



Missouri Department of dnr.mo.gov

# NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

**MAR 13 2018**

Mr. Mark Hyde  
Plant Manager  
CertainTeed Corporation  
100 CertainTeed Drive  
Jonesburg, MO 63351

RE: New Source Review Permit Amendment - Permit Number: 072015-014C  
Public Project Number: 2017-11-021; Installation Number: 139-0052

Dear Mr. Hyde:

CertainTeed Corporation proposes to add a ventilation fan to the headhouse. The fan is proposed to operate during summer months for worker comfort. The fan will be equipped with an exhaust filter. This project affects the emissions from processes contained in the upper headhouse area. These are emission unit (DP2) which is conveyor 1 drop onto tripper car, and emission unit (DP3) which is tripper car drop into granule and headlap silos. No other emission units are affected with this project.

These emission units were originally permitted conservatively, without considering the headhouse enclosure as a capture or control device. It was conservatively assumed that PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions from DP2 and DP3 would eventually emit from the structural joints within the headhouse. Also, this conservative representation showed compliance with the ambient air quality impact analysis without the addition of permit special conditions defining a degree of enclosure and without monitoring of the headhouse as a capture/control device.

After witnessing the headhouse and emission points in operation, the enclosed design without fan operation is being assigned an estimated █% combined capture/control efficiency for PM, PM<sub>10</sub>, and PM<sub>2.5</sub>, with each pollutant as filterable. Condensable particulate is not expected to be emitted by DP2 and DP3. The fan and filter have not yet been installed. It is estimated that the headhouse with fan operation will result in █% capture efficiency. Therefore, █% of emissions will escape uncontrolled via headhouse structural joints. The captured emissions will be subject to a filter of at least MERV 8 rating, identified as control device CTRL-21. Through review of published data titled, *Estimates of HVAC Filtration Efficiency for Fine and Ultrafine Particles of Outdoor Origin*, Azimi, Zhao, and Stephens, Atmospheric Environment, 2014, Figure 7, MERV 8 controls PM<sub>2.5</sub> at █%. MERV 8 PM<sub>10</sub> control efficiency of █% was obtained from <http://www.allergyclean.com/understanding-merv-or-the-minimum-efficiency-reporting-value/>. PM control efficiency of █% was obtained by engineering judgement. The combined capture/control during fan operation is then █%, █%, and █%, for PM, PM<sub>10</sub>, and PM<sub>2.5</sub> respectively.



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A permit special condition is required in order to consider the filter as a control device towards potential emissions. The special condition does not require a certain number of hours of fan and filter operation per year. Meeting a limit of any minimum number of hours results in the lowest PM and PM<sub>10</sub> emissions, but the highest PM<sub>2.5</sub> emissions. Comparing the headhouse with and without fan operation shows that the highest potential PM and PM<sub>10</sub> emissions are without fan operation, however the highest potential PM<sub>2.5</sub> emissions are during fan operation. This is in part due to the filter's relatively low PM<sub>2.5</sub> control efficiency. Both scenarios are an emission reduction for all pollutants compared to original permit 072015-014. The potential emissions can simply be represented as a hybrid of both scenarios. The combined potential PM emissions from DP2 and DP3 are 0.36 tpy. PM<sub>10</sub> is 0.13 tpy. PM<sub>2.5</sub> is 0.057 tpy. Those values are being stated for informational purposes, as they are not the potential emissions of the project. This is an amendment to the original permit which was defined as the entire new installation. Please see the attached calculations for DP2 and DP3 details. For actual emissions, the annual tons of throughput with and without fan/filter operation can be recorded and the respective factors chosen from the table below. The same uncontrolled emission factors were used as those from the original permit.

Table 1: DP2 and DP3 Controlled Emission Factors (lb/ton)

Pollutant	Enclosed Headhouse, No Ventilation	Enclosed Headhouse, with Ventilation and Filter
PM filterable	confidential	
PM <sub>10</sub> filterable		
PM <sub>2.5</sub> filterable		
Chromium compounds		
Cobalt compounds		

Separate, identical factors for DP2 and DP3 per operating scenario.  
Some colored granules contain HAPs.

