Project No.: DEL18-059
Date: December 4, 2018
Revised: April 3, 2019
December 16, 2019

PREPARED FOR:
Brantam Developments Inc.

9904 Oxbow Drive Subdivision

9904 Oxbow Drive
Komoka, Ontario
Noise and Vibration Assessment

development engineering (London) Limited
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1.0 INTRODUCTION

At the request of the Brantam Developments Inc., Development Engineering (London) Limited (DevEng) has undertaken the following noise and vibration assessment of the proposed residential subdivision to be constructed at 9904 Oxbow Drive in London, Ontario. The site lies in close proximity to four (4) major vehicular noise sources, north of the Canadian National (CN) Railway's right-of-way, south of the Canadian Pacific (CP) Railway's right-of-way, west of Komoka Road (Middlesex County Road #16) and north of Oxbow Drive. The proposed development includes 173 low density single family residential lots, five (5) medium density multi-family blocks and several open space and Stormwater Management (SWM) blocks. Vehicular access is proposed from Komoka Road and Oxbow Drive as well as stub connections to future development lands to the west . The Corporation of the Municipality of Middlesex Centre has indicated that a noise and vibration study will be a condition of final approval of this development. This report has been prepared to meet that condition. Proposed lot layouts have been provided by Archibald, Gray & McKay Engineering Ltd. (AGM) to facilitate assessment of noise on the site. However, detailed Site Plans have not yet been developed for the proposed multi-family blocks (blocks 177-181). Secondary assessment of each of the blocks should be conducted at the Site Plan Approval stage to reflect the final building layouts and confirm general conformance with this report.

The purpose of this report will be, therefore, to assess noise and vibration levels resulting from the adjacent CN and CP operated railways, as well as Komoka Road and Oxbow Drive, and offer recommendations for their mitigation, if required.

2.0 NOISE STUDY PARAMETERS

The Ministry of the Environment, Conservation and Parks Ontario (MECP) has created explicit criteria regarding what levels of noise are acceptable within residential developments, and what measures are to be taken, should these criteria be exceeded. These guidelines, as outlined in the Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning (Publication NPC-300), are as follows:

- Maximum outdoor noise level - 55 dbA as measured in the Outdoor Living area between the hours of 0700 and 2300 (7:00 am and 11:00 pm).
- When this criterion is met, no abatement measures are required.
- If the outdoor noise level is greater than 55 dbA and less than 60 dbA, physical control measures may be applied to reduce the sound level to 55 dbA. If no physical measures are provided, the prospective purchasers or tenants must be made aware of potential problems through a suitable noise warning clause.
- When this criterion is exceeded by 5 dbA or more, future tenants must be made aware of potential problems through a suitable noise warning clause, and physical abatement measures are required.
- Maximum indoor rail noise level: 40 dbA as measured at the plane of the open living room window at all times throughout the day and at the pane of the open bedroom window between the hours of 0700 and 2300 (7:00 am and 11:00 pm, day-time);
  and/or : 35 dbA as measured at the plane of the open bedroom window between the hours of 2300 and 0700 (11:00 pm and 7:00 am, night-time)
- When the above criteria are met, no abatement measures are required.
- When the above criteria is exceeded by 1 to 10 dbA, it is required to design the dwelling with a provision for future installation of central air conditioning. This requirement usually implies forced air heating with the ducts sized for central air conditioning. Future tenants must also be made aware of potential road noise through a suitable warning clause.
- When the above criteria is exceeded by more than 10 dbA installation of central air conditioning is mandatory, and exterior building components must be specified.

Noise levels are to be predicted through the use of the MECP's model, "Stamson, 5.0", utilizing rail traffic data as supplied by CN/CP and road traffic data from Middlesex County and the Municipality of Middlesex Centre.

3.0 VIBRATION STUDY PARAMETERS

The Canadian Pacific Railway and Canadian National Railway have developed a series of guidelines that govern the development of land adjacent to railway lands. These guidelines which are assumed to be acceptable are used herein. Therefore, the line in question has the following requirements with respect to ground-borne vibration:

"Ground-borne vibration transmission to be evaluated in a report through site testing to determine if dwellings within 75 metres of the railway right-of-way will be impacted by vibration conditions in excess of 0.14 mm/sec RMS between 4 Hz and 200 Hz. The monitoring system should be capable of measuring frequencies between 4 Hz and 200 Hz, +/- 3 dB with an RMS averaging time constant of 1 second. If in excess, isolation measures will be required to ensure living areas do not exceed 0.14 mm/sec RMS on and above the first floor of the dwelling."

On site vibration data was collected on September 6th and 10th, 2018 with an Instantel Blastmate II, model No. DS-677. The instrument had been calibrated and certified for accuracy by Instantel. Measurements were taken on three (3) occasions at distances from the track as noted on Figure No. 1.

Because vibration consists of rapidly fluctuating motions, both positive and negative, with an average motion of zero, it is necessary to "smooth" the signal by means of a root mean square (RMS) analysis, which is the square root of the average of the squared amplitude of the signal (amplitudes being both positive and negative). In accordance with Canadian National Railway & Canadian Pacific Railway standards, the RMS velocities of the vertical peak particle velocities (PPVs) were extracted graphically from the selected one-second interval and calculated.

While test results were compiled, it is noted none of the proposed single family lots subject to this assessment are located within 75 m of the existing CP rail corridor. In an effort to reduce the size of this report, the vibration results have not been appended but can be made available upon request. Supplemental noise and vibration analysis will be required in support of Site Plan Approval of blocks 177-178.

4.0 NOISE SOURCES

4.1 ROAD TRAFFIC DATA

Road traffic frequencies are summarized below in Table 1. The 2017 AADT for Komoka Road (Middlesex County Road #16) is 1,581 vehicles/day with assumed 10.0% heavy truck traffic and a 90/10 day/night split, as obtained from the Middlesex County traffic counts spreadsheet available on their website. This data has been extrapolated to a 2030 build out at a 5.6% annual growth rate for 13 years. The 2017 AADT for Oxbow Drive is 2,024 vehicles/day with an assumed 10% heavy truck traffic and a 90/10 day/night split, as obtained from the Municipality of Middlesex Centre. This data has been extrapolated to a 2028 build-out at a 3.6% annual growth rate for 13 years. While a growth rate of 2.0% would be considered typical for both roads in lieu of specific information from the municipality or traffic consultant, the proposed 5.6% and 4.3% growth rates were required to achieve a minimum of 40 vehicles per hour for night time-traffic for the STAMSON modelling software. For this reason, the calculations can be considered a conservative estimate. Correspondence with Middlesex County and the MTO is included in Appendix A

Table 1 - Road Traffic Data

Time (Hours)	No. of Cars	No of Heavy Trucks	Posted Speed Limit km/hr
Komoka Road (County Road #16) (10% Heavy)			
Day-Time (0700-2300)	2,600	289	50
Night-Time (2300-0700)	289	32	50
Oxbow Drive (10% Heavy)			
Day-Time (0700-2300)	2,596	288	60
Night-Time (2300-0700)	288	32	60

4.2 RAIL TRAFFIC DATA

Rail traffic frequencies for the CN/CP Railways are summarized below in Table 2. The figures represent the average daily rail volumes, as supplied by CN and CP in letters dated November 25, 2019 and September 5, 2017 respectively. It has been confirmed by CP that the 2017 data is still representative of the current traffic on their line as of November 2019. For the Stamson modelling results, the data has been extrapolated at a growth rate of 2.5% per year for 11 years for a 2030 build-out scenario.

Table 2- Rail Traffic Data

Time (Hours)	Type of Train	No. of Cars per Train	No. of Locomotives per Train	No. of Trains	Max Speed of Train km/hr
Canadian National Railway					
Day-Time (0700-2300)	Freight	140	4	13	97
	Way Freight	25	4	5	97
	Passenger	10	2	9	129
Night-Time (2300-0700)	Freight	140	4	8	97
	Way Freight	25	4	1	97
	Passenger	10	2	1	129
Canadian Pacific Railway					
Day-Time (0700-2300)	Freight	173	4	6	97
Night-Time (2300-0700)	Freight	173	4	3	97

5.0 NOISE LEVEL PREDICTIONS

Utilizing the MECP's noise prediction model, the projected noise levels for the site were calculated for two sample times during the daylight hours of 0700 to 2300 (7:00 a.m. to 11:00 p.m.) and the night time hours of 2300-0700 (11:00 p.m. to 7:00 a.m.). A `barrier free' situation was assumed for all calculations due to the existing topography. For all calculations the intervening topography and the distance to the noise source were considered as the only other impediments to noise transmission. In addition, the following assumptions were made:

- The proposed units will have setbacks as per the attached noise study figure (see Figure 1);
- Whistle noise was modelled for the day-time period only for the nearby at-grade crossings of Komoka Road (CP) and Oxbow Drive (CN), as there is an anti-whistling bylaw in effect in Komoka during the night time hours.
- All units are assumed to be two (2) storeys;
- Indoor night-time receiver elevations are as identified on Figure 1; and,
- Outdoor daytime receiver elevation was assumed to be 1.5 m and are located 3 m from the rear facade of the units.

Refer to Figure 1 for the building, Stamson and vibration test locations within the proposed development. The findings are summarized in Table 3 on the following page:

Table 3 - Stamson Noise Levels

Point of Assessment	Stamson Daytime Outdoor Noise Level (dBA)		Stamson Day-time Indoor Noise Level (dBA)*	Stamson Night-Time Indoor Noise Level (dBA)*	Warning Clauses/Mitigation Measures**
	Unattenuated	Attenuated			
POA1	59.07	N/A	49.07	48.98	WC 'AD', AC, BC
POA2	56.03	N/A	46.03	46.04	WC 'AD', AC, BC
POA3	54.13	N/A	44.13	44.20	WC 'C', Provisions
POA19	49.46	N/A	39.46	39.71	WC 'C', Provisions
POA24	53.67	N/A	43.67	44.11	WC 'C', Provisions
POA25	55.60	N/A	45.60	45.99	WC 'AD', AC, BC
POA26	58.57	N/A	48.57	47.96	WC 'AD', AC, BC
POA47	44.76	N/A	34.76	34.97	None
POA48	46.37	N/A	36.37	36.53	WC 'C', Provisions
POA71	43.43	N/A	33.43	34.03	None
POA72	44.85	N/A	34.85	35.41	WC 'C', Provisions
POA75	50.08	N/A	40.08	40.43	WC 'C', Provisions
POA76	58.91	N/A	48.91	49.20	WC 'AD', AC, BC
POA114	53.21	N/A	43.21	43.50	WC 'C', Provisions
POA119	55.51	N/A	45.51	44.51	WC 'AC', Provisions
POA120	60.14	58.00	50.14	49.74	WC 'BD', AC, BC, Barrier
POA121	56.25	N/A	46.25	42.11	WC 'AC', Provisions
POA122	48.55	N/A	38.55	37.76	WC 'C', Provisions
POA123	46.77	N/A	36.77	36.30	WC 'C', Provisions
POA124	45.22	N/A	35.22	34.96	None
POA132	45.39	N/A	35.39	34.55	None
POA133	47.45	N/A	37.45	36.27	WC 'C', Provisions
POA134	56.49	N/A	46.49	41.42	WC 'AC', Provisions
POA135	53.56	N/A	43.56	38.85	WC 'C', Provisions
POA153	53.86	N/A	43.86	38.57	WC 'C', Provisions
POA154	47.80	N/A	37.80	34.15	None
POA163	45.12	N/A	35.12	34.84	None
POA164	46.37	N/A	36.37	36.09	WC 'C', Provisions
POA166	59.86	N/A	49.86	49.78	WC 'AD', AC, BC
POA167	59.99	N/A	49.99	49.87	WC 'AD', AC, BC
POA168	60.52	56.44	50.52	50.43	WC 'BD', AC, BC, Barrier
POA173	62.33	58.06	52.33	52.08	WC 'BD', AC, BC, Barrier

*Note 1 – The indoor noise levels presented in Table 3 reflect the STAMSON model data at the building face less 10 dBA to reflect reductions caused by a typical wall assembly constructed in accordance with the Ontario Building Code (OBC).

**Note 2 – Legend for Mitigation Measures:

- WC – Warning Clause (type in quotations) required;
- Provisions – Provisions for the future installation of central air conditioning (forced air heating) required;
- AC – Mandatory air conditioning required;
- BC – Specialized Building components required;
- Barrier – Noise barrier to protect outdoor living area required.

See Appendix A for a complete set of noise level calculations. In addition to preparing Stamson noise modelling, our firm visited the site with an Intertan Model 33-2055 sound level meter on October 16, 2018 at 9:00 AM and October 17, 2018 at 8:00 a.m. to register stationary noise level readings from the nearby industrial property located on the opposite site of Oxbow Drive from the subject property (MN#9919 Oxbow Drive).

Readings were taken approximately at the south faces of the proposed units that would be most impacted by the stationary noise source within Block 176 (approximately 50 m from the source) at a setback of approximately 15m from the Oxbow Drive right-of-way. An average of 64 dBA was measured for the on-site ambient background noise based upon readings taken every 30 seconds over a 30 minute period on two separate occasions. As noted previously, when activities occurred within the industrial site, the noise metre was not triggered and remained below the 50 dBA level due to the setback. It is our suggestion the impacts from the adjacent rail and road traffic will far outweigh the impact of the industrial site and thus the stationary noise levels have not been added for a cumulative effect.

6.0 ATTENUATION RECOMMENDATIONS & SUMMARY

6.1 INTERIOR NOISE LEVELS

As per Table 3, indoor noise level exceeds the MECP criteria at several locations across the site. For the unit whose maximum predicted noise levels exceed these guidelines by more than 10 dbA, the installation of central air conditioning will be mandatory. In addition, the provision to notify the potential tenant with the appropriate warning clause is required.

Installation of central air conditioning and the following warning clause should be applied to units 1-2, 25-27, 76-77, 113, 120 and 166-173 within this development. The warning clause will be included in all agreements of purchase and sale or lease of these dwellings.

"This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment. (Note: The location and installation of the air conditioning device should be done so as to minimize the noise impacts and comply with criteria of MOECC Publication NPC-216, Residential Air Conditioning Devices.)"

For those units whose maximum predicted indoor noise level exceed the guidelines by 1-10 dBA, an appropriate warning clause should be applied. In addition, provisions must be made for the future installation of central air conditioning. This can be achieved through providing a forced air heating system adequately sized to allow such an installation thus enabling future residents the ability to close their windows should they find noise levels too much of a nuisance.

The following warning clause should be applied to units 3-24, 28-31, 48-55, 72-75, 78-80, 111-112, 114-119, 121-123, 133-134, 135-145, 153, 164-165 within this development. This warning clause will be included in all agreements of purchase and sale or lease of these dwellings.

"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of Environment. (Note: The location and installation of the outdoor air conditioning device should be done so as to minimize the noise impacts and comply with criteria of MECP Publication NPC-216, Residential Air Conditioning Devices.)"

6.2 BUILDING COMPONENTS

For all units with a night time sound level that exceeds 55 dBA outside the bedroom window or day time sound level that exceeds 60 dBA outside the living room window, building components including windows, walls and doors must be designed so that the indoor sound levels comply with the noise criteria outlined by the MECP.

Noise reduction building components will be required for units 1-2, 25-27, 76-77, 113, 120 and 166-173 within the development. For these units an EW5 construction rating from foundation to rafters should be utilized along with the installation of glazed windows for all building faces that have exposure to the CN/CP rail lines, Komoka Road and Oxbow Drive. EW5 construction is an exterior wall composed of 12.7mm gypsum board, vapour barrier and 38x89 studs with 50mm (or thicker) mineral wool or glass fibre batts in inter-stud cavities plus sheathing, 25mm air space and 100mm brick veneer. No single family dwellings being assessed are currently proposed within 100 m of either rail line and as such, alternative wall assemblies may be considered. For alternate EW5 construction methods refer to Section 8 of the Supplemental Guidelines of the Ontario Building Code for applicable STC ratings for various construction methodology.

6.3 EXTERIOR NOISE LEVELS

The outdoor noise levels, as presented in Table 3, are in excess of MECP guidelines and will therefore require additional mitigation measures. For those units whose maximum predicted noise levels exceeds these guidelines by 1-5 dbA, the provision to notify the potential tenant with the appropriate warning clause is required.

The following warning clause should be applied to units 1-2, 25-27, 76-77, 113, 121 134 and 166-167 within this development. This warning clause will be included in all agreements of purchase and sale or lease of these dwellings.

"Purchasers/tenants are advised that sound levels due to increasing rail and road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of Environment."

For those units whose maximum predicted outdoor noise levels exceed these guidelines by more than 5 dBA, noise barriers will be required. A noise barrier of 2.1m height will be required adjacent to the outdoor living area of unit 120 to reduce noise to an acceptable level. In addition, noise barrier(s) will be required to protect the outdoor living areas of lots 168-173. Two noise barrier options were modelled for these lots and each are considered viable independently, to be selected based on the requirements and preferences of the Owner, the Municipality and CN/CP. The first option included a single common 2.4 m high noise barrier that encloses all of the aforementioned lots. The second option was to include individual barriers extending to the rear lot line each with a 3.0 m long return. Both alternatives are indicated on Figure 1. The noise barriers must be constructed with approved materials with a minimum of 20 kg/m^2 density. In addition, the following noise warning clause will be included in all agreements of purchase and sale or lease of these units (120 and 168-173):

“Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road and rail traffic may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of Environment.”

A wording similar to the following should also be included in all agreements of purchase of sale or lease for all dwellings within this development:

"Warning: The Canadian National and Canadian Pacific Railway Companies or their assigns or successors in interest has or have a right-of-way within 300metres from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right-of-way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwellings; the Canadian National and Canadian Pacific Railways will not be responsible for any complaints or claims arising from the use of such facilities and/or operations on, over or under the aforesaid rights-of-way."

“The Municipality of Middlesex Centre assumes no responsibility for noise issues which may arise from the existing or increased traffic of the Canadian National Railway, the Canadian Pacific Railway, Komoka Road (Middlesex County Road #16) or Oxbow Drive as it relates to the interior or outdoor living areas of any dwelling unit within the development. The Municipality of Middlesex Centre will not be responsible for constructing any form of noise mitigation for this development.”

As noted earlier, detailed site plans were not available for the proposed medium density Blocks 177-181 and 178 as of the date of this report. Supplemental noise assessments will be required at the Site Plan Approval stage for each block. Proper implementation of the abatement program above will result in noise levels that will meet the MECP’s requirements for this development.

7.0 VIBRATION LEVEL MEASUREMENTS

For this project. Three (3) separate measurements were taken to determine the effects of ground vibration. The tests were conducted on September 6th and 10th, 2018 and were located at 40m and 50m from the Canadian Pacific Railway track. Vibration data was collected on the ground surface for all locations for a series of one second intervals for the entire length of time when the trigger level was exceeded. It should be noted that no vibration testing was conducted adjacent to the Canadian National Railway track as the nearest residential units are greater than 75 m away.

For all tests carried out the Longitudinal (L-compression wave or P-wave), Transverse (T-shear wave or S-wave), Vertical (V-surface wave or Rayleigh wave) were analysed and a RMS (root mean square) was determined graphically for each. Only the vertical component of the resulting vibration due to surface waves was analysed since Rayleigh waves account for 2/3 of the seismic energy of train vibration. The longitudinal and transverse waves were examined for consistency but were not incorporated in the assessment in accordance with standard practice for train vibration.

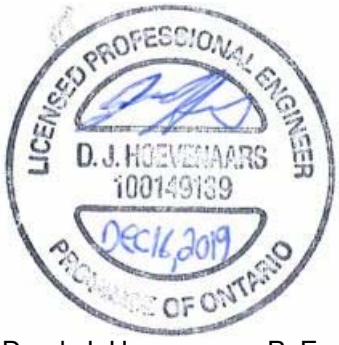
While test results were compiled, it is noted none of the proposed single family lots subject to this assessment are located within 75 m of the existing CP rail corridor. In an effort to reduce the size of this report, the vibration results have not been appended but can be made available upon request. Supplemental noise and vibration analysis will be required in support of Site Plan Approval of blocks 177-178.

8.0 VIBRATION ATTENUATION RECOMMENDATIONS & SUMMARY

While test results were compiled, it is noted none of the proposed single family lots subject to this assessment are located within 75 m of the existing CP rail corridor. As a result, no recommendations have been made for vibration attenuation on these lots.

See Figure 1 for the test locations.

DEVELOPMENT ENGINEERING (LONDON) LIMITED



Derek J. Hoevenaars, P. Eng.

Jeff Thomas, Certified Noise Consultant

APPENDIX A

NOISE LEVEL CALCULATIONS

ROAD NO.	LOCATION	AVERAGE TRAFFIC COUNT	LENGTH (Km)	BOUNDARY LENGTH	EQUIVALENT LENGTH	DAILY VEH-(Km)
GLENDON DR. 14	CR#81 TO CR#9	*3526*	10.6		10.6	37376
GLENDON DR. 14	CR#9 APPIN TO CR#8	*3657*	7.5		7.5	27428
GLENDON DR. 14	CR#8 APPIN TO CR#80	*3597*	7.3		7.3	26258
CONCESSION DR. 14	CR#80 GLENCOE TO CR#1 NEWBURY	*2821*	10.1		10.1	28492
CONCESSION DR. 14	CR#1 TO THE KENT COUNTY BOUNDARY	*1679*	9.7	4.4	7.5	12593
CARRAGE RD. 15	CR#2 TO CR#35	*1388*	8		8	11104
KOMOKA RD. 16	CR#3 TO CR #14	*4060*	1.7		1.7	6902
KOMOKA RD. 16	CR#14 TO CR#22	*1581*	9.4		9.4	14861
ILDERTON RD. 16	CR#22 TO CR#17	*2315*	5.8		5.8	13427
ILDERTON RD. 16	CR#17 TO CR#20 SOUTH	*3924*	9.5		9.5	37278
ILDERTON RD. 16	CR#20 SOUTH TO HIGHWAY #4	*4557*	5		5	22785
ILDERTON RD. 16	HIGHWAY #4 TO CR#23	*3500*	5		5	17500
PLOVER MILLS RD. 16	CR#23 TO CR#27	*2339*	7.8		7.8	18244
PLOVER MILLS RD. 16	CR#27 TO CR#31	*4071*	2.8		2.8	11399
PLOVER MILLS RD. 16	CR#31 TO THE OXFORD COUNTY BOUNDARY	*2514*	4.3		4.3	10810
GAINSBOROUGH RD. 17	LONDON TO CR#22	*5484*	6.5		6.5	35646
NAIRN RD. 17	CR#22 TO CR#16	*2558*	5.8		5.8	14836
NAIRN RD. 17	CR#16 TO CR#19	*2995*	10.3		10.3	30849
NAIRN RD. 17	CR#19 TO CR#81	*2741*	9.6		9.6	26314
NAIRN RD. 17	CR#81 TO CR#7	*1498*	2.7		2.7	4045

Derek Hoevenaars

From: Jake DeRidder <deridder@middlesexcentre.on.ca>
Sent: August 29, 2018 3:42 PM
To: Derek Hoevenaars
Cc: Jake Straus; khenderson@middlesex.ca; Jeff Thomas
Subject: RE: 9904 Oxbow Drive - Traffic Information Request

Hi Derek,

See below my comments in red.

Let me know if you have any further questions.

Jake DeRidder, C.Tech.
Development Review Coordinator
Middlesex Centre | deridder@middlesexcentre.on.ca
10227 Ilderton Road, RR#2 | Ilderton, Ontario, N0M 2A0
Tel: 519.666.0190 ext.269 | Fax: 519.666.0271

Good afternoon Jake,

Thank you for the phone call earlier this afternoon. As discussed, we are conducting a noise assessment for a proposed subdivision development to be constructed at 9904 Oxbow Drive in Komoka Ontario and are looking for some information regarding traffic counts on Oxbow Drive in vicinity of the subject site (we are also looking for Komoka Road (Middlesex County Road #16) but we understand that information will be provided directly from the County). At your earliest convenience, can you please provide the following:

- AADT traffic volume and year of the count;
  Traffic counts from 2017 is 2024 AADT
- Anticipated growth rate over the next 10 years for the road in question;
  I would suggest this be determined by the Traffic Engineer who is completing the TIS for this development. At this time we don't foresee an expansion of that portion of Oxbow within the next 10 years, however the TIS may determine otherwise.
- Posted speed limit of the section of road in question;
  60 km/h
- Percentage of medium and heavy trucks; and,
  Unfortunately we don't have this data, you would have to conduct a traffic survey of your own
- Day/Night splits (typically assumed 90/10 for non-highways).
  Agreed

Feel free to contact us with any questions or concerns. Thanks,

Derek Hoevenaars, P.Eng | Senior Project Engineer

Ext. 148 dhoevenaars@deveng.net www.deveng.net

System Engineering
Engineering Services

1 Administration Road
Concord, ON, L4K 1B9
T: 905.669.3264
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Train Count Data

TRANSMITTAL

To: *Destinataire :*	Development Engineering (London) Limited 41 Adelaide St N London, ON N6B 3P4	*Project :*	STY – 10.95 – Queen St. Komoka, ON
Att'n:	Derek J. Hoevenaars	*Routing:*	dhoevenaars@deveng.net
From: *Expéditeur :*	Michael Vallins	*Date:*	11/25/2019
Cc:	Adjacent Development CN via e-mail		

☐ Urgent ☐ For Your Use ☐ For Review ■ For Your Information ☐ Confidential

Re: Train Traffic Data – CN Strathroy Subdivision near Oxbow Rd in Komoka, ON

Please find attached the requested Train Traffic Data. The application fee in the amount of **$500.00** +HST will be invoiced.

Should you have any questions, please do not hesitate to contact the undersigned at 905-669-3264.

Sincerely,
CN Design & Construction

Michael Vallins P.Eng
Manager of Public Works
public_works_gld@cn.ca

Date: 2019/11/25 Project Number: STY – 10.92 – Queen St. Komoka, ON

Dear Derek J. Hoevenaars:

Re: Train Traffic Data – CN Strathroy Subdivision near Oxbow Rdin Komoka, ON

The following is provided in response to Derek's 2019/10/25 request for information regarding rail traffic in the vicinity of Oxbow Rd in Komoka at approximately Mile 10.92 on CN's Strathroy Subdivision.

Typical daily traffic volumes are recorded below. However, traffic volumes may fluctuate due to overall economic conditions, varying traffic demands, weather conditions, track maintenance programs, statutory holidays and traffic detours that when required may be heavy although temporary. For the purpose of noise and vibration reports, train volumes must be escalated by 2.5% per annum for a 10-year period.

Typical daily traffic volumes at this site location are as follows:

*Maximum train speed is given in Miles per Hour

	0700-2300			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	13	140	60	4
Way Freight	5	25	60	4
Passenger	9	10	80	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	8	140	60	4
Way Freight	1	25	60	4
Passenger	1	10	80	2

The volumes recorded reflect westbound and eastbound freight and passenger operations on CN's Strathroy Subdivision.

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There are 6 (six) at-grade crossing in the immediate vicinity of the study area at Mile 15.45-19.50. Anti-whistling bylaws are in effect from 23:00-6:00 at this crossing. Please note that engine warning whistles may be sounded in cases of emergency, as a safety and or warning precaution at station locations and pedestrian crossings and occasionally for operating requirements.

With respect to equipment restrictions, the gross weight of the heaviest permissible car is 286,000 lbs.

The single mainline track is considered to be continuously welded rail throughout the study area.

The Canadian National Railway continues to be strongly opposed to locating developments near railway facilities and rights-of-way due to potential safety and environmental conflicts. Development adjacent to the Railway Right-of-Way is not appropriate without sound impact mitigation measures to reduce the incompatibility. For confirmation of the applicable rail noise, vibration and safety standards, Adjacent Development, Canadian National Railway Properties at Proximity@cn.ca should be contacted directly.

I trust the above information will satisfy your current request.

Sincerely,

Michael Vallins P.Eng
Manager of Public Works
public_works_gld@cn.ca

1290 Central Parkway West
Mississauga, Ontario
Canada L5C 4R3

T 905 803 3429
E josie_tomei@cpr.ca

September 5, 2017

Via email: DHoevenaars@deveng.net

Derek Hoevenaars
Development Engineering Ltd.
41 Adelaide Street North
Unit #71
London, ON N6B 3P4

Dear Sir/Madam:

Re: Rail Traffic Volumes, CP Mileage 9.8, Windsor Subdivision, Between Oxbow Road and Komoka Road

This is in reference to your request for rail traffic data in the vicinity of Between Oxbow Road and Komoka Road in the Municipality of Middlesex Centre. The study area is located near mile 9.8 of our Windsor Subdivision, which is classified as a Prinicipal Main line.

The information requested is as follows:

1. Number of freight trains between 0700 & 2300: 6
   Number of freight trains between 2300 & 0700: 3

2. Average number of cars per train: 109
   Maximum cars per train freight: 173

3. Number of locomotives per train: 2 (4 Maximum)

4. Maximum permissible train speed is 60 miles per hour (freight)

5. The whistle signal is prohibited approaching the Komoka Road public grade crossing but is sounded at the Oxbow Road crossing. Please note, the whistle may be sounded if deemed necessary by the train crew for safety reasons.

The information provided is based on recent rail traffic. Variations of the above may exist on a day-to-day basis. Specific measurements may also vary significantly depending on customer needs.

