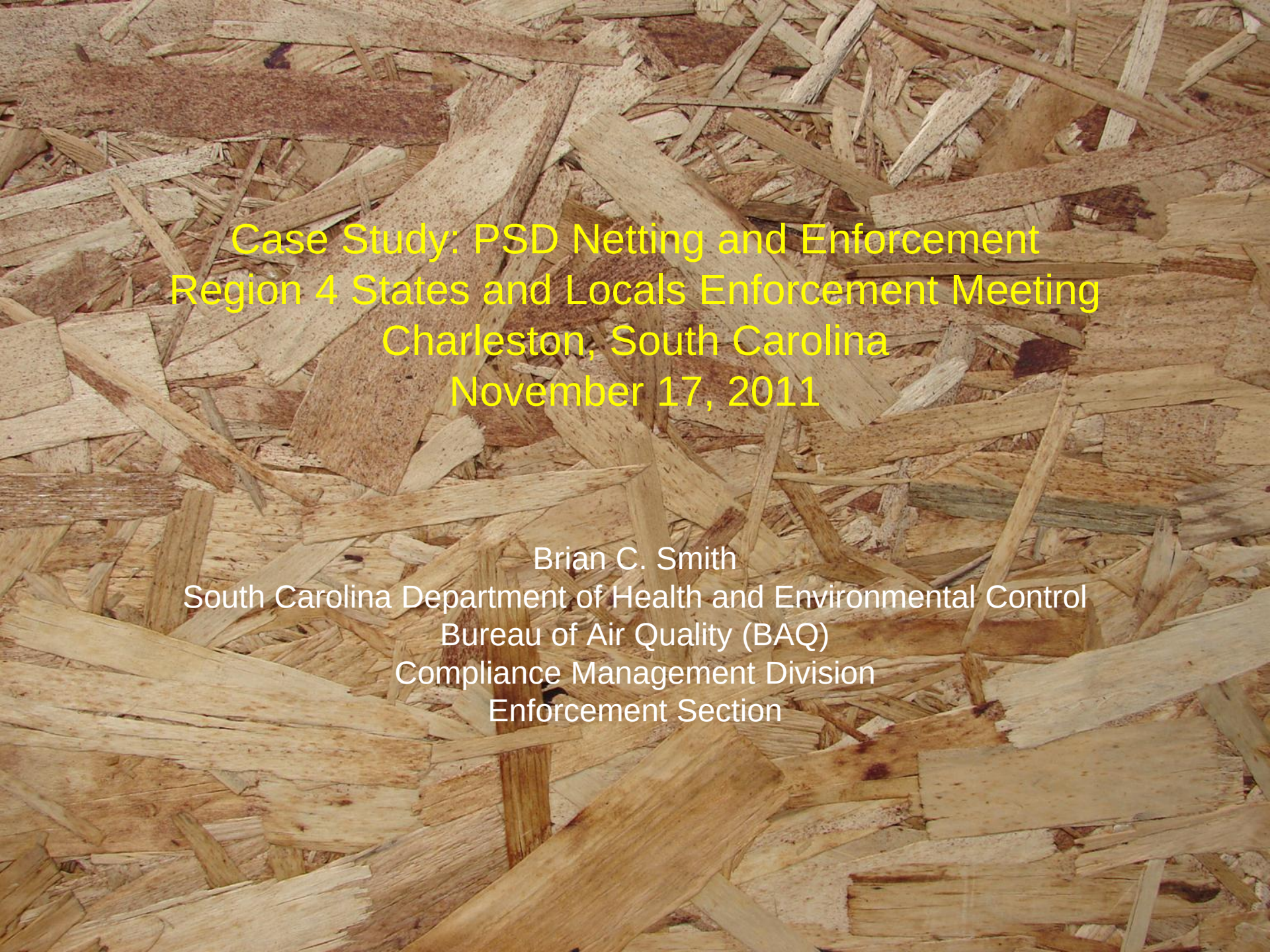

Case Study: PSD Netting and Enforcement
Region 4 States and Locals Enforcement Meeting
Charleston, South Carolina
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Background / History

