

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION
PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 112017-013

Project Number: 2017-09-041
Installation ID: 207-0074

Parent Company: Payne Ready Mix, LLC

Parent Company Address: 20444 State Hwy. 51, Puxico, MO 63960

Installation Name: Payne Ready Mix, LLC

Installation Address: 9886 N. Old Hwy 50, Dudley, MO 63936

Location Information: Stoddard County, S21 T25N R9E

Application for Authority to Construct was made for:
Construction of a ready mix concrete plant. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.



Prepared by
Kathy Kolb
New Source Review Unit



Director or Designee
Department of Natural Resources

NOV 29 2017

Effective Date

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:
Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102-0176
(573) 751-4817

The regional office information can be found at the following website:
<http://dnr.mo.gov/regions/>

SITE SPECIFIC SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

1. **Best Management Practices Requirement**
Payne Ready Mix, LLC shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing BMPs as defined in Attachment AA.
2. **Annual Emission Limit**
 - A. Payne Ready Mix, LLC shall emit less than 10.0 tons of PM_{2.5} in any 12-month period from the entire installation which consists of the equipment listed in Table 1. The SSM emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section in accordance with the requirements of 10 CSR 10-6.050 *Start-Up, Shutdown, and Malfunction Conditions* shall be included in the limit.
 - B. Payne Ready Mix, LLC shall demonstrate compliance with Special Condition 2.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
3. **Moisture Content Testing Requirement**
 - A. Payne Ready Mix, LLC shall verify that the moisture content of the processed rock is greater than or equal to 1.5 percent by weight.
 - B. Testing shall be conducted according to the method prescribed by the American Society for Testing Materials (ASTM) D-2216, C-566 or another method approved by the Director.
 - C. The initial test shall be conducted no later than 45 days after the start of operation. A second test shall be performed the calendar year following the initial test during the months of July or August.
 - D. The test samples shall be taken from rock that has been processed by the plant or from each source of aggregate (e.g. quarry).
 - E. The written analytical report shall include the raw data and moisture content of each sample, the test date and the original signature of the individual performing the test. The report shall be filed on-site or at the Payne Ready Mix, LLC main office within 30 days of completion of the required test.

SITE SPECIFIC SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- F. If the moisture content of either of the two tests is less than the moisture content in Special Condition 3.A, another test may be performed within 15 days of the noncompliant test. If the results of that test is less than the moisture content in Special Condition 3.A, Payne Ready Mix, LLC shall either:
- 1) Apply for a new permit to account for the revised information, or
 - 2) Submit a plan for the installation of wet spray devices to the Compliance/Enforcement Section of the Air Pollution Control Program within 10 days of the second noncompliant test. Plans may be sent by mail to P.O. Box 176, Jefferson City, MO 65102 or by email at aircompliancereporting@dnr.mo.gov. The wet spray devices shall be installed and operational within 40 days of the second noncompliant test.
- G. In lieu of testing, Payne Ready Mix, LLC may obtain test results that demonstrate compliance with the moisture content in Special Condition 3.A from the supplier of the aggregate.
4. **Record Keeping Requirement**
Payne Ready Mix, LLC shall maintain all records required by this permit for not less than five years and make them available to any Missouri Department of Natural Resources' personnel upon request.
5. **Reporting Requirement**
Payne Ready Mix, LLC shall report to the Air Pollution Control Program, Compliance / Enforcement Section by mail to P.O. Box 176, Jefferson City, MO 65102 or by email at AirComplianceReporting@dnr.mo.gov, no later than 10 days after any exceedances of the limitations imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2017-09-041

Installation ID Number: 207-0074

Permit Number: 112017-013

Payne Ready Mix, LLC:
9886 N. Old Hwy 50
Dudley, MO 63936

Complete: October 6, 2017

Parent Company:
Payne Ready Mix, LLC
20444 State Hwy. 51
Puxico, MO 63960

Stoddard County, S21 T25N R9E

PROJECT DESCRIPTION

Payne Ready Mix, LLC is constructing a new ready mix plant in Dudley, Missouri in Stoddard County. The plant is a St. Marc Materials Advantage Series 200 ready mix concrete plant, rated at 200 cubic yards/hour (MHDR is 400 tons/hour) and manufactured in 2017. A Sioux M Series propane-fired water heater, rated at 1.0 MMBtu/hr, manufactured in 2017, will be installed with the ready mix plant. The cement silo and fly ash silo are each controlled with a dust collector which uses a filter cartridge. The cement and fly ash are pneumatically loaded and the filter is inherent to this process. Electric power will be supplied by the local utility.

The applicant is using one of the methods described in Attachment AA, "Best Management Practices," to control emissions from haul roads and vehicular activity areas.

This installation is located in Stoddard County, an attainment area for all criteria pollutants.

This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

No permits have been issued to Payne Ready Mix, LLC from the Air Pollution Control Program.

Table 1 lists the equipment, storage piles, and haul roads for this concrete plant installation.

