Ohio Environmental Protection Agency
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

Certified Mail

10/20/2011

Kim McGreal
CLEVE. HOPKINS INTERNAT'L AIRPORT
ATTN: Environmental Services
PO Box 81009
CLEVELAND, OH 44181-0009

No	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
Yes	MACT/GACT
Yes	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED
Yes	SYNTHETIC MINOR TO AVOID TITLE V
Yes	FEDERALLY ENFORCABLE PTIO (FEPTIO)
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

RE: FINAL AIR POLLUTION PERMIT-TO-INSTALL AND OPERATE
Facility ID: 1318004181
Permit Number: P0108487
Permit Type: Initial Installation
County: Cuyahoga

Dear Permit Holder:

Enclosed please find a final Air Pollution Permit-to-Install and Operate (PTIO) which will allow you to install, modify, and/or operate the described emissions unit(s) in the manner indicated in the permit. Because this permit contains conditions and restrictions, please read it very carefully. Please complete a survey at www.epa.ohio.gov/dapc/permitsurvey.aspx and give us feedback on your permitting experience. We value your opinion.

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, OH 43215

If you have any questions, please contact Cleveland Division of Air Quality at (216)664-2297 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. This permit can be accessed electronically on the DAPC Web page, www.epa.ohio.gov/dapc, by clicking the "Issued Air Pollution Control Permits" link.

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section, DAPC

Cc: CDAQ

50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

614 | 644 3020
614 | 644 3184 (fax)
www.epa.ohio.gov

Ohio Environmental Protection Agency

FINAL

Division of Air Pollution Control
Permit-to-Install and Operate
for
CLEVE. HOPKINS INTERNAT'L AIRPORT

Facility ID:	1318004181
Permit Number:	P0108487
Permit Type:	Initial Installation
Issued:	10/20/2011
Effective:	10/20/2011
Expiration:	10/20/2016

Ohio Environmental Protection Agency

Division of Air Pollution Control
Permit-to-Install and Operate
for
CLEVE. HOPKINS INTERNAT'L AIRPORT

Table of Contents

Authorization

Facility ID: 1318004181
Application Number(s): A0042387
Permit Number: P0108487
Permit Description: Initial installation for two High Capacity Snow Melters and four Standard Capacity Snow Melters.
Permit Type: Initial Installation
Permit Fee: $2,400.00
Issue Date: 10/20/2011
Effective Date: 10/20/2011
Expiration Date: 10/20/2016
Permit Evaluation Report (PER) Annual Date: Apr 1 - Mar 31, Due May 15

This document constitutes issuance to:

CLEVE. HOPKINS INTERNAT'L AIRPORT
19501 FIVE POINTS RD
Cleveland, OH 44135

of a Permit-to-Install and Operate for the emissions unit(s) identified on the following page.

Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Cleveland Division of Air Quality
2nd Floor
75 Erieview Plaza
Cleveland, OH 44114
(216)664-2297

The above named entity is hereby granted this Permit-to-Install and Operate for the air contaminant source(s) (emissions unit(s)) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the described emissions unit(s) will operate in compliance with applicable State and federal laws and regulations.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Scott J. Nally
Director

Authorization (continued)

Permit Number: P0108487
Permit Description: Initial installation for two High Capacity Snow Melters and four Standard Capacity Snow Melters.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Group Name: High Capacity Snow Melter

Emissions Unit ID:	**P001**
Company Equipment ID:	High Capacity Mobile Snow Melter #1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P002**
Company Equipment ID:	High Capacity Mobile Snow Melter #2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

Group Name: Standard Capacity Snow Melter

Emissions Unit ID:	**P003**
Company Equipment ID:	Standard Capacity Mobile Snow Melter #1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P004**
Company Equipment ID:	Standard Capacity Mobile Snow Melter # 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P005**
Company Equipment ID:	Standard Capacity Snow Melter #3
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P006**
Company Equipment ID:	P006
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

A. Standard Terms and Conditions

1. What does this permit-to-install and operate ("PTIO") allow me to do?

This permit allows you to install and operate the emissions unit(s) identified in this PTIO. You must install and operate the unit(s) in accordance with the application you submitted and all the terms and conditions contained in this PTIO, including emission limits and those terms that ensure compliance with the emission limits (for example, operating, recordkeeping and monitoring requirements).

2. Who is responsible for complying with this permit?

The person identified on the "Authorization" page, above, is responsible for complying with this permit until the permit is revoked, terminated, or transferred. "Person" means a person, firm, corporation, association, or partnership. The words "you," "your," or "permittee" refer to the "person" identified on the "Authorization" page above.

The permit applies only to the emissions unit(s) identified in the permit. If you install or modify any other equipment that requires an air permit, you must apply for an additional PTIO(s) for these sources.

3. What records must I keep under this permit?

You must keep all records required by this permit, including monitoring data, test results, strip-chart recordings, calibration data, maintenance records, and any other record required by this permit for five years from the date the record was created. You can keep these records electronically, provided they can be made available to Ohio EPA during an inspection at the facility. Failure to make requested records available to Ohio EPA upon request is a violation of this permit requirement.

4. What are my permit fees and when do I pay them?

There are two fees associated with permitted air contaminant sources in Ohio:

PTIO fee. This one-time fee is based on a fee schedule in accordance with Ohio Revised Code (ORC) section 3745.11, or based on a time and materials charge for permit application review and permit processing if required by the Director.

You will be sent an invoice for this fee after you receive this PTIO and payment is due within 30 days of the invoice date. You are required to pay the fee for this PTIO even if you do not install or modify your operations as authorized by this permit.