Yours truly,

Josie Tomei SR/WA
Specialist Real Estate Sales & Acquisitions – Ontario

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 10:04:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA1D.te             Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 194.00 / 194.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     30 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 57.15 + 0.00) = 57.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -17.62  -1.33   0.00  -1.52   0.00  57.15
-------------------------------------------------------------------------

WHEEL (0.00 + 49.23 + 0.00) = 49.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -18.45  -1.46   0.00  -1.52   0.00  49.23
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 51.26 + 0.00) = 51.26 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -56     30   0.58  73.92 -17.62  -3.53   0.00  -1.52   0.00  51.26
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 46.99 + 0.00) = 46.99 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    30     69   0.58  73.92 -17.62  -7.80   0.00  -1.52   0.00  46.99
-------------------------------------------------------------------------

Segment Leq : 58.96 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.40 + 0.00) = 37.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -24.14  -1.33   0.00 -11.40   0.00  37.40
-------------------------------------------------------------------------

WHEEL (0.00 + 29.37 + 0.00) = 29.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -25.28  -1.46   0.00 -11.40   0.00  29.37
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 26.00 + 0.00) = 26.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -24     20   0.58  67.76 -24.14  -6.22   0.00 -11.40   0.00  26.00
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 23.81 + 0.00) = 23.81 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     49   0.58  67.76 -24.14  -8.41   0.00 -11.40   0.00  23.81
-------------------------------------------------------------------------

Segment Leq : 38.45 dBA

Total Leq All Segments: 59.00 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 58.26 + 0.00) = 58.26 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.56 -16.62  -1.17   0.00  -1.52   0.00  58.26
-------------------------------------------------------------------------

WHEEL (0.00 + 50.33 + 0.00) = 50.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.99 -17.79  -1.35   0.00  -1.52   0.00  50.33
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 51.21 + 0.00) = 51.21 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -56     30   0.50  72.82 -16.62  -3.48   0.00  -1.52   0.00  51.21
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 47.06 + 0.00) = 47.06 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    30     69   0.50  72.82 -16.62  -7.62   0.00  -1.52   0.00  47.06
-------------------------------------------------------------------------

Segment Leq : 59.83 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 38.88 + 0.00) = 38.88 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

-90	90	0.50	74.21	-22.77	-1.17	0.00	-11.40	0.00	38.88

WHEEL (0.00 + 30.33 + 0.00) = 30.33 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-24.37	-1.35	0.00	-11.40	0.00	30.33

LEFT WHISTLE (0.00 + 27.32 + 0.00) = 27.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-24	20	0.50	67.70	-22.77	-6.22	0.00	-11.40	0.00	27.32

RIGHT WHISTLE (0.00 + 25.21 + 0.00) = 25.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	49	0.50	67.70	-22.77	-8.33	0.00	-11.40	0.00	25.21

Segment Leq : 39.86 dBA

Total Leq All Segments: 59.87 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	327.90 / 327.90 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	1 / 1	
House density	50 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	221.60 / 221.60 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 23.18 + 0.00) = 23.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-22.13	-1.44	0.00	-16.47	0.00	23.18

Segment Leq : 23.18 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 41.24 + 0.00) = 41.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-19.32	-1.44	0.00	-2.52	0.00	41.24

Segment Leq : 41.24 dBA

Total Leq All Segments: 41.31 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 17.99 + 0.00) = 17.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-20.92	-1.29	0.00	-16.47	0.00	17.99

Segment Leq : 17.99 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 35.91 + 0.00) = 35.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-18.26	-1.29	0.00	-2.52	0.00	35.91

Segment Leq : 35.91 dBA

Total Leq All Segments: 35.98 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.07
(NIGHT): 59.89

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 10:05:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA1N.te             Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.4  !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 194.00 / 194.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 57.15 + 0.00) = 57.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -17.62  -1.33   0.00  -1.52   0.00  57.15
-------------------------------------------------------------------------

WHEEL (0.00 + 49.23 + 0.00) = 49.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -18.45  -1.46   0.00  -1.52   0.00  49.23
-------------------------------------------------------------------------

Segment Leq : 57.80 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.40 + 0.00) = 37.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
   -90     90   0.58  74.27 -24.14  -1.33   0.00 -11.40   0.00  37.40
-------------------------------------------------------------------------

WHEEL (0.00 + 29.37 + 0.00) = 29.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -25.28  -1.46   0.00 -11.40   0.00  29.37
-------------------------------------------------------------------------

Segment Leq : 38.03 dBA

Total Leq All Segments: 57.85 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 58.26 + 0.00) = 58.26 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.56 -16.62  -1.17   0.00  -1.52   0.00  58.26
-------------------------------------------------------------------------

WHEEL (0.00 + 50.33 + 0.00) = 50.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.99 -17.79  -1.35   0.00  -1.52   0.00  50.33
-------------------------------------------------------------------------

Segment Leq : 58.91 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 38.88 + 0.00) = 38.88 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -11.40   0.00  38.88
-------------------------------------------------------------------------

WHEEL (0.00 + 30.33 + 0.00) = 30.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -24.37  -1.35   0.00 -11.40   0.00  30.33
-------------------------------------------------------------------------

Segment Leq : 39.45 dBA

Total Leq All Segments: 58.96 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
```

```
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 327.90 / 327.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 221.60 / 221.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.18 + 0.00) = 23.18 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.13  -1.44   0.00 -16.47   0.00  23.18
-------------------------------------------------------------------------------

Segment Leq : 23.18 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 41.24 + 0.00) = 41.24 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -19.32  -1.44   0.00  -2.52   0.00  41.24
-------------------------------------------------------------------------------

Segment Leq : 41.24 dBA

Total Leq All Segments: 41.31 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.99 + 0.00) = 17.99 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.92  -1.29   0.00 -16.47   0.00  17.99
-------------------------------------------------------------------------------

Segment Leq : 17.99 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 35.91 + 0.00) = 35.91 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.26  -1.29   0.00  -2.52   0.00  35.91
-------------------------------------------------------------------------------

Segment Leq : 35.91 dBA

Total Leq All Segments: 35.98 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.94
                           (NIGHT): 58.98
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 10:05:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA2D.te             Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   6.5/4.0   !   6.5/4.0   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   2.5/0.5   !   2.5/0.5   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   4.5/0.5   !   4.5/0.5   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 205.00 / 205.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     30 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 54.07 + 0.00) = 54.07 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  76.41 -18.00  -1.33   0.00  -3.01   0.00  54.07
-------------------------------------------------------------------------

WHEEL (0.00 + 46.13 + 0.00) = 46.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  69.45 -18.85  -1.46   0.00  -3.01   0.00  46.13
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 48.10 + 0.00) = 48.10 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -54     30   0.58  72.72 -18.00  -3.61   0.00  -3.01   0.00  48.10
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 43.85 + 0.00) = 43.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    30     68   0.58  72.72 -18.00  -7.86   0.00  -3.01   0.00  43.85
-------------------------------------------------------------------------

Segment Leq : 55.86 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.40 + 0.00) = 37.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -24.14  -1.33   0.00 -11.40   0.00  37.40
-------------------------------------------------------------------------

WHEEL (0.00 + 29.37 + 0.00) = 29.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -25.28  -1.46   0.00 -11.40   0.00  29.37
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 26.00 + 0.00) = 26.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -24     20   0.58  67.76 -24.14  -6.22   0.00 -11.40   0.00  26.00
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 23.81 + 0.00) = 23.81 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     49   0.58  67.76 -24.14  -8.41   0.00 -11.40   0.00  23.81
-------------------------------------------------------------------------

Segment Leq : 38.45 dBA

Total Leq All Segments: 55.94 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 55.27 + 0.00) = 55.27 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  76.42 -16.98  -1.17   0.00  -3.01   0.00  55.27
-------------------------------------------------------------------------

WHEEL (0.00 + 47.32 + 0.00) = 47.32 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  69.85 -18.17  -1.35   0.00  -3.01   0.00  47.32
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 48.13 + 0.00) = 48.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -54     30   0.50  71.68 -16.98  -3.57   0.00  -3.01   0.00  48.13
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 44.00 + 0.00) = 44.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    30     68   0.50  71.68 -16.98  -7.69   0.00  -3.01   0.00  44.00
-------------------------------------------------------------------------

Segment Leq : 56.82 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 38.88 + 0.00) = 38.88 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

-90	90	0.50	74.21	-22.77	-1.17	0.00	-11.40	0.00	38.88	

WHEEL (0.00 + 30.33 + 0.00) = 30.33 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-24.37	-1.35	0.00	-11.40	0.00	30.33

LEFT WHISTLE (0.00 + 27.32 + 0.00) = 27.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-24	20	0.50	67.70	-22.77	-6.22	0.00	-11.40	0.00	27.32

RIGHT WHISTLE (0.00 + 25.21 + 0.00) = 25.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	49	0.50	67.70	-22.77	-8.33	0.00	-11.40	0.00	25.21

Segment Leq : 39.86 dBA

Total Leq All Segments: 56.91 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	327.80 / 327.80 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	2 / 2	
House density	50 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	236.40 / 236.40 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 23.18 + 0.00) = 23.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-22.12	-1.44	0.00	-16.47	0.00	23.18

Segment Leq : 23.18 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 39.28 + 0.00) = 39.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-19.78	-1.44	0.00	-4.00	0.00	39.28

Segment Leq : 39.28 dBA

Total Leq All Segments: 39.39 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 17.99 + 0.00) = 17.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-20.92	-1.29	0.00	-16.47	0.00	17.99

Segment Leq : 17.99 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 33.98 + 0.00) = 33.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-18.70	-1.29	0.00	-4.00	0.00	33.98

Segment Leq : 33.98 dBA

Total Leq All Segments: 34.09 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.03
(NIGHT): 56.93

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 10:05:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA2N.te             Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  13.0/8.0   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   5.0/1.0   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   9.0/1.0   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 205.00 / 205.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 54.07 + 0.00) = 54.07 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  76.41 -18.00  -1.33   0.00  -3.01   0.00  54.07
-------------------------------------------------------------------

WHEEL (0.00 + 46.13 + 0.00) = 46.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  69.45 -18.85  -1.46   0.00  -3.01   0.00  46.13
-------------------------------------------------------------------
```



```
Segment Leq : 54.72 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.40 + 0.00) = 37.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.27 -24.14  -1.33   0.00 -11.40   0.00  37.40
-------------------------------------------------------------------

WHEEL (0.00 + 29.37 + 0.00) = 29.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.51 -25.28  -1.46   0.00 -11.40   0.00  29.37
-------------------------------------------------------------------

Segment Leq : 38.03 dBA

Total Leq All Segments: 54.81 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 55.27 + 0.00) = 55.27 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  76.42 -16.98  -1.17   0.00  -3.01   0.00  55.27
-------------------------------------------------------------------

WHEEL (0.00 + 47.32 + 0.00) = 47.32 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  69.85 -18.17  -1.35   0.00  -3.01   0.00  47.32
-------------------------------------------------------------------

Segment Leq : 55.92 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 38.88 + 0.00) = 38.88 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -11.40   0.00  38.88
-------------------------------------------------------------------

WHEEL (0.00 + 30.33 + 0.00) = 30.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.45 -24.37  -1.35   0.00 -11.40   0.00  30.33
-------------------------------------------------------------------

Segment Leq : 39.45 dBA

Total Leq All Segments: 56.02 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
```

```
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 327.80 / 327.80 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 236.40 / 236.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.18 + 0.00) = 23.18 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.12  -1.44   0.00 -16.47   0.00  23.18
-------------------------------------------------------------------------------

Segment Leq : 23.18 dBA

Results segment # 2: Oxbow Dr. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 39.28 + 0.00) = 39.28 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -19.78  -1.44   0.00  -4.00   0.00  39.28
-------------------------------------------------------------------------------

Segment Leq : 39.28 dBA

Total Leq All Segments: 39.39 dBA
```



```
Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.99 + 0.00) = 17.99 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.92  -1.29   0.00 -16.47   0.00  17.99
-------------------------------------------------------------------------------

Segment Leq : 17.99 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 33.98 + 0.00) = 33.98 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.70  -1.29   0.00  -4.00   0.00  33.98
-------------------------------------------------------------------------------

Segment Leq : 33.98 dBA

Total Leq All Segments: 34.09 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.93
                           (NIGHT): 56.04
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 10:06:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA3D.te             Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   6.5/4.0   !   6.5/4.0   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   2.5/0.5   !   2.5/0.5   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   4.5/0.5   !   4.5/0.5   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 218.30 / 218.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     30 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 52.15 + 0.00) = 52.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  76.41 -18.43  -1.33   0.00  -4.50   0.00  52.15
-------------------------------------------------------------------------

WHEEL (0.00 + 44.19 + 0.00) = 44.19 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  69.45 -19.31  -1.46   0.00  -4.50   0.00  44.19
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 46.08 + 0.00) = 46.08 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -51     30   0.58  72.72 -18.43  -3.71   0.00  -4.50   0.00  46.08
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 41.85 + 0.00) = 41.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    30     67   0.58  72.72 -18.43  -7.95   0.00  -4.50   0.00  41.85
-------------------------------------------------------------------------

Segment Leq : 53.91 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.46 + 0.00) = 37.46 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -24.14  -1.33   0.00 -11.40   0.00  37.46
-------------------------------------------------------------------------

WHEEL (0.00 + 29.43 + 0.00) = 29.43 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -25.28  -1.46   0.00 -11.40   0.00  29.43
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 26.05 + 0.00) = 26.05 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -24     20   0.58  67.81 -24.14  -6.22   0.00 -11.40   0.00  26.05
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 23.87 + 0.00) = 23.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     49   0.58  67.81 -24.14  -8.41   0.00 -11.40   0.00  23.87
-------------------------------------------------------------------------

Segment Leq : 38.51 dBA

Total Leq All Segments: 54.03 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 53.37 + 0.00) = 53.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  76.42 -17.39  -1.17   0.00  -4.50   0.00  53.37
-------------------------------------------------------------------------

WHEEL (0.00 + 45.39 + 0.00) = 45.39 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  69.85 -18.61  -1.35   0.00  -4.50   0.00  45.39
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 46.13 + 0.00) = 46.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -51     30   0.50  71.68 -17.39  -3.67   0.00  -4.50   0.00  46.13
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 42.02 + 0.00) = 42.02 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    30     67   0.50  71.68 -17.39  -7.78   0.00  -4.50   0.00  42.02
-------------------------------------------------------------------------

Segment Leq : 54.90 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 38.88 + 0.00) = 38.88 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -11.40   0.00  38.88
-------------------------------------------------------------------------

WHEEL (0.00 + 30.33 + 0.00) = 30.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -24.37  -1.35   0.00 -11.40   0.00  30.33
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.32 + 0.00) = 27.32 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -24     20   0.50  67.70 -22.77  -6.22   0.00 -11.40   0.00  27.32
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 25.21 + 0.00) = 25.21 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     49   0.50  67.70 -22.77  -8.33   0.00 -11.40   0.00  25.21
-------------------------------------------------------------------------

Segment Leq : 39.86 dBA

Total Leq All Segments: 55.03 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 327.70 / 327.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 251.80 / 251.80 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.18 + 0.00) = 23.18 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.12  -1.44   0.00 -16.47   0.00  23.18
-------------------------------------------------------------------------------

Segment Leq : 23.18 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 37.34 + 0.00) = 37.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.23  -1.44   0.00  -5.50   0.00  37.34
-------------------------------------------------------------------------------

Segment Leq : 37.34 dBA

Total Leq All Segments: 37.50 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 18.00 + 0.00) = 18.00 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.92  -1.29   0.00 -16.47   0.00  18.00
-------------------------------------------------------------------------------

Segment Leq : 18.00 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 32.06 + 0.00) = 32.06 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -19.13  -1.29   0.00  -5.50   0.00  32.06
-------------------------------------------------------------------------------

Segment Leq : 32.06 dBA

Total Leq All Segments: 32.23 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.13
                           (NIGHT): 55.06
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 10:36:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA3N.te             Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  13.0/8.0   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   5.0/1.0   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   9.0/1.0   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 218.30 / 218.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 52.15 + 0.00) = 52.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  76.41 -18.43  -1.33   0.00  -4.50   0.00  52.15
-------------------------------------------------------------------------

WHEEL (0.00 + 44.19 + 0.00) = 44.19 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  69.45 -19.31  -1.46   0.00  -4.50   0.00  44.19
-------------------------------------------------------------------------

Segment Leq : 52.79 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.46 + 0.00) = 37.46 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
   -90     90   0.58  74.32 -24.14  -1.33   0.00 -11.40   0.00  37.46
-------------------------------------------------------------------------

WHEEL (0.00 + 29.43 + 0.00) = 29.43 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -25.28  -1.46   0.00 -11.40   0.00  29.43
-------------------------------------------------------------------------

Segment Leq : 38.09 dBA

Total Leq All Segments: 52.93 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 53.37 + 0.00) = 53.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  76.42 -17.39  -1.17   0.00  -4.50   0.00  53.37
-------------------------------------------------------------------------

WHEEL (0.00 + 45.39 + 0.00) = 45.39 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  69.85 -18.61  -1.35   0.00  -4.50   0.00  45.39
-------------------------------------------------------------------------

Segment Leq : 54.01 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 38.88 + 0.00) = 38.88 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -11.40   0.00  38.88
-------------------------------------------------------------------------

WHEEL (0.00 + 30.33 + 0.00) = 30.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -24.37  -1.35   0.00 -11.40   0.00  30.33
-------------------------------------------------------------------------

Segment Leq : 39.45 dBA

Total Leq All Segments: 54.16 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
```

```
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 327.70 / 327.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 2
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 251.80 / 251.80 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.18 + 0.00) = 23.18 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.12  -1.44   0.00 -16.47   0.00  23.18
-------------------------------------------------------------------------------

Segment Leq : 23.18 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 37.34 + 0.00) = 37.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.23  -1.44   0.00  -5.50   0.00  37.34
-------------------------------------------------------------------------------

Segment Leq : 37.34 dBA

Total Leq All Segments: 37.50 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 18.00 + 0.00) = 18.00 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.92  -1.29   0.00 -16.47   0.00  18.00
-------------------------------------------------------------------------------

Segment Leq : 18.00 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 33.56 + 0.00) = 33.56 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -19.13  -1.29   0.00  -4.00   0.00  33.56
-------------------------------------------------------------------------------

Segment Leq : 33.56 dBA

Total Leq All Segments: 33.68 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.06
                           (NIGHT): 54.20
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 12:57:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA19D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 247.70 / 247.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     30 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 250.20 / 250.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 46.49 + 0.00) = 46.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -19.30  -1.33   0.00 -10.48   0.00  46.49
-------------------------------------------------------------------------

WHEEL (0.00 + 38.49 + 0.00) = 38.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -20.22  -1.46   0.00 -10.48   0.00  38.49
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 40.17 + 0.00) = 40.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -46     30   0.58  73.91 -19.30  -3.96   0.00 -10.48   0.00  40.17
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 36.01 + 0.00) = 36.01 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    30     65   0.58  73.91 -19.30  -8.12   0.00 -10.48   0.00  36.01
-------------------------------------------------------------------------

Segment Leq : 48.20 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.07 + 0.00) = 42.07 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -19.37  -1.33   0.00 -11.50   0.00  42.07
-------------------------------------------------------------------------

WHEEL (0.00 + 34.27 + 0.00) = 34.27 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -20.29  -1.46   0.00 -11.50   0.00  34.27
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 32.58 + 0.00) = 32.58 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -51     20   0.58  67.76 -19.37  -4.31   0.00 -11.50   0.00  32.58
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 29.86 + 0.00) = 29.86 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     63   0.58  67.76 -19.37  -7.03   0.00 -11.50   0.00  29.86
-------------------------------------------------------------------------

Segment Leq : 43.34 dBA

Total Leq All Segments: 49.43 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 47.75 + 0.00) = 47.75 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -18.21  -1.17   0.00 -10.48   0.00  47.75
-------------------------------------------------------------------------

WHEEL (0.00 + 39.72 + 0.00) = 39.72 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -19.49  -1.35   0.00 -10.48   0.00  39.72
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 40.25 + 0.00) = 40.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -46     30   0.50  72.86 -18.21  -3.93   0.00 -10.48   0.00  40.25
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 36.21 + 0.00) = 36.21 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    30     65   0.50  72.86 -18.21  -7.96   0.00 -10.48   0.00  36.21
-------------------------------------------------------------------------

Segment Leq : 49.23 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.28 + 0.00) = 43.28 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

-90	90	0.50	74.21	-18.27	-1.17	0.00	-11.50	0.00	43.28

WHEEL (0.00 + 35.05 + 0.00) = 35.05 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-19.56	-1.35	0.00	-11.50	0.00	35.05

LEFT WHISTLE (0.00 + 33.67 + 0.00) = 33.67 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	20	0.50	67.70	-18.27	-4.27	0.00	-11.50	0.00	33.67

RIGHT WHISTLE (0.00 + 31.02 + 0.00) = 31.02 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	63	0.50	67.70	-18.27	-6.91	0.00	-11.50	0.00	31.02

Segment Leq : 44.48 dBA

Total Leq All Segments: 50.48 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	326.40 / 326.40 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	50 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	500.00 / 500.00 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 23.21 + 0.00) = 23.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-22.09	-1.44	0.00	-16.48	0.00	23.21

Segment Leq : 23.21 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 26.51 + 0.00) = 26.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-25.15	-1.44	0.00	-11.40	0.00	26.51

Segment Leq : 26.51 dBA

Total Leq All Segments: 28.18 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 18.02 + 0.00) = 18.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-20.89	-1.29	0.00	-16.48	0.00	18.02

Segment Leq : 18.02 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 21.51 + 0.00) = 21.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-23.78	-1.29	0.00	-11.40	0.00	21.51

Segment Leq : 21.51 dBA

Total Leq All Segments: 23.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 49.46
(NIGHT): 50.49

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 12:59:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA19N.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 247.70 / 247.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 250.20 / 250.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 46.49 + 0.00) = 46.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
   -90     90    0.58  77.60 -19.30  -1.33   0.00 -10.48   0.00  46.49
-------------------------------------------------------------------------

WHEEL (0.00 + 38.49 + 0.00) = 38.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -20.22  -1.46   0.00 -10.48   0.00  38.49
-------------------------------------------------------------------------

Segment Leq : 47.13 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.07 + 0.00) = 42.07 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -19.37  -1.33   0.00 -11.50   0.00  42.07
-------------------------------------------------------------------------

WHEEL (0.00 + 34.27 + 0.00) = 34.27 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -20.29  -1.46   0.00 -11.50   0.00  34.27
-------------------------------------------------------------------------

Segment Leq : 42.74 dBA

Total Leq All Segments: 48.48 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 47.75 + 0.00) = 47.75 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -18.21  -1.17   0.00 -10.48   0.00  47.75
-------------------------------------------------------------------------

WHEEL (0.00 + 39.72 + 0.00) = 39.72 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -19.49  -1.35   0.00 -10.48   0.00  39.72
-------------------------------------------------------------------------

Segment Leq : 48.38 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.28 + 0.00) = 43.28 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -18.27  -1.17   0.00 -11.50   0.00  43.28
-------------------------------------------------------------------------

WHEEL (0.00 + 35.05 + 0.00) = 35.05 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -19.56  -1.35   0.00 -11.50   0.00  35.05
-------------------------------------------------------------------------

Segment Leq : 43.89 dBA

Total Leq All Segments: 49.70 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
```

```
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 326.40 / 326.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.21 + 0.00) = 23.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.09  -1.44   0.00 -16.48   0.00  23.21
-------------------------------------------------------------------------------

Segment Leq : 23.21 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 26.51 + 0.00) = 26.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -11.40   0.00  26.51
-------------------------------------------------------------------------------

Segment Leq : 26.51 dBA

Total Leq All Segments: 28.18 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 18.02 + 0.00) = 18.02 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.89  -1.29   0.00 -16.48   0.00  18.02
-------------------------------------------------------------------------------

Segment Leq : 18.02 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.51 + 0.00) = 21.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -11.40   0.00  21.51
-------------------------------------------------------------------------------

Segment Leq : 21.51 dBA

Total Leq All Segments: 23.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 48.52
                           (NIGHT): 49.71
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 13:13:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA24D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     30 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 177.70 / 177.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.73 + 0.00) = 41.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -24.14  -1.33   0.00 -10.42   0.00  41.73
-------------------------------------------------------------------------

WHEEL (0.00 + 33.51 + 0.00) = 33.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -25.28  -1.46   0.00 -10.42   0.00  33.51
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 33.01 + 0.00) = 33.01 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -13     30   0.58  73.92 -24.14  -6.35   0.00 -10.42   0.00  33.01
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 29.84 + 0.00) = 29.84 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    30     54   0.58  73.92 -24.14  -9.53   0.00 -10.42   0.00  29.84
-------------------------------------------------------------------------

Segment Leq : 43.03 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 51.92 + 0.00) = 51.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -17.02  -1.33   0.00  -4.05   0.00  51.92
-------------------------------------------------------------------------

WHEEL (0.00 + 44.23 + 0.00) = 44.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -17.82  -1.46   0.00  -4.05   0.00  44.23
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 42.92 + 0.00) = 42.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -62     20   0.58  67.81 -17.02  -3.83   0.00  -4.05   0.00  42.92
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 40.13 + 0.00) = 40.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     69   0.58  67.81 -17.02  -6.62   0.00  -4.05   0.00  40.13
-------------------------------------------------------------------------

Segment Leq : 53.26 dBA

Total Leq All Segments: 53.65 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.21 + 0.00) = 43.21 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.56 -22.77  -1.17   0.00 -10.42   0.00  43.21
-------------------------------------------------------------------------

WHEEL (0.00 + 34.85 + 0.00) = 34.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.99 -24.37  -1.35   0.00 -10.42   0.00  34.85
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 33.30 + 0.00) = 33.30 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -13     30   0.50  72.82 -22.77  -6.34   0.00 -10.42   0.00  33.30
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 30.23 + 0.00) = 30.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    30     54   0.50  72.82 -22.77  -9.41   0.00 -10.42   0.00  30.23
-------------------------------------------------------------------------

Segment Leq : 44.34 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 53.05 + 0.00) = 53.05 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.32 -16.05  -1.17   0.00  -4.05   0.00  53.05
-------------------------------------------------------------------------

WHEEL (0.00 + 44.98 + 0.00) = 44.98 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.56 -17.18  -1.35   0.00  -4.05   0.00  44.98
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 43.95 + 0.00) = 43.95 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -62     20   0.50  67.81 -16.05  -3.77   0.00  -4.05   0.00  43.95
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 41.24 + 0.00) = 41.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     69   0.50  67.81 -16.05  -6.47   0.00  -4.05   0.00  41.24
-------------------------------------------------------------------------

Segment Leq : 54.34 dBA

Total Leq All Segments: 54.75 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 326.20 / 326.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.21 + 0.00) = 23.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.09  -1.44   0.00 -16.48   0.00  23.21
-------------------------------------------------------------------------------

Segment Leq : 23.21 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 26.51 + 0.00) = 26.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -11.40   0.00  26.51
-------------------------------------------------------------------------------

Segment Leq : 26.51 dBA

Total Leq All Segments: 28.18 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 18.02 + 0.00) = 18.02 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.89  -1.29   0.00 -16.48   0.00  18.02
-------------------------------------------------------------------------------

Segment Leq : 18.02 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.51 + 0.00) = 21.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -11.40   0.00  21.51
-------------------------------------------------------------------------------

Segment Leq : 21.51 dBA

Total Leq All Segments: 23.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.67
                           (NIGHT): 54.76
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 13:13:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA24N.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.4  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/4.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 177.70 / 177.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.73 + 0.00) = 41.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -24.14  -1.33   0.00 -10.42   0.00  41.73
-------------------------------------------------------------------

WHEEL (0.00 + 33.51 + 0.00) = 33.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -25.28  -1.46   0.00 -10.42   0.00  33.51
-------------------------------------------------------------------
```



```
Segment Leq : 42.34 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 51.92 + 0.00) = 51.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -17.02  -1.33   0.00  -4.05   0.00  51.92
-------------------------------------------------------------------

WHEEL (0.00 + 44.23 + 0.00) = 44.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -17.82  -1.46   0.00  -4.05   0.00  44.23
-------------------------------------------------------------------

Segment Leq : 52.60 dBA

Total Leq All Segments: 52.99 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.21 + 0.00) = 43.21 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.56 -22.77  -1.17   0.00 -10.42   0.00  43.21
-------------------------------------------------------------------

WHEEL (0.00 + 34.85 + 0.00) = 34.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  70.99 -24.37  -1.35   0.00 -10.42   0.00  34.85
-------------------------------------------------------------------

Segment Leq : 43.80 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 53.05 + 0.00) = 53.05 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.32 -16.05  -1.17   0.00  -4.05   0.00  53.05
-------------------------------------------------------------------

WHEEL (0.00 + 44.98 + 0.00) = 44.98 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.56 -17.18  -1.35   0.00  -4.05   0.00  44.98
-------------------------------------------------------------------

Segment Leq : 53.68 dBA

Total Leq All Segments: 54.10 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
```

```
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 326.20 / 326.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.21 + 0.00) = 23.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.09  -1.44   0.00 -16.48   0.00  23.21
-------------------------------------------------------------------------------

Segment Leq : 23.21 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 26.51 + 0.00) = 26.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -11.40   0.00  26.51
-------------------------------------------------------------------------------

Segment Leq : 26.51 dBA
```



```
Total Leq All Segments: 28.18 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 18.02 + 0.00) = 18.02 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.89  -1.29   0.00 -16.48   0.00  18.02
-------------------------------------------------------------------------------

Segment Leq : 18.02 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.51 + 0.00) = 21.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -11.40   0.00  21.51
-------------------------------------------------------------------------------

Segment Leq : 21.51 dBA

Total Leq All Segments: 23.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.01
                           (NIGHT): 54.11
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 13:09:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA25D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 499.90 / 499.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     30 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 163.60 / 163.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.73 + 0.00) = 41.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -24.14  -1.33   0.00 -10.42   0.00  41.73
-------------------------------------------------------------------------

WHEEL (0.00 + 33.51 + 0.00) = 33.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -25.28  -1.46   0.00 -10.42   0.00  33.51
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 33.02 + 0.00) = 33.02 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -13     30   0.58  73.92 -24.14  -6.35   0.00 -10.42   0.00  33.02
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 29.84 + 0.00) = 29.84 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    30     54   0.58  73.92 -24.14  -9.53   0.00 -10.42   0.00  29.84
-------------------------------------------------------------------------

Segment Leq : 43.03 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 53.98 + 0.00) = 53.98 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -16.45  -1.33   0.00  -2.56   0.00  53.98
-------------------------------------------------------------------------

WHEEL (0.00 + 46.32 + 0.00) = 46.32 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -17.23  -1.46   0.00  -2.56   0.00  46.32
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 45.06 + 0.00) = 45.06 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -64     20   0.58  67.81 -16.45  -3.74   0.00  -2.56   0.00  45.06
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 42.26 + 0.00) = 42.26 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     70   0.58  67.81 -16.45  -6.54   0.00  -2.56   0.00  42.26
-------------------------------------------------------------------------

Segment Leq : 55.34 dBA

Total Leq All Segments: 55.59 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.25 + 0.00) = 43.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -10.42   0.00  43.25
-------------------------------------------------------------------------

WHEEL (0.00 + 34.89 + 0.00) = 34.89 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.36  -1.35   0.00 -10.42   0.00  34.89
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 33.33 + 0.00) = 33.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -13     30   0.50  72.86 -22.77  -6.34   0.00 -10.42   0.00  33.33
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 30.26 + 0.00) = 30.26 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    30     54   0.50  72.86 -22.77  -9.41   0.00 -10.42   0.00  30.26
-------------------------------------------------------------------------

Segment Leq : 44.38 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 55.08 + 0.00) = 55.08 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.32 -15.51  -1.17   0.00  -2.56   0.00  55.08
-------------------------------------------------------------------------

WHEEL (0.00 + 47.04 + 0.00) = 47.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.56 -16.60  -1.35   0.00  -2.56   0.00  47.04
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 46.06 + 0.00) = 46.06 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -64     20   0.50  67.81 -15.51  -3.68   0.00  -2.56   0.00  46.06
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 43.35 + 0.00) = 43.35 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     70   0.50  67.81 -15.51  -6.39   0.00  -2.56   0.00  43.35
-------------------------------------------------------------------------

Segment Leq : 56.38 dBA

Total Leq All Segments: 56.65 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 326.00 / 326.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.21 + 0.00) = 23.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.08  -1.44   0.00 -16.48   0.00  23.21
-------------------------------------------------------------------------------

Segment Leq : 23.21 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 26.51 + 0.00) = 26.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -11.40   0.00  26.51
-------------------------------------------------------------------------------

Segment Leq : 26.51 dBA

Total Leq All Segments: 28.18 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 18.03 + 0.00) = 18.03 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.88  -1.29   0.00 -16.48   0.00  18.03
-------------------------------------------------------------------------------

Segment Leq : 18.03 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.51 + 0.00) = 21.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -11.40   0.00  21.51
-------------------------------------------------------------------------------

Segment Leq : 21.51 dBA

Total Leq All Segments: 23.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.60
                           (NIGHT): 56.65
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 13:11:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA25N.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 499.90 / 499.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/4.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 163.60 / 163.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.73 + 0.00) = 41.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -24.14  -1.33   0.00 -10.42   0.00  41.73
-------------------------------------------------------------------

WHEEL (0.00 + 33.51 + 0.00) = 33.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -25.28  -1.46   0.00 -10.42   0.00  33.51
-------------------------------------------------------------------
```



```
Segment Leq : 42.34 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 53.98 + 0.00) = 53.98 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -16.45  -1.33   0.00  -2.56   0.00  53.98
-------------------------------------------------------------------

WHEEL (0.00 + 46.32 + 0.00) = 46.32 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -17.23  -1.46   0.00  -2.56   0.00  46.32
-------------------------------------------------------------------

Segment Leq : 54.67 dBA

Total Leq All Segments: 54.92 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.25 + 0.00) = 43.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -10.42   0.00  43.25
-------------------------------------------------------------------

WHEEL (0.00 + 34.89 + 0.00) = 34.89 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  71.03 -24.36  -1.35   0.00 -10.42   0.00  34.89
-------------------------------------------------------------------

Segment Leq : 43.84 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 55.08 + 0.00) = 55.08 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.32 -15.51  -1.17   0.00  -2.56   0.00  55.08
-------------------------------------------------------------------

WHEEL (0.00 + 47.04 + 0.00) = 47.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.56 -16.60  -1.35   0.00  -2.56   0.00  47.04
-------------------------------------------------------------------

Segment Leq : 55.71 dBA

Total Leq All Segments: 55.98 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
```

```
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 326.00 / 326.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.21 + 0.00) = 23.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.08  -1.44   0.00 -16.48   0.00  23.21
-------------------------------------------------------------------------------

Segment Leq : 23.21 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 26.51 + 0.00) = 26.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -11.40   0.00  26.51
-------------------------------------------------------------------------------

Segment Leq : 26.51 dBA
```



```
Total Leq All Segments: 28.18 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 18.03 + 0.00) = 18.03 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.88  -1.29   0.00 -16.48   0.00  18.03
-------------------------------------------------------------------------------

Segment Leq : 18.03 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.51 + 0.00) = 21.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -11.40   0.00  21.51
-------------------------------------------------------------------------------

Segment Leq : 21.51 dBA

Total Leq All Segments: 23.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.93
                           (NIGHT): 55.99
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 13:24:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA26D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     35 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 148.90 / 148.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     60 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.71 + 0.00) = 41.71 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -24.14  -1.33   0.00 -10.42   0.00  41.71
-------------------------------------------------------------------------

WHEEL (0.00 + 33.48 + 0.00) = 33.48 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -25.28  -1.46   0.00 -10.42   0.00  33.48
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 32.76 + 0.00) = 32.76 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    -6     35   0.58  73.91 -24.14  -6.60   0.00 -10.42   0.00  32.76
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 29.16 + 0.00) = 29.16 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
    35     56   0.58  73.91 -24.14 -10.20   0.00 -10.42   0.00  29.16
-------------------------------------------------------------------------

Segment Leq : 42.96 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 57.14 + 0.00) = 57.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -15.80  -1.33   0.00   0.00   0.00  57.14
-------------------------------------------------------------------------

WHEEL (0.00 + 49.51 + 0.00) = 49.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -16.55  -1.46   0.00   0.00   0.00  49.51
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 49.17 + 0.00) = 49.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -44     60   0.58  67.76 -15.80  -2.79   0.00   0.00   0.00  49.17
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 39.17 + 0.00) = 39.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    60     77   0.58  67.76 -15.80 -12.79   0.00   0.00   0.00  39.17
-------------------------------------------------------------------------

Segment Leq : 58.44 dBA

Total Leq All Segments: 58.56 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.25 + 0.00) = 43.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -10.42   0.00  43.25
-------------------------------------------------------------------------