A full ambient air quality impact analysis was conducted for this installation in permit 072015-014, prior to the installation beginning operation. A revised full analysis will be completed as part of the permit true-up amendment for project 2017-01-072. That analysis will include revised potential emissions developed from stack test results, changes in emission routing conducted under amendment 072015-014A, and the addition of a limestone mill and associated equipment under project 2017-09-001. This amendment for the headhouse ventilation did not require a full modeling analysis. A significance run was conducted which showed little impact from this project itself, and reinforced that it would be acceptable to consider this project's impact with the full analysis to be conducted for project 2017-01-072.

10 CSR 10-6.400 *Restriction of Emission of Particulate Matter From Industrial Processes*, does not apply to emission units DP2 or DP3. The uncontrolled potential PM emissions from each unit are less than 0.5 lbs/hr. Therefore, the rule does not apply according to (B)12. CertainTeed requested confidentiality for process rates, emission factors, and control

Mr. Mark Hyde  
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efficiencies. Confidentiality was granted according to 10 CSR 10-6.210 *Confidential Information*. This is the redacted public amendment. A confidential version is available under project 2017-11-022.

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, 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](http://www.ao.mo.gov/ahc).

If you have any questions regarding this amendment, please do not hesitate to contact David Little, 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



Kendall B. Hale  
Permits Section Chief

KBH:dlj

Enclosures

c: St. Louis Regional Office  
PAMS File: 2017-11-021

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**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."*

CertainTeed Corporation  
Montgomery County, S8&17, T47N, R3W

1. Capture and Control Device - Headhouse Enclosure and Filter  
CertainTeed Corporation shall capture/control emissions from emission units DP2 and DP3 using either of the following,
  - A. Headhouse Enclosure  
CertainTeed Corporation shall capture emissions from DP2 (conveyor 1 drop onto tripper car) and DP3 (tripper car drop into granule and headlap silos) using a totally enclosed headhouse. The headhouse shall be six-sided. All doors, windows, and other openings larger than typical structural joints shall be closed during DP2 and DP3 operation. Structural joints need not be sealed. 100% capture is not required. OR
  - B. Headhouse Enclosure Routed to a Filter
    - 1) CertainTeed Corporation shall capture emissions from DP2 and DP3 using a totally enclosed headhouse. The headhouse shall be six-sided. All doors, windows, and other openings larger than typical structural joints shall be closed during DP2 and DP3 operation, except for the ventilation fan. The ventilation fan shall draw air from within the headhouse. Structural joints need not be sealed. 100% capture is not required.
    - 2) CertainTeed Corporation shall control emissions from DP2 and DP3 using a filter with a minimum rating of MERV 8.
    - 3) The filter shall be operated and maintained in accordance with manufacturer's specifications. A copy of the manufacturer's performance warranty shall be maintained on site.
    - 4) The filter shall be equipped with a gauge or meter which indicates the pressure drop across the control device. The gauge or meter shall be located such that department employees may easily observe it.
    - 5) CertainTeed Corporation shall develop a written standard operating procedure (SOP) to monitor pressure drop and filter condition.

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**SPECIAL CONDITIONS:**

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

- Normal operation and replacement parameters shall be indicated. The SOP shall be kept on site.
- 6) CertainTeed Corporation shall monitor and record the operating pressure drop across the filter at least once daily, on days the ventilation fan is operating. Days of no DP2 (conveyor 1 drop onto tripper car) and DP3 (tripper car drop into granule and headlap silos) operation shall be indicated. Days of no ventilation fan operation shall be indicated. The operating pressure drop shall be maintained within the conditions specified by the SOP.
  - 7) Replacement filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance). The air to cloth ratio or air to filter ratio shall not be increased when filter replacement is performed.
  - 8) CertainTeed Corporation shall maintain an operating and maintenance log for the filter which shall include the following:
    - a) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - b) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
    - c) Dates of all above schedules, incidents, activities, and actions.