TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE H: NOISE
CHAPTER II: ENVIRONMENTAL PROTECTION AGENCY

PART 952
MEASUREMENT PROCEDURES FOR THE ENFORCEMENT OF 35 ILL. ADM. CODE 902

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SUBPART A: GENERAL PROVISIONS

Section 952.100 General Provisions

a) Introduction

This report describes procedures for inspection, surveillance and measurement of motor vehicles and motor vehicle equipment to determine whether those motor vehicles and motor vehicle equipment conform to the standards specified in 35 Ill. Adm. Code 902 (old Part 3 of Chapter 8 of the Illinois Pollution Control Board Rules and Regulations).

b) Definitions

"Hard test site": any test site having the ground surface covered with concrete, asphalt, packed dirt, gravel or similar reflective material for more than 1/2 the distance between the microphone target point and the microphone location point.

"Soft test site": any test site having the ground surface covered with grass, other ground cover or similar absorptive material for 1/2 or more of the distance between the microphone target point and the microphone location point.

"Ground cover": any of various low, dense-growing plants, such as ivy, myrtle, low weeds or brush.

"Traffic railing": any longitudinal highway traffic barrier system installed along the side or median of a highway. For the purpose of this report, a traffic railing must have at least 35 percent of its vertical height, from the ground surface to the top of the railing, open to free space in order to qualify as an acceptable object within a noise measurement test site. Further, for the purposes of this report, posts or other discrete supports shall be ignored when ascertaining open free space.

"Relatively flat": when used to describe a noise measurement site means a site which does not contain significant concave curvatures or slope reversals that may result in the focusing of sound waves toward the microphone location point.

c) Measurement Tolerances

1) Measurement tolerances will be allowed to take into account the effects of the following factors:

A) The consensus standard practice of reporting field sound level measurements to the nearest whole decibel (dB).

B) Variations resulting from commercial instrument tolerances.

C) Variations resulting from the topography of the noise measurement site.

D) Variations resulting from atmospheric conditions such as wind, temperature and atmospheric pressure.

E) Variations resulting from reflected sound from small objects allowed within the test site.

F) The interpretation of the effects of the above cited factors by enforcement personnel.

2) Measurement tolerances shall not exceed:

A) 1 dB for Type 1 sound level meters;

B) 2 dB for Type 2 and Type S sound level meters.

3) Measurement tolerances are to be added to the applicable sound level limit.

SUBPART B: INSTRUMENTATION

Section 952.110 Instrumentation

a) Scope of this Subpart

This Subpart specifies criteria for sound level measurement systems which are used to make the sound level measurements specified in Subparts C and D of these measurement procedures.

b) Type of Measurement Systems Which May Be Used

The sound level measurement system must meet or exceed the requirements of American National Standards Institute Specification for Sound Level Meters (ANSI §1.4-1971), approved April 27, 1971, issued by the American National Standards Institute throughout the applicable frequency range for either:

1) A Type 1 sound level meter;

2) A Type 2 sound level meter; or

3) A Type S sound level meter which has:

A) A-weighting frequency response;

B) Fast dynamic characteristics of its indicating instrument; and

C) A relative response level tolerance consistent with those of either a Type 1 or Type 2 sound level meter, as specified in Section 2.1 of ANSI §1.4-1971.

c) Calibration of Measurement Systems

1) A) The sound level measurement system must be calibrated and appropriately adjusted at one or more frequencies in the range from 250 to 1,000 Hertz (Hz) at the beginning of each series of measurements and at intervals of 5-15 minutes thereafter, until it has been determined that the sound level measurement system has not significantly drifted from its calibrated level. Once this fact has been established, calibrations may be made at intervals once every hour. A significant drift shall be considered to have occurred if a 0.3 dB or more excursion is noted from the system's predetermined reference calibration level. In the case of systems using displays with whole decibel increments, the operator may visually judge when the 0.3 dB drift has been met or exceeded.