Table 1: Emission Point List*

Emission Point	Description	MHDR
EU-01	Aggregate Transfer	185.39 tph
EU-02	Sand Transfer	141.95 tph
EU-03	Cement Unloading to Silo	48.81 tph
EU-04	Supplement Unloading	7.26 tph
EU-05	Weigh Hopper	327.34 tph
EU-06	Truck Loading	56.06 tph
EU-07	Aggregate Storage Pile	0.02 acres
EU-08	Sand Storage Pile	0.01 acres
EU-09	Shipping (Customer/Finished Product) Haul Road	420 feet
EU-10	Receiving (Raw Material) Haul Road	300 feet
EU-11	Water Heater	1 MMBtu/hr

*Note the concrete plant has a maximum design capacity of 400 tons per hour

TABLES

The table below summarizes the emissions of this project. The potential emissions of the process equipment exclude emissions from haul roads and wind erosion. There are no existing actual emissions since this is a new installation. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). Conditioned potential emissions account for a voluntary annual PM_{2.5} emission limit of 10.0 tons per year in order to avoid refined modeling according to 10 CSR 10-6.060 (6)(B)3.

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	^a Potential Emissions of Process Equipment	Existing Actual Emissions	^b Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	254.79	N/A	298.60	45.29
PM ₁₀	15.0	74.51	N/A	90.32	13.70
PM _{2.5}	10.0	62.68	N/A	65.93	<10.0
SO _x	40.0	0.0	N/A	0.0	0.0
NO _x	40.0	0.63	N/A	0.63	0.09
VOC	40.0	0.05	N/A	0.05	0.01
CO	100.0	0.36	N/A	0.36	0.05
GHG (CO ₂ e)	N/A	6.55	N/A	6.55	0.99
GHG (mass)	N/A	6.52	N/A	6.52	0.99
Total HAPs	10.0/25.0	0.0	N/A	0.0	0.0

N/A = Not Applicable

^aPotential emissions of process equipment excluding haul roads, wind erosion, and vehicular activity

^bIncludes site specific haul road and storage pile emissions

EMISSIONS CALCULATIONS

Emissions for the project were calculated as described below and using emission factors found in the United States EPA document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42).

Emissions from the concrete batch plant:

- Calculated using emission factors from AP-42 Section 11.12 "Concrete Batching," June 2006.
- This section cites Equation (1) in Section 13.2.4 "Aggregate Handling and Storage Piles," November 2006 for calculating the emissions from aggregate and sand transfer.
- The cement and supplement silos are controlled with cartridge filters. Because the cement and fly ash are pneumatically loaded and the filter is considered inherent to this process. Therefore the controlled emission factors were used and no Special Condition is required for the cartridge filters.

Emissions from the aggregate weigh hopper:

- Calculated using AP-42 Section 13.2.4, Equation (1).
- These emissions are uncontrolled.
- Emissions from mix truck loading are uncontrolled, so the uncontrolled emission factor was used.

Emissions from the propane fired water heater:

- Calculated using emission factors from AP-42 Section 1.5 "Liquefied Petroleum Gas Combustion," July 2008.

Emissions from aggregate handling:

- Calculated using emission factors from AP-42 Section 11.19.2 "Crushed Stone Processing and Pulverized Mineral Processing," August 2004.
- The controlled emission factors were used because the inherent moisture content of the crushed rock is greater than 1.5% by weight.

Emissions from haul roads and vehicular activity areas:

- Calculated using the predictive equation from AP-42 Section 13.2.2 "Unpaved Roads," November 2006.
- A 90% control efficiency for PM and PM₁₀ and a 74% control efficiency for PM_{2.5} were applied to the emission calculations for the use of BMPs.

Emissions from storage piles:

- Load-in and load-out of storage piles were calculated using the predictive equation from AP-42 Section 13.2.4.
- The moisture content of the aggregate is 1.5% by weight.

- Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8 "Storage Pile Worksheet."

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. The conditioned potential emissions include emissions from sources that will limit their production to ensure compliance with the annual PM_{2.5} emission limit of 10.0 tons per year for stationary plants in order to avoid refined modeling according to 10 CSR 10-6.060 (6)(B)3. Potential emissions of PM are above de minimis but below major source levels. There are no modeling requirements for PM.

APPLICABLE REQUIREMENTS

Payne Ready Mix, LLC shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110.
- No Operating Permit is required for this installation because all emissions are conditioned below de minimis levels and PM does not trigger operating permits requirements. There are no federal regulations requiring an operating permit.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400. The aggregate weigh hopper's potential emission rate of 1.57 pounds per hour of PM and the truck loading potential emission rate of 5.46 pounds per hour of PM are individually below the process weight of 66.31 pounds per hour and complies with this regulation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) or National Emission Standards for Hazardous Air Pollutants for Source Categories (MACTS) apply to the proposed equipment.
- *Control of Sulfur Dioxide Emissions*, 10 CSR 10-6.261 does not apply because propane is used as fuel for the water heater EU-11.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 25, 2017, received September 27, 2017, designating Payne Ready Mix, LLC as the owner and operator of the installation.

