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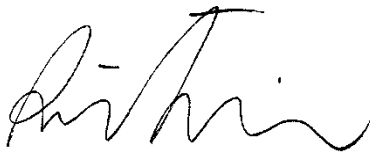
Sault Ste. Marie Solid Waste Environmental Assessment
Noise Impact Assessment

February 2015 – 06-6988

Note to Reader:

The attached Report (the "Report") has been prepared by Dillon Consulting Limited. This report was prepared specifically for the City of Sault Ste. Marie Solid Waste Environmental Assessment.

Report Prepared By: Alex Ballez



Report Reviewed By:

Amir A. Iravani, Ph.D., P.Eng.
Associate,Environmental Management
Atmospheric Services

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1.0 Noise Impact Assessment

1.1 Introduction

This document presents the findings of the noise impact assessment as part of the Environmental Assessment (EA) of the proposed expansion of the City of Sault Ste. Marie's landfill located on Fifth Line. The proposed project will result in an expansion of the landfill footprint to the north and west as well as an increase in landfill height. Landfill mining is proposed for the site, as part of the enhancement of the environmental management of the landfill. The mining process will involve the excavation of waste from the west area of the existing disposal footprint, removal of fines and recyclables and transfer of the residual waste to a lined cell. The proposed expansion will not significantly increase the daily waste acceptance rate.

The purpose of this study is to assess the potential noise impact at nearby receptors due to the proposed expansion at the Sault Ste. Marie Landfill (see Figure 1). The noise emissions from the landfill site (the "site") are dominated by activities such as vehicular travel along on-site routes and operation of heavy equipment such as bulldozers, compactors and earth moving equipment. There are noise sensitive receptors (i.e., residences and businesses) in proximity to the site. The assessment of potential noise impact at the nearby receptors was undertaken through acoustic modelling, considering worst-case noise emission scenarios. Maximum 1-hour sound level equivalent values were predicted at all relevant receptors and compared against applicable regulatory noise criterion for landfills.

This noise impact assessment has been prepared in accordance with applicable guidelines of the Ontario Ministry of the Environment and Climate Change (MOECC) and in support of an Environmental Assessment (EA) for the proposed expansion at the Sault Ste. Marie landfill.

1.2 Scope of Assessment

The noise impact assessment was completed considering worst-case noise emission scenarios from the site along with conservative assumptions and considerations which were incorporated in the acoustic modelling.

Eight future operational scenarios representing different stages of landfill operations were considered as part of the noise impact assessment. A brief description of the scenarios is provided in Table 1.

Table 1: SSM Landfill Operational Scenarios

Scenario Number	Anticipated Timeframe	Main Project Activities
1	2017	Cell 1 construction + existing landfill operations
2	2018 - 2020	Cell 1 operation and mining operations on Cell 1A
3	2021	Cell 1 operation + Cell 1A construction
4	2022 - 2026	Cell 1A operation
5	2027	Cell 1A operation + Cell 2 construction
6	2032	Cell 2 operation + Cell 3 construction
7	2033 - 2036	Cell 3 operation
8	2037	Cell 3 operation and Cell 4 construction

For all the scenarios, normal landfill activities are expected to be in operation (i.e., disposal of waste at the active area). In general, the scenarios can be divided into three main categories:

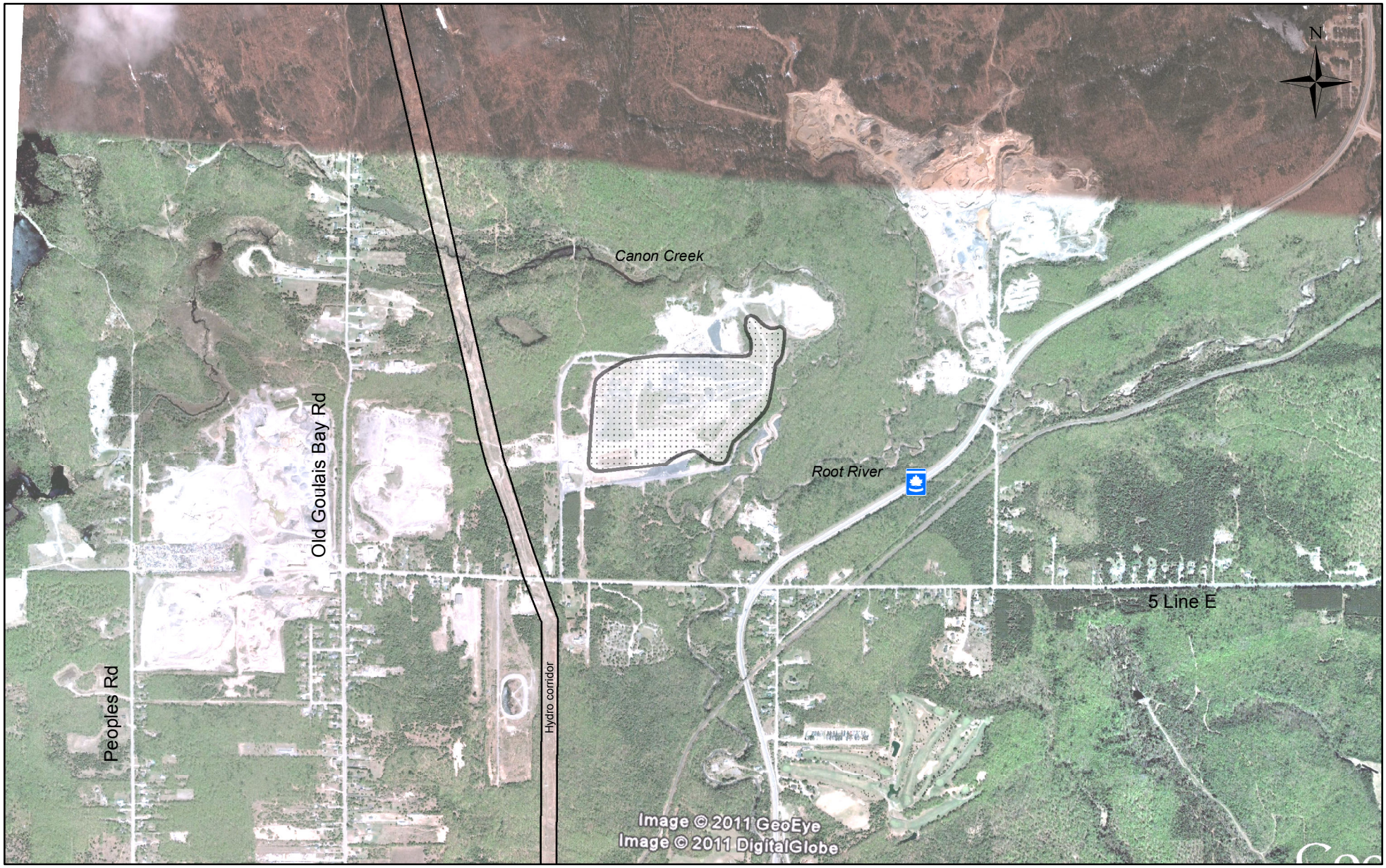
- Cell construction with normal landfill operations (Scenarios 1, 3, 5, 6, 8);
- Waste mining (with normal landfill operations) (Scenario 2); and
- Normal landfill operations (Scenarios 4, 7).

