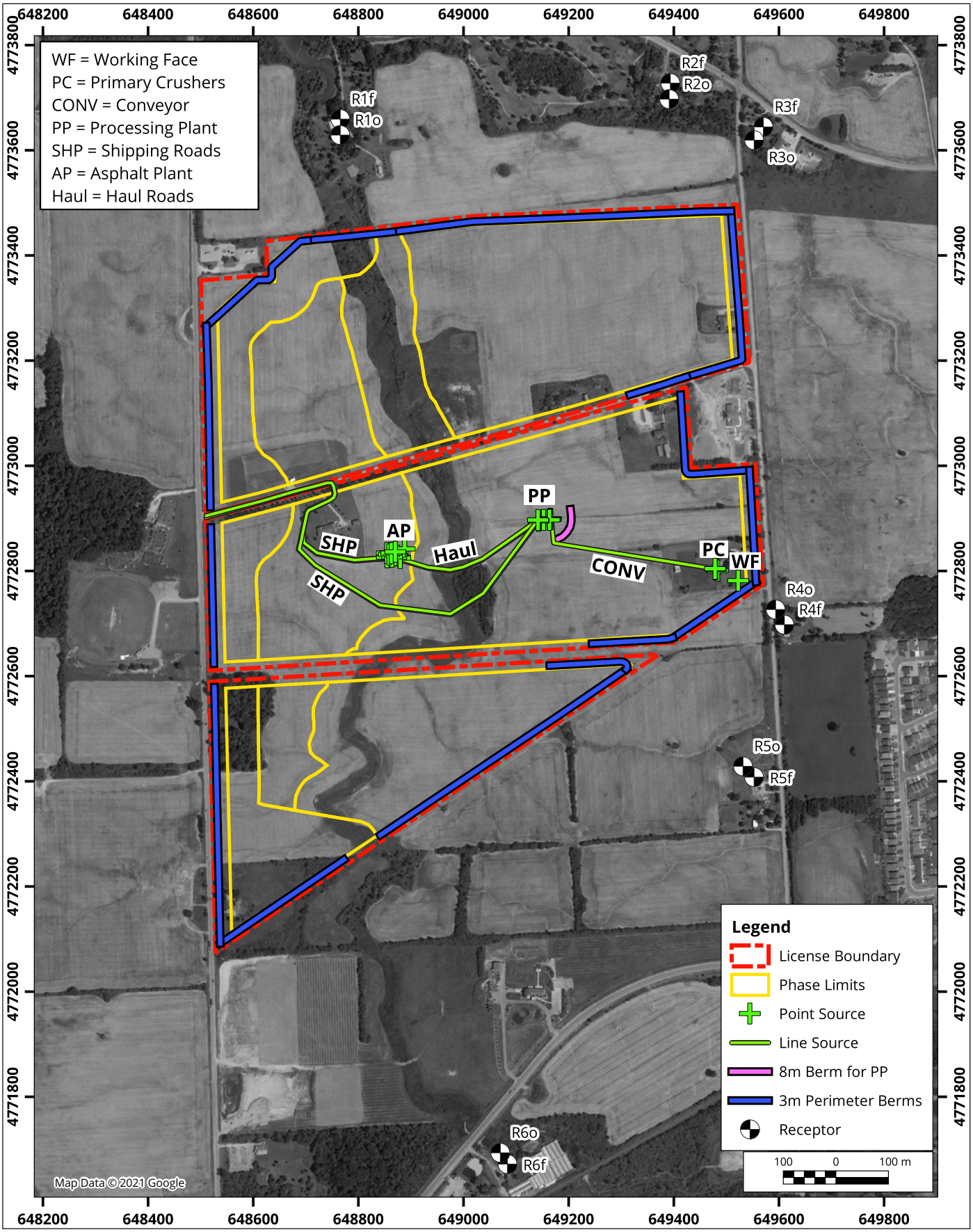
True North

Drawn by: DJK	Figure: 2e
Approx. Scale:	1:10,000
Date Revised:	Jul 13, 2023

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Proposed Phase 4 Southeast Operation Overview

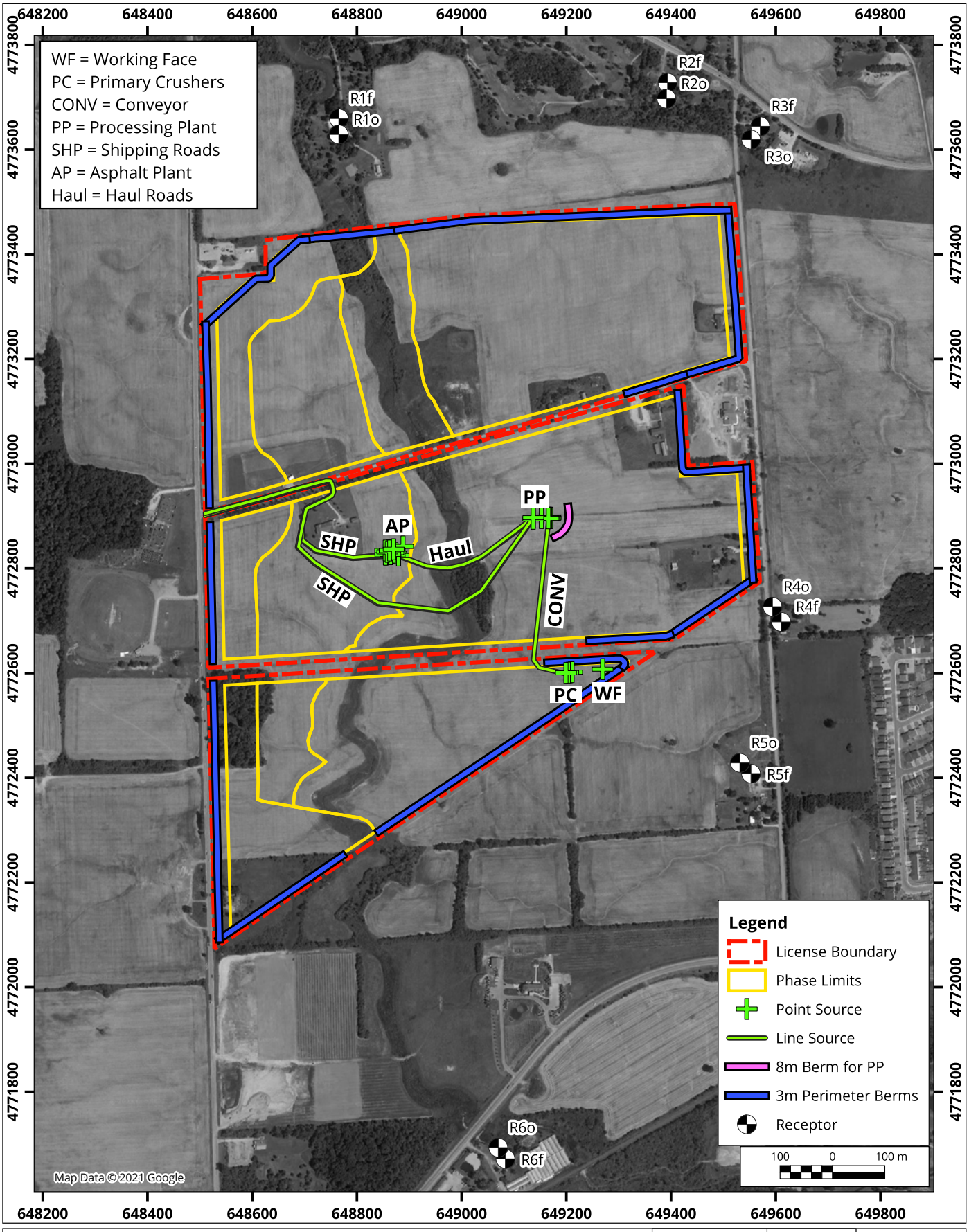
True North

Drawn by: DJK	Figure: 2f
Approx. Scale:	1:10,000
Date Revised:	Jul 13, 2023

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Proposed Phase 5 East Operation Overview

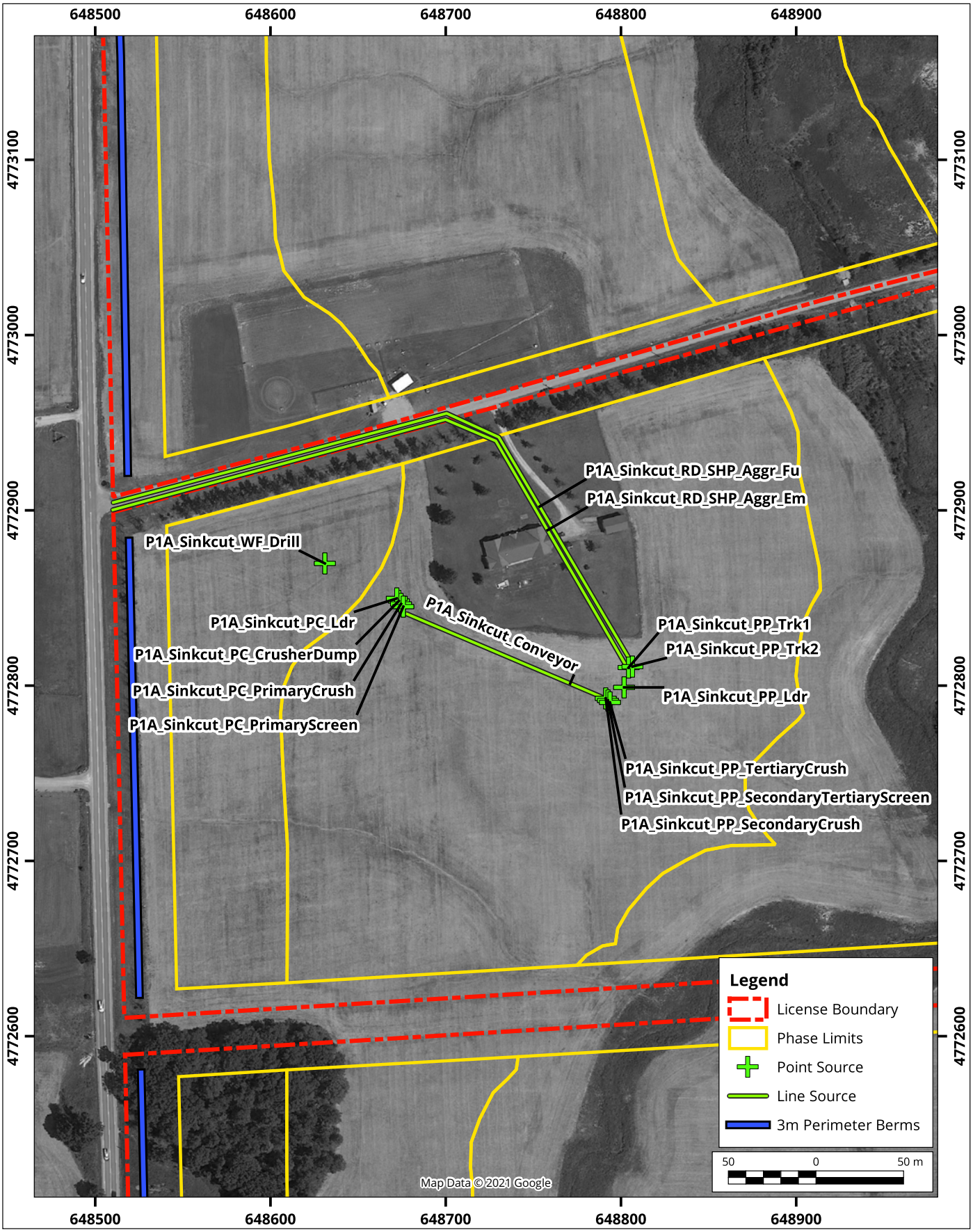
True North

Drawn by: DJK	Figure: 2g
Approx. Scale:	1:10,000
Date Revised:	Jul 13, 2023

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Significant Source Locations (Detailed Example)
Proposed Phase 1A Sinking Cut

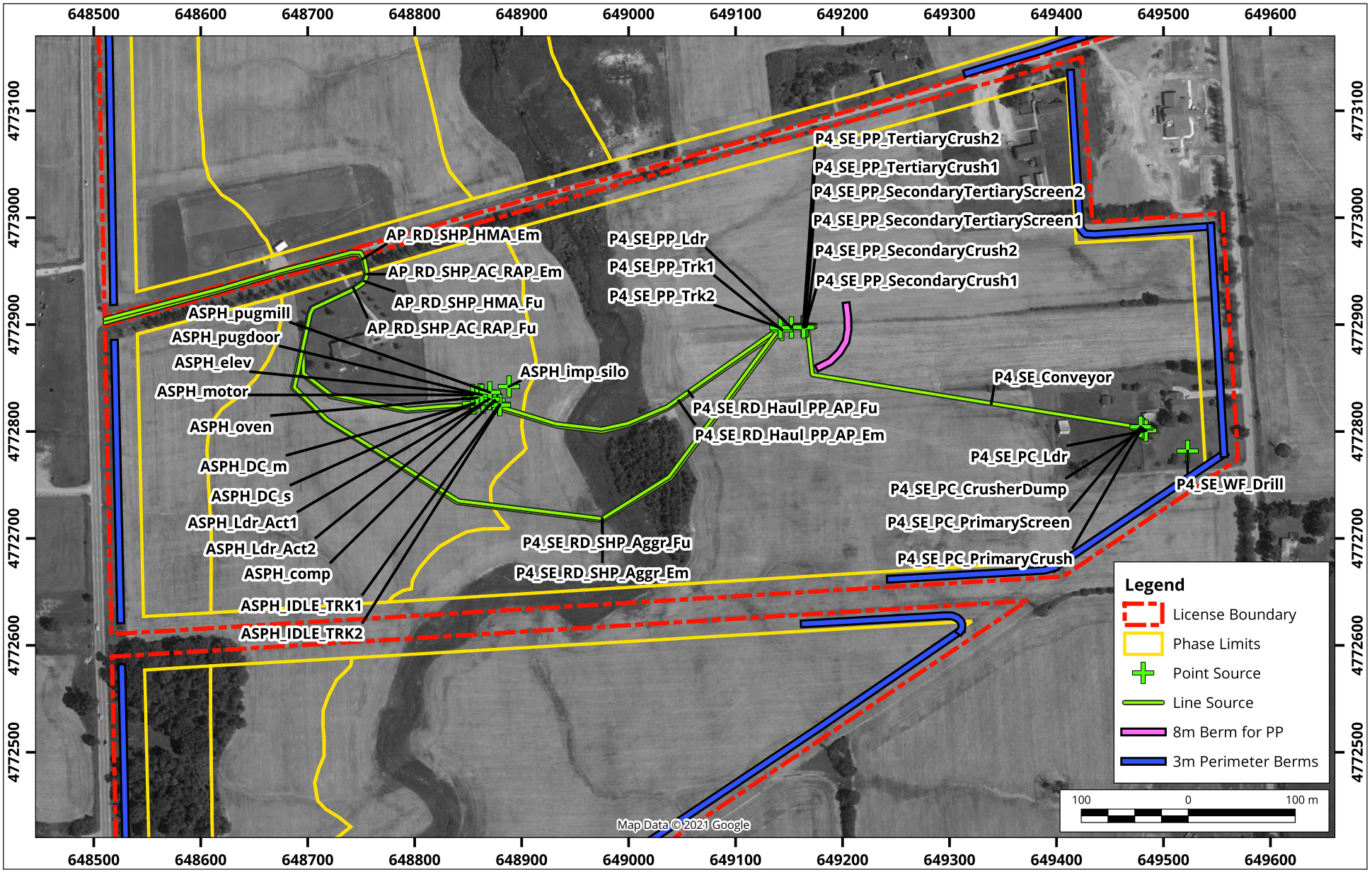
True North

Drawn by: DJK	Figure: 2h
Approx. Scale:	1:3,000
Date Revised:	Jul 13, 2023

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Significant Source Locations (Detailed Example)
Proposed Phase 4 Southeast

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

True North

Project #: 1603157

Drawn by:	DJK	Figure:	2i
Approx. Scale:		1:5,000	
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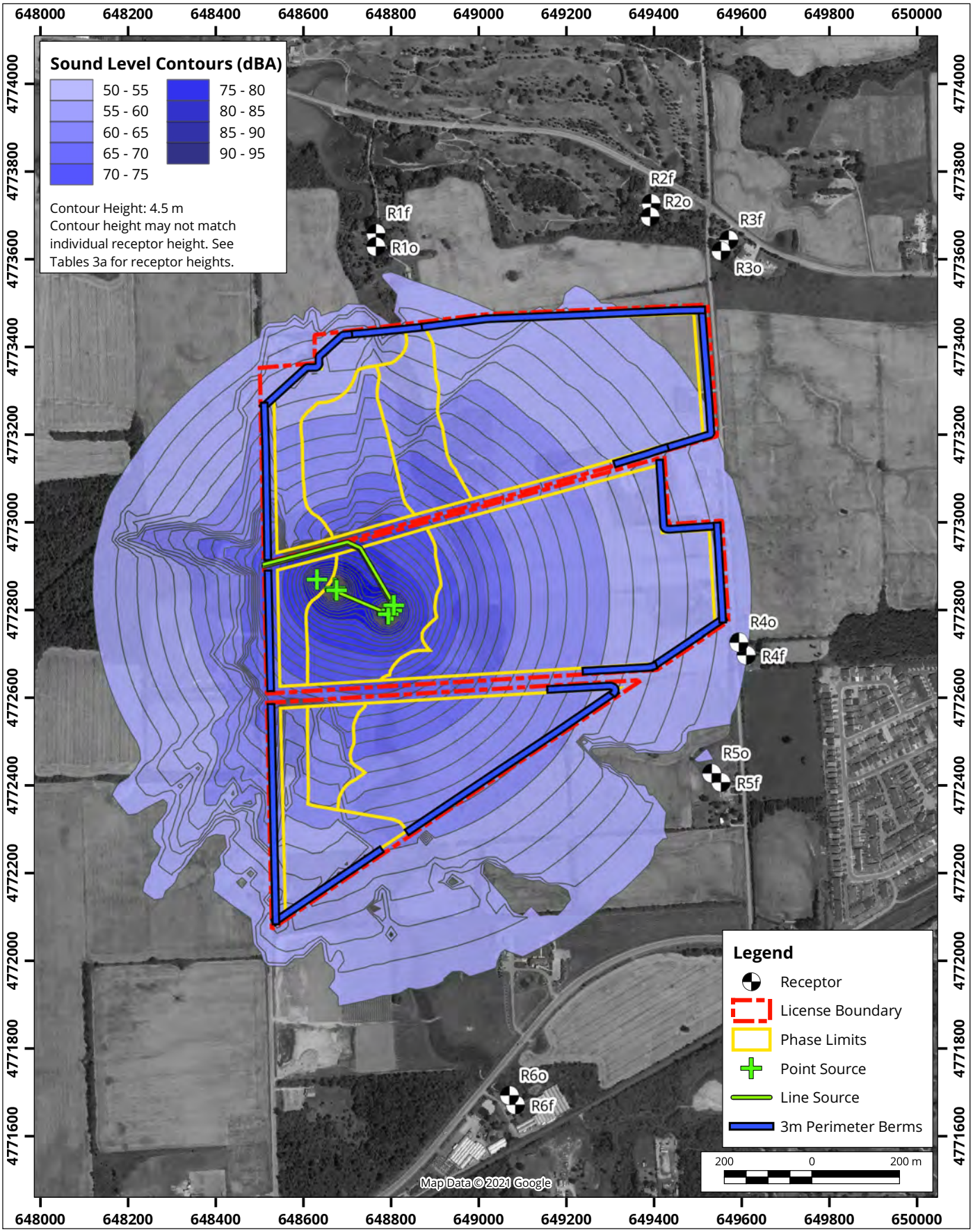


Sound Level Contours
Proposed Phase 1A Sinking Cut, Daytime

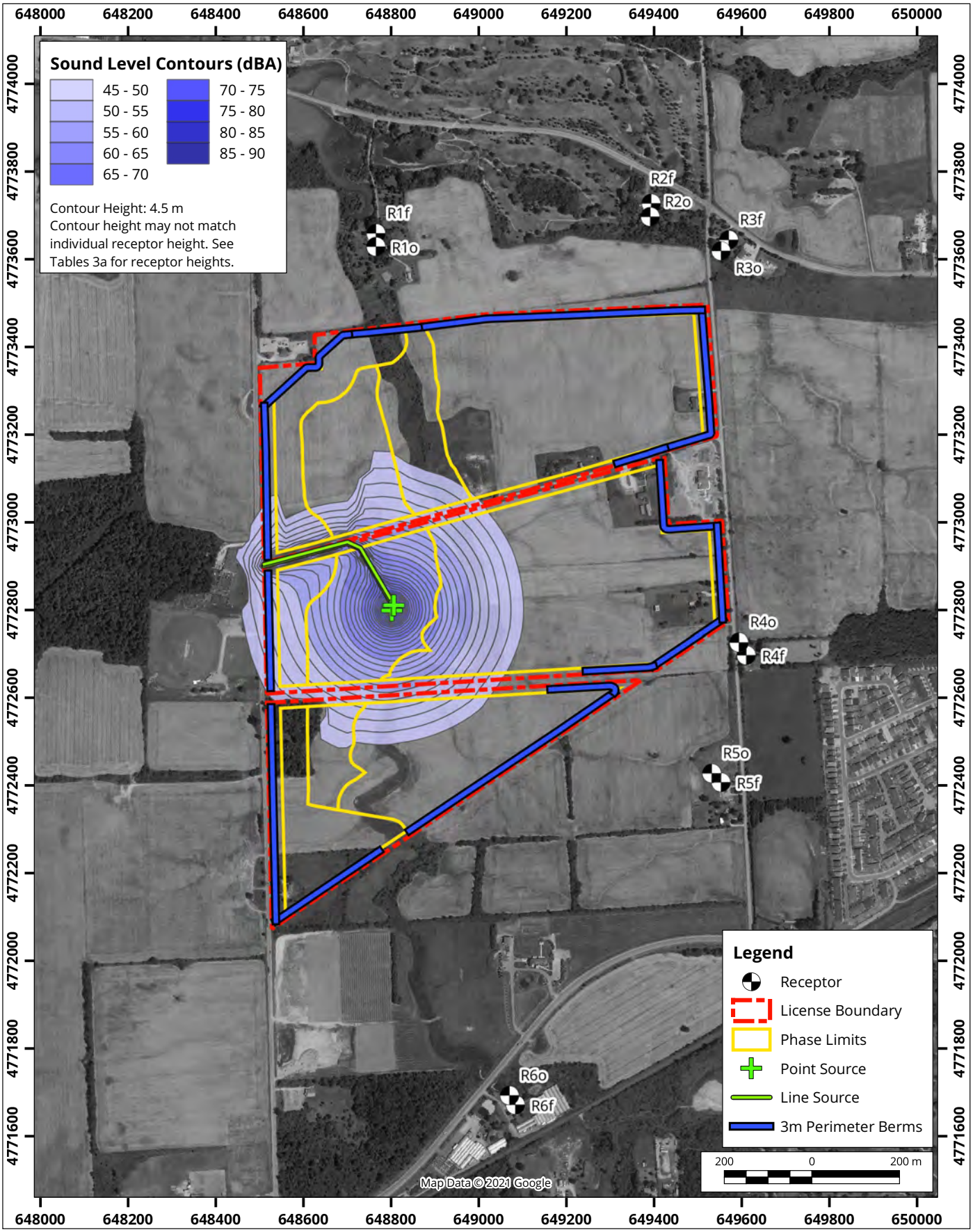
True North

Drawn by: RNL	Figure: 3a
Approx. Scale:	1:12000
Date Revised:	Sep 22, 2021

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Sound Level Contours
Proposed Phase 1A Sinking Cut, Evening/Nighttime

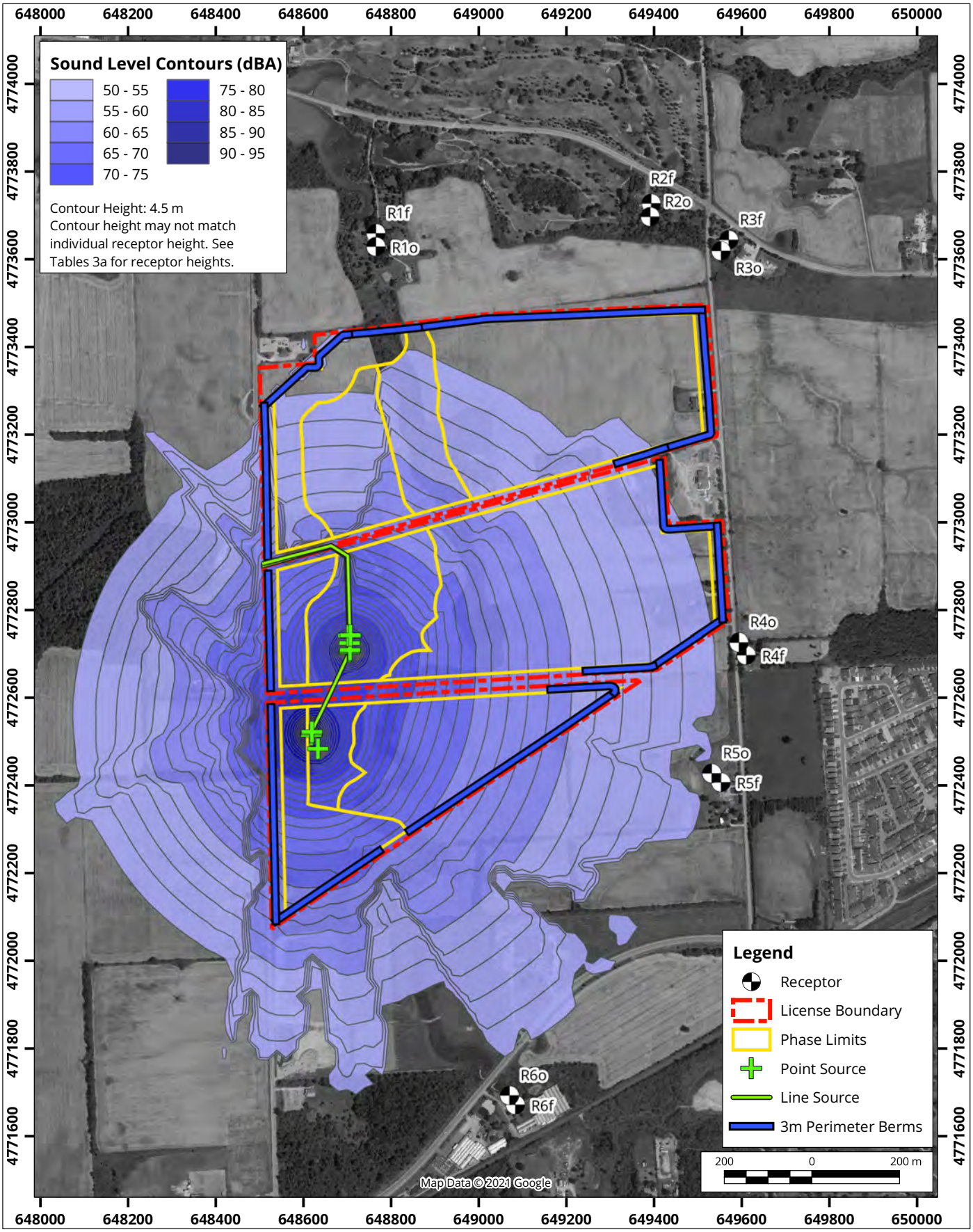
True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Drawn by: RNL	Figure: 3b
Approx. Scale:	1:12000
Date Revised:	Sep 22, 2021



Sound Level Contours
Proposed Phase 1A South Sinking Cut, Daytime

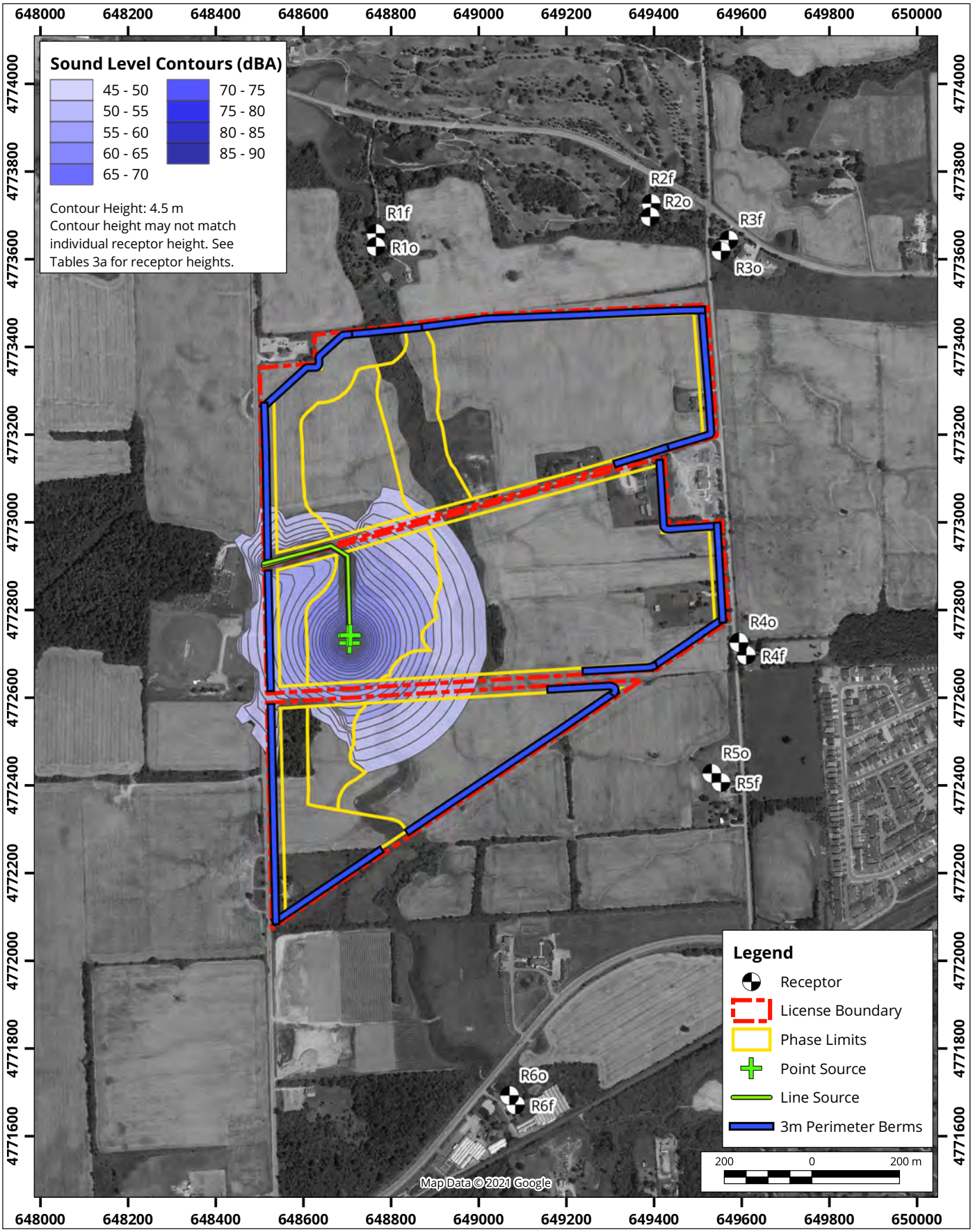
True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Drawn by: RNL	Figure: 3c
Approx. Scale:	1:12000
Date Revised:	Sep 22, 2021



