

Facility ID: 1576001801 Issuance type: Final State Permit To Operate

This version of facility specific terms and conditions was converted from a database format to an HTML file during an upgrade of the Ohio EPA, Division of Air Pollution Control's permitting software. Every attempt has been made to convert the terms and conditions to look and substantively conform to the permit issued or being drafted in STARS. However, the format of the terms may vary slightly from the original. In addition, although it is not expected, there is a slight possibility that a term and condition may have been inadvertently "left out" of this reproduction during the conversion process. Therefore, if this version is to be used as a starting point in drafting a new version of a permit, it is imperative that the entire set of terms and conditions be reviewed to ensure they substantively mimic the issued permit. The official version of any permit issued final by Ohio EPA is kept in the Agency's Legal section. The Legal section may be contacted at (614) 644-3037.

In addition to the terms and conditions, hyperlinks have been inserted into the document so you may more readily access the section of the document you wish to review.

Finally, the term language under "Part II" and before "A. Applicable Emissions Limitations..." has been added to aid in document conversion, and was not part of the original issued permit.

- [Go to Part II for Emissions Unit F001](#)
- [Go to Part II for Emissions Unit F002](#)
- [Go to Part II for Emissions Unit F003](#)

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Facility ID: 1576001801 Emissions Unit ID: F001 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

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) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
F001 - Paved Roadways and Parking Areas Non-Appendix A Area	OAC rule 3745-31-05(A)(3) PTI 15-01466 11/07/02	Total PM emissions from paved roadways and parking areas shall not exceed 52.0 tons/yr. Total PM10 emissions from paved roadways and parking areas shall not exceed 10.2 tons/yr. There shall be no visible emissions of fugitive dust except for a period of time not to exceed one minute during any sixty-minute observation period. Best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust. (See sections A.2.c., A.2.d., A.2.f., A.2.g., A.2.h., A.2.i., and A.2.j.)
Unpaved Roadways and Parking Areas	OAC rule 3745-31-05(A)(3) PTI 15-01466 11/07/02	Total PM emissions from unpaved roadways and parking areas shall not exceed 6.2 tons/yr. Total PM10 emissions from unpaved roadways and parking areas shall not exceed 2.8 tons/yr. There shall be no visible emissions of fugitive dust except for a period of time not to exceed three minutes during any sixty-minute observation period. Best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust. (See sections A.2.e., A.2.g., A.2.i., and A.2.j.)
	OAC rule 3745-17-08(A) OAC rule 3745-17-07(B)(11)(e)	See section A.2.k. See section A.2.l.

2. Additional Terms and Conditions

- (a) The paved roadways and parking areas that are covered by this permit and subject to the above-mentioned requirements are listed below:
 - paved roadways:
 - All
 - paved parking areas:
 - All
 The unpaved roadways and parking areas that are covered by this permit and subject to the above-

mentioned requirements are listed below:

unpaved roadways:

All

unpaved parking areas:

All

The permittee shall employ best available control measures on all paved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the paved roadways and parking areas by flushing at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

The permittee shall employ best available control measures on the unpaved shoulders of all paved roadways for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the unpaved shoulders of all paved roadways with water at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

The permittee shall employ best available control measures on all unpaved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the paved roadways and parking areas by watering at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for a paved roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.

Any unpaved roadway or parking area, which during the term of this permit is paved or takes the characteristics of a paved surface due to the application of certain types of dust suppressants, may be controlled with the control measure(s) specified above for paved surfaces. Any unpaved roadway or parking area that takes the characteristics of a paved roadway or parking area due to the application of certain types of dust suppressants shall remain subject to the visible emission limitation for unpaved roadways and parking areas. Any unpaved roadway or parking area that is paved shall be subject to the visible emission limitation for paved roadways and parking areas.

The permittee shall promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved streets onto which such material has been deposited by trucking or earth moving equipment or erosion by water or other means.

Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary for the materials being transported.

Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the best available technology requirements of OAC rule 3745-31-05.

This facility is not located within an "Appendix A" area as identified in OAC rule 3745-17-08. Therefore, pursuant to OAC rule 3745-17-08(A), this emissions unit is exempt from the requirements of OAC rule 3745-17-08(B).

