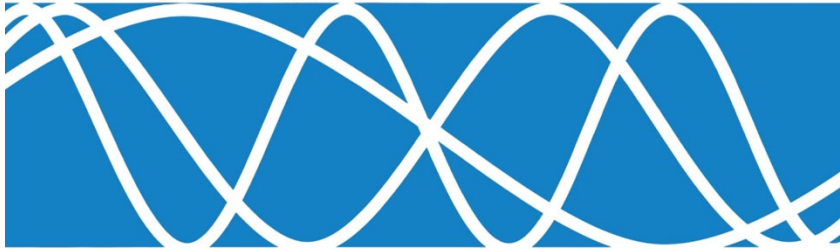


Noise Impact Assessment

**Walker Aggregates
Redford Pit Expansion
Municipality of West Grey,
Ontario**

July 22, 2025
HGC Project #: 02200719



Prepared for:

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July 22, 2025

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1 INTRODUCTION

HGC Noise Vibration Acoustics was retained by Walker Aggregates to undertake an analysis of the potential impact of noise from the proposed Redford Pit Expansion at neighbouring noise sensitive receptors (i.e. residential dwellings) in accordance with the guidelines of the Ministry of Natural Resources and Forestry (MNR) and the Ministry of the Environment, Conservation and Parks (MECP).

The analysis was based on consideration of the pertinent MNR and MECP guidelines, pit plans prepared by Skelton Brumwell & Associates Inc., equipment sound emission levels from the files of HGC, and discussions with Skelton Brumwell and Walker Aggregates regarding the Expansion.

Sound levels resulting from the Expansion were predicted at the selected receptor locations and compared to criteria established in accordance with MECP publication NPC-300 [1]. The results of the analysis indicate that sound levels of the Expansion, predicted under worst-case operating scenarios and with the noise control measures recommended herein, comply with the MECP guideline limits at surrounding sensitive receptors. Details of the analysis are included herein.

2 DESCRIPTION OF SITE AND SURROUNDING AREA

The Expansion is to be located east of the existing Redford Pit, on the north half of Lot 20, Concession 5 NDR, which is located north of the intersection of Allan Park Road and Concession Road 4. A scaled location map is included as Figure 1. The proposed license area is 20.8 hectares, and the extraction area is 14.5 hectares, with a maximum annual extraction of 300,000 tonnes. Aggregate extraction, processing, and shipping within and from the Expansion is proposed to take place Monday to Saturday between 07:00 and 19:00, with no operations on Sundays or statutory holidays.



Existing points of reception surrounding the site are labelled in Figure 2 and designated as locations R01 through R08, and R02A through R05A. Locations R01 through R08 represent residential homes; the outdoor living area of the most potentially impacted homes are represented by locations R02A through R05A (located within 30 metres of R02 through R05, respectively, in the direction of the Expansion). Also considered herein is a currently vacant lot near the Expansion on which noise sensitive uses are permitted by the Grey County Zoning By-law, labelled as location VL1 in Figure 2. The specific location of VL1 was selected in accordance with the guidance provided in MECP publication NPC-300, and with consideration to the existing built form.

Based on observations by HGC personnel during a visit to the site and surrounding area, the background sound (excluding the existing Redford Pit) in the vicinity of all points of reception is dominated by natural sounds and is thus best categorized as a Class 3 acoustical environment under MECP noise assessment guidelines.

3 CRITERIA FOR ACCEPTABLE SOUND LEVELS

MECP publication NPC-300 is the pertinent guideline for developing sound level limits for the assessment of aggregate operations, which are classified as stationary sources of sound. The acceptability limits for stationary sources are based on the existing background sound levels in the area of the subject site. In essence, sound from the stationary source is evaluated against (i.e. compared to) the typical background sound at neighbouring noise sensitive points of reception (e.g., residences). Background sound is considered to include road traffic sound, natural sound, and other typical sounds; but excludes the sound of the site under assessment.

NPC-300 stipulates that the sound level limit for a stationary source which could operate during daytime hours in a Class 3 acoustical environment, as is the case for the Expansion, is the greater of the minimum one-hour energy-equivalent (LEQ) background sound level, or the exclusionary minimum limit of 45 dBA at a noise-sensitive point of reception. The MECP guidelines also stipulate that the

noise assessment shall consider a predictable worst-case hour, which is defined as an hour when typically busy operation of the stationary sources under consideration could coincide with an hour of low background sound.

Observations in the vicinity of the Expansion indicate that background sound levels may fall as low as the exclusionary minimum limit during the quietest hours of the day. Therefore, the assessment criterion of 45 dBA is applicable at all receptor locations.

Compliance with MECP criteria generally results in acceptable levels of sound at residential receptors, although there may be residual audibility during periods of low background sound. Publication NPC-300 applies to sound from the ongoing day-to-day operations of the subject site, but not to the temporary sound produced during the preparation and rehabilitation of extraction areas, or to the sound produced by highway trucks on public roadways, or by auditory warning devices required or authorized by law or in accordance with good safety practices (including 'back up beepers'). Within each phase of extraction, the initial operations of building access roadways, stripping topsoil, building noise berms and/or localized shielding, as well as the final operations of rehabilitation (and removal of noise berms/localized shielding) are defined as construction activity. To satisfy Provincial Standards, the sound emission levels of equipment involved in those construction activities must comply with MECP Publication NPC-115 [2].

4 DESCRIPTION OF PIT OPERATIONS

On behalf of Walker Aggregates, Skelton Brumwell has prepared operational plans for the Expansion, included as Figure 3, which were used to evaluate sound emissions from the planned extraction and processing operations. The site will be operated in two phases, with materials extracted in one lift, approximately 9-metres in depth, to an elevation of approximately 292 metres above sea level. In both phases, a front-end loader will be used to extract material, which will be processed on site and shipped by highway trucks via the existing Redford Pit main entrance on Concession Road 4. Material will be



transported between the working face and the processing area by front-end loader. The following subsections describe the planned operations in each phase, which are depicted graphically in Figure 4.

4.1 Phase 1

Operations will commence below grade at the southwest edge of the Expansion, from the existing Redford Pit, with the processing equipment (e.g. crusher, screener, generator, etc.) established in the southwest corner. Extraction will take place throughout the balance of Phase 1, in a northeasterly direction, while the processing equipment remains within the yellow area highlighted in Figure 4.

4.2 Phase 2

Material extraction within Phase 2 will continue progressing northeast until the aggregate resources within the Expansion are exhausted. The processing equipment will remain within the area highlighted in Figure 4.