Sound Level Contours

Proposed Phase 1A South Sinking Cut, Evening/Nighttime

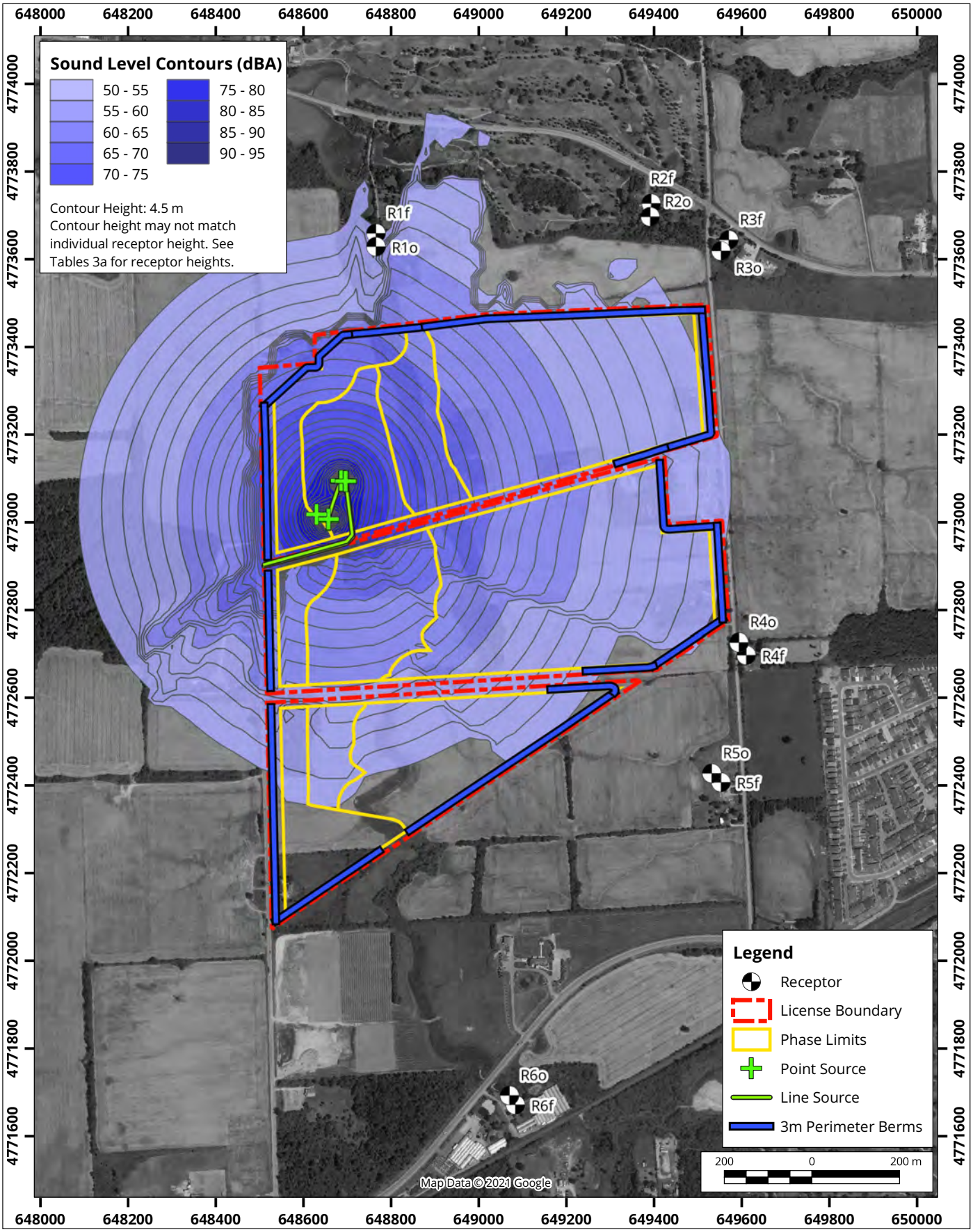
True North

Drawn by: RNL	Figure: 3d
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Sound Level Contours
Proposed Phase 2A Sinking Cut, Daytime

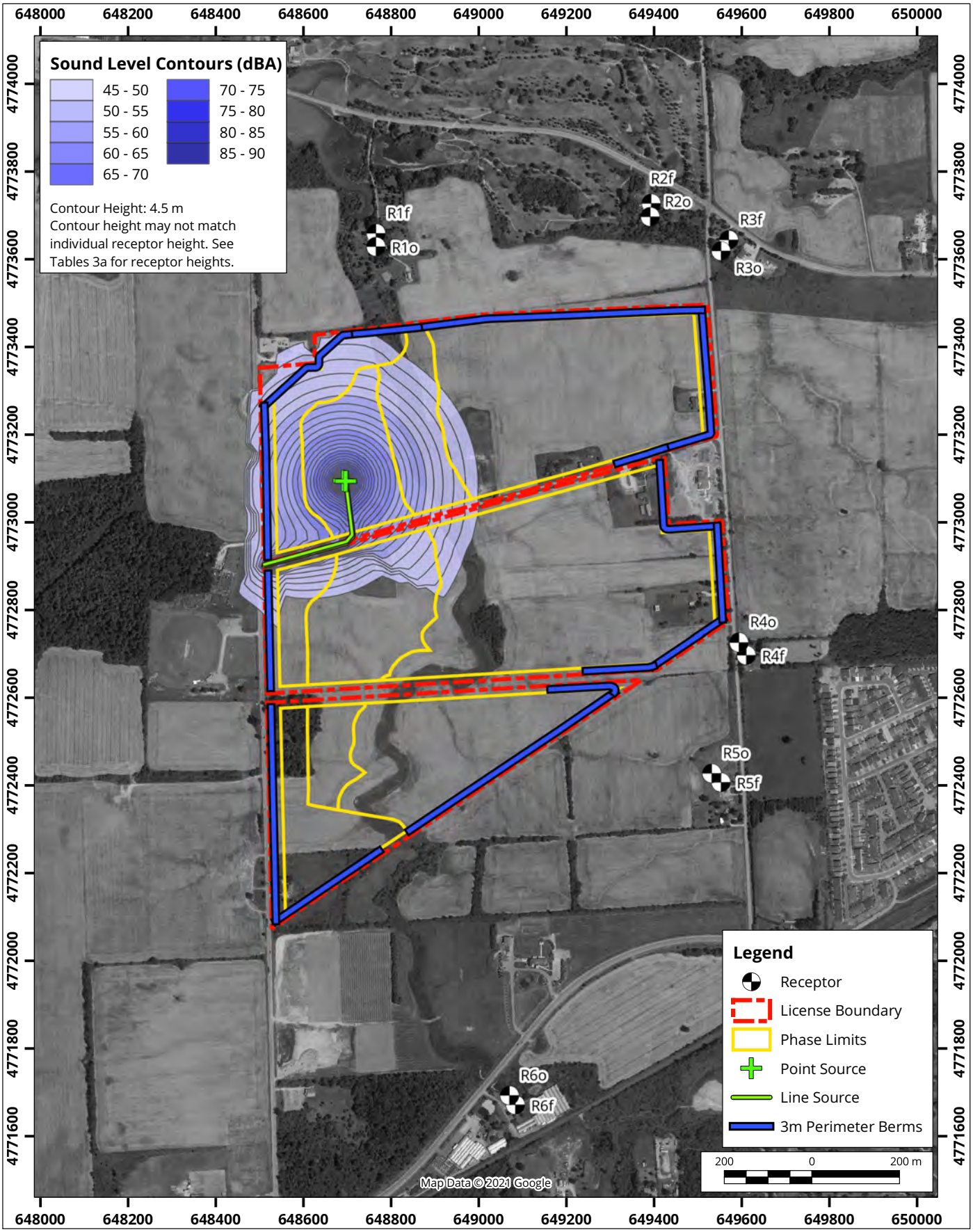
True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Drawn by: RNL	Figure: 3e
Approx. Scale:	1:12000
Date Revised:	Sep 22, 2021



Sound Level Contours
Proposed Phase 2A Sinking Cut, Evening/Nighttime

True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Drawn by: RNL	Figure: 3f
Approx. Scale:	1:12000
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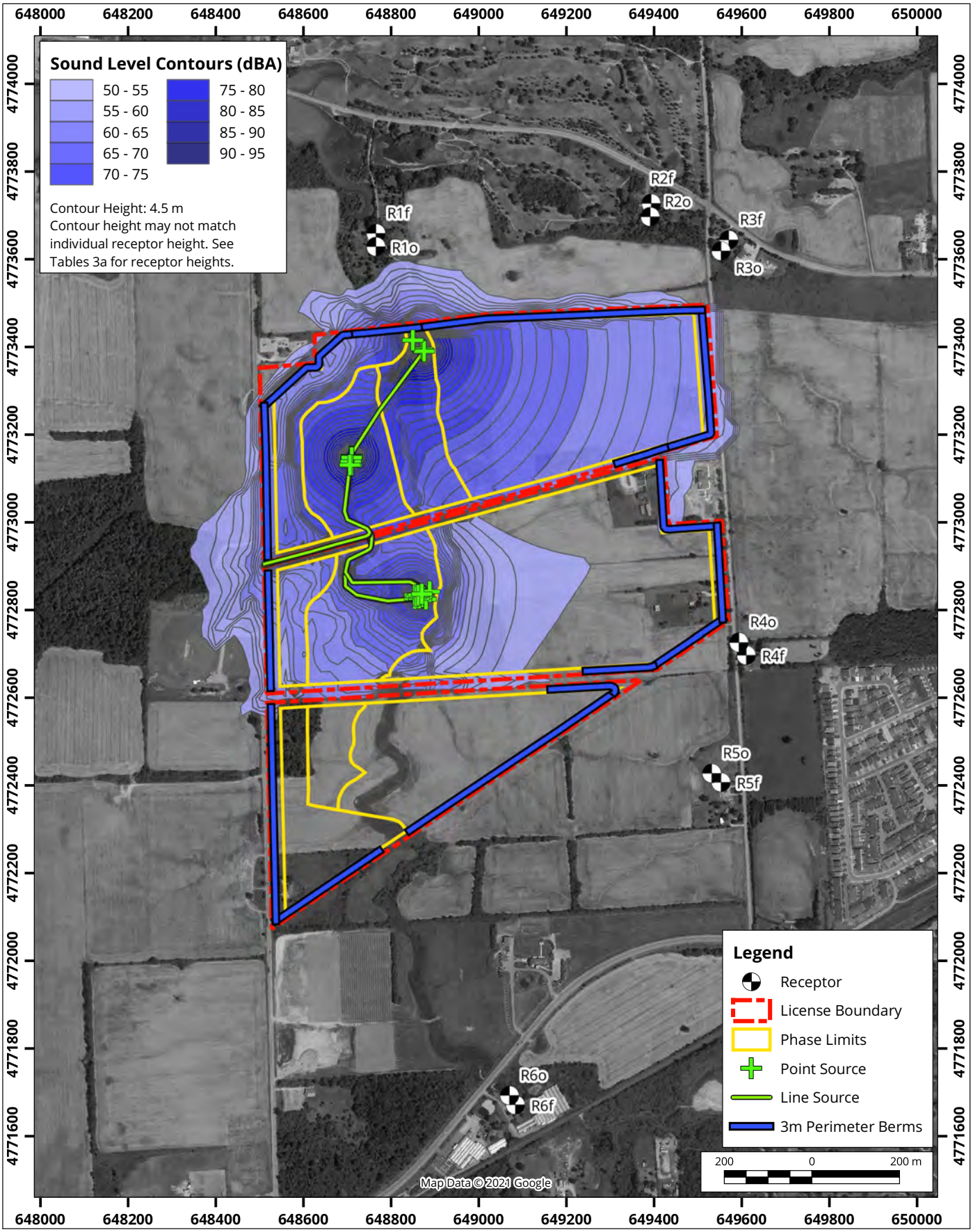


Sound Level Contours
Proposed Phase 3A, Daytime

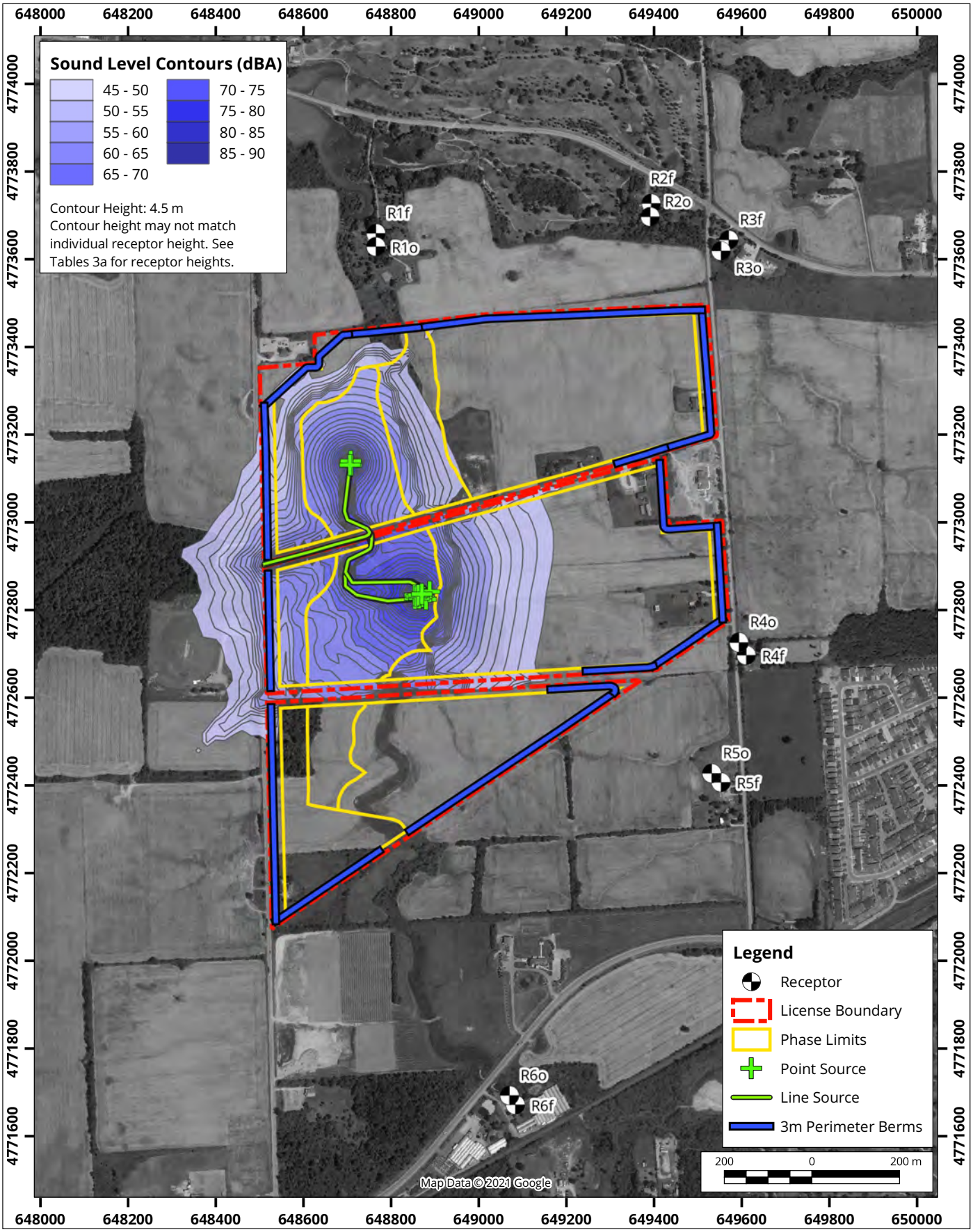
True North

Drawn by: RNL	Figure: 3g
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Sound Level Contours
Proposed Phase 3A, Evening/Nighttime

True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

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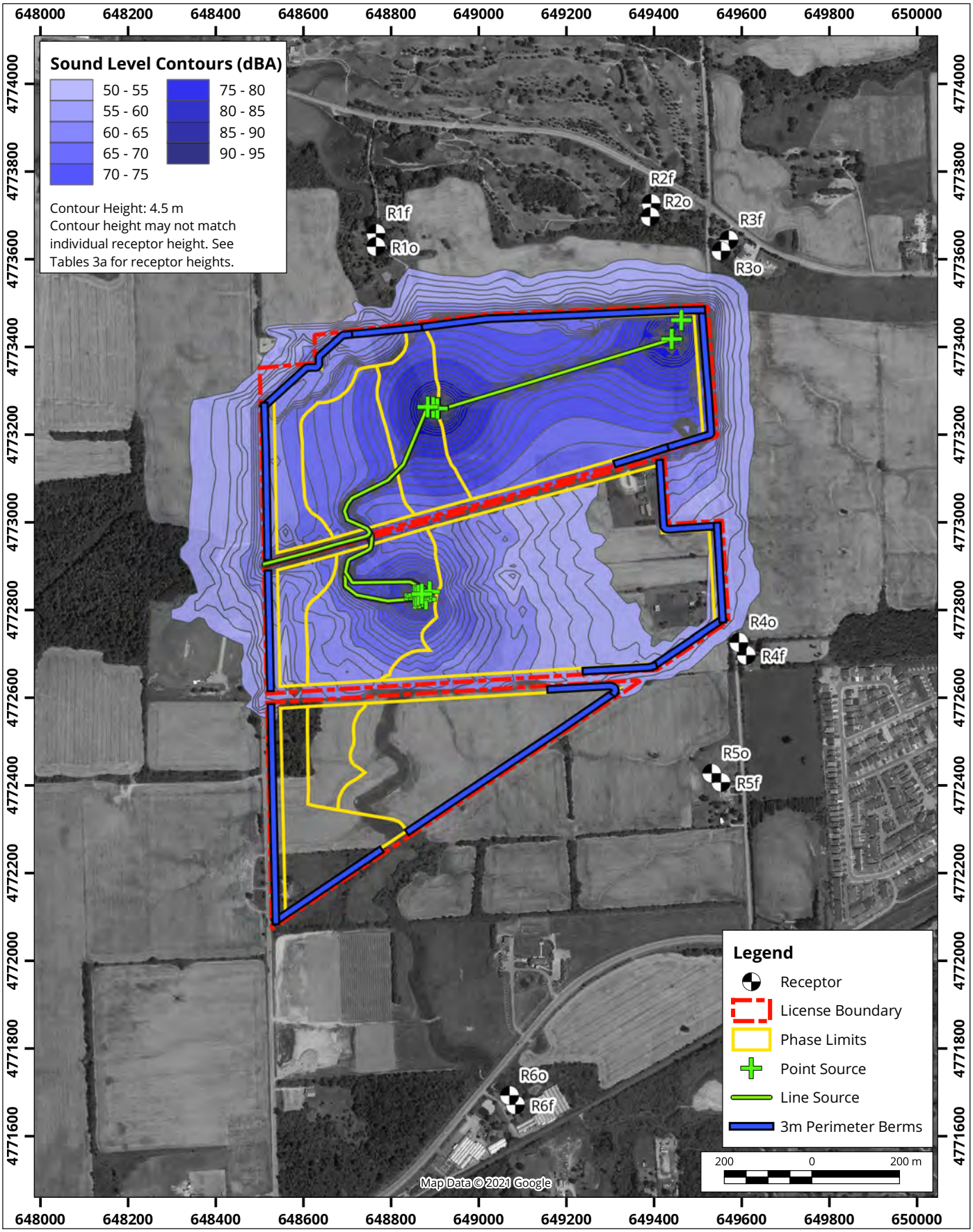


Sound Level Contours
Proposed Phase 3B Northeast, Daytime

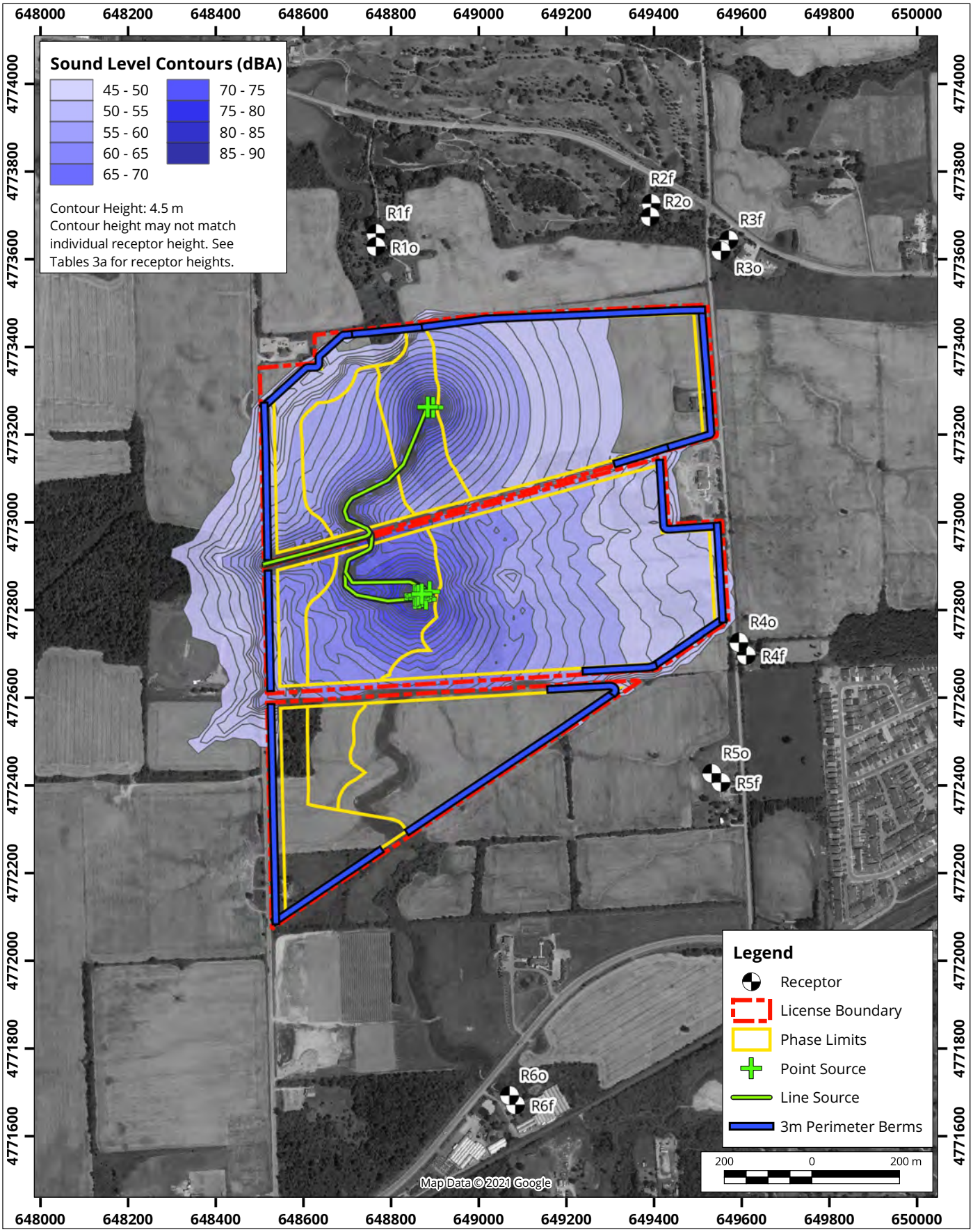
True North

Drawn by: RNL	Figure: 3i
Approx. Scale:	1:12000
Date Revised:	Sep 22, 2021

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Sound Level Contours
Proposed Phase 3B Northeast, Evening/Nighttime

True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Drawn by: RNL	Figure: 3j
Approx. Scale:	1:12000
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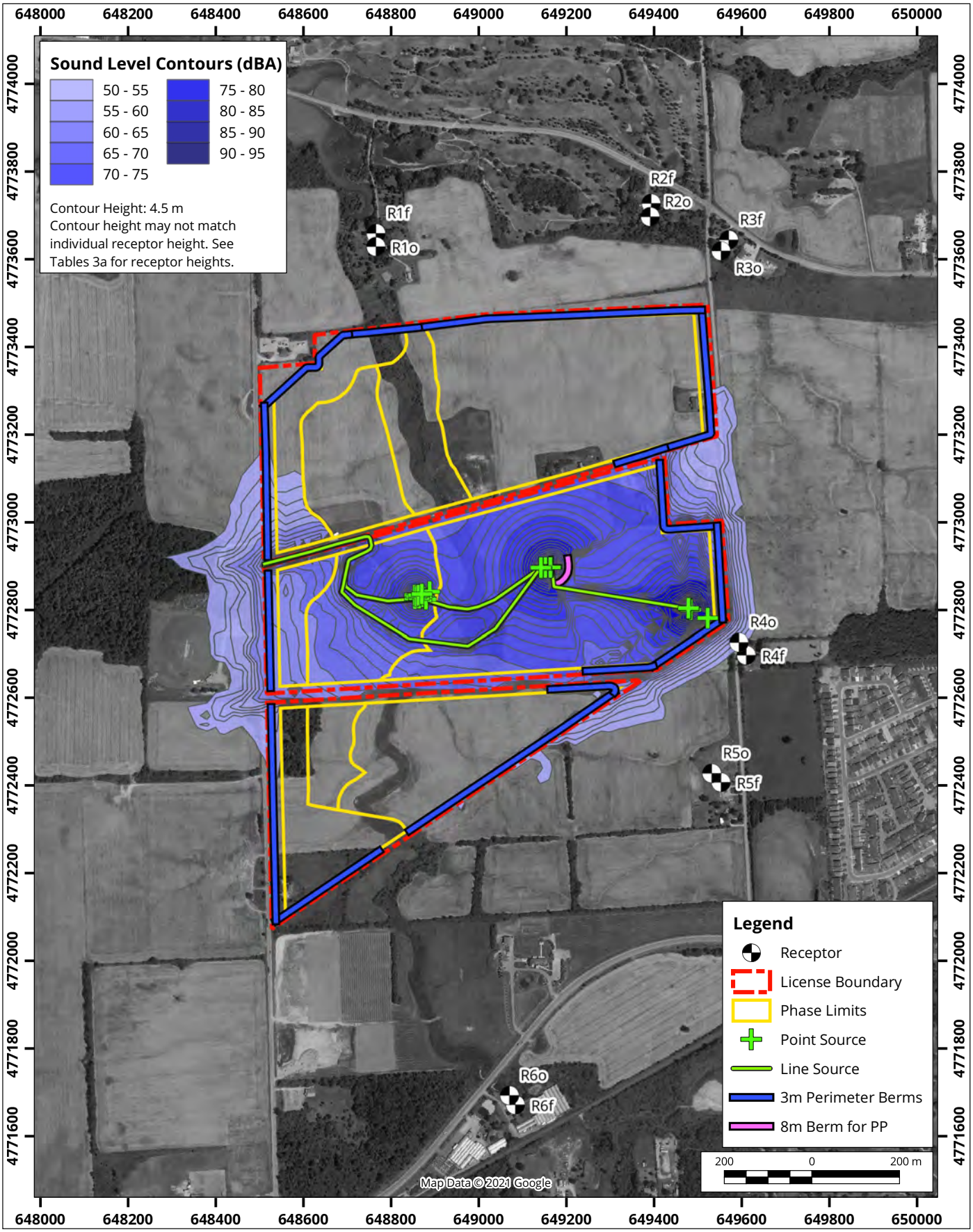


Sound Level Contours
Proposed Phase 4 Southeast, Daytime

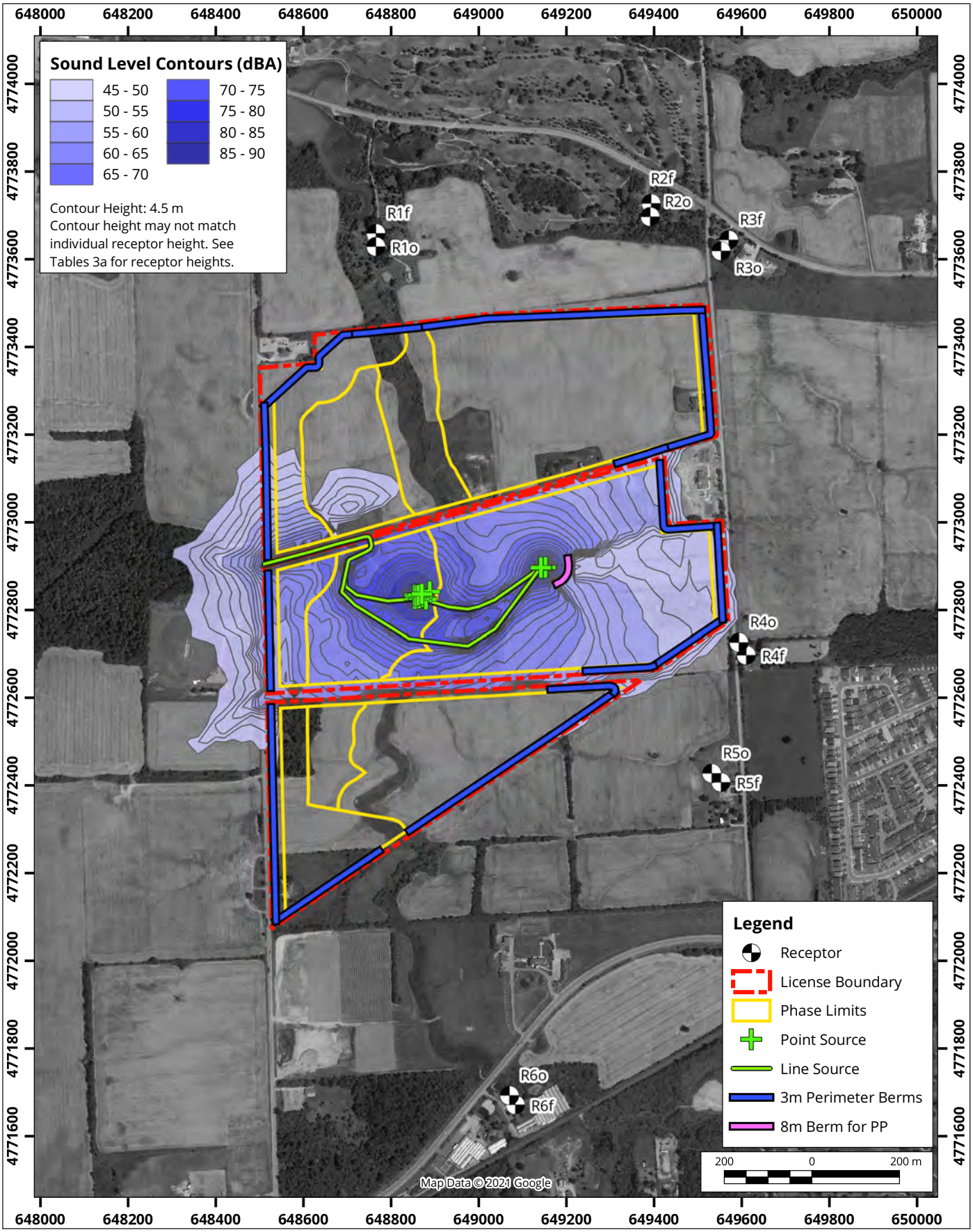
True North

Drawn by: RNL	Figure: 3k
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Sound Level Contours
Proposed Phase 4 Southeast, Evening/Nighttime