In order to determine which scenario represents the worst-case operating scenario in terms of potential for noise impact, a screening level assessment was completed. This screening assessment considered vehicle and equipment activities at the site, as well as distances from noise sources / noise generating activities to nearby Points of Reception (PORs).

Based on the screening assessment, Scenario 8 was determined to have the greatest potential noise impact given the close proximity of on-site noise sources to the nearest PORs.

For the purpose of this assessment, the potential noise impact was assessed at all the receptors located in the vicinity of the landfill site as shown on Figure 2. The proposed landfill operations are during day time, between the hours of 7:30 am and 5:00 pm, Monday to Saturday. Most of the noise generating activities at the site, including receiving of waste trucks occurs between these hours. Therefore, this assessment is for daytime (7am – 7pm) noise impact only. Conservatively, it was assumed that all on-site noise sources operate simultaneously.

The details of each noise source, including octave band sound levels as well as acoustic modelling details and results are presented in this report in accordance with MOE publications NPC-233 – *Information to Be Submitted for Approval for Stationary Sources of Sound*. The noise impact considerations for the landfill site, including sound level limits and the potential noise sources considered in the assessment are in accordance with the Ministry publication *"Noise Guidelines for Landfill Sites."*



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0 120 240 480 720 960
Meters

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EXISTING LANDFILL (includes current landfill area plus area of historical waste placement)

TRANS-CANADA HIGHWAY

Sault Ste. Marie Municipal Landfill Site

EXISTING SAULT STE. MARIE LANDFILL SITE

Project Manager:	KK	Drawn By:	SLP
Scale:	1 : 20000	Checked By:	XXX
Date Issued:	FEB 2015	Project No:	06-6988
Location:	I:\066988\	File Name:	Existing Site Figure

Figure No.

1

2.0 Methods of Assessment

The noise impact assessment completed for the proposed expansion consists of the following steps:

1. Identification of all dominant noise sources at the site;
2. Determination of worst-case noise emission scenarios associated with the above-mentioned 8 scenarios;
3. Acoustic modelling of the site under the defined worst-case operating scenario in order to predict worst-case noise impact (i.e., maximum hourly sound level equivalent) at all the nearby receptor locations;
4. Comparison of the predicted maximum receptor sound levels with the applicable criterion for landfills to determine compliance; and
5. Determining noise mitigation measures in case of non-compliance.

All relevant information needed for the noise impact assessment, including dominant noise sources at the site, identified nearest receptor locations, regulatory requirements and acoustic modelling assumptions and considerations are discussed in the following subsections.

2.1 Noise Sources

The following activities and related dominant noise sources at the Site were considered in the noise impact assessment for scenario 8 (Cell 3 operation and Cell 4 construction):

- Cell 3 operation: Travel of waste haul trucks (i.e., tri-axle waste trucks) along paved and unpaved haul routes at the Site. Operation of a front-end loader, a compactor and the odour control unit at / near work face;
- Cell 4 construction: Granular (gravel) tri-axle trucks for leachate collection system construction. Operation of a Dozer, idling haul truck and articulate dump truck;
- Site maintenance: Conservatively, several maintenance activities were assumed to occur at the same time. Operation of a plow truck, a sweeper / vacuum truck, and a sidewalk tractor along the main haul route;
- Composting pad: In total five pieces of (5) noise generating equipment operate at the composting pad (i.e., a water truck, a trommel screen, a front-end loader, a windrow turner, and a tractor). The windrow turner is operated by the tractor. The same operator operates the equipment and therefore, not all can operate at the same time. In order to model a realistic worst-case noise impact scenario, two sources with the highest noise levels (i.e., the trommel screen and the front-end loader) were included in the noise modelling for scenario 8; and,
- Landfill gas blower and flare system.

The noise source characteristics and their coordinate locations are summarized in Table 2. As discussed above, not all sources listed in Table 2 were included in the worst-case noise modelling scenario. The

Sound Power Level (PWL) spectra for all the dominant noise sources (landfill equipment) are summarized in Table 3. The noise data presented in Table 2 was extracted from a 2005 report from U.K. Department for Environment Food and Rural Affairs (defra, 2005) or on-site measurements conducted by Dillon. For waste haulage trucks (e.g., tri-axle trucks) travelling along site haul routes, the noise associated with truck traffic along haul routes were modelled as line sources. This is further discussed in the noise modelling section.