5 ASSESSMENT METHODOLOGY

The predictive model used for this study (*CadnaA, version 2025, build 197.5343*) is based on the methods from ISO Standard 9613-2.2 [3] which accounts for reductions in sound levels due to geometrical spreading, air absorption, ground attenuation and acoustical shielding by intervening structures, including the extraction face, topographic features, and foliage, where applicable. The ISO method tends to be conservative, as it assumes a moderate downwind condition (favorable for the propagation of sound from the source to a receiver) in all directions, at all times. This modelling technique is acceptable to the MNRF and MECP.

Details of the acoustical modelling assumptions are included as Appendix A. The recommended noise control measures are included as Appendix B.



6 ASSESSMENT RESULTS

Using the pit operational plan as described in Section 4 and included in Figure 3, the modelling assumptions detailed in Appendix A, along with the noise control recommendations detailed in Appendix B and Figure 5, the sound levels of the Expansion were predicted at each of the selected receptors under predictable worst-case conditions. The results are summarized in the table below, with sample calculations provided in Appendix C

Table 1: Predicted Pit Sound Levels at Selected Receptors, $L_{EQ,1-Hr}$ [dBA]

Point of Reception	Worst-Case Sound Level (Worst-Case Phase)	Sound Level Limit	Within Limit?
R01	36 (2)	45	Yes
R02	44 (2)	45	Yes
R02A	43 (2)	45	Yes
R03	44 (2)	45	Yes
R03A	45 (2)	45	Yes
R04	45 (2)	45	Yes
R04A	43 (2)	45	Yes
R05	43 (1)	45	Yes
R05A	41 (2)	45	Yes
R06	39 (1)	45	Yes
R07	40 (1)	45	Yes
R08	39 (1)	45	Yes
VL1	47 (1)	45	No*

* See Section 6.2, below, for a discussion of vacant lots.

6.1 Existing Receptors

The analysis results summarized above indicate that the predicted sound levels of the Expansion comply with MECP guideline limits at all existing points of reception receptors under worst-case operating scenarios.



6.2 Vacant Lots

Although the predicted sound levels of the Expansion exceed the MECP limits at VL1, this location represents a potential future home conservatively assessed in close proximity to the pit, whereas a future point of reception could be located anywhere on this lot, which is approximately 2 hectares in size. Given this uncertainty, it is not practical to develop noise control measures at this time. Rather, an updated Noise Impact Assessment, prepared by a Professional Engineer qualified to provide Acoustical Engineering services in the Province of Ontario, will be submitted to the MNRF within 12 months following the pit operator receiving notification of a building permit issued for a noise-sensitive use on the property designated herein as VL1. If the updated study concludes that the sound levels of the pit may not comply with the applicable limits, the report must include the following:

- Details regarding the noise control measures required to reduce the sound levels of the pit to comply with the applicable limits;
- A timetable for implementation of the noise control measures, including dates for achieving compliance with specific milestones;
- A timetable for submitting further assessments to demonstrate compliance with the applicable sound level limits at the property designated herein as VL1.

Note that the above is reiterated in Appendix B, as a noise control recommendation.

6.3 Cumulative Impacts

Walker plans to exhaust all aggregate reserves within the existing Redford Pit before commencing operations within the Expansion such that a cumulative assessment of noise from both operations is not warranted. Applications for Aggregate Resources Act (ARA) licences have been submitted to the MNRF for properties in the vicinity of the subject Expansion as follows:

- J.R. McLaughlin at 133690 Allan Park Road, the nearest extent of which is approximately 530 metres south of the proposed Redford Pit Expansion.



- JT Excavating Ltd. at Lot 22, Concession 5, the nearest extent of which is approximately 810 metres east of the proposed Redford Expansion.

Should these licence applications be approved, the potential for cumulative impacts from these operations and of the Redford Pit Expansion are acknowledged. However, the likelihood that either pit would be simultaneously operating under worst-case conditions as it pertains to noise impacts at receptors located between them and the Redford Pit Expansion is low; were it to ever occur with either, the resulting sound level would be only a minor excess of up to 3 dBA. Moreover, as highlighted in Section 5, the ISO standard used to assess noise emissions in this context is conservative insofar as it assumes a moderate downwind condition (favourable for the propagation of sound from the source to a receiver) in all directions, at all times. In reality, meteorological conditions would more likely favor propagation of sound from one pit operation at a given time, rather than both simultaneously.

7 CONCLUSIONS & RECOMMENDATIONS

The acoustical analysis indicates that sound levels from the proposed Redford Pit Expansion, predicted under worst-case operating scenarios and with the noise control measures recommended herein, will comply with MECP guideline limits at the existing, most potentially impacted neighbouring receptors.

The noise control measures specified in Appendix B should be incorporated into the operational plans for the pit. Any changes proposed for the Expansion plans that may affect offsite sound levels should be reviewed by a Professional Engineer qualified to provide Acoustical Engineering services in the Province of Ontario, and any necessary modifications to the noise control measures be incorporated into the pit plans if/as appropriate..



8 REFERENCES

1. *Ontario Ministry of the Environment, Conservation and Parks Publication NPC-300, "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning", August, 2013.*
2. *Ontario Ministry of the Environment, Conservation and Parks Publication NPC-115, "Construction Equipment", August, 1978.*
3. *International Organization for Standardization, "Acoustics – Attenuation of Sound during Propagation Outdoors – Part 2: General Method of Calculation", ISO-9613-2, Switzerland, 1996.*



