TECHNICAL REVIEW DOCUMENT
For
OPERATING PERMIT 10OPMF367

Boral Material Technologies, Inc. – Craig Station Facility
Moffat County
Source ID 0810018

June - September 2012

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Operating Permit Supervisor review:	Matthew S. Burgett
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I. Purpose

This document establishes the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed Operating Permit for the Boral Material Technologies, Inc Craig Station Facility.

This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the original application submitted on July 13, 2010 and previous inspection reports and various email correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at http://www.colorado.gov/cs/Satellite/CDPHE-AP/CBON/1251596446069 This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

Boral Material Technologies, Inc. (BMTI) operates a fly ash loading operation located at the Tri-State Transmission & Generation Association Inc (Tri-State) Craig Station. Craig Station is classified as an electric services facility under Standard Industrial Classification 4911. BMTI is a support facility for Craig Station and as such is considered a single stationary source with Craig Station for purposes of prevention of

significant deterioration (PSD) review, Title V operating permit and MACT requirements. Tri-State was issued a Title V operating permit (96OPMF155) for Craig Station. The Title V operating permit issued to BMTI will only address the flyash loading operation.

The following is a description of the ash loading operations conducted by BMTI. Boral transfers fly ash between trucks and rail cars using pneumatic loading equipment. Fly ash from the facility is brought in trucks to the loading operation. Particulate matter emissions from the operation are controlled with a baghouse. Emissions associated with the loading of fly ash into the trucks and haul road transport prior to arrival at Boral's operation are addressed in Tri-State's operating permit for the Craig Station.

The facility is located at 2101 S. Ranney, in Craig. The area in which the plant operates is designated as attainment for all pollutants.

Wyoming is an affected state within 50 miles of the plant. There are two Federal Class I designated areas within 100 kilometers of the facility: Mount Zirkel National Wilderness Area and Flattops National Wilderness Area. Dinosaur National Monument is a Federal land area within 100 kilometers of the facility. Although it is not a Federal Class I area, Dinosaur has been designated by the State to have the same sulfur dioxide increment as a Federal Class I area.

This source (Tri-State and Boral) is located in an area designated attainment for all pollutants. It is categorized as a major stationary source (Potential to Emit ≥ 100 Tons/Year for PM, PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO and VOC). Future modifications at this facility resulting in a significant net emissions increase (see Reg 3, Part D, Sections II.A.26 and 42) for any pollutant as listed in Regulation No. 3, Part D, Section II.A.42 or a modification which is major by itself (i.e. a Potential to Emit of ≥ 100 TPY of any pollutant listed in Regulation No. 3, Part D, Section II.A.42) may result in the application of the PSD review requirements. Note that this source is subject to the 100 TPY threshold for major stationary sources because the Tri-State coal-fired power plant is one of the 28 listed sources under Colorado Regulation No. 3, Part D, II.A.24.

Emissions (in tons/yr) at the facility are as follows:

	Potential to Emit (tons/yr)			**Actual Emissions (tons/yr)**		
Pollutant	**Tri-State[1]**	**BMTI[2]**	**Facility**	**Tri-State[3]**	**BMTI[4]**	**Facility**
PM	4419.2	0.05	4419.25	339.0	Negl.	339.0
PM_{10}	1356.7	0.08	1356.78	206.2	Negl.	206.2
SO_2	47515.0	N/A	47515.0	3381.9	N/A	3381.9
NO_x	33230.0	N/A	33230.0	14592.1	N/A	14592.1
CO	5328.0	N/A	5328.0	2540.5	N/A	2540.5
VOC	193.0	N/A	193.0	58.4	N/A	58.4
HAPs	>10/25	Negl.	>10/25	67.5	Negl.	67.5

1: Potential emissions for Tri-State are from: the technical review document for the initial issuance of operating permit 96OPMF155 (units 1 and 2) and construction permits 12MF322-1, 12MF322-2, 12-MF322-3 and 12MF322-4 (issued May 16, 2007 for Unit 3 and related activities).
2. Potential emissions for the Boral flyash loading are the emission limits (post-control) from Construction Permit 10MF1729, issued August 13, 2012.
3. Actual emissions from Tri-State are from the Division's inventory for calendar year 2010.
4. Actual emissions from the Boral operation were last reported on an APEN received July 13, 2010. The APEN reported actual throughput for calendar year 2009 at 3% of the permitted level.

III. Applicable Requirements

Accidental Release Program – 112(r)

Section 112(r) of the Clean Air Act mandates a new federal focus on the prevention of chemical accidents. Sources subject to these provisions must develop and implement risk management programs that include hazard assessment, a prevention program, and an emergency response program. They must prepare and implement a Risk Management Plan (RMP) as specified in the Rule.

Craig Station is subject to the provisions of Section 112(r) of the Federal Clean Air Act. The provisions of Section 112(r) are not applicable to the ash loading operations performed by BMTI.