B) The sound level measurement system must be checked once every twelve months by its manufacturer, a representative of its manufacturer, or a person of equivalent special competence to verify that its accuracy meets the manufacturer's design criteria.

2) An acoustical calibrator of the microphone coupler type designed for the sound level measurement system in use shall be used to calibrate the sound level measurement system in accordance with subsection (c)(1). The calibration must meet or exceed the accuracy requirements specified in Subsection 5.4.1 of the American National Standards Institute Standard Methods for Measurements of Sound Pressure Levels, (ANSI §1.13-1971) for field method measurements.

d) Windscreens

A properly installed windscreen, of the type recommended by the manufacturer of the Sound Level Measurement System, shall be used during the time that noise emission measurements are being taken, in order to minimize the wind generated noise on the microphone and to protect the microphone from dust and other airborne matter. The windscreen also reduces damage to the microphone in the event the tripod is upset or the microphone is dropped.

SUBPART C: MEASUREMENT OF NOISE EMISSIONS: HIGHWAY OPERATIONS

Section 952.120 Scope of this Subpart

a) This Subpart specifies conditions and procedures for measurement of the sound level generated by a motor vehicle engaged in a highway operation for the purpose of ascertaining whether the motor vehicle conforms with 35 Ill. Adm. Code 902.120(b)(1) and (b)(2), 902.121(b)(1) and (b)(2), 902.122(b)(1) and (b)(2) and 902.123(c).

b) A "standard site" is a measurement site which conforms with the specifications listed under Chapter 325.33 "Site Characteristics: highway operations" of Subpart C of "Department of Transportation Bureau of Motor Carrier Safety Regulations for Enforcement of Motor Carrier Emission Standards," as described below in Section 952.121. A standard site must be utilized to determine compliance with 35 Ill. Adm. Code 902.121: Standards Applicable to Motor Vehicles with Gross Vehicle Weight (GVW) in Excess of 8,000 Pounds and 35 Ill. Adm Code 902.123: Exception for and Standards Applicable to Motor Carriers Engaged in Interstate Commerce with Respect to Operations Regulated Pursuant to the Federal Noise Control Act of 1972. A standard site may be utilized to determine compliance with 35 Ill. Adm. Code 902.120: Standards Applicable to All Passenger Cars and to Other Motor Vehicles with GVW of 8,000 Pounds or Less and 35 Ill. Adm. Code 902.122: Standards Applicable to Motorcycles and Motor Driven Cycles.

c) 1) A "restricted site" is a measurement site at which:

A) The distance from the microphone to the center of the near lane of travel is greater than 26 feet (7.9 meters (m)) or less than 100 feet (30.2 m), or

B) The distance from the microphone target point to large reflecting surfaces is less than the distance between the microphone and the microphone target point, or

C) The distance from the microphone to large reflecting surfaces is less than the distance between the microphone and the microphone target point (See Appendix B).

2) A restricted site may be utilized to determine compliance with 35 Ill. Adm. Code 902.120: Standards Applicable to All Passenger Cars and to Other Motor Vehicles with GVW of 8,000 Pounds or Less and 35 Ill. Adm. Code 902.122: Standards Applicable to Motorcycles and Motor Driven Cycles.

Section 952.121 Standard Site Characteristics

a) Measurements shall be made at a test site which is adjacent to, and includes a portion of, a traveled lane of a public highway. A microphone target point shall be established on the centerline of the traveled lane of the highway, and a microphone location point shall be established on the ground surface not less than 35 feet (10.7 m) or more than 83 feet (25.3 m) from the microphone target point and on a line that is perpendicular to the centerline of the traveled lane of the highway and that passes through the microphone target point. Within the test site is a triangular measurement area. A plan view diagram of a standard test site is shown in Appendix A. Measurements may be made at a test site having smaller or greater dimensions in accordance with the following:

1) If the distance between the microphone location point and the microphone target point is other than 50 feet (15.2 m), the test site must be an open site with a radius from both points which is equal to the distance between the microphone location point and the microphone target point.