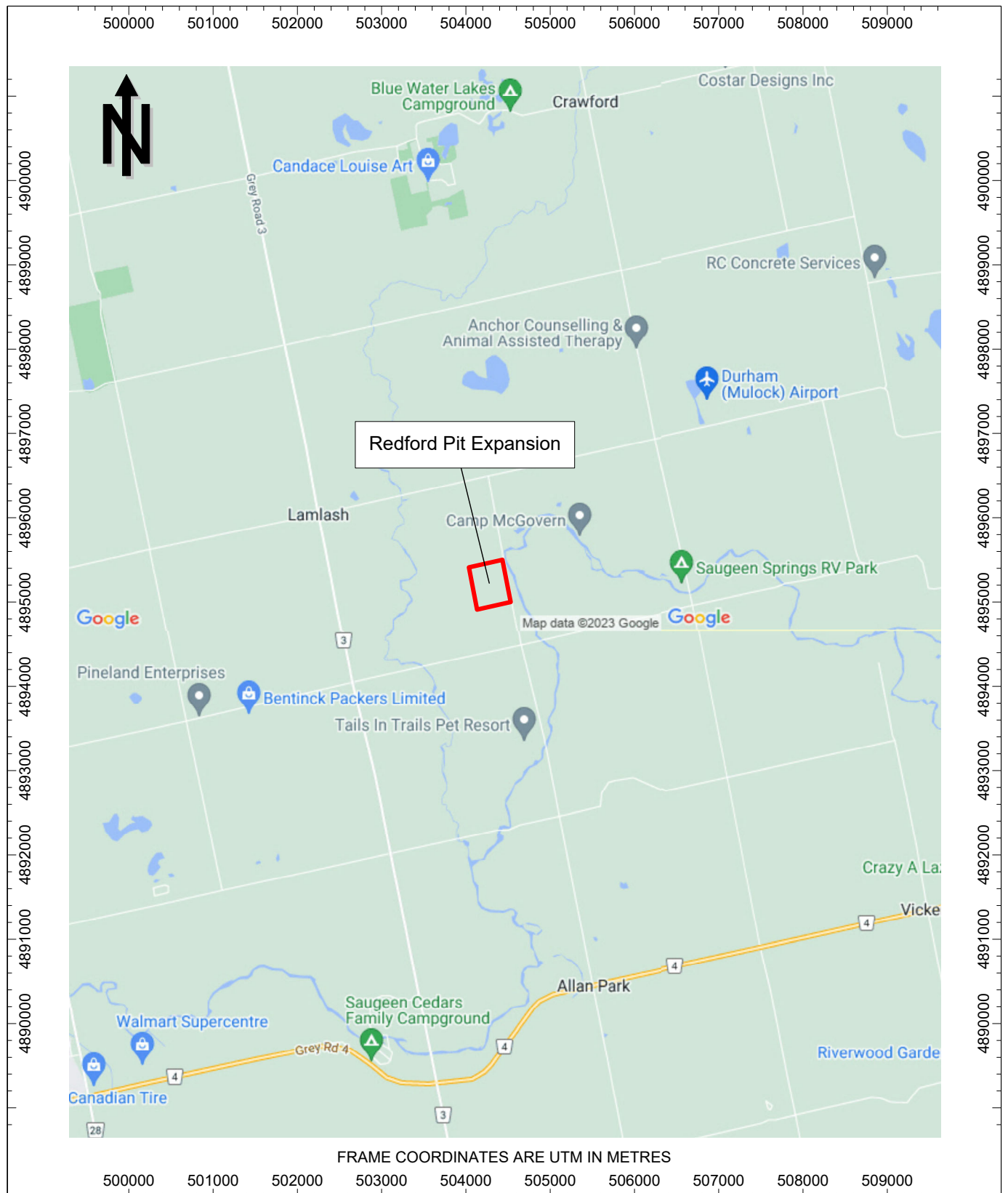


Figure 1: Location Map



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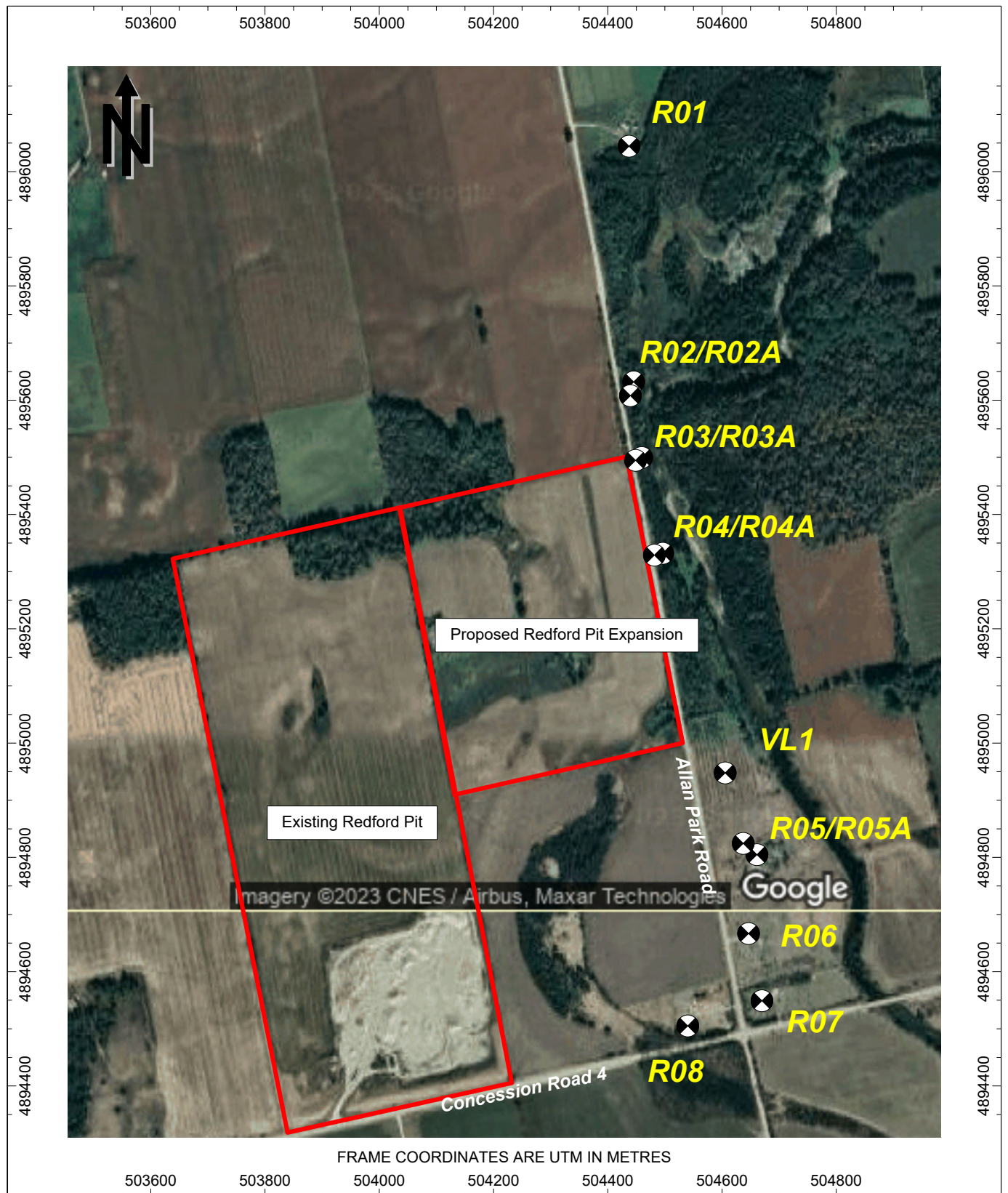
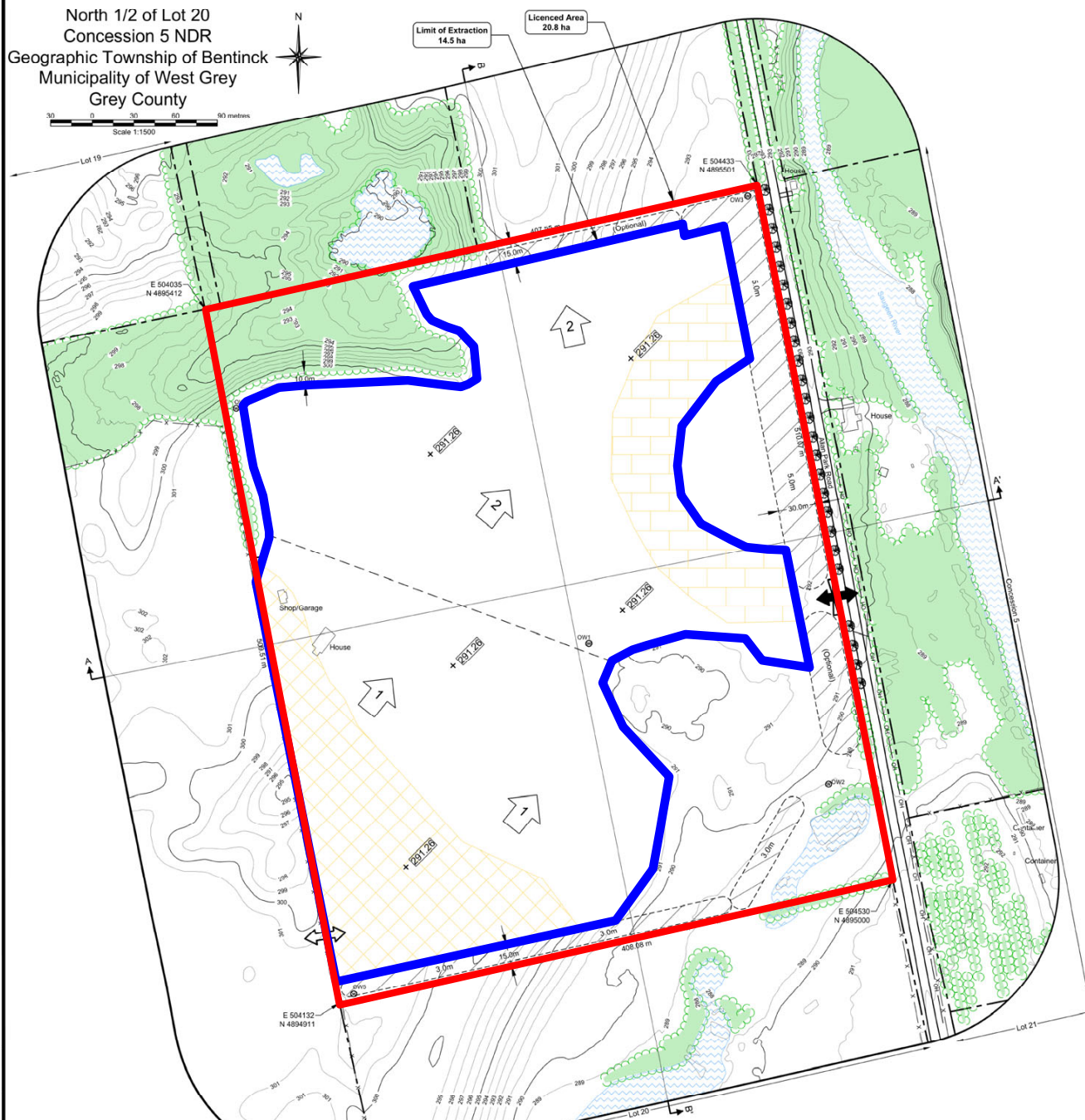