WHEEL (0.00 + 34.89 + 0.00) = 34.89 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -10.42   0.00  34.89
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 33.10 + 0.00) = 33.10 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    -6     35   0.50  72.86 -22.77  -6.58   0.00 -10.42   0.00  33.10
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 29.62 + 0.00) = 29.62 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    35     56   0.50  72.86 -22.77 -10.06   0.00 -10.42   0.00  29.62
-------------------------------------------------------------------------

Segment Leq : 44.34 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 58.14 + 0.00) = 58.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  74.21 -14.90  -1.17   0.00   0.00   0.00  58.14
```

WHEEL (0.00 + 50.15 + 0.00) = 50.15 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-15.95	-1.35	0.00	0.00	0.00	50.15

LEFT WHISTLE (0.00 + 50.07 + 0.00) = 50.07 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	60	0.50	67.70	-14.90	-2.73	0.00	0.00	0.00	50.07

RIGHT WHISTLE (0.00 + 40.41 + 0.00) = 40.41 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
60	77	0.50	67.70	-14.90	-12.39	0.00	0.00	0.00	40.41

Segment Leq : 59.38 dBA

Total Leq All Segments: 59.51 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume : 2600/289 veh/TimePeriod *
Medium truck volume : 0/0 veh/TimePeriod *
Heavy truck volume : 289/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 1581
Percentage of Annual Growth : 5.60
Number of Years of Growth : 13.00
Medium Truck % of Total Volume : 0.00
Heavy Truck % of Total Volume : 10.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 325.00 / 325.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume : 2596/288 veh/TimePeriod *
Medium truck volume : 0/0 veh/TimePeriod *
Heavy truck volume : 288/32 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2024
Percentage of Annual Growth : 3.60
Number of Years of Growth : 13.00
Medium Truck % of Total Volume : 0.00
Heavy Truck % of Total Volume : 10.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 23.23 + 0.00) = 23.23 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-22.06	-1.44	0.00	-16.48	0.00	23.23

Segment Leq : 23.23 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 26.51 + 0.00) = 26.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-25.15	-1.44	0.00	-11.40	0.00	26.51

Segment Leq : 26.51 dBA

Total Leq All Segments: 28.18 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 18.04 + 0.00) = 18.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-20.86	-1.29	0.00	-16.48	0.00	18.04

Segment Leq : 18.04 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 21.51 + 0.00) = 21.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-23.78	-1.29	0.00	-11.40	0.00	21.51

Segment Leq : 21.51 dBA

Total Leq All Segments: 23.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.57
(NIGHT): 59.51

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 13:25:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA26N.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     33 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 148.90 / 148.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.71 + 0.00) = 41.71 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
   -90     90    0.58  77.60 -24.14  -1.33   0.00 -10.42   0.00  41.71
-------------------------------------------------------------------------

WHEEL (0.00 + 33.48 + 0.00) = 33.48 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -25.28  -1.46   0.00 -10.42   0.00  33.48
-------------------------------------------------------------------------

Segment Leq : 42.32 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 57.14 + 0.00) = 57.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -15.80  -1.33   0.00   0.00   0.00  57.14
-------------------------------------------------------------------------

WHEEL (0.00 + 49.51 + 0.00) = 49.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -16.55  -1.46   0.00   0.00   0.00  49.51
-------------------------------------------------------------------------

Segment Leq : 57.83 dBA

Total Leq All Segments: 57.95 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.25 + 0.00) = 43.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -22.77  -1.17   0.00 -10.42   0.00  43.25
-------------------------------------------------------------------------

WHEEL (0.00 + 34.89 + 0.00) = 34.89 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -24.37  -1.35   0.00 -10.42   0.00  34.89
-------------------------------------------------------------------------

Segment Leq : 43.84 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 58.14 + 0.00) = 58.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -14.90  -1.17   0.00   0.00   0.00  58.14
-------------------------------------------------------------------------

WHEEL (0.00 + 50.15 + 0.00) = 50.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -15.95  -1.35   0.00   0.00   0.00  50.15
-------------------------------------------------------------------------

Segment Leq : 58.78 dBA

Total Leq All Segments: 58.92 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
```

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 325.00 / 325.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.23 + 0.00) = 23.23 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.06  -1.44   0.00 -16.48   0.00  23.23
-------------------------------------------------------------------------------

Segment Leq : 23.23 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 26.51 + 0.00) = 26.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -11.40   0.00  26.51
-------------------------------------------------------------------------------

Segment Leq : 26.51 dBA

Total Leq All Segments: 28.18 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 18.04 + 0.00) = 18.04 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -20.86  -1.29   0.00 -16.48   0.00  18.04
-------------------------------------------------------------------------------

Segment Leq : 18.04 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.51 + 0.00) = 21.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -11.40   0.00  21.51
-------------------------------------------------------------------------------

Segment Leq : 21.51 dBA

Total Leq All Segments: 23.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.96
                           (NIGHT): 58.92
```

```
STAMSON 5.0        NORMAL REPORT        Date: 04-12-2019 11:14:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA47D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 278.90 / 278.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     30 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 456.90 / 456.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.52 + 0.00) = 42.52 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -20.12  -1.33   0.00 -13.65   0.00  42.52
-------------------------------------------------------------------------

WHEEL (0.00 + 34.48 + 0.00) = 34.48 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -21.07  -1.46   0.00 -13.65   0.00  34.48
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 35.91 + 0.00) = 35.91 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -41     30   0.58  73.92 -20.12  -4.24   0.00 -13.65   0.00  35.91
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 31.84 + 0.00) = 31.84 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    30     64   0.58  73.92 -20.12  -8.31   0.00 -13.65   0.00  31.84
-------------------------------------------------------------------------

Segment Leq : 44.17 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.49 + 0.00) = 33.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -23.52  -1.33   0.00 -15.99   0.00  33.49
-------------------------------------------------------------------------

WHEEL (0.00 + 25.49 + 0.00) = 25.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -24.63  -1.46   0.00 -15.99   0.00  25.49
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 22.41 + 0.00) = 22.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -27     20   0.58  67.81 -23.52  -5.90   0.00 -15.99   0.00  22.41
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 20.12 + 0.00) = 20.12 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     51   0.58  67.81 -23.52  -8.19   0.00 -15.99   0.00  20.12
-------------------------------------------------------------------------

Segment Leq : 34.57 dBA

Total Leq All Segments: 44.62 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.77 + 0.00) = 43.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.56 -18.98  -1.17   0.00 -13.65   0.00  43.77
-------------------------------------------------------------------------

WHEEL (0.00 + 35.68 + 0.00) = 35.68 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.99 -20.31  -1.35   0.00 -13.65   0.00  35.68
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 35.98 + 0.00) = 35.98 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -41     30   0.50  72.82 -18.98  -4.21   0.00 -13.65   0.00  35.98
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 32.04 + 0.00) = 32.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    30     64   0.50  72.82 -18.98  -8.16   0.00 -13.65   0.00  32.04
-------------------------------------------------------------------------

Segment Leq : 45.20 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.99 + 0.00) = 34.99 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

-90	90	0.50	74.32	-22.18	-1.17	0.00	-15.99	0.00	34.99

WHEEL (0.00 + 26.48 + 0.00) = 26.48 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.56	-23.74	-1.35	0.00	-15.99	0.00	26.48

LEFT WHISTLE (0.00 + 23.76 + 0.00) = 23.76 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-27	20	0.50	67.81	-22.18	-5.89	0.00	-15.99	0.00	23.76

RIGHT WHISTLE (0.00 + 21.54 + 0.00) = 21.54 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	51	0.50	67.81	-22.18	-8.10	0.00	-15.99	0.00	21.54

Segment Leq : 36.00 dBA

Total Leq All Segments: 45.69 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	265.50 / 265.50 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	5 / 5	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	281.20 / 281.20 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 24.46 + 0.00) = 24.46 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-20.61	-1.44	0.00	-16.70	0.00	24.46

Segment Leq : 24.46 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 28.40 + 0.00) = 28.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-21.02	-1.44	0.00	-13.65	0.00	28.40

Segment Leq : 28.40 dBA

Total Leq All Segments: 29.87 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 19.19 + 0.00) = 19.19 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-19.49	-1.29	0.00	-16.70	0.00	19.19

Segment Leq : 19.19 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 23.16 + 0.00) = 23.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-19.88	-1.29	0.00	-13.65	0.00	23.16

Segment Leq : 23.16 dBA

Total Leq All Segments: 24.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 44.76
(NIGHT): 45.73

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 14:57:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA47N.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.4  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 278.90 / 278.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/4.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 456.90 / 456.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.52 + 0.00) = 42.52 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -20.12  -1.33   0.00 -13.65   0.00  42.52
-------------------------------------------------------------------

WHEEL (0.00 + 34.48 + 0.00) = 34.48 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -21.07  -1.46   0.00 -13.65   0.00  34.48
-------------------------------------------------------------------
```



```
Segment Leq : 43.15 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.49 + 0.00) = 33.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -23.52  -1.33   0.00 -15.99   0.00  33.49
-------------------------------------------------------------------

WHEEL (0.00 + 25.49 + 0.00) = 25.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -24.63  -1.46   0.00 -15.99   0.00  25.49
-------------------------------------------------------------------

Segment Leq : 34.13 dBA

Total Leq All Segments: 43.66 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.77 + 0.00) = 43.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.56 -18.98  -1.17   0.00 -13.65   0.00  43.77
-------------------------------------------------------------------

WHEEL (0.00 + 35.68 + 0.00) = 35.68 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  70.99 -20.31  -1.35   0.00 -13.65   0.00  35.68
-------------------------------------------------------------------

Segment Leq : 44.40 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.99 + 0.00) = 34.99 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.32 -22.18  -1.17   0.00 -15.99   0.00  34.99
-------------------------------------------------------------------

WHEEL (0.00 + 26.48 + 0.00) = 26.48 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.56 -23.74  -1.35   0.00 -15.99   0.00  26.48
-------------------------------------------------------------------

Segment Leq : 35.56 dBA

Total Leq All Segments: 44.93 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
```

```
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 265.50 / 265.50 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 281.20 / 281.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 24.46 + 0.00) = 24.46 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -20.61  -1.44   0.00 -16.70   0.00  24.46
-------------------------------------------------------------------------------

Segment Leq : 24.46 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 28.40 + 0.00) = 28.40 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -21.02  -1.44   0.00 -13.65   0.00  28.40
-------------------------------------------------------------------------------

Segment Leq : 28.40 dBA
```



```
Total Leq All Segments: 29.87 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 19.19 + 0.00) = 19.19 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -19.49  -1.29   0.00 -16.70   0.00  19.19
-------------------------------------------------------------------------------

Segment Leq : 19.19 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.16 + 0.00) = 23.16 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -19.88  -1.29   0.00 -13.65   0.00  23.16
-------------------------------------------------------------------------------

Segment Leq : 23.16 dBA

Total Leq All Segments: 24.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 43.84
                           (NIGHT): 44.97
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 15:20:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA48D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 266.90 / 266.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     30 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 470.70 / 470.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 44.27 + 0.00) = 44.27 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -19.82  -1.33   0.00 -12.20   0.00  44.27
-------------------------------------------------------------------------

WHEEL (0.00 + 36.25 + 0.00) = 36.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -20.75  -1.46   0.00 -12.20   0.00  36.25
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 37.78 + 0.00) = 37.78 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -43     30   0.58  73.92 -19.82  -4.13   0.00 -12.20   0.00  37.78
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 33.67 + 0.00) = 33.67 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    30     64   0.58  73.92 -19.82  -8.24   0.00 -12.20   0.00  33.67
-------------------------------------------------------------------------

Segment Leq : 45.94 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.34 + 0.00) = 33.34 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -23.72  -1.33   0.00 -15.93   0.00  33.34
-------------------------------------------------------------------------

WHEEL (0.00 + 25.33 + 0.00) = 25.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -24.84  -1.46   0.00 -15.93   0.00  25.33
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 22.15 + 0.00) = 22.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -26     20   0.58  67.81 -23.72  -6.01   0.00 -15.93   0.00  22.15
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 19.90 + 0.00) = 19.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     51   0.58  67.81 -23.72  -8.26   0.00 -15.93   0.00  19.90
-------------------------------------------------------------------------

Segment Leq : 34.41 dBA

Total Leq All Segments: 46.24 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 45.51 + 0.00) = 45.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.56 -18.69  -1.17   0.00 -12.20   0.00  45.51
-------------------------------------------------------------------------

WHEEL (0.00 + 37.44 + 0.00) = 37.44 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.99 -20.00  -1.35   0.00 -12.20   0.00  37.44
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 37.83 + 0.00) = 37.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -43     30   0.50  72.82 -18.69  -4.10   0.00 -12.20   0.00  37.83
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 33.85 + 0.00) = 33.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    30     64   0.50  72.82 -18.69  -8.08   0.00 -12.20   0.00  33.85
-------------------------------------------------------------------------

Segment Leq : 46.96 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.85 + 0.00) = 34.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.32 -22.37  -1.17   0.00 -15.93   0.00  34.85
-------------------------------------------------------------------------

WHEEL (0.00 + 26.33 + 0.00) = 26.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.56 -23.95  -1.35   0.00 -15.93   0.00  26.33
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 23.51 + 0.00) = 23.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -26     20   0.50  67.81 -22.37  -5.99   0.00 -15.93   0.00  23.51
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 21.33 + 0.00) = 21.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     51   0.50  67.81 -22.37  -8.18   0.00 -15.93   0.00  21.33
-------------------------------------------------------------------------

Segment Leq : 35.85 dBA

Total Leq All Segments: 47.28 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 265.60 / 265.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 266.40 / 266.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 24.46 + 0.00) = 24.46 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -20.61  -1.44   0.00 -16.70   0.00  24.46
-------------------------------------------------------------------------------

Segment Leq : 24.46 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 30.23 + 0.00) = 30.23 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.64  -1.44   0.00 -12.20   0.00  30.23
-------------------------------------------------------------------------------

Segment Leq : 30.23 dBA

Total Leq All Segments: 31.25 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 19.19 + 0.00) = 19.19 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -19.49  -1.29   0.00 -16.70   0.00  19.19
-------------------------------------------------------------------------------

Segment Leq : 19.19 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 24.98 + 0.00) = 24.98 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -19.51  -1.29   0.00 -12.20   0.00  24.98
-------------------------------------------------------------------------------

Segment Leq : 24.98 dBA

Total Leq All Segments: 26.00 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 46.37
                           (NIGHT): 47.32
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 15:20:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA48N.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.4  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 266.90 / 266.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/4.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 470.70 / 470.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 44.27 + 0.00) = 44.27 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -19.82  -1.33   0.00 -12.20   0.00  44.27
-------------------------------------------------------------------

WHEEL (0.00 + 36.25 + 0.00) = 36.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -20.75  -1.46   0.00 -12.20   0.00  36.25
-------------------------------------------------------------------
```



```
Segment Leq : 44.91 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.34 + 0.00) = 33.34 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -23.72  -1.33   0.00 -15.93   0.00  33.34
-------------------------------------------------------------------

WHEEL (0.00 + 25.33 + 0.00) = 25.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -24.84  -1.46   0.00 -15.93   0.00  25.33
-------------------------------------------------------------------

Segment Leq : 33.98 dBA

Total Leq All Segments: 45.25 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 45.51 + 0.00) = 45.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.56 -18.69  -1.17   0.00 -12.20   0.00  45.51
-------------------------------------------------------------------

WHEEL (0.00 + 37.44 + 0.00) = 37.44 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  70.99 -20.00  -1.35   0.00 -12.20   0.00  37.44
-------------------------------------------------------------------

Segment Leq : 46.14 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.85 + 0.00) = 34.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.32 -22.37  -1.17   0.00 -15.93   0.00  34.85
-------------------------------------------------------------------

WHEEL (0.00 + 26.33 + 0.00) = 26.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.56 -23.95  -1.35   0.00 -15.93   0.00  26.33
-------------------------------------------------------------------

Segment Leq : 35.42 dBA

Total Leq All Segments: 46.49 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
```

```
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 265.60 / 265.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 266.40 / 266.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 24.46 + 0.00) = 24.46 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -20.61  -1.44   0.00 -16.70   0.00  24.46
-------------------------------------------------------------------------------

Segment Leq : 24.46 dBA

Results segment # 2: Oxbow Dr. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 30.23 + 0.00) = 30.23 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.64  -1.44   0.00 -12.20   0.00  30.23
-------------------------------------------------------------------------------

Segment Leq : 30.23 dBA
```



```
Total Leq All Segments: 31.25 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 19.19 + 0.00) = 19.19 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -19.49  -1.29   0.00 -16.70   0.00  19.19
-------------------------------------------------------------------------------

Segment Leq : 19.19 dBA

Results segment # 2: Oxbow Dr. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 24.98 + 0.00) = 24.98 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -19.51  -1.29   0.00 -12.20   0.00  24.98
-------------------------------------------------------------------------------

Segment Leq : 24.98 dBA

Total Leq All Segments: 26.00 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 45.42
                           (NIGHT): 46.53
```

```
STAMSON 5.0        COMPREHENSIVE REPORT        Date: 28-11-2019 13:56:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA71D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 491.20 / 491.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     25 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 212.60 / 212.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     55 deg   Track 1
Reference angle           :   0.00

Train # 1: Freight, Segment # 1: CN Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 35.14 + 0.00) = 35.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  76.38 -24.02  -1.33   0.00 -15.90   0.00  35.14
-------------------------------------------------------------------------

WHEEL (0.00 + 27.46 + 0.00) = 27.46 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  69.97 -25.15  -1.46   0.00 -15.90   0.00  27.46
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 25.03 + 0.00) = 25.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -19     25   0.58  71.11 -24.02  -6.17   0.00 -15.90   0.00  25.03
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 22.31 + 0.00) = 22.31 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    25     52   0.58  71.11 -24.02  -8.89   0.00 -15.90   0.00  22.31
-------------------------------------------------------------------------

Segment Leq : 36.35 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)
--------------------------------------------------

LOCOMOTIVE (0.00 + 26.69 + 0.00) = 26.69 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  67.94 -24.02  -1.33   0.00 -15.90   0.00  26.69
-------------------------------------------------------------------------

WHEEL (0.00 + 16.36 + 0.00) = 16.36 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  58.87 -25.15  -1.46   0.00 -15.90   0.00  16.36
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 20.90 + 0.00) = 20.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -19     25   0.58  66.98 -24.02  -6.17   0.00 -15.90   0.00  20.90
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 18.17 + 0.00) = 18.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    25     52   0.58  66.98 -24.02  -8.89   0.00 -15.90   0.00  18.17
-------------------------------------------------------------------------

Segment Leq : 28.44 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)
------------------------------------------------

LOCOMOTIVE (0.00 + 27.69 + 0.00) = 27.69 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  68.93 -24.02  -1.33   0.00 -15.90   0.00  27.69
-------------------------------------------------------------------------

WHEEL (0.00 + 17.00 + 0.00) = 17.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  59.51 -25.15  -1.46   0.00 -15.90   0.00  17.00
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 22.18 + 0.00) = 22.18 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -19     25   0.58  68.26 -24.02  -6.17   0.00 -15.90   0.00  22.18
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 19.46 + 0.00) = 19.46 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    25     52   0.58  68.26 -24.02  -8.89   0.00 -15.90   0.00  19.46
-------------------------------------------------------------------------

Segment Leq : 29.50 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 40.76 + 0.00) = 40.76 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -18.25  -1.33   0.00 -13.98   0.00  40.76
-------------------------------------------------------------------------
```

WHEEL (0.00 + 33.01 + 0.00) = 33.01 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	67.56	-19.11	-1.46	0.00	-13.98	0.00	33.01

LEFT WHISTLE (0.00 + 31.72 + 0.00) = 31.72 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-24	55	0.58	67.81	-18.25	-3.86	0.00	-13.98	0.00	31.72

RIGHT WHISTLE (0.00 + 23.49 + 0.00) = 23.49 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	73	0.58	67.81	-18.25	-12.09	0.00	-13.98	0.00	23.49

Segment Leq : 41.94 dBA

Total Leq All Segments: 43.33 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 37.56 + 0.00) = 37.56 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	77.28	-22.65	-1.17	0.00	-15.90	0.00	37.56

WHEEL (0.00 + 29.36 + 0.00) = 29.36 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	70.86	-24.24	-1.35	0.00	-15.90	0.00	29.36

LEFT WHISTLE (0.00 + 27.30 + 0.00) = 27.30 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-19	25	0.50	72.01	-22.65	-6.16	0.00	-15.90	0.00	27.30

RIGHT WHISTLE (0.00 + 24.66 + 0.00) = 24.66 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
25	52	0.50	72.01	-22.65	-8.79	0.00	-15.90	0.00	24.66

Segment Leq : 38.69 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 24.17 + 0.00) = 24.17 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.89	-22.65	-1.17	0.00	-15.90	0.00	24.17

WHEEL (0.00 + 13.33 + 0.00) = 13.33 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.83	-24.24	-1.35	0.00	-15.90	0.00	13.33

LEFT WHISTLE (0.00 + 18.22 + 0.00) = 18.22 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-19	25	0.50	62.93	-22.65	-6.16	0.00	-15.90	0.00	18.22

RIGHT WHISTLE (0.00 + 15.59 + 0.00) = 15.59 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
25	52	0.50	62.93	-22.65	-8.79	0.00	-15.90	0.00	15.59

Segment Leq : 25.86 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 22.65 + 0.00) = 22.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	62.36	-22.65	-1.17	0.00	-15.90	0.00	22.65

WHEEL (0.00 + 11.44 + 0.00) = 11.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.94	-24.24	-1.35	0.00	-15.90	0.00	11.44

LEFT WHISTLE (0.00 + 16.99 + 0.00) = 16.99 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-19	25	0.50	61.69	-22.65	-6.16	0.00	-15.90	0.00	16.99

RIGHT WHISTLE (0.00 + 14.35 + 0.00) = 14.35 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
25	52	0.50	61.69	-22.65	-8.79	0.00	-15.90	0.00	14.35

Segment Leq : 24.40 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 41.96 + 0.00) = 41.96 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.32	-17.21	-1.17	0.00	-13.98	0.00	41.96

WHEEL (0.00 + 33.80 + 0.00) = 33.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.56	-18.42	-1.35	0.00	-13.98	0.00	33.80

LEFT WHISTLE (0.00 + 32.80 + 0.00) = 32.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-24	55	0.50	67.81	-17.21	-3.82	0.00	-13.98	0.00	32.80

RIGHT WHISTLE (0.00 + 24.85 + 0.00) = 24.85 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	73	0.50	67.81	-17.21	-11.76	0.00	-13.98	0.00	24.85

Segment Leq : 43.08 dBA

Total Leq All Segments: 44.53 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume : 2600/289 veh/TimePeriod *

```
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 240.40 / 240.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Segment # 1: Komoka Rd. (day)
-----------------------------

Source height = 1.78 m

ROAD (0.00 + 25.08 + 0.00) = 25.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -19.90  -1.44   0.00 -16.80   0.00  25.08
-------------------------------------------------------------------------------

Segment Leq : 25.08 dBA

Segment # 2: Oxbow Dr. (day)
----------------------------
```



```
Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
-------------------------------------------------------------------------------

Segment Leq : 22.01 dBA

Total Leq All Segments: 26.82 dBA

Segment # 1: Komoka Rd. (night)
-------------------------------

Source height = 1.78 m

ROAD (0.00 + 19.77 + 0.00) = 19.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -18.82  -1.29   0.00 -16.80   0.00  19.77
-------------------------------------------------------------------------------

Segment Leq : 19.77 dBA

Segment # 2: Oxbow Dr. (night)
------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
-------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 21.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 43.43
                           (NIGHT): 44.55
```

STAMSON 5.0 COMPREHENSIVE REPORT Date: 28-11-2019 13:56:34
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA71N.te Time Period: Day/Night 16/8 hours
Description:

Rail data, segment # 1: CN Rail (day/night)

Train Type	Trains	Speed (km/h)	# loc/Train	# Cars/Train	Eng type	Cont weld
* 1. Freight	17.1/10.5	97.0	4.0	140.0	Diesel	Yes
* 2. Way Freight	6.6/1.3	97.0	4.0	25.0	Diesel	Yes
* 3. Passenger	11.8/1.3	129.0	2.0	10.0	Diesel	Yes

* The identified number of trains have been adjusted for
future growth using the following parameters:

Train type: No	Name	Unadj. Trains	Annual % Increase	Years of Growth
1.	Freight	13.0/8.0	2.50	11.00
2.	Way Freight	5.0/1.0	2.50	11.00
3.	Passenger	9.0/1.0	2.50	11.00

Data for Segment # 1: CN Rail (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	491.20 / 491.20 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Rail data, segment # 2: CP Rail (day/night)

Train Type	Trains	Speed (km/h)	# loc/Train	# Cars/Train	Eng type	Cont weld
1. Freight	8.0/4.0	97.0	4.0	173.0	Diesel	Yes

Data for Segment # 2: CP Rail (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	5 / 5	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	212.60 / 212.60 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
No Whistle		
Reference angle	0.00	

Train # 1: Freight, Segment # 1: CN Rail (day)

LOCOMOTIVE (0.00 + 35.14 + 0.00) = 35.14 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.58	76.38	-24.02	-1.33	0.00	-15.90	0.00	35.14

WHEEL (0.00 + 27.46 + 0.00) = 27.46 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	69.97	-25.15	-1.46	0.00	-15.90	0.00	27.46

Segment Leq : 35.82 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)

LOCOMOTIVE (0.00 + 26.69 + 0.00) = 26.69 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.58	67.94	-24.02	-1.33	0.00	-15.90	0.00	26.69

WHEEL (0.00 + 16.36 + 0.00) = 16.36 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	58.87	-25.15	-1.46	0.00	-15.90	0.00	16.36

Segment Leq : 27.07 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)

LOCOMOTIVE (0.00 + 27.69 + 0.00) = 27.69 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.58	68.93	-24.02	-1.33	0.00	-15.90	0.00	27.69

WHEEL (0.00 + 17.00 + 0.00) = 17.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	59.51	-25.15	-1.46	0.00	-15.90	0.00	17.00

Segment Leq : 28.05 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)

LOCOMOTIVE (0.00 + 40.76 + 0.00) = 40.76 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.58	74.32	-18.25	-1.33	0.00	-13.98	0.00	40.76

WHEEL (0.00 + 33.01 + 0.00) = 33.01 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	67.56	-19.11	-1.46	0.00	-13.98	0.00	33.01

Segment Leq : 41.43 dBA

Total Leq All Segments: 42.76 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 37.56 + 0.00) = 37.56 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	77.28	-22.65	-1.17	0.00	-15.90	0.00	37.56

WHEEL (0.00 + 29.36 + 0.00) = 29.36 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	70.86	-24.24	-1.35	0.00	-15.90	0.00	29.36

Segment Leq : 38.17 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 24.17 + 0.00) = 24.17 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.89	-22.65	-1.17	0.00	-15.90	0.00	24.17

WHEEL (0.00 + 13.33 + 0.00) = 13.33 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.83	-24.24	-1.35	0.00	-15.90	0.00	13.33

Segment Leq : 24.51 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 22.65 + 0.00) = 22.65 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	62.36	-22.65	-1.17	0.00	-15.90	0.00	22.65

WHEEL (0.00 + 11.44 + 0.00) = 11.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.94	-24.24	-1.35	0.00	-15.90	0.00	11.44

Segment Leq : 22.97 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 41.96 + 0.00) = 41.96 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.32	-17.21	-1.17	0.00	-13.98	0.00	41.96

WHEEL (0.00 + 33.80 + 0.00) = 33.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.56	-18.42	-1.35	0.00	-13.98	0.00	33.80

Segment Leq : 42.58 dBA

Total Leq All Segments: 44.01 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	240.40 / 240.40 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	500.00 / 500.00 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 25.08 + 0.00) = 25.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-19.90	-1.44	0.00	-16.80	0.00	25.08

Segment Leq : 25.08 dBA

Segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-25.15	-1.44	0.00	-15.90	0.00	22.01

Segment Leq : 22.01 dBA

Total Leq All Segments: 26.82 dBA

Segment # 1: Komoka Rd. (night)

```
--------------------------------

Source height = 1.78 m

ROAD (0.00 + 19.77 + 0.00) = 19.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -18.82  -1.29   0.00 -16.80   0.00  19.77
-------------------------------------------------------------------------------

Segment Leq : 19.77 dBA

Segment # 2: Oxbow Dr. (night)
--------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
-------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 21.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 42.87
                           (NIGHT): 44.03
```

```
STAMSON 5.0        COMPREHENSIVE REPORT        Date: 28-11-2019 13:49:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA72D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     25 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 198.10 / 198.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     55 deg   Track 1
Reference angle           :   0.00

Train # 1: Freight, Segment # 1: CN Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 35.02 + 0.00) = 35.02 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  76.38 -24.14  -1.33   0.00 -15.90   0.00  35.02
-------------------------------------------------------------------

WHEEL (0.00 + 27.33 + 0.00) = 27.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  69.97 -25.28  -1.46   0.00 -15.90   0.00  27.33
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 24.84 + 0.00) = 24.84 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -18     25   0.58  71.11 -24.14  -6.24   0.00 -15.90   0.00  24.84
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 22.14 + 0.00) = 22.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------
    25     52   0.58  71.11 -24.14  -8.93   0.00 -15.90   0.00  22.14
-------------------------------------------------------------------

Segment Leq : 36.22 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)
--------------------------------------------------

LOCOMOTIVE (0.00 + 26.57 + 0.00) = 26.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  67.94 -24.14  -1.33   0.00 -15.90   0.00  26.57
-------------------------------------------------------------------

WHEEL (0.00 + 16.24 + 0.00) = 16.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  58.87 -25.28  -1.46   0.00 -15.90   0.00  16.24
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 20.70 + 0.00) = 20.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -18     25   0.58  66.98 -24.14  -6.24   0.00 -15.90   0.00  20.70
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 18.01 + 0.00) = 18.01 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    25     52   0.58  66.98 -24.14  -8.93   0.00 -15.90   0.00  18.01
-------------------------------------------------------------------

Segment Leq : 28.30 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)
------------------------------------------------

LOCOMOTIVE (0.00 + 27.57 + 0.00) = 27.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  68.93 -24.14  -1.33   0.00 -15.90   0.00  27.57
-------------------------------------------------------------------

WHEEL (0.00 + 16.87 + 0.00) = 16.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  59.51 -25.28  -1.46   0.00 -15.90   0.00  16.87
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.99 + 0.00) = 21.99 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -18     25   0.58  68.26 -24.14  -6.24   0.00 -15.90   0.00  21.99
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 19.29 + 0.00) = 19.29 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    25     52   0.58  68.26 -24.14  -8.93   0.00 -15.90   0.00  19.29
-------------------------------------------------------------------

Segment Leq : 29.36 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 42.65 + 0.00) = 42.65 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -17.76  -1.33   0.00 -12.58   0.00  42.65
-------------------------------------------------------------------
```

WHEEL (0.00 + 34.92 + 0.00) = 34.92 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	67.56	-18.61	-1.46	0.00	-12.58	0.00	34.92

LEFT WHISTLE (0.00 + 33.93 + 0.00) = 33.93 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	55	0.58	67.81	-17.76	-3.54	0.00	-12.58	0.00	33.93

RIGHT WHISTLE (0.00 + 25.50 + 0.00) = 25.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	74	0.58	67.81	-17.76	-11.97	0.00	-12.58	0.00	25.50

Segment Leq : 43.86 dBA

Total Leq All Segments: 44.78 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 37.44 + 0.00) = 37.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	77.28	-22.77	-1.17	0.00	-15.90	0.00	37.44

WHEEL (0.00 + 29.24 + 0.00) = 29.24 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	70.86	-24.37	-1.35	0.00	-15.90	0.00	29.24

LEFT WHISTLE (0.00 + 27.11 + 0.00) = 27.11 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	25	0.50	72.01	-22.77	-6.23	0.00	-15.90	0.00	27.11

RIGHT WHISTLE (0.00 + 24.50 + 0.00) = 24.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
25	52	0.50	72.01	-22.77	-8.84	0.00	-15.90	0.00	24.50

Segment Leq : 38.56 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 24.06 + 0.00) = 24.06 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.89	-22.77	-1.17	0.00	-15.90	0.00	24.06

WHEEL (0.00 + 13.21 + 0.00) = 13.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.83	-24.37	-1.35	0.00	-15.90	0.00	13.21

LEFT WHISTLE (0.00 + 18.04 + 0.00) = 18.04 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	25	0.50	62.93	-22.77	-6.23	0.00	-15.90	0.00	18.04

RIGHT WHISTLE (0.00 + 15.43 + 0.00) = 15.43 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
25	52	0.50	62.93	-22.77	-8.84	0.00	-15.90	0.00	15.43

Segment Leq : 25.73 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 22.53 + 0.00) = 22.53 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	62.36	-22.77	-1.17	0.00	-15.90	0.00	22.53

WHEEL (0.00 + 11.32 + 0.00) = 11.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.94	-24.37	-1.35	0.00	-15.90	0.00	11.32

LEFT WHISTLE (0.00 + 16.80 + 0.00) = 16.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	25	0.50	61.69	-22.77	-6.23	0.00	-15.90	0.00	16.80

RIGHT WHISTLE (0.00 + 14.19 + 0.00) = 14.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
25	52	0.50	61.69	-22.77	-8.84	0.00	-15.90	0.00	14.19

Segment Leq : 24.26 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 43.82 + 0.00) = 43.82 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.32	-16.76	-1.17	0.00	-12.58	0.00	43.82

WHEEL (0.00 + 35.70 + 0.00) = 35.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.56	-17.93	-1.35	0.00	-12.58	0.00	35.70

LEFT WHISTLE (0.00 + 34.99 + 0.00) = 34.99 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-31	55	0.50	67.81	-16.76	-3.49	0.00	-12.58	0.00	34.99

RIGHT WHISTLE (0.00 + 26.84 + 0.00) = 26.84 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	74	0.50	67.81	-16.76	-11.64	0.00	-12.58	0.00	26.84

Segment Leq : 44.98 dBA

Total Leq All Segments: 45.94 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume : 2600/289 veh/TimePeriod *