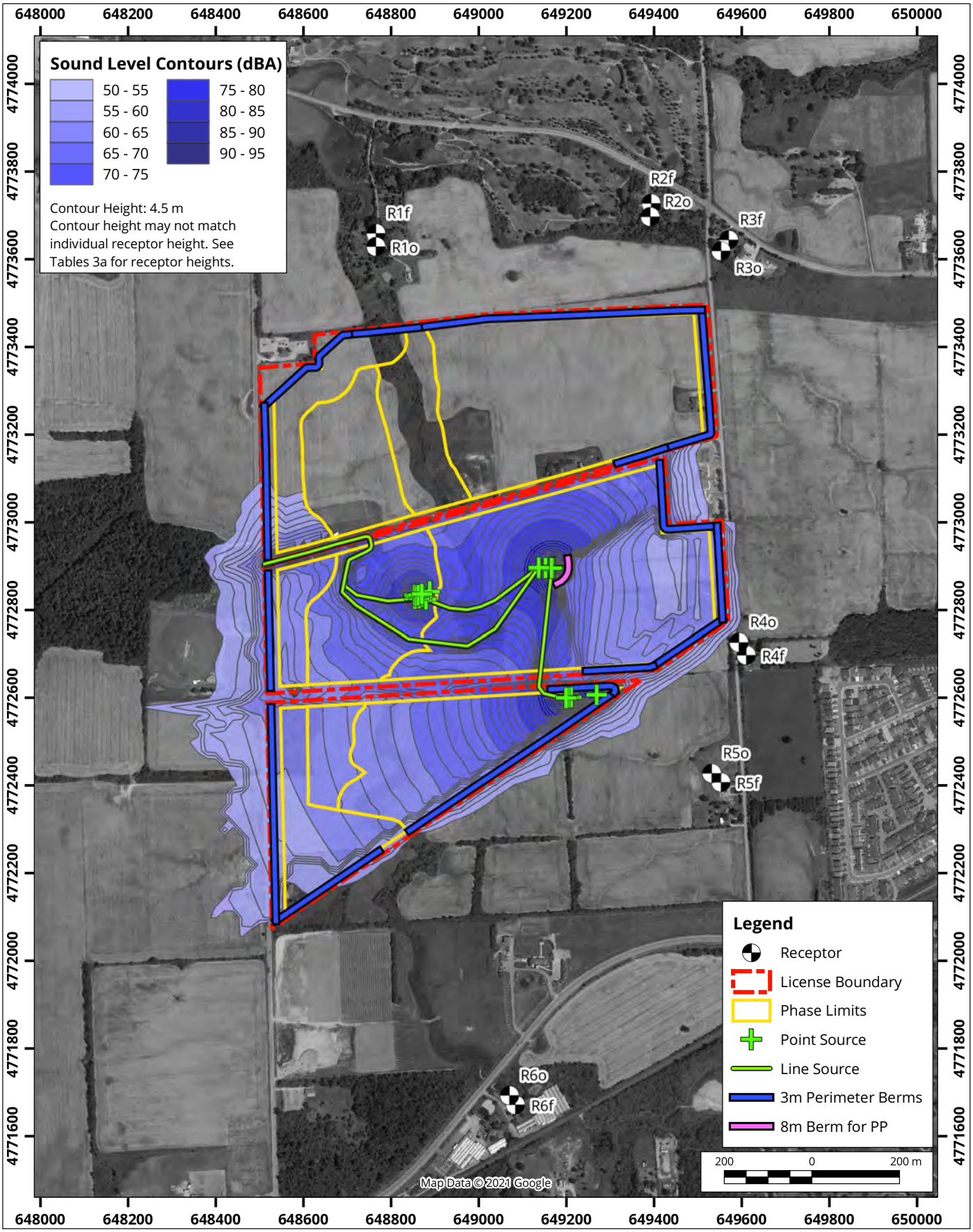
True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Drawn by: RNL	Figure: 3l
Approx. Scale:	1:12000
Date Revised:	Sep 22, 2021



Sound Level Contours
Proposed Phase 5 East, Daytime

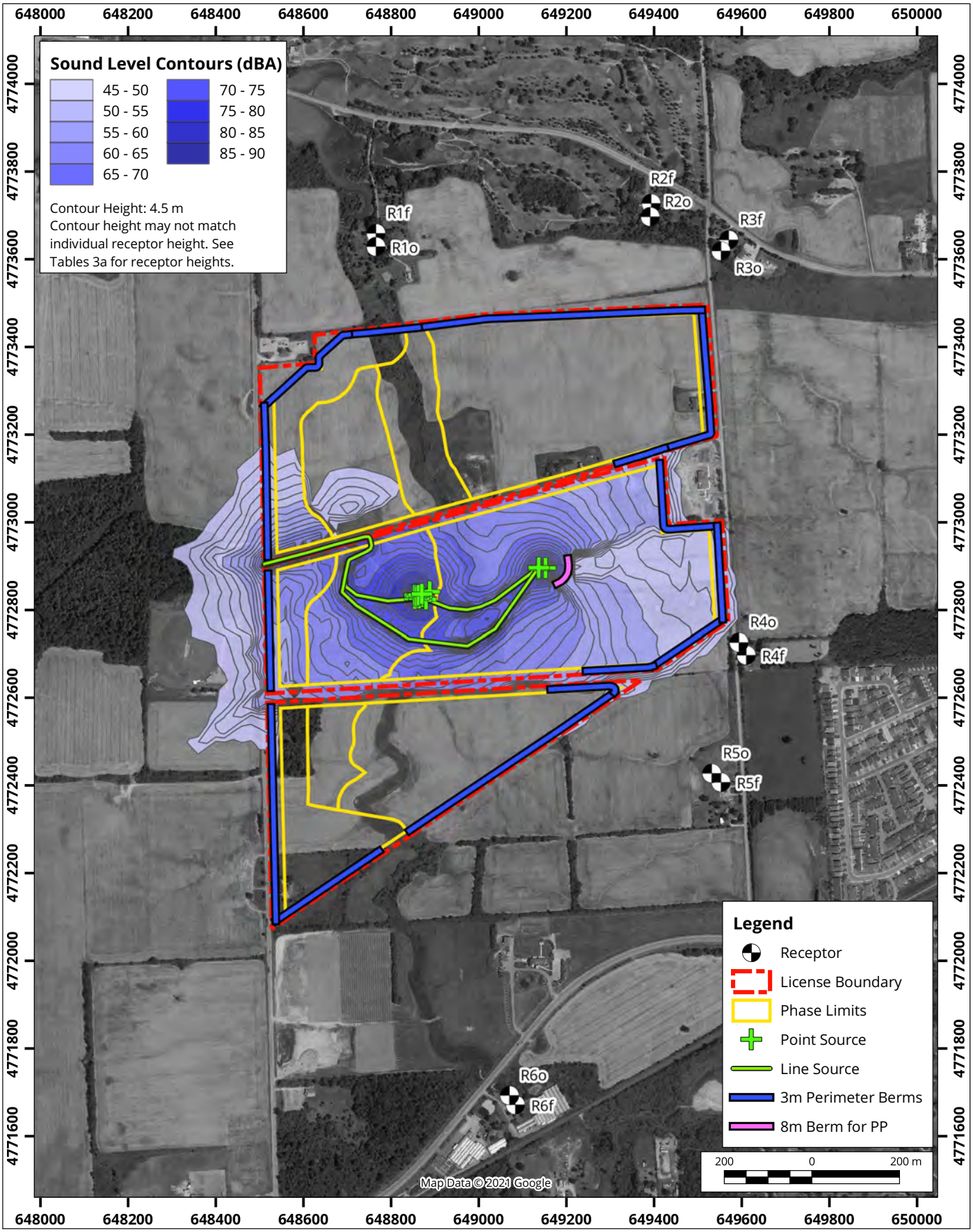
True North

Drawn by: RNL	Figure: 3m
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Sound Level Contours
Proposed Phase 5 East, Evening/Nighttime

True North

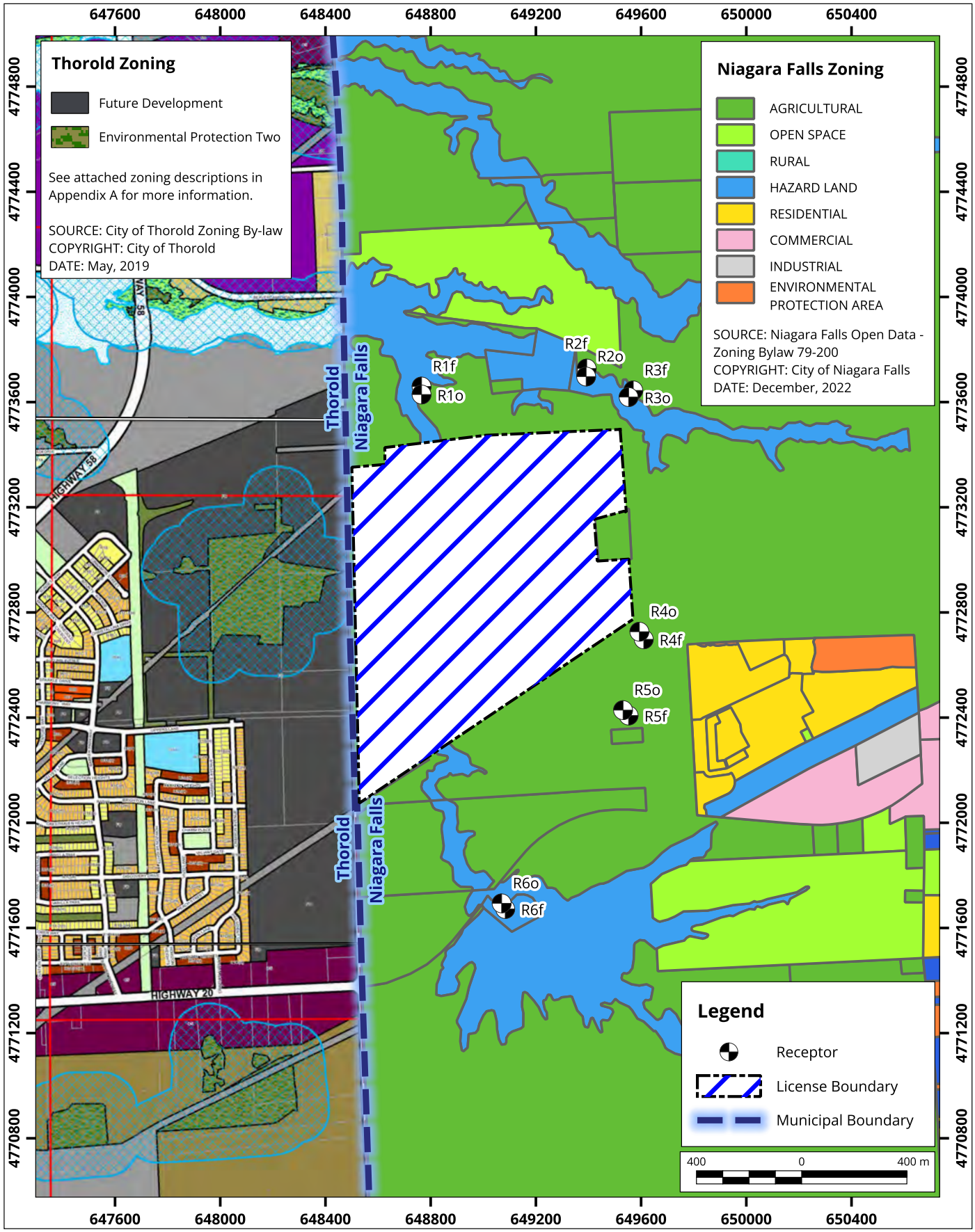
Drawn by: RNL	Figure: 3n
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

APPENDIX A



Zoning Map

True North

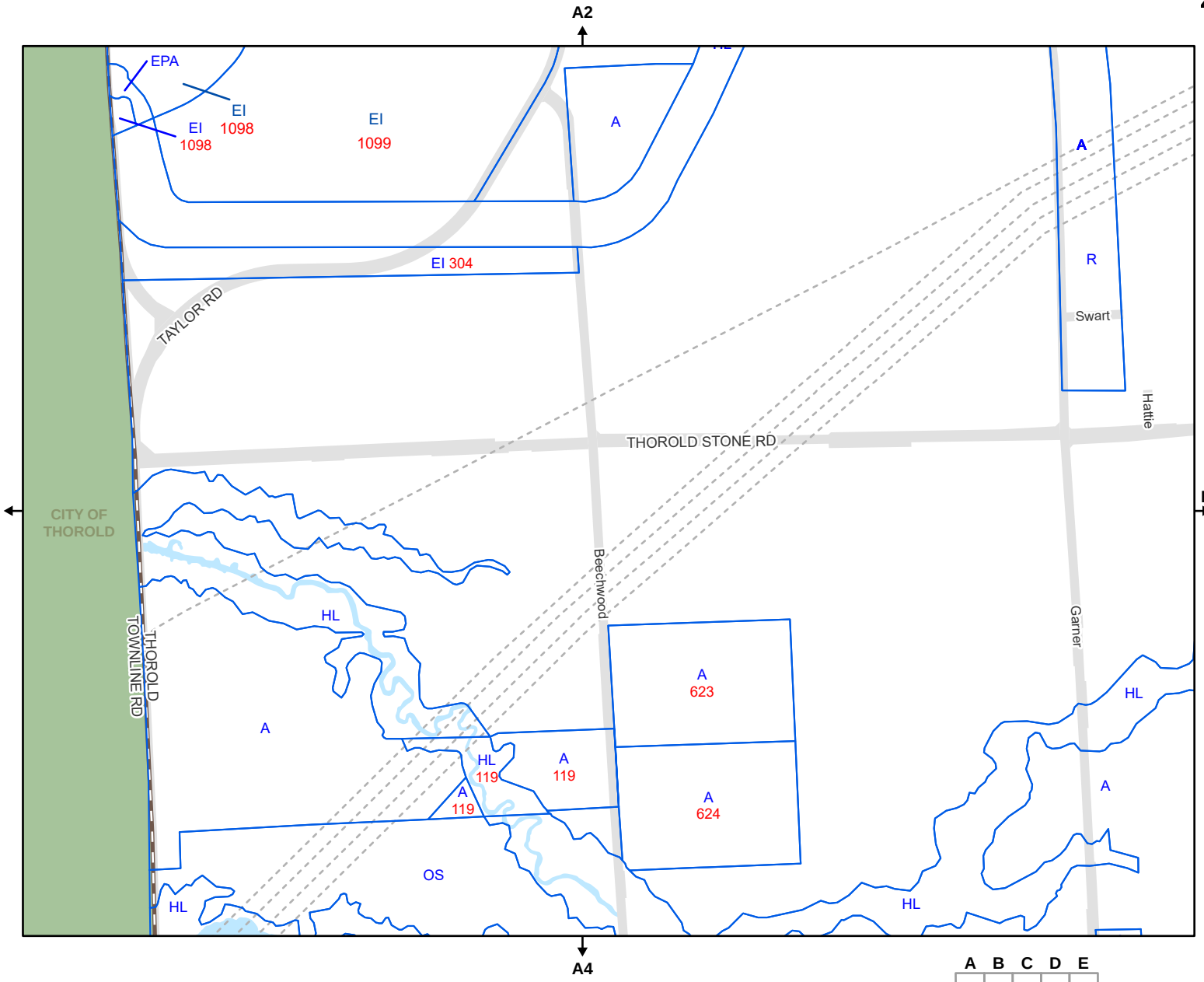
Drawn by:CWM	Figure: A.1
Approx. Scale:	1:20,000
Date Revised:	Jan 11, 2024

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

ZONING BY-LAW 79-200



ZONE LINES

EXCEPTIONS & SPECIAL PROVISION NO.
SEE SECTION 19

81-181
85-077
92-289
03-116
07-091
19-066

CITY OF NIAGARA FALLS
Planning & Development Department

0 500 m

Scale 1:13,000

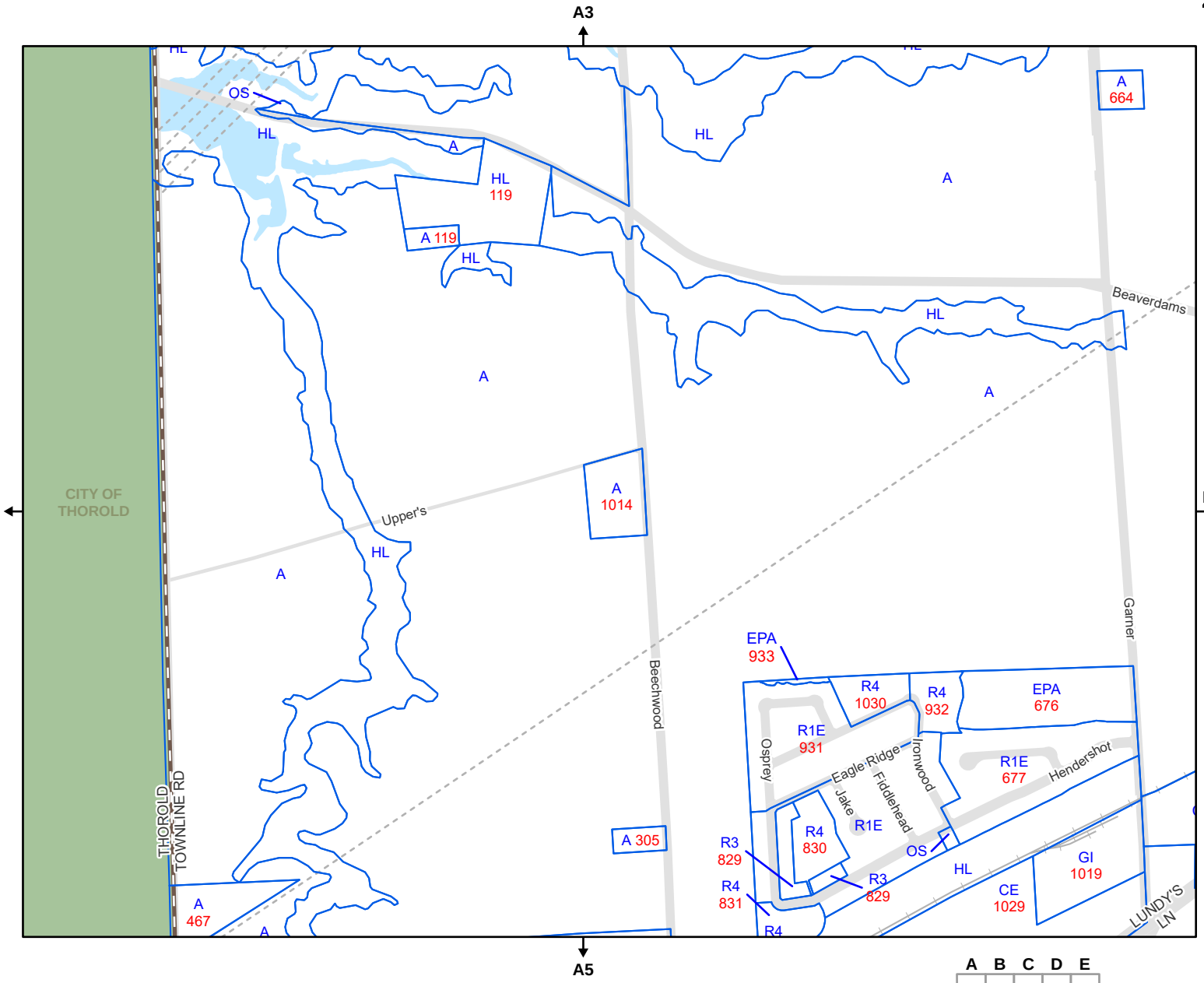
	A	B	C	D	E	F
1						
2						
3	■					
4						
5						
6						
7						
8						

CONSOLIDATION
DECEMBER 2022

Print Date: FEBRUARY, 2023

SHEET A3

ZONING BY-LAW 79-200



ZONE LINES

EXCEPTIONS & SPECIAL PROVISION NO.
SEE SECTION 19

99-48
04-133
04-157
08-099
11-004
15-124
16-028
16-095
16-096

CONSOLIDATION
DECEMBER 2022

CITY OF NIAGARA FALLS
Planning & Development Department

0 500 m

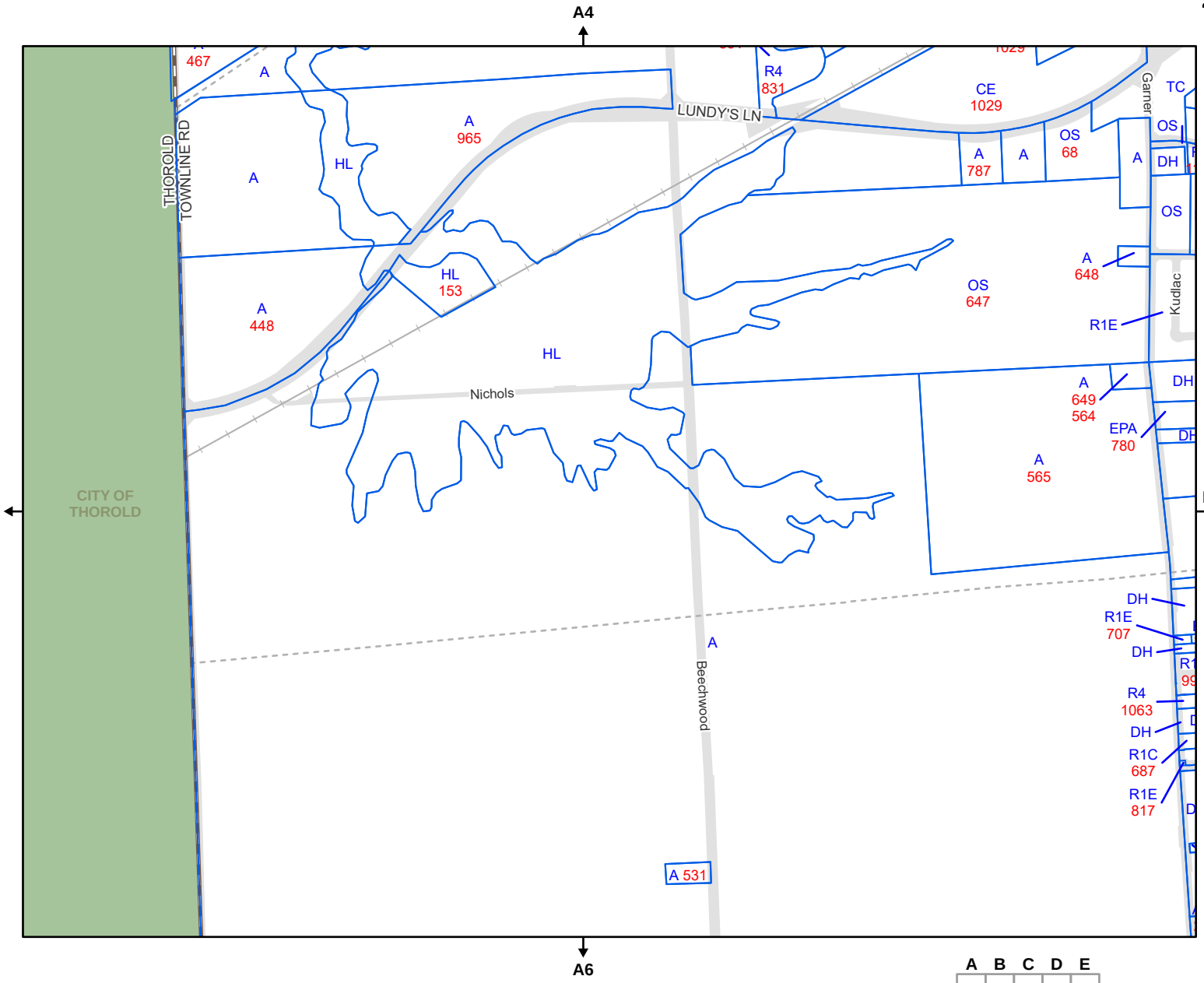
Scale 1:13,000

	A	B	C	D	E	F
1						
2						
3						
4	■					
5						
6						
7						
8						

Print Date: FEBRUARY, 2023

SHEET A4

ZONING BY-LAW 79-200



ZONE LINES

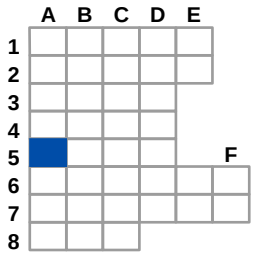
EXCEPTIONS & SPECIAL PROVISION NO.
SEE SECTION 19

95-116
99-048
98-244
04-046
04-090
05-084
04-157
07-090
07-130
08-099
12-068
16-095

CITY OF NIAGARA FALLS
Planning & Development Department

0 500 m

Scale 1:13,000



CONSOLIDATION
DECEMBER 2022

Print Date: FEBRUARY, 2023

SHEET A5

SECTION 3 - ZONES

3.1 CLASSIFICATION OF ZONES: For the purpose of this By-law, the following defined areas of the City of Niagara Falls, namely:

(a) all of the former Village of Chippawa, and
(b) all of the remaining part of the City of Niagara Falls lying north of the middle of the main channel of the Welland River are hereby divided into the following zones, which are hereby established and the lands included in each zone are shown on the Zoning Maps appended hereto as Schedule "A".

ZONES	**SHORT TITLES**
Residential 1A Density Zone	R1A
Residential 1B Density Zone	R1B
Residential 1C Density Zone	R1C
Residential 1D Density Zone	R1D
Residential 1E Density Zone	R1E
Residential 1F Density Zone	R1F
Residential Mobile Home Park Zone	RMP
Residential Two Zone	R2
Residential Mixed Zone	R3
Residential Low Density, Group Multiple Dwelling Zone	R4
Residential Apartment 5A Density Zone	R5A
Residential Apartment 5B Density Zone	R5B
Residential Apartment 5C Density Zone	R5C
Residential Apartment 5D Density Zone	R5D
Residential Apartment 5E Density Zone	R5E
Residential Apartment 5F Density Zone	R5F

ZONES	SHORT TITLES
Transition Residential Multiple Zone	TRM
Neighbourhood Commercial Zone	NC
General Commercial Zone	GC
Deferred Commercial Zone	DC
Planned Shopping Centre Commercial Zone	SC
Central Business Commercial Zone	CB
Tourist Commercial Zone	TC
Camping Establishment Zone	CE
Deferred Tourist Commercial Zone	DTC
Automobile Service Station and Gasoline Bar Zone	AS
Institutional Zone	I
Prestige Industrial Zone	PI
Light Industrial Zone	LI
General Industrial Zone	GI
Heavy Industrial Zone	HI
Transportation - Distribution Industrial Zone	TDI
Extractive Industrial Zone	EI
Agricultural Zone	A
Rural Zone	R
Open Space Zone	OS
Development Holding Zone	DH
Hazard Land Zone	HL

ZONES	SHORT TITLES
Parking Zone	P
Parking Holding Zone	PH
Environmental Protection Area Zone	EPA

3.2 ZONING MAPS: The Zones aforesaid and the boundaries of such Zones are shown on one or more of the Zoning Maps appended thereto as Schedule “A”, referred to in this By-law as “Zoning Maps”, each of which Zoning Maps and the Key Map contained in the said Schedule “A” and the Setback Plans appended hereto as Schedules “B-1”, “B-2”, “B-3” and “B-4”, Schedule “C” and Schedules “C-A” through to and including “C-F” and Schedules “C-H” through to and including “C-K”, and Schedule “D” together with all titles, symbols, notations, references and information shown therein shall form a part of this by-law to the same extent as if fully described in the text of this By-law.” (2004-14, 2012-60)

3.3 SHORT TITLES: The short titles of the Zones listed in Section 3.1 may be used to refer to buildings and structures and uses of buildings, structures and land permitted by this By-law in such Zones; and whenever in this By-law the word "Zone" is used preceded by any of the said short titles, such references shall mean any area of the City of Niagara Falls delineated and designated on the said Zoning Maps by such short title.

3.3.1 "RESIDENTIAL ZONE": The expression "residential zone", whenever used in this By-law, means an area of the City of Niagara Falls delineated on a Zoning Map and designated therein as R1A, R1B, R1C, R1D, R1E, R1F, RMP, R2, R3, R4, R5A, R5B, R5C, R5D, R5E, R5F or TRM.

3.3.2 "COMMERCIAL ZONE": The expression "commercial zone" whenever used in this By-law, means an area of the City of Niagara Falls delineated on a Zoning Map and designated therein as NC, GC, DC, SC, CB, TC, CE, DTC, AS, P or PH.

3.3.3. "INDUSTRIAL ZONE": The expression "industrial zone" whenever used in this By-law means an area of the City of Niagara Falls delineated on a Zoning Map and designated therein as PI, LI, GI, HI, TDI or EI.

3.4 ZONE BOUNDARIES: Where any uncertainty exists with respect to the boundary of any zone as shown on the Zoning Maps, the following rules shall apply:

(a) a boundary indicated as following a highway, street or lane shall be the centre line of such highway, street or lane;
(b) where a street or part of a street referred to in Section 4.27.1 of this By-law as a Type A, Type B, Type C, Type D, Type E or Transitional street.