- Annual emissions fee. Ohio EPA will assess a separate fee based on the total annual emissions from your facility. You self-report your emissions in accordance with Ohio Administrative Code (OAC) Chapter 3745-78. This fee assessed is based on a fee schedule in ORC section 3745.11 and funds Ohio EPA's permit compliance oversight activities. Unless otherwise specified, facilities subject to one or more synthetic minor restrictions must use Ohio EPA's "Air Services" to submit annual emissions associated with this permit requirement. Ohio EPA will notify you when it is time to report your emissions and to pay your annual emission fees.

5. When does my PTIO expire, and when do I need to submit my renewal application?

This permit expires on the date identified at the beginning of this permit document (see "Authorization" page above) and you must submit a renewal application to renew the permit. Ohio EPA will send a renewal notice to you approximately six months prior to the expiration date of this permit. However, it is

very important that you submit a complete renewal permit application (postmarked prior to expiration of this permit) even if you do not receive the renewal notice.

If a complete renewal application is submitted before the expiration date, Ohio EPA considers this a timely application for purposes of ORC section 119.06, and you are authorized to continue operating the emissions unit(s) covered by this permit beyond the expiration date of this permit until final action is taken by Ohio EPA on the renewal application.

6. What happens to this permit if my project is delayed or I do not install or modify my source?

This PTIO expires 18 months after the issue date identified on the "Authorization" page above unless otherwise specified if you have not (1) started constructing the new or modified emission sources identified in this permit, or (2) entered into a binding contract to undertake such construction. This deadline can be extended by up to 12 months, provided you apply to Ohio EPA for this extension within a reasonable time before the 18-month period has ended and you can show good cause for any such extension.

7. What reports must I submit under this permit?

An annual permit evaluation report (PER) is required in addition to any malfunction reporting required by OAC rule 3745-15-06 or other specific rule-based reporting requirement identified in this permit. Your PER due date is identified in the Authorization section of this permit.

8. If I am required to obtain a Title V operating permit in the future, what happens to the operating provisions and PER obligations under this permit?

If you are required to obtain a Title V permit under OAC Chapter 3745-77 in the future, the permit-to-operate portion of this permit will be superseded by the issued Title V permit. From the effective date of the Title V permit forward, this PTIO will effectively become a PTI (permit-to-install) in accordance with OAC rule 3745-31-02(B). The following terms and conditions will no longer be applicable after issuance of the Title V permit: Section B, Term 1.b) and Section C, for each emissions unit, Term a)(2).

The PER requirements in this permit remain effective until the date the Title V permit is issued and is effective, and cease to apply after the effective date of the Title V permit. The final PER obligation will cover operations up to the effective date of the Title V permit and must be submitted on or before the submission deadline identified in this permit on the last day prior to the effective date of the Title V permit.

9. What are my obligations when I perform scheduled maintenance on air pollution control equipment?

You must perform scheduled maintenance of air pollution control equipment in accordance with OAC rule 3745-15-06(A). If scheduled maintenance requires shutting down or bypassing any air pollution control equipment, you must also shut down the emissions unit(s) served by the air pollution control equipment during maintenance, unless the conditions of OAC rule 3745-15-06(A)(3) are met. Any emissions that exceed permitted amount(s) under this permit (unless specifically exempted by rule) must be reported as deviations in the annual permit evaluation report (PER), including nonexempt excess emissions that occur during approved scheduled maintenance.

10. Do I have to report malfunctions of emissions units or air pollution control equipment? If so, how must I report?

If you have a reportable malfunction of any emissions unit(s) or any associated air pollution control system, you must report this to the Cleveland Division of Air Quality in accordance with OAC rule 3745-15-06(B). Malfunctions that must be reported are those that result in emissions that exceed permitted emission levels. It is your responsibility to evaluate control equipment breakdowns and operational upsets to determine if a reportable malfunction has occurred.

If you have a malfunction, but determine that it is not a reportable malfunction under OAC rule 3745-15-06(B), it is recommended that you maintain records associated with control equipment breakdown or process upsets. Although it is not a requirement of this permit, Ohio EPA recommends that you maintain records for non-reportable malfunctions.

11. Can Ohio EPA or my local air agency inspect the facility where the emission unit(s) is/are located?

Yes. Under Ohio law, the Director or his authorized representative may inspect the facility, conduct tests, examine records or reports to determine compliance with air pollution laws and regulations and the terms and conditions of this permit. You must provide, within a reasonable time, any information Ohio EPA requests either verbally or in writing.

12. What happens if one or more emissions units operated under this permit is/are shut down permanently?

Ohio EPA can terminate the permit terms associated with any permanently shut down emissions unit. "Shut down" means the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31.

You should notify Ohio EPA of any emissions unit that is permanently shut down by submitting[1] a certification that identifies the date on which the emissions unit was permanently shut down. The certification must be submitted by an authorized official from the facility. You cannot continue to operate an emissions unit once the certification has been submitted to Ohio EPA by the authorized official.

You must comply with all recordkeeping and reporting for any permanently shut down emissions unit in accordance with the provisions of the permit, regulations or laws that were enforceable during the period of operation, such as the requirement to submit a PER, air fee emission report, or malfunction report. You must also keep all records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, for at least five years from the date the record was generated.

Again, you cannot resume operation of any emissions unit certified by the authorized official as being permanently shut down without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

[1] Permittees that use Ohio EPA's "Air Services" can mark the affected emissions unit(s) as "permanently shutdown" in the facility profile along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).

13. Can I transfer this permit to a new owner or operator?

You can transfer this permit to a new owner or operator. If you transfer the permit, you must follow the procedures in OAC Chapter 3745-31, including notifying Ohio EPA or the local air agency of the change in ownership or operator. Any transferee of this permit must assume the responsibilities of the transferor permit holder.