```
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 240.30 / 240.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Segment # 1: Komoka Rd. (day)
-----------------------------

Source height = 1.78 m

ROAD (0.00 + 25.08 + 0.00) = 25.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -19.90  -1.44   0.00 -16.80   0.00  25.08
-------------------------------------------------------------------------------

Segment Leq : 25.08 dBA

Segment # 2: Oxbow Dr. (day)
----------------------------
```



```
Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
-------------------------------------------------------------------------------

Segment Leq : 22.01 dBA

Total Leq All Segments: 26.82 dBA

Segment # 1: Komoka Rd. (night)
-------------------------------

Source height = 1.78 m

ROAD (0.00 + 19.77 + 0.00) = 19.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -18.81  -1.29   0.00 -16.80   0.00  19.77
-------------------------------------------------------------------------------

Segment Leq : 19.77 dBA

Segment # 2: Oxbow Dr. (night)
------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
-------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 21.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 44.85
                           (NIGHT): 45.96
```

```
STAMSON 5.0        COMPREHENSIVE REPORT        Date: 28-11-2019 13:51:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA72N.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/4.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 198.10 / 198.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Train # 1: Freight, Segment # 1: CN Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 35.02 + 0.00) = 35.02 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  76.38 -24.14  -1.33   0.00 -15.90   0.00  35.02
-------------------------------------------------------------------------

WHEEL (0.00 + 27.33 + 0.00) = 27.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  69.97 -25.28  -1.46   0.00 -15.90   0.00  27.33
```



```
-------------------------------------------------------------------------

Segment Leq : 35.70 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)
--------------------------------------------------

LOCOMOTIVE (0.00 + 26.57 + 0.00) = 26.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  67.94 -24.14  -1.33   0.00 -15.90   0.00  26.57
-------------------------------------------------------------------------

WHEEL (0.00 + 16.24 + 0.00) = 16.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  58.87 -25.28  -1.46   0.00 -15.90   0.00  16.24
-------------------------------------------------------------------------

Segment Leq : 26.95 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)
------------------------------------------------

LOCOMOTIVE (0.00 + 27.57 + 0.00) = 27.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  68.93 -24.14  -1.33   0.00 -15.90   0.00  27.57
-------------------------------------------------------------------------

WHEEL (0.00 + 16.87 + 0.00) = 16.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  59.51 -25.28  -1.46   0.00 -15.90   0.00  16.87
-------------------------------------------------------------------------

Segment Leq : 27.92 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 42.65 + 0.00) = 42.65 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -17.76  -1.33   0.00 -12.58   0.00  42.65
-------------------------------------------------------------------------

WHEEL (0.00 + 34.92 + 0.00) = 34.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -18.61  -1.46   0.00 -12.58   0.00  34.92
-------------------------------------------------------------------------

Segment Leq : 43.33 dBA

Total Leq All Segments: 44.21 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)
------------------------------------------------

LOCOMOTIVE (0.00 + 37.44 + 0.00) = 37.44 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.28 -22.77  -1.17   0.00 -15.90   0.00  37.44
-------------------------------------------------------------------------

WHEEL (0.00 + 29.24 + 0.00) = 29.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.86 -24.37  -1.35   0.00 -15.90   0.00  29.24
-------------------------------------------------------------------------
```

Segment Leq : 38.05 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 24.06 + 0.00) = 24.06 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.89	-22.77	-1.17	0.00	-15.90	0.00	24.06

WHEEL (0.00 + 13.21 + 0.00) = 13.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.83	-24.37	-1.35	0.00	-15.90	0.00	13.21

Segment Leq : 24.40 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 22.53 + 0.00) = 22.53 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	62.36	-22.77	-1.17	0.00	-15.90	0.00	22.53

WHEEL (0.00 + 11.32 + 0.00) = 11.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.94	-24.37	-1.35	0.00	-15.90	0.00	11.32

Segment Leq : 22.85 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 43.82 + 0.00) = 43.82 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.32	-16.76	-1.17	0.00	-12.58	0.00	43.82

WHEEL (0.00 + 35.70 + 0.00) = 35.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.56	-17.93	-1.35	0.00	-12.58	0.00	35.70

Segment Leq : 44.44 dBA

Total Leq All Segments: 45.40 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume : 2600/289 veh/TimePeriod *
Medium truck volume : 0/0 veh/TimePeriod *
Heavy truck volume : 289/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 1581
Percentage of Annual Growth : 5.60
Number of Years of Growth : 13.00
Medium Truck % of Total Volume : 0.00
Heavy Truck % of Total Volume : 10.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 240.30 / 240.30 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume : 2596/288 veh/TimePeriod *
Medium truck volume : 0/0 veh/TimePeriod *
Heavy truck volume : 288/32 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 2024
Percentage of Annual Growth : 3.60
Number of Years of Growth : 13.00
Medium Truck % of Total Volume : 0.00
Heavy Truck % of Total Volume : 10.00
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 95 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 500.00 / 500.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 25.08 + 0.00) = 25.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-19.90	-1.44	0.00	-16.80	0.00	25.08

Segment Leq : 25.08 dBA

Segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-25.15	-1.44	0.00	-15.90	0.00	22.01

Segment Leq : 22.01 dBA

Total Leq All Segments: 26.82 dBA

Segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 19.77 + 0.00) = 19.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-18.81	-1.29	0.00	-16.80	0.00	19.77

Segment Leq : 19.77 dBA

Segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-23.78	-1.29	0.00	-15.90	0.00	17.01

Segment Leq : 17.01 dBA

Total Leq All Segments: 21.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 44.29
(NIGHT): 45.41

```
STAMSON 5.0        COMPREHENSIVE REPORT        Date: 28-11-2019 13:39:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA75D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     25 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 155.10 / 155.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     55 deg   Track 1
Reference angle           :   0.00

Train # 1: Freight, Segment # 1: CN Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 35.02 + 0.00) = 35.02 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  76.38 -24.14  -1.33   0.00 -15.90   0.00  35.02
-------------------------------------------------------------------

WHEEL (0.00 + 27.33 + 0.00) = 27.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  69.97 -25.28  -1.46   0.00 -15.90   0.00  27.33
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 24.84 + 0.00) = 24.84 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -18     25   0.58  71.11 -24.14  -6.24   0.00 -15.90   0.00  24.84
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 22.14 + 0.00) = 22.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------
    25     52   0.58  71.11 -24.14  -8.93   0.00 -15.90   0.00  22.14
-------------------------------------------------------------------

Segment Leq : 36.22 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)
--------------------------------------------------

LOCOMOTIVE (0.00 + 26.57 + 0.00) = 26.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  67.94 -24.14  -1.33   0.00 -15.90   0.00  26.57
-------------------------------------------------------------------

WHEEL (0.00 + 16.24 + 0.00) = 16.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  58.87 -25.28  -1.46   0.00 -15.90   0.00  16.24
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 20.70 + 0.00) = 20.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -18     25   0.58  66.98 -24.14  -6.24   0.00 -15.90   0.00  20.70
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 18.01 + 0.00) = 18.01 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    25     52   0.58  66.98 -24.14  -8.93   0.00 -15.90   0.00  18.01
-------------------------------------------------------------------

Segment Leq : 28.30 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)
------------------------------------------------

LOCOMOTIVE (0.00 + 27.57 + 0.00) = 27.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  68.93 -24.14  -1.33   0.00 -15.90   0.00  27.57
-------------------------------------------------------------------

WHEEL (0.00 + 16.87 + 0.00) = 16.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  59.51 -25.28  -1.46   0.00 -15.90   0.00  16.87
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.99 + 0.00) = 21.99 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -18     25   0.58  68.26 -24.14  -6.24   0.00 -15.90   0.00  21.99
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 19.29 + 0.00) = 19.29 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    25     52   0.58  68.26 -24.14  -8.93   0.00 -15.90   0.00  19.29
-------------------------------------------------------------------

Segment Leq : 29.36 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 48.49 + 0.00) = 48.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.27 -16.08  -1.33   0.00  -8.37   0.00  48.49
-------------------------------------------------------------------
```

WHEEL (0.00 + 40.85 + 0.00) = 40.85 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	67.51	-16.84	-1.46	0.00	-8.37	0.00	40.85

LEFT WHISTLE (0.00 + 40.56 + 0.00) = 40.56 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	55	0.58	67.76	-16.08	-2.75	0.00	-8.37	0.00	40.56

RIGHT WHISTLE (0.00 + 31.70 + 0.00) = 31.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	76	0.58	67.76	-16.08	-11.61	0.00	-8.37	0.00	31.70

Segment Leq : 49.81 dBA

Total Leq All Segments: 50.06 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 37.44 + 0.00) = 37.44 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	77.28	-22.77	-1.17	0.00	-15.90	0.00	37.44

WHEEL (0.00 + 29.24 + 0.00) = 29.24 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	70.86	-24.37	-1.35	0.00	-15.90	0.00	29.24

LEFT WHISTLE (0.00 + 27.11 + 0.00) = 27.11 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	25	0.50	72.01	-22.77	-6.23	0.00	-15.90	0.00	27.11

RIGHT WHISTLE (0.00 + 24.50 + 0.00) = 24.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
25	52	0.50	72.01	-22.77	-8.84	0.00	-15.90	0.00	24.50

Segment Leq : 38.56 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 24.06 + 0.00) = 24.06 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.89	-22.77	-1.17	0.00	-15.90	0.00	24.06

WHEEL (0.00 + 13.21 + 0.00) = 13.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.83	-24.37	-1.35	0.00	-15.90	0.00	13.21

LEFT WHISTLE (0.00 + 18.04 + 0.00) = 18.04 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	25	0.50	62.93	-22.77	-6.23	0.00	-15.90	0.00	18.04

RIGHT WHISTLE (0.00 + 15.43 + 0.00) = 15.43 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
25	52	0.50	62.93	-22.77	-8.84	0.00	-15.90	0.00	15.43

Segment Leq : 25.73 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 22.53 + 0.00) = 22.53 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	62.36	-22.77	-1.17	0.00	-15.90	0.00	22.53

WHEEL (0.00 + 11.32 + 0.00) = 11.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.94	-24.37	-1.35	0.00	-15.90	0.00	11.32

LEFT WHISTLE (0.00 + 16.80 + 0.00) = 16.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-18	25	0.50	61.69	-22.77	-6.23	0.00	-15.90	0.00	16.80

RIGHT WHISTLE (0.00 + 14.19 + 0.00) = 14.19 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
25	52	0.50	61.69	-22.77	-8.84	0.00	-15.90	0.00	14.19

Segment Leq : 24.26 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 49.51 + 0.00) = 49.51 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.21	-15.17	-1.17	0.00	-8.37	0.00	49.51

WHEEL (0.00 + 41.50 + 0.00) = 41.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-16.23	-1.35	0.00	-8.37	0.00	41.50

LEFT WHISTLE (0.00 + 41.47 + 0.00) = 41.47 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	55	0.50	67.70	-15.17	-2.70	0.00	-8.37	0.00	41.47

RIGHT WHISTLE (0.00 + 32.90 + 0.00) = 32.90 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	76	0.50	67.70	-15.17	-11.27	0.00	-8.37	0.00	32.90

Segment Leq : 50.77 dBA

Total Leq All Segments: 51.05 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume : 2600/289 veh/TimePeriod *

```
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 241.20 / 241.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Segment # 1: Komoka Rd. (day)
-----------------------------

Source height = 1.78 m

ROAD (0.00 + 25.06 + 0.00) = 25.06 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -19.92  -1.44   0.00 -16.80   0.00  25.06
-------------------------------------------------------------------------------

Segment Leq : 25.06 dBA

Segment # 2: Oxbow Dr. (day)
----------------------------
```



```
Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
-------------------------------------------------------------------------------

Segment Leq : 22.01 dBA

Total Leq All Segments: 26.81 dBA

Segment # 1: Komoka Rd. (night)
-------------------------------

Source height = 1.78 m

ROAD (0.00 + 19.75 + 0.00) = 19.75 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -18.84  -1.29   0.00 -16.80   0.00  19.75
-------------------------------------------------------------------------------

Segment Leq : 19.75 dBA

Segment # 2: Oxbow Dr. (night)
------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
-------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 21.60 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 50.08
                           (NIGHT): 51.05
```

```
STAMSON 5.0        COMPREHENSIVE REPORT        Date: 28-11-2019 13:39:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA75N.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0        (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1        (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1        (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0        (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1        (Absorptive ground surface)
Receiver source distance  : 155.10 / 155.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1        (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Train # 1: Freight, Segment # 1: CN Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 35.02 + 0.00) = 35.02 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
   -90     90   0.58  76.38 -24.14  -1.33   0.00 -15.90   0.00  35.02
-------------------------------------------------------------------------

WHEEL (0.00 + 27.33 + 0.00) = 27.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  69.97 -25.28  -1.46   0.00 -15.90   0.00  27.33
-------------------------------------------------------------------------

Segment Leq : 35.70 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)
--------------------------------------------------

LOCOMOTIVE (0.00 + 26.57 + 0.00) = 26.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  67.94 -24.14  -1.33   0.00 -15.90   0.00  26.57
-------------------------------------------------------------------------

WHEEL (0.00 + 16.24 + 0.00) = 16.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  58.87 -25.28  -1.46   0.00 -15.90   0.00  16.24
-------------------------------------------------------------------------

Segment Leq : 26.95 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)
------------------------------------------------

LOCOMOTIVE (0.00 + 27.57 + 0.00) = 27.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  68.93 -24.14  -1.33   0.00 -15.90   0.00  27.57
-------------------------------------------------------------------------

WHEEL (0.00 + 16.87 + 0.00) = 16.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  59.51 -25.28  -1.46   0.00 -15.90   0.00  16.87
-------------------------------------------------------------------------

Segment Leq : 27.92 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 48.49 + 0.00) = 48.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -16.08  -1.33   0.00  -8.37   0.00  48.49
-------------------------------------------------------------------------

WHEEL (0.00 + 40.85 + 0.00) = 40.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -16.84  -1.46   0.00  -8.37   0.00  40.85
-------------------------------------------------------------------------

Segment Leq : 49.18 dBA

Total Leq All Segments: 49.43 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)
------------------------------------------------

LOCOMOTIVE (0.00 + 37.44 + 0.00) = 37.44 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.28 -22.77  -1.17   0.00 -15.90   0.00  37.44
```

WHEEL (0.00 + 29.24 + 0.00) = 29.24 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	70.86	-24.37	-1.35	0.00	-15.90	0.00	29.24

Segment Leq : 38.05 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 24.06 + 0.00) = 24.06 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.89	-22.77	-1.17	0.00	-15.90	0.00	24.06

WHEEL (0.00 + 13.21 + 0.00) = 13.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.83	-24.37	-1.35	0.00	-15.90	0.00	13.21

Segment Leq : 24.40 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 22.53 + 0.00) = 22.53 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	62.36	-22.77	-1.17	0.00	-15.90	0.00	22.53

WHEEL (0.00 + 11.32 + 0.00) = 11.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.94	-24.37	-1.35	0.00	-15.90	0.00	11.32

Segment Leq : 22.85 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 49.51 + 0.00) = 49.51 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.21	-15.17	-1.17	0.00	-8.37	0.00	49.51

WHEEL (0.00 + 41.50 + 0.00) = 41.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-16.23	-1.35	0.00	-8.37	0.00	41.50

Segment Leq : 50.15 dBA

Total Leq All Segments: 50.43 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	241.20 / 241.20 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	500.00 / 500.00 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 25.06 + 0.00) = 25.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-19.92	-1.44	0.00	-16.80	0.00	25.06

Segment Leq : 25.06 dBA

Segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq

```
   -90     90    0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
--------------------------------------------------------------------------------

Segment Leq : 22.01 dBA

Total Leq All Segments: 26.81 dBA

Segment # 1: Komoka Rd. (night)
------------------------------

Source height = 1.78 m

ROAD (0.00 + 19.75 + 0.00) = 19.75 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -90     90    0.56  56.67   0.00 -18.84  -1.29   0.00 -16.80   0.00  19.75
--------------------------------------------------------------------------------

Segment Leq : 19.75 dBA

Segment # 2: Oxbow Dr. (night)
------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -90     90    0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
--------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 21.60 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 49.45
                           (NIGHT): 50.43
```

```
STAMSON 5.0        NORMAL REPORT        Date: 28-11-2019 13:30:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA76D.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     25 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 140.60 / 140.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     55 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.64 + 0.00) = 27.64 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -18     25   0.58  73.91 -24.14  -6.24   0.00 -15.90   0.00  27.64
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 24.94 + 0.00) = 24.94 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
    25     52   0.58  73.91 -24.14  -8.93   0.00 -15.90   0.00  24.94
-------------------------------------------------------------------------

Segment Leq : 37.57 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 57.53 + 0.00) = 57.53 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -15.40  -1.33   0.00   0.00   0.00  57.53
-------------------------------------------------------------------------

WHEEL (0.00 + 49.92 + 0.00) = 49.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -16.13  -1.46   0.00   0.00   0.00  49.92
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 49.79 + 0.00) = 49.79 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -55     55   0.58  67.76 -15.40  -2.56   0.00   0.00   0.00  49.79
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 40.87 + 0.00) = 40.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    55     77   0.58  67.76 -15.40 -11.49   0.00   0.00   0.00  40.87
-------------------------------------------------------------------------

Segment Leq : 58.88 dBA

Total Leq All Segments: 58.91 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.96 + 0.00) = 27.96 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -18     25   0.50  72.86 -22.77  -6.23   0.00 -15.90   0.00  27.96
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 25.35 + 0.00) = 25.35 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    25     52   0.50  72.86 -22.77  -8.84   0.00 -15.90   0.00  25.35
-------------------------------------------------------------------------

Segment Leq : 38.93 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 58.52 + 0.00) = 58.52 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  74.21 -14.53  -1.17   0.00   0.00   0.00  58.52
```

WHEEL (0.00 + 50.55 + 0.00) = 50.55 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-15.55	-1.35	0.00	0.00	0.00	50.55

LEFT WHISTLE (0.00 + 50.67 + 0.00) = 50.67 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-55	55	0.50	67.70	-14.53	-2.50	0.00	0.00	0.00	50.67

RIGHT WHISTLE (0.00 + 42.04 + 0.00) = 42.04 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
55	77	0.50	67.70	-14.53	-11.14	0.00	0.00	0.00	42.04

Segment Leq : 59.81 dBA

Total Leq All Segments: 59.85 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	240.00 / 240.00 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	500.00 / 500.00 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 25.09 + 0.00) = 25.09 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-19.89	-1.44	0.00	-16.80	0.00	25.09

Segment Leq : 25.09 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-25.15	-1.44	0.00	-15.90	0.00	22.01

Segment Leq : 22.01 dBA

Total Leq All Segments: 26.83 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 19.78 + 0.00) = 19.78 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-18.80	-1.29	0.00	-16.80	0.00	19.78

Segment Leq : 19.78 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-23.78	-1.29	0.00	-15.90	0.00	17.01

Segment Leq : 17.01 dBA

Total Leq All Segments: 21.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.91
(NIGHT): 59.85

```
STAMSON 5.0        NORMAL REPORT        Date: 04-12-2019 16:38:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA76N.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 140.60 / 140.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
   -90     90    0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

Segment Leq : 36.84 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 57.53 + 0.00) = 57.53 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -15.40  -1.33   0.00   0.00   0.00  57.53
-------------------------------------------------------------------------

WHEEL (0.00 + 49.92 + 0.00) = 49.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -16.13  -1.46   0.00   0.00   0.00  49.92
-------------------------------------------------------------------------

Segment Leq : 58.22 dBA

Total Leq All Segments: 58.25 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

Segment Leq : 38.36 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 58.52 + 0.00) = 58.52 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -14.53  -1.17   0.00   0.00   0.00  58.52
-------------------------------------------------------------------------

WHEEL (0.00 + 50.55 + 0.00) = 50.55 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -15.55  -1.35   0.00   0.00   0.00  50.55
-------------------------------------------------------------------------

Segment Leq : 59.16 dBA

Total Leq All Segments: 59.20 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
```

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 240.00 / 240.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 25.09 + 0.00) = 25.09 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -19.89  -1.44   0.00 -16.80   0.00  25.09
-------------------------------------------------------------------------------

Segment Leq : 25.09 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
-------------------------------------------------------------------------------

Segment Leq : 22.01 dBA

Total Leq All Segments: 26.83 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 19.78 + 0.00) = 19.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -18.80  -1.29   0.00 -16.80   0.00  19.78
-------------------------------------------------------------------------------

Segment Leq : 19.78 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
-------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 21.62 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.25
                           (NIGHT): 59.20
```

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STAMSON 5.0        COMPREHENSIVE REPORT        Date: 28-11-2019 14:08:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA114D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     70 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 178.90 / 178.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Train # 1: Freight, Segment # 1: CN Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 35.04 + 0.00) = 35.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  76.41 -24.14  -1.33   0.00 -15.90   0.00  35.04
-------------------------------------------------------------------------

WHEEL (0.00 + 27.36 + 0.00) = 27.36 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  69.99 -25.28  -1.46   0.00 -15.90   0.00  27.36
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 24.67 + 0.00) = 24.67 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  71.14 -24.14  -6.43   0.00 -15.90   0.00  24.67
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 23.56 + 0.00) = 23.56 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    10     44   0.58  71.14 -24.14  -7.54   0.00 -15.90   0.00  23.56
-------------------------------------------------------------------------

Segment Leq : 36.29 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)
--------------------------------------------------

LOCOMOTIVE (0.00 + 26.57 + 0.00) = 26.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  67.94 -24.14  -1.33   0.00 -15.90   0.00  26.57
-------------------------------------------------------------------------

WHEEL (0.00 + 16.24 + 0.00) = 16.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  58.87 -25.28  -1.46   0.00 -15.90   0.00  16.24
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 20.51 + 0.00) = 20.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  66.98 -24.14  -6.43   0.00 -15.90   0.00  20.51
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 19.40 + 0.00) = 19.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.58  66.98 -24.14  -7.54   0.00 -15.90   0.00  19.40
-------------------------------------------------------------------------

Segment Leq : 28.42 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)
------------------------------------------------

LOCOMOTIVE (0.00 + 27.57 + 0.00) = 27.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  68.93 -24.14  -1.33   0.00 -15.90   0.00  27.57
-------------------------------------------------------------------------

WHEEL (0.00 + 16.87 + 0.00) = 16.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  59.51 -25.28  -1.46   0.00 -15.90   0.00  16.87
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.80 + 0.00) = 21.80 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  68.26 -24.14  -6.43   0.00 -15.90   0.00  21.80
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 20.69 + 0.00) = 20.69 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.58  68.26 -24.14  -7.54   0.00 -15.90   0.00  20.69
-------------------------------------------------------------------------

Segment Leq : 29.49 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 51.62 + 0.00) = 51.62 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -17.06  -1.33   0.00  -4.25   0.00  51.62
-------------------------------------------------------------------------
```

WHEEL (0.00 + 43.93 + 0.00) = 43.93 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	67.51	-17.87	-1.46	0.00	-4.25	0.00	43.93

LEFT WHISTLE (0.00 + 42.61 + 0.00) = 42.61 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	20	0.58	67.76	-17.06	-3.83	0.00	-4.25	0.00	42.61

RIGHT WHISTLE (0.00 + 39.82 + 0.00) = 39.82 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	69	0.58	67.76	-17.06	-6.62	0.00	-4.25	0.00	39.82

Segment Leq : 52.96 dBA

Total Leq All Segments: 53.09 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 37.40 + 0.00) = 37.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	77.23	-22.77	-1.17	0.00	-15.90	0.00	37.40

WHEEL (0.00 + 29.20 + 0.00) = 29.20 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	70.82	-24.37	-1.35	0.00	-15.90	0.00	29.20

LEFT WHISTLE (0.00 + 26.88 + 0.00) = 26.88 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	10	0.50	71.96	-22.77	-6.41	0.00	-15.90	0.00	26.88

RIGHT WHISTLE (0.00 + 25.81 + 0.00) = 25.81 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	71.96	-22.77	-7.49	0.00	-15.90	0.00	25.81

Segment Leq : 38.57 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 24.06 + 0.00) = 24.06 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.89	-22.77	-1.17	0.00	-15.90	0.00	24.06

WHEEL (0.00 + 13.21 + 0.00) = 13.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.83	-24.37	-1.35	0.00	-15.90	0.00	13.21

LEFT WHISTLE (0.00 + 17.85 + 0.00) = 17.85 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	10	0.50	62.93	-22.77	-6.41	0.00	-15.90	0.00	17.85

RIGHT WHISTLE (0.00 + 16.78 + 0.00) = 16.78 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	62.93	-22.77	-7.49	0.00	-15.90	0.00	16.78

Segment Leq : 25.85 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 22.53 + 0.00) = 22.53 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	62.36	-22.77	-1.17	0.00	-15.90	0.00	22.53

WHEEL (0.00 + 11.32 + 0.00) = 11.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.94	-24.37	-1.35	0.00	-15.90	0.00	11.32

LEFT WHISTLE (0.00 + 16.61 + 0.00) = 16.61 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	10	0.50	61.69	-22.77	-6.41	0.00	-15.90	0.00	16.61

RIGHT WHISTLE (0.00 + 15.54 + 0.00) = 15.54 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	61.69	-22.77	-7.49	0.00	-15.90	0.00	15.54

Segment Leq : 24.38 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 52.70 + 0.00) = 52.70 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.21	-16.09	-1.17	0.00	-4.25	0.00	52.70

WHEEL (0.00 + 44.62 + 0.00) = 44.62 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-17.22	-1.35	0.00	-4.25	0.00	44.62

LEFT WHISTLE (0.00 + 43.58 + 0.00) = 43.58 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	20	0.50	67.70	-16.09	-3.77	0.00	-4.25	0.00	43.58

RIGHT WHISTLE (0.00 + 40.88 + 0.00) = 40.88 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	69	0.50	67.70	-16.09	-6.48	0.00	-4.25	0.00	40.88

Segment Leq : 53.98 dBA

Total Leq All Segments: 54.11 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume : 2600/289 veh/TimePeriod *

```
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      6 / 6
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 107.70 / 107.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Segment # 1: Komoka Rd. (day)
-----------------------------

Source height = 1.78 m

ROAD (0.00 + 37.51 + 0.00) = 37.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -14.14  -1.44   0.00 -10.12   0.00  37.51
-------------------------------------------------------------------------------

Segment Leq : 37.51 dBA

Segment # 2: Oxbow Dr. (day)
----------------------------
```



```
Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
-------------------------------------------------------------------------------

Segment Leq : 22.01 dBA

Total Leq All Segments: 37.63 dBA

Segment # 1: Komoka Rd. (night)
-------------------------------

Source height = 1.78 m

ROAD (0.00 + 31.89 + 0.00) = 31.89 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -13.37  -1.29   0.00 -10.12   0.00  31.89
-------------------------------------------------------------------------------

Segment Leq : 31.89 dBA

Segment # 2: Oxbow Dr. (night)
------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
-------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 32.03 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.21
                           (NIGHT): 54.14
```

```
STAMSON 5.0        COMPREHENSIVE REPORT        Date: 28-11-2019 14:09:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA114N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.4  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     70 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 178.90 / 178.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Train # 1: Freight, Segment # 1: CN Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 35.04 + 0.00) = 35.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
```



```
   -90     90   0.58  76.41 -24.14  -1.33   0.00 -15.90   0.00  35.04
-------------------------------------------------------------------

WHEEL (0.00 + 27.36 + 0.00) = 27.36 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  69.99 -25.28  -1.46   0.00 -15.90   0.00  27.36
-------------------------------------------------------------------

Segment Leq : 35.72 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)
--------------------------------------------------

LOCOMOTIVE (0.00 + 26.57 + 0.00) = 26.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  67.94 -24.14  -1.33   0.00 -15.90   0.00  26.57
-------------------------------------------------------------------

WHEEL (0.00 + 16.24 + 0.00) = 16.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  58.87 -25.28  -1.46   0.00 -15.90   0.00  16.24
-------------------------------------------------------------------

Segment Leq : 26.95 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)
------------------------------------------------

LOCOMOTIVE (0.00 + 27.57 + 0.00) = 27.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  68.93 -24.14  -1.33   0.00 -15.90   0.00  27.57
-------------------------------------------------------------------

WHEEL (0.00 + 16.87 + 0.00) = 16.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  59.51 -25.28  -1.46   0.00 -15.90   0.00  16.87
-------------------------------------------------------------------

Segment Leq : 27.92 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 51.62 + 0.00) = 51.62 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.27 -17.06  -1.33   0.00  -4.25   0.00  51.62
-------------------------------------------------------------------

WHEEL (0.00 + 43.93 + 0.00) = 43.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.51 -17.87  -1.46   0.00  -4.25   0.00  43.93
-------------------------------------------------------------------

Segment Leq : 52.30 dBA

Total Leq All Segments: 52.42 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)
------------------------------------------------

LOCOMOTIVE (0.00 + 37.40 + 0.00) = 37.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.23 -22.77  -1.17   0.00 -15.90   0.00  37.40
-------------------------------------------------------------------
```

```
WHEEL (0.00 + 29.20 + 0.00) = 29.20 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.82 -24.37  -1.35   0.00 -15.90   0.00  29.20
-------------------------------------------------------------------------

Segment Leq : 38.01 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)
-----------------------------------------------------

LOCOMOTIVE (0.00 + 24.06 + 0.00) = 24.06 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  63.89 -22.77  -1.17   0.00 -15.90   0.00  24.06
-------------------------------------------------------------------------

WHEEL (0.00 + 13.21 + 0.00) = 13.21 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  54.83 -24.37  -1.35   0.00 -15.90   0.00  13.21
-------------------------------------------------------------------------

Segment Leq : 24.40 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)
--------------------------------------------------

LOCOMOTIVE (0.00 + 22.53 + 0.00) = 22.53 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  62.36 -22.77  -1.17   0.00 -15.90   0.00  22.53
-------------------------------------------------------------------------

WHEEL (0.00 + 11.32 + 0.00) = 11.32 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  52.94 -24.37  -1.35   0.00 -15.90   0.00  11.32
-------------------------------------------------------------------------

Segment Leq : 22.85 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)
------------------------------------------------

LOCOMOTIVE (0.00 + 52.70 + 0.00) = 52.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  74.21 -16.09  -1.17   0.00  -4.25   0.00  52.70
-------------------------------------------------------------------------

WHEEL (0.00 + 44.62 + 0.00) = 44.62 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -17.22  -1.35   0.00  -4.25   0.00  44.62
-------------------------------------------------------------------------

Segment Leq : 53.33 dBA

Total Leq All Segments: 53.46 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:
```



```
    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      6 / 6
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 107.70 / 107.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Segment # 1: Komoka Rd. (day)
-----------------------------

Source height = 1.78 m

ROAD (0.00 + 37.51 + 0.00) = 37.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -14.14  -1.44   0.00 -10.12   0.00  37.51
-------------------------------------------------------------------------------

Segment Leq : 37.51 dBA

Segment # 2: Oxbow Dr. (day)
----------------------------

Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
```

Segment Leq : 22.01 dBA

Total Leq All Segments: 37.63 dBA

Segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 31.89 + 0.00) = 31.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-13.37	-1.29	0.00	-10.12	0.00	31.89

Segment Leq : 31.89 dBA

Segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-23.78	-1.29	0.00	-15.90	0.00	17.01

Segment Leq : 17.01 dBA

Total Leq All Segments: 32.03 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.56
(NIGHT): 53.50

```
STAMSON 5.0        COMPREHENSIVE REPORT        Date: 28-11-2019 14:14:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA119D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     70 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 162.90 / 162.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Train # 1: Freight, Segment # 1: CN Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 35.04 + 0.00) = 35.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  76.41 -24.14  -1.33   0.00 -15.90   0.00  35.04
-------------------------------------------------------------------------

WHEEL (0.00 + 27.36 + 0.00) = 27.36 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  69.99 -25.28  -1.46   0.00 -15.90   0.00  27.36
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 24.67 + 0.00) = 24.67 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  71.14 -24.14  -6.43   0.00 -15.90   0.00  24.67
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 23.56 + 0.00) = 23.56 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    10     44   0.58  71.14 -24.14  -7.54   0.00 -15.90   0.00  23.56
-------------------------------------------------------------------------

Segment Leq : 36.29 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)
--------------------------------------------------