(i) forms a boundary between zones, it is shown on the Zoning Maps by one or more of the respective symbols set forth in Column 2 of the following Table:

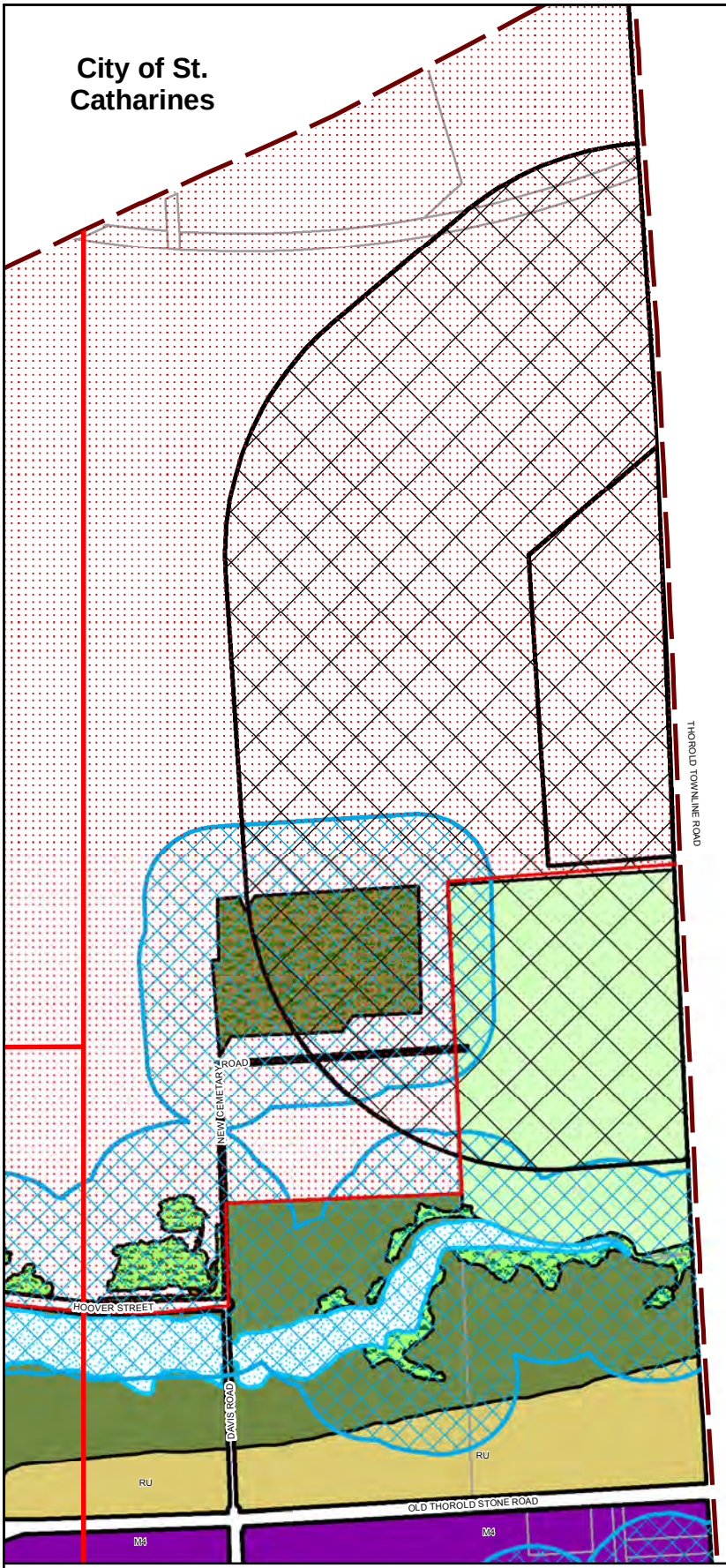
Column 1	**Column 2**
Type of Street	**Symbol**
Type A	(Green)
Type B	(Salmon)
Type C	(Magenta)
Type D	(Cyan)
Type E	(Gold)
Transitional	(Red)

(ii) does not form a boundary between zones, it is shown on the Zoning Maps by one or more of the respective symbols set forth in Column 2 of the following Table:

Column 1	**Column 2**
Type of Street	**Symbol**
Type A	(Green)
Type B	(Salmon)
Type C	(Magenta)
Type D	(Cyan)
Type E	(Gold)
Transitional	(Red)

(c) generally, boundaries between zones are indicated either by an unbroken heavy line or by one or more of the symbols set forth in subclause I of clause b of this section.

(d) a boundary indicated as following a watercourse, creek, stream, power canal, or the right-of-way of a railway or of an electrical, gas or oil transmission line shall be



City of Thorold Boundary

Community Zones
- I1 - Major Institutional
- I2 - Minor Institutional
- OS1 - Parks and Recreation
- OS2 - Open Space Conservation

Countryside Zones
- A - Agricultural
- AS - Specialty Crop
- RU - Rural

Employment Zones
- M1 - Prestige Industrial
- M2 - General Industrial
- M3 - Employment Mixed Use
- M4 - Rural Industrial

Environmental Zones
- EP1 - Environmental Protection One
- EP2 - Environmental Protection Two
- EP3 - Environmental Protection Three

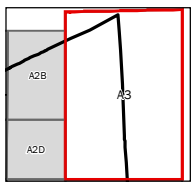
Other Zones
- FD - Future Development
- U - Utility

Commercial Zones
- C1 - Downtown Main Street
- C2 - Downtown Mixed Use
- C3 - General Commercial
- C4 - Neighbourhood Commercial
- C5 - Highway Commercial
- C6 - Mixed Use Commercial

Residential Zones
- R1A - Single Detached
- R1B - Single Detached, Duplex
- R1C - Single Detached, Duplex
- R1D - Single Detached
- R2A, R2B - Semi Detached
- R3A, R3B, R3C, R3D - Townhouse (Street or Stacked), Triplex, Fourplex, and Private Street Development
- R4A, R4B - Apartment and Long Term Care Facility

- Greenbelt Natural Heritage Area
- Source Water Protection Area (area specific provisions apply)
- Niagara Escarpment Plan
- Former Waste Disposal Site
- Solid Waste Dispoal Assessment Area (area specific provisions apply)
- Natural Heritage Feature Buffer Area
- Water Feature

City of Thorold Zoning By-law
Schedule A3



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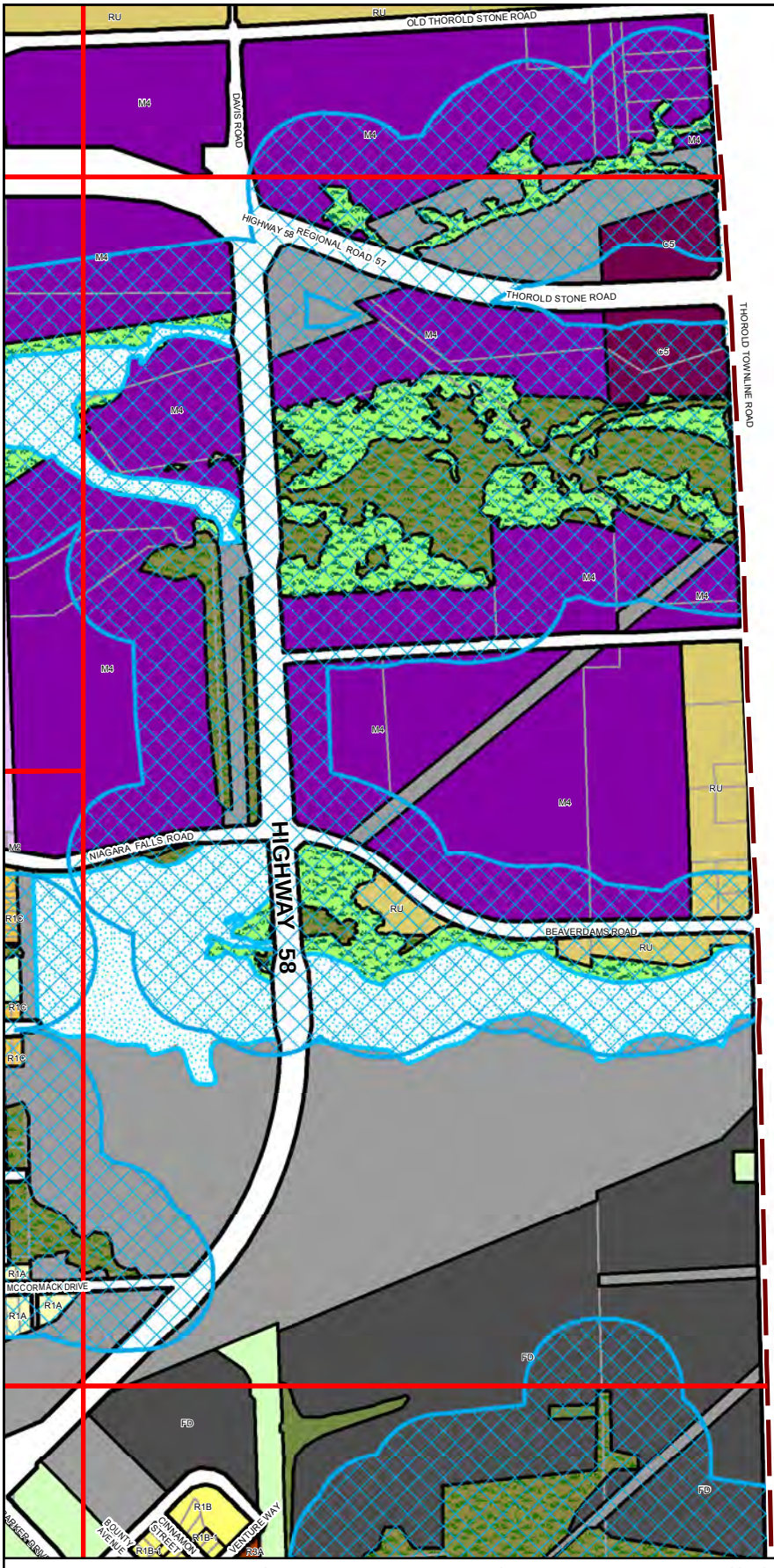

City of Niagara Falls

City of Thorold Boundary

Community Zones
- I1 - Major Institutional
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Employment Zones
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- EP1 - Environmental Protection One
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- FD - Future Development
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Commercial Zones
- C1 - Downtown Main Street
- C2 - Downtown Mixed Use
- C3 - General Commercial
- C4 - Neighbourhood Commercial
- C5 - Highway Commercial
- C6 - Mixed Use Commercial

Residential Zones
- R1A - Single Detached
- R1B - Single Detached, Duplex
- R1C - Single Detached, Duplex
- R1D - Single Detached
- R2A, R2B - Semi Detached
- R3A, R3B, R3C, R3D - Townhouse (Street or Stacked), Triplex, Fourplex, and Private Street Development
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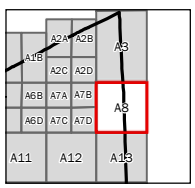
- Natural Heritage Feature Buffer Area
- Water Feature

City of Thorold Zoning By-law
Schedule A8



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City of Thorold Boundary

Community Zones
- I1 - Major Institutional
- I2 - Minor Institutional
- OS1 - Parks and Recreation
- OS2 - Open Space Conservation

Countryside Zones
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Employment Zones
- M1 - Prestige Industrial
- M2 - General Industrial
- M3 - Employment Mixed Use
- M4 - Rural Industrial

Environmental Zones
- EP1 - Environmental Protection One
- EP2 - Environmental Protection Two
- EP3 - Environmental Protection Three

Other Zones
- FD - Future Development
- U - Utility

Commercial Zones
- C1 - Downtown Main Street
- C2 - Downtown Mixed Use
- C3 - General Commercial
- C4 - Neighbourhood Commercial
- C5 - Highway Commercial
- C6 - Mixed Use Commercial

Residential Zones
- R1A - Single Detached
- R1B - Single Detached, Duplex
- R1C - Single Detached, Duplex
- R1D - Single Detached
- R2A, R2B - Semi Detached
- R3A, R3B, R3C, R3D - Townhouse (Street or Stacked), Triplex, Fourplex, and Private Street Development
- R4A, R4B - Apartment and Long Term Care Facility

- Greenbelt Natural Heritage Area
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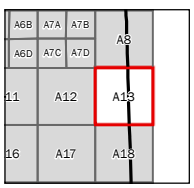
- Natural Heritage Feature Buffer Area
- Water Feature

City of Thorold Zoning By-law
Schedule A13



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Part 5 | Establishment of Zones

5.1 Establishment of Zones and Zone Symbols

This By-law establishes the following *zones*, and places all lands in the defined area into *zones*, which are defined in Table 5.1.

Table 5.1: Establishment of Zones	
Zone Name	**Zone Symbol**
Residential Zones	
Single Detached A	R1A
Single Detached and Duplex B	R1B
Single Detached and Duplex C	R1C
Single Detached D	R1D
Semi-detached A	R2A
Semi-detached B	R2B
Townhouse A	R3A
Townhouse B	R3B
Triplex and Fourplex	R3C
Private Street Development	R3D
Apartment and Long-term Care Facility A	R4A
Apartment and Long-term Care Facility B	R4B
Commercial Zones	
Downtown Main Street	C1
Downtown Mixed Use	C2
General Commercial	C3
Neighbourhood Commercial	C4
Highway Commercial	C5
Mixed Use Commercial	C6
Employment Zones	
Prestige Employment	M1
General Industrial	M2
Employment Mixed Use	M3

Table 5.1: Establishment of Zones	
Zone Name	**Zone Symbol**
Rural Industrial	M4
Agricultural & Rural Zones	
Agricultural	A
Specialty Crop	AS
Rural	RU
Community Zones	
Major Institutional	I1
Minor Institutional	I2
Open Space – Parks and Recreation	OS1
Open Space - Conservation	OS2
Environmental Zones	
Environmental Protection 1	EP1
Environmental Protection 2	EP2
Environmental Protection 3	EP3
Other Zones	
Future Development	FD
Utility	U

APPENDIX B

CITY OF THOROLD
Official Plan
SCHEDULE 'A-3'
THE NEIGHBOURHOODS OF ROLLING MEADOWS SECONDARY PLAN
Land Use

Legend

- Municipal Boundary
- Urban Area Boundary
- Built Boundary
- Greenfield Overlay
- Open Space & Parks
- Employment - Prestige Industrial
- Employment - Light Industrial
- Employment - Dry Industrial
- Highway Commercial
- Village Square Commercial
- Institutional
- Residential
- Environmental Protection Two
- Waterbody
- Aggregate Impact Area

Road Classification

- Highway
- Arterial
- Local

Trails

- Eco-Trail
- Off-Road Multi-Use Trail
- On-Road Cycling Trail

See Schedule 'A'

See Schedule 'A2'

See Schedule 'A2'

See Schedule 'A'

LOT 47 LOT 46 LOT 45 LOT 44 LOT 43

LOT 70 LOT 69 LOT 68 LOT 67 LOT 66

LOT 94 LOT 93 LOT 92 LOT 91 LOT 90 LOT 89

LOT 117 LOT 116 LOT 115 LOT 114 LOT 113 LOT 112

58 THOROLD TOWNLINE RD 70

UPPER'S LANE

LUNDY'S LANE 20

ALLANPORT RD 82

City of Niagara Falls

N

0 100 200 300 400 500

Metres

City of Thorold — Where Ships Climb The Mountain...

Adopted April 21, 2015

B1.8.12 Land Use Compatibility

It is a requirement of this Plan that appropriate measures be undertaken to attenuate the effects of noise, visual intrusion or other undesirable impacts of residential development adjacent to Highways 58 and 20, Thorold Townline Road and other environmentally incompatible land uses.

B1.8.12.1 Residential Development Adjacent to Provincial Highways and Regional Arterial Roads

Where residential development is proposed to be located adjacent to Highway 58 and 20 three alternative design considerations can be utilized to achieve environmental compatibility:

a) Acoustical barriers such as berms or walls; or

b) Minimum building setbacks of 65 metres from Highway 20 and 85 metres from Highway 58; or

c) Single loaded window streets with the dwelling units facing the highway.

For residential development within 250 metres of Highway 58 and 20 and 100 metres of Thorold Townline Road the developer shall be required to prepare a detailed noise study. A noise feasibility study is required within 50 metres of a provincial highway in accordance with Provincial Guideline NPC-300. The noise study shall include recommendations regarding noise attenuation measures which are required in order to satisfy Provincial sound level objectives. Noise attenuation measures may include but shall not be limited to the following:

a) Sound proofing measures and construction techniques;

b) Warning clauses; and,

c) Equipping the dwelling units with air conditioning or special ventilation.

B1.8.12.2 Residential Development Adjacent to Stationary Noise Sources and Industrial Facilities

Located within the Blackhorse Community are a number of existing uses which are stationary noise sources and may therefore impact sensitive receptors. A noise study is required for residential uses and noise sensitive land uses, such as a daycare facility, institutional use, or hotel/motel, if these uses are to be located within:

a) 300 metres of the commercial vehicle refuelling station; or,

b) 70 metres of the natural gas metering facility.

The noise study shall include recommendations regarding noise attenuation measures which are required in order to satisfy Provincial sound level objectives.

When residential development is proposed adjacent to the natural gas metering facility a 20 metre separation distance is required measured from lot line to line.

a) The utilization of window streets abutting the industrial area and the dwelling units having flanking yards;

b) Sound proofing and construction techniques;

c) Acoustical barriers such as berms or walls; and

d) A forced air ventilation system with central air conditioning or some other form of mechanical ventilation.

B1.8.12.3 Aggregate Resource Protection Policies

The Ministry of Natural Resources and Forestry has identified lands east of Thorold Townline Road, north of the Hydro One corridor, as a potential bedrock resource area. Development applications within 500 metres of this potential bedrock resource area shall be reviewed having regard to this identified resource area and the need to demonstrate that future aggregate extraction will not be precluded or hindered and to achieve land use compatibility. Mitigation measures which shall be determined through appropriate studies prepared by the developer may be necessary and include but shall not be limited to the following:

a) Building orientation;

b) The utilization of window streets and dwelling units having flanking yards;

c) Sound proofing and construction techniques;

d) Increasing building setbacks or possibly the need for additional spatial separation; and

e) Landscape treatments.

In order to determine the necessary mitigation, the developer when proceeding before a quarry application shall be required to prepare the following studies assuming that a proposed quarry will be located on the east side of Thorold Townline Road:

a) Operational noise;

b) Blasting;

c) Traffic; and,

d) Any other technical report considered appropriate by Council.

The 500 metre study area is identified on Schedule A-3.

It shall also be recognized that Thorold Townline Road is a Regional arterial road and is the likely aggregate haul route required to serve any future aggregate extraction

operation to the east. Accordingly, all studies required by any policy of this Plan shall recognize that Thorold Townline Road is a future aggregate haul route. The haul route shall be restricted from the future extraction operation entrance southerly to Highway 20, a major arterial.

Once the proponent has prepared the appropriate studies and the necessary mitigation is incorporated into the proposed development, if necessary, the utilization of such mitigation measures does not relieve the new mineral aggregate operation from providing appropriate setbacks and mitigation measures in order to achieve land use compatibility.

B1.8.12.4 Residential Development Adjacent to Thorold Townline Road

When residential development is proposed to be located adjacent to the Townline Road and the easterly located agricultural lands in the City of Niagara Falls consideration shall be given to utilizing design elements of dwelling orientation, window streets, increased building setbacks, and landscape treatments to achieve land use compatibility.

B1.8.13 Servicing and Transportation

B1.8.13.1 General

a) All development within the Neighbourhoods of Rolling Meadows shall be developed with full municipal services in accordance with Municipal Policy.

b) Extension of municipal services into the Neighbourhoods of Rolling will be required to service development.

c) Easements to accommodate municipal services shall be granted as a condition of development approval.

d) Easements to accommodate utilities shall be granted as a condition of development approval.

e) The provision of a water distribution system, wastewater collection system, stormwater management facilities, road network, and other municipal services will be achieved with minimum costs to the City.

f) In order to achieve the proper co-ordination of services and consistence in development standards, the orderly development of land by way of plan of subdivision and site plan will be required throughout the neighbourhood. Consents to sever land to create development blocks will only be permitted when it is determined to the satisfaction of the City that the severance of land will not prejudice or jeopardize the subsequent development of the balance of the lands.

B1.8.13.2 Infrastructure Improvements

In order to accommodate development within the Neighbourhoods of Rolling Meadows, it will be necessary to address off-site upgrading or expansion of infrastructure such as:

a) The extension of the Allanburg Road trunk sanitary sewer easterly to the

APPENDIX C

Table C.1: Key Parameters Included in the Cadna/A Noise Modelling

Upper's Quarry, 1603157

Parameter	Value	Rationale
Ground Absorption, within extraction limit	0.2	Accounts for hard ground (exposed rock surfaces) within extraction limit
Ground Absorption, outside of extraction limit	0.8	Accounts for mostly soft ground outside of quarry extraction limit
Temperature	10 ^{o}C	Ontario standard conditions
Relative Humidity	70%	Ontario standard conditions
Max. Order of Reflection	1	1st order reflection considered
Absorption Coefficient Alpha	0.37	Cadna/A default value for structured facade

Cadna/A ISO-9613 Calculation Protocol - Definitions

Parameter	Unit	Definition
Nr		Ray Number
X	**(m)**	X-axis Cartesian Coordinate
Y	**(m)**	Y-axis Cartesian Coordinate
Z	**(m)**	Z-axis Cartesian Coordinate
Refl.	**order**	Order of Reflection
DEN	**D/E/N**	Time of Day (Day, Evening, or Night)
Freq.	**(Hz)**	1/1 Octave Band Dominant Frequency or Frequency Type ("A" for A-weighted)
Lw	**(dBA)**	Overall Sound Power Level
I/a	**dB**	Line/Area Source Correction
Optime	**dB**	Operating Time Correction
K0	**(dB)**	D_omega in ISO 9613-2 (correction for radiation into solid angles less than 4 Pi)
Di	**(dB)**	Directivity Index
Adiv	**(dB)**	Attenuation Due to Divergence
Aatm	**(dB)**	Atmospheric Attenuation
Agr	**(dB)**	Ground Attenuation
Afol	**(dB)**	Attenuation Due to Foliage
Ahous	**(dB)**	Attenuation from Houses
Abar	**(dB)**	Barrier Attenuation
Cmet	**(dB)**	Meteorological Correction
RL	**(dB)**	Reflection Loss
Lr	**(dBA)**	Resulting Noise Impact at Receptor - Leq (1-Hr)

Sample CadnaA Output - Uppers Quarry - Proposed Phase 1A Sinking Cut

Receiver
Name: Facade of dwelling (5584 Beechwood Rd)
ID: R4f
X: 649610.64 m
Y: 4772697.98 m
Z: 190.50 m

Point Source, ISO 9613, Name: "P1A_Sinkcut, PP Loader", ID: "P1A_Sinkcut_PP_Ldr"																				
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)
146	648801.86	4772799.02	179.50	0	D	A	105.6	0.0	0.0	0.0	0.0	69.2	5.1	-1.7	0.0	0.0	0.0	0.0	0.0	33.0

Point Source, ISO 9613, Name: "P1A_Sinkcut, PC Primary Crusher", ID: "P1A_Sinkcut_PC_PrimaryCrush"																				
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	648674.53	4772846.65	180.00	0	D	A	117.6	0.0	0.0	0.0	0.0	70.5	3.3	-1.7	0.0	0.0	0.0	0.0	0.0	45.5

Point Source, ISO 9613, Name: "P1A_Sinkcut, PP Secondary Crusher", ID: "P1A_Sinkcut_PP_SecondaryCrush"																				
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)
148	648791.38	4772792.73	180.00	0	D	A	114.6	0.0	0.0	0.0	0.0	69.3	4.0	-1.7	0.0	0.0	0.0	0.0	0.0	43.0

Point Source, ISO 9613, Name: "P1A_Sinkcut, PP Idling Truck", ID: "P1A_Sinkcut_PP_Trk2"																				
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)
149	648806.63	4772810.88	180.00	0	D	A	96.3	0.0	0.0	0.0	0.0	69.2	3.8	-1.8	0.0	0.0	0.0	0.0	0.0	25.1

Point Source, ISO 9613, Name: "P1A_Sinkcut, PP Idling Truck", ID: "P1A_Sinkcut_PP_Trk1"																				
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	648804.44	4772810.35	180.00	0	D	A	96.3	0.0	0.0	0.0	0.0	69.2	3.8	-1.8	0.0	0.0	0.0	0.0	0.0	25.0

Point Source, ISO 9613, Name: "P1A_Sinkcut, PP Secondary & Tertiary Screen", ID: "P1A_Sinkcut_PP_SecondaryTertiaryScreen"																				
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)
152	648792.65	4772791.54	180.00	0	D	A	113.8	0.0	0.0	0.0	0.0	69.3	4.1	-1.6	0.0	0.0	0.0	0.0	0.0	42.0

Point Source, ISO 9613, Name: "P1A_Sinkcut, PC Primary Screen", ID: "P1A_Sinkcut_PC_PrimaryScreen"																				
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	648675.85	4772845.10	180.00	0	D	A	113.8	0.0	0.0	0.0	0.0	70.5	4.5	-1.9	0.0	0.0	0.0	0.0	0.0	40.7

Point Source, ISO 9613, Name: "P1A_Sinkcut, PC loader dumping into crusher", ID: "P1A_Sinkcut_PC_CrusherDump"																				
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)
159	648673.29	4772848.33	180.00	0	D	A	123.0	0.0	-10.8	0.0	0.0	70.5	4.2	-1.9	0.0	0.0	0.0	0.0	0.0	39.3

Point Source, ISO 9613, Name: "P1A_Sinkcut, WF Drill", ID: "P1A_Sinkcut_WF_Drill"																				
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)
160	648631.06	4772869.76	179.50	0	D	A	110.0	0.0	0.0	0.0	0.0	71.0	6.6	-2.2	0.0	0.0	0.0	0.0	0.0	34.7

Line Source, ISO 9613, Name: "P1A_Sinkcut, Aggregate Shipping from PP, Full", ID: "P1A_Sinkcut_RD_SHP_Aggr_Fu"																				
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	648768.21	4772877.52	180.57	0	DEN	A	67.0	21.7	0.0	0.0	0.0	69.7	3.9	-1.6	0.0	0.0	0.0	0.0	0.0	16.7
165	648622.64	4772934.55	186.30	0	DEN	A	67.0	22.1	0.0	0.0	0.0	71.1	4.3	-1.5	0.0	0.0	0.0	0.0	0.0	15.1
176	648527.52	4772909.10	187.70	0	DEN	A	67.0	15.5	0.0	0.0	0.0	71.9	4.5	-1.6	0.0	0.0	0.0	0.0	0.0	7.7
179	648721.07	4772946.02	182.79	0	DEN	A	67.0	13.2	0.0	0.0	0.0	70.3	4.1	-1.5	0.0	0.0	0.0	0.0	0.0	7.3
182	648706.19	4772952.83	185.02	0	DEN	A	67.0	10.9	0.0	0.0	0.0	70.5	4.1	-1.4	0.0	0.0	0.0	0.0	0.0	4.7

Line Source, ISO 9613, Name: "P1A_Sinkcut, Aggregate Shipping from PP, Empty", ID: "P1A_Sinkcut_RD_SHP_Aggr_Em"																				
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)
163	648765.56	4772875.98	180.50	0	DEN	A	67.0	21.7	0.0	0.0	0.0	69.7	3.9	-1.6	0.0	0.0	0.0	0.0	0.0	16.6
166	648622.41	4772930.83	186.31	0	DEN	A	67.0	22.1	0.0	0.0	0.0	71.1	4.3	-1.5	0.0	0.0	0.0	0.0	0.0	15.1
174	648527.49	4772905.03	187.73	0	DEN	A	67.0	15.6	0.0	0.0	0.0	71.8	4.5	-1.6	0.0	0.0	0.0	0.0	0.0	7.7
178	648717.20	4772944.52	182.76	0	DEN	A	67.0	13.6	0.0	0.0	0.0	70.3	4.1	-1.5	0.0	0.0	0.0	0.0	0.0	7.7
184	648703.40	4772950.40	185.07	0	DEN	A	67.0	8.8	0.0	0.0	0.0	70.5	4.1	-1.4	0.0	0.0	0.0	0.0	0.0	2.6
186	648728.07	4772939.89	180.50	0	DEN	A	67.0	1.1	0.0	0.0	0.0	70.2	4.0	-1.6	0.0	0.0	0.0	0.0	0.0	-4.6

Point Source, ISO 9613, Name: "P1A_Sinkcut, PC Loader", ID: "P1A_Sinkcut_PC_Ldr"																				
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)
169	648672.13	4772849.77	179.50	0	D	A	105.6	0.0	0.0	0.0	0.0	70.6	5.5	-1.9	0.0	0.0	0.0	0.0	0.0	31.4

Line Source, ISO 9613, Name: "P1A_Sinkcut, Conveyor", ID: "P1A_Sinkcut_Conveyor"																				
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)
170	648733.39	4772817.27	180.50	0	D	A	82.7	20.8	0.0	0.0	0.0	69.9	3.8	-1.9	0.0	0.0	0.0	0.0	0.0	31.7

Point Source, ISO 9613, Name: "P1A_Sinkcut, PP Tertiary Crusher", ID: "P1A_Sinkcut_PP_TertiaryCrush"																				
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)
173	648793.79	4772790.45	180.00	0	D	A	99.2	0.0	0.0	0.0	0.0	69.3	3.3	-1.6	0.0	0.0	0.0	0.0	0.0	28.2

Receiver
Name: Facade of dwelling (5584 Beechwood Rd)
ID: R4f
X: 649610.64 m
Y: 4772697.98 m
Z: 190.50 m

Point Source, ISO 9613, Name: "Asphalt Plant - Dust Collector Blower (stack)", ID: "ASPH_DC_s"																				
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)
1547	648854.54	4772826.22	166.05	0	D	A	109.5	0.0	0.0	0.0	0.0	68.7	1.8	-1.3	0.0	0.0	4.6	0.0	0.0	35.7

Point Source, ISO 9613, Name: "P4_SE, PC Primary Crusher", ID: "P4_SE_PC_PrimaryCrush"																				
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)
1549	649480.08	4772803.25	164.50	0	D	A	117.6	0.0	0.0	0.0	0.0	55.6	0.9	-0.8	0.0	0.0	21.2	0.0	0.0	40.7

Point Source, ISO 9613, Name: "P4_SE, PP Loader", ID: "P4_SE_PP_Ldr"																				
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)
1551	649152.30	4772897.23	148.50	0	D	A	105.6	0.0	0.0	0.0	0.0	65.0	4.0	-2.6	0.0	0.0	10.3	0.0	0.0	28.9

Point Source, ISO 9613, Name: "P4_SE, PC loader dumping into crusher", ID: "P4_SE_PC_CrusherDump"																				
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)
1554	649481.42	4772802.28	164.50	0	D	A	123.0	0.0	-7.8	0.0	0.0	55.5	1.1	-1.0	0.0	0.0	22.6	0.0	0.0	37.0

Point Source, ISO 9613, Name: "Asphalt Plant - Pug Mill door (pressure relief noise)", ID: "ASPH_pugdoor"																				
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)
1557	648862.85	4772834.18	150.00	0	D	A	107.0	0.0	0.0	0.0	0.0	68.6	2.7	-2.6	0.0	0.0	23.8	0.0	0.0	14.5
1559	648862.85	4772834.18	150.00	1	D	A	107.0	0.0	0.0	0.0	0.0	68.8	2.7	-2.7	0.0	0.0	4.7	0.0	19.8	-86.4
1562	648862.85	4772834.18	150.00	1	D	A	107.0	0.0	0.0	0.0	0.0	68.8	2.7	-2.7	0.0	0.0	4.7	0.0	15.3	18.0

Point Source, ISO 9613, Name: "Asphalt Plant - Conveyor motor, gravel hitting metal plate", ID: "ASPH_motor"																				
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)
1564	648854.17	4772834.20	150.00	0	D	A	107.0	0.0	0.0	0.0	0.0	68.7	4.6	-3.0	0.0	0.0	5.9	0.0	0.0	30.8
1567	648854.17	4772834.20	150.00	1	D	A	107.0	0.0	0.0	0.0	0.0	68.8	4.6	-3.0	0.0	0.0	4.8	0.0	20.0	-88.2

Point Source, ISO 9613, Name: "P4_SE, PC Primary Screen", ID: "P4_SE_PC_PrimaryScreen"																				
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)
1569	649478.69	4772804.35	164.50	0	D	A	113.8	0.0	0.0	0.0	0.0	55.7	1.5	-1.1	0.0	0.0	21.7	0.0	0.0	35.9