- RhymesWithMakeBoard is a major stationary source for volatile organic compound (VOC) emissions with a facility-wide potential to emit (PTE) of approximately 436 tons per year (TPY) of VOCs
- RhymesWithMakeBoard owns and operates a Medium Density Fiberboard facility located in Parts Unknown, South Carolina (MDF)
- RhymesWithMakeBoard also owns and operates a particleboard facility located in Parts Unknown, South Carolina (Particleboard)
- Particleboard is a major plant for VOC emissions, and is co-located under the Title V program with MDF

Background / History continued

- RhymesWithMakeBoard is subject to U.S. EPA Regulation 40 CFR Part 52.21, and 24A S.C. Code Ann. Regs. 61-62.5, Standard No. 7, *Prevention of Significant Deterioration* (collectively PSD)

MDF

- BAQ issued Part 70 (Title V) Air Quality Operating Permit (Title V Permit) to MDF, effective January 1, 2001
- The Title V Permit authorizes MDF to operate the following sources:
  - Unit ID 02 – Refiner System;
  - Unit ID 03 – Face and Core Drying Systems; and
  - Unit ID 05 – Press System
- Hazardous air pollutant (HAP) and VOC emissions from Unit IDs 02, 03, and 05 are controlled through a Core Thermal Catalytic Oxidizer (Core TCO)

Background / History continued

- On November 6, 2007, BAQ issued Construction Permit CT (Permit CT) to MDF for installation of a new Face Thermal Catalytic Oxidizer (Face TCO) to control HAP and VOC emissions from its existing Face Drying System
- The Face Drying System is subject to U.S. EPA Regulations at 40 CFR Part 63, *National Emission Standards For Hazardous Air Pollutants For Source Categories*, Subpart DDDD - *National Emission Standards For Hazardous Air Pollutants: Plywood And Composite Wood Products*, and 24A South Carolina Code Ann. Regs. 61-62.63, *National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Source Categories*, Subpart DDDD - *National Emission Standards For Hazardous Air Pollutants: Plywood And Composite Wood Products*, (collectively Subpart DDDD)

Background / History continued

- MDF could demonstrate compliance with Subpart DDDD using three possible compliance options, but chose the one for add-on control systems
- MDF has been operating the Face TCO in compliance with the compliance option for add-on control systems, specifically, the option that limits emissions of total HAP, measured as total hydrocarbons (THC), to 20 parts per million dry volume (ppmvd)
- However, the limit of 20 ppmvd contained in Subpart DDDD was not incorporated into Permit CT
- BAQ renewed MDF's Title V Permit, effective January 1, 2010, and incorporated the requirements of Permit CT

Background / History continued

Particleboard

- BAQ issued Title V Permit to Particleboard, effective October 1, 2005
- On July 17, 2009, BAQ issued Construction Permit CK (Permit CK) to Particleboard for construction of three new green flakers (two for normal operation and one for a backup) and a baghouse, which would replace two existing refiners
- In its permit application, Particleboard estimated that its PTE VOCs from the project was approximately 27 TPY, based upon emission factors from a similar source located in North Carolina
- Permit CK required Particleboard to conduct an initial source test for VOC emissions within 180 days after startup

Background / History continued

- On June 3, 2010, Particleboard conducted a BAQ-approved source test for VOC emissions from two of the new flakers
- Results of the source test demonstrated that the PTE of VOCs from the two flakers was greater than 40 TPY
- Based on the results of the source test, BAQ determined that RhymesWithMakeBoard did not include accurate emissions information in the application for Permit CK