LOCOMOTIVE (0.00 + 26.57 + 0.00) = 26.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  67.94 -24.14  -1.33   0.00 -15.90   0.00  26.57
-------------------------------------------------------------------------

WHEEL (0.00 + 16.24 + 0.00) = 16.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  58.87 -25.28  -1.46   0.00 -15.90   0.00  16.24
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 20.51 + 0.00) = 20.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  66.98 -24.14  -6.43   0.00 -15.90   0.00  20.51
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 19.40 + 0.00) = 19.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.58  66.98 -24.14  -7.54   0.00 -15.90   0.00  19.40
-------------------------------------------------------------------------

Segment Leq : 28.42 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)
------------------------------------------------

LOCOMOTIVE (0.00 + 27.57 + 0.00) = 27.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  68.93 -24.14  -1.33   0.00 -15.90   0.00  27.57
-------------------------------------------------------------------------

WHEEL (0.00 + 16.87 + 0.00) = 16.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  59.51 -25.28  -1.46   0.00 -15.90   0.00  16.87
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.80 + 0.00) = 21.80 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  68.26 -24.14  -6.43   0.00 -15.90   0.00  21.80
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 20.69 + 0.00) = 20.69 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.58  68.26 -24.14  -7.54   0.00 -15.90   0.00  20.69
-------------------------------------------------------------------------

Segment Leq : 29.49 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)
----------------------------------------------

LOCOMOTIVE (0.00 + 52.28 + 0.00) = 52.28 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -16.42  -1.33   0.00  -4.29   0.00  52.28
-------------------------------------------------------------------------
```

WHEEL (0.00 + 44.62 + 0.00) = 44.62 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	67.56	-17.19	-1.46	0.00	-4.29	0.00	44.62

LEFT WHISTLE (0.00 + 43.36 + 0.00) = 43.36 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-64	20	0.58	67.81	-16.42	-3.74	0.00	-4.29	0.00	43.36

RIGHT WHISTLE (0.00 + 40.57 + 0.00) = 40.57 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	70	0.58	67.81	-16.42	-6.54	0.00	-4.29	0.00	40.57

Segment Leq : 53.64 dBA

Total Leq All Segments: 53.75 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 37.40 + 0.00) = 37.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	77.23	-22.77	-1.17	0.00	-15.90	0.00	37.40

WHEEL (0.00 + 29.20 + 0.00) = 29.20 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	70.82	-24.37	-1.35	0.00	-15.90	0.00	29.20

LEFT WHISTLE (0.00 + 26.88 + 0.00) = 26.88 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	10	0.50	71.96	-22.77	-6.41	0.00	-15.90	0.00	26.88

RIGHT WHISTLE (0.00 + 25.81 + 0.00) = 25.81 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	71.96	-22.77	-7.49	0.00	-15.90	0.00	25.81

Segment Leq : 38.57 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 24.06 + 0.00) = 24.06 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.89	-22.77	-1.17	0.00	-15.90	0.00	24.06

WHEEL (0.00 + 13.21 + 0.00) = 13.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.83	-24.37	-1.35	0.00	-15.90	0.00	13.21

LEFT WHISTLE (0.00 + 17.85 + 0.00) = 17.85 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	10	0.50	62.93	-22.77	-6.41	0.00	-15.90	0.00	17.85

RIGHT WHISTLE (0.00 + 16.78 + 0.00) = 16.78 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	62.93	-22.77	-7.49	0.00	-15.90	0.00	16.78

Segment Leq : 25.85 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 22.53 + 0.00) = 22.53 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	62.36	-22.77	-1.17	0.00	-15.90	0.00	22.53

WHEEL (0.00 + 11.32 + 0.00) = 11.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.94	-24.37	-1.35	0.00	-15.90	0.00	11.32

LEFT WHISTLE (0.00 + 16.61 + 0.00) = 16.61 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	10	0.50	61.69	-22.77	-6.41	0.00	-15.90	0.00	16.61

RIGHT WHISTLE (0.00 + 15.54 + 0.00) = 15.54 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	61.69	-22.77	-7.49	0.00	-15.90	0.00	15.54

Segment Leq : 24.38 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 53.27 + 0.00) = 53.27 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.21	-15.49	-1.17	0.00	-4.29	0.00	53.27

WHEEL (0.00 + 45.23 + 0.00) = 45.23 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-16.57	-1.35	0.00	-4.29	0.00	45.23

LEFT WHISTLE (0.00 + 44.25 + 0.00) = 44.25 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-64	20	0.50	67.70	-15.49	-3.68	0.00	-4.29	0.00	44.25

RIGHT WHISTLE (0.00 + 41.54 + 0.00) = 41.54 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	70	0.50	67.70	-15.49	-6.39	0.00	-4.29	0.00	41.54

Segment Leq : 54.57 dBA

Total Leq All Segments: 54.69 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume : 2600/289 veh/TimePeriod *

```
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     50 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  47.70 / 47.70  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Segment # 1: Komoka Rd. (day)
-----------------------------

Source height = 1.78 m

ROAD (0.00 + 50.74 + 0.00) = 50.74 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -8.30  -1.44   0.00  -2.74   0.00  50.74
-------------------------------------------------------------------------------

Segment Leq : 50.74 dBA

Segment # 2: Oxbow Dr. (day)
----------------------------
```



```
Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
-------------------------------------------------------------------------------

Segment Leq : 22.01 dBA

Total Leq All Segments: 50.75 dBA

Segment # 1: Komoka Rd. (night)
-------------------------------

Source height = 1.78 m

ROAD (0.00 + 44.80 + 0.00) = 44.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -7.85  -1.29   0.00  -2.74   0.00  44.80
-------------------------------------------------------------------------------

Segment Leq : 44.80 dBA

Segment # 2: Oxbow Dr. (night)
------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
-------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 44.81 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.51
                           (NIGHT): 55.11
```

STAMSON 5.0 COMPREHENSIVE REPORT Date: 28-11-2019 14:14:46
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA119N.te Time Period: Day/Night 16/8 hours
Description:

Rail data, segment # 1: CN Rail (day/night)

Train Type	Trains	Speed (km/h)	# loc / Train	# Cars / Train	Eng type	Cont weld
1. Freight	17.2/10.4	97.0	4.0	140.0	Diesel	Yes
* 2. Way Freight	6.6/1.3	97.0	4.0	25.0	Diesel	Yes
* 3. Passenger	11.8/1.3	129.0	2.0	10.0	Diesel	Yes

* The identified number of trains have been adjusted for future growth using the following parameters:

Train type: No	Name	Unadj. Trains	Annual % Increase	Years of Growth
2.	Way Freight	5.0/1.0	2.50	11.00
3.	Passenger	9.0/1.0	2.50	11.00

Data for Segment # 1: CN Rail (day/night)

Angle1 Angle2	: -90.00 deg 90.00 deg
Wood depth	: 0 (No woods.)
No of house rows	: 7 / 7
House density	: 95 %
Surface	: 1 (Absorptive ground surface)
Receiver source distance	: 500.00 / 500.00 m
Receiver height	: 1.50 / 4.50 m
Topography	: 1 (Flat/gentle slope; no barrier)
No Whistle	
Reference angle	: 0.00

Rail data, segment # 2: CP Rail (day/night)

Train Type	Trains	Speed (km/h)	# loc / Train	# Cars / Train	Eng type	Cont weld
1. Freight	8.0/3.9	97.0	4.0	173.0	Diesel	Yes

Data for Segment # 2: CP Rail (day/night)

Angle1 Angle2	: -90.00 deg 90.00 deg
Wood depth	: 0 (No woods.)
No of house rows	: 1 / 1
House density	: 70 %
Surface	: 1 (Absorptive ground surface)
Receiver source distance	: 162.90 / 162.90 m
Receiver height	: 1.50 / 4.50 m
Topography	: 1 (Flat/gentle slope; no barrier)
No Whistle	
Reference angle	: 0.00

Train # 1: Freight, Segment # 1: CN Rail (day)

LOCOMOTIVE (0.00 + 35.04 + 0.00) = 35.04 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.58	76.41	-24.14	-1.33	0.00	-15.90	0.00	35.04

WHEEL (0.00 + 27.36 + 0.00) = 27.36 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	69.99	-25.28	-1.46	0.00	-15.90	0.00	27.36

Segment Leq : 35.72 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (day)

LOCOMOTIVE (0.00 + 26.57 + 0.00) = 26.57 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.58	67.94	-24.14	-1.33	0.00	-15.90	0.00	26.57

WHEEL (0.00 + 16.24 + 0.00) = 16.24 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	58.87	-25.28	-1.46	0.00	-15.90	0.00	16.24

Segment Leq : 26.95 dBA

Train # 3: Passenger, Segment # 1: CN Rail (day)

LOCOMOTIVE (0.00 + 27.57 + 0.00) = 27.57 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.58	68.93	-24.14	-1.33	0.00	-15.90	0.00	27.57

WHEEL (0.00 + 16.87 + 0.00) = 16.87 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	59.51	-25.28	-1.46	0.00	-15.90	0.00	16.87

Segment Leq : 27.92 dBA

Train # 1: Freight, Segment # 2: CP Rail (day)

LOCOMOTIVE (0.00 + 52.28 + 0.00) = 52.28 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.58	74.32	-16.42	-1.33	0.00	-4.29	0.00	52.28

WHEEL (0.00 + 44.62 + 0.00) = 44.62 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	67.56	-17.19	-1.46	0.00	-4.29	0.00	44.62

Segment Leq : 52.97 dBA

Total Leq All Segments: 53.07 dBA

Train # 1: Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 37.40 + 0.00) = 37.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	77.23	-22.77	-1.17	0.00	-15.90	0.00	37.40

WHEEL (0.00 + 29.20 + 0.00) = 29.20 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	70.82	-24.37	-1.35	0.00	-15.90	0.00	29.20

Segment Leq : 38.01 dBA

Train # 2: Way Freight, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 24.06 + 0.00) = 24.06 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	63.89	-22.77	-1.17	0.00	-15.90	0.00	24.06

WHEEL (0.00 + 13.21 + 0.00) = 13.21 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	54.83	-24.37	-1.35	0.00	-15.90	0.00	13.21

Segment Leq : 24.40 dBA

Train # 3: Passenger, Segment # 1: CN Rail (night)

LOCOMOTIVE (0.00 + 22.53 + 0.00) = 22.53 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	62.36	-22.77	-1.17	0.00	-15.90	0.00	22.53

WHEEL (0.00 + 11.32 + 0.00) = 11.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	52.94	-24.37	-1.35	0.00	-15.90	0.00	11.32

Segment Leq : 22.85 dBA

Train # 1: Freight, Segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 53.27 + 0.00) = 53.27 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.21	-15.49	-1.17	0.00	-4.29	0.00	53.27

WHEEL (0.00 + 45.23 + 0.00) = 45.23 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-16.57	-1.35	0.00	-4.29	0.00	45.23

Segment Leq : 53.90 dBA

Total Leq All Segments: 54.02 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	1 / 1	
House density	50 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	47.70 / 47.70	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	500.00 / 500.00	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 50.74 + 0.00) = 50.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-8.30	-1.44	0.00	-2.74	0.00	50.74

Segment Leq : 50.74 dBA

Segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-25.15	-1.44	0.00	-15.90	0.00	22.01

Segment Leq : 22.01 dBA

Total Leq All Segments: 50.75 dBA

Segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 44.80 + 0.00) = 44.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-7.85	-1.29	0.00	-2.74	0.00	44.80

Segment Leq : 44.80 dBA

Segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-23.78	-1.29	0.00	-15.90	0.00	17.01

Segment Leq : 17.01 dBA

Total Leq All Segments: 44.81 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.07
(NIGHT): 54.51

```
STAMSON 5.0        NORMAL REPORT        Date: 02-12-2019 14:21:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA120D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 155.90 / 155.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.25 + 0.00) = 36.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -24.14  -1.33   0.00 -15.90   0.00  36.25
-------------------------------------------------------------------------

WHEEL (0.00 + 28.03 + 0.00) = 28.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -25.28  -1.46   0.00 -15.90   0.00  28.03
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.46 + 0.00) = 27.46 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  73.92 -24.14  -6.43   0.00 -15.90   0.00  27.46
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.35 + 0.00) = 26.35 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
    10     44   0.58  73.92 -24.14  -7.54   0.00 -15.90   0.00  26.35
-------------------------------------------------------------------------

Segment Leq : 37.66 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 56.88 + 0.00) = 56.88 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -16.12  -1.33   0.00   0.00   0.00  56.88
-------------------------------------------------------------------------

WHEEL (0.00 + 49.23 + 0.00) = 49.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -16.88  -1.46   0.00   0.00   0.00  49.23
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 48.00 + 0.00) = 48.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -66     20   0.58  67.81 -16.12  -3.70   0.00   0.00   0.00  48.00
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 45.20 + 0.00) = 45.20 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     71   0.58  67.81 -16.12  -6.50   0.00   0.00   0.00  45.20
-------------------------------------------------------------------------

Segment Leq : 58.24 dBA

Total Leq All Segments: 58.28 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.78 + 0.00) = 27.78 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.50  72.86 -22.77  -6.41   0.00 -15.90   0.00  27.78
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.70 + 0.00) = 26.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.50  72.86 -22.77  -7.49   0.00 -15.90   0.00  26.70
-------------------------------------------------------------------------

Segment Leq : 38.99 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 57.96 + 0.00) = 57.96 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  74.32 -15.20  -1.17   0.00   0.00   0.00  57.96
```

```
--------------------------------------------------------------------------

WHEEL (0.00 + 49.94 + 0.00) = 49.94 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -90     90   0.60  67.56 -16.27  -1.35   0.00   0.00   0.00  49.94
--------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 48.98 + 0.00) = 48.98 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -66     20   0.50  67.81 -15.20  -3.63   0.00   0.00   0.00  48.98
--------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 46.27 + 0.00) = 46.27 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
    20     71   0.50  67.81 -15.20  -6.35   0.00   0.00   0.00  46.27
--------------------------------------------------------------------------

Segment Leq : 59.27 dBA

Total Leq All Segments: 59.31 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth         :   5.60
    Number of Years of Growth           :  13.00
    Medium Truck % of Total Volume      :   0.00
    Heavy Truck  % of Total Volume      :  10.00
    Day (16 hrs) % of Total Volume      :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  35.70 / 35.70  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth         :   3.60
    Number of Years of Growth           :  13.00
    Medium Truck % of Total Volume      :   0.00
    Heavy Truck  % of Total Volume      :  10.00
    Day (16 hrs) % of Total Volume      :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
```



```
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 55.55 + 0.00) = 55.55 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -6.22  -1.44   0.00   0.00   0.00  55.55
--------------------------------------------------------------------------------

Segment Leq : 55.55 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
--------------------------------------------------------------------------------

Segment Leq : 22.01 dBA

Total Leq All Segments: 55.55 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 49.50 + 0.00) = 49.50 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -5.88  -1.29   0.00   0.00   0.00  49.50
--------------------------------------------------------------------------------

Segment Leq : 49.50 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
--------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 49.50 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.14
                           (NIGHT): 59.74
```

```
STAMSON 5.0        NORMAL REPORT        Date: 04-12-2019 17:04:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA120DA.te          Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 155.90 / 155.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Whistle Angle             :     20 deg   Track 1
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.10 m
Barrier receiver distance :   9.00 / 9.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.25 + 0.00) = 36.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -24.14  -1.33   0.00 -15.90   0.00  36.25
-------------------------------------------------------------------------

WHEEL (0.00 + 28.03 + 0.00) = 28.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -25.28  -1.46   0.00 -15.90   0.00  28.03
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.46 + 0.00) = 27.46 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
   -32     10   0.58  73.92 -24.14  -6.43   0.00 -15.90   0.00  27.46
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.35 + 0.00) = 26.35 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.58  73.92 -24.14  -7.54   0.00 -15.90   0.00  26.35
-------------------------------------------------------------------------

Segment Leq : 37.66 dBA

Results segment # 2: CP Rail (day)
----------------------------------

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       4.00 !        1.50 !        1.64 !         1.64
       0.50 !        1.50 !        1.44 !         1.44

LOCOMOTIVE (0.00 + 53.00 + 0.00) = 53.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.46  74.32 -14.83  -1.10   0.00   0.00  -5.39  53.00
-------------------------------------------------------------------------

WHEEL (0.00 + 44.59 + 0.00) = 44.59 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.56  67.56 -15.90  -1.29   0.00   0.00  -5.78  44.59
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 43.85 + 0.00) = 43.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -66     20   0.46  67.81 -14.83  -3.61   0.00   0.00  -5.52  43.85
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 41.27 + 0.00) = 41.27 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     71   0.46  67.81 -14.83  -6.28   0.00   0.00  -5.42  41.27
-------------------------------------------------------------------------

Segment Leq : 54.25 dBA

Total Leq All Segments: 54.34 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.78 + 0.00) = 27.78 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.50  72.86 -22.77  -6.41   0.00 -15.90   0.00  27.78
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.70 + 0.00) = 26.70 dBA
```

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	72.86	-22.77	-7.49	0.00	-15.90	0.00	26.70

Segment Leq : 38.99 dBA

Results segment # 2: CP Rail (night)

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
4.00	4.50	4.47	4.47
0.50	4.50	4.27	4.27

LOCOMOTIVE (0.00 + 57.96 + 0.00) = 57.96 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.37	74.32	-13.92	-0.92	0.00	0.00	-0.26	59.23*
-90	90	0.50	74.32	-15.20	-1.17	0.00	0.00	0.00	57.96

* Bright Zone !

WHEEL (0.00 + 49.94 + 0.00) = 49.94 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.47	67.56	-14.99	-1.13	0.00	0.00	-0.31	51.14*
-90	90	0.60	67.56	-16.27	-1.35	0.00	0.00	0.00	49.94

* Bright Zone !

LEFT WHISTLE (0.00 + 48.98 + 0.00) = 48.98 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-66	20	0.37	67.81	-13.92	-3.54	0.00	0.00	0.00	50.36*
-66	20	0.50	67.81	-15.20	-3.63	0.00	0.00	0.00	48.98

* Bright Zone !

RIGHT WHISTLE (0.00 + 46.27 + 0.00) = 46.27 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	71	0.37	67.81	-13.92	-6.13	0.00	0.00	0.00	47.76*
20	71	0.50	67.81	-15.20	-6.35	0.00	0.00	0.00	46.27

* Bright Zone !

Segment Leq : 59.27 dBA

Total Leq All Segments: 59.31 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00

Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	35.70 / 35.70	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	500.00 / 500.00	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 55.55 + 0.00) = 55.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-6.22	-1.44	0.00	0.00	0.00	55.55

Segment Leq : 55.55 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-25.15	-1.44	0.00	-15.90	0.00	22.01

Segment Leq : 22.01 dBA

Total Leq All Segments: 55.55 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 49.50 + 0.00) = 49.50 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-5.88	-1.29	0.00	0.00	0.00	49.50

Segment Leq : 49.50 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-23.78	-1.29	0.00	-15.90	0.00	17.01

Segment Leq : 17.01 dBA

Total Leq All Segments: 49.50 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.00
(NIGHT): 59.74

```
STAMSON 5.0        NORMAL REPORT        Date: 02-12-2019 14:22:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA120N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/4.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 155.90 / 155.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.25 + 0.00) = 36.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -24.14  -1.33   0.00 -15.90   0.00  36.25
-------------------------------------------------------------------

WHEEL (0.00 + 28.03 + 0.00) = 28.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -25.28  -1.46   0.00 -15.90   0.00  28.03
-------------------------------------------------------------------

Segment Leq : 36.86 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 56.88 + 0.00) = 56.88 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -16.12  -1.33   0.00   0.00   0.00  56.88
```



```
-------------------------------------------------------------------

WHEEL (0.00 + 49.23 + 0.00) = 49.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -16.88  -1.46   0.00   0.00   0.00  49.23
-------------------------------------------------------------------

Segment Leq : 57.57 dBA

Total Leq All Segments: 57.61 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------

Segment Leq : 38.36 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 57.96 + 0.00) = 57.96 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.32 -15.20  -1.17   0.00   0.00   0.00  57.96
-------------------------------------------------------------------

WHEEL (0.00 + 49.94 + 0.00) = 49.94 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.56 -16.27  -1.35   0.00   0.00   0.00  49.94
-------------------------------------------------------------------

Segment Leq : 58.60 dBA

Total Leq All Segments: 58.64 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
```

```
Receiver source distance  :  35.70 / 35.70  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 55.55 + 0.00) = 55.55 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -6.22  -1.44   0.00   0.00   0.00  55.55
-------------------------------------------------------------------------------

Segment Leq : 55.55 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.01 + 0.00) = 22.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -25.15  -1.44   0.00 -15.90   0.00  22.01
-------------------------------------------------------------------------------

Segment Leq : 22.01 dBA

Total Leq All Segments: 55.55 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 49.50 + 0.00) = 49.50 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -5.88  -1.29   0.00   0.00   0.00  49.50
```



```
-------------------------------------------------------------------------------

Segment Leq : 49.50 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.01 + 0.00) = 17.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.78  -1.29   0.00 -15.90   0.00  17.01
-------------------------------------------------------------------------------

Segment Leq : 17.01 dBA

Total Leq All Segments: 49.50 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.71
                           (NIGHT): 59.14
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:21:06
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA121D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :      3 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 220.90 / 220.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :      7 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.15 + 0.00) = 27.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37      3   0.58  73.91 -24.14  -6.72   0.00 -15.90   0.00  27.15
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.82 + 0.00) = 26.82 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
     3      40   0.58  73.91 -24.14  -7.05   0.00 -15.90   0.00  26.82
-------------------------------------------------------------------------

Segment Leq : 37.66 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 46.50 + 0.00) = 46.50 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -18.51  -1.33   0.00  -7.93   0.00  46.50
-------------------------------------------------------------------------

WHEEL (0.00 + 38.73 + 0.00) = 38.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -19.39  -1.46   0.00  -7.93   0.00  38.73
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 36.55 + 0.00) = 36.55 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -59      7   0.58  67.76 -18.51  -4.77   0.00  -7.93   0.00  36.55
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 35.59 + 0.00) = 35.59 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
     7      63   0.58  67.76 -18.51  -5.72   0.00  -7.93   0.00  35.59
-------------------------------------------------------------------------

Segment Leq : 47.80 dBA

Total Leq All Segments: 48.20 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.49 + 0.00) = 27.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37      3   0.50  72.86 -22.77  -6.70   0.00 -15.90   0.00  27.49
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 27.17 + 0.00) = 27.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
     3      40   0.50  72.86 -22.77  -7.02   0.00 -15.90   0.00  27.17
-------------------------------------------------------------------------

Segment Leq : 39.00 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 47.66 + 0.00) = 47.66 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.21 -17.46  -1.17   0.00  -7.93   0.00  47.66
-------------------------------------------------------------------------

WHEEL (0.00 + 39.48 + 0.00) = 39.48 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -18.69  -1.35   0.00  -7.93   0.00  39.48
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 37.61 + 0.00) = 37.61 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -59      7   0.50  67.70 -17.46  -4.71   0.00  -7.93   0.00  37.61
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 36.68 + 0.00) = 36.68 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
     7     63   0.50  67.70 -17.46  -5.63   0.00  -7.93   0.00  36.68
-------------------------------------------------------------------------

Segment Leq : 48.90 dBA

Total Leq All Segments: 49.32 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  35.90 / 35.90  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 462.30 / 462.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 55.51 + 0.00) = 55.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -6.26  -1.44   0.00   0.00   0.00  55.51
-------------------------------------------------------------------------------

Segment Leq : 55.51 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.51 + 0.00) = 22.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.59  -1.44   0.00 -15.97   0.00  22.51
-------------------------------------------------------------------------------

Segment Leq : 22.51 dBA

Total Leq All Segments: 55.51 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 49.47 + 0.00) = 49.47 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -5.92  -1.29   0.00   0.00   0.00  49.47
-------------------------------------------------------------------------------

Segment Leq : 49.47 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.47 + 0.00) = 17.47 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.25  -1.29   0.00 -15.97   0.00  17.47
-------------------------------------------------------------------------------

Segment Leq : 17.47 dBA

Total Leq All Segments: 49.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.25
                           (NIGHT): 52.41
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:21:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA121N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 220.90 / 220.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
   -90     90    0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

Segment Leq : 36.84 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 46.50 + 0.00) = 46.50 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -18.51  -1.33   0.00  -7.93   0.00  46.50
-------------------------------------------------------------------------

WHEEL (0.00 + 38.73 + 0.00) = 38.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -19.39  -1.46   0.00  -7.93   0.00  38.73
-------------------------------------------------------------------------

Segment Leq : 47.17 dBA

Total Leq All Segments: 47.55 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

Segment Leq : 38.36 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 47.66 + 0.00) = 47.66 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -17.46  -1.17   0.00  -7.93   0.00  47.66
-------------------------------------------------------------------------

WHEEL (0.00 + 39.48 + 0.00) = 39.48 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -18.69  -1.35   0.00  -7.93   0.00  39.48
-------------------------------------------------------------------------

Segment Leq : 48.27 dBA

Total Leq All Segments: 48.69 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
```

```
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  35.90 / 35.90  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 462.30 / 462.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 55.51 + 0.00) = 55.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -6.26  -1.44   0.00   0.00   0.00  55.51
-------------------------------------------------------------------------------

Segment Leq : 55.51 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 22.51 + 0.00) = 22.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.59  -1.44   0.00 -15.97   0.00  22.51
-------------------------------------------------------------------------------

Segment Leq : 22.51 dBA

Total Leq All Segments: 55.51 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 49.47 + 0.00) = 49.47 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -5.92  -1.29   0.00   0.00   0.00  49.47
-------------------------------------------------------------------------------

Segment Leq : 49.47 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.47 + 0.00) = 17.47 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.25  -1.29   0.00 -15.97   0.00  17.47
-------------------------------------------------------------------------------

Segment Leq : 17.47 dBA

Total Leq All Segments: 49.47 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.16
                           (NIGHT): 52.11
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:23:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA122D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :      3 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 224.00 / 224.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :      7 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.15 + 0.00) = 27.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37      3   0.58  73.91 -24.14  -6.72   0.00 -15.90   0.00  27.15
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.82 + 0.00) = 26.82 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
     3     40   0.58  73.91 -24.14  -7.05   0.00 -15.90   0.00  26.82
-------------------------------------------------------------------------

Segment Leq : 37.66 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 44.92 + 0.00) = 44.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -18.61  -1.33   0.00  -9.41   0.00  44.92
-------------------------------------------------------------------------

WHEEL (0.00 + 37.16 + 0.00) = 37.16 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -19.49  -1.46   0.00  -9.41   0.00  37.16
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 34.95 + 0.00) = 34.95 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -59      7   0.58  67.76 -18.61  -4.79   0.00  -9.41   0.00  34.95
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 34.00 + 0.00) = 34.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
     7     62   0.58  67.76 -18.61  -5.74   0.00  -9.41   0.00  34.00
-------------------------------------------------------------------------

Segment Leq : 46.22 dBA

Total Leq All Segments: 46.79 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.49 + 0.00) = 27.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37      3   0.50  72.86 -22.77  -6.70   0.00 -15.90   0.00  27.49
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 27.17 + 0.00) = 27.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
     3     40   0.50  72.86 -22.77  -7.02   0.00 -15.90   0.00  27.17
-------------------------------------------------------------------------

Segment Leq : 39.00 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 46.09 + 0.00) = 46.09 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

-90	90	0.50	74.21	-17.55	-1.17	0.00	-9.41	0.00	46.09

WHEEL (0.00 + 37.91 + 0.00) = 37.91 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-18.79	-1.35	0.00	-9.41	0.00	37.91

LEFT WHISTLE (0.00 + 36.02 + 0.00) = 36.02 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	7	0.50	67.70	-17.55	-4.73	0.00	-9.41	0.00	36.02

RIGHT WHISTLE (0.00 + 35.09 + 0.00) = 35.09 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
7	62	0.50	67.70	-17.55	-5.65	0.00	-9.41	0.00	35.09

Segment Leq : 47.33 dBA

Total Leq All Segments: 47.93 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	1 / 1	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	47.90 / 47.90	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	462.20 / 462.20	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 43.76 + 0.00) = 43.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-8.33	-1.44	0.00	-9.68	0.00	43.76

Segment Leq : 43.76 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 22.51 + 0.00) = 22.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-24.59	-1.44	0.00	-15.97	0.00	22.51

Segment Leq : 22.51 dBA

Total Leq All Segments: 43.79 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 37.83 + 0.00) = 37.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-7.87	-1.29	0.00	-9.68	0.00	37.83

Segment Leq : 37.83 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 17.47 + 0.00) = 17.47 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-23.25	-1.29	0.00	-15.97	0.00	17.47

Segment Leq : 17.47 dBA

Total Leq All Segments: 37.87 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 48.55
(NIGHT): 48.33

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:23:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA122N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 224.00 / 224.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
   -90     90    0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

Segment Leq : 36.84 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 44.92 + 0.00) = 44.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -18.61  -1.33   0.00  -9.41   0.00  44.92
-------------------------------------------------------------------------

WHEEL (0.00 + 37.16 + 0.00) = 37.16 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -19.49  -1.46   0.00  -9.41   0.00  37.16
-------------------------------------------------------------------------

Segment Leq : 45.59 dBA

Total Leq All Segments: 46.13 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

Segment Leq : 38.36 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 46.09 + 0.00) = 46.09 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -17.55  -1.17   0.00  -9.41   0.00  46.09
-------------------------------------------------------------------------

WHEEL (0.00 + 37.91 + 0.00) = 37.91 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -18.79  -1.35   0.00  -9.41   0.00  37.91
-------------------------------------------------------------------------

Segment Leq : 46.70 dBA

Total Leq All Segments: 47.29 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
```

```
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  47.90 / 47.90  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 462.20 / 462.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 43.76 + 0.00) = 43.76 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -8.33  -1.44   0.00  -9.68   0.00  43.76
-------------------------------------------------------------------------------

Segment Leq : 43.76 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 22.51 + 0.00) = 22.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.59  -1.44   0.00 -15.97   0.00  22.51
-------------------------------------------------------------------------------

Segment Leq : 22.51 dBA

Total Leq All Segments: 43.79 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 37.83 + 0.00) = 37.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -7.87  -1.29   0.00  -9.68   0.00  37.83
-------------------------------------------------------------------------------

Segment Leq : 37.83 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.47 + 0.00) = 17.47 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.25  -1.29   0.00 -15.97   0.00  17.47
-------------------------------------------------------------------------------

Segment Leq : 17.47 dBA

Total Leq All Segments: 37.87 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 48.13
                           (NIGHT): 47.76
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:46:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA123.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :      3 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 227.30 / 227.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :      6 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.15 + 0.00) = 27.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37      3   0.58  73.91 -24.14  -6.72   0.00 -15.90   0.00  27.15
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.82 + 0.00) = 26.82 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
     3     40   0.58  73.91 -24.14  -7.05   0.00 -15.90   0.00  26.82
-------------------------------------------------------------------------

Segment Leq : 37.66 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 43.34 + 0.00) = 43.34 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -18.71  -1.33   0.00 -10.88   0.00  43.34
-------------------------------------------------------------------------

WHEEL (0.00 + 35.57 + 0.00) = 35.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -19.60  -1.46   0.00 -10.88   0.00  35.57
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 33.30 + 0.00) = 33.30 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -59      6   0.58  67.76 -18.71  -4.87   0.00 -10.88   0.00  33.30
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 32.48 + 0.00) = 32.48 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
     6     62   0.58  67.76 -18.71  -5.68   0.00 -10.88   0.00  32.48
-------------------------------------------------------------------------

Segment Leq : 44.64 dBA

Total Leq All Segments: 45.43 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.49 + 0.00) = 27.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37      3   0.50  72.86 -22.77  -6.70   0.00 -15.90   0.00  27.49
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 27.17 + 0.00) = 27.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
     3     40   0.50  72.86 -22.77  -7.02   0.00 -15.90   0.00  27.17
-------------------------------------------------------------------------

Segment Leq : 39.00 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 44.51 + 0.00) = 44.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.21 -17.65  -1.17   0.00 -10.88   0.00  44.51
-------------------------------------------------------------------------------

WHEEL (0.00 + 36.33 + 0.00) = 36.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.60  67.45 -18.89  -1.35   0.00 -10.88   0.00  36.33
-------------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 34.37 + 0.00) = 34.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -59      6   0.50  67.70 -17.65  -4.80   0.00 -10.88   0.00  34.37
-------------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 33.58 + 0.00) = 33.58 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     6     62   0.50  67.70 -17.65  -5.59   0.00 -10.88   0.00  33.58
-------------------------------------------------------------------------------

Segment Leq : 45.75 dBA

Total Leq All Segments: 46.58 dBA

Road data, segment # 1: Komoka Rd. (day/night)
------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  59.80 / 59.80  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 436.40 / 436.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 40.95 + 0.00) = 40.95 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -9.92  -1.44   0.00 -10.90   0.00  40.95
-------------------------------------------------------------------------------

Segment Leq : 40.95 dBA

Results segment # 2: Oxbow Dr. (day)
-----------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.83 + 0.00) = 22.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.18  -1.44   0.00 -16.06   0.00  22.83
-------------------------------------------------------------------------------