Attachment A: Annual PM_{2.5} Emission Tracking Sheet

Pyane Ready Mix, LLC Site ID:207-0074

Project Number: 2017-09-041

Permit Number: **112017-013**

Site Address: 9886 N. Old Hwy. 60, Dudley< MO 63936

Site County: Stoddard

This sheet covers the period from _____ to _____ (Copy as needed)
(Month, Day Year) (Month, Day Year)

Month	Production (tons)	Emission Factor (lb/ton)	Monthly Emissions ¹ (lbs)	Monthly Emissions ² (tons)	12-Month Total Emissions ³ (tons)
<i>Example</i>	30,000	0.0376	1128	0.56	<i>0.56 + 11 previous months tonnage</i>
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¹Multiply the monthly production by the emission factor.

²Divide the monthly emissions (lbs) by 2000.

³Add the monthly emissions (tons) to the sum of the monthly emissions from the previous eleven months. A total of less than 10.0 tons of PM_{2.5} is necessary for compliance.

Attachment AA: Best Management Practices

Haul roads and vehicular activity areas shall be maintained in accordance with at least one of the following options when the plant is operating.

1. **Pavement**
 - A. The operator shall pave the area with materials such as asphalt, concrete or other materials approved by the Air Pollution Control Program. The pavement will be applied in accordance with industry standards to achieve control of fugitive emissions while the plant is operating.
 - B. Maintenance and repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.
 - C. The operator shall periodically wash or otherwise clean all of the paved portions of the haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is operating.

2. **Application of Chemical Dust Suppressants**
 - A. The operator shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved areas.
 - B. The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacturer's recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
 - C. The operator shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the above areas. The operator shall keep these records with the plant for not less than five (5) years and make these records available to Department of Natural Resources' personnel upon request.

3. **Application of Water-Documented Daily**
 - A. The operator shall apply water to unpaved areas. Water shall be applied at a rate of 100 gallons per day per 1,000 square feet of unpaved or untreated surface area while the plant is operating.
 - B. Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
 - C. Watering may also be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
 - D. The operator shall record the date, volume of water application and total surface area of active haul roads or the amount of precipitation that day. The operators shall also record the rationale for not watering (e.g. freezing conditions or not operating).
 - E. The operator shall keep these records with the plant for not less than five (5) years, and the operator shall make these records available to Department of Natural Resources' personnel upon request.

APPENDIX A

Abbreviations and Acronyms

%percent	MMBtuMillion British thermal units
°Fdegrees Fahrenheit	MMCFmillion cubic feet
acfmactual cubic feet per minute	MSDSMaterial Safety Data Sheet
BACTBest Available Control Technology	NAAQSNational Ambient Air Quality Standards
BMPsBest Management Practices	NESHAPs ..National Emissions Standards for Hazardous Air Pollutants
BtuBritish thermal unit	NO_xnitrogen oxides
CAMCompliance Assurance Monitoring	NSPSNew Source Performance Standards
CASChemical Abstracts Service	NSRNew Source Review
CEMSContinuous Emission Monitor System	PMparticulate matter
CFRCode of Federal Regulations	PM_{2.5}particulate matter less than 2.5 microns in aerodynamic diameter
COcarbon monoxide	PM₁₀particulate matter less than 10 microns in aerodynamic diameter
CO₂carbon dioxide	ppmparts per million
CO₂ecarbon dioxide equivalent	PSD Prevention of Significant Deterioration
COMSContinuous Opacity Monitoring System	PTEpotential to emit
CSRCode of State Regulations	RACTReasonable Available Control Technology
dscfdry standard cubic feet	RALRisk Assessment Level
EIQEmission Inventory Questionnaire	SCCSource Classification Code
EPEmission Point	scfmstandard cubic feet per minute
EPAEnvironmental Protection Agency	SDSSafety Data Sheet
EUEmission Unit	SICStandard Industrial Classification
fpsfeet per second	SIPState Implementation Plan
ftfeet	SMALScreening Model Action Levels
GACTGenerally Available Control Technology	SO_xsulfur oxides
GHGGreenhouse Gas	SO₂sulfur dioxide
gpmgallons per minute	SSMstartup, shutdown, & malfunction
grgrains	tphtons per hour
GWPGlobal Warming Potential	tpytons per year
HAPHazardous Air Pollutant	VMTvehicle miles traveled
hrhour	VOCVolatile Organic Compound
hphorsepower	
lbpound	
lbs/hrpounds per hour	
MACTMaximum Achievable Control Technology	
µg/m³micrograms per cubic meter	
m/smeters per second	
Mgal1,000 gallons	
MWmegawatt	
MHDRmaximum hourly design rate	

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		Pollutant	Justification for Limit	Limit Hours per Year
Hours per day	24.0	PM10	NAAQS	
Days per year	55.4	N/A	N/A	Limit Hours per Year w/ 24 hr day
Hours per year	1328.8	PM2.5	De Minimis	