Background / History continued

- On July 19, 2010, RhymesWithMakeBoard submitted a PSD netting analysis to BAQ. RhymesWithMakeBoard indicated that the PTE from construction of the two new flakers was a significant increase of greater than 40 TPY for VOC emissions (approximately 87 TPY); however, asserted it was not required to conduct a PSD review because the net VOC emissions increase was less than 40 TPY
- On November 12, 2010, RhymesWithMakeBoard submitted a revised PSD netting analysis to BAQ. RhymesWithMakeBoard indicated that the PTE from construction of the two new flakers was a significant increase of greater than 40 TPY for VOC emissions (approximately 69 TPY) based on a corrected production throughput; however, asserted it was not required to conduct a PSD review because the net VOC emissions increase was less than 40 TPY
- On September 6, 2011, BAQ received a revised final PSD netting analysis from RhymesWithMakeBoard, providing an analysis to net out of PSD, utilizing a decrease in actual VOC emissions resulting from compliance with Subpart DDDD via the Face TCO, and therefore achieving sufficient VOC emissions reductions to remain below the threshold for PSD review

PSD requirements

- No new major stationary source or major modification to which the requirements of paragraphs (j) through (r)(5) apply shall begin actual construction without a permit that states that the major stationary source or major modification will meet those requirements
- PSD requires RhymesWithMakeBoard either to accept Federally enforceable limits to avoid the permitting requirements of PSD, or to complete a PSD review (i.e., submit a PSD application with Best Available Control Technology (BACT) analysis, install necessary emissions controls, and obtain a PSD permit)

PSD definitions

- PSD defines a **major stationary source** as a facility that has the PTE more than 250 TPY of any pollutant subject to regulation under New Source Review (NSR), including VOCs
- **Major modification** means any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase (as defined in paragraph (b)(50)) of a regulated NSR pollutant (as defined in paragraph (b)(44)); and a significant net emissions increase of that pollutant from the major stationary source
- **Significant** means, in reference to a net emissions increase or the potential of a source to emit any of the following pollutants, a rate of emissions that would equal or exceed any of the following rates:

  Ozone - 40 TPY of VOCs or oxides of nitrogen

PSD definitions continued

- **Significant emissions increase** means, for a regulated NSR pollutant, an increase in emissions that is significant (as defined in paragraph (b)(49)) for that pollutant
- PSD therefore defines an increase in potential VOC emissions greater than 40 TPY as a **significant increase**

PSD definitions continued

- **Net emissions increase** means, with respect to any regulated NSR pollutant emitted by a major stationary source, the amount by which the sum of the following exceeds zero:
- (a) The increase in emissions from a particular physical change or change in method of operation at a stationary source as calculated pursuant to paragraph (a)(2)(iv); and
- (b) Any other increases and decreases in actual emissions at the major stationary source that are contemporaneous with the particular change and are otherwise creditable. Baseline actual emissions for calculating increases and decreases under this paragraph (b)(34)(i)(b) shall be determined as provided in paragraph (b)(4), except that paragraphs (b)(4)(i)(c) and (b)(4)(ii)(d) shall not apply

PSD definitions continued

- (ii) An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs between:
- (a) The date five years before construction on the particular change commences; and
- (b) The date that the increase from the particular change occurs.
- (iii) An increase or decrease in actual emissions is creditable only if:
- (a) The Department has not relied on it in issuing a permit for the source under this section, which permit is in effect when the increase in actual emissions from the particular change occurs; and
- (b) [Reserved]
- (c) It occurs within five years before the date that the increase from the particular change occurs.