Figure 2: Redford Pit Expansion and Points of Reception

30 0 30 60 90 metres
Scale 1:1500



Declaration of Purpose

This Site Plan is prepared under the Aggregate Resources Act
for a Class 'A' Licence for a pit above the groundwater table

A. General

1. Licenced area 20.8 ha
Area to be extracted 14.5 ha
2. The established maximum predicted water table is at an elevation of 289.70 msl on the site based on the Maximum Predicted Water Table Report by Tatham Engineering (date).
3. Depth of extraction shall not exceed 1.5 m above the maximum predicted water table as shown on this plan.
4. The licensee shall obtain a Permit to Take Water (PTTW) under the Ontario *Water Resources Act* where required to carry out operations at the pit.
5. The licensee shall obtain an Environmental Compliance Approval (ECA) under the *Environmental Protection Act* where required to carry out operations at the pit.

6. The site is located within _____ Source Protection Zones. _____ Source Protection Zones apply to the site, OR See Notes XY for associated maps.

B. Hours of Operation

1. The permitted hours of operation for site activities are as follows:
- | | | |
|--------------------------------|-----------------|--------------------|
| Crushing | Monday - Friday | 7:00 AM - 7:00 PM |
| Extraction, Loading & Shipment | Monday - Friday | 6:00 AM - 7:00 PM |
| | Saturday | 7:00 AM - 12:00 PM |

C. Drainage and Siltation Control

1. Drainage of undisturbed areas shall continue as shown and described on the Existing Features plan view.
2. Drainage of extracted areas shall be contained on-site and will infiltrate into the pit floor.
3. Where necessary, a silt barrier shall be installed to prevent siltation of the setback and adjacent lands.
4. The silt barrier shall be maintained until the stripped area is extracted to an elevation that retains all runoff from the disturbed area.

D. Fencing

1. Post and wire fencing is currently located along the west and south licensed boundaries of the site.
2. Fencing shall be installed along the remaining licensed boundary within six (6) months of licensing. The minimum height of fencing shall be 1.2 m.
3. A gate shall be installed at the entrance/exist of the site at Allan Park Road and shall be kept closed at all times.
4. Fencing shall be maintained and/or replaced as necessary along the north, east, and south licensed boundaries until the licence is surrendered. Refer to Section 10. Variations from Ontario Regulation 244/97 for details on maintenance of fencing along the west licensed boundary.

E. Tree Screens and Setbacks

1. A tree screen shall be planted along the eastern boundary, in the location shown on this plan within six (6) months of licencing. Planting shall consist of one (1) row of coniferous trees. The minimum height of trees at planting shall be one (1.0) metre.
2. The tree screen will be monitored for die-off and trees will be replaced as necessary to ensure an effective screen until the licence is surrendered.
3. Setbacks may be disturbed for the creation of berms and/or installation and maintenance of fencing.

F. Site Preparation

1. Trees, brush and stumps shall be removed from site, disposed of by burying or burning with applicable permits, or stockpiled and/or chipped for use in rehabilitation.
2. All trees within 5 m of the excavation face and within the area to be excavated shall be removed.