Pollutant	Potential Emissions of Process Equipment (tons/yr)	Potential Emissions including fugitives (tons/yr)	Allowable Emissions for 1329 hours per year (tons/yr)	DeMinimis Thresholds	Plant-wide Composite Emission Factor (lb/ton)
PM	254.79	298.60	45.29	25	0.1704
PM ₁₀	74.51	90.32	13.70	15	0.0516
PM _{2.5}	62.68	65.93	10.00	10	0.0376
SO ₂	0.00	0.00	0.00	40	0.0000
NO ₂	0.63	0.63	0.09	40	0.0004
VOC	0.05	0.05	0.01	40	0.0000
CO	0.36	0.36	0.05	100	0.0002
CH ₂ O	0.00	0.00	0.00	2	0.0000
C ₁ H ₁₀	0.00	0.00	0.00	-	0.0000
Pb	0.00	0.00	0.00	0.01	0.0000
HAPs	0.000000	0.00	0.00	10	0.0000
CO ₂	6.52	6.52	0.99	100	0.0037
N ₂ O	0.00	0.00	0.00	100	0.0000
CH ₄	0.00	0.00	0.00	100	0.0000
GHG _{mass}	6.52	6.52	0.99	100	0.0037
CO ₂ eq	6.55	6.55	0.99	100,000	0.0037

Maximum hourly design rate (tons/hr)	400
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Tons of product per day	9,600.0
Tons of product per year	531,501.9

E=55.0 P.11 - 40

P=Process Rate=MHDR

E=

66.31371359

Process Rate 400

Allowable lb/hr 66.31371359

Potential lb/hr 1.57E+00 Weigh hopper EP-5

5.46E+01 Truck Loading EP-6

1.57 lb/hr from the weigh hopper EP-5 is less than 66.31 lb/hr, therefore the aggregate weigh hopper is in compliance with the process rate rule 10 CSR 6.400

5.46 lb/hr from the truck loading EP-6 is less than 66.31 lb/hr, therefore the aggregate weigh hopper is in compliance with the process rate rule 10 CSR 6.400

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Plant Information

Plant Type	Truck mix
Plant capacity (tons/hr)	400
Best Management Practices	Yes

Emission Point Information

Emission Point	Stack Height (feet)	Stack Inside Diameter (feet)	Stack Gas Flow Rate (ACFM)	Stack Gas Exit Temp. (°F)

Material Information

Material	Composition of Concrete (% by weight)	Default Composition (% by weight)	Moisture Content of Material (% by weight)
Crushed limestone	46.35%	46.35%	1.5
Sand	35.49%	35.49%	4.17
Cement	12.20%	12.20%	0.12
Supplement to Cement	1.81%	1.81%	0.12
Water	4.15%	4.15%	
	100%	100%	

Finished Product Information (Include all other inputs)

Storage Pile Information

Storage Pile ID No.	Pile #1 (used for Aggregate transfer)	Pile #2 (used for Sand transfer)	Pile #3	Pile #4
Maximum Area of Storage Pile (Acres)	0.02	0.01		
Type of Material Stored:	Crushed limestone	Sand		
Moisture Content %:	1.5	4.17		
Silt Content %:	1.6	2.6		
Method of Load In to Storage Pile	Truck	Truck		
Method of Load Out from Storage Pile	Loader	Loader		
Distance Loader Travels (feet)	100	100		
Unloaded Loader Weight (tons)	13.00	13.00		
Loaded Loader Weight (tons)	17.50	17.50		
Rate (tons/hour)	185.39	141.95		
max VMT per hour	1.5605	1.1949		
Surface Treatment	Unpaved	Unpaved		
Vehicular Area Control	Documented Watering/Chemical Application	Documented Watering/Chemical Application		

Haul Road Information

Haul Road ID No.	Customer/Finished Product	Rew Material	Road #3	Road #4
Length of Haul Road (feet) <small>Enter the length of each roadway in feet. The plant layout diagram (drawn to scale) should document and support the values entered. Note: Twice this distance is used, one trip in and one out.</small>	420	300		
Unloaded Truck Weight (tons)	10	10		
Loaded Truck Weight (tons)	40	40		
Rate Hauled (tons/hour)	400	383.3996024		
max VMT per hour	2.1212	1.4523		
Surface Treatment	Unpaved	Unpaved		
Haul Road Control	Documented Watering/Chemical Application	Documented Watering/Chemical Application		

Engine Set Information

Type of Fuel	7A	7B	7C
Brake Horsepower (bhp)			
Engine kilowatt rating (kW)			
Gallons per hour			
Engine MHR (mmBtu per hour, input)			
Is this a generator-set engine?			
Model Year (yyyy)			
Fuel Sulfur Content (% weight sulfur)			