This emissions unit is exempt from the visible particulate emission limitations specified in OAC rule 3745-17-07(B) pursuant to OAC rule 3745-17-07(B)(11)(e).

B. Operational Restrictions

1. None

C. Monitoring and/or Record Keeping Requirements

1. Except as otherwise provided in this section, the permittee shall perform inspections of the paved roadways and parking areas in accordance with the following frequencies:

paved roadways and parking areas minimum inspection frequency
All Daily

unpaved roadways and parking areas minimum inspection frequency
All Daily

2. The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.
3. The permittee may, upon receipt of written approval from the Canton local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.
4. The permittee shall maintain records of the following information:
 - a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;
 - b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

- c. the dates the control measures were implemented; and
- d. on a calendar quarter annual basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

The information required in 4. d. shall be updated on a calendar quarter annual basis within 30 days after the end of each calendar quarter year.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify any of the following occurrences:
 - a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and
 - b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.
2. The above deviation reports shall be submitted to the Canton local air agency by January 31 of each year, in accordance with the reporting requirements of the General Terms and Conditions of this permit.

E. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):
Emissions Limitation
There shall be no visible emissions of fugitive dust except for a period of time not to exceed one minute during any sixty-minute observation period from paved roadways and parking areas.

Applicable Compliance Method

Compliance with the emission limitation for the paved roadways and parking areas identified above shall be determined in accordance with Test Method 22 as set forth in "Appendix A on Test Methods" found in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources," as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03.

Emissions Limitation

There shall be no visible emissions of fugitive dust except for a period of time not to exceed three minutes during any sixty-minute observation period from unpaved roadways and parking lots.

Applicable Compliance Method

Compliance with the emission limitation for the unpaved roadways and parking areas identified above shall be determined in accordance with Test Method 22 as set forth in "Appendix A on Test Methods" found in 40 CFR, Part 60 "Standards of Performance for New Stationary Sources", and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03.

Emissions Limitation

Total PM emissions from paved roadways and parking areas shall not exceed 52.0 tons/yr.

Applicable Compliance Method

Compliance shall be demonstrated by multiplying the estimated vehicle miles traveled (VMT) per year on all paved roadways and parking areas for all vehicles times the pounds/VMT emission factor, calculated in accordance with AP-42, Section 13.2.1.3, and dividing by 2,000 pounds/ton.

AP-42, Section 13.2.1.3, the calculation for paved roadways:

$$E (\text{lb/VMT}) = (k) \times (sL/2)^{0.65} \times (W/3)^{1.5} \times (1-CE)$$

where:

E = Particulate Emission Factor (lbs PM/Vehicle Mile Traveled or lb/VMT)

k = Base Emission Factor for Particle Size range (lb/VMT) = 0.082 lb/VMT (PM)

sL = Silt Loading (g/m²) = 70 g/m²

W = Average Weight (tons) of the Vehicles Traveling the Road = 35 tons

CE = Control Efficiency = Watering 95% reduction

Emissions Limitation

Total PM₁₀ emissions from paved roadways and parking areas shall not exceed 10.2 tons/yr.

Applicable Compliance Method

Compliance shall be demonstrated by multiplying the estimated vehicle miles traveled (VMT) per year on all paved roadways and parking areas for all vehicles times the pound/VMT emission factor, calculated in accordance with AP-42, Section 13.2.1.3, and dividing by 2,000 pounds/ton.

AP-42, Section 13.2.1.3, the calculation for paved roadways:

$$E (\text{lb/VMT}) = (k) \times (sL/2)^{0.65} \times (W/3)^{1.5} \times (1-CE)$$

where:

E = Particulate Emission Factor (lbs PM/Vehicle Mile Traveled or lb/VMT)

k = Base Emission Factor for Particle Size range (lb/VMT) = 0.016 lb/VMT (PM₁₀)

sL = Silt Loading (g/m²) = 70 g/m²

W = Average Weight (tons) of the Vehicles Traveling the Road = 35 tons

CE = Control Efficiency = Watering 95% reduction

Emissions Limitation

Total PM emissions from unpaved roadways and parking areas shall not exceed 6.2 tons/yr.