14. Does compliance with this permit constitute compliance with OAC rule 3745-15-07, "air pollution nuisance"?

This permit and OAC rule 3745-15-07 prohibit operation of the air contaminant source(s) regulated under this permit in a manner that causes a nuisance. Ohio EPA can require additional controls or modification of the requirements of this permit through enforcement orders or judicial enforcement action if, upon investigation, Ohio EPA determines existing operations are causing a nuisance.

15. What happens if a portion of this permit is determined to be invalid?

If a portion of this permit is determined to be invalid, the remainder of the terms and conditions remain valid and enforceable. The exception is where the enforceability of terms and conditions are dependent on the term or condition that was declared invalid.

B. Facility-Wide Terms and Conditions

1. This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

a) For the purpose of a permit-to-install document, the facility-wide terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) For the purpose of a permit-to-operate document, the facility-wide terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

(1) None.

C. Emissions Unit Terms and Conditions

1. Emissions Unit Group -High Capacity Snow Melter: P001,P002,

EU ID	Operations, Property and/or Equipment Description
P001	John Deere (Model #6068HFC94) High Capacity Snow Melter. Stationary Compression Ignition (CI) Internal Combustion Engine (ICE) that is less than ten liters per cylinder and 225 horsepower.
P002	John Deere (Model #6068HFC94) High Capacity Snow Melter. Stationary Compression Ignition (CI) Internal Combustion Engine (ICE) that is less than ten liters per cylinder and 225 horsepower.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)e., c)(3), and e)(3)

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001.	Particulate Matter (PM) shall not exceed 0.02 gram PM/kW-hr and 0.102 ton per rolling 12-month period for each snow melter. Nitrogen Oxide (NO_x) emissions shall not exceed 0.40 gram NO_x/kW-hr and 1.15 tons per rolling 12-month period for each snow melter. Carbon Monoxide (CO) emissions shall not exceed 3.5 gram CO/kW-hr and 0.51 ton per rolling 12-month period for each

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		snow melter. Volatile Organic Compound (VOC) emissions shall not exceed 0.19 gram VOC/kW-hr and 0.021 ton per rolling 12-month period for each snow melter. Sulfur Dioxide (SO_2) emissions shall not exceed 0.45 ton per rolling 12-month period per snow melter. See b)(2)d. below.
b.	OAC rule 3745-31-05(A)(3)(b), as effective 12/01/2006.	See b)(2)e. below.
c.	40 CFR Part 60, Subpart IIII 40 CFR 60.4204(b) 40 CFR 60.4201(a) Table 6 to Part 1039.102	The exhaust emissions from this engine shall not exceed: 0.02 gram PM/kW-hr 0.40 gram NO_x/kW-hr 0.19 gram NMHC/kW-hr 3.5 grams CO/kW-hr See terms b)(2)(a through c)
d.	40 CFR 60.4207(b) 40 CFR 80.510(b)	The sulfur content of the diesel fuel burned in this emissions unit shall not exceed 15 ppm or 0.0015% sulfur by weight. See terms b)(2)c, c(2), d(1), and e(2).
e.	40 CFR 1039.105 (certified by manufacturer)	20% opacity during the acceleration mode. 15% opacity during the lugging mode. 50% opacity during the peaks in either the acceleration or lugging modes.
f.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed twenty percent opacity, as a six-minute average, except as provided by this rule.
g.	OAC rule 3745-31-05(D) Synthetic minor to avoid Title V and MACT applicability.	Particulate Matter (PM) shall not exceed 0.102 ton per rolling 12-month period for each snow melter. Nitrogen Oxide (NO_x) emissions shall not exceed 1.15 tons per rolling 12-month

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		period for each snow melter. Carbon Monoxide (CO) emissions shall not exceed 0.51 ton per rolling 12-month period for each snow melter. Volatile Organic Compound (VOC) emissions shall not exceed 0.021 ton per rolling 12-month period for each snow melter. Sulfur Dioxide (SO_2) emissions shall not exceed 0.45 ton per rolling 12-month period per snow melter. See c)(2).
h.	OAC rule 3745-17-11(B)(5)	The emission limitation specified by this rule is less stringent than the emissions limitation established for PE pursuant to 40 CFR Part 60, Subpart IIII.
i.	40 CFR Part 63 Subpart ZZZZ 40 CFR 63.6590(c).	A new area source operating in compliance with Part 60 Subpart IIII is the demonstration of compliance for 40 CFR 63 Subpart ZZZZ.

(2) Additional Terms and Conditions

a. The stationary compression ignition (CI) internal combustion engine (ICE) is subject to and shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart IIII, the standards of performance for stationary CI ICE.

b. The stationary CI ICE has been or shall be purchased certified by the manufacturer, for its useful life*, to emission standards as stringent as those identified in 40 CFR 60.4201(a) and found in 40 CFR 1039.102 Table 6, for engines greater than or equal to 175 horsepower (130 Kilowatt) and less than 750 horsepower (560 kilowatt), and certified to the opacity standards found in 40 CFR 1039.105.

* “useful life” defined in Miscellaneous Requirements section.

c. The quality of the diesel fuel burned in this emissions unit shall meet the following specifications on an “as received” basis:

i. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.0015 pound sulfur dioxide/MMBtu actual hear input; and 15 ppm sulfur or 0.0015% sulfur by weight;

ii. a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent; and

iii. a heating value greater than 135,000 Btu/gallon.