Compliance Assurance Monitoring (CAM)

The following emission points at this facility use a control device to achieve compliance with an emission limitation or standard to which they are subject and have pre-control emissions that exceed or are equivalent to the major source threshold. They are therefore subject to the provisions of the CAM program as set forth in 40 CFR Part 64 as adopted by reference into Colorado Regulation No. 3, Part C, Section XIV:

None: the pre-control emissions from the ash loading operation do not exceed the major source threshold. Note that the pre-control emissions are evaluated at a throughput limit of 30,000 tons per year, which is an enforceable limit in Colorado Construction Permit 10MF1729.

Hazardous Air Pollutants (HAPs)

The source (Tri-State and BMTI) is a major source for hazardous air pollutants (HAPS). However, there have been no MACT standards promulgated that apply to the BMTI operations and sources. In addition, BMTI has no equipment that falls under a source category for which EPA did not promulgate a MACT standard by the regulatory deadline and therefore, BMTI is not subject to the case-by-case MACT requirements in Section 112(j) of the Act.

Colorado Regulation No. 6 Opacity and Particulate Matter Standards

The opacity and PM standards in Regulation No. 6 apply to new manufacturing processes. The Boral operation is a material transfer operation only and is not considered to be a manufacturing process subject the requirements of Regulation No. 6.

Colorado Regulation No. 1 Particulate Matter Standards

The PM standards in Regulation No. 1 apply to manufacturing processes. The Boral operation is a material transfer operation only and is not considered to be a manufacturing process subject to the PM requirements of Regulation No. 1.

IV. Emission Sources

A. Emission Unit Title: One (1) Custom material transloader

1. Applicable Requirements

Fly ash is transferred pneumatically to and from trucks to rail cars for transfer off-site, and emissions are controlled using a baghouse. Emissions associated with both the loading of fly ash into the trucks at the Craig Station and haul road transport prior to arrival at Boral's operation are addressed in Tri-State's operating permit for the Craig Station.

The due date of the first semi-annual monitoring report required by this operating permit will be more than 180 days after the initial approval construction permit 10MF1729 was issued. Therefore, under the provisions of Regulation No. 3, Part C, Section V.A.2, the Division is allowing the initial approval construction permit to continue in full force and effect and will consider the Responsible Official certification submitted with that report to serve as the demonstration required pursuant to Regulation No. 3, Part B, Section III.G.2 and no final approval construction permit will be issued. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit as follows:

- Condition 1: Submit a notice of startup within 15 days after commencement of the permitted operation.

  This equipment previously operated at the facility under a different construction permit (see discussion for Condition 11 below). According to the Title V application, the transloader was first placed in service in October 16, 2006. The notice of startup requirement is satisfied and will not be included in the operating permit.

- Condition 2: Submit a self-certification of compliance with the conditions of permit 10MF1729 within 180 days of commencement of operation.

  The first semi-annual monitoring report required by the operating permit will satisfy this requirement, therefore it will not be included as a separate permit condition.

- Condition 3: This permit shall expire if the source does not commence construction/modification within 18 months

  This equipment previously operated at the facility under a different construction permit (see discussion for Condition 11 below); this requirement is not applicable.

- Condition 4: within 180 days after commencement of operation, the permit number shall be marked on the subject equipment

  This is a construction permit-only condition and will not be included.

- Condition 5: The model number of the baghouse shall be provided to the Division within 15 days after commencement of operation

  Boral provided a serial number for the baghouse (#BP-010-12). The model number is unknown, however it is identified as a "Type 225-10-30 baghouse." The underlying construction permit condition is therefore satisfied and will not be included in the operating permit.

- Condition 6: Annual emission limits for PM (0.05 tons per year), PM_{10} (0.08 tons per year) and $PM_{2.5}$ (0.14 tons per year), to be based on 12-month rolling totals

  The operating permit will specify the method of determining compliance based on the emission factors noted in the Notes to Permit holder section of the construction permit (AP-42 Table 11.12-2 emission factors).

- Condition 7: requires the use of a baghouse to achieve control efficiencies of 99.9% (PM), 99.5% (PM_{10}) and 99% ($PM_{2.5}$). Allows the control efficiencies to be used in the required emission calculations provided that the owner or operator operates and maintains the equipment in accordance with manufacturer's recommendations and good engineering practices.

  Conditions 6 and 7 will be incorporated into one condition in the operating permit which will also specify the emission calculations to be used.

- Condition 8: transfer of fly ash is limited to 30,000 tons per year based on a rolling 12-month total.

- Condition 9: visible emissions shall not exceed 20% opacity during normal operation, and 30% opacity during periods of startup, process modification, or adjustment or control equipment (Colorado Regulation No. 1, Sections II.A.1 & 4).

  The operating permit language will reflect the specific Reg 1 language, which does not restrict the 20% opacity requirement of Section II.A.1 to periods of only "normal" operation (it applies at all times except during the periods explicitly listed by Section II.A.4). Note that Section II.A.4 also includes periods of fire building, cleaning of fire boxes, or soot blowing; these activities are not included in the permit language as they are determined not to apply to the fly ash transloading operation.