Point Source, ISO 9613, Name: "Asphalt Plant - Pug Mill Motor", ID: "ASPH_pugmill"																				
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)
1571	648870.31	4772836.62	151.00	0	D	A	104.8	0.0	0.0	0.0	0.0	68.6	7.2	-2.4	0.0	0.0	6.5	0.0	0.0	25.1
1574	648870.31	4772836.62	151.00	1	D	A	104.8	0.0	0.0	0.0	0.0	68.9	7.3	-2.4	0.0	0.0	20.6	0.0	14.2	-103.7
1577	648870.31	4772836.62	151.00	1	D	A	104.8	0.0	0.0	0.0	0.0	68.6	7.2	-2.4	0.0	0.0	4.7	0.0	3.4	23.2

Point Source, ISO 9613, Name: "Asphalt Plant - Dust Collector Blower (motor)", ID: "ASPH_DC_m"																				
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)
1579	648856.17	4772826.28	148.00	0	D	A	104.8	0.0	0.0	0.0	0.0	68.7	2.9	-2.7	0.0	0.0	4.8	0.0	0.0	31.2
1582	648856.17	4772826.28	148.00	1	D	A	104.8	0.0	0.0	0.0	0.0	68.7	2.9	-2.7	0.0	0.0	4.8	0.0	8.3	22.9

Point Source, ISO 9613, Name: "P4_SE, WF Drill", ID: "P4_SE_WF_Drill"																				
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)
1584	649522.65	4772781.71	180.50	0	D	A	110.0	0.0	0.0	0.0	0.0	52.7	1.6	-0.7	0.0	0.0	16.4	0.0	0.0	40.0

Point Source, ISO 9613, Name: "Asphalt Plant - Oven Motor", ID: "ASPH_oven"																				
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)
1587	648858.27	4772831.59	151.80	0	D	A	102.4	0.0	0.0	0.0	0.0	68.7	3.4	-2.6	0.0	0.0	4.7	0.0	0.0	28.3
1590	648858.27	4772831.59	151.80	1	D	A	102.4	0.0	0.0	0.0	0.0	68.8	3.4	-2.6	0.0	0.0	4.7	0.0	46.3	-18.1

Point Source, ISO 9613, Name: "Asphalt Plant - Loader Activity", ID: "ASPH_Ldr_Act1"																				
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)
1597	648869.76	4772830.27	148.50	0	D	A	101.7	0.0	0.0	0.0	0.0	68.5	3.8	-2.7	0.0	0.0	12.1	0.0	0.0	20.1
1600	648869.76	4772830.27	148.50	1	D	A	101.7	0.0	0.0	0.0	0.0	68.9	3.8	-2.7	0.0	0.0	4.7	0.0	20.1	-93.1

Point Source, ISO 9613, Name: "Asphalt Plant - Loader Activity", ID: "ASPH_Ldr_Act2"																				
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)
1603	648864.03	4772827.02	148.50	0	D	A	101.7	0.0	0.0	0.0	0.0	68.6	3.8	-2.7	0.0	0.0	4.7	0.0	0.0	27.3
1607	648864.03	4772827.02	148.50	1	D	A	101.7	0.0	0.0	0.0	0.0	68.8	3.8	-2.7	0.0	0.0	4.7	0.0	44.6	-17.6

Point Source, ISO 9613, Name: "Asphalt Plant - Elevator Motor", ID: "ASPH_elev"																				
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)
1609	648861.24	4772834.76	165.00	0	D	A	99.8	0.0	0.0	0.0	0.0	68.6	3.1	-1.5	0.0	0.0	4.8	0.0	0.0	24.9
1612	648861.24	4772834.76	165.00	1	D	A	99.8	0.0	0.0	0.0	0.0	68.8	3.1	-1.6	0.0	0.0	4.8	0.0	28.5	-103.8

Point Source, ISO 9613, Name: "P4_SE, PP Idling Truck", ID: "P4_SE_PP_Trk1"																				
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)
1615	649143.29	4772895.19	149.00	0	D	A	96.3	0.0	0.0	0.0	0.0	65.1	2.6	-2.7	0.0	0.0	5.2	0.0	0.0	26.1

Point Source, ISO 9613, Name: "P4_SE, PP Idling Truck", ID: "P4_SE_PP_Trk2"																				
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)
1617	649141.96	4772897.03	149.00	0	D	A	96.3	0.0	0.0	0.0	0.0	65.2	2.6	-2.7	0.0	0.0	5.2	0.0	0.0	26.0

Point Source, ISO 9613, Name: "Asphalt Plant - Compressor Vent", ID: "ASPH_comp"																				
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)
1620	648874.75	4772829.07	146.60	0	D	A	96.0	0.0	0.0	3.0	0.0	68.5	2.9	-1.5	0.0	0.0	21.0	0.0	0.0	8.2
1623	648874.75	4772829.07	146.60	1	D	A	96.0	0.0	0.0	3.0	0.0	68.9	3.0	-1.5	0.0	0.0	4.7	0.0	22.2	-98.3

Line Source, ISO 9613, Name: "P4_SE, Conveyor", ID: "P4_SE_Conveyor"																				
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)
1627	649434.42	4772810.92	149.50	0	D	A	82.7	18.8	0.0	0.0	0.0	57.6	1.2	-1.4	0.0	0.0	23.8	0.0	0.0	20.4
1629	649359.39	4772823.01	149.50	0	D	A	82.7	18.8	0.0	0.0	0.0	60.1	1.5	-1.8	0.0	0.0	14.9	0.0	0.0	26.9
1631	649246.84	4772841.14	149.50	0	D	A	82.7	21.8	0.0	0.0	0.0	62.9	2.0	-2.3	0.0	0.0	8.5	0.0	0.0	33.5
1804	649473.37	4772804.82	157.25	0	D	A	82.7	12.0	0.0	0.0	0.0	56.0	1.0	-1.1	0.0	0.0	24.8	0.0	0.0	14.1
1973	649171.27	4772858.25	149.50	0	D	A	82.7	10.0	0.0	0.0	0.0	64.4	2.3	-2.6	0.0	0.0	5.8	0.0	0.0	22.8
1983	649168.92	4772879.80	149.50	0	D	A	82.7	15.2	0.0	0.0	0.0	64.6	2.3	-2.6	0.0	0.0	13.6	0.0	0.0	20.0
2190	649475.97	4772804.73	165.00	0	D	A	82.7	3.7	0.0	0.0	0.0	55.8	1.0	-1.1	0.0	0.0	22.3	0.0	0.0	8.4

Line Source, ISO 9613, Name: "P4 SE, Aggregate Haul road b/w PP and AP, Full", ID: "P4_SE_RD_Haul_PP_AP_Fu"																				
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)
1633	649130.91	4772889.48	149.50	0	DEN	A	73.4	14.1	0.0	0.0	0.0	65.3	2.5	-2.6	0.0	0.0	5.1	0.0	0.0	17.2
1635	649078.32	4772852.64	149.50	0	DEN	A	73.4	20.1	0.0	0.0	0.0	65.9	2.6	-2.6	0.0	0.0	4.9	0.0	0.0	22.7
1706	649017.68	4772815.35	149.50	0	DEN	A	73.4	16.0	0.0	0.0	0.0	66.6	2.8	-2.7	0.0	0.0	4.8	0.0	0.0	17.8
1709	648907.21	4772814.73	149.50	0	DEN	A	73.4	17.2	0.0	0.0	0.0	68.1	3.2	-2.8	0.0	0.0	4.8	0.0	0.0	17.3
1710	648907.21	4772814.73	149.50	1	DEN	A	73.4	17.2	0.0	0.0	0.0	68.6	3.4	-2.8	0.0	0.0	4.8	0.0	16.5	0.2
1712	648907.21	4772814.73	149.50	1	DEN	A	73.4	17.2	0.0	0.0	0.0	68.7	3.4	-2.8	0.0	0.0	4.8	0.0	51.8	-35.2
1714	648907.21	4772814.73	149.50	1	DEN	A	73.4	17.2	0.0	0.0	0.0	68.7	3.4	-2.8	0.0	0.0	4.8	0.0	17.2	-0.6
1716	648907.21	4772814.73	149.50	1	DEN	A	73.4	17.2	0.0	0.0	0.0	68.7	3.4	-2.8	0.0	0.0	4.8	0.0	51.3	-34.7
1718	648953.45	4772804.66	149.50	0	DEN	A	73.4	16.3	0.0	0.0	0.0	67.5	3.1	-2.7	0.0	0.0	4.8	0.0	0.0	17.1
1720	648953.45	4772804.66	149.50	1	DEN	A	73.4	16.3	0.0	0.0	0.0	69.2	3.5	-2.9	0.0	0.0	4.8	0.0	29.7	-114.6
1722	648953.45	4772804.66	149.50	1	DEN	A	73.4	16.3	0.0	0.0	0.0	69.1	3.5	-2.9	0.0	0.0	4.8	0.0	29.2	-114.1
1724	648986.92	4772804.88	149.50	0	DEN	A	73.4	14.0	0.0	0.0	0.0	67.0	2.9	-2.7	0.0	0.0	4.8	0.0	0.0	15.3
1726	648986.92	4772804.88	149.50	1	DEN	A	73.4	14.0	0.0	0.0	0.0	69.5	3.6	-2.9	0.0	0.0	4.8	0.0	34.3	-121.9

Line Source, ISO 9613, Name: "P4 SE, Aggregate Haul road b/w PP and AP, Full", ID: "P4_SE_RD_Haul_PP_AP_Fu"																				
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)
1728	648986.92	4772804.88	149.50	1	DEN	A	73.4	14.0	0.0	0.0	0.0	69.5	3.6	-2.9	0.0	0.0	4.8	0.0	33.9	-121.5

Line Source, ISO 9613, Name: "P4_SE, Aggregate Shipping from PP, Empty", ID: "P4_SE_RD_SHP_Aggr_Em"																				
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)
1639	649139.11	4772890.32	149.50	0	DEN	A	71.7	10.6	0.0	0.0	0.0	65.2	2.8	-2.4	0.0	0.0	5.1	0.0	0.0	11.8
1641	649132.97	4772882.08	149.50	0	DEN	A	71.7	9.6	0.0	0.0	0.0	65.2	2.8	-2.4	0.0	0.0	5.1	0.0	0.0	10.7
1644	649084.75	4772817.35	149.50	0	DEN	A	71.7	21.8	0.0	0.0	0.0	65.7	2.9	-2.4	0.0	0.0	5.0	0.0	0.0	22.5
1680	648907.83	4772725.25	149.50	0	DEN	A	71.7	21.4	0.0	0.0	0.0	68.0	3.4	-2.5	0.0	0.0	4.7	0.0	0.0	19.5
1695	648778.40	4772772.26	149.50	0	DEN	A	71.7	21.6	0.0	0.0	0.0	69.4	3.8	-2.6	0.0	0.0	4.7	0.0	0.0	18.0
1698	649007.42	4772736.56	149.50	0	DEN	A	71.7	18.7	0.0	0.0	0.0	66.6	3.1	-2.4	0.0	0.0	4.8	0.0	0.0	18.3
1731	648707.63	4772956.98	187.19	0	DEN	A	71.7	18.5	0.0	0.0	0.0	70.5	4.1	-2.8	0.0	0.0	0.0	0.0	0.0	18.4
1733	648687.35	4772847.10	149.50	0	DEN	A	71.7	11.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	6.3
1735	648688.95	4772854.30	149.50	0	DEN	A	71.7	2.5	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	6.7	0.0	0.0	-4.2
1737	648689.43	4772856.50	149.50	0	DEN	A	71.7	4.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-0.5
1739	648689.85	4772858.41	149.50	0	DEN	A	71.7	0.7	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.1
1741	648690.19	4772859.94	149.50	0	DEN	A	71.7	2.9	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.9
1743	648690.76	4772862.48	149.50	0	DEN	A	71.7	5.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	0.3
1745	648691.22	4772864.59	149.50	0	DEN	A	71.7	0.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.5
1747	648691.79	4772867.15	149.50	0	DEN	A	71.7	6.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	1.4
1750	648692.47	4772870.25	149.50	0	DEN	A	71.7	3.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.4
1752	648693.11	4772873.10	149.50	0	DEN	A	71.7	5.7	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	0.9
1755	648693.92	4772876.77	149.50	0	DEN	A	71.7	5.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.8	0.0	0.0	-0.1
1757	648694.77	4772880.62	149.50	0	DEN	A	71.7	6.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	0.2
1758	648698.25	4772896.37	149.50	0	DEN	A	71.7	14.5	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	9.7
1763	648582.94	4772921.88	187.43	0	DEN	A	71.7	18.6	0.0	0.0	0.0	71.4	4.4	-2.8	0.0	0.0	0.0	0.0	0.0	17.2
1765	648547.42	4772912.09	187.50	0	DEN	A	71.7	1.5	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-0.2
1788	648645.64	4772939.76	187.31	0	DEN	A	71.7	17.6	0.0	0.0	0.0	71.0	4.3	-2.8	0.0	0.0	0.0	0.0	0.0	16.9
1791	648724.20	4772925.31	149.50	0	DEN	A	71.7	16.5	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	11.9
1794	648701.36	4772825.84	149.50	0	DEN	A	71.7	16.3	0.0	0.0	0.0	70.3	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	11.7
1863	648542.69	4772910.77	187.55	0	DEN	A	71.7	9.2	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	7.5
1865	648533.50	4772908.20	187.66	0	DEN	A	71.7	10.3	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	8.5
1867	648523.62	4772905.45	187.78	0	DEN	A	71.7	9.9	0.0	0.0	0.0	71.9	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	8.0
1868	648516.07	4772903.34	187.87	0	DEN	A	71.7	7.7	0.0	0.0	0.0	71.9	4.6	-2.6	0.0	0.0	0.0	0.0	0.0	5.5
1870	648511.97	4772902.19	187.92	0	DEN	A	71.7	4.3	0.0	0.0	0.0	72.0	4.6	-2.6	0.0	0.0	0.0	0.0	0.0	2.1
2023	648751.95	4772957.71	178.53	0	DEN	A	71.7	11.1	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	11.5
2032	648754.42	4772947.09	155.33	0	DEN	A	71.7	10.7	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	6.4
2109	648748.21	4772937.54	149.50	0	DEN	A	71.7	9.8	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	5.5
2186	648744.94	4772965.81	187.11	0	DEN	A	71.7	8.0	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	8.4
2210	648702.72	4772912.91	149.50	0	DEN	A	71.7	8.0	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	3.2
2213	648749.67	4772963.29	187.12	0	DEN	A	71.7	7.6	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	7.9
2216	648753.11	4772942.75	149.50	0	DEN	A	71.7	7.4	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	3.2
2219	648753.12	4772952.63	166.83	0	DEN	A	71.7	7.5	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	7.9
2325	648752.69	4772954.51	171.01	0	DEN	A	71.7	5.7	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	6.1
2343	648753.47	4772951.19	162.57	0	DEN	A	71.7	5.4	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	1.1
2357	648754.15	4772948.34	159.80	0	DEN	A	71.7	5.2	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	0.9
2391	648753.76	4772949.94	159.69	0	DEN	A	71.7	4.6	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	0.3
2403	648751.31	4772960.40	185.82	0	DEN	A	71.7	4.5	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	4.9
2442	648754.26	4772946.06	149.50	0	DEN	A	71.7	1.6	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	-2.7

Point Source, ISO 9613, Name: "P4_SE, PC Loader", ID: "P4_SE_PC_Ldr"																				
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)
1647	649483.67	4772800.84	164.00	0	D	A	105.6	0.0	0.0	0.0	0.0	55.4	2.2	-1.1	0.0	0.0	22.0	0.0	0.0	27.1

Line Source, ISO 9613, Name: "P4_SE, Aggregate Shipping from PP, Full", ID: "P4_SE_RD_SHP_Aggr_Fu"																				
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)
1650	649083.00	4772818.36	149.50	0	DEN	A	71.7	21.8	0.0	0.0	0.0	65.7	2.9	-2.4	0.0	0.0	4.9	0.0	0.0	22.4
1652	649129.95	4772881.43	149.50	0	DEN	A	71.7	7.4	0.0	0.0	0.0	65.3	2.8	-2.4	0.0	0.0	5.0	0.0	0.0	8.5
1653	649136.50	4772890.23	149.50	0	DEN	A	71.7	12.1	0.0	0.0	0.0	65.2	2.8	-2.4	0.0	0.0	5.1	0.0	0.0	13.3
1682	648908.30	4772726.74	149.50	0	DEN	A	71.7	21.3	0.0	0.0	0.0	68.0	3.4	-2.5	0.0	0.0	4.7	0.0	0.0	19.5
1690	648779.52	4772773.20	149.50	0	DEN	A	71.7	21.6	0.0	0.0	0.0	69.4	3.8	-2.6	0.0	0.0	4.7	0.0	0.0	18.0

Line Source, ISO 9613, Name: "P4_SE, Aggregate Shipping from PP, Full", ID: "P4_SE_RD_SHP_Aggr_Fu"																				
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)
1703	649006.55	4772737.99	149.50	0	DEN	A	71.7	18.7	0.0	0.0	0.0	66.7	3.1	-2.4	0.0	0.0	4.8	0.0	0.0	18.2
1776	648581.82	4772923.96	187.43	0	DEN	A	71.7	18.6	0.0	0.0	0.0	71.5	4.4	-2.8	0.0	0.0	0.0	0.0	0.0	17.3
1786	648645.08	4772941.51	187.31	0	DEN	A	71.7	17.7	0.0	0.0	0.0	71.0	4.3	-2.8	0.0	0.0	0.0	0.0	0.0	17.0
1790	648725.03	4772924.59	149.50	0	DEN	A	71.7	16.5	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	11.9
1796	648702.68	4772826.35	149.50	0	DEN	A	71.7	16.3	0.0	0.0	0.0	70.3	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	11.7
1799	648753.85	4772957.12	176.06	0	DEN	A	71.7	13.8	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	14.2
1802	648755.28	4772949.98	157.24	0	DEN	A	71.7	12.2	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	8.0
1830	648699.37	4772896.12	149.50	0	DEN	A	71.7	14.5	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	9.7
1833	648696.01	4772880.51	149.50	0	DEN	A	71.7	5.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	6.0	0.0	0.0	-0.2
1835	648695.18	4772876.66	149.50	0	DEN	A	71.7	6.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	0.2
1837	648694.57	4772873.82	149.50	0	DEN	A	71.7	2.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-2.4
1861	648727.75	4772964.09	187.15	0	DEN	A	71.7	14.4	0.0	0.0	0.0	70.3	4.1	-2.7	0.0	0.0	0.0	0.0	0.0	14.5
1888	648703.57	4772957.74	187.20	0	DEN	A	71.7	13.5	0.0	0.0	0.0	70.5	4.1	-2.8	0.0	0.0	0.0	0.0	0.0	13.4
1892	648520.98	4772907.90	187.83	0	DEN	A	71.7	1.2	0.0	0.0	0.0	71.9	4.6	-2.8	0.0	0.0	0.0	0.0	0.0	-0.8
1893	648526.62	4772909.39	187.76	0	DEN	A	71.7	10.1	0.0	0.0	0.0	71.9	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	8.3
1896	648536.87	4772912.10	187.63	0	DEN	A	71.7	10.4	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	8.6
1898	648544.39	4772914.08	187.53	0	DEN	A	71.7	6.7	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	5.0
1902	648682.94	4772952.40	187.24	0	DEN	A	71.7	13.1	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	12.7
1932	648691.53	4772858.14	149.50	0	DEN	A	71.7	0.9	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-3.9
1935	648691.07	4772856.22	149.50	0	DEN	A	71.7	4.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-0.4
1940	648690.55	4772854.03	149.50	0	DEN	A	71.7	2.5	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	6.8	0.0	0.0	-4.3
1943	648688.94	4772847.25	149.50	0	DEN	A	71.7	10.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	6.1
2006	648694.20	4772872.02	149.50	0	DEN	A	71.7	2.9	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.9
2008	648693.82	4772869.99	149.50	0	DEN	A	71.7	3.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.4
2011	648693.23	4772866.93	149.50	0	DEN	A	71.7	6.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	1.3
2014	648692.74	4772864.36	149.50	0	DEN	A	71.7	0.7	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.1
2017	648692.34	4772862.28	149.50	0	DEN	A	71.7	4.9	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	0.1
2019	648691.86	4772859.75	149.50	0	DEN	A	71.7	3.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.6
2095	648749.24	4772936.89	149.50	0	DEN	A	71.7	10.0	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	5.7
2120	648745.26	4772967.67	187.11	0	DEN	A	71.7	9.2	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	9.5
2131	648754.61	4772943.40	149.50	0	DEN	A	71.7	8.9	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	4.6
2142	648751.23	4772964.48	187.11	0	DEN	A	71.7	8.6	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	9.0
2162	648511.34	4772905.30	187.89	0	DEN	A	71.7	0.5	0.0	0.0	0.0	72.0	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	-1.7
2163	648516.12	4772906.59	187.86	0	DEN	A	71.7	9.4	0.0	0.0	0.0	71.9	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	7.4
2225	648703.63	4772912.51	149.50	0	DEN	A	71.7	7.7	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	3.0

Point Source, ISO 9613, Name: "P4_SE, PP Secondary Crusher", ID: "P4_SE_PP_SecondaryCrush2"																				
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)
1654	649166.16	4772898.39	149.00	0	D	A	114.6	0.0	0.0	0.0	0.0	64.8	2.8	-2.6	0.0	0.0	11.8	0.0	0.0	37.9

Point Source, ISO 9613, Name: "P4_SE, PP Secondary Crusher", ID: "P4_SE_PP_SecondaryCrush1"																				
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)
1655	649165.78	4772899.34	149.00	0	D	A	114.6	0.0	0.0	0.0	0.0	64.8	2.8	-2.6	0.0	0.0	11.6	0.0	0.0	38.0

Point Source, ISO 9613, Name: "Asphalt Plant - Idling Truck", ID: "ASPH_IDLE_TRK2"																				
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)
1657	648879.73	4772824.63	149.50	0	D	A	96.3	0.0	0.0	0.0	0.0	68.4	3.5	-2.9	0.0	0.0	4.8	0.0	0.0	22.5
1660	648879.73	4772824.63	149.50	1	D	A	96.3	0.0	0.0	0.0	0.0	68.5	3.6	-2.9	0.0	0.0	14.7	0.0	59.5	-47.0
1662	648879.73	4772824.63	149.50	1	D	A	96.3	0.0	0.0	0.0	0.0	69.0	3.7	-3.0	0.0	0.0	4.8	0.0	32.2	-110.5

Point Source, ISO 9613, Name: "Asphalt Plant - Idling Truck", ID: "ASPH_IDLE_TRK1"																				
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)
1666	648879.52	4772825.56	149.50	0	D	A	96.3	0.0	0.0	0.0	0.0	68.4	3.5	-2.9	0.0	0.0	4.8	0.0	0.0	22.5
1670	648879.52	4772825.56	149.50	1	D	A	96.3	0.0	0.0	0.0	0.0	68.5	3.6	-2.9	0.0	0.0	15.3	0.0	59.6	-47.8
1672	648879.52	4772825.56	149.50	1	D	A	96.3	0.0	0.0	0.0	0.0	69.0	3.7	-3.0	0.0	0.0	4.8	0.0	32.2	-110.4

Point Source, ISO 9613, Name: "P4_SE, PP Secondary & Tertiary Screen", ID: "P4_SE_PP_SecondaryTertiaryScreen2"																				
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)
1674	649164.92	4772897.98	149.00	0	D	A	113.8	0.0	0.0	0.0	0.0	64.8	3.0	-2.6	0.0	0.0	11.0	0.0	0.0	37.5

Point Source, ISO 9613, Name: "P4_SE, PP Secondary & Tertiary Screen", ID: "P4_SE_PP_SecondaryTertiaryScreen1"																				
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)
1677	649164.51	4772898.84	149.00	0	D	A	113.8	0.0	0.0	0.0	0.0	64.8	3.0	-2.6	0.0	0.0	10.9	0.0	0.0	37.6

Line Source, ISO 9613, Name: "P4 SE, Aggregate Haul road b/w PP and AP, Empty", ID: "P4_SE_RD_Haul_PP_AP_Em"																				
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)
1686	649132.52	4772888.09	149.50	0	DEN	A	69.7	13.8	0.0	0.0	0.0	65.3	2.4	-2.5	0.0	0.0	5.1	0.0	0.0	13.3
1688	649079.54	4772851.39	149.50	0	DEN	A	69.7	20.2	0.0	0.0	0.0	65.9	2.5	-2.6	0.0	0.0	4.9	0.0	0.0	19.2
1762	649018.07	4772813.70	149.50	0	DEN	A	69.7	16.0	0.0	0.0	0.0	66.6	2.7	-2.6	0.0	0.0	4.8	0.0	0.0	14.2
1767	648907.31	4772812.89	149.50	0	DEN	A	69.7	17.3	0.0	0.0	0.0	68.1	3.0	-2.7	0.0	0.0	4.8	0.0	0.0	13.8
1769	648907.31	4772812.89	149.50	1	DEN	A	69.7	17.3	0.0	0.0	0.0	68.6	3.2	-2.8	0.0	0.0	4.8	0.0	18.0	-4.9
1770	648907.31	4772812.89	149.50	1	DEN	A	69.7	17.3	0.0	0.0	0.0	68.7	3.2	-2.8	0.0	0.0	4.8	0.0	54.4	-41.3
1772	648907.31	4772812.89	149.50	1	DEN	A	69.7	17.3	0.0	0.0	0.0	68.7	3.2	-2.8	0.0	0.0	4.8	0.0	18.7	-5.6
1774	648907.31	4772812.89	149.50	1	DEN	A	69.7	17.3	0.0	0.0	0.0	68.7	3.2	-2.8	0.0	0.0	4.8	0.0	53.9	-40.8
1779	648954.09	4772802.59	149.50	0	DEN	A	69.7	16.3	0.0	0.0	0.0	67.5	2.9	-2.7	0.0	0.0	4.8	0.0	0.0	13.5
1781	648954.09	4772802.59	149.50	1	DEN	A	69.7	16.3	0.0	0.0	0.0	69.2	3.4	-2.8	0.0	0.0	4.8	0.0	31.8	-120.3
1783	648954.09	4772802.59	149.50	1	DEN	A	69.7	16.3	0.0	0.0	0.0	69.2	3.3	-2.8	0.0	0.0	4.8	0.0	31.3	-119.8
1843	648987.53	4772802.96	149.50	0	DEN	A	69.7	14.0	0.0	0.0	0.0	67.0	2.8	-2.6	0.0	0.0	4.8	0.0	0.0	11.7
1845	648987.53	4772802.96	149.50	1	DEN	A	69.7	14.0	0.0	0.0	0.0	69.5	3.4	-2.8	0.0	0.0	4.8	0.0	36.3	-127.5
1847	648987.53	4772802.96	149.50	1	DEN	A	69.7	14.0	0.0	0.0	0.0	69.5	3.4	-2.8	0.0	0.0	4.8	0.0	35.9	-127.1

Line Source, ISO 9613, Name: "AP, AC and RAP shipped from Offsite, Empty", ID: "AP_RD_SHP_AC_RAP_Em"																				
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)
1805	648854.10	4772824.67	149.50	0	DEN	A	68.7	17.0	0.0	0.0	0.0	68.7	3.6	-2.6	0.0	0.0	4.7	0.0	0.0	11.3
1807	648854.10	4772824.67	149.50	1	DEN	A	68.7	17.0	0.0	0.0	0.0	68.7	3.6	-2.6	0.0	0.0	4.7	0.0	19.9	-8.6
1852	648748.87	4772829.28	149.50	0	DEN	A	68.7	17.4	0.0	0.0	0.0	69.8	3.9	-2.7	0.0	0.0	4.7	0.0	0.0	10.3
1857	648582.08	4772924.01	187.43	0	DEN	A	68.7	18.4	0.0	0.0	0.0	71.4	4.4	-2.8	0.0	0.0	0.0	0.0	0.0	14.1
1874	648716.72	4772961.26	187.17	0	DEN	A	68.7	17.0	0.0	0.0	0.0	70.4	4.1	-2.8	0.0	0.0	0.0	0.0	0.0	14.0
1886	648724.77	4772924.42	149.50	0	DEN	A	68.7	16.4	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	8.9
1890	648639.14	4772939.74	187.32	0	DEN	A	68.7	16.9	0.0	0.0	0.0	71.0	4.3	-2.8	0.0	0.0	0.0	0.0	0.0	13.1
1956	648697.76	4772852.98	149.50	0	DEN	A	68.7	6.6	0.0	0.0	0.0	70.3	4.1	-2.7	0.0	0.0	7.2	0.0	0.0	-3.6
1958	648710.76	4772843.05	149.50	0	DEN	A	68.7	14.5	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	7.0
1967	648816.82	4772822.79	149.50	0	DEN	A	68.7	13.9	0.0	0.0	0.0	69.1	3.7	-2.7	0.0	0.0	4.7	0.0	0.0	7.7
1985	648699.40	4772895.90	149.50	0	DEN	A	68.7	14.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	6.7
1987	648696.05	4772880.50	149.50	0	DEN	A	68.7	5.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	6.0	0.0	0.0	-3.2
1989	648695.53	4772878.14	149.50	0	DEN	A	68.7	0.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	-8.8
2035	648754.54	4772953.97	168.09	0	DEN	A	68.7	8.2	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	5.7
2037	648755.32	4772950.00	157.25	0	DEN	A	68.7	12.2	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	4.9
2097	648784.26	4772822.42	149.50	0	DEN	A	68.7	12.4	0.0	0.0	0.0	69.5	3.8	-2.7	0.0	0.0	4.7	0.0	0.0	5.8
2112	648753.70	4772958.16	178.99	0	DEN	A	68.7	12.3	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	9.7
2148	648798.64	4772821.27	149.50	0	DEN	A	68.7	10.7	0.0	0.0	0.0	69.3	3.8	-2.7	0.0	0.0	4.7	0.0	0.0	4.3
2167	648695.49	4772876.08	149.50	0	DEN	A	68.7	5.0	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	-4.0
2169	648695.63	4772872.62	149.50	0	DEN	A	68.7	5.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-2.0
2172	648695.75	4772869.63	149.50	0	DEN	A	68.7	3.5	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.3
2174	648695.88	4772866.44	149.50	0	DEN	A	68.7	6.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.6
2177	648695.98	4772864.08	149.50	0	DEN	A	68.7	-2.5	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-10.2
2200	648526.89	4772909.46	187.86	0	DEN	A	68.7	9.9	0.0	0.0	0.0	71.9	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	5.0
2203	648535.60	4772911.74	187.89	0	DEN	A	68.7	9.1	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	4.3
2231	648749.03	4772936.75	149.50	0	DEN	A	68.7	10.3	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	3.0
2261	648667.84	4772948.21	187.27	0	DEN	A	68.7	10.5	0.0	0.0	0.0	70.8	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	7.0
2274	648695.99	4772861.94	149.50	0	DEN	A	68.7	5.7	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-2.0
2277	648695.98	4772859.00	149.50	0	DEN	A	68.7	3.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.4
2280	648695.97	4772857.34	149.50	0	DEN	A	68.7	0.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-7.0
2282	648695.97	4772855.55	149.50	0	DEN	A	68.7	3.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-3.9
2287	648745.25	4772967.66	187.11	0	DEN	A	68.7	9.3	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	6.6
2305	648754.63	4772943.48	149.50	0	DEN	A	68.7	8.9	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	1.7
2308	648511.35	4772905.30	187.89	0	DEN	A	68.7	0.5	0.0	0.0	0.0	72.0	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	-4.6
2310	648516.74	4772906.76	187.87	0	DEN	A	68.7	10.0	0.0	0.0	0.0	71.9	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	5.0