Compliance with the above-mentioned specifications shall be determined by using the analytical results provided by the permittee or oil supplier for each shipment of oil.

d. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC Rule 3745-31-05 was revised to conform with Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revision to OAC Rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once the U.S. EPA approves the December 1, 2006 revision of OAC Rule 3745-31-05, then these emissions limitations/control measures no longer apply.

e. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM, NO_x, CO, VOC and SO_2 emissions from this air contaminant source since the uncontrolled potential to emit for PM, NO_x, CO, VOC and SO_2 is less than 10 tons/year.

c) Operational Restrictions

(1) The stationary CI ICE shall be installed, operated, and maintained according to the manufacturer's specifications, written instructions, and procedure, and/or according to procedure developed by the permittee that have been approved by the engine manufacturer in writing, over the entire life of the engine. The IC ICE must also be installed and operated to meet the applicable requirements from 40 CFR Part 89. Control of Emissions from New and In-Use Non-road CI ICE and part 1068, the General Compliance Provisions for Engine Programs. The permittee shall operate and maintain the stationary CI ICE to achieve the Interim Tier 4 emission standards in Table 6 to in 40 CFR 1039.102 as required per 40 CFR 60.4204(b).

(2) Diesel fuel burned in the CI, ICE shall not exceed the limit for sulfur as specified by 40 CFR 80.510(b), i.e., the maximum sulfur content of diesel fuel shall not exceed 15 ppm or 0.0015% sulfur by weight.

(3) The maximum annual hours of operation for the ICE shall not exceed 400-hours per rolling 12-month period for each snow melter.

(4) If the stationary CI internal combustion engine is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the permittee when the high backpressure limit of the engine is approached.

d) Monitoring and/or Recordkeeping Requirements

(1) For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of the diesel oil received and the oil supplier's (or permittee's) analyses for sulfur content, in parts per million (40 CFR 80.510) or percent by weight. The permittee shall perform or require the supplier to perform the analyses for sulfur content and hear content in accordance with 40 CFR 80.580, using the appropriate ASTM methods. These records shall be retained for a minimum of 5-years and shall be available for inspection by the Cleveland Division of Air Quality (CDAQ).

(2) The permittee shall maintain the manufacturer's certification, that demonstrates compliance with the phase-in emission standards in table 6 of 40 CFR 1039.102 and the opacity standards in 40 CFR 1039.105, on site or at a central location for all facility CI ICE, and the certification shall be made available for review upon request. If the manufacturer's certification I not kept on site, the permittee shall maintain a log for the location of each ICE and it shall identify the agency-assigned emissions unit number, the manufacturer's identification number, and the certificate identification number, the manufacturer's operations manual and any written instructions or procedures developed by the permittee and approved by the manufacturer shall be maintained at the same location as the ICE.

(3) The permittee shall maintain a record of the hours of operation for each ICE on a 12-month basis, i.e. at the end of each month, the sum of the hours of operation for this ICE during the month plus the number of hours operated during the preceding 11-months. During the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, where 11-months records of the hours operated are not available, the permittee shall record the cumulative hours of operation for the engine.

After the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, compliance with the annual hours of operation limit shall be based upon a rolling, 12-month summation of the hours of operation records.

(4) If the stationary CI ICE is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the permittee shall keep records of the date, time, and any corrective action(s) taken in response to the notification from the backpressure monitor, that the high backpressure limit of the engine has been approached or exceeded.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the Director by the due date identified in the Authorization section of this permit. The permit evaluation

report shall cover a reporting period of no more than 12- months for each air contaminant source identified in this permit.

(2) The permittee shall identify in the annual permit evaluation report any period of time (date and number of hours) that the quality of oil burned in this emissions unit did not meet the requirements established in 40 CFR 80.510(b), based upon the required fuel records, and the amount of non-compliant fuel burned on each such occasion.

(3) The permittee shall identify in the quarterly deviation report any exceedance of the hours of operation restriction, to include the amount of additional hours of operation recorded for each rolling 12-month period.

(4) If the stationary CI ICE s equipped with a diesel fuel particulate filter to comply with the emissions standards in 40 CFR 60.4204, the permittee shall include in the PER any records of the date, time, and any corrective action(s) taken in response to the notification from the monitor that the backpressure has been approached or exceeded.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Opacity Limitations:

20% opacity during the acceleration mode

15% opacity during the lugging mode

50% opacity during the peaks in either the acceleration or lugging modes

Applicable Compliance Method:

The ICE shall be purchased certified to the opacity standards of 40 CFR 1039.105.

b. Opacity Limitation:

Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed 20% opacity, as a six-minute average, except as specified by rule.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission observations performed in accordance with U.S. EPA Reference Method 9 in 40 CFR, Part 60, Appendix A.

c. Emission Limitations:

0.02 gram PM/kW-hr

0.102 ton PM/rolling 12-month period for each snow melter.

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 6 of 40 CFR 1039.102, the interim Tier 4 phase-in exhaust emission standards for diesel engines between 175 and less than 750 horsepower (130 and <560 kW).

Compliance with the ton per rolling 12-month PM emissions limitation shall be determined by the following calculation:

Where:

Gi = Gallons of diesel fuel used per rolling 12-month period for engine type i.

EFi = the gram/kW-hr emission factor for the engine type i, 0.02 gram PM/kW-hr.

E = Total tons of PM/rolling 12-month period emitted.

$$E = \sum_{i=1}^{n} \left(Gi \frac{Gallons}{Rolling\ 12-months}\right)\left(\frac{kW}{1.341\ hp}\right)\left(\frac{137{,}000\ Btu}{Gallon}\right)\left(\frac{hp-hr}{7000\ Btu}\right)\left(EFi \frac{0.02\ gram}{kW-hr}\right)\left(\frac{Ton}{907{,}185\ gram}\right)$$

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i. below.

d. Emission Limitations:

0.40 gram NO_x/kW-hr

1.15 tons NO_x/rolling 12-month period for each snow melter.

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 6 of 40 CFR 1039.102, the interim Tier 4 phase-in exhaust emission standards for diesel engines between 175 and less than 750 horsepower (130 and <560 kW).