Table 2: Noise Source Summary Table

Dominant Noise Sources		PWL (dBA)	Source Height (m)	Coordinates	
Name	ID			UTM - X (m)	UTM - Y (m)
Landfill Compactor	CMPTR	97.1	3	704385	5162390
LFG Flare and blower	BLR_FLR	78.6	1	704484	5162139
Dozer	DZR	104.6	3	704388	5162567
Front-end Loader	FELDR	103	2.5	704289	5162198
Front-end Loader	FELDR	103	2	704379	5162400
Dump Truck – Articulated	ADT	108.8	2	704219	5162439
Tractor 1	TRKR1	91.1	1	704308	5162136
Sidewalk tractor	TRKR2	91.1	1	704396	5162117
Plow truck	PLTRK	91.1	1	704379	5162271
Vacuum Sweeper	SWPR	103.1	1	704390	5162216
Water Truck	WT	78.6	2	704338	5162135
Haul Truck idling	HT	96.2	2	704400	5162590
Trommel Screen	TS	106.4	3	704290	5162216
Windrow Turner	WRT	102.7	2	704308	5162152
Odour Turbo fan	OTF	113.1	2	704418	5162393
Onsite Haul Route 1	OR1	n/a	D	n/a	n/a
Onsite Haul Route2	OR2	n/a	D	n/a	n/a

Note:
PWL: Sound Power Level
dBA: A-weighted decibel

Table 3: Landfill Equipment Sound Power Level Octave Spectrum

Dominant Noise Sources		Octave Spectrum (dB)									Overall		Source
Name	ID	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	
Landfill Compactor	CMPTR	93.5	92.1	109	96	93.2	91	83.1	77.3	70.6	97.1	109.6	Dillon onsite measurement
LFG Flare and blower	BLR_FLR	92.1	87.8	79.5	70.3	71	71.7	67.2	74.5	66.2	78.6	93.8	Dillon onsite Measurement
Dozer	DZR	93.7	93.6	103.2	107.4	101.7	98.2	95.4	92.1	84	104.6	110.3	Dillon onsite measurement
Front-end Loader	FELDR	89.2	91.7	105.5	109.5	94	92.4	92.6	88.2	87.2	103	111.3	Dillon onsite measurement
Front-end Loader	FELDR	89.2	91.7	105.5	109.5	94	92.4	92.6	88.2	87.2	103	111.3	Dillon onsite measurement
Dump Truck – Articulated	ADT	92.5	97.9	108.8	109.8	102.1	104.3	102.1	95.8	87.1	108.8	113.9	Dillon onsite measurement
Tractor 1	TRKR1	87.1	104.7	92.8	82	80.1	85.5	86.4	80.8	76.2	91.1	105.2	Dillon onsite measurement
Sidewalk tractor	TRKR2	87.1	104.7	92.8	82	80.1	85.5	86.4	80.8	76.2	91.1	105.2	Dillon onsite measurement
Plow truck	PLTRK	87.1	104.7	92.8	82	80.1	85.5	86.4	80.8	76.2	91.1	105.2	Dillon onsite measurement
Vacuum Sweeper	SWPR	91.6	94.2	93.8	99.2	96.9	98.5	97.4	92.5	87.1	103.1	105.4	Dillon onsite measurement

Dominant Noise Sources		Octave Spectrum (dB)									Overall		Source
Name	ID	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	
Water Truck	WT		78	73	74	80	70	68	60	56	78.6	83.5	UK Defra
Haul Truck idling	HT		102.5	101.5	96.5	89.5	91.5	89.5	81.5	70.5	96.2	106	UK Defra
Trommel Screen	TS	91.4	105.8	101.3	98.1	98.5	98.9	102.4	97.5	93.4	106.4	110	Dillon onsite measurement
Windrow Turner	WRT	87.4	107.2	110.3	98.3	95.7	98.1	96	90.3	86	102.7	112.6	Dillon onsite measurement
Odour Turbo fan	OTF	102.5	106.6	103.4	104.4	100.9	105.5	106.3	108.9	96.5	113.1	114.6	Dillon onsite measurement

Note:

UK Defra: United Kingdom Department for Environment Food and Rural Affairs

A is in reference to A-weighted sound level and Lin is in reference to Linear sound level.

Equipment such as excavators, dozers and compactors typically operate within a given area or location over the course of an hour. Therefore, these sources were modelled as point sources at the locations that they are expected to operate majority of the time and have the highest noise impact on the nearby receptors.

The specifics of the onsite haul route traffic are provided in Table 4. The truck traffic data presented in this table corresponds to worst-case hourly scenario. The maximum hourly truck numbers were used in determining traffic noise associated with onsite routes.