2) Plan view diagrams of standard test sites are shown in Appendices G and H. Appendix G illustrates a test site which has a 60 foot (18.3 m) distance between the microphone location point and the microphone target point. Appendix H illustrates a test site which has a 35 foot (10.7 m) distance between the microphone location point and the microphone target point.

b) The measurement site must be an open site, essentially free of large sound reflecting objects. However, the following objects may be within the measurement site, including the triangular measurement area:

1) Small cylindrical objects such as fire hydrants or telephone or utility poles located 3 feet (1 m) or more from the microphone.

2) Rural mailboxes located 3 feet (1 m) or more from the microphone.

3) One or more curbs having a vertical height of 1 foot (.3 m) or less.

c) The following objects may be within the test site if they are outside of the triangular measurement area of the site:

1) Any vertical surface (such as a billboard), regardless of size, having a lower edge more than 15 feet (4.6 m) higher than the surface of the traveled lane of the highway.

2) Any uniformly smoooth sloping surface slanting away from the highway (such as a rise in grade alongside the highway) with a slope that is less than 45 degrees above the horizontal.

3) Any surface slanting away from the highway that is 45 degrees or more and not more than 90 degrees above the horizontal, if all points on the surface are more than 15 feet (4.6 m) above the surface of the traveled lane of the highway.

d) 1) The surface of the ground within the triangular measurement area must be relatively flat. If the site is determined to be "hard," the correction factor specified below shall be applied to the sound level limits of 35 Ill. Adm. Code 902.121 and 902.123.

2) When measurements are made upon a test site which is "hard," a correction factor of 2 dB(A) shall be added to the sound level limits of 35 Ill. Adm. Code 902.121(b)(1), 902.121(b)(2) and 902.123(c).

e) The traveled lane of the highway within the test site must be dry, paved with relatively smooth concrete or asphalt, and substantially free of:

1) Holes or other defects which would cause a motor vehicle to emit irregular tire, body or chassis impact noise; and

2) Loose material, such as gravel or sand.

f) The traveled lane of the highway on which the microphone target point is situated must not pass through a tunnel or underpass located within 200 feet (61 m) of that point.

Section 952.122 Restricted Site Characteristics

a) Restricted measuring sites are those sites where sound reflecting surfaces are close to either the microphone or the microphone target point as specified in Section 952.120(c).

b) Measurements shall be made at a test site which is adjacent to, and includes a portion of a traveled lane of a public highway. A microphone target point shall be established on the centerline of the traveled lane of the highway and a microphone location point shall be established on the ground surface not less than 26 feet (7.9 m) or more than 100 feet (30.2 m) from the microphone target point and on a line that is perpendicular to the centerline of the traveled lane of the highway and that passes through the microphone target point.

c) A sound reflecting surface is any building, signboard, hillside or similar object, within the measurement site, that reflects sufficient sound to affect the sound level readings obtained from passing vehicles. Such sound reflecting surfaces make this site a restricted measurement site. Some sound reflecting surfaces require a correction to the measured sound level.

1) Surfaces not requiring correction. The following surfaces and objects within the measuring site do not require a correction factor:

A) Small cylindrical objects such as fire hydrants or telephone or utility poles located 3 feet (1 m) or more from the microphone.

B) Rural mailboxes located 3 feet (1 m) or more from the microphone.

C) Traffic railings of any type of construction except solid concrete barriers.

D) Chain-link fences or any vegetation such as bushes, shrubs, hedges and grass.

E) One or more curbs having a vertical height of 1 foot (.3 m) or less.

F) The following objects may be within the measurement site if they are outside of the triangular measurement area of the site:

i) Any vertical surface (such as a billboard), regardless of size, having a lower edge more than 15 feet (4.6 m) higher than the surface of the traveled lane of the highway.

ii) Any uniformly smooth sloping surface slanting away from the highway (such as a rise in grade alongside the highway)

with a slope that is less than 45 degrees above the horizontal.

iii) Any surface slanting away from the highway that is 45 degrees or more and not more than 90 degrees above the horizontal, if all points on the surface are more than 15 feet (4.6 m) above the surface of the traveled lane of the highway.