Applicable Compliance Method

Compliance shall be demonstrated by multiplying the vehicle miles traveled (VMT) per year on all unpaved

roadways and parking areas for all vehicles times the 9.34 pounds/VMT emission factor, calculated in accordance with AP-42, Section 13.2.2, and dividing by 2,000 pounds/ton.

AP-42, Section 13.2.2.2, the calculation for unpaved roadways:

$$E(\text{lb/VMT}) = [k(s/12)a(W/3)b / (\text{Mdry}/0.2)c] [(365-p)/365]$$

where:

E = Particulate Emission Factor (lbs PM/Vehicle Mile Traveled or lb/VMT)

k, a, b, c = empirical constants from Table 13.2.2-2:

k = 10 for PM

a = 0.8 for PM

b = 0.5 for PM

c = 0.4 for PM

s = surface material silt content = 7.1%

W = mean vehicle weight (tons)

Mdry = surface material moisture content under dry, uncontrolled conditions %

p = number of days with at least 0.01 inch of precipitation

CE = Control efficiency (watering) = 95% reduction

Emissions Limitation

Total PM10 emissions from unpaved roadways and parking areas shall not exceed 2.8 tons/yr.

Applicable Compliance Method

Compliance shall be demonstrated by multiplying the vehicle miles traveled (VMT) per year on all unpaved roadways and parking areas for all vehicles times the pounds/VMT emission factor, calculated in accordance with AP-42, Section 13.2.2, and dividing by 2,000 pounds/ton.

AP-42, Section 13.2.2.2, the calculation for unpaved roadways:

$$E(\text{lb/VMT}) = [k(s/12)a(W/3)b / (\text{Mdry}/0.2)c] [(365-p)/365]$$

where:

E = Particulate Emission Factor (lbs PM/Vehicle Mile Traveled or lb/VMT)

k, a, b, c = empirical constants from Table 13.2.2-2:

k = 2.6 for PM10

a = 0.8 for PM10

b = 0.4 for PM10

c = 0.3 for PM10

s = surface material silt content = 7.1%

W = mean vehicle weight (tons)

Mdry = surface material moisture content under dry, uncontrolled conditions %

p = number of days with at least 0.01 inch of precipitation

CE = Control efficiency (watering) = 95% reduction

F. Miscellaneous Requirements

1. None

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Facility ID: 1576001801 Emissions Unit ID: F002 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

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) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
F002 - Storage Piles Non-Appendix A Area	OAC rule 3745-31-05(A)(3) PTI 15-01466 11/7/02	PM emissions shall not exceed 7.3 tons/yr from wind erosion and load-in and load-out operations.

load-in and load-out of storage piles (See section A.2.a for identification of storage piles.)	OAC rule 3745-31-05(A)(3) PTI 15-01466 11/7/02	PM10 emissions shall not exceed 6.8 tons/yr from wind erosion and load-in and load-out operations. There shall be no visible emissions of fugitive dust except for a period of time not to exceed one minute during any sixty-minute observation period. The permittee shall employ best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust. (See sections A.2.b, A.2.c, and A.2.f.)
wind erosion from storage piles (See section A.2.a for identification of storage piles.)	OAC rule 3745-31-05(A)(3) PTI 15-01466 11/7/02	There shall be no visible emissions of fugitive dust except for a period of time not to exceed one minute during any sixty-minute observation period. The permittee shall employ best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See sections A.2.d through A.2.f.)
	OAC rule 3745-17-08(A) OAC rule 3745-17-07(B)(11)(e)	See section A.2.g. See section A.2.h.

2. Additional Terms and Conditions

- (a) The storage piles that are covered by this permit and subject to the requirements of OAC rule 3745-31-05 are listed below:
 - crushed gravel
 - washed gravel
 - washed sand

The permittee shall employ best available control measures for all load-in and load-out operations associated with the storage piles for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to using a mobile conveyor/ stacker and watering the storage piles as needed to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

The above-mentioned control measures shall be employed for each load-in and load-out operation of each storage pile if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measures are necessary to ensure compliance with the above-mentioned applicable requirements. Any required implementation of the control measures shall continue during any such operation until further observation confirms that use of the measure is unnecessary.