Table 4: Onsite Truck Traffic

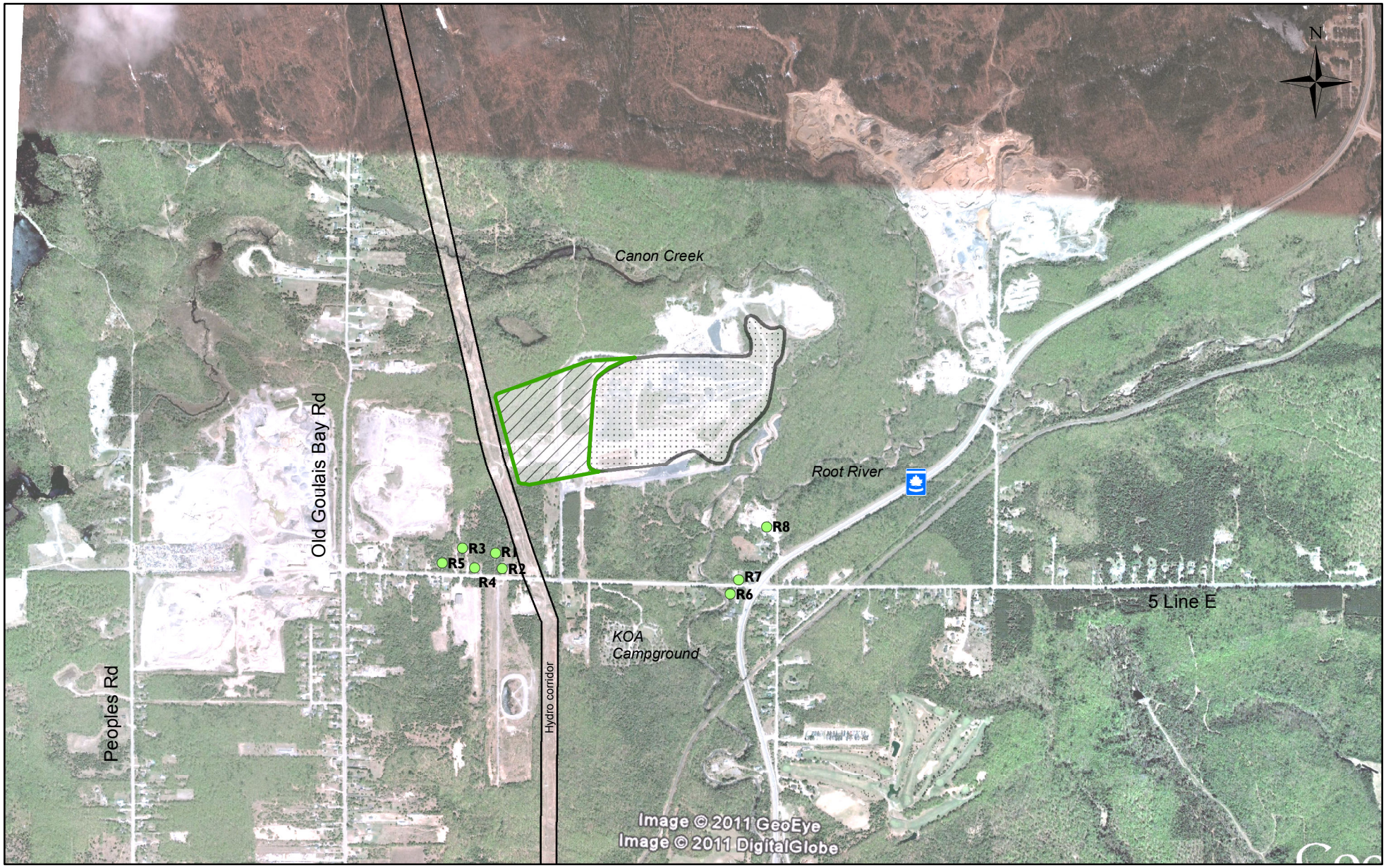
Description	ID	Count (Veh/hour)	Travel Speed (km/h)
Onsite Route #1	OR1	6	20
Onsite Route #2	OR2	6	20

Back-up beeper alarms used on some of the onsite equipment were not considered in this analysis as the MOECC considers them to be "Public Safety Devices" and as such, are excluded from the assessment.

2.2 Receptors

The Model Municipal Noise Control By-Law defines a receptor or point of reception as “any point on the premises of a person where sound or vibration originating from other than those premises is received.” The point of reception may be located on any of the following existing, or zoned for future use, premises: permanent or seasonal residences, hotels/motels, nursing/retirement homes, rental residence, hospitals, camp grounds, and noise sensitive buildings such as schools and places of worship.

The noise receptors in the area include residences, a camp ground, and businesses that are located in proximity of the site. The locations of the nearest receptors in various directions from the site are presented in Figure 2. In total, the noise impact at the eight (8) closest receptors were assessed in this study. All the eight nearest receptors are residences.



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0 120 240 480 720 960
Meters

Legend

- Noise Receptor
- EXISTING LANDFILL (includes current landfill area plus area of historical waste placement)
- PROPOSED LANDFILL EXPANSION
- TRANS-CANADA HIGHWAY

Sault Ste. Marie Municipal Landfill Site

EXISTING SAULT STE. MARIE LANDFILL SITE AND NEARBY RECEPTORS

Project Manager:	KK	Drawn By:	SLP
Scale:	1 : 20000	Checked By:	XXX
Date Issued:	FEB 2015	Project No:	06-6988
Location:	I:\066988\	File Name:	Nearby Receptors

Figure No.

2

2.3 Assessment Guidelines / Criteria

The Ministry's publication "Noise Guidelines for Landfills" (MOE, 1992) applies to the operations at the Sault Ste. Marie Landfill in terms of absolute sound exposure from landfill operations. The guidelines specify a daytime (7:00am and 7:00pm) receptor noise criterion of 50 dBA and a nighttime (7:00pm and 7:00am) receptor noise criterion of 45 dBA. These sound exposure limits apply to any receptor, in any worst-case hour of operation at the landfill. These limits can be replaced with existing background values if it is established that the background levels are consistently higher due to other noise sources in the area, such as road traffic and/or other industries. The acoustical descriptor used is the one-hour energy equivalent continuous sound exposure, denoted as "Leq (1)".