Combustion Sources

Combustion ID - Description	Combustion #1	Desc #1	Combustion #2	Desc #2
Heat Rate		1 mmBtu/hour		mmBtu/hour
		0.01 mgal/hour		mgal/hour
		mm ³ /hour		mm ³ /hour
	In regards to AP-42 Chapter 1	In regards to 40 CFR Part 58	In regards to AP-42 Chapter 1	In regards to 40 CFR Part 98
Fuel Type	Propane (>0.3, <10 mmBtu/hour)	Propane		
Fuel Sulfur Content (% weight sulfur, for oil; grains of sulfur/100 cuft gas vapor for Butane and Propane, not used for Natural gas)		0.00012 grains of sulfur/100 R3 gas vapor		% weight sulfur

Cell: C4

Comment: Plant Capacity:
One cubic yard of concrete weighs approximately two tons

Cell: A26

Comment: Material 1:
Also known as aggregate, rock. Various limestone products is NOT a valid choice here.

Cell: C40

Comment: Storage Pile ID No.:
The storage pile No. is not used on the emission factor pages, but rather labeled "Storage Pile"

Cell: D40

Comment: Pile #1:
This pile is associated with the Aggregate transfer, load-in/load-out used there for drop points.

Cell: E40

Comment: Pile #2:
This pile is associated with the Sand transfer, load-in/load-out used there for drop points.

Cell: C41

Comment: Maximum Surface Area of Storage Pile (Acres):
Enter the total surface area of all storage piles.

Cell: C43

Comment: Storage Pile Materials - Moisture Content Information

Material Stored	Moisture Content %	
	Range	Mean
Crushed Limestone *	0.2 to 1.1	0.7
Various Limestone Products	0.46 to 5.0	2.1
Sand	-	7.4
Clay/Dirt Mix	-	14.0
Clay	8.9 to 11.0	10.0

* Additional documentation (i.e. test data, ASTM-C-136 method) should be provided if using a different value for the moisture contents in place of the default (mean) value.

Cell: C44

Comment: Storage Pile Materials - Silt Content Information

Material Stored	Silt Content %	
	Range	Mean
Crushed Limestone *	1.3 to 1.9	1.6
Various Limestone Products	0.8 to 14	14.0
Sand	-	2.6
Clay/Dirt Mix	-	9.2
Clay	4.5 to 7.4	6.0

* Additional documentation (i.e. test data, ASTM-C-136 method) should be provided if using a different value for the silt contents in place of the default (mean) value.

Cell: D44

Comment: Silt Content %:
The initial default values for silt content should be replaced with site-specific information.

Cell: C48

Comment: Unloaded Loader Weight:
This data will be used by Paved & Unpaved worksheets to calculate storage pile traffic emissions

Cell: C50

Comment: Rate:
For Pile #1, the default is the primary crusher size.

Cell: C51

Comment: max VMT per hour:
 $MHDR = 2 * D * R / (U - L)$ where:
MHDR = maximum hourly design rate (VMT/hr)
D = one way length of haul road (miles)
R = rate of material hauled (tons/hr)
U = unloaded truck weight (tons)
L = loaded truck weight (tons)

Cell: C58

Comment: Haul Road ID No.: Enter a value or number to uniquely identify this emission unit/point at this installation. The value entered for the Haul Road ID No. must be consistent with those in your Emission Inventory Questionnaire (EIQ) and your Operating Permit/Application.

Cell: C58

Comment: Unloaded Truck Weight (Tons): Enter the unloaded weight of the haul trucks. Note: If using haul trucks of varying unloaded weights, then a "fleet" weighted average value should be used and documentation of the analysis should included with your submittal.
Example: 75% of rock is hauled in a 50 ton truck and 25% is hauled in a 30 ton truck. The "fleet" average unloaded weight would be calculated as follows:
"Fleet" Avg. Wt. = [(0.75 x 50 tons) + (0.25 x 30 tons)]
= [(37.5 tons) + (7.5 tons)]
= 45 tons

Cell: C58

Comment: Average Loaded Truck Weight (Tons): Enter the average loaded weight of the haul trucks. Note: If using haul trucks of varying loaded weights, then a "fleet" weighted average value should be used and documentation of the analysis should included with your submittal.
Example: 75% of rock is hauled in a 50 ton truck and 25% is hauled in a 30 ton truck. The "fleet" average unloaded weight would be calculated as follows:
"Fleet" Avg. Wt. = [(0.75 x 50 tons) + (0.25 x 30 tons)]
= [(37.5 tons) + (7.5 tons)]
= 45 tons

Cell: C60

Comment: Rate Hauled:
For Road #1, the default is the primary crusher size.

Cell: C61

Comment: max VMT per hour:
 $MHDR = 2 * D * R / (U - L)$ where:
MHDR = maximum hourly design rate (VMT/hr)
D = one way length of haul road (miles)
R = rate of material hauled (tons/hr)
U = unloaded truck weight (tons)
L = loaded truck weight (tons)

Cell: D67

Comment: Randy Raymond:
Because BHP and gallons per hour are linked through code, if you want to erase them, you have to highlight both cells and then hit the delete key.