The permittee shall employ best available control measures for wind erosion from the surfaces of all storage piles for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to watering the storage piles as needed to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

The above-mentioned control measures shall be employed for wind erosion from each pile if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measures are necessary to ensure compliance with the above-mentioned applicable requirements. Implementation of the control measures shall not be necessary for a storage pile that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements.

Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rules 3745-17-08 and 3745-31-05.

This facility is not located within an "Appendix A" area as identified in OAC rule 3745-17-08. Therefore, pursuant to OAC rule 3745-17-08(A), this emissions unit is exempt from the requirements of OAC rule 3745-17-08(B).

This emissions unit is exempt from the visible particulate emission limitations specified in OAC rule 3745-17-07(B) pursuant to OAC rule 3745-17-07(B)(11)(e).

B. Operational Restrictions

- 1. None

C. Monitoring and/or Record Keeping Requirements

- 1. Except as otherwise provided in this section, the permittee shall perform inspections of each load-in operation at each storage pile in accordance with the following frequencies:
 - storage pile identification minimum load-in inspection frequency
 - crushed gravel monthly
 - washed gravel monthly
 - washed sand monthly
- 2. Except as otherwise provided in this section, the permittee shall perform inspections of each load-out operation at each storage pile in accordance with the following frequencies:
 - storage pile identification minimum load-out inspection frequency
 - crushed gravel monthly
 - washed gravel monthly
 - washed sand monthly

3. Except as otherwise provided in this section, the permittee shall perform inspections of the wind erosion from pile surfaces associated with each storage pile in accordance with the following frequencies:
 - storage pile identification minimum wind erosion inspection frequency
 - crushed gravel monthly
 - washed gravel monthly
 - washed sand monthly
4. No inspection shall be necessary for wind erosion from the surface of a storage pile when the pile is covered with snow and/or ice and for any storage pile activity if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.
5. The purpose of the inspections is to determine the need for implementing the control measures specified in this permit for load-in and load-out of a storage pile and for wind erosion from the surface of a storage pile. The inspections shall be performed during representative, normal storage pile operating conditions.
6. The permittee may, upon receipt of written approval from the Canton local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.
7. The permittee shall maintain records of the following information:
 - a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;
 - b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measure(s);
 - c. the dates the control measure(s) were implemented; and
 - d. on a calendar quarter annual basis, the total number of days the control measure(s) (was) implemented and, for wind erosion from pile surfaces, the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

The information required in 7.d. shall be kept separately for (i) the load-in operations, (ii) the load-out operations, and (iii) the pile surfaces (wind erosion), and shall be updated on a calendar quarter annual basis within 30 days after the end of each calendar quarter year.

D. Reporting Requirements

1. The permittee shall submit deviation (exceedance) reports that identify any of the following occurrences:
 - a. each month during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and
 - b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.
2. The above deviation reports shall be submitted to the Canton local air agency by January 31 of each year, in accordance with the reporting requirements of the General Terms and Conditions of this permit.

E. Testing Requirements

1. Compliance with the emission limitations specified in section A.1. of these terms and conditions shall be determined in accordance with the following methods:
Emissions Limitation
There shall be no visible emissions of fugitive dust except for a period of time not to exceed one minute during any sixty-minute observation period.

Applicable Compliance Method

Compliance with the visible emission limitations for the storage piles identified above shall be determined in accordance with Test Method 22 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60, "Standards of Performance for New Stationary Sources".

Emissions Limitation

PM emissions shall not exceed 7.3 tons/yr from wind erosion and load-in and load-out operations.