Compliance with the ton per rolling 12-month NO_x emissions limitation shall be determined by the following calculation:

Where:

Gi = Gallons of diesel fuel used per rolling 12-month period for engine type i.

EFi =the gram/kW-hr emission factor for the engine type i, 0.40 gram NO_x/kW-hr.

E = Total tons of NO_x/rolling 12-month period emitted.

$$E = \sum_{i=1}^{n} \left(Gi \frac{Gallons}{Rolling\ 12-months}\right)\left(\frac{kW}{1.341\ hp}\right)\left(\frac{137{,}000\ Btu}{Gallon}\right)\left(\frac{hp-hr}{7000\ Btu}\right)\left(EFi \frac{0.40\ gram}{kW-hr}\right)\left(\frac{Ton}{907{,}185\ gram}\right)$$

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i below.

e. Emission Limitations:

3.5 grams CO/kW-hr

0.51 ton CO/rolling 12-month period for each snow melter.

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 6 of 40 CFR 1039.102, the interim Tier 4 phase-in exhaust emission standards for diesel engines between 175 and less than 750 horsepower (130 and <560 kW).

Compliance with the ton per rolling 12-month CO emissions limitation shall be determined by the following calculation:

Where:

Gi = Gallons of diesel fuel used per rolling 12-month period for engine type i.

EFi = the gram/kW-hr emission factor for the engine type i, 3.5 grams CO/kW-hr.

E = Total tons of CO/rolling 12-month period emitted.

$$E = \sum_{i=1}^{n} \left(Gi \frac{Gallons}{Rolling\ 12-months}\right)\left(\frac{kW}{1.341\ hp}\right)\left(\frac{137{,}000\ Btu}{Gallon}\right)\left(\frac{hp-hr}{7000\ Btu}\right)\left(EFi \frac{3.5\ grams}{kW-hr}\right)\left(\frac{Ton}{907{,}185\ gram}\right)$$

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i below.

f. Emission Limitations:

0.19 gram NMHC/kW-hr

0.021 ton VOC/rolling 12-month period for each snow melter.

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 6 of 40 CFR 1039.102, the interim Tier 4 phase-in exhaust emission standards for diesel engines between 175 and less than 750 horsepower (130 and <560 kW).

Compliance with the ton per rolling 12-month VOC emissions limitation shall be determined by the following calculation:

Where:

Gi = Gallons of diesel fuel used per rolling 12-month period for engine type i.

EFi=the gram/kW-hr emission factor for the engine type i, 0.19 gram VOC/kW-hr.

E = Total tons of VOC/rolling 12-month period emitted.

$$E = \sum_{i=1}^{n} \left(Gi \frac{Gallons}{Rolling\ 12-months} \right) \left(\frac{kW}{1.341\ hp} \right) \left(\frac{137{,}000\ Btu}{Gallon} \right) \left(\frac{hp-hr}{7000\ Btu} \right) \left(EFi \frac{0.19\ gram}{kW-hr} \right) \left(\frac{Ton}{907{,}185\ gram} \right)$$

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i below.

g. Sulfur Content Limitations for Diesel Fuel:

Sulfur content 15 ppm or $\leq$ 0.0015% by weight sulfur

Applicable Compliance Method:

Compliance shall be demonstrated through the record keeping requirements for the sulfur content of each shipment of diesel oil received. If meeting the standards in 40 CFR 80.510(b), this calculates to approximately 0.0015 lb SO_2/MMBtu.

h. Emission Limitations:

0.45 ton of SO_2/rolling 12-month period for each snow melter.

Applicable Compliance Method:

Compliance with the ton per rolling 12-month SO_2 emissions limitation shall be determined by the following calculation from AP-42 Table 3.4-1:

Where:

G = Gallons of diesel fuel burned in the engine during each rolling 12-month period.

S = % sulfur content of the fuel used. Since the sulfur content limit for the fuel is 0.0015%, use the value 0.0015 in the formula.

E = Total tons of SO_2/rolling 12-month period emitted.

$$E = \left(G \frac{Gallons}{Rolling\ 12-months}\right)\left(\frac{137{,}000\ Btu}{Gallon}\right)\left((1.01)(S)\frac{lb\ SO2}{mmBtu}\right)\left(\frac{Ton}{2000\ lbs}\right)$$

The heating value of the diesel fuel may be adjusted to that provided by the supplier.

i. If it is determined by the Ohio EPA that a compliance demonstration is required through performance testing, it shall be conducted using one of the following test methods or procedures:

i. in accordance with 40 CFR 60.4212, conduct the exhaust emissions testing using the in-use testing procedures found in 40 CFR Part 1039, Subpart F, measuring the emissions of the regulated pollutants as specified in 40 CFR 1065; or

ii. in accordance with 40 CFR 60.4213, conduct exhaust emissions testing using the test methods identified in Table 7 to Subpart IIII of Part 60.

The exhaust emissions shall not exceed standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d).

g) Miscellaneous Requirements

(1) Useful life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for useful life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for useful life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a).

2. Emissions Unit Group -Standard Capacity Snow Melter: P003,P004,P005,P006,

EU ID	Operations, Property and/or Equipment Description
P003	John Deere (Model #4045HF285) Standard Capacity Snow Melter. Stationary Compression Ignition (CI) Internal Combustion Engine (ICE) that is less than ten liters per cylinder and 139 horsepower.
P004	John Deere (Model #4045HF285) Standard Capacity Snow Melter. Stationary Compression Ignition (CI) Internal Combustion Engine (ICE) that is less than ten liters per cylinder and 139 horsepower.
P005	John Deere (Model #4045HF285) Standard Capacity Snow Melter. Stationary Compression Ignition (CI) Internal Combustion Engine (ICE) that is less than ten liters per cylinder and 139 horsepower.
P006	John Deere (Model #4045HF285) Standard Capacity Snow Melter. Stationary Compression Ignition (CI) Internal Combustion Engine (ICE) that is less than ten liters per cylinder and 139 horsepower.

a) This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

(1) For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.

a. None.