Segment Leq : 22.83 dBA

Total Leq All Segments: 41.02 dBA

Results segment # 1: Komoka Rd. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 35.10 + 0.00) = 35.10 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -9.38  -1.29   0.00 -10.90   0.00  35.10
-------------------------------------------------------------------------------

Segment Leq : 35.10 dBA

Results segment # 2: Oxbow Dr. (night)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.77 + 0.00) = 17.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -22.86  -1.29   0.00 -16.06   0.00  17.77
-------------------------------------------------------------------------------

Segment Leq : 17.77 dBA

Total Leq All Segments: 35.18 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 46.77
                           (NIGHT): 46.89
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:47:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA123N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 227.30 / 227.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
   -90     90    0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

Segment Leq : 36.84 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 43.34 + 0.00) = 43.34 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -18.71  -1.33   0.00 -10.88   0.00  43.34
-------------------------------------------------------------------------

WHEEL (0.00 + 35.57 + 0.00) = 35.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -19.60  -1.46   0.00 -10.88   0.00  35.57
-------------------------------------------------------------------------

Segment Leq : 44.01 dBA

Total Leq All Segments: 44.77 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

Segment Leq : 38.36 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 44.51 + 0.00) = 44.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -17.65  -1.17   0.00 -10.88   0.00  44.51
-------------------------------------------------------------------------

WHEEL (0.00 + 36.33 + 0.00) = 36.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -18.89  -1.35   0.00 -10.88   0.00  36.33
-------------------------------------------------------------------------

Segment Leq : 45.12 dBA

Total Leq All Segments: 45.95 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
```

```
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  59.80 / 59.80  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 436.40 / 436.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 40.95 + 0.00) = 40.95 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -9.92  -1.44   0.00 -10.90   0.00  40.95
-------------------------------------------------------------------------------

Segment Leq : 40.95 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 22.83 + 0.00) = 22.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.18  -1.44   0.00 -16.06   0.00  22.83
-------------------------------------------------------------------------------

Segment Leq : 22.83 dBA

Total Leq All Segments: 41.02 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 35.10 + 0.00) = 35.10 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -9.38  -1.29   0.00 -10.90   0.00  35.10
-------------------------------------------------------------------------------

Segment Leq : 35.10 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.77 + 0.00) = 17.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -22.86  -1.29   0.00 -16.06   0.00  17.77
-------------------------------------------------------------------------------

Segment Leq : 17.77 dBA

Total Leq All Segments: 35.18 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 46.30
                           (NIGHT): 46.30
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:28:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA124D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :      3 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 230.50 / 230.50 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :      6 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.25 + 0.00) = 36.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -24.14  -1.33   0.00 -15.90   0.00  36.25
-------------------------------------------------------------------------

WHEEL (0.00 + 28.03 + 0.00) = 28.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -25.28  -1.46   0.00 -15.90   0.00  28.03
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.17 + 0.00) = 27.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37      3   0.58  73.92 -24.14  -6.72   0.00 -15.90   0.00  27.17
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.83 + 0.00) = 26.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
     3     40   0.58  73.92 -24.14  -7.05   0.00 -15.90   0.00  26.83
-------------------------------------------------------------------------

Segment Leq : 37.68 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.82 + 0.00) = 41.82 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -18.81  -1.33   0.00 -12.36   0.00  41.82
-------------------------------------------------------------------------

WHEEL (0.00 + 34.05 + 0.00) = 34.05 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -19.70  -1.46   0.00 -12.36   0.00  34.05
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 31.76 + 0.00) = 31.76 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -58      6   0.58  67.81 -18.81  -4.89   0.00 -12.36   0.00  31.76
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 30.94 + 0.00) = 30.94 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
     6     61   0.58  67.81 -18.81  -5.70   0.00 -12.36   0.00  30.94
-------------------------------------------------------------------------

Segment Leq : 43.11 dBA

Total Leq All Segments: 44.20 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.49 + 0.00) = 27.49 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37      3   0.50  72.86 -22.77  -6.70   0.00 -15.90   0.00  27.49
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 27.17 + 0.00) = 27.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
     3     40   0.50  72.86 -22.77  -7.02   0.00 -15.90   0.00  27.17
-------------------------------------------------------------------------

Segment Leq : 39.00 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 42.94 + 0.00) = 42.94 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

-90	90	0.50	74.21	-17.74	-1.17	0.00	-12.36	0.00	42.94

WHEEL (0.00 + 34.75 + 0.00) = 34.75 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-18.99	-1.35	0.00	-12.36	0.00	34.75

LEFT WHISTLE (0.00 + 32.78 + 0.00) = 32.78 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-58	6	0.50	67.70	-17.74	-4.82	0.00	-12.36	0.00	32.78

RIGHT WHISTLE (0.00 + 31.99 + 0.00) = 31.99 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
6	61	0.50	67.70	-17.74	-5.61	0.00	-12.36	0.00	31.99

Segment Leq : 44.17 dBA

Total Leq All Segments: 45.32 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	3 / 3	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	71.90 / 71.90	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	462.30 / 462.30	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 38.29 + 0.00) = 38.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-11.24	-1.44	0.00	-12.24	0.00	38.29

Segment Leq : 38.29 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 22.51 + 0.00) = 22.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-24.59	-1.44	0.00	-15.97	0.00	22.51

Segment Leq : 22.51 dBA

Total Leq All Segments: 38.40 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 32.51 + 0.00) = 32.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-10.63	-1.29	0.00	-12.24	0.00	32.51

Segment Leq : 32.51 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 17.47 + 0.00) = 17.47 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-23.25	-1.29	0.00	-15.97	0.00	17.47

Segment Leq : 17.47 dBA

Total Leq All Segments: 32.64 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 45.22
(NIGHT): 45.55

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:28:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA124N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 230.50 / 230.50 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.25 + 0.00) = 36.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -24.14  -1.33   0.00 -15.90   0.00  36.25
-------------------------------------------------------------------

WHEEL (0.00 + 28.03 + 0.00) = 28.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -25.28  -1.46   0.00 -15.90   0.00  28.03
-------------------------------------------------------------------
```



```
Segment Leq : 36.86 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.82 + 0.00) = 41.82 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -18.81  -1.33   0.00 -12.36   0.00  41.82
-------------------------------------------------------------------

WHEEL (0.00 + 34.05 + 0.00) = 34.05 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -19.70  -1.46   0.00 -12.36   0.00  34.05
-------------------------------------------------------------------

Segment Leq : 42.49 dBA

Total Leq All Segments: 43.54 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------

Segment Leq : 38.36 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 42.94 + 0.00) = 42.94 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.21 -17.74  -1.17   0.00 -12.36   0.00  42.94
-------------------------------------------------------------------

WHEEL (0.00 + 34.75 + 0.00) = 34.75 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.45 -18.99  -1.35   0.00 -12.36   0.00  34.75
-------------------------------------------------------------------

Segment Leq : 43.55 dBA

Total Leq All Segments: 44.70 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
```

```
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  71.90 / 71.90  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 462.30 / 462.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 38.29 + 0.00) = 38.29 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -11.24  -1.44   0.00 -12.24   0.00  38.29
-------------------------------------------------------------------------------

Segment Leq : 38.29 dBA

Results segment # 2: Oxbow Dr. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.51 + 0.00) = 22.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.59  -1.44   0.00 -15.97   0.00  22.51
-------------------------------------------------------------------------------

Segment Leq : 22.51 dBA
```



```
Total Leq All Segments: 38.40 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 32.51 + 0.00) = 32.51 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -10.63  -1.29   0.00 -12.24   0.00  32.51
-------------------------------------------------------------------------------

Segment Leq : 32.51 dBA

Results segment # 2: Oxbow Dr. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.47 + 0.00) = 17.47 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -23.25  -1.29   0.00 -15.97   0.00  17.47
-------------------------------------------------------------------------------

Segment Leq : 17.47 dBA

Total Leq All Segments: 32.64 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 44.70
                           (NIGHT): 44.96
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:50:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA132D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   6.5/4.0   !   6.5/4.0   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   2.5/0.5   !   2.5/0.5   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   4.5/0.5   !   4.5/0.5   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 255.10 / 255.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 35.04 + 0.00) = 35.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  76.41 -24.14  -1.33   0.00 -15.90   0.00  35.04
-------------------------------------------------------------------------

WHEEL (0.00 + 26.81 + 0.00) = 26.81 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  69.45 -25.28  -1.46   0.00 -15.90   0.00  26.81
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 26.25 + 0.00) = 26.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  72.72 -24.14  -6.43   0.00 -15.90   0.00  26.25
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 25.15 + 0.00) = 25.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    10     44   0.58  72.72 -24.14  -7.54   0.00 -15.90   0.00  25.15
-------------------------------------------------------------------------

Segment Leq : 36.45 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.19 + 0.00) = 41.19 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -19.51  -1.33   0.00 -12.24   0.00  41.19
-------------------------------------------------------------------------

WHEEL (0.00 + 33.38 + 0.00) = 33.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -20.43  -1.46   0.00 -12.24   0.00  33.38
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 31.45 + 0.00) = 31.45 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -52     15   0.58  67.76 -19.51  -4.56   0.00 -12.24   0.00  31.45
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 29.42 + 0.00) = 29.42 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     61   0.58  67.76 -19.51  -6.59   0.00 -12.24   0.00  29.42
-------------------------------------------------------------------------

Segment Leq : 42.46 dBA

Total Leq All Segments: 43.43 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 36.59 + 0.00) = 36.59 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  76.42 -22.77  -1.17   0.00 -15.90   0.00  36.59
-------------------------------------------------------------------------

WHEEL (0.00 + 28.23 + 0.00) = 28.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  69.85 -24.37  -1.35   0.00 -15.90   0.00  28.23
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 26.60 + 0.00) = 26.60 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.50  71.68 -22.77  -6.41   0.00 -15.90   0.00  26.60
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 25.53 + 0.00) = 25.53 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.50  71.68 -22.77  -7.49   0.00 -15.90   0.00  25.53
-------------------------------------------------------------------------

Segment Leq : 37.81 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 42.40 + 0.00) = 42.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

-90	90	0.50	74.21	-18.40	-1.17	0.00	-12.24	0.00	42.40

WHEEL (0.00 + 34.17 + 0.00) = 34.17 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-19.69	-1.35	0.00	-12.24	0.00	34.17

LEFT WHISTLE (0.00 + 32.55 + 0.00) = 32.55 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-52	15	0.50	67.70	-18.40	-4.52	0.00	-12.24	0.00	32.55

RIGHT WHISTLE (0.00 + 30.58 + 0.00) = 30.58 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
15	61	0.50	67.70	-18.40	-6.48	0.00	-12.24	0.00	30.58

Segment Leq : 43.60 dBA

Total Leq All Segments: 44.62 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	2 / 2	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	60.10 / 60.10 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	433.20 / 433.20 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 40.92 + 0.00) = 40.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-9.96	-1.44	0.00	-10.90	0.00	40.92

Segment Leq : 40.92 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 22.87 + 0.00) = 22.87 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-24.12	-1.44	0.00	-16.08	0.00	22.87

Segment Leq : 22.87 dBA

Total Leq All Segments: 40.99 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 35.07 + 0.00) = 35.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-9.41	-1.29	0.00	-10.90	0.00	35.07

Segment Leq : 35.07 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 17.80 + 0.00) = 17.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-22.81	-1.29	0.00	-16.08	0.00	17.80

Segment Leq : 17.80 dBA

Total Leq All Segments: 35.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 45.39
(NIGHT): 45.08

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:50:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA132N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  13.0/8.0   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   5.0/1.0   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   9.0/1.0   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 255.10 / 255.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 35.04 + 0.00) = 35.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  76.41 -24.14  -1.33   0.00 -15.90   0.00  35.04
-------------------------------------------------------------------

WHEEL (0.00 + 26.81 + 0.00) = 26.81 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  69.45 -25.28  -1.46   0.00 -15.90   0.00  26.81
-------------------------------------------------------------------
```



```
Segment Leq : 35.65 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 41.19 + 0.00) = 41.19 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.27 -19.51  -1.33   0.00 -12.24   0.00  41.19
-------------------------------------------------------------------

WHEEL (0.00 + 33.38 + 0.00) = 33.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.51 -20.43  -1.46   0.00 -12.24   0.00  33.38
-------------------------------------------------------------------

Segment Leq : 41.86 dBA

Total Leq All Segments: 42.79 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 36.59 + 0.00) = 36.59 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  76.42 -22.77  -1.17   0.00 -15.90   0.00  36.59
-------------------------------------------------------------------

WHEEL (0.00 + 28.23 + 0.00) = 28.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  69.85 -24.37  -1.35   0.00 -15.90   0.00  28.23
-------------------------------------------------------------------

Segment Leq : 37.18 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 42.40 + 0.00) = 42.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.21 -18.40  -1.17   0.00 -12.24   0.00  42.40
-------------------------------------------------------------------

WHEEL (0.00 + 34.17 + 0.00) = 34.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.45 -19.69  -1.35   0.00 -12.24   0.00  34.17
-------------------------------------------------------------------

Segment Leq : 43.01 dBA

Total Leq All Segments: 44.02 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
```

```
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.10 / 60.10  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 433.20 / 433.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 40.92 + 0.00) = 40.92 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -9.96  -1.44   0.00 -10.90   0.00  40.92
-------------------------------------------------------------------------------

Segment Leq : 40.92 dBA

Results segment # 2: Oxbow Dr. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.87 + 0.00) = 22.87 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.12  -1.44   0.00 -16.08   0.00  22.87
-------------------------------------------------------------------------------

Segment Leq : 22.87 dBA

Total Leq All Segments: 40.99 dBA
```



```
Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 35.07 + 0.00) = 35.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -9.41  -1.29   0.00 -10.90   0.00  35.07
-------------------------------------------------------------------------------

Segment Leq : 35.07 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.80 + 0.00) = 17.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -22.81  -1.29   0.00 -16.08   0.00  17.80
-------------------------------------------------------------------------------

Segment Leq : 17.80 dBA

Total Leq All Segments: 35.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 44.99
                           (NIGHT): 44.55
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:48:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA133D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 249.00 / 249.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.44 + 0.00) = 27.44 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  73.91 -24.14  -6.43   0.00 -15.90   0.00  27.44
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.34 + 0.00) = 26.34 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    10     44   0.58  73.91 -24.14  -7.54   0.00 -15.90   0.00  26.34
-------------------------------------------------------------------------

Segment Leq : 37.64 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.83 + 0.00) = 42.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -19.34  -1.33   0.00 -10.77   0.00  42.83
-------------------------------------------------------------------------

WHEEL (0.00 + 35.03 + 0.00) = 35.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -20.25  -1.46   0.00 -10.77   0.00  35.03
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 33.14 + 0.00) = 33.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -53     15   0.58  67.76 -19.34  -4.52   0.00 -10.77   0.00  33.14
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 31.10 + 0.00) = 31.10 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     62   0.58  67.76 -19.34  -6.55   0.00 -10.77   0.00  31.10
-------------------------------------------------------------------------

Segment Leq : 44.10 dBA

Total Leq All Segments: 44.98 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.78 + 0.00) = 27.78 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.50  72.86 -22.77  -6.41   0.00 -15.90   0.00  27.78
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.70 + 0.00) = 26.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.50  72.86 -22.77  -7.49   0.00 -15.90   0.00  26.70
-------------------------------------------------------------------------

Segment Leq : 38.99 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 44.04 + 0.00) = 44.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.21 -18.24  -1.17   0.00 -10.77   0.00  44.04
-------------------------------------------------------------------------

WHEEL (0.00 + 35.81 + 0.00) = 35.81 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -19.52  -1.35   0.00 -10.77   0.00  35.81
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 34.22 + 0.00) = 34.22 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -53     15   0.50  67.70 -18.24  -4.47   0.00 -10.77   0.00  34.22
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 32.25 + 0.00) = 32.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     62   0.50  67.70 -18.24  -6.45   0.00 -10.77   0.00  32.25
-------------------------------------------------------------------------

Segment Leq : 45.25 dBA

Total Leq All Segments: 46.17 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  47.80 / 47.80  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 436.40 / 436.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 43.78 + 0.00) = 43.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -8.31  -1.44   0.00  -9.68   0.00  43.78
-------------------------------------------------------------------------------

Segment Leq : 43.78 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.83 + 0.00) = 22.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.18  -1.44   0.00 -16.06   0.00  22.83
-------------------------------------------------------------------------------

Segment Leq : 22.83 dBA

Total Leq All Segments: 43.81 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 37.84 + 0.00) = 37.84 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -7.86  -1.29   0.00  -9.68   0.00  37.84
-------------------------------------------------------------------------------

Segment Leq : 37.84 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.77 + 0.00) = 23.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -22.86  -1.29   0.00 -10.06   0.00  23.77
-------------------------------------------------------------------------------

Segment Leq : 23.77 dBA

Total Leq All Segments: 38.01 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 47.45
                           (NIGHT): 46.79
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:48:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA133N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 249.00 / 249.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
   -90     90    0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

Segment Leq : 36.84 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.83 + 0.00) = 42.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -19.34  -1.33   0.00 -10.77   0.00  42.83
-------------------------------------------------------------------------

WHEEL (0.00 + 35.03 + 0.00) = 35.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -20.25  -1.46   0.00 -10.77   0.00  35.03
-------------------------------------------------------------------------

Segment Leq : 43.50 dBA

Total Leq All Segments: 44.35 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

Segment Leq : 38.36 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 44.04 + 0.00) = 44.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -18.24  -1.17   0.00 -10.77   0.00  44.04
-------------------------------------------------------------------------

WHEEL (0.00 + 35.81 + 0.00) = 35.81 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -19.52  -1.35   0.00 -10.77   0.00  35.81
-------------------------------------------------------------------------

Segment Leq : 44.65 dBA

Total Leq All Segments: 45.57 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
```

```
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  47.80 / 47.80  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 436.40 / 436.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 43.78 + 0.00) = 43.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -8.31  -1.44   0.00  -9.68   0.00  43.78
-------------------------------------------------------------------------------

Segment Leq : 43.78 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 22.83 + 0.00) = 22.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.18  -1.44   0.00 -16.06   0.00  22.83
-------------------------------------------------------------------------------

Segment Leq : 22.83 dBA

Total Leq All Segments: 43.81 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 37.84 + 0.00) = 37.84 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -7.86  -1.29   0.00  -9.68   0.00  37.84
-------------------------------------------------------------------------------

Segment Leq : 37.84 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.77 + 0.00) = 23.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -22.86  -1.29   0.00 -10.06   0.00  23.77
-------------------------------------------------------------------------------

Segment Leq : 23.77 dBA

Total Leq All Segments: 38.01 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 47.10
                           (NIGHT): 46.27
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:42:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA134D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 244.90 / 244.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.44 + 0.00) = 27.44 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  73.91 -24.14  -6.43   0.00 -15.90   0.00  27.44
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.34 + 0.00) = 26.34 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    10     44   0.58  73.91 -24.14  -7.54   0.00 -15.90   0.00  26.34
-------------------------------------------------------------------------

Segment Leq : 37.64 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.93 + 0.00) = 42.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -19.22  -1.33   0.00 -10.78   0.00  42.93
-------------------------------------------------------------------------

WHEEL (0.00 + 35.14 + 0.00) = 35.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -20.13  -1.46   0.00 -10.78   0.00  35.14
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 33.26 + 0.00) = 33.26 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -54     15   0.58  67.76 -19.22  -4.49   0.00 -10.78   0.00  33.26
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 31.22 + 0.00) = 31.22 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     62   0.58  67.76 -19.22  -6.53   0.00 -10.78   0.00  31.22
-------------------------------------------------------------------------

Segment Leq : 44.21 dBA

Total Leq All Segments: 45.07 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.78 + 0.00) = 27.78 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.50  72.86 -22.77  -6.41   0.00 -15.90   0.00  27.78
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.70 + 0.00) = 26.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.50  72.86 -22.77  -7.49   0.00 -15.90   0.00  26.70
-------------------------------------------------------------------------

Segment Leq : 38.99 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 44.13 + 0.00) = 44.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.21 -18.13  -1.17   0.00 -10.78   0.00  44.13
-------------------------------------------------------------------------

WHEEL (0.00 + 35.91 + 0.00) = 35.91 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -19.41  -1.35   0.00 -10.78   0.00  35.91
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 34.34 + 0.00) = 34.34 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -54     15   0.50  67.70 -18.13  -4.45   0.00 -10.78   0.00  34.34
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 32.37 + 0.00) = 32.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     62   0.50  67.70 -18.13  -6.42   0.00 -10.78   0.00  32.37
-------------------------------------------------------------------------

Segment Leq : 45.34 dBA

Total Leq All Segments: 46.25 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  32.80 / 32.80  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 436.40 / 436.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 56.16 + 0.00) = 56.16 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -5.61  -1.44   0.00   0.00   0.00  56.16
-------------------------------------------------------------------------------

Segment Leq : 56.16 dBA

Results segment # 2: Oxbow Dr. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.83 + 0.00) = 22.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.18  -1.44   0.00 -16.06   0.00  22.83
-------------------------------------------------------------------------------

Segment Leq : 22.83 dBA

Total Leq All Segments: 56.16 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 50.08 + 0.00) = 50.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -5.31  -1.29   0.00   0.00   0.00  50.08
-------------------------------------------------------------------------------

Segment Leq : 50.08 dBA

Results segment # 2: Oxbow Dr. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.77 + 0.00) = 17.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -22.86  -1.29   0.00 -16.06   0.00  17.77
-------------------------------------------------------------------------------

Segment Leq : 17.77 dBA

Total Leq All Segments: 50.08 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.49
                           (NIGHT): 51.58
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:45:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA134N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 244.90 / 244.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.23 + 0.00) = 36.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
   -90     90    0.58  77.60 -24.14  -1.33   0.00 -15.90   0.00  36.23
-------------------------------------------------------------------------

WHEEL (0.00 + 28.00 + 0.00) = 28.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -25.28  -1.46   0.00 -15.90   0.00  28.00
-------------------------------------------------------------------------

Segment Leq : 36.84 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.93 + 0.00) = 42.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -19.22  -1.33   0.00 -10.78   0.00  42.93
-------------------------------------------------------------------------

WHEEL (0.00 + 35.14 + 0.00) = 35.14 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -20.13  -1.46   0.00 -10.78   0.00  35.14
-------------------------------------------------------------------------

Segment Leq : 43.60 dBA

Total Leq All Segments: 44.43 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.77 + 0.00) = 37.77 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -22.77  -1.17   0.00 -15.90   0.00  37.77
-------------------------------------------------------------------------

WHEEL (0.00 + 29.41 + 0.00) = 29.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -24.37  -1.35   0.00 -15.90   0.00  29.41
-------------------------------------------------------------------------

Segment Leq : 38.36 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 44.13 + 0.00) = 44.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -18.13  -1.17   0.00 -10.78   0.00  44.13
-------------------------------------------------------------------------

WHEEL (0.00 + 35.91 + 0.00) = 35.91 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -19.41  -1.35   0.00 -10.78   0.00  35.91
-------------------------------------------------------------------------

Segment Leq : 44.74 dBA

Total Leq All Segments: 45.64 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
```

```
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  32.80 / 32.80  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 436.40 / 436.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 56.16 + 0.00) = 56.16 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -5.61  -1.44   0.00   0.00   0.00  56.16
-------------------------------------------------------------------------------

Segment Leq : 56.16 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 22.83 + 0.00) = 22.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -24.18  -1.44   0.00 -16.06   0.00  22.83
-------------------------------------------------------------------------------

Segment Leq : 22.83 dBA

Total Leq All Segments: 56.16 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 50.08 + 0.00) = 50.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -5.31  -1.29   0.00   0.00   0.00  50.08
-------------------------------------------------------------------------------

Segment Leq : 50.08 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.77 + 0.00) = 17.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -22.86  -1.29   0.00 -16.06   0.00  17.77
-------------------------------------------------------------------------------

Segment Leq : 17.77 dBA

Total Leq All Segments: 50.08 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.44
                           (NIGHT): 51.42
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:52:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA135D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 497.60 / 497.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 290.10 / 290.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.28 + 0.00) = 36.28 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -24.10  -1.33   0.00 -15.90   0.00  36.28
-------------------------------------------------------------------------

WHEEL (0.00 + 28.06 + 0.00) = 28.06 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -25.25  -1.46   0.00 -15.90   0.00  28.06
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.51 + 0.00) = 27.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  73.92 -24.10  -6.42   0.00 -15.90   0.00  27.51
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.40 + 0.00) = 26.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    10     44   0.58  73.92 -24.10  -7.52   0.00 -15.90   0.00  26.40
-------------------------------------------------------------------------

Segment Leq : 37.70 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 40.44 + 0.00) = 40.44 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -20.39  -1.33   0.00 -12.11   0.00  40.44
-------------------------------------------------------------------------

WHEEL (0.00 + 32.59 + 0.00) = 32.59 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -21.36  -1.46   0.00 -12.11   0.00  32.59
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 30.46 + 0.00) = 30.46 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -48     15   0.58  67.76 -20.39  -4.80   0.00 -12.11   0.00  30.46
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 28.47 + 0.00) = 28.47 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     59   0.58  67.76 -20.39  -6.79   0.00 -12.11   0.00  28.47
-------------------------------------------------------------------------

Segment Leq : 41.67 dBA

Total Leq All Segments: 43.13 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.80 + 0.00) = 37.80 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -22.74  -1.17   0.00 -15.90   0.00  37.80
-------------------------------------------------------------------------

WHEEL (0.00 + 29.45 + 0.00) = 29.45 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -24.33  -1.35   0.00 -15.90   0.00  29.45
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 27.82 + 0.00) = 27.82 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.50  72.86 -22.74  -6.40   0.00 -15.90   0.00  27.82
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 26.75 + 0.00) = 26.75 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.50  72.86 -22.74  -7.47   0.00 -15.90   0.00  26.75
-------------------------------------------------------------------------

Segment Leq : 39.02 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 41.70 + 0.00) = 41.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

-90	90	0.50	74.21	-19.23	-1.17	0.00	-12.11	0.00	41.70

WHEEL (0.00 + 33.40 + 0.00) = 33.40 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-20.58	-1.35	0.00	-12.11	0.00	33.40

LEFT WHISTLE (0.00 + 31.59 + 0.00) = 31.59 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-48	15	0.50	67.70	-19.23	-4.77	0.00	-12.11	0.00	31.59

RIGHT WHISTLE (0.00 + 29.67 + 0.00) = 29.67 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
15	59	0.50	67.70	-19.23	-6.69	0.00	-12.11	0.00	29.67

Segment Leq : 42.87 dBA

Total Leq All Segments: 44.37 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	50.00 / 50.00	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	394.00 / 394.00	m
Receiver height	1.50 / 4.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 53.14 + 0.00) = 53.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-8.64	-1.44	0.00	0.00	0.00	53.14

Segment Leq : 53.14 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 23.40 + 0.00) = 23.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-23.44	-1.44	0.00	-16.22	0.00	23.40

Segment Leq : 23.40 dBA

Total Leq All Segments: 53.14 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 47.22 + 0.00) = 47.22 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-8.17	-1.29	0.00	0.00	0.00	47.22

Segment Leq : 47.22 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 18.30 + 0.00) = 18.30 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-22.17	-1.29	0.00	-16.22	0.00	18.30

Segment Leq : 18.30 dBA

Total Leq All Segments: 47.23 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.56
(NIGHT): 49.04

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 10:52:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA135N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 497.60 / 497.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 290.10 / 290.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 36.28 + 0.00) = 36.28 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
   -90     90    0.58  77.62 -24.10  -1.33   0.00 -15.90   0.00  36.28
-------------------------------------------------------------------------

WHEEL (0.00 + 28.06 + 0.00) = 28.06 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.66 -25.25  -1.46   0.00 -15.90   0.00  28.06
-------------------------------------------------------------------------

Segment Leq : 36.89 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 40.44 + 0.00) = 40.44 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -20.39  -1.33   0.00 -12.11   0.00  40.44
-------------------------------------------------------------------------

WHEEL (0.00 + 32.59 + 0.00) = 32.59 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -21.36  -1.46   0.00 -12.11   0.00  32.59
-------------------------------------------------------------------------

Segment Leq : 41.10 dBA

Total Leq All Segments: 42.50 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 37.80 + 0.00) = 37.80 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -22.74  -1.17   0.00 -15.90   0.00  37.80
-------------------------------------------------------------------------

WHEEL (0.00 + 29.45 + 0.00) = 29.45 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -24.33  -1.35   0.00 -15.90   0.00  29.45
-------------------------------------------------------------------------

Segment Leq : 38.39 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 41.70 + 0.00) = 41.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -19.23  -1.17   0.00 -12.11   0.00  41.70
-------------------------------------------------------------------------

WHEEL (0.00 + 33.40 + 0.00) = 33.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -20.58  -1.35   0.00 -12.11   0.00  33.40
-------------------------------------------------------------------------

Segment Leq : 42.30 dBA

Total Leq All Segments: 43.78 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
```

```
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 394.00 / 394.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 53.14 + 0.00) = 53.14 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -8.64  -1.44   0.00   0.00   0.00  53.14
-------------------------------------------------------------------------------

Segment Leq : 53.14 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.40 + 0.00) = 23.40 dBA
```



```
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -23.44  -1.44   0.00 -16.22   0.00  23.40
-------------------------------------------------------------------------------

Segment Leq : 23.40 dBA

Total Leq All Segments: 53.14 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 47.22 + 0.00) = 47.22 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -8.17  -1.29   0.00   0.00   0.00  47.22
-------------------------------------------------------------------------------

Segment Leq : 47.22 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 18.30 + 0.00) = 18.30 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -22.17  -1.29   0.00 -16.22   0.00  18.30
-------------------------------------------------------------------------------

Segment Leq : 18.30 dBA

Total Leq All Segments: 47.23 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.50
                           (NIGHT): 48.85
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 11:07:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA153D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 383.40 / 383.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 431.50 / 431.50 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -22.31  -1.33   0.00 -16.26   0.00  37.70
-------------------------------------------------------------------------

WHEEL (0.00 + 29.56 + 0.00) = 29.56 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -23.37  -1.46   0.00 -16.26   0.00  29.56
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 29.87 + 0.00) = 29.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -38     15   0.58  73.91 -22.31  -5.47   0.00 -16.26   0.00  29.87
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 28.02 + 0.00) = 28.02 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    15     53   0.58  73.91 -22.31  -7.32   0.00 -16.26   0.00  28.02
-------------------------------------------------------------------------

Segment Leq : 39.24 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.73 + 0.00) = 33.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -23.12  -1.33   0.00 -16.08   0.00  33.73
-------------------------------------------------------------------------

WHEEL (0.00 + 25.75 + 0.00) = 25.75 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -24.22  -1.46   0.00 -16.08   0.00  25.75
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 22.57 + 0.00) = 22.57 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37     10   0.58  67.76 -23.12  -5.99   0.00 -16.08   0.00  22.57
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 21.39 + 0.00) = 21.39 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     48   0.58  67.76 -23.12  -7.17   0.00 -16.08   0.00  21.39
-------------------------------------------------------------------------

Segment Leq : 34.85 dBA

Total Leq All Segments: 40.59 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 39.13 + 0.00) = 39.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -21.04  -1.17   0.00 -16.26   0.00  39.13
-------------------------------------------------------------------------

WHEEL (0.00 + 30.90 + 0.00) = 30.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -22.52  -1.35   0.00 -16.26   0.00  30.90
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 30.10 + 0.00) = 30.10 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -38     15   0.50  72.86 -21.04  -5.45   0.00 -16.26   0.00  30.10
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 28.31 + 0.00) = 28.31 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     53   0.50  72.86 -21.04  -7.24   0.00 -16.26   0.00  28.31
-------------------------------------------------------------------------

Segment Leq : 40.46 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 35.15 + 0.00) = 35.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.21 -21.81  -1.17   0.00 -16.08   0.00  35.15
-------------------------------------------------------------------------

WHEEL (0.00 + 26.67 + 0.00) = 26.67 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -23.34  -1.35   0.00 -16.08   0.00  26.67
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 23.85 + 0.00) = 23.85 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37     10   0.50  67.70 -21.81  -5.96   0.00 -16.08   0.00  23.85
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 22.70 + 0.00) = 22.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     48   0.50  67.70 -21.81  -7.11   0.00 -16.08   0.00  22.70
-------------------------------------------------------------------------

Segment Leq : 36.20 dBA

Total Leq All Segments: 41.84 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.70 / 46.70  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 246.40 / 246.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 53.63 + 0.00) = 53.63 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -8.15  -1.44   0.00   0.00   0.00  53.63
-------------------------------------------------------------------------------

Segment Leq : 53.63 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 29.21 + 0.00) = 29.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.08  -1.44   0.00 -13.78   0.00  29.21
-------------------------------------------------------------------------------

Segment Leq : 29.21 dBA

Total Leq All Segments: 53.65 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 47.68 + 0.00) = 47.68 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -7.70  -1.29   0.00   0.00   0.00  47.68
-------------------------------------------------------------------------------

Segment Leq : 47.68 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.93 + 0.00) = 23.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.98  -1.29   0.00 -13.78   0.00  23.93
-------------------------------------------------------------------------------