As indicated above, the landfill operates only during the day, therefore, this assessment pertains to daytime hours (7:00am – 7:00pm) only. For the purposes of this assessment, the predicted worst-case hourly sound level equivalent (Leq(1)) at the receptors, resulting from the operations at the landfill, are compared against the MOECC's Class 2 Area daytime criterion of 50 dBA.

2.4 Site Operations

The details of site operations including, fill sequences of the landfill, excavation and installation of leachate collection system, site access, waste filling and cover operation as well as site maintenance activities and their influence on noise modelling are described below. In all cases, conservative assumptions were used in order to determine worst-case noise impacts.

Landfill Staging

In preparation for landfilling, cells are constructed approximately 10m below grade. The final landfill elevation is about 30 m above existing grade. The landfilling operation does not remain fixed in one location, but instead is dynamic, continually changing position and elevation. Thus, noise impacts also continually change for a given receptor location. Noise impacts have therefore been assessed for worst case landfill operations typically closest to the receptor locations.

Site Access

Trucks access the site through the main entrance / driveway, heading north from Fifth Line (see Figure 1). After passing through weigh scales, trucks with municipal solid waste are directed to the working face, while public vehicles would be directed to the appropriate drop-off areas for waste and recyclables.

Working Face

It is anticipated that there will be one working face during Scenario 8. This single working face is expected to accommodate the predicted maximum daily tonnage. Waste trucks will typically unload at the working face. The waste is placed in 5m high and 50m wide lifts, screened by an operating berm. Where practical, the operating berms will be oriented in a manner that would eliminate the direct line of sight between the noise sources and receptors. Conservatively, noise mitigation measures (e.g.,

operating berms) were not incorporated in the noise modelling. The dominant noise sources that will be operating at / near the working face include a compactor, an odour control unit, a dozer or a front-end loader.

Cell Construction

As mentioned above, cell construction is also a noise generating activity that will be ongoing during Scenario 8. The cell construction activities include soil excavation and hauling as well as placement of various materials for the construction of the liner and leachate collection system such as geosynthetics, pipes, gravel and sand. The noise generating equipment that will be used during the construction of the cell leachate collection system (assumed worst case scenario) would be a dozer and haul trucks (gravel hauling and placement). The gravel trucks are assumed to make 5 round trips per hour, 8 hours per day over approximately 3 week construction period, while the dozer operates continuously, 8 hours a day over the same construction period.

Landfill gas flare system

The facility operates a landfill gas flaring system, which consist of two blowers (one of them as standby) and an enclosed flare. The noise sources include the blower and the flare, both of which have been incorporated in this assessment.

Stockpile

Excavated material from cell construction will be stockpiled onsite for use as daily cover. This material may also be supplemented by street sweepings and fill material that are brought to the site. For this activity, an articulated dump truck transports cover material from the stockpile area to the working face.

Composting Pad

The landfill will be relocating its composting pad to an area immediately south of the south-east quadrant of the expanded fill area. The activities include screening of materials using a trommel screen, placing composting material in windrows, using a windrow turner and a water truck to maintain the composting windrows. Noise generating equipment that will operate at the composting pad include: a front-end loader, a water truck, a tractor that connects to the windrow turner and a trommel screen. For the purposes of this assessment, those with higher noise levels that can operate simultaneously have been considered for the worst-case noise modelling scenario (see Section 2.1).

Site Maintenance

Various construction and maintenance activities take place over the life of the landfill. These include ditch / road cleaning, watering the haul routes, and road maintenance including snow removal. Equipment to complete these tasks includes a backhoe, a water truck, a Kobota 4 x 4, a plow truck and a sweeper. It should be noted that the maintenance equipment are operated by the same team and as such, only few of the above list of equipment will be operating at the same time. For the purposes of this assessment, those with higher noise levels that can operate simultaneously have been considered for the worst-case noise modelling scenario (see Section 2.1).

3.0 Noise Modelling

The worst-case noise emission scenario, Scenario 8, consisting of cell 3 operation and cell 4 construction, was modeled using CADNA-A software program. CadnaA (0omputer Aided Noise Abatement) is a computer program from Datakustik GmbH, used for modeling, assessment and prognosis of noise exposure and impact. CadnaA, which is written in C/C++, represents the state-of-the-art in the prediction of environmental noise. The model is capable of incorporating various site specific features, such as elevation, berms, adsorptive grounds, barriers, etc. to accurately predict noise levels at specific receptor locations, associated with noise emissions from a particular industry, road, railway, etc., or a combination thereof. This outdoor noise propagation model is based on ISO 9613, Part 1: Calculation of the absorption of sound by the atmosphere, 1993 and Part 2: General method of calculation (ISO 9613-2:1996).

3.1 Modelling Assumptions and Considerations

Some of the onsite operations are not fixed in location and elevation. Operations also change with the seasons and with staging of the landfill. To be conservative, worst-case scenarios have been modelled. Key assumptions are presented below:

- Modelling consisted of Summer time operations when landfilling, pre-landfilling (i.e., cell construction), composting and maintenance activities can occur simultaneously;
- Peak activity (e.g., peak haul route traffic and all heavy equipment in use at the same time) was modeled;
- Default atmospheric conditions were used (i.e., temperature of 10°C and a relative humidity of 70%);
- A ground absorption coefficient of 0.50 was used, which is considered to be conservative in this case, as most of the land between the sources and receptors consist of soft (i.e., absorptive) ground;
- Conservatively, a third order reflection was applied for all sources;
- For site haul routes, CADNA's road option was used along with maximum hourly truck counts (see Table 4) and a travel speed of 20 km/h;
- Road gradient was incorporated in the modelling;
- The site topography (i.e., elevation contours) was incorporated in the noise modelling;
- For the working face, one (1) front-end loader and one (1) compactor were included (operating simultaneously); and,
- Conservatively no operating cycles were incorporated in the noise modelling (i.e., it was assumed that all of the equipment operate continuously and at the same time for the duration of the worst-case noise emission hour).