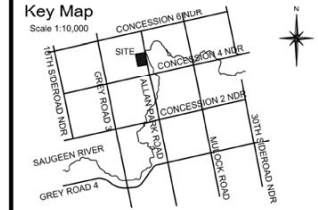
G. Berms

1. Topsoil and overburden from Phase 1 shall be stripped and stored separately and used for construction of a berm located along the south boundary. Topsoil and overburden from Phase 2 shall be stripped and stored separately and used for construction of a berm located along the east boundary, north of the site access from Allen Park Road. A berm may be constructed along the east lot-lined boundary, south of the site access from Allen Park Road, if necessary for topsoil management.
2. Once berms are established, stripped topsoil and overburden shall be used for progressive rehabilitation, or if areas are not available for rehabilitation, temporarily stockpiled.
3. Berms and stockpiles shall be seeded and maintained to control erosion as necessary.
4. No topsoil shall be removed from the site.

REFER TO DRAWING 3 OF 5 FOR CONTINUED OPERATIONAL PLAN NOTES

Key Map

Scale 1:10,000



Legend

- | | |
|--|---|
| | Licensed Boundary |
| | Limit of Extraction |
| | Line indicating all points within 120m (minimum) of licensed boundary |
| | Property Line |
| | Post and Page Wire Fence (unless otherwise noted) |
| | Still Fence |
| | Public Road |
| | Internal Road |
| | Water Course - Permanent |
| | Overhead Hydro Line |
| | Buildings and Structures |
| | Contours and Spot Elevations |
| | Existing Pit Entrance / Exit |
| | Proposed Pit Entrance / Exit |
| | Gate |
| | Wooded Areas |
| | Pond / Surface Water |
| | Well |
| | Processing Area (see Note J.2) |
| | Restricted Noise Area (see Note J.3) |
| | Maximum Depth of Extraction |
| | Section Arrows |
| | Proposed Topsoil and / or Overburden Bank (Minimum Height) |
| | Direction / Sequence of Extraction |
| | Extraction Phase Boundary |
| | Tree Screen (Coniferous, 1.0 m Height) |

Schedule of Revisions (Pre-Licencing)

No.	Date	Description	Approved

Schedule of Amendments

[illegible]

PRELIMINARY
ONLY

Client _____ Date _____

Walker Aggregates
Redford Pit Expansion
Municipality of West Grey, Grey County

Licensee: Walker Aggregates
323545 East Linton Side Road West
RR #2 Kemble, ON
N0H 1S0

Operational Plan

Project No.	23 - 3581	Drwg. No.	3581 - 2 of 5
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Date: November 2023	Scale: 1:1500
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Drawn:	JRH	Checked:	MJB	Approved:	MJB
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CD A Skelton Brumwell

SDA & Associates Inc.
ENGINEERING PLANNING ENVIRONMENTAL CONSULTANTS

93 Bell Farm Road, Suite 102 Telephone (706) 726-1141

Barrie, Ontario L4M 5G1
www.skellonbrumwell.ca

Figure 3: Redford Pit Operational Plan

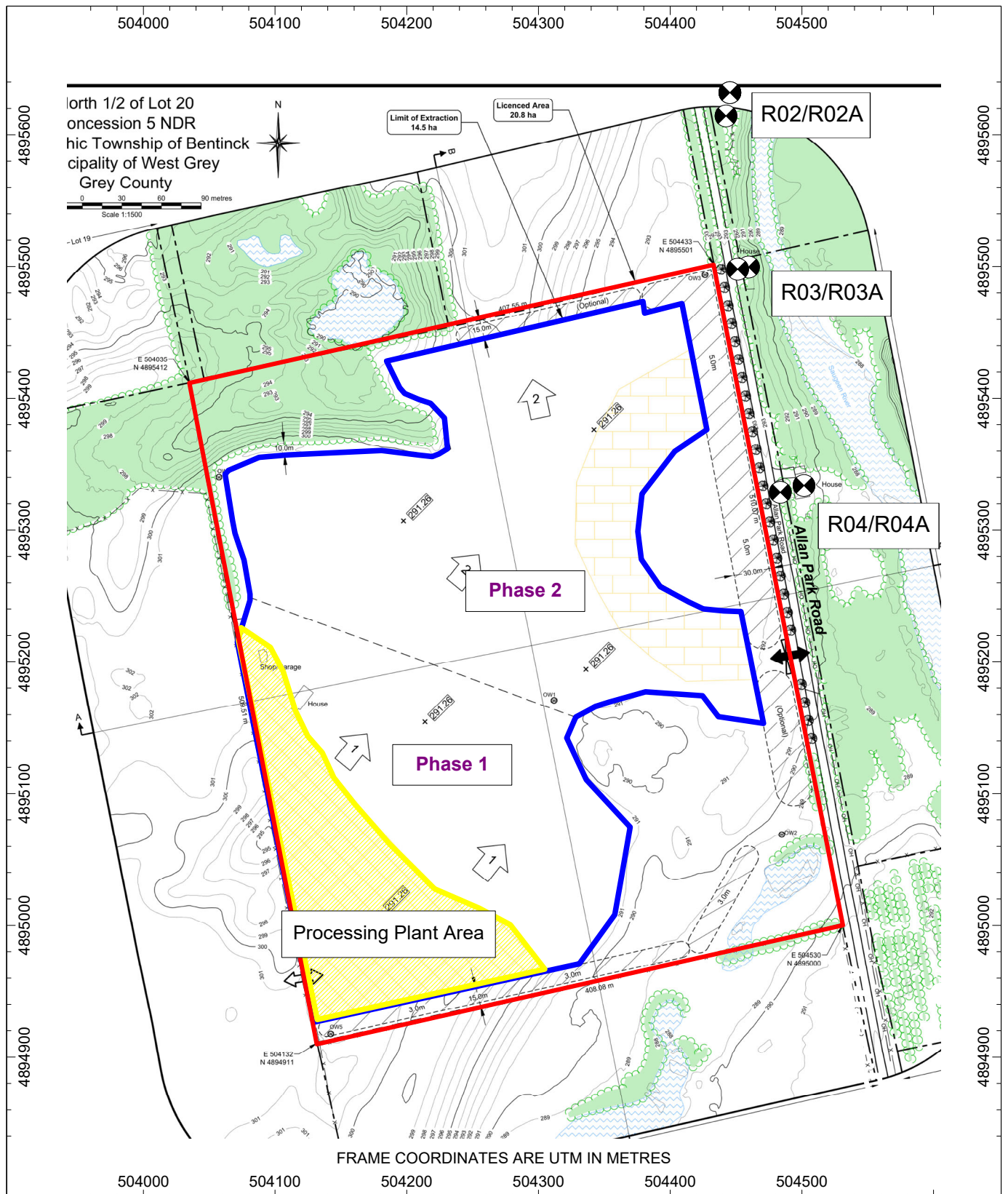
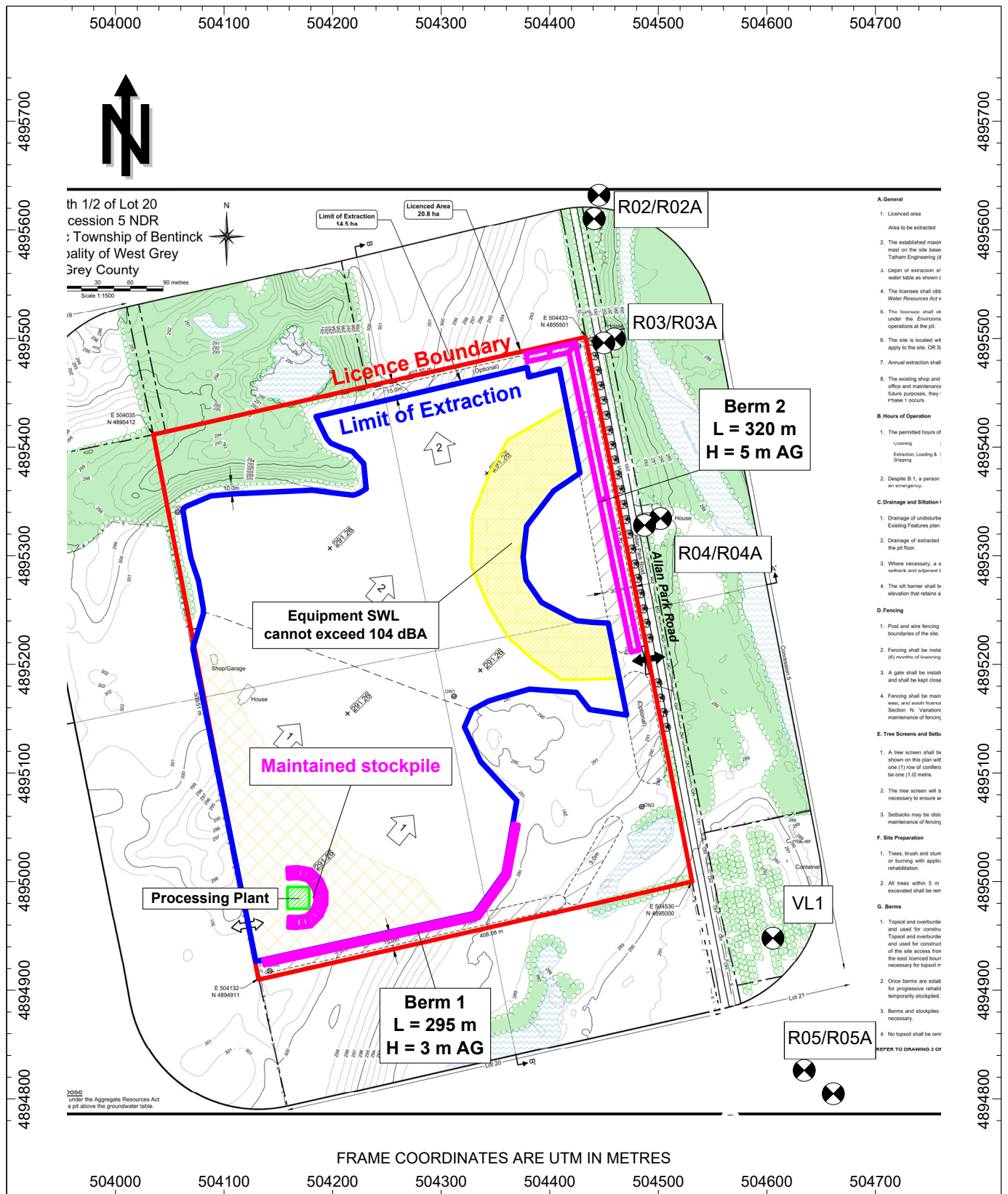