(2) For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.

a. b)(1)f., c)(3), d)(3), and e)(3).

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC Rule 3745-31-05(A)(3) as effective 11/30/2001.	Particulate Matter (PM) shall not exceed 0.30 gram PM/kW-hr and 0.064 ton per rolling 12-month period for each snow melter. Nitrogen oxide (NOx) emissions shall not exceed 4.0 grams NO_x + NMHC/kW-hr and 0.68 ton per rolling

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		12-month period for each snow melter. Carbon monoxide (CO) emissions shall not exceed 5.0 grams CO/kW-hr and 0.35 tons per rolling 12-month period for each snow melter. Volatile organic compound (VOC) emissions shall not exceed 0.08 ton per rolling 12-month period per snow melter. Sulfur dioxide (SO2) emissions shall not exceed 0.23 ton per rolling 12-month period for each snow melter. See b)(2)d. below.
b.	OAC rule 3745-31-05(A)(3)(b) as effective 12/01/2006.	See b)(2)e. below.
b.	40 CFR Part 60, Subpart IIII 40 CFR 60.4204(b) 40 CFR 60.4201(a) Table 1 to 40 CFR 89.112, Tier 3	The exhaust emissions from this engine shall not exceed: 0.30 gram PM/kW-hr 4.0 grams NOx + NMHC/kW-hr 5.0 grams CO/kW-hr See terms b)(2)(a through c).
c.	40 CFR 60.4207(b) 40 CFR 80.510(b)	The sulfur content of the diesel fuel burned in this emissions unit shall not exceed 15 ppm or 0.0015% sulfur by weight. See terms b)(2)c, c(2), d(1), and e(2).
d.	40 CFR 89.113 (certified by manufacturer)	20% opacity during the acceleration mode. 15% opacity during the lugging mode. 50% opacity during the peaks in either the acceleration or lugging modes.

e.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed twenty (20) percent opacity, as a six-minute average, except as specified by rule.
f.	OAC rule 3745-31-05(D) Synthetic minor to avoid Title V and MACT applicability.	Particulate Matter (PM) shall not exceed 0.064 ton per rolling 12-month period for each snow melter. Nitrogen oxide (NOx) emissions shall not exceed 0.68 ton per rolling 12-month period for each snow melter. Carbon monoxide (CO) emissions shall not exceed 0.35 tons per rolling 12-month period for each snow melter. Volatile organic compound (VOC) emissions shall not exceed 0.08 ton per rolling 12-month period per snow melter. Sulfur dioxide (SO_2) emissions shall not exceed 0.23 ton per rolling 12-month period for each snow melter. See c)(2).
g.	OAC rule 3745-17-11(B)(5)	The emission limitation specified by this rule is less stringent than the emission limitation established for PE pursuant to 40 CFR Part 60, Subpart IIII.
h.	40 CFR 63 Subpart ZZZZ 40 CFR 63.6590(c)	A new area source operating in compliance with Part 60 Subpart IIII is the demonstration of compliance for 40 CFR 63 Subpart ZZZZ.

(2) Additional Terms and Conditions

a. The stationary compression ignition (CI) internal combustion engine (ICE) is subject to and shall be operated in compliance with the requirements of 40 CFR Part 60, Subpart III, the standards of performance doe stationary CI ICE.

b. The stationary CI ICE has been or shall be purchased certified by the manufacturer to emission standards as stringent as those identified in 40 CFR 60.4201(a) and found in Tier 3 of 40 CFR 89.112, Table 1, for engines greater than or equal to 100 horsepower (75 kilowatt) and less than 175 horsepower (130 kilowatt), and certified to the opacity standards found in 40 CFR 89.113.

c. The quality of diesel fuel burned in this emissions unit shall meet the following specifications on an "as received" basis:

i. a sulfur content which is sufficient to comply with the allowable sulfur dioxide emission limitation of 0.0015 pound sulfur dioxide/MMBTU actual heat input; and 15 ppm sulfur or 0.0015% sulfur by weight.

ii. a minimum cetane index of 40 or a minimum aromatic content of 35 volume percent; and

iii. a heating value greater than 135,000 BTU/gallon.

Compliance with the above-mentioned specifications shall be determined by using the analytical results provided by the permittee or oil supplier for each shipment of oil.

d. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC Rule 3745-31-05 was revised to conform with Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revision to OAC Rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio. Once the U.S. EPA approves the December 1, 2006 revision of OAC Rule 3745-31-05, then these emissions limitations/control measures no longer apply.

e. This rule paragraph applies once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the State Implementation Plan (SIP).

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM, NO_x, CO, VOC and SO_2 emissions from this air contaminant source since the uncontrolled potential to emit for PM, NO_x, CO, VOC and SO_2 is less than 10 tons/year.

c) Operational Restrictions

(1) The stationary CI ICE shall be installed, operated, and maintained according to the manufacturer's specifications, written instructions, and procedures, and/or according to procedures developed by the permittee that have been approved by the engine manufacturer in writing, over the entire life of the engine. The CI ICE must also be

installed and operated to meet the applicable requirements from 40 CFR Part 89, Control of Emissions from New and In-use Non-road CI ICE and Part 1068, the General Compliance Provisions for Engine Programs. The permittee shall operate and maintain the stationary CI ICE to achieve the Tier 3 emission standards in Table 1 to 40 CFR 89.112, as required per 40 CFR 60. 4204(b).