2) Surfaces Requiring Correction. Sound level measurements may be made with appropriate corrections when sound reflecting surfaces are within the measuring site as shown in Appendix B. Measurements may be made only when the sound reflecting surfaces are basically parallel to the lane of travel.

A) A basically parallel surface may have irregularities or projections of not more than 2 feet (.6 m) measured perpendicular to the lane of travel, with the distance to the microphone line or vehicle path measured from the closest point of the projection.

B) Sound reflecting surfaces not basically parallel to the lane of travel shall be a minimum of 35 feet or B, whichever is greater, from the microphone and microphone target point. (B is the distance between the microphone and microphone target point as shown in Appendix B.) This restriction does not apply to surfaces that are perpendicular to the lane of travel and behind the parallel surface for which corrections are made, such as a fence or the side walls of a building.

C) Distance measurements from smooth embankments covered with vegetation, concrete, asphalt, dirt or other relatively smooth cover shall be made from the point where the slope begins to exceed 45 degrees above horizontal. Measurements from non-smooth embankments shall be made from the point where the irregularity begins.

3) Correction Factors for Sound Reflecting Surfaces. Correction factors to be added to the applicable sound level limits when there are sound reflecting surfaces within the restricted measurement site shall be determined as follows:

A) Reflecting Surfaces. Sites with sound reflecting surfaces basically parallel to the vehicle path within the measuring area shown in Appendix B may be used by measuring the distances shown in

Appendix B and adding the correction factor obtained from the nomogram in Appendix E to the applicable sound level limit.

B) Measuring Distances to Determine Correction. Measurement "D" is the shortest distance between the centerline of the lane of travel and the reflecting surface located on the opposite side of the lane of travel from the measurement location (see Appendices B, C and D). Measurement "L" is the shortest distance between a line parallel to the lane of travel passing through the microphone and the reflecting surface behind the measurement location (see Appendices B, C and D).

C) Determining Correction Factor. Locate the points on the left and right scales of Appendix E corresponding to the distances "D" and "L" in Appendices B and C. Place a straight edge across the nomogram so that it connects the two points. The point where the straight edge intersects the center axis indicates the correction factor to be added to the applicable sound level limit.

4) Correction Factor for a Microphone Mounted on a Passenger Car. A correction factor of 1dB shall be added to the appliable sound level limit when a microphone is mounted on a passenger car.

Section 952.123 Ambient Conditions

a) Sound

1) The ambient A-weighted sound level at the microphone location point shall be measured, in the absence of motor vehicle noise emanating from within the clear zone, with fast meter response using a sound level measurement system that conforms to these procedures.

2) The measured ambient level of non-motor vehicle sound must be 10 dB(A) or more below that level which corresponds to the maximum permissible sound level reading which is applicable at the test site at the time of testing. The maximum permissible sound level reading is the sound level limit appropriate for each vehicle type, plus the site corrections.

b) Wind. Noise measurements may only be made if the measured wind velocity is 12 miles per hour (mph) (19.3 kilometers per hour (kph)) or less. The wind velocity at the test site shall be measured at the beginning of each series of noise measurements and at intervals of 5-15 minutes thereafter until it has been established that the wind velocity is essentially constant. Once that fact has been established, wind velocity measurements may be made at intervals of once every hour. Gust wind measurements of up to 20 mph (33.2 kph) are allowed, although sound level measurements may not be taken at these times.

c) Precipitation. Sound level measurements are prohibited under any condition of precipitation, however, measurements may be made with snow on the ground. The ground surface within the measurement area must be free of standing water.

Section 952.124 Location and Operation of Sound Level Measurement System

a) Microphone Position

1) Unless mounted on a passenger car, the microphone of a sound level measurement system that conforms to this report shall be located at a height of not less than 2 feet (.6 m) nor more than 6 feet (1.8 m) above the plane of the roadway surface and not less than 3.5 feet (1.1 m) above the surface on which the microphone stands. The preferred microphone height on flat terrain is 4 feet (1.2 m).