Applicable Compliance Method

Compliance with the above annual particulate emission limitation shall be determined using the equations from AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles, Fifth Edition, dated 1/1995, for load -in and load-out operations and from USEPA's Control of Open Fugitive Dust Sources September 1988 for wind erosion from storage piles. The calculated worst-case emissions shall document compliance as follows:

AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles:

$$E = k(0.0032) \times ((U/5)^{1.3})/(M/2)^{1.4}$$

where:

E = lbs PM/ton produced

k = Base emission factor for particle size range (lb/ton) = 0.74 lb/ton (PM)

U = Mean wind speed = 9.5 mph

M = Mean material moisture content:

Crushed Gravel = 2%

Washed Gravel = 15%

Washed Sand = 15%

Tons produced
 Crushed Gravel = 200,000 tons/yr
 Washed Gravel = 500,000 tons/yr
 Washed Sand = 1,500,000 tons/yr

Crushed Gravel:
 $E = k(0.0032) \times ((U/5)^{1.3}) / (M/2)^{1.4}$
 $E = 0.74(0.0032) \times (9.5/5)^{1.3} / (2/2)^{1.4}$
 $E = 0.74(0.0032) \times (9.5/5)^{1.3} / (1)^{1.4}$
 $E = 0.74(0.0032) \times (1.9)^{1.3} / 1$
 $E = 0.00545 \text{ lb PM/ton}$

$PE = 200,000 \text{ tons/yr} \times 0.00545 \text{ lb PM/ton} \times 1 \text{ ton}/2,000 \text{ lbs} = 0.55 \text{ ton PM/yr}$

Washed Gravel:
 $E = k(0.0032) \times ((U/5)^{1.3}) / (M/2)^{1.4}$
 $E = 0.74(0.0032) \times (9.5/5)^{1.3} / (15/2)^{1.4}$
 $E = 0.74(0.0032) \times (9.5/5)^{1.3} / (7.5)^{1.4}$
 $E = 0.74(0.0032) \times (1.9)^{1.3} / 16.79$
 $E = 0.74(0.0032) \times 0.137$
 $E = 0.00032 \text{ lb PM/ton}$

$E = 500,000 \text{ tons/yr} \times 0.00032 \text{ lb PM/ton} \times 1 \text{ ton}/2,000 \text{ lbs} = 0.08 \text{ ton PM/yr}$

Washed Sand:
 $E = k(0.0032) \times ((U/5)^{1.3}) / (M/2)^{1.4}$
 $E = 0.74(0.0032) \times (9.5/5)^{1.3} / (15/2)^{1.4}$
 $E = 0.74(0.0032) \times (9.5/5)^{1.3} / (7.5)^{1.4}$
 $E = 0.74(0.0032) \times (1.9)^{1.3} / 16.79$
 $E = 0.74(0.0032) \times 0.137$
 $E = 0.00032 \text{ lb PM/ton}$

$E = 1,500,000 \text{ tons/yr} \times 0.00032 \text{ lb PM/ton} \times 1 \text{ ton}/2,000 \text{ lbs} = 0.24 \text{ ton PM/yr}$

Total:

0.55 Crushed Gravel
 0.08 Washed Gravel
 +0.24 Washed Sand
 0.87 Total

USEPA's Control of Open Fugitive Dust Sources September 1988 for wind erosion from storage piles:

$E_w = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A/2,000$

where:

E_w = total annual particulate emission rate;
 s = silt content of the stored material, weight percent
 for crushed gravel: 6%
 for washed gravel: 5%
 for washed sand: 0.9%

p = number of days with > 0.01 inch of precipitation per year, 149 days;
 f = percentage of time wind speed exceeds 12 mph, 20%; and
 A = total surface area of storage piles:
 for crushed gravel: 1.7
 for washed gravel: 2.55
 for washed sand: 2.55

Crushed Gravel:
 $E_w = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A/2,000$
 $E_w = 1.7 \times (6/1.5) \times [(365-149)/235] \times (20/15) \times 365 \times 1.7/2,000$
 $E_w = 1.7 \times (4) \times [(216)/235] \times 1.33 \times 365 \times 0.00085$
 $E_w = 2.58 \text{ tons PM/yr}$
 $E_w = 1.7 \times (3.33) \times [(216)/235] \times 1.33 \times 365 \times 0.001275$
 $E_w = 3.22 \text{ tons PM/yr}$

Washed Sand:
 $E_w = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A/2,000$
 $E_w = 1.7 \times (0.9/1.5) \times [(365-149)/235] \times (20/15) \times 365 \times 2.55/2,000$
 $E_w = 1.7 \times (0.6) \times [(216)/235] \times 1.33 \times 365 \times 0.001275$
 $E_w = 0.58 \text{ ton PM/yr}$

Total
 2.58 Crushed Gravel
 3.22 Washed Gravel
 +0.58 Washed Sand
 6.38 Total

Load in and load out 0.87 ton PM/yr
 Wind Erosion 6.38 tons PM/yr

Total 7.25 tons PM/yr

For total particulate emissions E = [sum of particulate emissions from each load-in/load-out operation (EI)] + [total annual particulate emissions from wind erosion (Ew)] .