Line Source, ISO 9613, Name: "AP, AC and RAP shipped from Offsite, Empty", ID: "AP_RD_SHP_AC_RAP_Em"																				
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)
2312	648521.86	4772908.15	187.85	0	DEN	A	68.7	-2.4	0.0	0.0	0.0	71.9	4.6	-2.8	0.0	0.0	0.0	0.0	0.0	-7.3
2331	648751.28	4772964.42	186.95	0	DEN	A	68.7	8.7	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	6.0
2345	648688.63	4772953.85	187.23	0	DEN	A	68.7	8.9	0.0	0.0	0.0	70.6	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	5.7
2395	648703.62	4772912.28	149.50	0	DEN	A	68.7	7.9	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	0.2
2417	648675.54	4772950.43	187.25	0	DEN	A	68.7	6.8	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	3.4
2426	648679.94	4772951.59	187.24	0	DEN	A	68.7	6.3	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	2.9
2445	648683.41	4772952.51	187.24	0	DEN	A	68.7	4.7	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	1.3
2447	648546.64	4772914.67	187.56	0	DEN	A	68.7	5.5	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	0.8
2450	648543.26	4772913.80	187.73	0	DEN	A	68.7	5.4	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	0.7
2470	648540.12	4772912.94	187.89	0	DEN	A	68.7	0.6	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-4.2
2489	648541.33	4772913.29	187.85	0	DEN	A	68.7	-2.9	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-7.7
2493	648540.88	4772913.15	187.87	0	DEN	A	68.7	-3.6	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-8.4

Line Source, ISO 9613, Name: "AP, HMA product shipping, Full", ID: "AP_RD_SHP_HMA_Fu"																				
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)
1811	648854.16	4772824.66	149.50	0	DEN	A	68.7	17.0	0.0	0.0	0.0	68.7	3.6	-2.6	0.0	0.0	4.7	0.0	0.0	11.3
1813	648854.16	4772824.66	149.50	1	DEN	A	68.7	17.0	0.0	0.0	0.0	68.7	3.6	-2.6	0.0	0.0	4.7	0.0	19.7	-8.4
1849	648748.85	4772829.22	149.50	0	DEN	A	68.7	17.4	0.0	0.0	0.0	69.8	3.9	-2.7	0.0	0.0	4.7	0.0	0.0	10.3
1859	648582.97	4772924.27	187.43	0	DEN	A	68.7	18.4	0.0	0.0	0.0	71.4	4.4	-2.8	0.0	0.0	0.0	0.0	0.0	14.1
1881	648725.03	4772924.56	149.50	0	DEN	A	68.7	16.5	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	8.9
1891	648639.68	4772939.97	187.32	0	DEN	A	68.7	16.8	0.0	0.0	0.0	71.0	4.3	-2.8	0.0	0.0	0.0	0.0	0.0	13.0
1904	648723.53	4772963.03	187.16	0	DEN	A	68.7	15.6	0.0	0.0	0.0	70.3	4.1	-2.8	0.0	0.0	0.0	0.0	0.0	12.7
1948	648697.82	4772853.01	149.50	0	DEN	A	68.7	6.7	0.0	0.0	0.0	70.3	4.1	-2.7	0.0	0.0	7.2	0.0	0.0	-3.5
1951	648710.78	4772843.00	149.50	0	DEN	A	68.7	14.5	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	7.0
1962	648816.88	4772822.78	149.50	0	DEN	A	68.7	13.9	0.0	0.0	0.0	69.1	3.7	-2.7	0.0	0.0	4.7	0.0	0.0	7.7
2026	648754.48	4772954.33	168.51	0	DEN	A	68.7	8.8	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	6.2
2029	648755.32	4772950.08	157.24	0	DEN	A	68.7	12.2	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	4.9
2091	648699.84	4772898.02	149.50	0	DEN	A	68.7	13.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	6.0
2100	648784.26	4772822.41	149.50	0	DEN	A	68.7	12.4	0.0	0.0	0.0	69.5	3.8	-2.7	0.0	0.0	4.7	0.0	0.0	5.8
2124	648697.27	4772956.05	187.21	0	DEN	A	68.7	12.6	0.0	0.0	0.0	70.5	4.1	-2.8	0.0	0.0	0.0	0.0	0.0	9.4
2127	648753.63	4772958.48	179.54	0	DEN	A	68.7	12.1	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	9.5
2145	648798.63	4772821.27	149.50	0	DEN	A	68.7	10.7	0.0	0.0	0.0	69.3	3.8	-2.7	0.0	0.0	4.7	0.0	0.0	4.3
2232	648511.15	4772905.35	187.90	0	DEN	A	68.7	0.3	0.0	0.0	0.0	72.0	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	-4.8
2237	648516.59	4772906.79	187.89	0	DEN	A	68.7	10.1	0.0	0.0	0.0	71.9	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	5.0
2239	648523.89	4772908.71	187.88	0	DEN	A	68.7	6.9	0.0	0.0	0.0	71.9	4.6	-2.8	0.0	0.0	0.0	0.0	0.0	2.0
2242	648695.69	4772872.15	149.50	0	DEN	A	68.7	4.5	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-3.2
2244	648695.78	4772869.63	149.50	0	DEN	A	68.7	3.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.3
2246	648695.88	4772866.44	149.50	0	DEN	A	68.7	6.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.6
2249	648695.97	4772863.86	149.50	0	DEN	A	68.7	0.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-7.7
2251	648696.01	4772862.88	149.50	0	DEN	A	68.7	-0.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-8.1
2253	648749.20	4772936.85	149.50	0	DEN	A	68.7	10.1	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	2.8
2266	648528.91	4772910.03	187.88	0	DEN	A	68.7	7.4	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	2.5
2267	648535.71	4772911.80	187.90	0	DEN	A	68.7	9.3	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	4.5
2270	648667.98	4772948.31	187.27	0	DEN	A	68.7	10.4	0.0	0.0	0.0	70.8	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	6.9
2290	648745.26	4772967.67	187.11	0	DEN	A	68.7	9.3	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	6.6
2294	648696.86	4772884.38	149.50	0	DEN	A	68.7	6.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.6
2297	648696.03	4772880.50	149.50	0	DEN	A	68.7	5.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	6.0	0.0	0.0	-3.2
2300	648695.52	4772878.16	149.50	0	DEN	A	68.7	-0.0	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	-8.9
2302	648754.63	4772943.46	149.50	0	DEN	A	68.7	8.9	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	1.7
2315	648696.01	4772861.24	149.50	0	DEN	A	68.7	3.7	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.0
2318	648696.00	4772859.00	149.50	0	DEN	A	68.7	3.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.4
2321	648695.99	4772857.34	149.50	0	DEN	A	68.7	0.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-7.0
2323	648695.98	4772855.59	149.50	0	DEN	A	68.7	3.6	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.1
2335	648751.26	4772964.46	187.07	0	DEN	A	68.7	8.6	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	6.0
2387	648685.27	4772952.93	187.23	0	DEN	A	68.7	8.3	0.0	0.0	0.0	70.6	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	5.0
2400	648703.70	4772912.42	149.50	0	DEN	A	68.7	7.9	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	0.1
2409	648545.86	4772914.49	187.64	0	DEN	A	68.7	8.6	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	3.9
2414	648675.67	4772950.45	187.25	0	DEN	A	68.7	7.1	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	3.7
2420	648695.50	4772876.09	149.50	0	DEN	A	68.7	5.0	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	-3.9
2423	648695.62	4772874.04	149.50	0	DEN	A	68.7	-0.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-8.0
2434	648680.08	4772951.59	187.24	0	DEN	A	68.7	6.0	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	2.6
2459	648541.57	4772913.36	187.83	0	DEN	A	68.7	0.1	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-4.6

Line Source, ISO 9613, Name: "AP, HMA product shipping, Full", ID: "AP_RD_SHP_HMA_Fu"																				
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)
2462	648542.23	4772913.53	187.80	0	DEN	A	68.7	-4.8	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-9.6
2468	648540.46	4772913.06	187.88	0	DEN	A	68.7	1.0	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-3.8

Line Source, ISO 9613, Name: "AP, AC and RAP shipped from Offsite, Full", ID: "AP_RD_SHP_AC_RAP_Fu"																				
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)
1817	648855.31	4772823.42	149.50	0	DEN	A	68.7	16.8	0.0	0.0	0.0	68.7	3.6	-2.6	0.0	0.0	4.7	0.0	0.0	11.1
1820	648855.31	4772823.42	149.50	1	DEN	A	68.7	16.8	0.0	0.0	0.0	68.7	3.6	-2.6	0.0	0.0	4.7	0.0	20.8	-9.7
1854	648547.38	4772912.13	187.50	0	DEN	A	68.7	1.1	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-3.6
1855	648582.70	4772921.85	187.43	0	DEN	A	68.7	18.6	0.0	0.0	0.0	71.4	4.4	-2.8	0.0	0.0	0.0	0.0	0.0	14.2
1872	648645.49	4772939.72	187.31	0	DEN	A	68.7	17.7	0.0	0.0	0.0	71.0	4.3	-2.8	0.0	0.0	0.0	0.0	0.0	13.9
1884	648724.08	4772925.26	149.50	0	DEN	A	68.7	16.5	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	8.9
1906	648761.28	4772825.07	149.50	0	DEN	A	68.7	14.9	0.0	0.0	0.0	69.7	3.9	-2.7	0.0	0.0	4.7	0.0	0.0	8.0
1914	648695.81	4772853.02	149.50	0	DEN	A	68.7	5.0	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	7.1	0.0	0.0	-5.1
1916	648709.29	4772842.40	149.50	0	DEN	A	68.7	14.9	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	7.4
1924	648818.15	4772821.17	149.50	0	DEN	A	68.7	14.2	0.0	0.0	0.0	69.1	3.7	-2.7	0.0	0.0	4.7	0.0	0.0	8.0
1929	648724.87	4772961.47	187.15	0	DEN	A	68.7	15.4	0.0	0.0	0.0	70.3	4.1	-2.7	0.0	0.0	0.0	0.0	0.0	12.5
1992	648698.23	4772896.28	149.50	0	DEN	A	68.7	14.5	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	6.7
1993	648694.84	4772880.81	149.50	0	DEN	A	68.7	5.6	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	-3.3
2020	648733.88	4772830.35	149.50	0	DEN	A	68.7	14.0	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	6.8
2065	648694.46	4772876.87	149.50	0	DEN	A	68.7	6.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	-2.6
2067	648694.48	4772872.84	149.50	0	DEN	A	68.7	5.7	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-2.0
2069	648694.49	4772869.87	149.50	0	DEN	A	68.7	3.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.3
2070	648694.50	4772866.70	149.50	0	DEN	A	68.7	6.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.6
2073	648694.51	4772864.12	149.50	0	DEN	A	68.7	0.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-7.7
2076	648694.52	4772861.97	149.50	0	DEN	A	68.7	5.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-2.6
2079	648694.53	4772859.26	149.50	0	DEN	A	68.7	3.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.4
2081	648694.54	4772857.59	149.50	0	DEN	A	68.7	0.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-7.0
2084	648694.54	4772855.62	149.50	0	DEN	A	68.7	4.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-3.4
2088	648694.55	4772854.13	149.50	0	DEN	A	68.7	-6.0	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	7.0	0.0	0.0	-16.0
2106	648784.43	4772820.67	149.50	0	DEN	A	68.7	12.2	0.0	0.0	0.0	69.4	3.8	-2.7	0.0	0.0	4.7	0.0	0.0	5.6
2118	648699.22	4772954.75	187.20	0	DEN	A	68.7	12.6	0.0	0.0	0.0	70.5	4.1	-2.8	0.0	0.0	0.0	0.0	0.0	9.4
2134	648798.77	4772819.63	149.50	0	DEN	A	68.7	11.0	0.0	0.0	0.0	69.3	3.8	-2.7	0.0	0.0	4.7	0.0	0.0	4.6
2157	648753.09	4772952.75	168.18	0	DEN	A	68.7	8.8	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	6.2
2160	648753.88	4772949.36	162.69	0	DEN	A	68.7	7.4	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	0.1
2179	648524.67	4772905.74	187.85	0	DEN	A	68.7	8.8	0.0	0.0	0.0	71.9	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	3.9
2181	648533.20	4772908.10	187.89	0	DEN	A	68.7	10.0	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	5.2
2183	648538.71	4772909.63	187.91	0	DEN	A	68.7	1.5	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-3.3
2222	648754.34	4772947.36	154.95	0	DEN	A	68.7	10.4	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	3.1
2227	648752.15	4772956.76	176.35	0	DEN	A	68.7	10.3	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	7.8
2256	648748.13	4772937.49	149.50	0	DEN	A	68.7	9.9	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	2.6
2337	648686.51	4772951.37	187.23	0	DEN	A	68.7	9.1	0.0	0.0	0.0	70.6	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	5.8
2341	648753.34	4772943.47	149.50	0	DEN	A	68.7	8.5	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	1.2
2348	648512.04	4772902.19	187.92	0	DEN	A	68.7	4.2	0.0	0.0	0.0	72.0	4.6	-2.6	0.0	0.0	0.0	0.0	0.0	-1.1
2351	648516.09	4772903.34	187.88	0	DEN	A	68.7	7.6	0.0	0.0	0.0	71.9	4.6	-2.6	0.0	0.0	0.0	0.0	0.0	2.5
2353	648519.94	4772904.42	187.85	0	DEN	A	68.7	3.4	0.0	0.0	0.0	71.9	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	-1.7
2372	648744.93	4772965.78	187.11	0	DEN	A	68.7	8.1	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	5.4
2378	648751.44	4772959.80	184.18	0	DEN	A	68.7	7.8	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	5.2
2384	648702.66	4772912.83	149.50	0	DEN	A	68.7	8.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	0.3
2397	648749.69	4772963.23	187.06	0	DEN	A	68.7	7.6	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	5.0
2412	648676.12	4772948.70	187.25	0	DEN	A	68.7	7.2	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	3.8
2429	648680.63	4772949.82	187.24	0	DEN	A	68.7	6.1	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	2.7
2452	648545.12	4772911.47	187.61	0	DEN	A	68.7	5.3	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	0.6
2471	648540.35	4772910.13	187.90	0	DEN	A	68.7	-1.1	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-5.9
2478	648541.87	4772910.57	187.82	0	DEN	A	68.7	-1.7	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-6.4
2484	648543.19	4772910.92	187.73	0	DEN	A	68.7	-2.0	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-6.7
2486	648539.68	4772909.92	187.91	0	DEN	A	68.7	-2.0	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-6.8
2491	648542.42	4772910.73	187.78	0	DEN	A	68.7	-3.4	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-8.1
2494	648540.93	4772910.29	187.88	0	DEN	A	68.7	-3.6	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-8.4
2496	648541.34	4772910.41	187.85	0	DEN	A	68.7	-3.7	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-8.4
2498	648542.76	4772910.82	187.76	0	DEN	A	68.7	-5.9	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-10.7

Line Source, ISO 9613, Name: "AP, HMA product shipping, Empty", ID: "AP_RD_SHP_HMA_Em"																				
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)
1824	648855.34	4772823.41	149.50	0	DEN	A	68.7	16.8	0.0	0.0	0.0	68.7	3.6	-2.6	0.0	0.0	4.7	0.0	0.0	11.1
1826	648855.34	4772823.41	149.50	1	DEN	A	68.7	16.8	0.0	0.0	0.0	68.7	3.6	-2.6	0.0	0.0	4.7	0.0	20.8	-9.7
1839	648547.50	4772912.12	187.50	0	DEN	A	68.7	0.8	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-3.9
1840	648589.87	4772923.90	187.42	0	DEN	A	68.7	19.4	0.0	0.0	0.0	71.4	4.4	-2.8	0.0	0.0	0.0	0.0	0.0	15.1
1876	648718.93	4772959.74	187.17	0	DEN	A	68.7	16.7	0.0	0.0	0.0	70.4	4.1	-2.8	0.0	0.0	0.0	0.0	0.0	13.8
1879	648724.21	4772925.31	149.50	0	DEN	A	68.7	16.5	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	8.9
1900	648738.26	4772829.50	149.50	0	DEN	A	68.7	15.3	0.0	0.0	0.0	69.9	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	8.1
1909	648695.80	4772853.04	149.50	0	DEN	A	68.7	5.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	7.1	0.0	0.0	-4.9
1911	648709.32	4772842.40	149.50	0	DEN	A	68.7	14.9	0.0	0.0	0.0	70.2	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	7.4
1920	648818.18	4772821.15	149.50	0	DEN	A	68.7	14.2	0.0	0.0	0.0	69.1	3.7	-2.7	0.0	0.0	4.7	0.0	0.0	8.1
1996	648647.85	4772940.38	187.31	0	DEN	A	68.7	15.3	0.0	0.0	0.0	70.9	4.3	-2.8	0.0	0.0	0.0	0.0	0.0	11.6
2025	648765.65	4772824.22	149.50	0	DEN	A	68.7	13.4	0.0	0.0	0.0	69.6	3.9	-2.7	0.0	0.0	4.7	0.0	0.0	6.5
2040	648694.50	4772876.91	149.50	0	DEN	A	68.7	6.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	-2.5
2041	648694.50	4772872.84	149.50	0	DEN	A	68.7	5.7	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-2.0
2043	648694.50	4772869.87	149.50	0	DEN	A	68.7	3.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.3
2045	648694.50	4772866.70	149.50	0	DEN	A	68.7	6.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-1.6
2047	648694.50	4772864.12	149.50	0	DEN	A	68.7	0.1	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-7.7
2050	648694.50	4772861.98	149.50	0	DEN	A	68.7	5.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-2.6
2053	648694.51	4772859.26	149.50	0	DEN	A	68.7	3.3	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-4.4
2056	648694.51	4772857.60	149.50	0	DEN	A	68.7	0.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-7.0
2057	648694.51	4772855.63	149.50	0	DEN	A	68.7	4.4	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	-3.4
2062	648694.51	4772854.16	149.50	0	DEN	A	68.7	-6.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	7.0	0.0	0.0	-16.8
2102	648784.46	4772820.67	149.50	0	DEN	A	68.7	12.2	0.0	0.0	0.0	69.4	3.8	-2.7	0.0	0.0	4.7	0.0	0.0	5.6
2115	648699.26	4772900.94	149.50	0	DEN	A	68.7	12.6	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	4.8
2123	648751.95	4772957.69	178.99	0	DEN	A	68.7	12.2	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	9.6
2138	648798.80	4772819.62	149.50	0	DEN	A	68.7	11.0	0.0	0.0	0.0	69.3	3.8	-2.7	0.0	0.0	4.7	0.0	0.0	4.5
2150	648524.34	4772905.67	187.85	0	DEN	A	68.7	9.2	0.0	0.0	0.0	71.9	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	4.2
2153	648533.15	4772908.11	187.89	0	DEN	A	68.7	10.0	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	5.2
2155	648538.89	4772909.71	187.91	0	DEN	A	68.7	2.8	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-2.0
2194	648696.29	4772887.30	149.50	0	DEN	A	68.7	9.8	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	2.1
2197	648694.88	4772880.85	149.50	0	DEN	A	68.7	5.5	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	5.9	0.0	0.0	-3.4
2206	648754.46	4772947.08	155.39	0	DEN	A	68.7	10.7	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	3.5
2259	648748.22	4772937.51	149.50	0	DEN	A	68.7	9.8	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	2.5
2285	648668.80	4772946.67	187.26	0	DEN	A	68.7	10.0	0.0	0.0	0.0	70.8	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	6.5
2328	648692.16	4772952.73	187.22	0	DEN	A	68.7	9.2	0.0	0.0	0.0	70.6	4.1	-2.8	0.0	0.0	0.0	0.0	0.0	5.9
2333	648753.60	4772950.64	161.75	0	DEN	A	68.7	8.6	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	1.3
2355	648752.97	4772953.37	168.21	0	DEN	A	68.7	8.4	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	5.8
2360	648753.26	4772943.23	149.50	0	DEN	A	68.7	8.2	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	0.9
2363	648511.95	4772902.22	187.92	0	DEN	A	68.7	4.1	0.0	0.0	0.0	72.0	4.6	-2.6	0.0	0.0	0.0	0.0	0.0	-1.1
2365	648516.01	4772903.35	187.88	0	DEN	A	68.7	7.7	0.0	0.0	0.0	71.9	4.6	-2.6	0.0	0.0	0.0	0.0	0.0	2.5
2368	648519.59	4772904.35	187.84	0	DEN	A	68.7	2.0	0.0	0.0	0.0	71.9	4.6	-2.7	0.0	0.0	0.0	0.0	0.0	-3.1
2371	648744.87	4772965.78	187.11	0	DEN	A	68.7	8.1	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	5.4
2375	648702.67	4772912.81	149.50	0	DEN	A	68.7	8.2	0.0	0.0	0.0	70.4	4.1	-2.7	0.0	0.0	4.7	0.0	0.0	0.4
2381	648749.68	4772963.17	186.87	0	DEN	A	68.7	7.7	0.0	0.0	0.0	70.1	4.0	-2.7	0.0	0.0	0.0	0.0	0.0	5.1
2406	648685.26	4772951.12	187.23	0	DEN	A	68.7	7.7	0.0	0.0	0.0	70.6	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	4.4
2432	648754.16	4772948.31	159.86	0	DEN	A	68.7	5.4	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	-1.9
2436	648680.53	4772949.89	187.24	0	DEN	A	68.7	5.9	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	2.5
2439	648675.46	4772948.58	187.25	0	DEN	A	68.7	5.9	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	2.5
2455	648545.41	4772911.54	187.59	0	DEN	A	68.7	5.0	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	0.3
2457	648678.00	4772949.23	187.25	0	DEN	A	68.7	1.2	0.0	0.0	0.0	70.7	4.2	-2.8	0.0	0.0	0.0	0.0	0.0	-2.2
2465	648543.27	4772910.96	187.73	0	DEN	A	68.7	1.1	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-3.6
2474	648754.44	4772946.55	149.50	0	DEN	A	68.7	-2.9	0.0	0.0	0.0	70.0	4.0	-2.7	0.0	0.0	4.7	0.0	0.0	-10.1
2476	648542.28	4772910.69	187.79	0	DEN	A	68.7	-1.2	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-5.9
2480	648540.13	4772910.06	187.91	0	DEN	A	68.7	-1.8	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-6.5
2482	648541.60	4772910.48	187.84	0	DEN	A	68.7	-1.8	0.0	0.0	0.0	71.7	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-6.6
2488	648540.71	4772910.22	187.89	0	DEN	A	68.7	-2.6	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-7.3
2499	648541.06	4772910.32	187.87	0	DEN	A	68.7	-7.6	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-12.3
2501	648541.22	4772910.37	187.86	0	DEN	A	68.7	-8.4	0.0	0.0	0.0	71.8	4.5	-2.8	0.0	0.0	0.0	0.0	0.0	-13.2

Point Source, ISO 9613, Name: "P4_SE, PP Tertiary Crusher", ID: "P4_SE_PP_TertiaryCrush2"																				
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)
1999	649163.60	4772897.34	149.00	0	D	A	99.2	0.0	0.0	0.0	0.0	64.8	2.3	-2.4	0.0	0.0	10.3	0.0	0.0	24.2

Point Source, ISO 9613, Name: "P4_SE, PP Tertiary Crusher", ID: "P4_SE_PP_TertiaryCrush1"																				
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)
2002	649163.10	4772898.30	149.00	0	D	A	99.2	0.0	0.0	0.0	0.0	64.8	2.3	-2.4	0.0	0.0	10.2	0.0	0.0	24.2

APPENDIX D

APPENDIX D: ALTERNATE EXTRACTION SCENARIO

Alternate Extraction Scenario Description

Subject to agreement from the City of Niagara Falls, Walker proposes an alternative extraction scenario in which these road allowances can also be extracted:

i. Upper's Lane, between the North Extraction Area and the Mid Extraction Area; and
ii. The unopened road allowance between Lots 120 and 136, between the Mid Extraction Area and the South Extraction Area.

The layout of the site and phases for the Alternate Extraction Scenario can be found in **Figure D.1**.

Walker owns all of the lands north and south of Upper's Lane and the unopened road allowance between Thorold Townline Road and Beechwood Road, with exception of the Bible Baptist Church property which has secured access from Beechwood Road. Subject to an agreement with the City, Walker proposes to extract this portion of Upper's Lane and the unopened road allowance to maximize access to the aggregate resource and to create a more integrated operation and rehabilitation plan.

Should Agreement with the City be reached, extraction at the site can be simplified greatly. A single sinking cut would then be required, as opposed to multiple sinking cuts in the Proposed Extraction Scenario. Initial operations will be similar to the Proposed Extraction Scenario, with a portable plant operating at the top of rock until sufficient area has been opened to move the plant to the first bench and then the final quarry floor. Once on the quarry floor, the plant can be expanded.

In addition to aggregate extraction and processing, the site will also include a hot mix asphalt (HMA) batch plant, capable of producing 4,900 tonnes per day of HMA. Operations include the receipt and drying of washed aggregate, receipt and storage of asphalt cement, mixing and storage of HMA, and loading highway trucks for shipment to the job site.

The initial sinking cut is performed in the southern region of Phase 1A. The sinking cut will consist of only drilling, extraction, aggregate processing, and aggregate shipping. Once sufficient area has been extracted in Phase 1A, the asphalt plant will be constructed on the Quarry floor south of Upper's Lane.

Phases 1A, 2, and 3 will be extracted in two benches down to the Quarry floor. Phases 1B and 1C will be extracted in one bench to approximately 155 masl. After extraction, Phase 1B will be backfilled to a final elevation of approximately 175 masl to accommodate the realignment of Upper's Creek. The mobile crusher plant will be close to the surface during the sinking cut and descend in elevation as material is extracted. The crusher plant will remain on the Quarry floor once it reaches there. The exception is Phase 1B, where the crusher plant may be relocated to a higher elevation of 155 masl to accommodate Phase 1B's higher final depth. For all of the phases, the crusher plant will follow the working face as closely as possible to reduce hauling distance.

In addition to aggregate extraction and processing, the site will also include the hot mix asphalt (HMA) batch plant, described under the proposed extraction scenario, to be located in Phase 1A.

The hours of operation at the Quarry for the Alternative Extraction Scenario are the same as those for the Proposed Extraction Scenarios as described in **Section 2** of the report.

The modelled phases for the Alternate Extraction Scenario are:

- **Alternate Phase 1B North** (AP1B_N*):
  - Extraction in northern portion of Alternate Phase 1B, with AP operational
- **Alternate Phase 2 Northeast** (AP2_NE*):
  - Extraction in the northeastern corner of Alternate Phase 2, with AP operational
- **Alternate Phase 3 Southeast** (AP3_SE*);
  - Extraction in the southeastern corner of Alternate Phase 3, with AP operational

The operation overviews of the modelled scenarios are shown in **Figures D.2a** through **D.2c**.

Noise Sources

The sources modelled for the Alternate Extraction Scenarios are the same as those for the Proposed Extraction Scenarios as described in **Section 3** of the report.

A summary of significant sound sources is provided in **Table D.1**, including sound power levels, location, sound characteristics, operating duration, and vehicle route assumptions. Sound power levels for the proposed sources are based on historical measurement data on file at RWDI. The overview of the locations of the modelled sources are shown in **Figures D.2a** through **D.2c**.

Noise Control Recommendations

The following recommendations are provided in order to meet the applicable criteria described in **Section 5** of the report:

1. Minimum 3 m tall perimeter berms should be constructed around the Quarry as shown in **Figure D.1** The perimeter berms should be constructed as soon as possible during site preparation prior to extraction.
2. The primary crusher should stay within 30 m of the working face to maximize shielding effect of the Quarry terrain.
3. For alternate phase 3, WAI should maintain an 8m tall barrier at a radius of 40 m to the southeast of the processing plant secondary crushers as shown in **Figure D.2c**. The barrier can be material stockpiles, noise walls, or a combination of both. The barrier should extend long enough to shield R4 and R5 from the secondary crushers.

Impact Asssessment

The same assessment methodology as described in **Section 7** of the report was used for the Alternate Extraction Scenarios.

The predicted sound levels at PORs were assessed using applicable sound level limits, as shown in **Tables D.2a** to **D.2c** for continuous sources, and **Table D.2d** for impulsive sources. The predicted sound levels at each POR complies with the applicable NPC-300 Class 2 exclusion limits for all scenarios with the implementation of the mitigation measures described above.

Predicted sound level contours (isopleths of equal sound level) for continuous sources were generated for the modelled phases of the alternate extraction scenarios. The sound level contours are shown in **Figures D.3a** through **D.3f**.

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Table D.1: Noise Source Summary - Alternate Extraction Scenario

Upper's Quarry, 1603157

Notes to Table:

1. Wherever possible, the Source ID matches the identifiers used in the ESDM report.

2. Sound Power Level of Source, in dBA, not including sound characteristic adjustments per NPC-104.

3. Source Location: O = Outside of building, including the roof, I = Inside of building.

4. Sound Characteristic, per NPC-104:
   - S = Steady
   - I = Impulsive
   - T = Tonal
   - Q = Quasi-Steady Impulsive
   - B = Buzzing
   - C = Cyclic

5. Noise control measures currently in place or specified in construction drawings:
   - S = Silencer/Muffler
   - L = Lagging
   - O = Other
   - A = Acoustic lining, plenum
   - E = Acoustic enclosure
   - U = Uncontrolled
   - B = Barrier/Berm

   Where noise control measures are specified in construction drawings or were found on existing equipment, octave band sound power levels include the effects of the noise control measures. Noise control measures recommended in the mitigation section of this report are not included in this table.

Table 1: Additional Data

Upper's Quarry, 1603157

6. Source type indicates Cadna/A modelling methodology. For Point, Line, and Area sources, PWLs represent the overall level for the entire source. Where source type is Mobile Equipment, the source is modelled as a moving point source, and PWL is calculated from a single-vehicle passby.