A) When the sound level measurement system is hand-held or is otherwise monitored by a person located near its microphone, the holder must orient himself relative to the highway in a manner consistent with the recommendation of the manufacturer of the sound level measurement system.

B) In no case shall the meter holder or observer be closer than 2 feet (.6 m) from the system's microphone, nor shall he locate himself between the microphone and the vehicle being measured.

2) If mounted on a passenger car, the microphone of a sound level measurement system that conforms to this report shall be located in the following manner:

A) The microphone shall be located 1 foot (.3 m) plus or minus 1/2 foot (.15 m) above the roof of the passenger car (see Appendix I, Figure 1).

B) The microphone shall be located in the vertical plane of the edge of the roof on the driver's side of the passenger car plus or minus 1/2 foot (.15 m) (see Appendix I, Figure 2).

C) The microphone shall be located between the front and back edges of the roof of the passenger car.

D) The passenger car shall be positioned either perpendicular or parallel to the lane of travel.

b) The microphone of the sound level measurement system shall be oriented toward the traveled lane of the highway at the microphone target point at an angle that is consistent with the recommendation of the system's manufacturer. If the manufacturer of the system does not recommend an angle of orientation for its microphone, the microphone shall be oriented toward the highway at an angle of

not less than 70 degrees and not more than perpendicular to the horizontal plane of the traveled lane of the highway at the microphone target point.

c) The sound level measurement system shall be set to the A-weighting network and "fast" meter response mode.

Section 952.125 Measurement Procedure

a) In accordance with this Subpart, a measurement shall be made of the sound level generated by a motor vehicle operating through the measurement area on the traveled lane of the highway within the test site, regardless of the highway grade, load, acceleration or deceleration.

b) The sound level generated by the motor vehicle is the highest reading observed on the sound level measurement system as the vehicle passes through the measurement area, corrected, when appropriate, in accordance with these measurement procedures. The sound level of the vehicle being measured must be observed to rise at least 6 dB(A) before the maximum sound level occurs and to fall at least 6 dB(A) after the maximum sound level occurs in order to be considered a valid sound level reading.

SUBPART D: MEASUREMENT OF NOISE EMISSIONS: STATIONARY TEST

Section 952.130 Scope of this Subpart

a) This Subpart specifies conditions and procedures for measuring the sound level generated by a vehicle when the vehicle's engine is rapidly accelerated from idle to governed speed at wide open throttle with the vehicle stationary, its transmission in neutral, and its clutch engaged, for the purpose of ascertaining whether the motor vehicle conforms with 35 Ill. Adm. Code 902.121(c) or 902.123(d).

b) This Subpart applies only to a motor vehicle with GVW in excess of 8,000 pounds that is equipped with an engine speed governor.

c) Tests conducted in accordance with this Subpart may be made on either side of the vehicle.

Section 952.131 Site Characteristics

a) The motor vehicle to be tested shall be parked on the test site. A microphone target point shall be established on the ground surface of the site on the centerline of the lane in which the motor vehicle is parked at a point that is within 3 feet (.9 m) of the longitudinal position of the vehicle's exhaust system outlet(s). A microphone location point shall be established on the ground surface not less than 35 feet (10.7 m) and not more than 83 feet (25.3 m) from the microphone target point. Within the test site is a triangular measurement area. A plan view diagram of a standard stationary test site, is shown in Appendix F.

b) The test site must be an open site, essentially free of large sound-reflecting objects. However, the following objects may be within the test site, including the triangular measurement area:

1) Small cylindrical objects such as fire hydrants or telephone or utility poles located 3 feet (1 m) or more from the microphone.

2) Rural mailboxes located 3 feet (1 m) or more from the microphone.

3) Traffic railings of any type of construction except solid concrete barriers.

4) Chain-link fences or any vegetation such as bushes, shrubs, hedges and grass.