3.2 Noise Modelling Results

The modelling results without noise mitigation are presented in Figure 3. The figure illustrates corresponding receptor sound levels (in dBA) for all the discrete receptors located in proximity to the site. The overall receptor sound levels without noise mitigation measures are summarized in Table 5.

The results indicate that with the exception of one receptor (i.e., R1) the predicted receptor sound levels are below the MOECC's daytime criterion of 50 dBA for landfills. As such noise mitigation measure(s) are required to achieve compliance.

Figure 3: Sault Ste. Marie Landfill Acoustic Modelling Results – Scenario 8 Without Noise Mitigation Measures

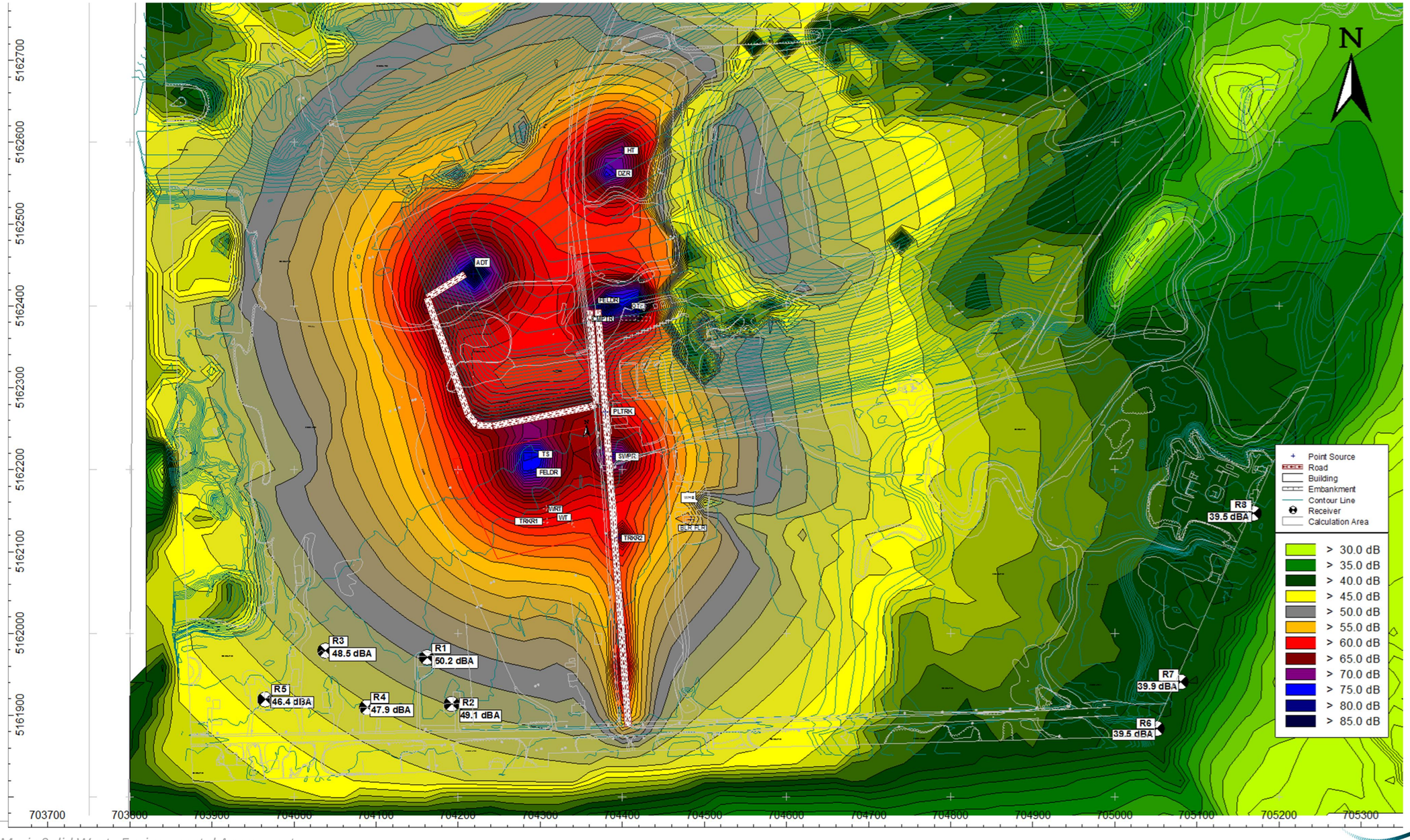

Table 5: Predicted Receptor Sound Levels – SSM Landfill – Scenario 8 Without Mitigation

Receptors		Coordinates		Receptor Height (m)	Elevation (m)	Predicted SPL (dBA)	Applicable Criterion (dBA)	Compliant (Yes / No)
ID	Description	UTM - X	UTM - Y					
R1	Assumed 2-storey residential dwelling	704162	5161971	4.5	282.1	50.2	50	No
R2	Assumed 2-storey residential dwelling	704192	5161914	4.5	281.5	49.1	50	Yes
R3	Assumed 2-storey residential dwelling	704038	5161979	4.5	282.0	48.5	50	Yes
R4	Assumed 2-storey residential dwelling	704089	5161910	4.5	281.5	47.9	50	Yes
R5	Assumed 2-storey residential dwelling	703965	5161919	4.5	281.7	46.4	50	Yes
R6	Assumed 2-storey residential dwelling	705051	5161884	4.5	278.5	39.5	50	Yes
R7	Assumed 2-storey residential dwelling	705080	5161941	4.5	280.7	39.9	50	Yes
R8	Assumed 2-storey residential dwelling	705169	5162147	4.5	281.0	39.5	50	Yes

Note: Ground elevation is above Mid-sea level.