PSD definitions continued

- (iv) An increase or decrease in actual emissions of sulfur dioxide, particulate matter, or nitrogen oxide, that occurs before the applicable minor source baseline date is creditable only if it is required to be considered in calculating the amount of maximum allowable increases remaining available
- (v) An increase in actual emissions is creditable only to the extent that the new level of actual emissions exceeds the old level.
- (vi) A decrease in actual emissions is creditable only to the extent that:
- (a) The old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions;
- (b) It is federally enforceable at and after the time that actual construction on the particular change begins; and

PSD definitions continued

- (c) It has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change.
- (vii) [Reserved]
- (viii) An increase that results from a physical change at a source occurs when the emissions unit on which construction occurred becomes operational and begins to emit a particular pollutant. Any replacement unit that requires shakedown becomes operational only after a reasonable shakedown period, not to exceed 180 days.
- (ix) Paragraph (b)(1)(ii) shall not apply for determining creditable increases and decreases.

PSD definitions continued

- **Federally enforceable** means all limitations and conditions which are enforceable by the Administrator, including those requirements developed pursuant to 40 CFR 60 and 61, requirements within any applicable State implementation plan, any permit requirements established pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51, subpart I, including operating permits issued under an EPA-approved program that is incorporated into the State implementation plan and expressly requires adherence to any permit issued under such program.

Regulatory differences – Federal vs. State

Net emissions increase

U.S. EPA Regulation 40 CFR Part 52.21, *Prevention Of Significant Deterioration Of Air Quality*

- (b)(3)(vi)(*b*) **It is enforceable as a practical matter at and after the time that actual construction on the particular change begins**

vs.

24A S.C. Code Ann. Regs. 61-62.5, Standard 7, *Prevention of Significant Deterioration*

- (b) **It is federally enforceable at and after the time that actual construction on the particular change begins**

Subpart DDDD Requirements

(a) Production-based compliance options

- Meet the production-based total HAP compliance options in Table 1A to this subpart and the applicable operating requirements in Table 2 to this subpart
- Cannot use an add-on control system or wet control device to meet the production-based compliance options

(b) **Compliance options for add-on control systems**

- Must use an emissions control system and demonstrate that the resulting emissions meet the compliance options and operating requirements in Tables 1B and 2 to this subpart

(c) Emissions averaging compliance option (for existing sources only)

- Must demonstrate that emissions included in the emissions average meet the compliance options and operating requirements

40 CFR Table 1B To Subpart DDDD Of Part 63.–Add-On Control Systems Compliance Options

TABLE 1B TO SUBPART DDDD OF Part 63 - ADD-ON CONTROL SYSTEMS COMPLIANCE OPTIONS

(Modified)

(1) Reduce emissions of total HAP, measured as THC (as carbon)[a], by 90 percent; or

(2) Limit emissions of total HAP, measured as THC (as carbon)[a], to 20 ppmvd; or

(3) Reduce methanol emissions by 90 percent; or

(4) Limit methanol emissions to less than or equal to 1 ppmvd if uncontrolled methanol emissions entering the control device are greater than or equal to 10 ppmvd; or

(5) Reduce formaldehyde emissions by 90 percent; or

(6) Limit formaldehyde emissions to less than or equal to 1 ppmvd if uncontrolled formaldehyde emissions entering the control device are greater than or equal to 10 ppmvd.

a You may choose to subtract methane from THC as carbon measurements.

BAQ's position

- BAQ reviewed the PSD netting analysis and determined that a decrease in actual VOC emissions from the project permitted under Permit CT was not allowed pursuant to PSD because RhymesWithMakeBoard had not accepted Federally enforceable limits at and after the time that actual construction of the two new flakers began
- RhymesWithMakeBoard could only demonstrate a net emissions decrease using the add-on control systems option under Subpart DDDD, specifically, the option that limits emissions of total HAP, measured as THC to 20 ppmvd
- RhymesWithMakeBoard could not demonstrate a net emissions decrease with the other two available compliance options under Subpart DDDD

BAQ's position continued

- The modifications would have required RhymesWithMakeBoard, either to accept Federally enforceable limits to avoid the permitting requirements of PSD, or to complete a PSD review (i.e., submit a PSD application with BACT analysis, install necessary emissions controls, and obtain a PSD permit)
- BAQ maintains that the limit of 20 ppmvd was not included within Permit CT as a Federally enforceable limit prior to making the changes that resulted in a major modification
- BAQ has determined that the actual emissions at the facility, including contemporaneous decreases from the installation from the Face TCO, remained below the significant increase threshold, and will modify the permit to establish the Subpart DDDD limit as a Federally enforceable limit