Segment Leq : 23.93 dBA

Total Leq All Segments: 47.70 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.86
                           (NIGHT): 48.70
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 11:08:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA153N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 383.40 / 383.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 431.50 / 431.50 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.70 + 0.00) = 37.70 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
   -90     90    0.58  77.60 -22.31  -1.33   0.00 -16.26   0.00  37.70
-------------------------------------------------------------------------

WHEEL (0.00 + 29.56 + 0.00) = 29.56 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -23.37  -1.46   0.00 -16.26   0.00  29.56
-------------------------------------------------------------------------

Segment Leq : 38.32 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.73 + 0.00) = 33.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -23.12  -1.33   0.00 -16.08   0.00  33.73
-------------------------------------------------------------------------

WHEEL (0.00 + 25.75 + 0.00) = 25.75 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -24.22  -1.46   0.00 -16.08   0.00  25.75
-------------------------------------------------------------------------

Segment Leq : 34.37 dBA

Total Leq All Segments: 39.79 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 39.13 + 0.00) = 39.13 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -21.04  -1.17   0.00 -16.26   0.00  39.13
-------------------------------------------------------------------------

WHEEL (0.00 + 30.90 + 0.00) = 30.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -22.52  -1.35   0.00 -16.26   0.00  30.90
-------------------------------------------------------------------------

Segment Leq : 39.74 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 35.15 + 0.00) = 35.15 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -21.81  -1.17   0.00 -16.08   0.00  35.15
-------------------------------------------------------------------------

WHEEL (0.00 + 26.67 + 0.00) = 26.67 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -23.34  -1.35   0.00 -16.08   0.00  26.67
-------------------------------------------------------------------------

Segment Leq : 35.73 dBA

Total Leq All Segments: 41.19 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
```

```
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.70 / 46.70  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 246.40 / 246.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 53.63 + 0.00) = 53.63 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -8.15  -1.44   0.00   0.00   0.00  53.63
-------------------------------------------------------------------------------

Segment Leq : 53.63 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 29.21 + 0.00) = 29.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.08  -1.44   0.00 -13.78   0.00  29.21
-------------------------------------------------------------------------------

Segment Leq : 29.21 dBA

Total Leq All Segments: 53.65 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 47.68 + 0.00) = 47.68 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -7.70  -1.29   0.00   0.00   0.00  47.68
-------------------------------------------------------------------------------

Segment Leq : 47.68 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.93 + 0.00) = 23.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.98  -1.29   0.00 -13.78   0.00  23.93
-------------------------------------------------------------------------------

Segment Leq : 23.93 dBA

Total Leq All Segments: 47.70 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.82
                           (NIGHT): 48.57
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 11:10:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA154.te            Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 376.10 / 376.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 434.70 / 434.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.80 + 0.00) = 37.80 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -22.18  -1.33   0.00 -16.29   0.00  37.80
-------------------------------------------------------------------------

WHEEL (0.00 + 29.67 + 0.00) = 29.67 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -23.23  -1.46   0.00 -16.29   0.00  29.67
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 30.03 + 0.00) = 30.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -39     15   0.58  73.91 -22.18  -5.42   0.00 -16.29   0.00  30.03
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 28.17 + 0.00) = 28.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    15     53   0.58  73.91 -22.18  -7.28   0.00 -16.29   0.00  28.17
-------------------------------------------------------------------------

Segment Leq : 39.35 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.69 + 0.00) = 33.69 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -23.17  -1.33   0.00 -16.07   0.00  33.69
-------------------------------------------------------------------------

WHEEL (0.00 + 25.71 + 0.00) = 25.71 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -24.27  -1.46   0.00 -16.07   0.00  25.71
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 22.51 + 0.00) = 22.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37     10   0.58  67.76 -23.17  -6.01   0.00 -16.07   0.00  22.51
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 21.33 + 0.00) = 21.33 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     48   0.58  67.76 -23.17  -7.18   0.00 -16.07   0.00  21.33
-------------------------------------------------------------------------

Segment Leq : 34.81 dBA

Total Leq All Segments: 40.66 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 39.23 + 0.00) = 39.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -20.92  -1.17   0.00 -16.29   0.00  39.23
-------------------------------------------------------------------------

WHEEL (0.00 + 31.00 + 0.00) = 31.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -22.39  -1.35   0.00 -16.29   0.00  31.00
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 30.25 + 0.00) = 30.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -39     15   0.50  72.86 -20.92  -5.40   0.00 -16.29   0.00  30.25
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 28.45 + 0.00) = 28.45 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     53   0.50  72.86 -20.92  -7.20   0.00 -16.29   0.00  28.45
-------------------------------------------------------------------------

Segment Leq : 40.57 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 35.12 + 0.00) = 35.12 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.21 -21.86  -1.17   0.00 -16.07   0.00  35.12
-------------------------------------------------------------------------

WHEEL (0.00 + 26.64 + 0.00) = 26.64 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -23.39  -1.35   0.00 -16.07   0.00  26.64
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 23.79 + 0.00) = 23.79 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -37     10   0.50  67.70 -21.86  -5.99   0.00 -16.07   0.00  23.79
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 22.65 + 0.00) = 22.65 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     48   0.50  67.70 -21.86  -7.13   0.00 -16.07   0.00  22.65
-------------------------------------------------------------------------

Segment Leq : 36.17 dBA

Total Leq All Segments: 41.92 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     75 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  58.60 / 58.60  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 246.40 / 246.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 46.79 + 0.00) = 46.79 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -9.77  -1.44   0.00  -5.21   0.00  46.79
-------------------------------------------------------------------------------

Segment Leq : 46.79 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 29.21 + 0.00) = 29.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.08  -1.44   0.00 -13.78   0.00  29.21
-------------------------------------------------------------------------------

Segment Leq : 29.21 dBA

Total Leq All Segments: 46.87 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 40.93 + 0.00) = 40.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -9.24  -1.29   0.00  -5.21   0.00  40.93
-------------------------------------------------------------------------------

Segment Leq : 40.93 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.93 + 0.00) = 23.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.98  -1.29   0.00 -13.78   0.00  23.93
-------------------------------------------------------------------------------

Segment Leq : 23.93 dBA

Total Leq All Segments: 41.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 47.80
                           (NIGHT): 44.50
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 11:10:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA154N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 376.10 / 376.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 434.70 / 434.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 37.80 + 0.00) = 37.80 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
   -90     90    0.58  77.60 -22.18  -1.33   0.00 -16.29   0.00  37.80
-------------------------------------------------------------------------

WHEEL (0.00 + 29.67 + 0.00) = 29.67 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  70.64 -23.23  -1.46   0.00 -16.29   0.00  29.67
-------------------------------------------------------------------------

Segment Leq : 38.42 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.69 + 0.00) = 33.69 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.58  74.27 -23.17  -1.33   0.00 -16.07   0.00  33.69
-------------------------------------------------------------------------

WHEEL (0.00 + 25.71 + 0.00) = 25.71 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.66  67.51 -24.27  -1.46   0.00 -16.07   0.00  25.71
-------------------------------------------------------------------------

Segment Leq : 34.33 dBA

Total Leq All Segments: 39.85 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 39.23 + 0.00) = 39.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  77.60 -20.92  -1.17   0.00 -16.29   0.00  39.23
-------------------------------------------------------------------------

WHEEL (0.00 + 31.00 + 0.00) = 31.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  71.03 -22.39  -1.35   0.00 -16.29   0.00  31.00
-------------------------------------------------------------------------

Segment Leq : 39.84 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 35.12 + 0.00) = 35.12 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.50  74.21 -21.86  -1.17   0.00 -16.07   0.00  35.12
-------------------------------------------------------------------------

WHEEL (0.00 + 26.64 + 0.00) = 26.64 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90    0.60  67.45 -23.39  -1.35   0.00 -16.07   0.00  26.64
-------------------------------------------------------------------------

Segment Leq : 35.70 dBA

Total Leq All Segments: 41.26 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
```

```
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     75 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  58.60 / 58.60  m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 246.40 / 246.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 46.79 + 0.00) = 46.79 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00  -9.77  -1.44   0.00  -5.21   0.00  46.79
-------------------------------------------------------------------------------

Segment Leq : 46.79 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m
```



```
ROAD (0.00 + 29.21 + 0.00) = 29.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.08  -1.44   0.00 -13.78   0.00  29.21
-------------------------------------------------------------------------------

Segment Leq : 29.21 dBA

Total Leq All Segments: 46.87 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 40.93 + 0.00) = 40.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00  -9.24  -1.29   0.00  -5.21   0.00  40.93
-------------------------------------------------------------------------------

Segment Leq : 40.93 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.93 + 0.00) = 23.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.98  -1.29   0.00 -13.78   0.00  23.93
-------------------------------------------------------------------------------

Segment Leq : 23.93 dBA

Total Leq All Segments: 41.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 47.65
                           (NIGHT): 44.15
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 13:18:09
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA163D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      6 / 6
House density             :     85 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 310.90 / 310.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 463.40 / 463.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.10 + 0.00) = 42.10 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -20.87  -1.33   0.00 -13.32   0.00  42.10
-------------------------------------------------------------------------

WHEEL (0.00 + 34.03 + 0.00) = 34.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -21.85  -1.46   0.00 -13.32   0.00  34.03
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 34.79 + 0.00) = 34.79 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -46     15   0.58  73.92 -20.87  -4.95   0.00 -13.32   0.00  34.79
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 32.83 + 0.00) = 32.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    15     57   0.58  73.92 -20.87  -6.91   0.00 -13.32   0.00  32.83
-------------------------------------------------------------------------

Segment Leq : 43.74 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.42 + 0.00) = 33.42 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -23.61  -1.33   0.00 -15.96   0.00  33.42
-------------------------------------------------------------------------

WHEEL (0.00 + 25.41 + 0.00) = 25.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -24.73  -1.46   0.00 -15.96   0.00  25.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 22.04 + 0.00) = 22.04 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -34     10   0.58  67.81 -23.61  -6.19   0.00 -15.96   0.00  22.04
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 20.90 + 0.00) = 20.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     46   0.58  67.81 -23.61  -7.34   0.00 -15.96   0.00  20.90
-------------------------------------------------------------------------

Segment Leq : 34.52 dBA

Total Leq All Segments: 44.23 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.39 + 0.00) = 43.39 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.56 -19.68  -1.17   0.00 -13.32   0.00  43.39
-------------------------------------------------------------------------

WHEEL (0.00 + 35.25 + 0.00) = 35.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.99 -21.06  -1.35   0.00 -13.32   0.00  35.25
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 34.90 + 0.00) = 34.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -46     15   0.50  72.82 -19.68  -4.92   0.00 -13.32   0.00  34.90
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 33.00 + 0.00) = 33.00 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     57   0.50  72.82 -19.68  -6.82   0.00 -13.32   0.00  33.00
-------------------------------------------------------------------------

Segment Leq : 44.81 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.92 + 0.00) = 34.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.32 -22.27  -1.17   0.00 -15.96   0.00  34.92
-------------------------------------------------------------------------

WHEEL (0.00 + 26.41 + 0.00) = 26.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.56 -23.84  -1.35   0.00 -15.96   0.00  26.41
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 23.40 + 0.00) = 23.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -34     10   0.50  67.81 -22.27  -6.18   0.00 -15.96   0.00  23.40
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 22.29 + 0.00) = 22.29 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     46   0.50  67.81 -22.27  -7.29   0.00 -15.96   0.00  22.29
-------------------------------------------------------------------------

Segment Leq : 35.94 dBA

Total Leq All Segments: 45.34 dBA

Road data, segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 166.10 / 166.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
-----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     70 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 246.60 / 246.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 27.23 + 0.00) = 27.23 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -17.25  -1.44   0.00 -17.29   0.00  27.23
-------------------------------------------------------------------------------

Segment Leq : 27.23 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 37.39 + 0.00) = 37.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.08  -1.44   0.00  -5.59   0.00  37.39
-------------------------------------------------------------------------------

Segment Leq : 37.39 dBA

Total Leq All Segments: 37.79 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.78 + 0.00) = 21.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -16.31  -1.29   0.00 -17.29   0.00  21.78
-------------------------------------------------------------------------------

Segment Leq : 21.78 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 32.11 + 0.00) = 32.11 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.99  -1.29   0.00  -5.59   0.00  32.11
-------------------------------------------------------------------------------

Segment Leq : 32.11 dBA

Total Leq All Segments: 32.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 45.12
                           (NIGHT): 45.56
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 13:18:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA163N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.4  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      6 / 6
House density             :     85 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 310.90 / 310.90 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/4.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 463.40 / 463.40 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 42.10 + 0.00) = 42.10 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -20.87  -1.33   0.00 -13.32   0.00  42.10
-------------------------------------------------------------------

WHEEL (0.00 + 34.03 + 0.00) = 34.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -21.85  -1.46   0.00 -13.32   0.00  34.03
-------------------------------------------------------------------
```



```
Segment Leq : 42.73 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.42 + 0.00) = 33.42 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -23.61  -1.33   0.00 -15.96   0.00  33.42
-------------------------------------------------------------------

WHEEL (0.00 + 25.41 + 0.00) = 25.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -24.73  -1.46   0.00 -15.96   0.00  25.41
-------------------------------------------------------------------

Segment Leq : 34.06 dBA

Total Leq All Segments: 43.28 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 43.39 + 0.00) = 43.39 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.56 -19.68  -1.17   0.00 -13.32   0.00  43.39
-------------------------------------------------------------------

WHEEL (0.00 + 35.25 + 0.00) = 35.25 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  70.99 -21.06  -1.35   0.00 -13.32   0.00  35.25
-------------------------------------------------------------------

Segment Leq : 44.01 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.92 + 0.00) = 34.92 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.32 -22.27  -1.17   0.00 -15.96   0.00  34.92
-------------------------------------------------------------------

WHEEL (0.00 + 26.41 + 0.00) = 26.41 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.56 -23.84  -1.35   0.00 -15.96   0.00  26.41
-------------------------------------------------------------------

Segment Leq : 35.49 dBA

Total Leq All Segments: 44.58 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
```

```
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 166.10 / 166.10 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     70 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 246.60 / 246.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 27.23 + 0.00) = 27.23 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -17.25  -1.44   0.00 -17.29   0.00  27.23
-------------------------------------------------------------------------------

Segment Leq : 27.23 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 37.39 + 0.00) = 37.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.08  -1.44   0.00  -5.59   0.00  37.39
-------------------------------------------------------------------------------

Segment Leq : 37.39 dBA
```



```
Total Leq All Segments: 37.79 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.78 + 0.00) = 21.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -16.31  -1.29   0.00 -17.29   0.00  21.78
-------------------------------------------------------------------------------

Segment Leq : 21.78 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 32.11 + 0.00) = 32.11 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.99  -1.29   0.00  -5.59   0.00  32.11
-------------------------------------------------------------------------------

Segment Leq : 32.11 dBA

Total Leq All Segments: 32.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 44.36
                           (NIGHT): 44.84
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 11:28:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: poa164d.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     85 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 303.70 / 303.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 466.80 / 466.80 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 43.74 + 0.00) = 43.74 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -20.71  -1.33   0.00 -11.84   0.00  43.74
-------------------------------------------------------------------------

WHEEL (0.00 + 35.68 + 0.00) = 35.68 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -21.69  -1.46   0.00 -11.84   0.00  35.68
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 36.48 + 0.00) = 36.48 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -46     15   0.58  73.92 -20.71  -4.90   0.00 -11.84   0.00  36.48
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 34.51 + 0.00) = 34.51 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------
    15     58   0.58  73.92 -20.71  -6.87   0.00 -11.84   0.00  34.51
-------------------------------------------------------------------------

Segment Leq : 45.39 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.38 + 0.00) = 33.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.32 -23.66  -1.33   0.00 -15.95   0.00  33.38
-------------------------------------------------------------------------

WHEEL (0.00 + 25.37 + 0.00) = 25.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.56 -24.78  -1.46   0.00 -15.95   0.00  25.37
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.98 + 0.00) = 21.98 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -34     10   0.58  67.81 -23.66  -6.22   0.00 -15.95   0.00  21.98
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 20.84 + 0.00) = 20.84 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     46   0.58  67.81 -23.66  -7.36   0.00 -15.95   0.00  20.84
-------------------------------------------------------------------------

Segment Leq : 34.47 dBA

Total Leq All Segments: 45.73 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 45.03 + 0.00) = 45.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.56 -19.53  -1.17   0.00 -11.84   0.00  45.03
-------------------------------------------------------------------------

WHEEL (0.00 + 36.90 + 0.00) = 36.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.99 -20.90  -1.35   0.00 -11.84   0.00  36.90
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 36.59 + 0.00) = 36.59 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -46     15   0.50  72.82 -19.53  -4.86   0.00 -11.84   0.00  36.59
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 34.68 + 0.00) = 34.68 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     58   0.50  72.82 -19.53  -6.77   0.00 -11.84   0.00  34.68
-------------------------------------------------------------------------

Segment Leq : 46.46 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.89 + 0.00) = 34.89 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```

```
   -90     90   0.50  74.32 -22.32  -1.17   0.00 -15.95   0.00  34.89
-------------------------------------------------------------------------

WHEEL (0.00 + 26.37 + 0.00) = 26.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.56 -23.89  -1.35   0.00 -15.95   0.00  26.37
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 23.34 + 0.00) = 23.34 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -34     10   0.50  67.81 -22.32  -6.20   0.00 -15.95   0.00  23.34
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 22.24 + 0.00) = 22.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     46   0.50  67.81 -22.32  -7.31   0.00 -15.95   0.00  22.24
-------------------------------------------------------------------------

Segment Leq : 35.91 dBA

Total Leq All Segments: 46.83 dBA

Road data, segment # 1: Komoka Rd. (day/night)
------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 178.20 / 178.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00
```



```
Data for Segment # 2: Oxbow Dr. (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 7
House density             :     70 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 246.60 / 246.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 26.81 + 0.00) = 26.81 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -17.75  -1.44   0.00 -17.21   0.00  26.81
-------------------------------------------------------------------------------

Segment Leq : 26.81 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 37.39 + 0.00) = 37.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.08  -1.44   0.00  -5.59   0.00  37.39
-------------------------------------------------------------------------------

Segment Leq : 37.39 dBA

Total Leq All Segments: 37.75 dBA

Results segment # 1: Komoka Rd. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.39 + 0.00) = 21.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -16.79  -1.29   0.00 -17.21   0.00  21.39
-------------------------------------------------------------------------------

Segment Leq : 21.39 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 24.61 + 0.00) = 24.61 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.99  -1.29   0.00 -13.09   0.00  24.61
-------------------------------------------------------------------------------

Segment Leq : 24.61 dBA

Total Leq All Segments: 26.30 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 46.37
                           (NIGHT): 46.87
```

```
STAMSON 5.0        NORMAL REPORT        Date: 03-12-2019 11:28:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA164N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.4  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      5 / 5
House density             :     85 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 303.70 / 303.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/4.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 466.80 / 466.80 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 43.74 + 0.00) = 43.74 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -20.71  -1.33   0.00 -11.84   0.00  43.74
-------------------------------------------------------------------

WHEEL (0.00 + 35.68 + 0.00) = 35.68 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -21.69  -1.46   0.00 -11.84   0.00  35.68
-------------------------------------------------------------------
```



```
Segment Leq : 44.37 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 33.38 + 0.00) = 33.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -23.66  -1.33   0.00 -15.95   0.00  33.38
-------------------------------------------------------------------

WHEEL (0.00 + 25.37 + 0.00) = 25.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -24.78  -1.46   0.00 -15.95   0.00  25.37
-------------------------------------------------------------------

Segment Leq : 34.02 dBA

Total Leq All Segments: 44.75 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 45.03 + 0.00) = 45.03 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.56 -19.53  -1.17   0.00 -11.84   0.00  45.03
-------------------------------------------------------------------

WHEEL (0.00 + 36.90 + 0.00) = 36.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  70.99 -20.90  -1.35   0.00 -11.84   0.00  36.90
-------------------------------------------------------------------

Segment Leq : 45.65 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.89 + 0.00) = 34.89 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.32 -22.32  -1.17   0.00 -15.95   0.00  34.89
-------------------------------------------------------------------

WHEEL (0.00 + 26.37 + 0.00) = 26.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.56 -23.89  -1.35   0.00 -15.95   0.00  26.37
-------------------------------------------------------------------

Segment Leq : 35.46 dBA

Total Leq All Segments: 46.05 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
```

```
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 178.20 / 178.20 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 7
House density             :     70 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 246.60 / 246.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 26.81 + 0.00) = 26.81 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -17.75  -1.44   0.00 -17.21   0.00  26.81
-------------------------------------------------------------------------------

Segment Leq : 26.81 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 37.39 + 0.00) = 37.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -20.08  -1.44   0.00  -5.59   0.00  37.39
-------------------------------------------------------------------------------

Segment Leq : 37.39 dBA
```



```
Total Leq All Segments: 37.75 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 21.39 + 0.00) = 21.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -16.79  -1.29   0.00 -17.21   0.00  21.39
-------------------------------------------------------------------------------

Segment Leq : 21.39 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 24.61 + 0.00) = 24.61 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -18.99  -1.29   0.00 -13.09   0.00  24.61
-------------------------------------------------------------------------------

Segment Leq : 24.61 dBA

Total Leq All Segments: 26.30 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 45.54
                           (NIGHT): 46.09
```

```
STAMSON 5.0        NORMAL REPORT        Date: 27-11-2019 09:15:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA166D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 217.30 / 217.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 57.89 + 0.00) = 57.89 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -18.40  -1.33   0.00   0.00   0.00  57.89
-------------------------------------------------------------------

WHEEL (0.00 + 49.93 + 0.00) = 49.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -19.27  -1.46   0.00   0.00   0.00  49.93
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 50.95 + 0.00) = 50.95 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -59     10   0.58  73.92 -18.40  -4.58   0.00   0.00   0.00  50.95
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 49.58 + 0.00) = 49.58 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
```



```
    10     64   0.58  73.92 -18.40  -5.94   0.00   0.00   0.00  49.58
-------------------------------------------------------------------

Segment Leq : 59.68 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.96 + 0.00) = 32.96 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -24.14  -1.33   0.00 -15.90   0.00  32.96
-------------------------------------------------------------------

WHEEL (0.00 + 24.93 + 0.00) = 24.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -25.28  -1.46   0.00 -15.90   0.00  24.93
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.35 + 0.00) = 21.35 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -32     10   0.58  67.81 -24.14  -6.43   0.00 -15.90   0.00  21.35
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 20.24 + 0.00) = 20.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    10     44   0.58  67.81 -24.14  -7.54   0.00 -15.90   0.00  20.24
-------------------------------------------------------------------

Segment Leq : 34.03 dBA

Total Leq All Segments: 59.69 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 59.08 + 0.00) = 59.08 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.60 -17.36  -1.17   0.00   0.00   0.00  59.08
-------------------------------------------------------------------

WHEEL (0.00 + 51.10 + 0.00) = 51.10 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  71.03 -18.58  -1.35   0.00   0.00   0.00  51.10
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 50.99 + 0.00) = 50.99 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -59     10   0.50  72.86 -17.36  -4.52   0.00   0.00   0.00  50.99
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 49.66 + 0.00) = 49.66 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    10     64   0.50  72.86 -17.36  -5.84   0.00   0.00   0.00  49.66
-------------------------------------------------------------------

Segment Leq : 60.63 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -15.90   0.00  34.38
```

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-24.37	-1.35	0.00	-15.90	0.00	25.83

LEFT WHISTLE (0.00 + 22.62 + 0.00) = 22.62 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	10	0.50	67.70	-22.77	-6.41	0.00	-15.90	0.00	22.62

RIGHT WHISTLE (0.00 + 21.55 + 0.00) = 21.55 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	67.70	-22.77	-7.49	0.00	-15.90	0.00	21.55

Segment Leq : 35.38 dBA

Total Leq All Segments: 60.64 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	75 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	222.60 / 222.60 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	172.60 / 172.60 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 28.68 + 0.00) = 28.68 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-19.35	-1.44	0.00	-13.74	0.00	28.68

Segment Leq : 28.68 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-17.52	-1.44	0.00	0.00	0.00	45.54

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.63 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 23.35 + 0.00) = 23.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-18.29	-1.29	0.00	-13.74	0.00	23.35

Segment Leq : 23.35 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-16.57	-1.29	0.00	0.00	0.00	40.12

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.21 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.86
(NIGHT): 60.68

```
STAMSON 5.0        NORMAL REPORT        Date: 27-11-2019 09:15:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA166N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 217.30 / 217.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 57.89 + 0.00) = 57.89 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -18.40  -1.33   0.00   0.00   0.00  57.89
-------------------------------------------------------------------

WHEEL (0.00 + 49.93 + 0.00) = 49.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -19.27  -1.46   0.00   0.00   0.00  49.93
-------------------------------------------------------------------
```



```
Segment Leq : 58.53 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.96 + 0.00) = 32.96 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -24.14  -1.33   0.00 -15.90   0.00  32.96
-------------------------------------------------------------------

WHEEL (0.00 + 24.93 + 0.00) = 24.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -25.28  -1.46   0.00 -15.90   0.00  24.93
-------------------------------------------------------------------

Segment Leq : 33.59 dBA

Total Leq All Segments: 58.54 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 59.08 + 0.00) = 59.08 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.60 -17.36  -1.17   0.00   0.00   0.00  59.08
-------------------------------------------------------------------

WHEEL (0.00 + 51.10 + 0.00) = 51.10 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  71.03 -18.58  -1.35   0.00   0.00   0.00  51.10
-------------------------------------------------------------------

Segment Leq : 59.72 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -15.90   0.00  34.38
-------------------------------------------------------------------

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.45 -24.37  -1.35   0.00 -15.90   0.00  25.83
-------------------------------------------------------------------

Segment Leq : 34.95 dBA

Total Leq All Segments: 59.73 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
```

```
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     75 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 222.60 / 222.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 172.60 / 172.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 28.68 + 0.00) = 28.68 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -19.35  -1.44   0.00 -13.74   0.00  28.68
-------------------------------------------------------------------------------

Segment Leq : 28.68 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -17.52  -1.44   0.00   0.00   0.00  45.54
-------------------------------------------------------------------------------

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.63 dBA
```



```
Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.35 + 0.00) = 23.35 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -18.29  -1.29   0.00 -13.74   0.00  23.35
-------------------------------------------------------------------------------

Segment Leq : 23.35 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -16.57  -1.29   0.00   0.00   0.00  40.12
-------------------------------------------------------------------------------

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.21 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.76
                           (NIGHT): 59.78
```

```
STAMSON 5.0        NORMAL REPORT        Date: 27-11-2019 09:21:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA167D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 213.00 / 213.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     15 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 58.02 + 0.00) = 58.02 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.62 -18.26  -1.33   0.00   0.00   0.00  58.02
-------------------------------------------------------------------------

WHEEL (0.00 + 50.08 + 0.00) = 50.08 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.66 -19.13  -1.46   0.00   0.00   0.00  50.08
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 51.38 + 0.00) = 51.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -58     15   0.58  73.92 -18.26  -4.29   0.00   0.00   0.00  51.38
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 49.31 + 0.00) = 49.31 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
    15     65   0.58  73.92 -18.26  -6.35   0.00   0.00   0.00  49.31
-------------------------------------------------------------------------

Segment Leq : 59.82 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.90 + 0.00) = 32.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -24.14  -1.33   0.00 -15.90   0.00  32.90
-------------------------------------------------------------------------

WHEEL (0.00 + 24.87 + 0.00) = 24.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -25.28  -1.46   0.00 -15.90   0.00  24.87
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.43 + 0.00) = 21.43 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -28     15   0.58  67.76 -24.14  -6.29   0.00 -15.90   0.00  21.43
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 19.78 + 0.00) = 19.78 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     47   0.58  67.76 -24.14  -7.95   0.00 -15.90   0.00  19.78
-------------------------------------------------------------------------

Segment Leq : 33.96 dBA

Total Leq All Segments: 59.83 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 59.17 + 0.00) = 59.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.56 -17.23  -1.17   0.00   0.00   0.00  59.17
-------------------------------------------------------------------------

WHEEL (0.00 + 51.20 + 0.00) = 51.20 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  70.99 -18.44  -1.35   0.00   0.00   0.00  51.20
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 51.37 + 0.00) = 51.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -58     15   0.50  72.82 -17.23  -4.23   0.00   0.00   0.00  51.37
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 49.37 + 0.00) = 49.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    15     65   0.50  72.82 -17.23  -6.23   0.00   0.00   0.00  49.37
-------------------------------------------------------------------------

Segment Leq : 60.72 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -15.90   0.00  34.38
```

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-24.37	-1.35	0.00	-15.90	0.00	25.83

LEFT WHISTLE (0.00 + 22.76 + 0.00) = 22.76 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-28	15	0.50	67.70	-22.77	-6.28	0.00	-15.90	0.00	22.76

RIGHT WHISTLE (0.00 + 21.16 + 0.00) = 21.16 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
15	47	0.50	67.70	-22.77	-7.88	0.00	-15.90	0.00	21.16

Segment Leq : 35.37 dBA

Total Leq All Segments: 60.73 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	: 2600/289	veh/TimePeriod *
Medium truck volume	: 0/0	veh/TimePeriod *
Heavy truck volume	: 289/32	veh/TimePeriod *
Posted speed limit	: 50 km/h	
Road gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	: 1581
Percentage of Annual Growth	: 5.60
Number of Years of Growth	: 13.00
Medium Truck % of Total Volume	: 0.00
Heavy Truck % of Total Volume	: 10.00
Day (16 hrs) % of Total Volume	: 90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	: -90.00 deg	90.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 7 / 7	
House density	: 75 %	
Surface	: 1	(Absorptive ground surface)
Receiver source distance	: 237.60 / 237.60 m	
Receiver height	: 1.50 / 4.50 m	
Topography	: 1	(Flat/gentle slope; no barrier)
Reference angle	: 0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	: 2596/288	veh/TimePeriod *
Medium truck volume	: 0/0	veh/TimePeriod *
Heavy truck volume	: 288/32	veh/TimePeriod *
Posted speed limit	: 60 km/h	
Road gradient	: 0 %	
Road pavement	: 1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	: 2024
Percentage of Annual Growth	: 3.60
Number of Years of Growth	: 13.00
Medium Truck % of Total Volume	: 0.00
Heavy Truck % of Total Volume	: 10.00
Day (16 hrs) % of Total Volume	: 90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	: -90.00 deg	90.00 deg
Wood depth	: 0	(No woods.)
No of house rows	: 0 / 0	
Surface	: 1	(Absorptive ground surface)
Receiver source distance	: 172.60 / 172.60 m	
Receiver height	: 1.50 / 4.50 m	
Topography	: 1	(Flat/gentle slope; no barrier)
Reference angle	: 0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 28.25 + 0.00) = 28.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-19.82	-1.44	0.00	-13.71	0.00	28.25

Segment Leq : 28.25 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-17.52	-1.44	0.00	0.00	0.00	45.54

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.62 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 22.94 + 0.00) = 22.94 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-18.74	-1.29	0.00	-13.71	0.00	22.94

Segment Leq : 22.94 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-16.57	-1.29	0.00	0.00	0.00	40.12