Cell: D69

Comment: Randy Raymond:
Because BHP and gallons per hour are linked through code, if you want to erase them, you have to highlight both cells and then hit the delete key.

Cell: C71

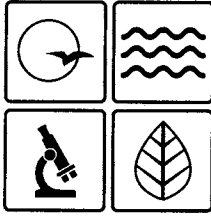
Comment: Generator-set engine:
means an engine used primarily to operate an electrical generator or alternator to produce electric power for other applications.

Cell: C73

Emission Point Number	Emission Unit Number	Description	SCC	MHDR	Units	Control Device Number	Control Type	Capture Efficiency (%)	Control Efficiency (%)	Pollutant	Emission Factor	Units (pounds per)	Emission Rate (lb/hr)	Potential Emissions (tons/yr)	Allowable Emissions (tons/yr)
1	1	Aggregate transfer Moisture Content (% wt.) = 1.5	3-05-011-04	185.39	tons per hour			N/A	N/A	PM	0.0087	ton	1.62E+00	7.08	1.07
								N/A	N/A	PM ₁₀	0.0041	ton	7.65E-01	3.35	0.51
								N/A	N/A	PM _{2.5}	0.0006	ton	1.16E-01	0.51	0.08
2	2	Sand transfer Moisture Content (% wt.) = 4.17	3-05-011-05	141.95	tons per hour			N/A	N/A	PM	0.0021	ton	2.95E-01	1.30	0.20
								N/A	N/A	PM ₁₀	0.0010	ton	1.40E-01	0.61	0.09
								N/A	N/A	PM _{2.5}	0.0001	ton	2.12E-02	0.09	0.01
3	3	Cement unloading to silo	3-05-011-07	48.81	tons per hour		Fabric filter	100%	N/A	PM	0.0010	ton	4.83E-02	0.21	0.03
								100%	N/A	PM ₁₀	0.0003	ton	1.66E-02	0.07	0.01
								100%	N/A	PM _{2.5}	0.0003	ton	1.66E-02	0.07	0.01
4	4	Supplement unloading (pneumatic)	3-05-011-17	7.26	tons per hour		Fabric filter	100%	N/A	PM	0.0089	ton	6.46E-02	0.28	0.04
								100%	N/A	PM ₁₀	0.0049	ton	3.56E-02	0.16	0.02
								100%	N/A	PM _{2.5}	0.0049	ton	3.56E-02	0.16	0.02
5	5	Weigh hopper loading	3-05-011-08	327.34	tons per hour		Uncontrolled	N/A	N/A	PM	0.0048	ton	1.57E+00	6.88	1.04
								N/A	N/A	PM ₁₀	0.0028	ton	9.17E-01	4.01	0.61
								N/A	N/A	PM _{2.5}	0.0014	ton	4.71E-01	2.06	0.31
6	6	Truck loading (truck mix) Moisture Content (% wt.) = 0.12	3-05-011-10	56.06	tons per hour		Uncontrolled	N/A	N/A	PM	1.118	ton	5.46E+01	239.00	36.25
								N/A	N/A	PM ₁₀	0.31	ton	1.51E+01	66.27	10.05
								N/A	N/A	PM _{2.5}	0.2795	ton	1.36E+01	59.75	9.06
7A	7A	Generator Model Year			bhp gallons per hour mmBtu/hour			N/A	N/A	PM		MMBtu			
								N/A	N/A	PM ₁₀		MMBtu			
								N/A	N/A	PM _{2.5}		MMBtu			
								N/A	N/A	SO ₂		Gallon			
								N/A	N/A	NO ₂		MMBtu			
								N/A	N/A	CO		MMBtu			
								N/A	N/A	VOC		MMBtu			
								N/A	N/A	CH ₂ O		MMBtu			
								N/A	N/A	HAPs		MMBtu			
								N/A	N/A	CO ₂		MMBtu			
								N/A	N/A	N ₂ O		MMBtu			
7B	7B	Generator Model Year			bhp gallons per hour mmBtu/hour			N/A	N/A	PM		MMBtu			
								N/A	N/A	PM ₁₀		MMBtu			
								N/A	N/A	PM _{2.5}		MMBtu			
								N/A	N/A	SO ₂		Gallon			
								N/A	N/A	NO ₂		MMBtu			
								N/A	N/A	CO		MMBtu			
								N/A	N/A	VOC		MMBtu			
								N/A	N/A	CH ₂ O		MMBtu			
								N/A	N/A	HAPs		MMBtu			
								N/A	N/A	CO ₂		MMBtu			
								N/A	N/A	N ₂ O		MMBtu			
7C	7C	Generator Model Year			bhp gallons per hour mmBtu/hour			N/A	N/A	PM		MMBtu			
								N/A	N/A	PM ₁₀		MMBtu			
								N/A	N/A	PM _{2.5}		MMBtu			
								N/A	N/A	SO ₂		Gallon			
								N/A	N/A	NO ₂		MMBtu			
								N/A	N/A	CO		MMBtu			
								N/A	N/A	VOC		MMBtu			
								N/A	N/A	CH ₂ O		MMBtu			
								N/A	N/A	HAPs		MMBtu			
								N/A	N/A	CO ₂		MMBtu			
								N/A	N/A	N ₂ O		MMBtu			
								N/A	N/A	GHG _{pass}		MMBtu			
								N/A	N/A	CH ₄		MMBtu			