7. Sound Power Level Data Source:
   - Man = Manufacturer's Data
   - EC = Engineering Calc based on specifications
   - Mea = Measured Directly
   - Same ### = same type as source no. ###
   - Hist = Historical Data on File at RWDI

8 For loader dumping into primary crusher, it is assumed each dump takes approximately 10s

Source ID [1]	Source Description	Sound Power Level [2]	Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	1/1 Octave Band Sound Power Level Data if available (dB)									Source Type [6]	PWL Data Source [7]	Height Above Roof	Local Roof Height Ab. Grade	Height Above Grade	Source Co-ordinates for point sources (m)			Operating Time during Worst-case hour for Point Sources, [8] OR Vehicle Passby per Hour & Speed for Line Sources		
		(dBA)	(I or O)	(S,Q,I,B,T,C)	(S,A,B,L,E,O,U)	31.5	63	125	250	500	1000	2000	4000	8000			(m)	(m)	(m)	X	Y	Z	Daytime	Evening	Nighttime
Point Sources																									
AP1B_N_PC_CrusherDump	Alternate P1B North, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	648792	4773389	168.7	60 dumps/hr	-	-
AP1B_N_PC_Ldr	Alternate P1B North, PC loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648793	4773390	168.2	60 min	-	-
AP1B_N_PC_PrimaryCrush	Alternate P1B North, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	648791	4773388	168.7	60 min	-	-
AP1B_N_PC_PrimaryScreen	Alternate P1B North, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648791	4773387	168.7	60 min	-	-
AP1B_N_PP_Ldr	Alternate P1B North, PP loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648709	4773141	145.5	60 min	60 min	60 min
AP1B_N_PP_SecondaryCrush1	Alternate P1B North, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648709	4773154	146.0	60 min	-	-
AP1B_N_PP_SecondaryCrush2	Alternate P1B North, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648710	4773154	146.0	60 min	-	-
AP1B_N_PP_SecondaryTertiaryScreen1	Alternate P1B North, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648709	4773152	146.0	60 min	-	-
AP1B_N_PP_SecondaryTertiaryScreen2	Alternate P1B North, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648710	4773152	146.0	60 min	-	-
AP1B_N_PP_TertiaryCrush1	Alternate P1B North, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648709	4773150	146.0	60 min	-	-
AP1B_N_PP_TertiaryCrush2	Alternate P1B North, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648710	4773150	146.0	60 min	-	-
AP1B_N_PP_Trk1	Alternate P1B North, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648707	4773129	146.0	60 min	60 min	60 min
AP1B_N_PP_Trk2	Alternate P1B North, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648709	4773129	146.0	60 min	60 min	60 min
AP1B_N_WF_Drill	Alternate P1B North, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	648805	4773411	175.5	60 min	-	-
AP2_NE_PC_CrusherDump	Alternate P2 NE, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	649438	4773415	165.0	60 dumps/hr	-	-
AP2_NE_PC_Ldr	Alternate P2 NE, PC loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	649441	4773417	164.5	60 min	-	-
AP2_NE_PC_PrimaryCrush	Alternate P2 NE, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	649436	4773413	165.0	60 min	-	-
AP2_NE_PC_PrimaryScreen	Alternate P2 NE, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649435	4773411	165.0	60 min	-	-
AP2_NE_PP_Ldr	Alternate P2 NE, PP loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	648892	4773262	150.5	60 min	60 min	60 min
AP2_NE_PP_SecondaryCrush1	Alternate P2 NE, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648906	4773263	151.0	60 min	-	-
AP2_NE_PP_SecondaryCrush2	Alternate P2 NE, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	648907	4773262	151.0	60 min	-	-
AP2_NE_PP_SecondaryTertiaryScreen1	Alternate P2 NE, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648905	4773263	151.0	60 min	-	-
AP2_NE_PP_SecondaryTertiaryScreen2	Alternate P2 NE, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	648905	4773262	151.0	60 min	-	-
AP2_NE_PP_TertiaryCrush1	Alternate P2 NE, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648903	4773263	151.0	60 min	-	-
AP2_NE_PP_TertiaryCrush2	Alternate P2 NE, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	648902	4773262	151.0	60 min	-	-
AP2_NE_PP_Trk1	Alternate P2 NE, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648884	4773264	151.0	60 min	60 min	60 min
AP2_NE_PP_Trk2	Alternate P2 NE, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	648885	4773262	151.0	60 min	60 min	60 min
AP2_NE_WF_Drill	Alternate P2 NE, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	649461	4773447	177.5	60 min	-	-
AP3_SE_PC_CrusherDump	Alternate P3 SE, PC loader dumping into crusher	123	O	S	U	115.4	120.3	122.2	120.0	118.3	118.5	116.6	111.1	102.3	Point	Hist	-	-	3.0	649482	4772801	164.0	60 dumps/hr	-	-
AP3_SE_PC_Ldr	Alternate P3 SE, PC Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	649483	4772801	163.5	60 min	-	-
AP3_SE_PC_PrimaryCrush	Alternate P3 SE, PC Primary Crusher	118	O	S	U	108.9	119.8	115.0	118.7	114.6	112.2	109.6	104.4	99.6	Point	Hist	-	-	3.0	649481	4772802	164.0	60 min	-	-
AP3_SE_PC_PrimaryScreen	Alternate P3 SE, PC Primary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649480	4772803	164.0	60 min	-	-

Table D.1: Noise Source Summary - Alternate Extraction Scenario

Upper's Quarry, 1603157

Notes to Table:

1. Wherever possible, the Source ID matches the identifiers used in the ESDM report.

2. Sound Power Level of Source, in dBA, not including sound characteristic adjustments per NPC-104.

3. Source Location: O = Outside of building, including the roof, I = Inside of building.

4. Sound Characteristic, per NPC-104:
   - S = Steady
   - I = Impulsive
   - T = Tonal
   - Q = Quasi-Steady Impulsive
   - B = Buzzing
   - C = Cyclic

5. Noise control measures currently in place or specified in construction drawings:
   - S = Silencer/Muffler
   - L = Lagging
   - O = Other
   - A = Acoustic lining, plenum
   - E = Acoustic enclosure
   - U = Uncontrolled
   - B = Barrier/Berm

   Where noise control measures are specified in construction drawings or were found on existing equipment, octave band sound power levels include the effects of the noise control measures. Noise control measures recommended in the mitigation section of this report are not included in this table.

Table 1: Additional Data

Upper's Quarry, 1603157

6. Source type indicates Cadna/A modelling methodology. For Point, Line, and Area sources, PWLs represent the overall level for the entire source. Where source type is Mobile Equipment, the source is modelled as a moving point source, and PWL is calculated from a single-vehicle passby.

7. Sound Power Level Data Source:
   - Man = Manufacturer's Data
   - EC = Engineering Calc based on specifications
   - Mea = Measured Directly
   - Same ### = same type as source no. ###
   - Hist = Historical Data on File at RWDI

8 For loader dumping into primary crusher, it is assumed each dump takes approximately 10s

Source ID [1]	Source Description	Sound Power Level [2]	Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	1/1 Octave Band Sound Power Level Data if available (dB)									Source Type [6]	PWL Data Source [7]	Height Above Roof	Local Roof Height Ab. Grade	Height Above Grade	Source Co-ordinates for point sources (m)			Operating Time during Worst-case hour for Point Sources, [8] OR Vehicle Passby per Hour & Speed for Line Sources		
		(dBA)	(I or O)	(S,Q,I,B,T,C)	(S,A,B,L,E,O,U)	31.5	63	125	250	500	1000	2000	4000	8000			(m)	(m)	(m)	X	Y	Z	Daytime	Evening	Nighttime
AP3_SE_PP_Ldr	Alternate P3 SE, PP Loader	106	O	S	U	102.4	111.2	104.7	101.4	99.9	99.2	97.5	97.7	98.5	Point	Hist	-	-	2.5	649152	4772897	147.5	60 min	60 min	60 min
AP3_SE_PP_SecondaryCrush1	Alternate P3 SE, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	649166	4772899	148.0	60 min	-	-
AP3_SE_PP_SecondaryCrush2	Alternate P3 SE, PP Secondary Crusher	115	O	S	U	102.3	108.9	111.7	110.8	109.6	110.5	107.4	104.6	99.0	Point	Hist	-	-	3.0	649166	4772898	148.0	60 min	-	-
AP3_SE_PP_SecondaryTertiaryScreen1	Alternate P3 SE, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649165	4772899	148.0	60 min	-	-
AP3_SE_PP_SecondaryTertiaryScreen2	Alternate P3 SE, PP Secondary & Tertiary Screen	114	O	S	U	111.4	113.6	111.5	111.1	110.9	106.9	106.5	105.2	101.7	Point	Hist	-	-	3.0	649165	4772898	148.0	60 min	-	-
AP3_SE_PP_TertiaryCrush1	Alternate P3 SE, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	649163	4772898	148.0	60 min	-	-
AP3_SE_PP_TertiaryCrush2	Alternate P3 SE, PP Tertiary Crusher	99	O	S	U	103.4	106.7	97.1	99.9	96.0	92.8	91.3	88.6	83.9	Point	Hist	-	-	3.0	649163	4772897	148.0	60 min	-	-
AP3_SE_PP_Trk1	Alternate P3 SE, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	649143	4772895	148.0	60 min	60 min	60 min
AP3_SE_PP_Trk2	Alternate P3 SE, PP Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.0	649142	4772897	148.0	60 min	60 min	60 min
AP3_SE_WF_Drill	Alternate P3 SE, WF Drill	110	O	S	U	96.8	101.2	99.3	96.9	102.5	104.3	104.4	102.0	99.5	Point	Hist	-	-	2.5	649512	4772788	180.5	60 min	-	-
ASPH_comp	Asphalt Plant - Compressor Vent	96	O	S	U	91.4	88.5	99.4	96.2	93.0	90.2	87.4	84.9	81.3	Point	Hist	-	-	0.6	648875	4772829	143.6	60 min	60 min	60 min
ASPH_DC_m	Asphalt Plant - Dust Collector Blower (motor)	105	O	S	U	110.8	113.6	105.4	104.1	102.2	99.8	94.9	93.4	91.5	Point	Hist	-	-	2.0	648856	4772826	145.0	60 min	60 min	60 min
ASPH_DC_s	Asphalt Plant - Dust Collector Blower (stack)	110	O	S	U	125.3	126.2	117.0	110.0	105.8	103.5	98.5	93.6	86.1	Point	Hist	0.1	20.0	20.1	648855	4772826	163.1	60 min	60 min	60 min
ASPH_elev	Asphalt Plant - Elevator Motor	100	O	S	U	95.7	97.7	95.1	95.2	97.8	95.5	91.5	87.3	77.2	Point	Hist	-	-	19.0	648861	4772835	162.0	60 min	60 min	60 min
ASPH_IDLE_TRK1	Asphalt Plant - Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.5	648880	4772826	146.5	60 min	60 min	60 min
ASPH_IDLE_TRK2	Asphalt Plant - Idling Truck	96	O	S	U	101.7	98.9	94.6	90.2	90.5	92.8	90.1	81.6	73.8	Point	Hist	-	-	3.5	648880	4772825	146.5	60 min	60 min	60 min
ASPH_imp_silo	Asphalt Plant - Silo - Impulsive	127	O	I	U	122.0	127.9	114.5	107.6	106.6	108.5	117.9	122.3	123.2	Point	Hist	1.0	21.0	22.0	648888	4772842	165.0	60 min	60 min	60 min
ASPH_Ldr_Act1	Asphalt Plant - Loader Activity	102	O	S	U	103.6	109.2	104.1	99.2	97.3	95.8	94.2	93.1	88.0	Point	Hist	-	-	2.5	648870	4772830	145.5	60 min	60 min	60 min
ASPH_Ldr_Act2	Asphalt Plant - Loader Activity	102	O	S	U	103.6	109.2	104.1	99.2	97.3	95.8	94.2	93.1	88.0	Point	Hist	-	-	2.5	648864	4772827	145.5	60 min	60 min	60 min
ASPH_motor	Asphalt Plant - Conveyor motor, gravel hitting metal plate	107	O	S	U	100.5	102.5	94.2	95.5	98.9	103.0	102.0	95.1	91.4	Point	Hist	-	-	4.0	648854	4772834	147.0	60 min	60 min	60 min
ASPH_oven	Asphalt Plant - Oven Motor	102	O	S	U	111.4	110.7	104.0	100.1	98.3	97.8	93.9	91.9	89.9	Point	Hist	-	-	5.8	648858	4772832	148.8	60 min	60 min	60 min
ASPH_pugdoor	Asphalt Plant - Pug Mill door (pressure relief noise)	107	O	S	U	114.6	112.8	109.9	106.3	105.2	101.2	96.8	94.9	93.4	Point	Hist	-	-	4.0	648863	4772834	147.0	60 min	60 min	60 min
ASPH_pugmill	Asphalt Plant - Pug Mill Motor	105	O	S	U	0.0	105.0	104.6	100.8	94.8	94.7	96.6	99.5	99.3	Point	Hist	-	-	5.0	648870	4772837	148.0	60 min	60 min	60 min
Line Sources																									
AP1B_N_Conveyor	Alternate P1B North, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
AP1B_N_RD_Haul_PP_AP_Em	Alternate P1B North, Aggregate Haul road b/w PP and AP, Empty	108	O	S	U	110.2	113.9	109.7	105.1	104.6	102.7	101.6	92.5	89.4	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
AP1B_N_RD_Haul_PP_AP_Fu	Alternate P1B North, Aggregate Haul road b/w PP and AP, Full	112	O	S	U	108.8	108.3	109.9	109.0	106.2	108.2	104.3	98.4	94.8	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
AP1B_N_RD_SHP_Aggr_Em	Alternate P1B North, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
AP1B_N_RD_SHP_Aggr_Fu	Alternate P1B North, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
AP2_NE_Conveyor	Alternate P2 NE, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
AP2_NE_RD_Haul_PP_AP_Em	Alternate P2 NE, Aggregate Haul road b/w PP and AP, Empty	108	O	S	U	110.2	113.9	109.7	105.1	104.6	102.7	101.6	92.5	89.4	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
AP2_NE_RD_Haul_PP_AP_Fu	Alternate P2 NE, Aggregate Haul road b/w PP and AP, Full	112	O	S	U	108.8	108.3	109.9	109.0	106.2	108.2	104.3	98.4	94.8	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
AP2_NE_RD_SHP_Aggr_Em	Alternate P2 NE, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
AP2_NE_RD_SHP_Aggr_Fu	Alternate P2 NE, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
AP3_SE_Conveyor	Alternate P3 SE, Conveyor	83	O	S	U	74.5	75.5	79.0	77.3	78.8	79.2	75.6	69.1	58.5	Line	Hist	-	-	3.5	-	-	-	60 min	-	-
AP3_SE_RD_Haul_PP_AP_Em	Alternate P3 SE, Aggregate Haul road b/w PP and AP, Empty	108	O	S	U	110.2	113.9	109.7	105.1	104.6	102.7	101.6	92.5	89.4	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
AP3_SE_RD_Haul_PP_AP_Fu	Alternate P3 SE, Aggregate Haul road b/w PP and AP, Full	112	O	S	U	108.8	108.3	109.9	109.0	106.2	108.2	104.3	98.4	94.8	Line	Hist	-	-	3.5	-	-	-	3/hr, 20kph	3/hr, 20kph	3/hr, 20kph
AP3_SE_RD_SHP_Aggr_Em	Alternate P3 SE, Aggregate Shipping from PP, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
AP3_SE_RD_SHP_Aggr_Fu	Alternate P3 SE, Aggregate Shipping from PP, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	12/hr, 20kph	12/hr, 20kph	12/hr, 20kph
AP_RD_SHP_AC_RAP_Em	AP, AC and RAP shipped from Offsite, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	6/hr, 20kph	6/hr, 20kph	6/hr, 20kph
AP_RD_SHP_AC_RAP_Fu	AP, AC and RAP shipped from Offsite, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	6/hr, 20kph	6/hr, 20kph	6/hr, 20kph
AP_RD_SHP_HMA_Em	AP, HMA product shipping, Empty	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	6/hr, 20kph	6/hr, 20kph	6/hr, 20kph
AP_RD_SHP_HMA_Fu	AP, HMA product shipping, Full	104	O	S	U	107.7	110.2	108.3	99.9	99.4	98.6	96.7	93.6	91.6	Line	Hist	-	-	3.5	-	-	-	6/hr, 20kph	6/hr, 20kph	6/hr, 20kph

Table D.2a: Acoustic Assessment Summary, Alternate Phase 1B North

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	47	No	50	D	Yes	648766	4773660	4.5
		Evening	39	No	50		Yes			
		Nighttime	39	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	46	No	50	D	Yes	648766	4773629	1.5
		Evening	37	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	40	No	50	D	Yes	649394	4773728	4.5
		Evening	33	No	50		Yes			
		Nighttime	33	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	38	No	50	D	Yes	649391	4773698	1.5
		Evening	28	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	37	No	50	D	Yes	649571	4773645	4.5
		Evening	32	No	50		Yes			
		Nighttime	32	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	35	No	50	D	Yes	649553	4773620	1.5
		Evening	27	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	37	No	50	D	Yes	649611	4772698	4.5
		Evening	33	No	50		Yes			
		Nighttime	33	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	30	No	50	D	Yes	649594	4772727	1.5
		Evening	27	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	38	No	50	D	Yes	649553	4772408	4.5
		Evening	30	No	50		Yes			
		Nighttime	30	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	32	No	50	D	Yes	649532	4772429	1.5
		Evening	29	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	38	No	50	D	Yes	649084	4771672	4.5
		Evening	30	No	50		Yes			
		Nighttime	30	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	37	No	50	D	Yes	649070	4771693	1.5
		Evening	30	No	45		Yes			

Table D.2b: Acoustic Assessment Summary, Alternate Phase 2 Northeast

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	46	No	50	D	Yes	648766	4773660	4.5
		Evening	41	No	50		Yes			
		Nighttime	41	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	45	No	50	D	Yes	648766	4773629	1.5
		Evening	40	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	47	No	50	D	Yes	649394	4773728	4.5
		Evening	35	No	50		Yes			
		Nighttime	35	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	45	No	50	D	Yes	649391	4773698	1.5
		Evening	34	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	48	No	50	D	Yes	649571	4773645	4.5
		Evening	36	No	50		Yes			
		Nighttime	36	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	48	No	50	D	Yes	649553	4773620	1.5
		Evening	33	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	48	No	50	D	Yes	649611	4772698	4.5
		Evening	36	No	50		Yes			
		Nighttime	36	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	44	No	50	D	Yes	649594	4772727	1.5
		Evening	30	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	45	No	50	D	Yes	649553	4772408	4.5
		Evening	32	No	50		Yes			
		Nighttime	32	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	43	No	50	D	Yes	649532	4772429	1.5
		Evening	31	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	40	No	50	D	Yes	649084	4771672	4.5
		Evening	31	No	50		Yes			
		Nighttime	31	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	39	No	50	D	Yes	649070	4771693	1.5
		Evening	31	No	45		Yes			

Table D.2c: Acoustic Assessment Summary, Alternate Phase 3 Southeast

Upper's Quarry, 1603157

Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. "Continuous" noise sources includes sum of steady, quasi-steady impulsive, tonal, cyclical and buzzing noise sources, with appropriate penalties applied, in accordance with documents NPC-104 and NPC-300. Impulsive and emergency noise sources are assessed separately from continuous noise sources.

2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.

3. Worst-case cumulative sound level from all applicable sources operating.

4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?

5. Applicable worst-case NPC-300 sound level limit.

6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Continuous" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	48	No	50	D	Yes	648766	4773660	4.5
		Evening	41	No	50		Yes			
		Nighttime	41	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	47	No	50	D	Yes	648766	4773629	1.5
		Evening	40	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	47	No	50	D	Yes	649394	4773728	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	45	No	50	D	Yes	649391	4773698	1.5
		Evening	37	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	47	No	50	D	Yes	649571	4773645	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	46	No	50	D	Yes	649553	4773620	1.5
		Evening	37	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	49	No	50	D	Yes	649611	4772698	4.5
		Evening	41	No	50		Yes			
		Nighttime	41	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	48	No	50	D	Yes	649594	4772727	1.5
		Evening	40	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	43	No	50	D	Yes	649553	4772408	4.5
		Evening	40	No	50		Yes			
		Nighttime	40	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	42	No	50	D	Yes	649532	4772429	1.5
		Evening	39	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	42	No	50	D	Yes	649084	4771672	4.5
		Evening	37	No	50		Yes			
		Nighttime	37	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	41	No	50	D	Yes	649070	4771693	1.5
		Evening	36	No	45		Yes			

Table D.2d: Acoustic Assessment Summary, Alternate Scenario Impulsive Source

Upper's Quarry, 1603157

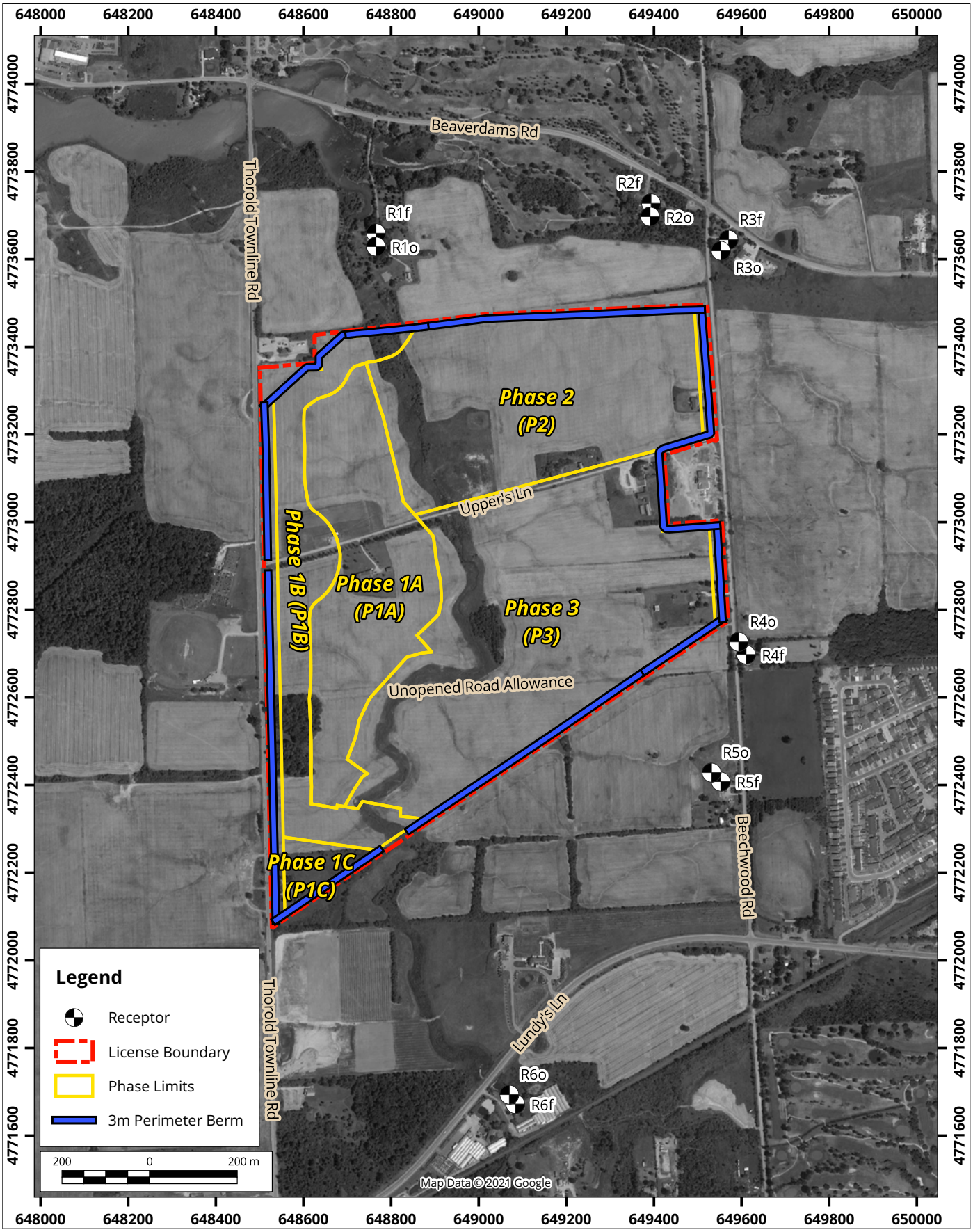
Notes to Table:

- "Table A3" in Appendix A of Basic CCofA Guide.

1. Impulsive noise sources are assessed separately from continuous noise sources.
2. Daytime occurs from 0700-1900h. Evening occurs from 1900h-2300h. Nighttime occurs from 2300-0700h.
3. Worst-case cumulative sound level from all applicable sources operating.
4. Has an acoustic audit (as defined in Publication NPC-233) been conducted with source in place and operating?
5. Applicable worst-case NPC-300 sound level limit, based on more than 9 impulses per hour in a Class 2 area.
6. Performance limit (aka guideline limit) based on following:
   - C = Calculated based on road traffic volumes in compliance with NPC-206 requirements.
   - M = Measured based on monitoring for a minimum 48 hour period, in accordance with NPC-233 requirements.
   - D = Default guideline minima per NPC-300.

Assessment of Impacts for "Impulsive" Noise Sources [1]

Point of Reception ID	Point of Reception Description	Time Period [2]	Total Sound Level at PoR [3] (dBA)	Verified by Acoustic Audit [4] (Yes/No)	Performance Limit [5] (dBA)	Peformance Limit Source [6] (C / M/ D)	Compliance with Performance Limit (Yes/No)	UTM Coordinate (Zone 17N) X (m)	UTM Coordinate (Zone 17N) Y (m)	Height Relative to Local Grade (m)
R1f	Facade of dwelling (10148 Beaverdams Rd)	Daytime	41	No	50	D	Yes	648766	4773660	4.5
		Evening	41	No	50		Yes			
		Nighttime	41	No	45		Yes			
R1o	Outdoor area of dwelling (10148 Beaverdams Rd)	Daytime	41	No	50	D	Yes	648766	4773629	1.5
		Evening	41	No	45		Yes			
R2f	Facade of dwelling (9722 Beaverdams Rd)	Daytime	38	No	50	D	Yes	649394	4773728	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R2o	Outdoor area of dwelling (9722 Beaverdams Rd)	Daytime	38	No	50	D	Yes	649391	4773698	1.5
		Evening	38	No	45		Yes			
R3f	Facade of dwelling (9602 Beaverdams Rd)	Daytime	38	No	50	D	Yes	649571	4773645	4.5
		Evening	38	No	50		Yes			
		Nighttime	38	No	45		Yes			
R3o	Outdoor area of dwelling (9602 Beaverdams Rd)	Daytime	38	No	50	D	Yes	649553	4773620	1.5
		Evening	38	No	45		Yes			
R4f	Facade of dwelling (5584 Beechwood Rd)	Daytime	42	No	50	D	Yes	649611	4772698	4.5
		Evening	42	No	50		Yes			
		Nighttime	42	No	45		Yes			
R4o	Outdoor area of dwelling (5584 Beechwood Rd)	Daytime	43	No	50	D	Yes	649594	4772727	1.5
		Evening	43	No	45		Yes			
R5f	Facade of dwelling (5769 Beechwood Rd)	Daytime	41	No	50	D	Yes	649553	4772408	4.5
		Evening	41	No	50		Yes			
		Nighttime	41	No	45		Yes			
R5o	Outdoor area of dwelling (5769 Beechwood Rd)	Daytime	42	No	50	D	Yes	649532	4772429	1.5
		Evening	42	No	45		Yes			
R6f	Facade of dwelling (9944 Lundy's Ln)	Daytime	35	No	50	D	Yes	649084	4771672	4.5
		Evening	35	No	50		Yes			
		Nighttime	35	No	45		Yes			
R6o	Outdoor area of dwelling (9944 Lundy's Ln)	Daytime	36	No	50	D	Yes	649070	4771693	1.5
		Evening	36	No	45		Yes			



Site Overview and Sensitive Receptor Locations
Alternate Extraction Scenario

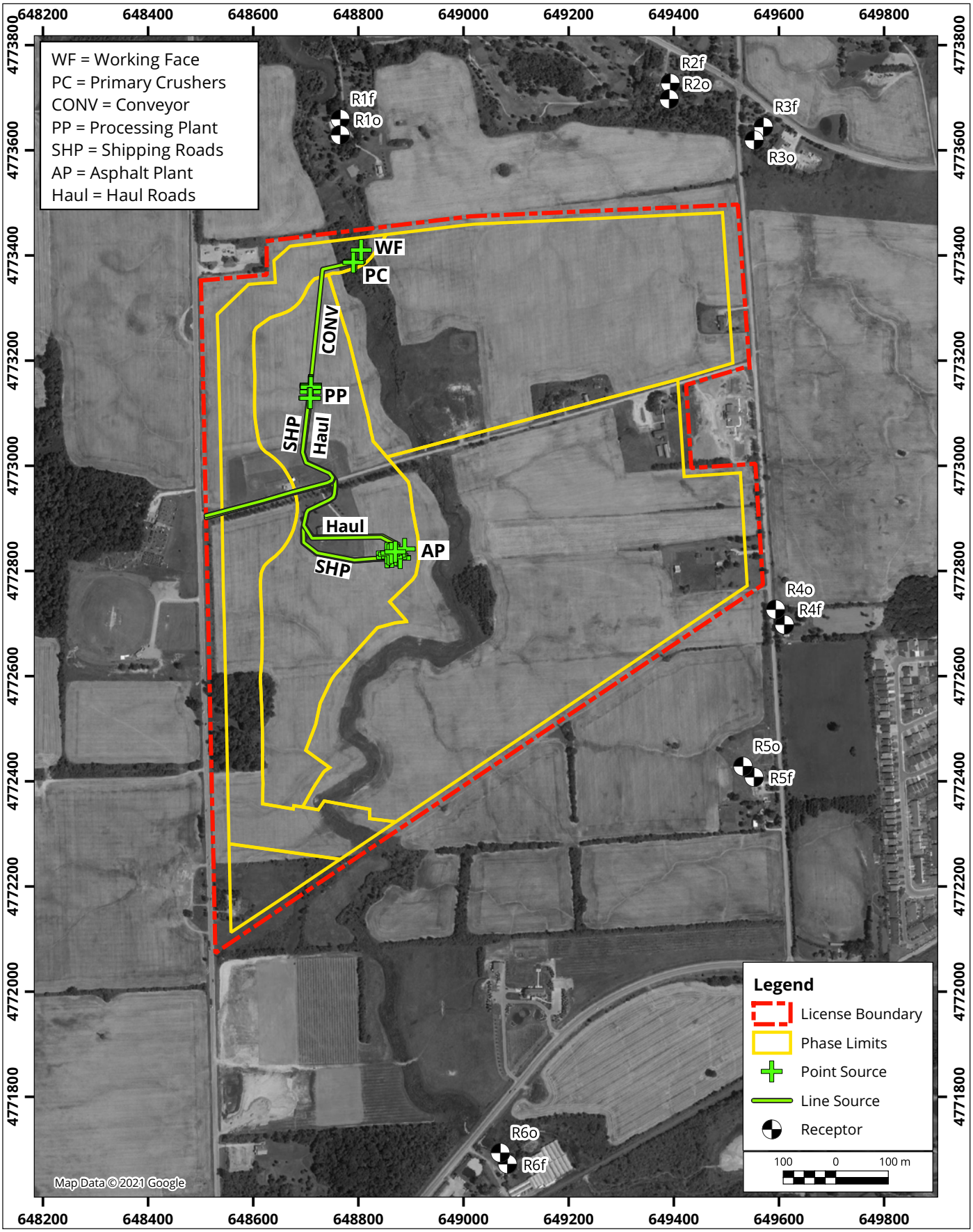
True North

Drawn by: RNL	Figure: D.1
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Alternate Phase 1B North
Operation Overview