Washed Gravel:

$$Ew = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A / 2,000$$

$$Ew = 1.7 \times (5/1.5) \times [(365-149)/235] \times (20/15) \times 365 \times 2.55/2,000$$

$$Ew = 1.7 \times (3.33) \times [(216)/235] \times 1.33 \times 365 \times 0.001275$$

$$Ew = 3.22 \text{ tons PM/yr}$$

Washed Sand:

$$Ew = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A/2,000$$

$$Ew = 1.7 \times (0.9/1.5) \times [(365-149)/235] \times (20/15) \times 365 \times 2.55/2,000$$

$$Ew = 1.7 \times (0.6) \times [(216)/235] \times 1.33 \times 365 \times 0.001275$$

$$Ew = 0.58 \text{ ton PM/yr}$$

Total

2.58 Crushed Gravel
 3.22 Washed Gravel
 +0.58 Washed Sand
 6.38 Total

Load in and load out 0.87 ton PM/yr

Wind Erosion 6.38 tons PM/yr

Total 7.25 tons PM/yr

For total particulate emissions E = [sum of particulate emissions from each load-in/load-out operation (EI)] + [total annual particulate emissions from wind erosion (Ew)]

Emissions Limitation

PM10 emissions shall not exceed 6.8 tons/yr from wind erosion and load-in and load-out operations.

Applicable Compliance Method

Compliance with the above annual particulate emission limitation shall be determined using equations from AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles, Fifth Edition, dated 1/1995, for load -in and load-out operations and from USEPA's Control of Open Fugitive Dust Sources September 1988 for wind erosion from storage piles. The calculated worst-case emissions shall document compliance as follows:

AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles:

$$E = k(0.0032) \times ((U/5)^{1.3})/(M/2)^{1.4}$$

where:

E = lbs PM/ton produced
 k = Base emission factor for particle size range (lb/ton) = 0.35 lb/ton (PM10)
 U = Mean wind speed = 9.5 mph
 M = Mean material moisture content:
 Crushed Gravel = 2%
 Washed Gravel = 15%
 Washed Sand = 15%

Tons produced

Crushed Gravel = 200,000 tons/yr
 Washed Gravel = 500,000 tons/yr
 Washed Sand = 1,500,000 tons/yr

Crushed Gravel:

$$Ew = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A/2,000$$

$$Ew = 1.7 \times (6/1.5) \times [(365-149)/235] \times (20/15) \times 365 \times 1.7/2,000$$

$$Ew = 1.7 \times (4) \times [(216)/235] \times 1.33 \times 365 \times 0.00085$$

$$Ew = 2.58 \text{ tons PM/yr}$$

Washed Gravel:

$$Ew = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A / 2,000$$

$$Ew = 1.7 \times (5/1.5) \times [(365-149)/235] \times (20/15) \times 365 \times 2.55/2,000$$

$$Ew = 1.7 \times (3.33) \times [(216)/235] \times 1.33 \times 365 \times 0.001275$$

$$Ew = 3.22 \text{ tons PM/yr}$$

Washed Gravel:

$$E = k(0.0032) \times ((U/5)^{1.3})/(M/2)^{1.4}$$

$$E = 0.35(0.0032) \times (9.5/5)^{1.3}/(15/2)^{1.4}$$

$$E = 0.35(0.0032) \times (9.5/5)^{1.3}/(7.5)^{1.4}$$

$$E = 0.35(0.0032) \times (1.9)^{1.3}/16.79$$

$$E = 0.35(0.0032) \times 0.137$$

$$E = 0.00015 \text{ lb PM/ton}$$

$$E = 500,000 \text{ tons/yr} \times 0.00015 \text{ lb PM/ton} \times 1 \text{ ton}/2,000 \text{ lbs} = 0.04 \text{ ton PM/yr}$$