3.3 Noise Mitigation Measures

Through modelling iterations it was determined that the facility can reach compliance if the following noise mitigation measure is implemented:

- *Install a 2.5 m high perimeter berm that provides shielding of noise generating activities at the composting pad for the receptors to the southwest of the pad. The berm would be 150m in length and will be located along the south and west sides of the pad, as shown in Figure 4.*

The modelling results for Scenario 8, with the above-mentioned noise mitigation measure are presented in Figure 5. The figure illustrates corresponding receptor sound levels (in dBA) for all the discrete

receptors located in proximity to the site. The overall receptor sound levels with noise mitigation measures are also summarized in Table 6. As the results indicate, no additional noise mitigation measures are required.

Figure 4: Proposed Noise Mitigation Measure

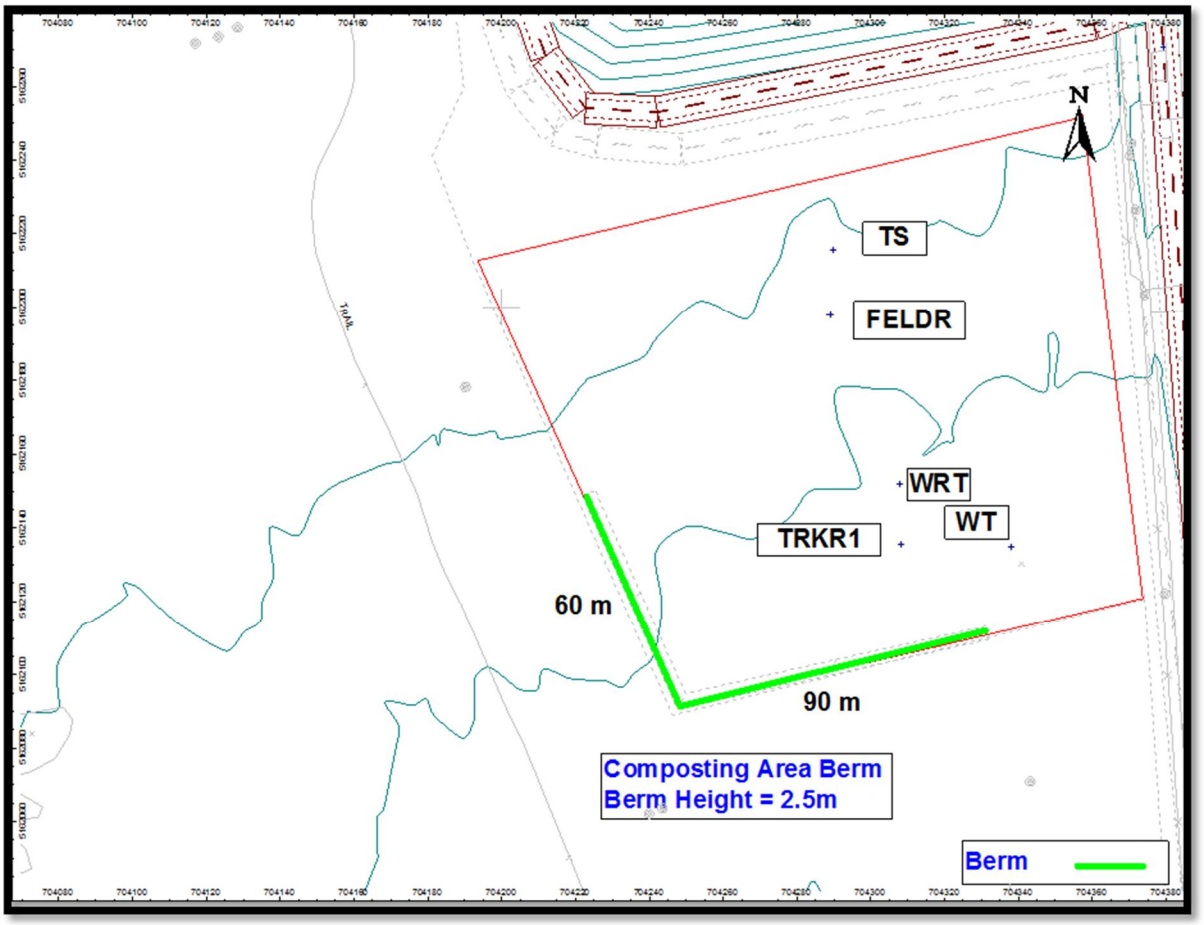

Figure 5: Sault Ste. Marie Landfill Acoustic Modelling Results –Scenario 8 with Noise Mitigation Measures