5) One or more curbs having a height of 1 foot (.3 m) or less.

c) The following objects may be within the test site if they are outside of the triangular measurement area of the site:

1) Any vertical surface, regardless of size (such as a billboard), having a lower edge more than 15 feet (4.6 m) above the ground.

2) Any uniformly smooth surface slanting away from the vehicle with a slope that is less than 45 degrees above the horizontal.

3) Any surface slanting away from the vehicle that is 45 degrees or more and not more than 90 degrees above the horizontal, if all points on the surface are more than 15 feet (4.6 m) above the surface of the ground in the test site.

d) 1) The surface of the ground within the measurement area must be relatively flat. The site shall be a "hard" site. However, if the site is determined to be "soft," the correction factor specified below shall be subtracted from the applicable sound level limit.

2) When measurements are made upon a test site which is "soft," a correction factor of 2 dB(A) shall be subtracted from the sound level limits of 35 Ill. Adm. Code 902.121(c) and 902.123(d).

Section 952.132 Ambient Conditions

a) Sound

1) The ambient A-weighted sound level at the microphone location point shall be measured, in the absence of motor vehicle noise eminating from within the clear zone, with fast meter response using a sound level measurement system that conforms to these procedures.

2) The measured ambient level must be 10 dB(A) or more below that level which corresponds to the maximum permissible sound level reading which is applicable at the test site at the time of testing. The maximum permissible sound level reading is the sound level limit plus the necessary site corrections.

b) Wind. Noise measurements may only be made if the measured wind velocity is 12 mph (19.3 kph) or less. The wind velocity at the test site shall be measured at the beginning of each series of noise measurements and at intervals of 5-15 minutes thereafter until it has been established that the wind velocity is essentially constant. Once this fact has been established, wind velocity measurements may be made at intervals of once every hour. Gust wind measurements of up to 20 mph (33.2 kph) are allowed, although sound level measurements may not be taken at these times.

c) Precipitation. Measurements are prohibited under any conditions of precipitation, however, measurements may be made with snow on the ground. The ground within the measurement area must be free of standing water.

Section 952.133 Location and Operation of Sound Level Measurement System

a) The microphone of a sound level measurement system that conforms to these measurement procedures shall be located at a height of not less than 2 feet (.6 m) nor more than 6 feet (1.8 m) above the plane of the roadway surface and not less than 3.5 feet (1.1 m) above the surface on which the microphone stands. The preferred microphone height on flat terrain is 4 feet (1.2 m).

b) When the sound level measurement system is hand-held or otherwise monitored by a person located near its microphone, the holder must orient himself relative to the highway in a manner consistent with the recommendation of the manufacturer of the sound level measurement system. In no case shall the holder or observer be closer than 2 feet (.6 m) from the system's microphone, nor shall he locate himself between the microphone and the vehicle being measured.

c) The microphone of the sound level measurement system shall be oriented toward the vehicle at an angle that is consistent with the recommendation of the system's manufacturer. If the manufacturer of the system does not recommend an angle of orientation for its microphone, the microphone shall be oriented at an angle of not less than 70 degrees and not more than perpendicular to the horizontal plane of the test site at the microphone target point.

d) The sound level measurement system shall be set to the A-weighting network and "fast" meter response mode.

Section 952.134 Measurement Procedure

In accordance with this Subpart, a measurement shall be made of the sound level generated by a stationary motor vehicle as follows:

a) Park the motor vehicle on the test site as specified in this Subpart. If the motor vehicle is a combination (articulated) vehicle, park the combination so that the longitudinal centerlines of the towing vehicle and the towed vehicle or vehicles are in substantial alignment.

b) Turn off all auxiliary equipment which is installed on the motor vehicle and which is designed to operate under normal conditions only when the vehicle is operating at a speed of 5 mph (8 kph) or less. Examples of such equipment include cranes, asphalt spreaders, liquid or slurry pumps, auxiliary air compressors, welders and trash compactors.