Washed Sand:

$$E = k(0.0032) \times ((U/5)^{1.3})/(M/2)^{1.4}$$

$$E = 0.35(0.0032) \times (9.5/5)^{1.3}/(15/2)^{1.4}$$

$$E = 0.35(0.0032) \times (9.5/5)^{1.3}/(7.5)^{1.4}$$

$$E = 0.35(0.0032) \times (1.9)^{1.3}/16.79$$

$$E = 0.35(0.0032) \times 0.137$$

$$E = 0.00015 \text{ lb PM/ton}$$

$$E = 1,500,000 \text{ tons/yr} \times 0.00015 \text{ lb PM/ton} \times 1 \text{ ton}/2,000 \text{ lbs} = 0.11 \text{ ton PM/yr}$$

Total

0.26 Crushed Gravel
 0.04 Washed Gravel
 +0.11 Washed Sand
 0.41

USEPA's Control of Open Fugitive Dust Sources September 1988 for wind erosion from storage piles:

$$E_w = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A/2,000$$

where:

E_w = total annual particulate emission rate;
 s = silt content of the stored material, weight percent
 for crushed gravel: 6%
 for washed gravel: 5%
 for washed sand: 0.9%

p = number of days with > 0.01 inch of precipitation per year, 149 days;
 f = percentage of time wind speed exceeds 12 mph, 20%; and
 A = total surface area of storage piles:

for crushed gravel: 1.7
 for washed gravel: 2.55
 for washed sand: 2.55

Crushed Gravel:

$$E_w = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A/2,000$$

$$E_w = 1.7 \times (6/1.5) \times [(365-149)/235] \times (20/15) \times 365 \times 1.7/2,000$$

$$E_w = 1.7 \times (4) \times [(216)/235] \times 1.33 \times 365 \times 0.00085$$

$$E_w = 2.58 \text{ tons PM/yr}$$

Washed Gravel:

$$E_w = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A / 2,000$$

$$E_w = 1.7 \times (5/1.5) \times [(365-149)/235] \times (20/15) \times 365 \times 2.55/2,000$$

$$E_w = 1.7 \times (3.33) \times [(216)/235] \times 1.33 \times 365 \times 0.001275$$

$$E_w = 3.22 \text{ tons PM/yr}$$

Washed Sand:

$$E_w = 1.7 \times (s/1.5) \times [(365-p)/235] \times (f/15) \times 365 \times A/2,000$$

$$E_w = 1.7 \times (0.9/1.5) \times [(365-149)/235] \times (20/15) \times 365 \times 2.55/2,000$$

$$E_w = 1.7 \times (0.6) \times [(216)/235] \times 1.33 \times 365 \times 0.001275$$

$$E_w = 0.58 \text{ ton PM/yr}$$

Total

2.58 Crushed Gravel
 3.22 Washed Gravel
 +0.58 Washed Sand
 6.38 Total

Load in and load out 0.41 ton PM10/yr
 Wind Erosion 6.38 tons PM10/yr

Total 6.79 tons PM10/yr

For total PM10 emissions E = [sum of particulate emissions from each load-in/load-out operation (EI)] + [total annual particulate emissions from wind erosion (E_w)] .

F. Miscellaneous Requirements

1. None

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1576001801 Emissions Unit ID: F003 Issuance type: Final State Permit To Operate

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Part II - Special Terms and Conditions

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) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
F003 - sand and aggregate processing, including crushing, screening, material handling, and truck dumping of raw material into crusher hopper.	OAC rule 3745-31-05(A)(3) PTI 15-01466 11/7/02	Visible particulate emissions of fugitive dust shall not exceed 10% opacity, as a six-minute average. Particulate emissions shall not exceed 14.6 tons/yr.
Non-Appendix A Area	OAC rule 3745-17-08(A) OAC rule 3745-17-07(B)(11)(e) 40 CFR, Part 60, Subpart 000	PM10 emissions shall not exceed 7.0 tons/yr. See section A.2.b. See section A.2.c. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. **Additional Terms and Conditions**