RhymesWithMakeBoard's position

- Used the best most representative data (flaker emission factor from NC plant)
- AP-42 did not have a representative factor
- Emissions testing after construction showed higher VOC emissions than estimated
- Submitted a PSD netting analysis that demonstrated project was minor
- Project was minor prior to construction and minor after due to MACT project and ability to net out, therefore no environmental impact
- Have a Federally enforceable limit of less than 20 ppm on Face TCO that is practically enforceable due to MACT requirements to monitor temperature continuously
- Invested $1.5 million in the flakers to increase product quality, reduce costs and energy consumption (and indirect greenhouse gases), and to stay ahead of competition
- Are an environmental stewardship and green building standards
- Based the net emissions decrease on the following Memo

November 12, 1997, Memorandum from John S. Seitz, Director /s/ by Henry Thomas Office of Air Quality Planning and Standards (MD-10) to Bob Hannesschlager, Acting Director Multimedia Planning and Permitting Division, Region VI (6PD), regarding the subject of Crediting of MACT Emission Reductions for NSR Netting and Offsets

Memo responds to the August 27, 1997 memorandum from Allyn M. Davis requesting the EPA policy concerning whether emissions reductions needed to meet requirements for MACT codified at 40 CFR part 63 - National Emissions Standards for Hazardous Air Pollutants for Source Categories may be credited for NSR netting

Memo summary

- MACT program not designed to limit criteria or other pollutants regulated by NSR programs of parts C and D of title I of the Act
- Actual emissions reductions of hazardous or other air pollutants that result from complying with MACT regulations codified at 40 CFR part 63 may be considered “surplus” for purposes of NSR netting and are not precluded from NSR netting as long as the reductions are otherwise creditable under NSR

Memo example

- If compliance with a MACT standard under part 63 at a major source results in an actual emissions decrease of 200 tpy in toluene emissions, which is both a hazardous air pollutant under section 112 and a VOC under NSR, the reduction may be available for NSR netting at the source (1) as long as the reduction has not been used to meet RACT or other attainment strategies (e.g., the 15 percent reduction requirement for certain ozone nonattainment areas) and, (2) the reduction is otherwise creditable under NSR
- If after NSR netting the emissions increase is significant, then the NSR offset requirement applies
- Any emissions reductions that are in excess of or incidental to the MACT standards are not precluded from being creditable as NSR offsets as long as all conditions of a creditable offset are met

Enforcement action

- BAQ issued Notice of Alleged Violation and Notice of Enforcement Conference to RhymesWithMakeBoard
- RhymesWithMakeBoard violated U.S. EPA 40 CFR 52.21 and 24A S.C. Code Ann. Regs. 61-62.5, Standard No. 7, *Prevention of Significant Deterioration*, in that it failed to obtain a PSD permit or accept Federally enforceable limits to avoid the requirements of PSD prior to initiating a major modification
- RhymesWithMakeBoard attended an Enforcement Conference

Resolution

- Dropped PSD violation, pursuing State permitting violation in a Consent Order
- Particleboard is subject to 24A S.C. Code Ann. Regs. 61-62.1, Section II, *Permit Requirements,* which requires a construction permit application, to include mass emission data and emission calculations, including the potential uncontrolled and controlled mass emission rate of each criteria pollutant and other air contaminants such as VOCs, toxic air pollutants, and HAPs that will be emitted from each source covered by the application
- Emission calculations must be based on proper documentation that supports the basis of the emission rates

Lessons learned

- Permitting Vs. Enforcement
- Technically a violation – Yes or No?
- What would you have done?

Got Questions?