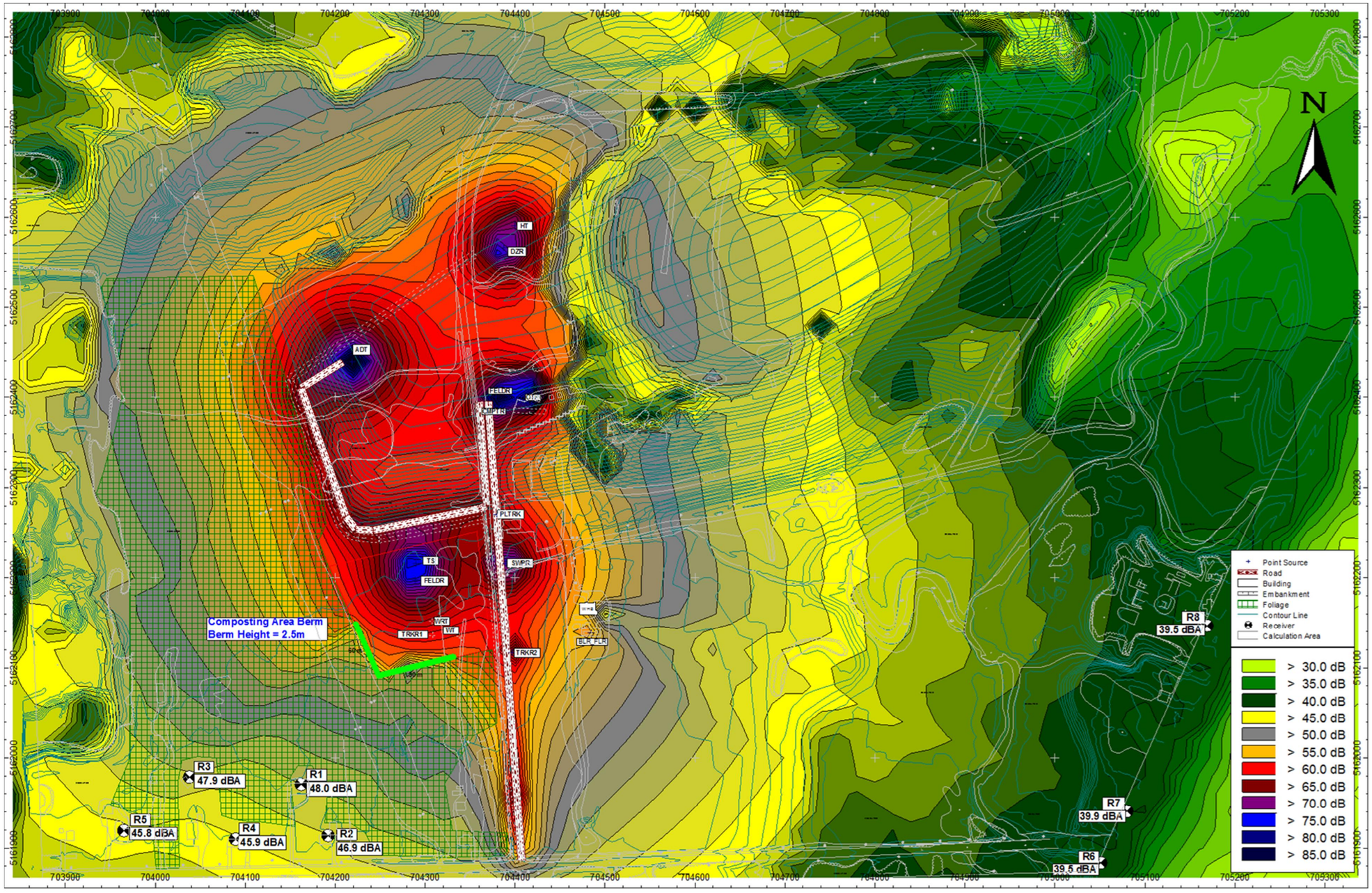

Table 6: Predicted Receptor Sound Levels - SSM Landfill – Scenario 8 with Mitigation

Receptors		Coordinates		Receptor Height (m)	Elevation (m)	Predicted SPL (dBA)	Applicable Criterion (dBA)	Compliant (Yes / No)
ID	Description	UTM - X	UTM - Y					
R1	Assumed 2-storey residential dwelling	704162	5161971	4.5	282.1	48.0	50	Yes
R2	Assumed 2-storey residential dwelling	704192	5161914	4.5	281.5	46.9	50	Yes
R3	Assumed 2-storey residential dwelling	704038	5161979	4.5	282.0	47.9	50	Yes
R4	Assumed 2-storey residential dwelling	704089	5161910	4.5	281.5	45.9	50	Yes
R5	Assumed 2-storey residential dwelling	703965	5161919	4.5	281.7	45.8	50	Yes
R6	Assumed 2-storey residential dwelling	705051	5161884	4.5	278.5	39.5	50	Yes
R7	Assumed 2-storey residential dwelling	705080	5161941	4.5	280.7	39.9	50	Yes
R8	Assumed 2-storey residential dwelling	705169	5162147	4.5	281.0	39.5	50	Yes

4.0 Conclusion

The purpose of this study was to assess the potential noise impact at the nearby receptors due to the proposed expansion of the Sault Ste. Marie Landfill. The noise emissions from the landfill site are dominated by activities such as vehicular travel along onsite routes and operation of heavy equipment such as bulldozers, compactors and earth moving equipment. There are noise sensitive receptors in proximity to the site. The assessment of potential noise impact at the nearby receptors was undertaken through acoustic modelling, considering worst-case noise emission scenarios. Maximum 1-hour sound level equivalent values were predicted at all relevant receptors and compared against applicable regulatory noise criterion for daytime (the landfill site operates during daytime hours only). Due to the conservative assumptions in the analysis, such as worst-case operations for each activity occurring simultaneously, it is expected that sound exposures will in reality be lower than the reasonable worst-case values predicted in this report.

The results indicate that for the worst-case operational scenario, with the implementation of the noise mitigation measure proposed in this report, the predicted receptor sound levels will be below the MOECC's daytime criterion of 50 dBA for all the nearby noise receptors. The installation of the proposed noise mitigation measure (i.e., the berm), is to coincide with the construction of the proposed composting pad.

5.0 Closure

This Noise Impact Assessment Report has been prepared based on the information provided and/or approved by the City of Sault Ste. Marie and/or AECOM. This report was prepared by Dillon for the sole benefit of the City of Sault Ste. Marie to satisfy reporting requirements for an Environmental Assessment. The material in the report reflects Dillon's judgment in light of the information available to Dillon at the time of this report preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Respectfully Submitted,

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