- (a) During sand and aggregate processing, including crushing, screening, material handling, and truck dumping of raw material into the crusher hopper, the material should be kept sufficiently moist to ensure compliance with the visible emission limitation specified above.
This facility is not located within an "Appendix A" area as identified in OAC rule 3745-17-08. Therefore, pursuant to OAC rule 3745-17-08(A), this emissions unit is exempt from the requirements of OAC rule 3745-17-08(B).
This emissions unit is exempt from the visible particulate emission limitations specified in OAC rule 3745-17-07(B) pursuant to OAC rule 3745-17-07(B)(11)(e).

B. **Operational Restrictions**

1. None

C. **Monitoring and/or Record Keeping Requirements**

1. The permittee shall perform inspections of sand and aggregate processing in accordance with the following frequencies:

Processing identification Minimum inspection frequency

sand and aggregate processing Monthly

D. **Reporting Requirements**

1. The permittee shall submit deviation (exceedance) reports that identify any of the following occurrences:
 - a. each month during which an inspection was not performed by the required frequency, excluding an inspection which was not performed; and
 - b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

E. **Testing Requirements**

1. Compliance with the emission limitations specified in section A.1. of these terms and conditions shall be determined in accordance with the following methods:
Emissions Limitation
Visible particulate emissions of fugitive dust shall not exceed 10% opacity, as a six-minute average.

Applicable Compliance Method

Compliance with the above-mentioned visible emission limitation shall be determined by USEPA's Reference Method 9 in 40 CFR, Part 60, Appendix A.

Emissions Limitation

PM emissions shall not exceed 14.6 tons/yr; and
PM10 emissions shall not exceed 7.0 tons/yr.

Applicable Compliance Method

Compliance with shall be determined using the emission factors for crushing, screening, and material handling operations in AP-42, Chapter 11.19.2, Crushed Stone Processing, Fifth Edition, dated 1/1995 and for truck dumping operations in AP-42, Chapter 13.2.4, Aggregate Handling and Storage Piles, Fifth Edition, dated 1/1995. The calculated emission factors shall be multiplied by the maximum facility production rate of 2,190,000 tons/yr. The calculated worst-case emissions shall document compliance as follows:

Screening with wet suppression, three screening equipment

Controlled emission factor AP-42 Table 11.19.2-2 = 0.0084 lb PM10/ton x 2.1 = 0.01764 lb PM/ton

2,190,000 tons/yr x 0.0084 lb PM10/ton x 1 ton/2,000 lbs x 3 = 2.76 tons PM10/yr

2,190,000 tons/yr x 0.0176 lb PM/ton x 1 ton/2,000 lbs x 3 = 5.78 tons PM/yr

Primary, Secondary and Tertiary crushing with wet suppression

Controlled emission factor from AP-42 Table 11.19.2-2 = 0.00059 lb PM10/yr x 2.1 = 0.00124 lb PM/ton

2,190,000 tons/yr x 0.00059 lb PM10/ton x 1 ton/2,000 lbs x 3 = 1.94 tons PM10/yr

2,190,000 tons/yr x 0.00124 lb PM/ton x 1 ton/2,000 lbs x 3 = 4.07 tons PM/yr

Conveyor Transfer Point (43) with wet suppression

Controlled emission factor from AP-42, Table 11.19.2-2 = 0.000048 lb PM10/ton x 2.1 = 0.0001 lb PM/ton
 43 transfer points (7 transfer points are handling totally saturated material.)
 2,200,000 tons/yr x 0.000048 lb PM10/ton x 1 ton/2,000 lbs x 43 = 2.27 tons PM10/yr
 2,200,000 tons/yr x 0.0001 lb PM/ton x 1 ton/2,000 lbs x 43 = 4.73 tons PM/yr

Total

Jobs PM10 PM

screening 2.76 5.78
 crushing 1.94 4.07
 transfer points + 2.27 +4.73

Total F003 6.97 14.58

F. **Miscellaneous Requirements**

1. None