Figure 4: Operational Phases and Processing Plant Area



Appendix A

Details of Modelling Assumptions



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In the development of worst-case hour operational scenarios with respect to each of the selected points of reception, the following assumptions were made:

- All pit operations (i.e., extraction, processing, loading, shipping, etc.) occur during the daytime period only (07:00 to 19:00), with the processing equipment and front-end loader used for extraction assumed to be operating at worst-case locations in terms of sound level impact at each of the neighbouring receptors.
- The processing equipment was assumed to operate with maintained perimeter stockpiles, with a minimum height of 7 metres above the pit floor (in addition to attenuation afforded by the outer rim of the pit and any noise berms).
- One front-end loader was assumed to operate on the pit floor when extracting material from the working face.
- The following table presents the equipment sound emission levels employed in the analysis. All equipment was assumed to operate continuously during a predictable worst-case hour.

Table A1: Source Sound Power Levels [dBA re: 10⁻¹² Watts]

Source Type/Name	Sound Power Level
Front-End Loader	106
Processing Area (crusher, screener, generator, etc.)	115
Highway Trucks (each)	101

- The processing/loading area will include general front-end loaders or excavators, which were not explicitly included in the analysis given their acoustical insignificance relative to the balance of equipment in the processing area.
- A predictable worst-case hour of shipping was assumed to include 28 inbound and outbound highway trucks, each assumed to travel along the access route between the main entrance and the processing area at an average speed of 25 km/hr.
- The localized acoustical shielding described in Appendix B was assumed to afford a modest 5 dBA reduction in equipment sound emission level.



Appendix B

Noise Control Recommendations



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The pit shall be limited to the following hours of operation:

- All pit activities are permitted Monday to Saturday between 07:00 and 19:00.
- No operations are permitted on Sundays or statutory holidays.

Acoustical Shielding

The processing plant shall be located as close as possible to maintained perimeter stockpiles on the north, east and south sides of the equipment, which may be constructed of any earthen material (i.e. overburden or extracted/processed aggregate materials).

The following subsections refer to noise berms, the locations of which are depicted in Figure 5, and heights/extents are tabulated below:

Table B1: Summary of Noise Berm Dimensions, m

Berm	Height	Length
1	3	295
2	5.5	320

Note: All heights are expressed relative to the natural grade on which the berms will be located, which differs along the length of a given berm.

The berms noted above may be constructed of any earthen material (i.e. overburden or extracted/processed aggregate materials) and shall be constructed prior to commencement of operations.

Equipment Restrictions

The processing equipment employed within the subject licensed area shall be limited to those detailed in this study, with sound power levels not greater than those in Table A1. In addition, extraction within the yellow area in Figure 5 shall be carried out with a front-end loader having a sound power level not greater than 104 dBA. All mobile construction equipment used to prepare for, rehabilitate, or maintain the operations shall produce sound levels which comply with MECP Publication NPC-115.