(2) Diesel fuel burned in the CI ICE shall not exceed the limit for sulfur and specified by 40 CFR 80.510(b) i.e., the maximum sulfur content of diesel fuel shall not exceed 15 ppm or 0.0015% sulfur by weight.

(3) The maximum annual hours of operation for the ICE shall not exceed 400-hours per rolling 12-month period for each snow melter.

(4) If the stationary CI ICE is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the permittee when the high backpressure limit of the engine is approached.

d) Monitoring and/or Recordkeeping Requirements

(1) For each shipment of oil received for burning in this emissions unit, the permittee shall maintain records of the total quantity of the diesel oil received and the oil supplier's (or permittee's) analyses for sulfur content, in part per million (40 CFR 80.510) or percent by weight. The permittee shall perform or require the supplier to perform the analyses for sulfur content and heat content in accordance with 40 CFR 80.580, using the appropriate ASTM methods. These records shall be retained for a minimum of 5-years and shall be made available for inspection by the Cleveland Division of Air Quality (CDAQ).

(2) The permittee shall maintain the manufacturer's certification, to the applicable Tier 3 emission standards in Table 1 of 40 CFR 89.112, on site or at a central location for all facility ICE and it shall be made available for review upon request. If the manufacturer's certification is not kept onsite, the permittee shall maintain a log for the location of each ICE and it shall identify the agency-assigned emissions unit number, the manufacturer's identification number, and the identification number of the certificate. The manufacturer's operations manual and any written instructions or procedures developed by the permittee and approved by the manufacturer shall be maintained at the same location as the ICE.

(3) The permittee shall maintain a record of the hours of operation for each ICE on a 12-month basis, i.e. at the end of each month, the sum of the hours of operation for this ICE during the month plus the number of hours operated during the preceding 11-months. During the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, where 11-months records of the hours operated are not available, the permittee shall record the cumulative hours of operation for the engine.

After the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, compliance with the annual hours of operation limit shall be based upon a rolling, 12-month summation of the hours of operation records.

(4) If the stationary CI ICE is equipped with a diesel particulate filter to comply with the emission limitation standards in 40 CFR 60.4204, the permittee shall keep records of the date, time, and any corrective action(s) taken in response to the notification from the backpressure monitor, that the high backpressure limit of the engine has been approached or exceeded.

e) Reporting Requirements

(1) Annual Permit Evaluation Report (PER) forms will be mailed to the permittee at the end of the reporting period specified in the Authorization section of this permit. The permittee shall submit the PER in the form and manner provided by the Director by the due date identified in the Authorization section of this permit. The permit evaluation report shall cover a reporting period of no more than 12-months for each air contaminant source identified in this permit.

(2) The permittee shall identify in the annual permit evaluation report any period of time (date and number of hours) that the quality of oil burned in this emissions unit did not meet the requirements established in 40 CFR 80.510(b), based upon the required fuel records; and the amount of non-compliance fuel burned on each such occasion.

(3) The permittee shall identify in the quarterly deviation report any exceedance of the hours of operation restriction, to include the amount of additional hours of operation recorded for each rolling 12-month period.

(4) If the stationary CI ICE is equipped with a diesel particulate filter to comply with the emission standards in 40 CFR 60.4204, the permittee shall include in the PER any records of the date, time, and any corrective action(s) taken in response to the notification from the monitor that the backpressure has been approached or exceeded.

f) Testing Requirements

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Opacity Limitation:

20% opacity during the acceleration mode.

15% opacity during the lugging mode.

50% opacity during the peaks in either acceleration or lugging modes.

Applicable Compliance Method:

The ICE shall be purchased certified to the opacity standards of 40 CFR 89.113.

b. Opacity Limitation:

Visible particulate emissions from the exhaust stack serving this emissions unit shall not exceed 20 %opacity, as a six-minute average, except as specified by rule.

Applicable Compliance Method:

If required, compliance shall be determined through visible emission observations performed in accordance with U.S. EPA Reference Method 9 in 40 CFR, Part 60, Appendix A.

c. Emission Limitations:

0.30 gram PM/kW-hr

0.064 ton PM/rolling 12-month period for each snow melter

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 100 and less than 175 horsepower (75 and 130 kilowatts).

Compliance with the ton per rolling 12-month PM emissions limitation shall be determined by the following calculation:

Where:

Gi = Gallons of diesel fuel used per rolling 12-month period for engine type i.

EFi = the gram/kW-hr emission factor for the engine type i, 0.30 gram PM/kW-hr.

E = Total tons of PM/rolling 12-month period emitted.

$$E = \sum_{i=1}^{n} \left(Gi \frac{Gallons}{Rolling\ 12-months}\right)\left(\frac{kW}{1.341\ hp}\right)\left(\frac{137{,}000\ Btu}{Gallon}\right)\left(\frac{hp-hr}{7000\ Btu}\right)\left(EFi \frac{0.30\ gram}{kW-hr}\right)\left(\frac{Ton}{907{,}185\ gram}\right)$$

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i. below.

d. Emission Limitations:

4.0 grams NO_x + NMHC/kW-hr

0.68 ton NO_x/rolling 12-month period for each snow melter

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 100 and less than 175 horsepower (75 and 130 kilowatts).

For the purpose of reporting emissions, where the limit is for NO_x + NMHC, the NO_x and VOC limits shall be calculated using a ratio of 74.6% NO_x to 25.4% VOC.*

4.0 g NO_x+NMHC/kW-hr x 74.6% NO_x* = 3.0 grams NO_x/kW-hr

Compliance with the ton per rolling 12-month NO_x emissions limitation shall be determined by the following calculation:

Where:

Gi = Gallons of diesel fuel used per rolling 12-month period for engine type i.

EFi =the gram/kW-hr emission factor for the engine type i, 3.0 grams NO_x/kW-hr.