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.20 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.99
(NIGHT): 60.77

```
STAMSON 5.0        NORMAL REPORT        Date: 27-11-2019 09:51:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA167N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.4  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 213.00 / 213.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 58.02 + 0.00) = 58.02 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.62 -18.26  -1.33   0.00   0.00   0.00  58.02
```



```
-------------------------------------------------------------------

WHEEL (0.00 + 50.08 + 0.00) = 50.08 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -19.13  -1.46   0.00   0.00   0.00  50.08
-------------------------------------------------------------------

Segment Leq : 58.67 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.90 + 0.00) = 32.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.27 -24.14  -1.33   0.00 -15.90   0.00  32.90
-------------------------------------------------------------------

WHEEL (0.00 + 24.87 + 0.00) = 24.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.51 -25.28  -1.46   0.00 -15.90   0.00  24.87
-------------------------------------------------------------------

Segment Leq : 33.53 dBA

Total Leq All Segments: 58.68 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 59.17 + 0.00) = 59.17 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.56 -17.23  -1.17   0.00   0.00   0.00  59.17
-------------------------------------------------------------------

WHEEL (0.00 + 51.20 + 0.00) = 51.20 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  70.99 -18.44  -1.35   0.00   0.00   0.00  51.20
-------------------------------------------------------------------

Segment Leq : 59.81 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -15.90   0.00  34.38
-------------------------------------------------------------------

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.45 -24.37  -1.35   0.00 -15.90   0.00  25.83
-------------------------------------------------------------------

Segment Leq : 34.95 dBA

Total Leq All Segments: 59.82 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
```

```
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     75 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 237.60 / 237.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 172.60 / 172.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 28.25 + 0.00) = 28.25 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -19.82  -1.44   0.00 -13.71   0.00  28.25
-------------------------------------------------------------------------------

Segment Leq : 28.25 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -17.52  -1.44   0.00   0.00   0.00  45.54
-------------------------------------------------------------------------------

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.62 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.94 + 0.00) = 22.94 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -18.74  -1.29   0.00 -13.71   0.00  22.94
-------------------------------------------------------------------------------

Segment Leq : 22.94 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -16.57  -1.29   0.00   0.00   0.00  40.12
-------------------------------------------------------------------------------

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.20 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.89
                           (NIGHT): 59.87
```

```
STAMSON 5.0        NORMAL REPORT        Date: 27-11-2019 09:55:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA168D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 196.70 / 196.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 58.55 + 0.00) = 58.55 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  77.60 -17.72  -1.33   0.00   0.00   0.00  58.55
-------------------------------------------------------------------------

WHEEL (0.00 + 50.63 + 0.00) = 50.63 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  70.64 -18.55  -1.46   0.00   0.00   0.00  50.63
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 51.74 + 0.00) = 51.74 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -62     10   0.58  73.91 -17.72  -4.45   0.00   0.00   0.00  51.74
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 50.37 + 0.00) = 50.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
```



```
    10     66   0.58  73.91 -17.72  -5.83   0.00   0.00   0.00  50.37
-------------------------------------------------------------------------

Segment Leq : 60.37 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.90 + 0.00) = 32.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.58  74.27 -24.14  -1.33   0.00 -15.90   0.00  32.90
-------------------------------------------------------------------------

WHEEL (0.00 + 24.87 + 0.00) = 24.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.66  67.51 -25.28  -1.46   0.00 -15.90   0.00  24.87
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.29 + 0.00) = 21.29 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -32     10   0.58  67.76 -24.14  -6.43   0.00 -15.90   0.00  21.29
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 20.18 + 0.00) = 20.18 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     44   0.58  67.76 -24.14  -7.54   0.00 -15.90   0.00  20.18
-------------------------------------------------------------------------

Segment Leq : 33.97 dBA

Total Leq All Segments: 60.38 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 59.73 + 0.00) = 59.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  77.60 -16.71  -1.17   0.00   0.00   0.00  59.73
-------------------------------------------------------------------------

WHEEL (0.00 + 51.80 + 0.00) = 51.80 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  71.03 -17.88  -1.35   0.00   0.00   0.00  51.80
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 51.76 + 0.00) = 51.76 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -62     10   0.50  72.86 -16.71  -4.39   0.00   0.00   0.00  51.76
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 50.43 + 0.00) = 50.43 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    10     66   0.50  72.86 -16.71  -5.72   0.00   0.00   0.00  50.43
-------------------------------------------------------------------------

Segment Leq : 61.31 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -15.90   0.00  34.38
```

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-24.37	-1.35	0.00	-15.90	0.00	25.83

LEFT WHISTLE (0.00 + 22.62 + 0.00) = 22.62 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	10	0.50	67.70	-22.77	-6.41	0.00	-15.90	0.00	22.62

RIGHT WHISTLE (0.00 + 21.55 + 0.00) = 21.55 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	67.70	-22.77	-7.49	0.00	-15.90	0.00	21.55

Segment Leq : 35.38 dBA

Total Leq All Segments: 61.32 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	75 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	257.70 / 257.70 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	172.60 / 172.60 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 27.71 + 0.00) = 27.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-20.40	-1.44	0.00	-13.67	0.00	27.71

Segment Leq : 27.71 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-17.52	-1.44	0.00	0.00	0.00	45.54

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.61 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 22.43 + 0.00) = 22.43 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-19.29	-1.29	0.00	-13.67	0.00	22.43

Segment Leq : 22.43 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-16.57	-1.29	0.00	0.00	0.00	40.12

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.19 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.52
(NIGHT): 61.35

```
STAMSON 5.0        NORMAL REPORT        Date: 04-12-2019 13:39:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA168DA.te          Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 196.70 / 196.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Whistle Angle             :     10 deg   Track 2
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.40 m
Barrier receiver distance :   9.00 / 9.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     10 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       4.00 !        1.50 !        1.61 !         1.61
       0.50 !        1.50 !        1.45 !         1.45

LOCOMOTIVE (0.00 + 54.40 + 0.00) = 54.40 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.44  77.62 -16.11  -1.06   0.00   0.00  -6.05  54.40
-------------------------------------------------------------------

WHEEL (0.00 + 45.67 + 0.00) = 45.67 dBA
```



```
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.55  70.66 -17.28  -1.26   0.00   0.00  -6.45  45.67
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 47.06 + 0.00) = 47.06 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -62     10   0.44  73.92 -16.11  -4.35   0.00   0.00  -6.41  47.06
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 45.88 + 0.00) = 45.88 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    10     66   0.44  73.92 -16.11  -5.65   0.00   0.00  -6.28  45.88
-------------------------------------------------------------------

Segment Leq : 56.04 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.96 + 0.00) = 32.96 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -24.14  -1.33   0.00 -15.90   0.00  32.96
-------------------------------------------------------------------

WHEEL (0.00 + 24.93 + 0.00) = 24.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -25.28  -1.46   0.00 -15.90   0.00  24.93
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.35 + 0.00) = 21.35 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -32     10   0.58  67.81 -24.14  -6.43   0.00 -15.90   0.00  21.35
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 20.24 + 0.00) = 20.24 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    10     44   0.58  67.81 -24.14  -7.54   0.00 -15.90   0.00  20.24
-------------------------------------------------------------------

Segment Leq : 34.03 dBA

Total Leq All Segments: 56.07 dBA

Results segment # 1: CN Rail (night)
------------------------------------

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       4.00 !        4.50 !        4.48 !         4.48
       0.50 !        4.50 !        4.32 !         4.32

LOCOMOTIVE (0.00 + 59.73 + 0.00) = 59.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.35  77.60 -15.10  -0.88   0.00   0.00  -0.34  61.28*
   -90     90   0.50  77.60 -16.71  -1.17   0.00   0.00   0.00  59.73
-------------------------------------------------------------------

 * Bright Zone !

WHEEL (0.00 + 51.80 + 0.00) = 51.80 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.46	71.03	-16.27	-1.09	0.00	0.00	-0.41	53.26*
-90	90	0.60	71.03	-17.88	-1.35	0.00	0.00	0.00	51.80

* Bright Zone !

LEFT WHISTLE (0.00 + 51.76 + 0.00) = 51.76 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	10	0.35	72.86	-15.10	-4.28	0.00	0.00	0.00	53.48*
-62	10	0.50	72.86	-16.71	-4.39	0.00	0.00	0.00	51.76

* Bright Zone !

RIGHT WHISTLE (0.00 + 50.43 + 0.00) = 50.43 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	66	0.35	72.86	-15.10	-5.55	0.00	0.00	0.00	52.21*
10	66	0.50	72.86	-16.71	-5.72	0.00	0.00	0.00	50.43

* Bright Zone !

Segment Leq : 61.31 dBA

Results segment # 2: CP Rail (night)

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.50	74.21	-22.77	-1.17	0.00	-15.90	0.00	34.38

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-24.37	-1.35	0.00	-15.90	0.00	25.83

LEFT WHISTLE (0.00 + 22.62 + 0.00) = 22.62 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-32	10	0.50	67.70	-22.77	-6.41	0.00	-15.90	0.00	22.62

RIGHT WHISTLE (0.00 + 21.55 + 0.00) = 21.55 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	44	0.50	67.70	-22.77	-7.49	0.00	-15.90	0.00	21.55

Segment Leq : 35.38 dBA

Total Leq All Segments: 61.32 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	75 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	257.70 / 257.70 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	172.60 / 172.60 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 27.71 + 0.00) = 27.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-20.40	-1.44	0.00	-13.67	0.00	27.71

Segment Leq : 27.71 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-17.52	-1.44	0.00	0.00	0.00	45.54

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.61 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 22.43 + 0.00) = 22.43 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-19.29	-1.29	0.00	-13.67	0.00	22.43

Segment Leq : 22.43 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-16.57	-1.29	0.00	0.00	0.00	40.12

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.19 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.44
(NIGHT): 61.35

```
STAMSON 5.0        NORMAL REPORT        Date: 27-11-2019 09:56:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA168N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !  17.1/10.5  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 129.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !  13.0/8.0   !    2.50  !   11.00  !
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 196.70 / 196.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !   8.0/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 58.55 + 0.00) = 58.55 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.60 -17.72  -1.33   0.00   0.00   0.00  58.55
-------------------------------------------------------------------

WHEEL (0.00 + 50.63 + 0.00) = 50.63 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.64 -18.55  -1.46   0.00   0.00   0.00  50.63
-------------------------------------------------------------------
```



```
Segment Leq : 59.20 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.96 + 0.00) = 32.96 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -24.14  -1.33   0.00 -15.90   0.00  32.96
-------------------------------------------------------------------

WHEEL (0.00 + 24.93 + 0.00) = 24.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -25.28  -1.46   0.00 -15.90   0.00  24.93
-------------------------------------------------------------------

Segment Leq : 33.59 dBA

Total Leq All Segments: 59.21 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 59.73 + 0.00) = 59.73 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.60 -16.71  -1.17   0.00   0.00   0.00  59.73
-------------------------------------------------------------------

WHEEL (0.00 + 51.80 + 0.00) = 51.80 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  71.03 -17.88  -1.35   0.00   0.00   0.00  51.80
-------------------------------------------------------------------

Segment Leq : 60.38 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -15.90   0.00  34.38
-------------------------------------------------------------------

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.45 -24.37  -1.35   0.00 -15.90   0.00  25.83
-------------------------------------------------------------------

Segment Leq : 34.95 dBA

Total Leq All Segments: 60.39 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
```

```
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     75 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 257.70 / 257.70 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 172.60 / 172.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 27.71 + 0.00) = 27.71 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -20.40  -1.44   0.00 -13.67   0.00  27.71
-------------------------------------------------------------------------------

Segment Leq : 27.71 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -17.52  -1.44   0.00   0.00   0.00  45.54
-------------------------------------------------------------------------------

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.61 dBA
```



```
Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 22.43 + 0.00) = 22.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -19.29  -1.29   0.00 -13.67   0.00  22.43
-------------------------------------------------------------------------------

Segment Leq : 22.43 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -16.57  -1.29   0.00   0.00   0.00  40.12
-------------------------------------------------------------------------------

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.19 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.40
                           (NIGHT): 60.43
```

```
STAMSON 5.0        NORMAL REPORT        Date: 27-11-2019 08:55:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA173D.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 128.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 151.80 / 151.80 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     30 deg   Track 2
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 60.35 + 0.00) = 60.35 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.61 -15.93  -1.33   0.00   0.00   0.00  60.35
-------------------------------------------------------------------

WHEEL (0.00 + 52.52 + 0.00) = 52.52 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -16.69  -1.46   0.00   0.00   0.00  52.52
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 54.76 + 0.00) = 54.76 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -64     30   0.58  73.93 -15.93  -3.24   0.00   0.00   0.00  54.76
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 50.46 + 0.00) = 50.46 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
```



```
    30     73   0.58  73.93 -15.93  -7.54   0.00   0.00   0.00  50.46
-------------------------------------------------------------------

Segment Leq : 62.23 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.90 + 0.00) = 32.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.27 -24.14  -1.33   0.00 -15.90   0.00  32.90
-------------------------------------------------------------------

WHEEL (0.00 + 24.87 + 0.00) = 24.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.51 -25.28  -1.46   0.00 -15.90   0.00  24.87
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.50 + 0.00) = 21.50 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -24     20   0.58  67.76 -24.14  -6.22   0.00 -15.90   0.00  21.50
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 19.31 + 0.00) = 19.31 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    20     49   0.58  67.76 -24.14  -8.41   0.00 -15.90   0.00  19.31
-------------------------------------------------------------------

Segment Leq : 33.95 dBA

Total Leq All Segments: 62.24 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 61.37 + 0.00) = 61.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.56 -15.03  -1.17   0.00   0.00   0.00  61.37
-------------------------------------------------------------------

WHEEL (0.00 + 53.56 + 0.00) = 53.56 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  70.99 -16.08  -1.35   0.00   0.00   0.00  53.56
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 54.62 + 0.00) = 54.62 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -64     30   0.50  72.83 -15.03  -3.18   0.00   0.00   0.00  54.62
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 50.45 + 0.00) = 50.45 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    30     73   0.50  72.83 -15.03  -7.35   0.00   0.00   0.00  50.45
-------------------------------------------------------------------

Segment Leq : 63.01 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -15.90   0.00  34.38
```

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.60	67.45	-24.37	-1.35	0.00	-15.90	0.00	25.83

LEFT WHISTLE (0.00 + 22.82 + 0.00) = 22.82 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-24	20	0.50	67.70	-22.77	-6.22	0.00	-15.90	0.00	22.82

RIGHT WHISTLE (0.00 + 20.71 + 0.00) = 20.71 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
20	49	0.50	67.70	-22.77	-8.33	0.00	-15.90	0.00	20.71

Segment Leq : 35.36 dBA

Total Leq All Segments: 63.02 dBA

Road data, segment # 1: Komoka Rd. (day/night)

Car traffic volume	2600/289	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	289/32	veh/TimePeriod *
Posted speed limit	50 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	1581
Percentage of Annual Growth	5.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 1: Komoka Rd. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	7 / 7	
House density	95 %	
Surface	1	(Absorptive ground surface)
Receiver source distance	333.30 / 333.30 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Road data, segment # 2: Oxbow Dr. (day/night)

Car traffic volume	2596/288	veh/TimePeriod *
Medium truck volume	0/0	veh/TimePeriod *
Heavy truck volume	288/32	veh/TimePeriod *
Posted speed limit	60 km/h	
Road gradient	0 %	
Road pavement	1 (Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT)	2024
Percentage of Annual Growth	3.60
Number of Years of Growth	13.00
Medium Truck % of Total Volume	0.00
Heavy Truck % of Total Volume	10.00
Day (16 hrs) % of Total Volume	90.00

Data for Segment # 2: Oxbow Dr. (day/night)

Angle1 Angle2	-90.00 deg	90.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	172.60 / 172.60 m	
Receiver height	1.50 / 4.50 m	
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

Results segment # 1: Komoka Rd. (day)

Source height = 1.78 m

ROAD (0.00 + 23.08 + 0.00) = 23.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	63.22	0.00	-22.24	-1.44	0.00	-16.45	0.00	23.08

Segment Leq : 23.08 dBA

Results segment # 2: Oxbow Dr. (day)

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.65	64.51	0.00	-17.52	-1.44	0.00	0.00	0.00	45.54

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.56 dBA

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 17.90 + 0.00) = 17.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-21.03	-1.29	0.00	-16.45	0.00	17.90

Segment Leq : 17.90 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-16.57	-1.29	0.00	0.00	0.00	40.12

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.33
(NIGHT): 63.04

```
STAMSON 5.0        NORMAL REPORT        Date: 27-11-2019 08:58:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA173DA.te          Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   8.6/5.2   !   8.6/5.2   !  97.0 !  4.0 !140.0 !Diesel! Yes
  2. Way Freight !   3.3/0.6   !   3.3/0.6   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
  3. Passenger   !   5.9/0.6   !   5.9/0.6   ! 128.0 !  2.0 ! 10.0 !Diesel! Yes

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 151.80 / 151.80 m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Whistle Angle             :     30 deg   Track 2
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.40 m
Barrier receiver distance :   9.00 / 9.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             ! (Left)      ! (Right)     !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------------+-------+------+------+------+----
  1. Freight     !   4.0/2.0   !   4.0/2.0   !  97.0 !  4.0 !173.0 !Diesel! Yes

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Whistle Angle             :     20 deg   Track 1
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       4.00 !        1.50 !        1.65 !         1.65
       0.50 !        1.50 !        1.44 !         1.44

LOCOMOTIVE (0.00 + 56.08 + 0.00) = 56.08 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.44  77.61 -14.48  -1.06   0.00   0.00  -5.99  56.08
-------------------------------------------------------------------

WHEEL (0.00 + 47.36 + 0.00) = 47.36 dBA
```



```
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.55  70.66 -15.54  -1.26   0.00   0.00  -6.50  47.36
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 49.97 + 0.00) = 49.97 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -64     30   0.44  73.93 -14.48  -3.15   0.00   0.00  -6.33  49.97
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 46.23 + 0.00) = 46.23 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    30     73   0.44  73.93 -14.48  -7.24   0.00   0.00  -5.98  46.23
-------------------------------------------------------------------

Segment Leq : 57.79 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.96 + 0.00) = 32.96 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.32 -24.14  -1.33   0.00 -15.90   0.00  32.96
-------------------------------------------------------------------

WHEEL (0.00 + 24.93 + 0.00) = 24.93 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.56 -25.28  -1.46   0.00 -15.90   0.00  24.93
-------------------------------------------------------------------

LEFT WHISTLE (0.00 + 21.55 + 0.00) = 21.55 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -24     20   0.58  67.81 -24.14  -6.22   0.00 -15.90   0.00  21.55
-------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 19.37 + 0.00) = 19.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
    20     49   0.58  67.81 -24.14  -8.41   0.00 -15.90   0.00  19.37
-------------------------------------------------------------------

Segment Leq : 34.01 dBA

Total Leq All Segments: 57.81 dBA

Results segment # 1: CN Rail (night)
------------------------------------

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       4.00 !        4.50 !        4.47 !         4.47
       0.50 !        4.50 !        4.26 !         4.26

LOCOMOTIVE (0.00 + 61.37 + 0.00) = 61.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.35  77.56 -13.58  -0.88   0.00   0.00  -0.34  62.76*
   -90     90   0.50  77.56 -15.03  -1.17   0.00   0.00   0.00  61.37
-------------------------------------------------------------------

 * Bright Zone !

WHEEL (0.00 + 53.56 + 0.00) = 53.56 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```

```
-------------------------------------------------------------------------
   -90     90   0.46  70.99 -14.64  -1.09   0.00   0.00  -0.43  54.84*
   -90     90   0.60  70.99 -16.08  -1.35   0.00   0.00   0.00  53.56
-------------------------------------------------------------------------

 * Bright Zone !

LEFT WHISTLE (0.00 + 54.62 + 0.00) = 54.62 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -64     30   0.35  72.83 -13.58  -3.08   0.00   0.00   0.00  56.16*
   -64     30   0.50  72.83 -15.03  -3.18   0.00   0.00   0.00  54.62
-------------------------------------------------------------------------

 * Bright Zone !

RIGHT WHISTLE (0.00 + 50.45 + 0.00) = 50.45 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    30     73   0.35  72.83 -13.58  -7.04   0.00   0.00   0.00  52.21*
    30     73   0.50  72.83 -15.03  -7.35   0.00   0.00   0.00  50.45
-------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 63.01 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -15.90   0.00  34.38
-------------------------------------------------------------------------

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -90     90   0.60  67.45 -24.37  -1.35   0.00 -15.90   0.00  25.83
-------------------------------------------------------------------------

LEFT WHISTLE (0.00 + 22.82 + 0.00) = 22.82 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
   -24     20   0.50  67.70 -22.77  -6.22   0.00 -15.90   0.00  22.82
-------------------------------------------------------------------------

RIGHT WHISTLE (0.00 + 20.71 + 0.00) = 20.71 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------
    20     49   0.50  67.70 -22.77  -8.33   0.00 -15.90   0.00  20.71
-------------------------------------------------------------------------

Segment Leq : 35.36 dBA

Total Leq All Segments: 63.02 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
```



```
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 333.30 / 333.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 172.60 / 172.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.08 + 0.00) = 23.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.24  -1.44   0.00 -16.45   0.00  23.08
-------------------------------------------------------------------------------

Segment Leq : 23.08 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -17.52  -1.44   0.00   0.00   0.00  45.54
-------------------------------------------------------------------------------

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.56 dBA
```

Results segment # 1: Komoka Rd. (night)

Source height = 1.78 m

ROAD (0.00 + 17.90 + 0.00) = 17.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	56.67	0.00	-21.03	-1.29	0.00	-16.45	0.00	17.90

Segment Leq : 17.90 dBA

Results segment # 2: Oxbow Dr. (night)

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.56	57.98	0.00	-16.57	-1.29	0.00	0.00	0.00	40.12

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.06
(NIGHT): 63.04

```
STAMSON 5.0        NORMAL REPORT        Date: 27-11-2019 08:56:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: POA173N.te           Time Period: Day/Night 16/8 hours
Description:


Rail data, segment # 1: CN Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
  1. Freight     !  17.2/10.4  !  97.0 !  4.0 !140.0 !Diesel! Yes
* 2. Way Freight !   6.6/1.3   !  97.0 !  4.0 ! 25.0 !Diesel! Yes
* 3. Passenger   !  11.8/1.3   ! 128.0 !  2.0 ! 10.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  2. Way Freight    !   5.0/1.0   !    2.50  !   11.00  !
  3. Passenger      !   9.0/1.0   !    2.50  !   11.00  !

Data for Segment # 1: CN Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 151.80 / 151.80 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Rail data, segment # 2: CP Rail (day/night)
-------------------------------------------
Train            ! Trains      ! Speed !# loc !# Cars! Eng  !Cont
Type             !             !(km/h) !/Train!/Train! type !weld
-----------------+-------------+-------+------+------+------+----
* 1. Freight     !   7.9/3.9   !  97.0 !  4.0 !173.0 !Diesel! Yes

* The identified number of trains have been adjusted for
  future growth using the following parameters:

Train type:         ! Unadj. ! Annual % ! Years of !
 No  Name           ! Trains ! Increase !  Growth  !
--------------------+--------+----------+----------+
  1. Freight        !   6.0/3.0   !    2.50  !   11.00  !

Data for Segment # 2: CP Rail (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
No Whistle
Reference angle           :   0.00

Results segment # 1: CN Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 60.35 + 0.00) = 60.35 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  77.61 -15.93  -1.33   0.00   0.00   0.00  60.35
```



```
-------------------------------------------------------------------

WHEEL (0.00 + 52.52 + 0.00) = 52.52 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  70.66 -16.69  -1.46   0.00   0.00   0.00  52.52
-------------------------------------------------------------------

Segment Leq : 61.01 dBA

Results segment # 2: CP Rail (day)
----------------------------------

LOCOMOTIVE (0.00 + 32.90 + 0.00) = 32.90 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.58  74.27 -24.14  -1.33   0.00 -15.90   0.00  32.90
-------------------------------------------------------------------

WHEEL (0.00 + 24.87 + 0.00) = 24.87 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.66  67.51 -25.28  -1.46   0.00 -15.90   0.00  24.87
-------------------------------------------------------------------

Segment Leq : 33.53 dBA

Total Leq All Segments: 61.02 dBA

Results segment # 1: CN Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 61.37 + 0.00) = 61.37 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  77.56 -15.03  -1.17   0.00   0.00   0.00  61.37
-------------------------------------------------------------------

WHEEL (0.00 + 53.56 + 0.00) = 53.56 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  70.99 -16.08  -1.35   0.00   0.00   0.00  53.56
-------------------------------------------------------------------

Segment Leq : 62.04 dBA

Results segment # 2: CP Rail (night)
------------------------------------

LOCOMOTIVE (0.00 + 34.38 + 0.00) = 34.38 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.50  74.21 -22.77  -1.17   0.00 -15.90   0.00  34.38
-------------------------------------------------------------------

WHEEL (0.00 + 25.83 + 0.00) = 25.83 dBA
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------
   -90     90   0.60  67.45 -24.37  -1.35   0.00 -15.90   0.00  25.83
-------------------------------------------------------------------

Segment Leq : 34.95 dBA

Total Leq All Segments: 62.05 dBA

Road data, segment # 1: Komoka Rd. (day/night)
----------------------------------------------
Car traffic volume  :  2600/289   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   289/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
```

```
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   1581
    Percentage of Annual Growth        :   5.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Komoka Rd. (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      7 / 7
House density             :     95 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 333.30 / 333.30 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: Oxbow Dr. (day/night)
---------------------------------------------
Car traffic volume  :  2596/288   veh/TimePeriod  *
Medium truck volume :     0/0     veh/TimePeriod  *
Heavy truck volume  :   288/32    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   2024
    Percentage of Annual Growth        :   3.60
    Number of Years of Growth          :  13.00
    Medium Truck % of Total Volume     :   0.00
    Heavy Truck  % of Total Volume     :  10.00
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Oxbow Dr. (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 172.60 / 172.60 m
Receiver height           :   1.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: Komoka Rd. (day)
-------------------------------------

Source height = 1.78 m

ROAD (0.00 + 23.08 + 0.00) = 23.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.65  63.22   0.00 -22.24  -1.44   0.00 -16.45   0.00  23.08
-------------------------------------------------------------------------------

Segment Leq : 23.08 dBA

Results segment # 2: Oxbow Dr. (day)
------------------------------------

Source height = 1.78 m

ROAD (0.00 + 45.54 + 0.00) = 45.54 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```



```
-------------------------------------------------------------------------------
   -90     90   0.65  64.51   0.00 -17.52  -1.44   0.00   0.00   0.00  45.54
-------------------------------------------------------------------------------

Segment Leq : 45.54 dBA

Total Leq All Segments: 45.56 dBA

Results segment # 1: Komoka Rd. (night)
---------------------------------------

Source height = 1.78 m

ROAD (0.00 + 17.90 + 0.00) = 17.90 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  56.67   0.00 -21.03  -1.29   0.00 -16.45   0.00  17.90
-------------------------------------------------------------------------------

Segment Leq : 17.90 dBA

Results segment # 2: Oxbow Dr. (night)
--------------------------------------

Source height = 1.78 m

ROAD (0.00 + 40.12 + 0.00) = 40.12 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.56  57.98   0.00 -16.57  -1.29   0.00   0.00   0.00  40.12
-------------------------------------------------------------------------------

Segment Leq : 40.12 dBA

Total Leq All Segments: 40.15 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.14
                           (NIGHT): 62.08
```

NOISE LEGEND & WARNING CLAUSES:

A – "Purchasers/Tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of Environment."

B – "Purchasers/Tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing rail traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of Environment."

C – "This dwelling unit has been fitted with a forced air heating system and the ducting, etc. was sized to accommodate central air conditioning. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the noise level limits of the Municipality and the Ministry of the Environment. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with the sound criteria of MOE Publication NPC–216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property)."

D – "This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of Environment." (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with the noise criteria of MOE Publication NPC–216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property)."

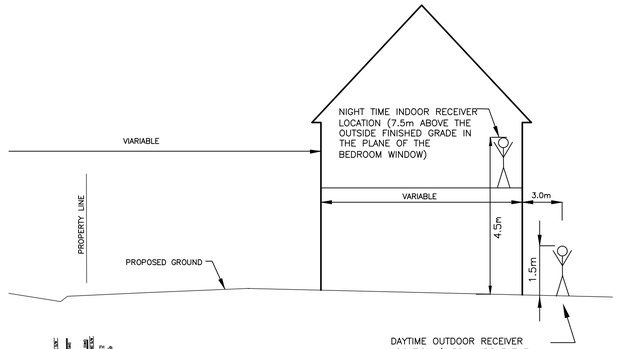
ALL DWELLINGS WITHIN THE PROPOSED DEVELOPMENT TO INCLUDE THE FOLLOWING CLAUSES REGISTERED ON TITLE

"Warning: The Canadian National and Canadian Pacific Railway Companies or their assigns or successors in interest has or have a right–of–way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right–of–way in the future including the possibility that the railway or its assigns or successors as aforesaid may expand its operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwellings; the Canadian National and Canadian Pacific Railways will not be responsible for any complaints or claims arising from the use of such facilities and/or operations on, over or under the aforesaid rights–of–way."

"The Municipality of Middlesex Centre assumes no responsibility for noise issues which may arise from the existing or increased traffic of the Canadian National Railway, the Canadian Pacific Railway, Komoka Road (Middlesex County Road #16) or Oxbow Drive as it relates to the interior or outdoor living areas of any dwelling unit within the development. The Municipality of Middlesex Centre will not be responsible for constructing any form of noise mitigation for this development."

WARNING CLAUSE TYPE A
WARNING CLAUSE TYPE B
WARNING CLAUSE TYPE C
WARNING CLAUSE TYPE D
FOR DEFINITION OF WARNING CLAUSES REFER TO NOISE REPORT AND SEE ABOVE

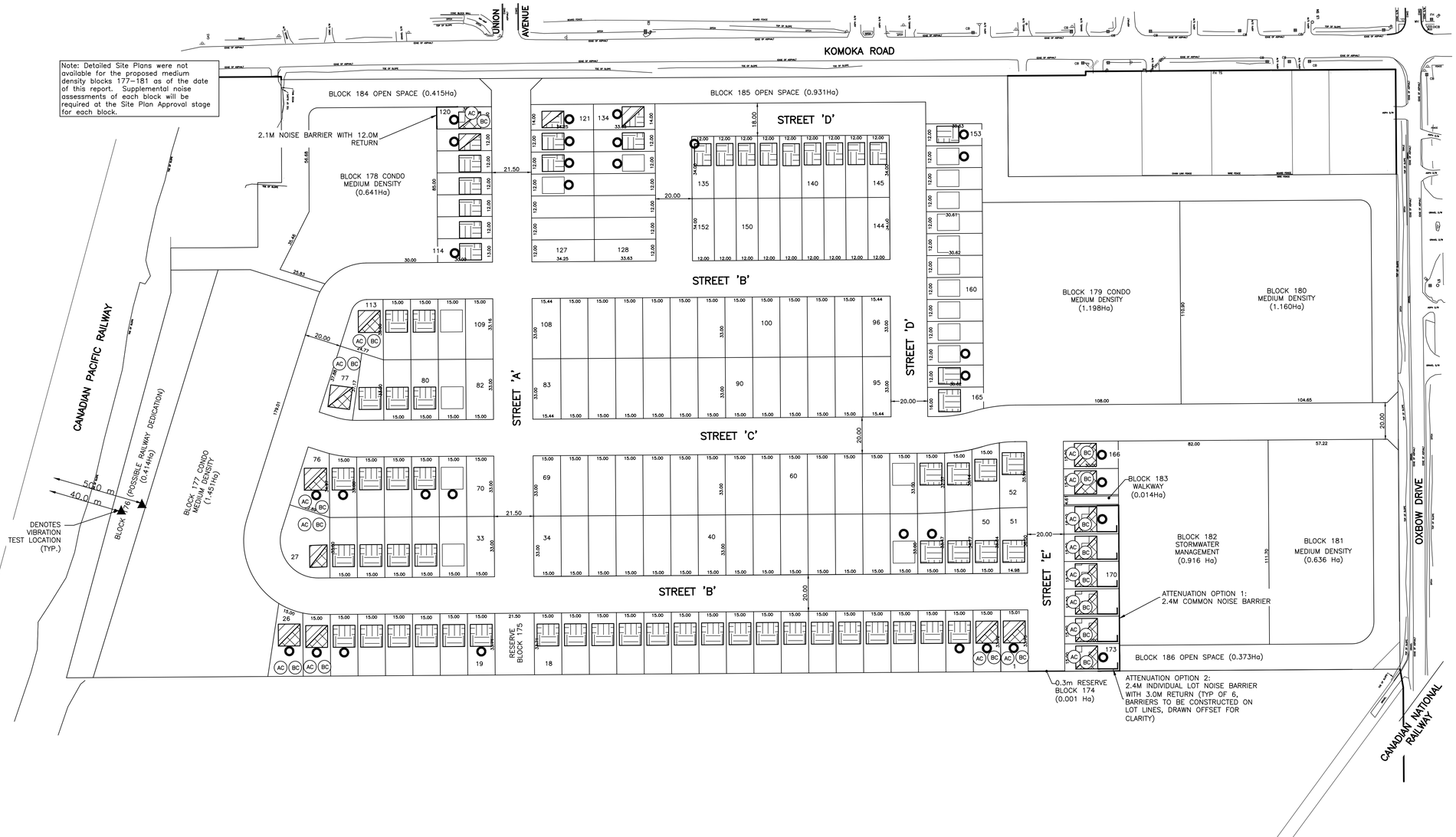
(AC) MANDATORY INSTALLATION OF CENTRAL AIR CONDITIONING
DENOTES STAMSON TEST LOCATION
(BC) MANDATORY INSTALLATION OF BUILDING COMPONENTS
DENOTES VIBRATION TEST LOCATION



TYPICAL SECTION - SINGLE FAMILY

NTS

Note: Detailed Site Plans were not available for the proposed medium density blocks 177–181 as of the date of this report. Supplemental noise assessments of each block will be required at the Site Plan Approval stage for each block.



EXISTING SERVICES	DRAWING #, SOURCE	DATE	AS CONSTRUCTED SERVICES	COMPLETION

DETAILS	No.	REVISIONS	DATE	CONSULTANT
DESIGN BY DH	1	ISSUED FOR APPROVAL	DEC 4, 2018	DEVENG
DRAWN BY DH	2	REVISED PER NEW DRAFT PLAN	APR 5, 2019	DEVENG
CHECKED BY JT	2	REVISED PER REVIEW COMMENTS	DEC 4, 2019	DEVENG
F.BK.				
FILE: DEL18–059 – NOISE BASE_V3.DWG				

CONSULTANT OR DIVISION

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development engineering (London) Limited
CONSULTING CIVIL ENGINEERS

ENGINEER'S STAMP

SCALE
SCALE – 1:1250
12.5 0 25m

TITLE
9904 OXBOW DRIVE
KOMOKA, ONTARIO

NOISE STUDY

PROJECT No. DEL18–059
SHEET No. FIG. 1
PLAN FILE No.