c) If the motor vehicle's engine radiator fan drive is equipped with a clutch or similar device that automatically either reduces the rotational speed of the fan or completely disengages the fan from its power source in response to reduced engine cooling loads, park the vehicle before testing with its engine running at high idle or any other speed the operator may choose, for sufficient time but not more than 10 minutes, to permit the engine radiator fan to automatically disengage when the vehicle's noise emissions are measured under stationary test.

d) With the motor vehicle's transmission in neutral and its clutch engaged, rapidly accelerate the vehicle's engine from idle to its maximum governed speed with wide open throttle. Return the engine's speed to idle.

e) Observe the maximum reading on the sound level measurement system during the time the procedures specified in subsection (d) are followed. Record that reading, if the reading has not been influenced by extraneous noise sources such as motor vehicles operating on adjacent raodways.

f) Repeat the procedures specified in subsections (d) and (e) until the first two maximum sound level readings that are within 2 dB(A) of each other are recorded. Numerically average those two maximum sound level readings.

g) The average reading, obtained in accordance with subsection (f), is the sound level generated by the motor veicle for the purpose of determining whether it conforms with the equivalent sound level limits of 35 Ill. Adm. Code 902.121(c) or 902.123(d).

SUBPART E: MICROPHONE DISTANCE CORRECTION FACTORS

Section 952.140 Microphone Distance Correction Factors

a) Scope of this Subpart

1) This Subpart specifies correction factors which are added to the applicable sound level limit to be compared with the measured sound level generated by a motor vehicle.

2) The purpose of adding a correction factor is to determine equivalent sound level limits for distances between the microphone target point and the microphone location point other than 50 feet (15.2 m).

b) Microphone Distance Correction Factors

If the distance between the microphone location point and the microphone target point is other than 50 feet (15.2 m), the equivalent sound level limit shall be determined by adding the correction factor specified in the following table to the applicable sound level limit:

DISTANCE CORRECTION FACTORS

If the distance between the microphone location point and the microphone target point is:	The value (dB(A)) to be added to the applicable sound level limit is:
26 feet (7.9 m) or more but less than 29 feet (8.8 m)	+7
29 feet (8.8 m) or more but less than 32 feet (9.8 m)	+6
32 feet (9.8 m) or more but less than 35 feet (10.7 m)	+5
35 feet (10.7 m) or more but less than 39 feet (11.9 m)	+3
39 feet (10.7 m) or more but less than 43 feet (13.1 m)	+2
43 feet (13.1 m) or more but less than 48 feet (14.6 m)	+1

48 feet (14.6 m) or more but less than 58 feet (17.7 m)	0
58 feet (17.7 m) or more but less than 70 feet (21.3 m)	-1
70 feet (21.3 m) or more but less than 83 feet (25.3 m)	-2
83 feet (25.3 m) or more but less than 100 feet (30.2 m)	-3

c) Application of Correction Factors

If two or more correction factors apply to a sound level limit they are applied cumulatively.

SUBPART F: EXHAUST SYSTEMS AND TIRES

Section 952.150 Exhaust Systems and Tires

a) Exhaust Systems

A motor vehicle does not conform to the visual exhaust system inspection requirements of 35 Ill. Adm. Code 902.101 and 902.123(b), if inspection of the exhaust system of the motor vehicle discloses that the system:

1) Has a defect which adversely affects sound reduction, such as exhaust gas leaks or alteration or deterioration of muffler elements (small traces of soot or flexible exhaust pipe sections shall not constitute a violation of 35 Ill. Adm. Code 902.101 and 902.123(b);

2) Is not equipped with either a muffler or other noise dissipation device; or

3) Is equipped with a cut-out, by-pass or similar device, unless such device is designed as an exhaust gas driven cargo unloading system.

b) Tires. A motor vehicle does not conform to the visual tire inspection requirements, 35 Ill. Adm. Code 902.102 and 902.123(b), if inspection of any tire on which the vehicle is operating discloses that the tire has a tread pattern composed primarily of cavities in the tread (excluding sipes and local chunking) which are not vented by grooves to the tire shoulder or circumferentially to each other around the tire.