  Due to the nature and size of the operation, the Division will require compliance with good operation, maintenance and engineering practices

in lieu of Method 9 observations in order to determine compliance with opacity requirements.

- Condition 10: The permit number shall be marked on the subject equipment

  This is a construction permit-only condition and will not be included.

- Condition 11: cancels a previously issued portable construction permit.

  The BMTI operation was originally permitted under 06PO1141, which was a portable source permit. The operation remained onsite at the Craig Station for more than two years, at which point it no longer qualified to operate as a portable source. The old portable permit is canceled and this condition will not be included in the operating permit.

- Condition 12: revised APENs are required in accordance with Colorado Regulation No. 3, Part A Requirements.

  This requirement is part of the Operating Permit general conditions and therefore is not directly incorporated.

- Condition 13 requires the owner or operator to submit an application to modify the operating permit to incorporate the provisions of the construction permit.

  This initial operating permit already incorporates Construction Permit 10MF1729 and the application requirement is no longer applicable.

- Condition 14: PSD requirements shall apply to this source at any such time that this source becomes major solely by virtue of a relaxation of any permit condition.

  This condition references the source obligation requirements of Colorado Regulation No. 4, Part D, Section VI.B.4. As a SIP-approved state, these are Colorado's equivalent to the source obligation requirements of 52.24(g) and 52.21(r)(4). The addition of the BMTI operation to the existing Craig Station (which is a major stationary source for PSD purposes) would have been considered a major modification subject to PSD requirements if emission limits were not below the PSD significance thresholds (25 tons per year PM, 15 tons per year PM_{10} and 10 tons per year $PM_{2.5}$). The pre-baghouse emissions from the BMTI operation at a design throughput of 50 tons per year, when calculated at 8760 hours per year of operation would exceed PSD significance thresholds. Therefore, the throughput limitation and the baghouse control allow the operation to avoid PSD review requirements. The operating permit condition will be updated to include the specific significance threshold values for clarity.

2. Emission Factors

Permitted emissions of PM and PM_{10} are based on emission factors from EPA's Compilation of Emission Factors (AP-42), Section 11.12, Table 11.12-2, Cement Supplement Unloading to Elevated Storage Silo (pneumatic), dated June 2006. Section 11.12 deals with concrete batching operations, and specifically address fly ash as one of the supplementary materials used to make concrete. Section 11.12 does not include an emission factor for $PM_{2.5}$ emissions, so the particle size distribution information in Category 4 of Appendix B-2 of AP-42 (Generalized Particle Size Distributions, dated September 1990, reformatted January 1995). Category 4 covers material handling and processing of processed ores and minerals. Table B.2-3 also provides fabric filter control efficiencies for PM_{10} and $PM_{2.5}$. PM control efficiency was specified as 99.9% in the operating permit application, which is consistent with the Division's experience of similar baghouse control equipment.

Pollutant	Emission Factor (lb/ton)	Control Efficiency	Source of Emission Factor
PM	3.14	99.9%	AP-42 Table 11.12-2 (1/1995)*
PM_{10}	1.10	99.5%	
$PM_{2.5}$	0.942	99.0%	

*$PM_{2.5}$ emission factors and control efficiencies are based on PM values and the particle size distribution information in AP-42 Appendix B.2-14 (1/1995)

The control efficiencies may be used when calculating emissions provided that the baghouse is operated and maintained in accordance with manufacturer's recommendations and good engineering practices.

3. Monitoring Plan

The owner or operator shall be required to record fly ash throughput and calculate emissions monthly. In the absence of credible evidence to the contrary, opacity emissions from the fly ash transloader shall be presumed to be in compliance with the opacity requirements provided the baghouse is operated and maintained in accordance with manufacturer's recommendations and good engineering practices.

4. Compliance Status

The Title V permit application indicated that the fly ash transloader is not in compliance with the following requirement: "E1 exceeded 2 year portable status." The fly ash transloader was not moved from the Craig Station within two years of initial startup and therefore no longer met the definition of portable source under Colorado Regulation No. 3, Part A, Section I.B.36. The source included an application for a construction permit as a part of the operating permit application with the intention of converting the previously issued portable permit (06PO1141) into a stationary source permit. Colorado Construction Permit 10MF1729 (a stationary source permit) was issued on August 13, 2012, and the portable permit was cancelled. The Division determines that no additional

requirements are needed in the operating permit with respect to this previous compliance issue.

V. Streamlining of Applicable Requirements

No applicable requirements were streamlined.

VI. Insignificant Activities

General categories of insignificant activities include: no insignificant activities were listed in the operating permit application.

VII. Alternative Operating Scenarios

No alternative operating scenarios were requested for this facility.

VIII. Permit Shield

The source did not request the permit shield for any non-applicable requirements.