E = Total tons of NOx/rolling 12-month period emitted.

$$E = \sum_{i=1}^{n} \left(Gi \frac{Gallons}{Rolling\ 12-months} \right) \left(\frac{kW}{1.341\ hp} \right) \left(\frac{137{,}000\ Btu}{Gallon} \right) \left(\frac{hp-hr}{7000\ Btu} \right) \left(EFi \frac{3.0\ grams}{kW-hr} \right) \left(\frac{Ton}{907{,}185\ gram} \right)$$

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i below.

e. Emission Limitations:

5.0 grams CO/kW-hr

0.35 ton CO per rolling 12-month period for each snow melter

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 100 and less than 175 horsepower (75 and 130 kilowatts).

Compliance with the ton per rolling 12-month CO emissions limitation shall be determined by the following calculation:

Where:

Gi = Gallons of diesel fuel used per rolling 12-month period for engine type i.

EFi = the gram/kW-hr emission factor for the engine type i, 5.0 grams CO/kW-hr.

E = Total tons of CO/rolling 12-month period emitted.

$$E = \sum_{i=1}^{n} \left(Gi \frac{Gallons}{Rolling\ 12-months}\right)\left(\frac{kW}{1.341\ hp}\right)\left(\frac{137{,}000\ Btu}{Gallon}\right)\left(\frac{hp-hr}{7000\ Btu}\right)\left(EFi \frac{5.0\ grams}{kW-hr}\right)\left(\frac{Ton}{907{,}185\ gram}\right)$$

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i below.

f. Emission Limitations:

4.0 grams NO_x + NMHC/kW-hr

0.08 ton VOC/rolling 12-month period for each snow melter

Applicable Compliance Method:

Compliance with the emission limitations shall be based on the manufacturer's certification and by maintaining the engine according to the manufacturer's specifications. The g/kW-hr limit is the emission limitation from Table 1 of 40 CFR 89.112, the Tier 3 exhaust emission standards for diesel engines between 100 and less than 175 horsepower (75 and 130 kilowatts).

For the purpose of reporting emissions, where the limit is for NO_x + NMHC, the NO_x and VOC limits shall be calculated using a ratio of 74.6% NO_x to 25.4% VOC.*

4.0 g NO_x+NMHC/kW-hr x 25.4% NMHC* = 1.0 gram VOC/kW-hr

Compliance with the ton per rolling 12-month VOC emissions limitation shall be determined by the following calculation:

Where:

Gi = Gallons of diesel fuel used per rolling 12-month period for engine type i.

EFi = the gram/kW-hr emission factor for the engine type i, 1.0 gram VOC/kW-hr.

E = Total tons of VOC/rolling 12-month period emitted.

$$E = \sum_{i=1}^{n} \left(Gi \frac{Gallons}{Rolling\ 12-months}\right)\left(\frac{kW}{1.341\ hp}\right)\left(\frac{137{,}000\ Btu}{Gallon}\right)\left(\frac{hp-hr}{7000\ Btu}\right)\left(EFi \frac{1.0\ gram}{kW-hr}\right)\left(\frac{Ton}{907{,}185\ gram}\right)$$

If required, the permittee shall demonstrate compliance with the emission limitations through performance tests conducted in accordance with the provisions in term f)(1)i below.

*This ratio is based upon the linear relationship of NOx to NMHC from Table 1 of Subpart IIII, Table 1 from 40 CFR 89.112, to Tables 4, 5, and 6 from 1039.102.

g. Sulfur Content Limitations for Diesel Fuel:

Sulfur content 15 ppm or ≤ 0.0015% by weight sulfur

Applicable Compliance Method:

Compliance shall be demonstrated through the record keeping requirements for the sulfur content of each shipment of diesel oil received. If meeting the standards in 40 CFR 80.510(b), this calculates to approximately 0.0015 lb SO_2/MMBtu.

h. Emission Limitations:

0.23 ton of SO_2/rolling 12-month period for each snow melter.

Applicable Compliance Method:

Compliance with the ton per rolling 12-month SO_2 emissions limitation shall be determined by the following calculation from AP-42 Table 3.4-1:

Where:

G = Gallons of diesel fuel burned in the engine during each rolling 12-month period.

S = % sulfur content of the fuel used. Since the sulfur content limit for the fuel is 0.0015%, use the value 0.0015 in the formula.

E = Total tons of SO_2/rolling 12-month period emitted.

$$E = \left(G\ \frac{Gallons}{Rolling\ 12-months}\right)\left(\frac{137{,}000\ Btu}{Gallon}\right)\left((1.01)(S)\ \frac{lb\ SO2}{mmBtu}\right)\left(\frac{Ton}{2000\ lbs}\right)$$

[OAC rule 3745-31-05(D)]

The heating value of the diesel fuel may be adjusted to that provided by the supplier.

i. If it is determined by the Ohio EPA that a compliance demonstration is required through performance testing, it shall be conducted using one of the following test methods or procedures:

i. in accordance with 40 CFR 60.4212, conduct the exhaust emissions testing using the in-use testing procedures found in 40 CFR Part 1039,

Subpart F, measuring the emissions of the regulated pollutants as specified in 40 CFR 1065; or

ii. in accordance with 40 CFR 60.4213, conduct exhaust emissions testing using the test methods identified in Table 7 to Subpart IIII of Part 60.

If demonstrating compliance through the in-use testing procedures in 40 CFR part 1039, Subpart F, exhaust emissions from the stationary CI ICE shall not exceed the "not to exceed" (NTE) numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112, determined from the following equation:

NTE requirement for each pollutant = 1.25 x STD

Where:

STD = The standard specified for the pollutant in 40 CFR 89.112.

g) Miscellaneous Requirements

(1) None.