Equipment	Unit ID	Description of Unit	Equipment Description/SCC	Heat Rate	UoM per hour					Emission Factor (lbs/UoM)																											
Combustion #1		Propane (>=0.3, <10 mmBtu)	1 mmBtu	100%	N/A	PM	0.70	mgal	7.69E-03	0.03	0.01																										
															0.01 mgal	100%	N/A	PM ₁₀	0.70	mgal	7.69E-03	0.03	0.01														
															mmscf	100%	N/A	PM _{2.5}	0.70	mgal	7.69E-03	0.03	0.01														
																100%	N/A	SO ₂	0.00	mgal	1.32E-07	0.00	0.00														
																100%	N/A	NO ₂	13.00	mgal	1.43E-01	0.63	0.09														
																100%	N/A	VOC	1.00	mgal	1.10E-02	0.05	0.01														
																100%	N/A	CO	7.50	mgal	8.24E-02	0.36	0.05														
																100%	N/A	CH ₂ O	-	mgal	0.00E+00	0.00	0.00														
																100%	N/A	Pb	-	mgal	0.00E+00	0.00	0.00														
																100%	N/A	HAPs	-	mgal	0.00E+00	0.00	0.00														
																100%	N/A	CO ₂	135.50	mgal	1.49E+00	6.52	0.99														
																100%	N/A	N ₂ O	0.00	mgal	1.45E-05	0.00	0.00														
																100%	N/A	GHG _{mass}	135.50	mgal	1.49E+00	6.52	0.99														
																100%	N/A	CH ₄	0.01	mgal	7.27E-05	0.00	0.00														
															Combustion #2			mmBtu	100%	N/A	PM		mgal														
																														mgal	100%	N/A	PM ₁₀		mgal		
mmscf	100%	N/A	PM _{2.5}		mgal																																
	100%	N/A	SO ₂		mgal																																
	100%	N/A	NO ₂		mgal																																
	100%	N/A	VOC		mgal																																
	100%	N/A	CO		mgal																																
	100%	N/A	CH ₂ O		mgal																																
	100%	N/A	Pb		mgal																																
	100%	N/A	HAPs		mgal																																
	100%	N/A	CO ₂		mgal																																
	100%	N/A	N ₂ O		mgal																																
	100%	N/A	GHG _{mass}		mgal																																
	100%	N/A	CH ₄		mgal																																
Combustion #3			mmBtu	100%	N/A	PM		mgal																													
																														mgal	100%	N/A	PM ₁₀		mgal		
															mmscf	100%	N/A	PM _{2.5}		mgal																	
																100%	N/A	SO ₂		mgal																	
																100%	N/A	NO ₂		mgal																	
																100%	N/A	VOC		mgal																	
																100%	N/A	CO		mgal																	
																100%	N/A	CH ₂ O		mgal																	
																100%	N/A	Pb		mgal																	
																100%	N/A	HAPs		mgal																	
																100%	N/A	CO ₂		mgal																	
																100%	N/A	N ₂ O		mgal																	
																100%	N/A	GHG _{mass}		mgal																	
																100%	N/A	CH ₄		mgal																	
															Pile #1 (used for Aggregate transfer)		Load in	185.39	tons per hour		N/A	N/A	PM	0.0087	ton	1.62E+00	7.08	1.07									
																														N/A	N/A	PM ₁₀	0.0041	ton	7.65E-01	3.35	0.51
N/A	N/A	PM _{2.5}	0.0006	ton	1.16E-01	0.51	0.08																														
Load out	185.39	tons per hour		N/A	N/A	N/A	N/A	PM	0.0087	ton	1.62E+00	7.08	1.07																								
																														N/A	N/A	PM ₁₀	0.0041	ton	7.65E-01	3.35	0.51
																														N/A	N/A	PM _{2.5}	0.0006	ton	1.16E-01	0.51	0.08
Vehicular Activity	1.56	VMT per hour		N/A	90%	N/A	90%	PM	7.8685	VMT	1.23E+00	5.38	0.82																								
																														N/A	90%	PM ₁₀	2.2375	VMT	3.49E-01	1.53	0.23
																														N/A	74%	PM _{2.5}	0.2238	VMT	9.08E-02	0.40	0.06
Wind Erosion	0.02	acres		N/A	N/A	N/A	N/A	PM	0.1783	acre-hr	3.57E-03	0.02	0.00																								
																														N/A	N/A	PM ₁₀	0.0892	acre-hr	1.78E-03	0.01	0.00
																														N/A	N/A	PM _{2.5}	0.0134	acre-hr	2.67E-04	0.00	0.00