Variations

It is recognized that advancements of equipment or different configurations may allow additional equipment or equipment to be substituted for certain activities while still meeting MECP guidelines. Variations to the noise control measures may be permitted, provided that the sound level revisions can demonstrably meet the applicable MECP limits as confirmed through documentation by a professional engineer. Prior to modification, notification shall be given to the MNRF.

Vacant Lots

An updated Noise Impact Assessment, prepared by a Professional Engineer qualified to provide Acoustical Engineering services in the Province of Ontario, will be submitted to the MNRF within 12 months following the pit operator receiving notification of a building permit issued for a noise-sensitive use on the properties designated as VL1. If the updated study concludes that the sound levels of the pit may not comply with the applicable limits, the report must include the following:

- Details regarding the noise control measures required to reduce the sound levels of the pit to comply with the applicable limits;
- A timetable for implementation of the noise control measures, including dates for achieving compliance with specific milestones;
- A timetable for submitting further assessments to demonstrate compliance with the applicable sound level limits at the property designated as VL1.



APPENDIX C

Sample Calculations



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R01 - Two Storey Dwelling on Allan Park Road	504437	4896045	303.2												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R01	504375	4895422	294.4	106	66.9	0	0.0	1.0	2.8	2.5	0.0	0.0	0.0	0.0	33
Arriving/Departing Shipping Trucks	504048	4894737	299.6	105	75.9	0	0.0	-0.4	4.8	206.1	0.0	0.0	0.0	0.0	21
Processing Plant - Worst Case R01	504088	4895197	295.0	115	70.2	0	0.0	0.1	8.1	4.0	0.0	0.0	0.0	0.0	33

R02 - Two Storey Dwelling on Allan Park Road	504445	4895632	296.1												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R02	504366	4895461	294.5	106	56.5	0	0.0	1.6	4.2	0.7	0.0	0.0	0.0	0.0	43
Arriving/Departing Shipping Trucks	504049	4894737	299.6	105	73.8	0	0.0	-0.6	4.8	160.9	0.0	0.0	0.0	0.0	27
Processing Plant - Worst Case R02	504274	4894989	294.8	115	67.5	0	0.0	-0.7	12.5	2.7	0.0	0.0	0.0	0.0	33

R02A - Outdoor Amenity Space of R02	504440	4895608	295.5												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R02A	504366	4895461	294.5	106	55.3	0	0.0	3.7	4.4	0.6	0.0	0.0	0.0	0.0	42
Arriving/Departing Shipping Trucks	504049	4894739	299.6	105	73.6	0	0.0	-0.6	4.8	158.0	0.0	0.0	0.0	0.0	27
Processing Plant - Worst Case R02A	504090	4895197	295.0	115	65.6	0	0.0	3.0	10.0	2.4	0.0	0.0	0.0	0.0	34

R03 - Single Storey Dwelling on Allan Park Road	504460	4895500	293.6												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R03	504405	4895442	294.4	106	49	0	0.0	4.9	7.7	0.2	0.0	0.0	0.0	0.0	44
Arriving/Departing Shipping Trucks	504049	4894738	299.6	105	73	0	0.0	-0.6	5.9	147.3	0.0	0.0	0.0	0.0	27
Processing Plant - Worst Case R03	504090	4895197	295.0	115	65	0	0.0	2.7	15.1	2.0	0.0	0.0	0.0	0.0	30

R03A - Outdoor Amenity Space of R03	504449	4895495	294.0												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R03A	504405	4895442	294.4	106	48	0	0.0	4.4	8.4	0.2	0.0	0.0	0.0	0.0	45
Arriving/Departing Shipping Trucks	504050	4894739	299.6	105	73	0	0.0	-0.6	8.7	146.3	0.0	0.0	0.0	0.0	26
Processing Plant - Worst Case R03A	504274	4894989	294.8	115	66	0	0.0	2.8	13.8	2.2	0.0	0.0	0.0	0.0	31

R04 - Two Storey Dwelling on Allan Park Road	504496	4895332	296.5												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R04	504355	4895402	294.3	106	55	0	0.0	-0.2	5.9	0.7	0.0	0.0	0.0	0.0	45
Arriving/Departing Shipping Trucks	504050	4894739	299.6	105	72	0	0.0	-0.6	4.8	131.9	0.0	0.0	0.0	0.0	30
Processing Plant - Worst Case R04	504274	4894989	294.8	115	63	0	0.0	-0.9	14.8	1.8	0.0	0.0	0.0	0.0	36

R04A - Outdoor Amenity Space of R04	504482	4895329	293.7												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R04A	504462	4895181	294.4	106	54	0	0.0	4.1	4.3	0.6	0.0	0.0	0.0	0.0	42
Arriving/Departing Shipping Trucks	504050	4894740	299.6	105	72	0	0.0	-0.5	9.3	130.7	0.0	0.0	0.0	0.0	27
Processing Plant - Worst Case R04A	504274	4894989	294.8	115	63	0	0.0	2.7	14.6	1.8	0.0	0.0	0.0	0.0	33

R05 - Two Storey Dwelling on Allan Park Road	504661	4894805	295.1												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R05	504355	4895022	293.8	106	62	0	0.0	0.1	0.0	1.8	0.0	0.0	0.0	0.0	42
Arriving/Departing Shipping Trucks	504049	4894735	299.6	105	70	0	0.0	0.0	0.0	100.3	0.0	0.0	0.0	0.0	31
Processing Plant - Worst Case R05	504275	4894992	294.8	115	64	0	0.0	0.7	9.1	2.1	0.0	0.0	0.0	0.0	39

R05A - Two Storey Dwelling on Allan Park Road	504637	4894825	292.5												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R05A	504355	4895022	293.8	106	62	0	0.0	2.7	1.2	2.3	0.0	0.0	0.0	0.0	38
Arriving/Departing Shipping Trucks	504048	4894736	299.6	105	70	0	0.0	0.0	3.7	99.2	0.0	0.0	0.0	0.0	31
Processing Plant - Worst Case R05A	504275	4894992	294.8	115	63	0	0.0	3.4	7.4	2.1	0.0	0.0	0.0	0.0	39

R06 - Single Storey Dwelling on Allan Park Road	504647	4894667	291.5												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R06	504315	4894982	294.4	106	64	0	0.0	1.7	1.3	2.5	0.0	0.0	0.0	0.0	36
Arriving/Departing Shipping Trucks	504048	4894735	299.6	105	68	0	0.0	-1.1	4.8	79.0	0.0	0.0	0.0	0.0	31
Processing Plant - Worst Case R06	504274	4894989	294.8	115	65	0	0.0	3.5	6.4	2.5	0.0	0.0	0.0	0.0	38