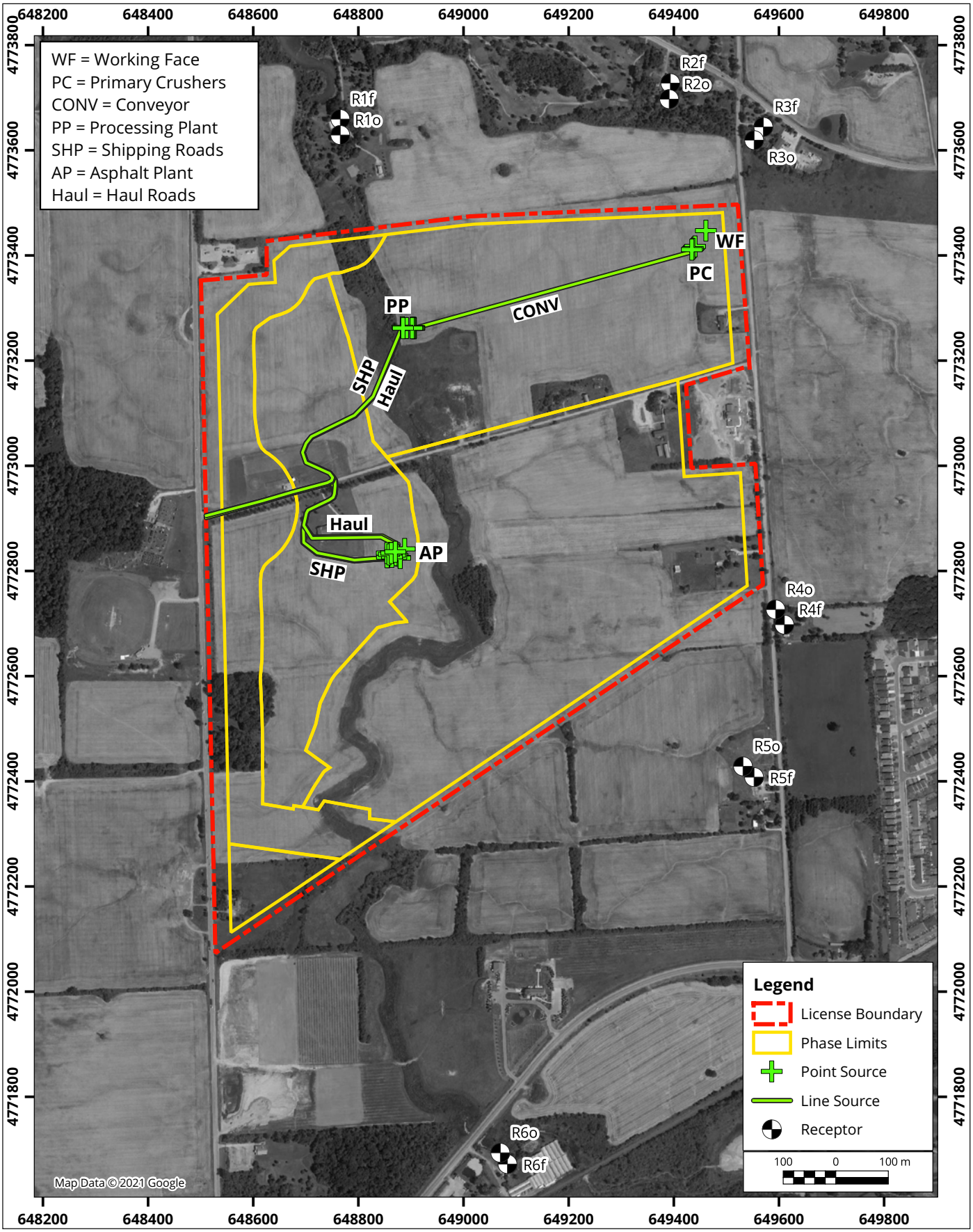
True North

Drawn by: RNL	Figure: D.2a
Approx. Scale:	1:10000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Alternate Phase 2 Northeast Operation Overview

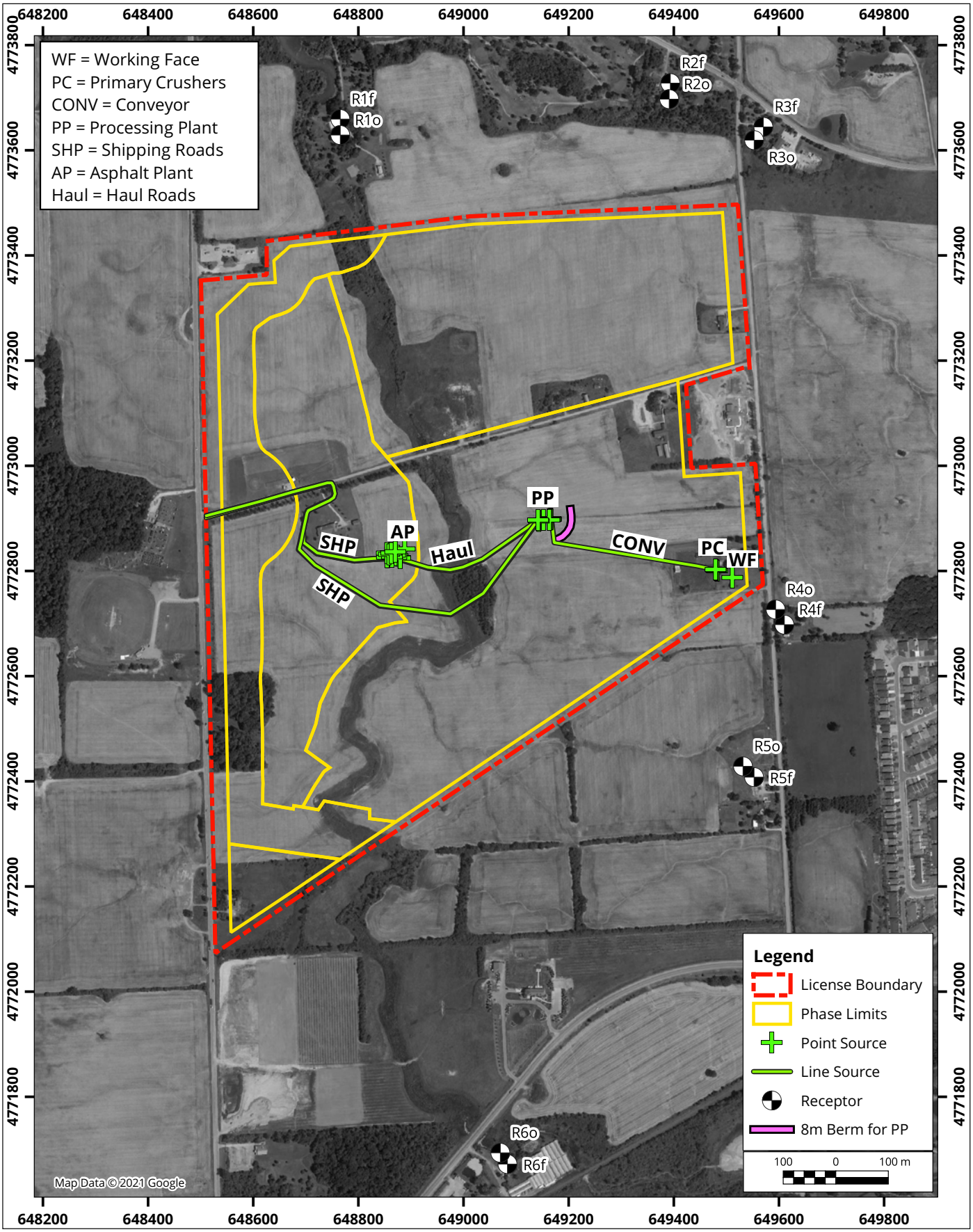
Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

True North

Drawn by: RNL	Figure: D.2b
Approx. Scale:	1:10000
Date Revised:	Sep 22, 2021



Alternate Phase 3 Southeast Operation Overview

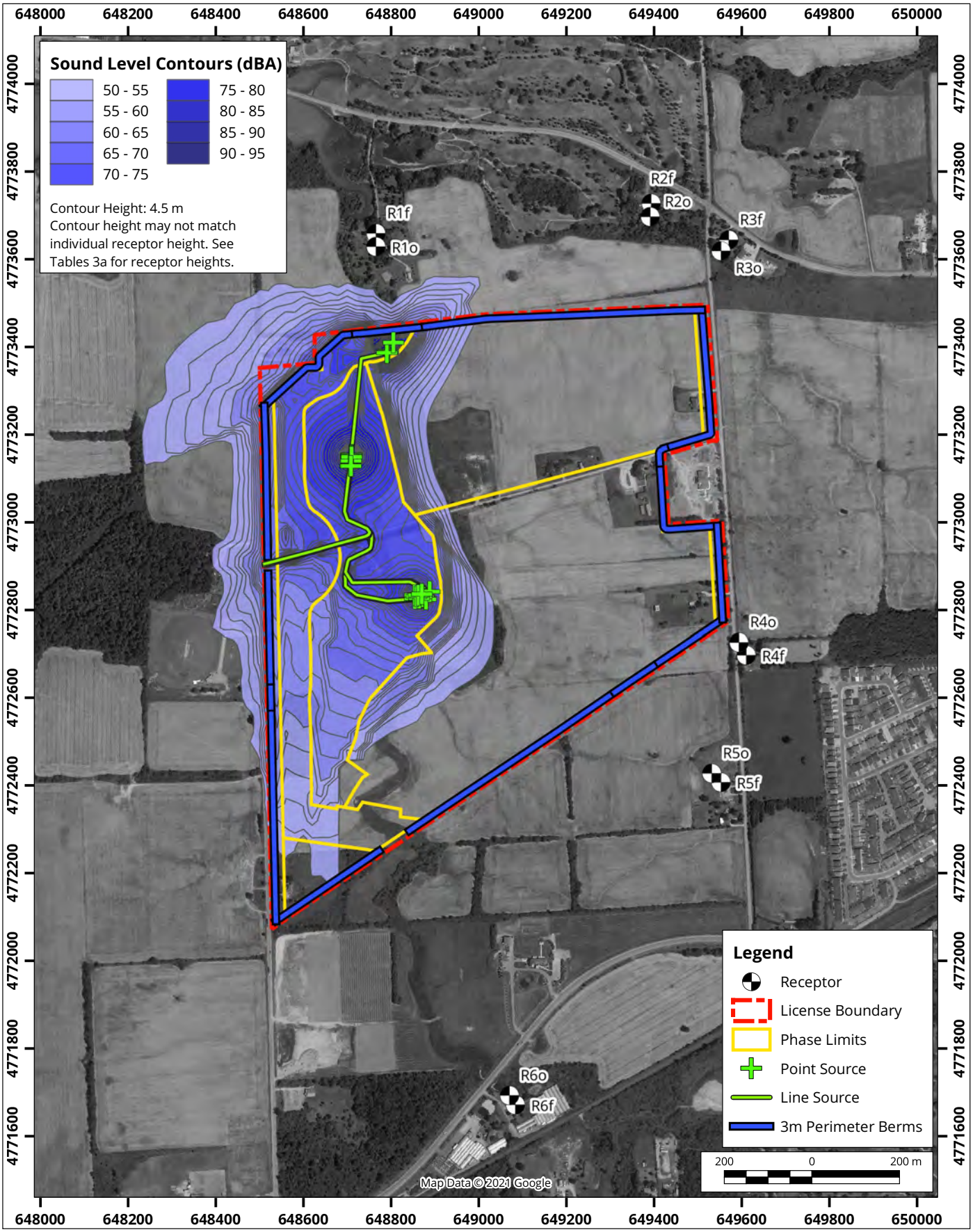
True North

Drawn by: RNL	Figure: D.2c
Approx. Scale:	1:10000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Sound Level Contours
Alternate Phase 1B North, Daytime

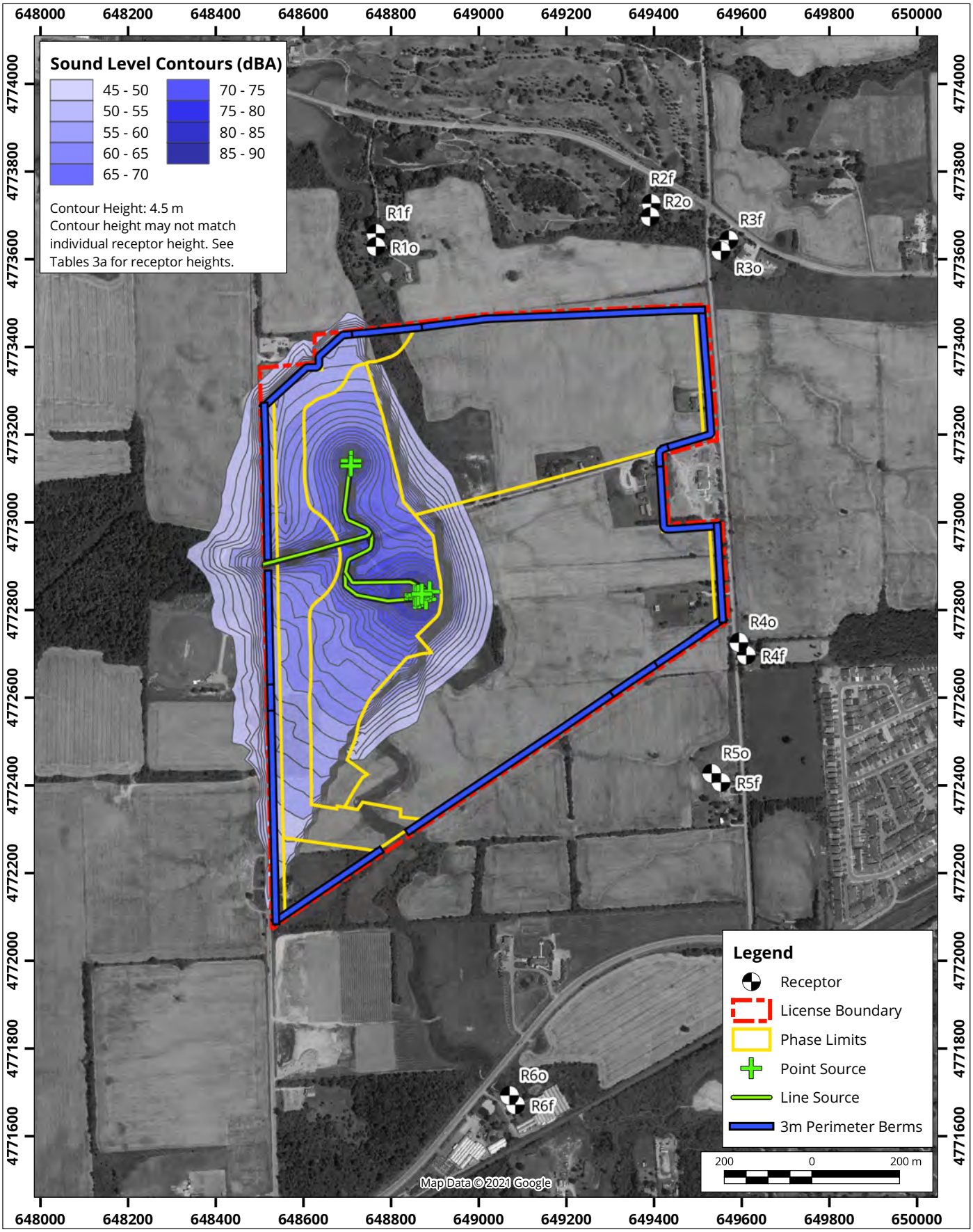
True North

Drawn by: RNL	Figure: D.3a
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Sound Level Contours
Alternate Phase 1B North, Evening/Nighttime

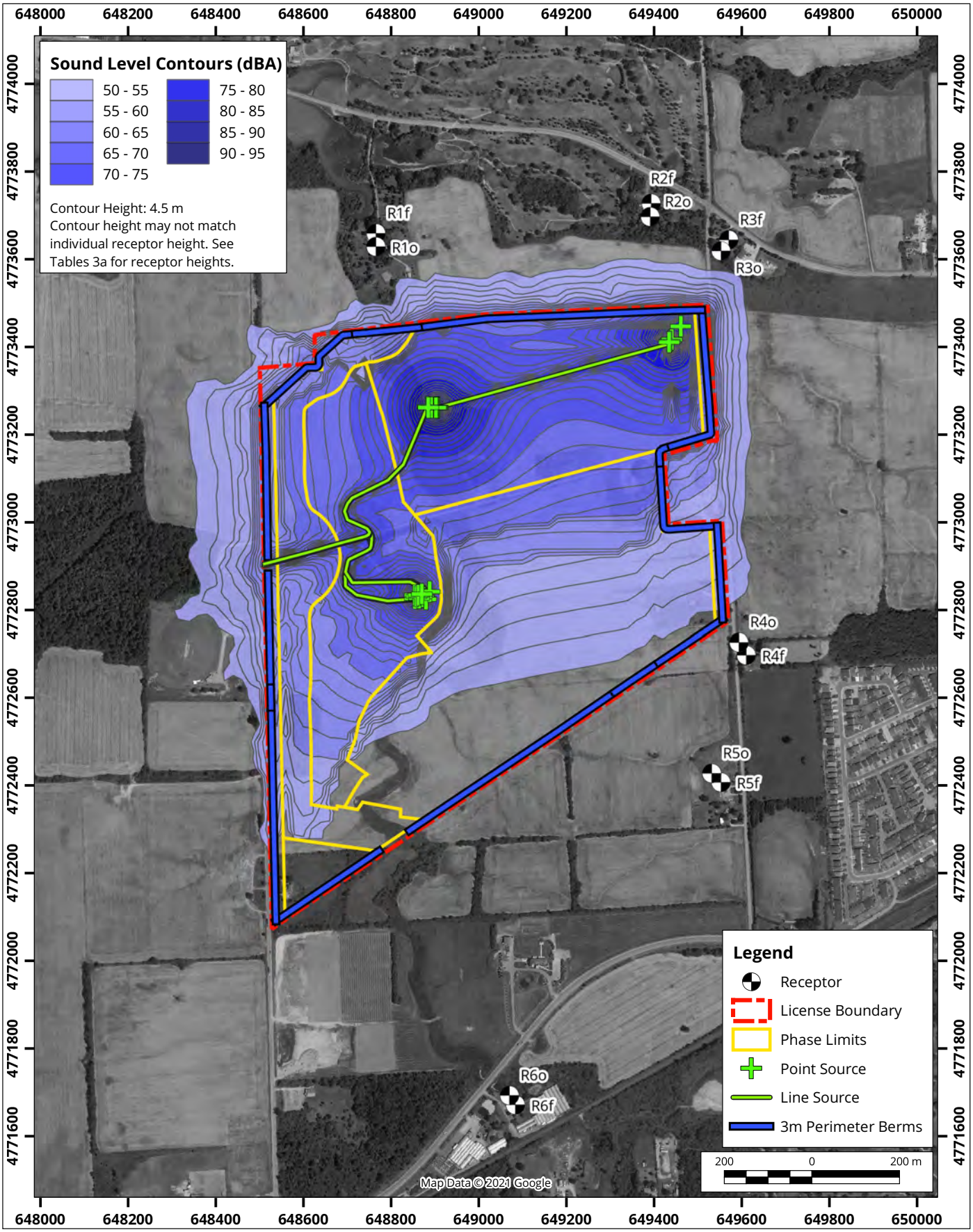
True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Drawn by: RNL	Figure: D.3b
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	



Sound Level Contours
Alternate Phase 2 Northeast, Daytime

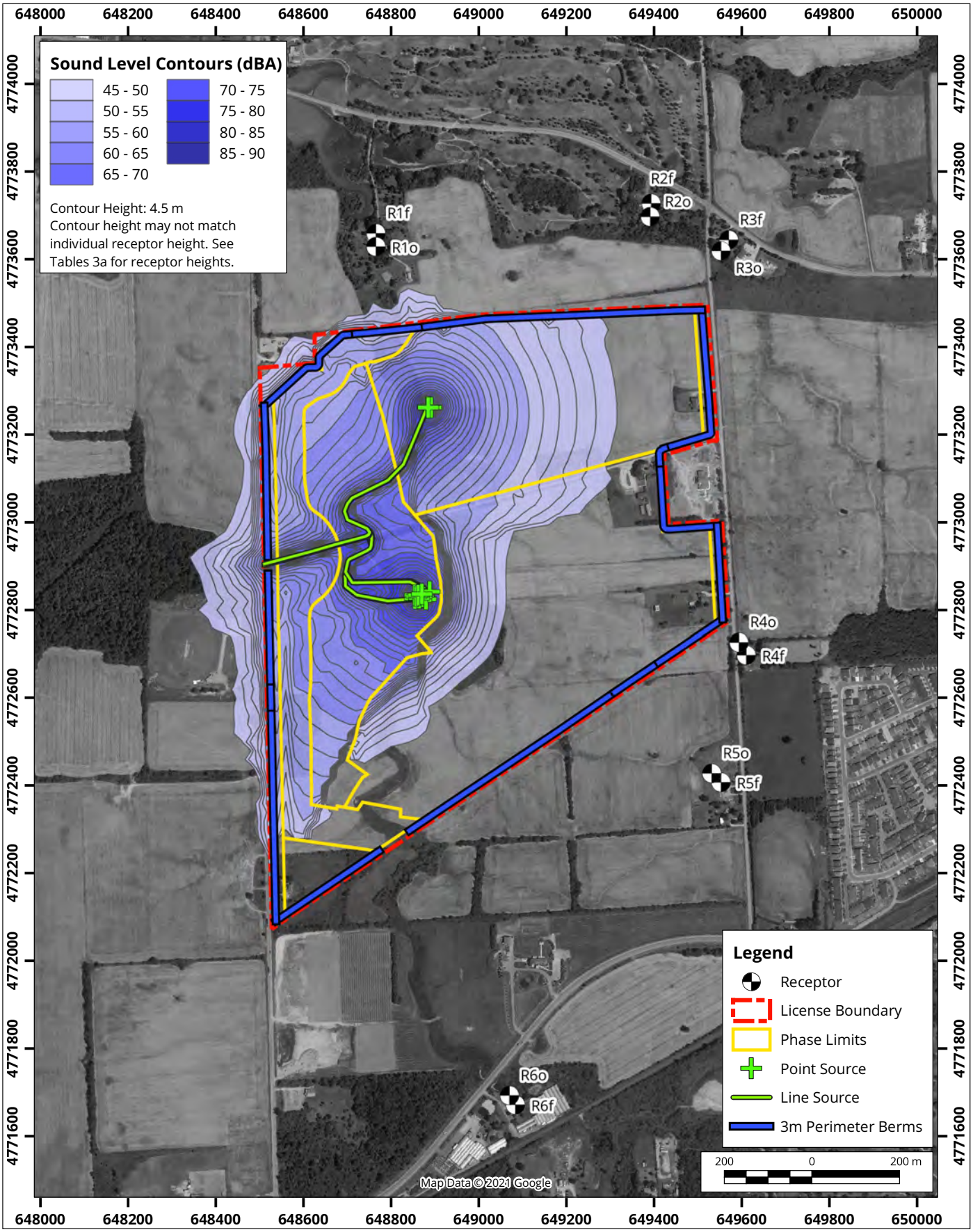
True North

Drawn by: RNL	Figure: D.3c
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157



Sound Level Contours
Alternate Phase 2 Northeast, Evening/Nighttime

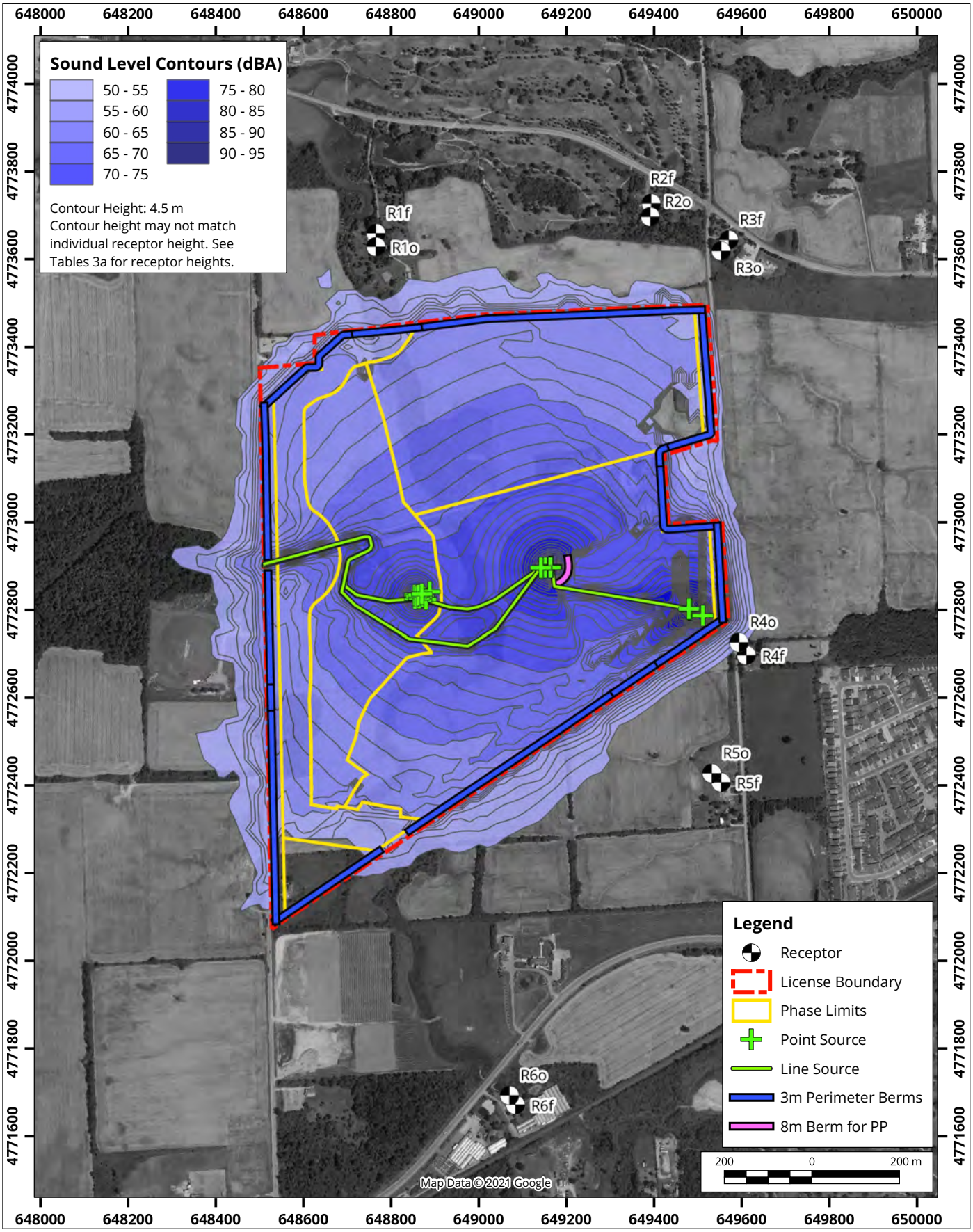
True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Drawn by: RNL	Figure: D.3d
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	



Sound Level Contours
Alternate Phase 3 Southeast, Daytime

True North

Drawn by: RNL	Figure: D.3e
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Sound Level Contours
Alternate Phase 3 Southeast, Evening/Nighttime

True North

Map Projection: NAD 1983 UTM Zone 17N

Walker Aggregates Inc., Upper's Quarry - Niagara Region, Ontario

Project #: 1603157

Drawn by: RNL	Figure: D.3f
Approx. Scale:	1:12000
Date Revised: Sep 22, 2021	

APPENDIX E

SLAVI GROZEV, P.ENG., B.A.SC.

SENIOR ENGINEER

T: 647-475-1048 X 2609 | Slavi.Grozev@rwdi.com

Slavi is an acoustics specialist who supports our clients with a range of noise-related processes, including permitting, compliance, modeling and complaint investigation. His project experience spans a range of industries, including manufacturing, utilities and distribution, food and beverage, quarries and pits, wastewater treatment, waste disposal and land development. Our clients benefit in particular from the depth of Slavi's experience with transportation-related noise. In a previous role with the Ontario Ministry of Transportation, he carried out noise impact assessments of highway and transit corridors and interchange reconfigurations, and also supported roadway noise abatement strategies and transportation policy development. Slavi is RAQS-certified and is experienced in a variety of road traffic models including TNM 2.5.

Employment History

2019-Present
Senior Engineer, RWDI

2017-2019
Senior Environmental Engineer (Acoustics), Arcadis Canada Inc.

2015-2017
Senior Policy Analyst, Acoustics, Air Quality and Climate Change, Ontario Ministry of Transportation

2010-2015
Project Manager/Engineer, Air and Noise Quality Group, GHD Limited

Education

Bachelor of Science (Chemical Engineering) (Hons.), University of Waterloo, Waterloo, ON, 2010

Affiliations

Member, Professional Engineers of Ontario, 2015 – Present

Member, Air & Waste Management Association, 2018 - Present

Technical Expertise

- Compliance and permitting
- Environmental Noise
- Government Reporting
- Industrial Noise
- Noise Impact Assessments
- Noise Modeling
- Transportation Noise

Project Experience

- Lafarge Woodstock Quarry, Woodstock, ON
- McCreedy Mine, Sudbury, ON
- IKO Crusher Plant, Ingersoll, ON
- Tri City Spencer Pit, Guelph, ON
- Tri City Kitchener Pit, Kitchener, ON
- KPM Reid Pit, Brantford, ON

RAY LI, M.SC., P.ENG.
NOISE AND VIBRATION ENGINEER

T: 403-232-6771 X 6283 | Ray.Li@rwdi.com

Ray joined RWDI in 2018 and has become an integral part of the noise, acoustics, and vibration team. He has conducted noise and vibration studies in multiple jurisdictions across Canada and for a wide range of clients. His expertise is with energy production, industrial facilities, and mining operations.

Ray is also well versed in construction vibration and has helped clients manage construction vibration levels in dense urban areas.

Project Experience

Energy & Power

- Prairie Lights Power Plant – AB
- Hidden Lake Compressor Station – AB
- Buffalo Creek Compressor Station – AB
- Hidden Lake Compressor Station – AB
- Kaybob Gas Plant – AB
- ALC Scotford Generator Addition – AB
- Fox Creek Wells – AB
- Enbridge Valve Stations Blowdown – BC
- Claresholm Solar Farm – AB
- Greengate Solar Farm – AB

Ontario Regulatory Applications

- ECA/EASR noise assessment for industrial facilities
- Land use planning for developments

Construction Vibration

- Calgary Cancer Centre – Calgary, AB
- Trans Mountain Pipeline – Edmonton, AB

Mining and Quarry

- Upper's Quarry – Niagara Falls, ON
- Melbourne Road Quarry – Thunder Bay, ON
- North Coal – Sparwood, BC
- Portable Crusher Plants – ON

Employment History

2018-Present
Noise and Vibration Engineer, RWDI

2016-2018
Research Assistant, University of Alberta

2015
Engineer-in-Training, TransCanada Pipelines

2013-2014
Engineering Intern, TransCanada Pipelines

Education

Master of Science (Materials Engineering), University of Alberta, Canada

Bachelor of Science (Mech. Engineering), University of Calgary, Canada

Affiliation

Association of Professional Engineers and Geoscientists of Alberta (APEGA)