	Pile #2(used for Sand transfer)													
	Load in	141.95	tons per hour			N/A	N/A	PM	0.0021	ton	2.96E-01	1.30	0.20	
						N/A	N/A	PM ₁₀	0.0010	ton	1.40E-01	0.61	0.09	
						N/A	N/A	PM _{2.5}	0.0001	ton	2.12E-02	0.09	0.01	
	Load out	141.95	tons per hour			N/A	N/A	PM	0.0021	ton	2.96E-01	1.30	0.20	
						N/A	N/A	PM ₁₀	0.0010	ton	1.40E-01	0.61	0.09	
						N/A	N/A	PM _{2.5}	0.0001	ton	2.12E-02	0.09	0.01	
	Vehicular Activity	1.19	VMT per hour		Unpaved, Documented Watering/Chemical Application	N/A	90%	PM	7.8685	VMT	9.40E-01	4.12	0.62	
						N/A	90%	PM ₁₀	2.2375	VMT	2.67E-01	1.17	0.18	
						N/A	74%	PM _{2.5}	0.2238	VMT	6.95E-02	0.30	0.05	
	Wind Erosion	0.01	acres			N/A	N/A	PM	0.2898	acre-hr	2.90E-03	0.01	0.00	
						N/A	N/A	PM ₁₀	0.1449	acre-hr	1.45E-03	0.01	0.00	
						N/A	N/A	PM _{2.5}	0.0217	acre-hr	2.17E-04	0.00	0.00	
	Pile #3													
	Load in		tons per hour			N/A	N/A	PM		ton				
						N/A	N/A	PM ₁₀		ton				
						N/A	N/A	PM _{2.5}		ton				
	Load out		tons per hour			N/A	N/A	PM		ton				
						N/A	N/A	PM ₁₀		ton				
						N/A	N/A	PM _{2.5}		ton				
	Vehicular Activity		VMT per hour			N/A	N/A	PM		VMT				
						N/A	N/A	PM ₁₀		VMT				
						N/A	N/A	PM _{2.5}		VMT				
	Wind Erosion		acres			N/A	N/A	PM		acre-hr				
						N/A	N/A	PM ₁₀		acre-hr				
						N/A	N/A	PM _{2.5}		acre-hr				
	Pile #4													
	Load in		tons per hour			N/A	N/A	PM		ton				
						N/A	N/A	PM ₁₀		ton				
						N/A	N/A	PM _{2.5}		ton				
	Load out		tons per hour			N/A	N/A	PM		ton				
						N/A	N/A	PM ₁₀		ton				
						N/A	N/A	PM _{2.5}		ton				
	Vehicular Activity		VMT per hour			N/A	N/A	PM		VMT				
						N/A	N/A	PM ₁₀		VMT				
						N/A	N/A	PM _{2.5}		VMT				
	Wind Erosion		acres			N/A	N/A	PM		acre-hr				
						N/A	N/A	PM ₁₀		acre-hr				
						N/A	N/A	PM _{2.5}		acre-hr				
	Road #1	2.12	VMT per hour		Unpaved, Documented Watering/Chemical Application	N/A	90%	PM	11.1979	VMT	2.38E+00	10.40	1.58	
						N/A	90%	PM ₁₀	3.3052	VMT	7.01E-01	3.07	0.47	
						N/A	74%	PM _{2.5}	0.3305	VMT	1.82E-01	0.80	0.12	
	Road #2	1.45	VMT per hour		Unpaved, Documented Watering/Chemical Application	N/A	90%	PM	11.1979	VMT	1.63E+00	7.12	1.08	
						N/A	90%	PM ₁₀	3.3052	VMT	4.80E-01	2.10	0.32	
						N/A	74%	PM _{2.5}	0.3305	VMT	1.25E-01	0.55	0.08	
	Road #3		VMT per hour			N/A	N/A	PM		VMT				
						N/A	N/A	PM ₁₀		VMT				
						N/A	N/A	PM _{2.5}		VMT				



Missouri Department of

dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

NOV 29 2017

Mr. Chad Payne
Owner
Payne Ready Mix, LLC
20444 State Hwy. 51
Puxico, MO 63960

RE: New Source Review Permit - Project Number: 2017-09-041

Dear Mr. Payne:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application is necessary for continued compliance. In addition, please note that Payne Ready Mix, LLC cannot operate with any other plants that have ambient impact limits based on the Air Pollution Control Program's nomographs. Please refer to the permits of any plant that you are operating with to see if their respective permits contain an ambient impact limit. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission,



Recycled paper

Mr. Chad Payne
Page Two

whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: www.ao.mo.gov/ahc.

If you have any questions, please do not hesitate to contact Kathy Kolb, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM



Susan Heckenkamp
New Source Review Unit Chief

SH:kkj

Enclosures

c: Southeast Regional Office
PAMS File: 2017-09-041

Permit Number: 112017-013