R07 - Two Storey Dwelling on Allan Park Road	504670	4894549	296.0												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R07	504355	4895022	293.8	106	66	0	0.0	0.3	0.0	2.4	0.0	0.0	0.0	0.0	37
Arriving/Departing Shipping Trucks	504047	4894734	299.6	105	69	0	0.0	-1.0	4.8	90.3	0.0	0.0	0.0	0.0	31
Processing Plant - Worst Case R07	504274	4894989	294.8	115	66	0	0.0	0.6	7.6	3.0	0.0	0.0	0.0	0.0	37

R08 - Single Storey Dwelling on Concession Road 4	504540	4894505	291.5												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case R08	504325	4894982	294.4	106	65	0	0.0	2.3	0.0	2.3	0.0	0.0	0.0	0.0	36

Where: $L_r = L_x + A_{div} + K_0 + D_c - A_{gnd} - A_{bar} - A_{atm} - A_{fol} - A_{hous} + C_{met} + Refl$



Arriving/Departing Shipping Trucks	504047	4894732	299.6	105	68	0	0.0	-1.0	4.9	84.6	0.0	0.0	0.0	0.0	32
Processing Plant - Worst Case R08	504274	4894989	294.8	115	66	0	0.0	3.5	5.8	2.9	0.0	0.0	0.0	0.0	37

VL1 - Vacant Lot on Allan Park Road	504606	4894948	296.5												
Src Name	Easting	Northing	Elevation	Lx	Adiv	K0	Dc	Agnd	Abar	Aatm	Afol	Ahous	Cmet	Refl	Lr
Extraction Loader - Worst Case VL1	504355	4895022	293.8	106	59	0	0.0	-0.1	0.0	1.4	0.0	0.0	0.0	0.0	45
Arriving/Departing Shipping Trucks	504051	4894737	299.5	105	70	0	0.0	0.0	0.0	105.0	0.0	0.0	0.0	0.0	33
Processing Plant - Worst Case VL1	504274	4894989	294.8	115	61	0	0.0	0.1	10.0	1.7	0.0	0.0	0.0	0.0	42

Where: $L_r = L_x - A_{div} + K_0 + D_c - A_{gnd} - A_{bar} - A_{atm} - A_{fol} - A_{hous} + C_{met} + Refl$



NOISE



VIBRATION



ACOUSTICS

APPENDIX D

Consultant Curriculum Vitae



NOISE



VIBRATION



ACOUSTICS

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Education

McMaster University, Bachelor of Civil Engineering
George Brown College, Certificate for Building Official Fundamentals

Professional Memberships

Professional Engineers Ontario (PEO)
Institute of Noise Control Engineering USA (INCE-USA)

Professional History

2022 to Present – Project Consultant, HGC Noise Vibration Acoustics, Toronto, ON

Experience

Danielle Mota's experience includes the measurement, analysis, and mitigation of environmental noise found in various industrial scenarios and for government approvals. She is also proficient in conducting workplace noise studies for provincial requirements. She has conducted acoustic audits and assessments of pits/quarries and complex industrial developments, and is proficient with a variety of measurement and analysis techniques for stationary and transportation sources.

Selected Projects

Enbridge Gas Inc., ON (Province-wide)
Oxy Vinyls Canada Inc., Niagara Falls, ON
HERC Rentals, Fort McMurray, AB
Green Infrastructure Partners Paving Inc., Hamilton, ON
Howmet Aerospace, Georgetown, ON
Amazon Fulfillment Centers, ON
Mars Petcare, Bolton, ON
GreenFirst Forest Products, Chapleau, ON
Lafarge Canada Inc., Sault Ste. Marie, ON
Walker Durham Pit, Durham, ON
The Miller Group, Mount Forest, ON
Stubbe's Redi-Mix, Harley, ON
Viola Ready Mix, Halton Hills, ON
Shell Sarnia Manufacturing Centre, Corunna, ON
INEOS Styrolution, Sarnia, ON
Thermo Fisher Scientific, Mississauga, ON

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Education

Schulich School of Business, York University, Master of Business Administration, 2015
University of Waterloo, Bachelor of Applied Science, Mechanical Engineering, 2001

Professional Memberships

Professional Engineers Ontario (PEO)
Canadian Acoustical Association (CAA)
Institute of Noise Control Engineering (INCE-USA)
National Council of Acoustical Consultants (NCAC)

Professional History

2024 to present	President, HGC Noise Vibration Acoustics, Toronto
2009 to 2024	Senior Associate, HGC Noise Vibration Acoustics, Toronto
2006 to 2009	Project Engineer, HGC Noise Vibration Acoustics, Toronto
2001 to 2006	Mechanical Engineer, Magellan Aerospace, Mississauga
2000 to 2001	Contract Engineer, HGC Noise Vibration Acoustics, Toronto

Experience

Corey has extensive experience in the assessment and mitigation of noise emissions from industrial and commercial facilities, and specializes in the use of advanced sound intensity measurement equipment and techniques. He has conducted feasibility studies, acoustic assessments and audits for regulatory approvals, as well as noise complaint investigations for hundreds of facilities across Ontario and abroad. His experience spans a wide variety of industrial and commercial sectors and is highlighted by natural gas fired power generation facilities, natural gas transmission and distribution facilities, electrical transformer stations, petrochemical refineries, mineral mines, hot mix asphalt, ready-mix concrete and cement plants, aggregate pits and quarries and myriad of other sites and facilities of varying size and complexity.

Selected Projects

Enbridge Gas Inc., Numerous sites throughout Ontario
General Dynamics Land Systems, London, Ontario
Vale Canada Limited, Copper Cliff & Garson, Ontario
Suncor Energy Inc., Mooretown, Ontario
Lafarge Canada Inc., Numerous sites throughout Ontario
National Gas Company of Trinidad & Tobago, Trinidad & Tobago
General Motors, St. Catharines, Ontario
Petro-Canada Lubricants Inc., Mississauga, Ontario
TransCanada Pipelines Ltd., Numerous sites in Ontario and Western Canada
Canada Building Materials, Numerous sites throughout Ontario
DeBeers Victor Mine Project, Northern Ontario
Staatsolie, Tout Lui Faut, Suriname
Dufferin Concrete, Numerous sites throughout Ontario
NOVA Chemicals Corporation, Corunna, Mooretown & St. Clair, Ontario
Hydro One, Numerous sites throughout Ontario
St. Marys Cement, St. Marys & Bowmanville, Ontario
INNIO Waukesha, Welland, Ontario
Beyond Meat, Devault, Pennsylvania
Bruce Power, Inverhuron, Ontario
Glatfelter Corporation, Mount Holly, North Carolina
Owens Corning Canada, Guelph, Ontario
Atura Power, Toronto & Napanee, Ontario