

MEMORANDUM

TO: Board of Environmental Protection

FROM: Jeff Crawford, Bureau of Air Quality

DATE: August 20, 2009

RE: Adoption: Chapter 131 Cutback Asphalt and Emulsified Asphalt

Statutory and Regulatory Reference:

A. Statutory authority.

38 MRSA Section 585-A provides that the Board of Environmental Protection "may establish and amend regulations to implement ambient air quality standards and emission standards. These regulations shall be designed to achieve and maintain ambient air quality standards and emission standards within any region and prevent air pollution."

B. Specific legal mandates requiring adoption.

Section 184 of the Clean Air Act requires states to implement or update reasonably available control technology (RACT) controls on all major VOC and NO_x emission sources and on source categories covered by a control technique guideline document. EPA developed a control technique guideline (CTG), *Control of Volatile Organic Compounds from the Use of Cutback Asphalt (1977)*, covering cutback and emulsified asphalt paving operations.

Location/Applicability:

The regulation will apply statewide.

Description:

Background: Section 184 of the Clean Air Act requires states to implement or update reasonably available control technology (RACT) controls on all major VOC and NO_x emission sources and on source categories covered by a Control Technique Guideline (CTG) document. EPA defines RACT as the lowest emission limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. In December 1977, EPA published a CTG for the use of cutback asphalt

which recommended replacing cutback asphalt binders with emulsified asphalt during the ozone season. Since asphalt paving operations occur predominantly during warm weather, when formation of ozone is most prevalent, the decreased use of cutback asphalt greatly reduces the VOC emissions from paving operations.

Asphalt used for paving is grouped into three general categories: hot-mix, cutback and emulsified. Hot-mix asphalt, the most commonly used asphalt, produces minimal VOC emissions because its organic components have high molecular weights and low vapor pressures. Cutback asphalt has traditionally been used as a tack coat between old and new layers of hot-mix asphalt, in seal operations, in priming new roadbed for hot-mix applications and cold-mix applications for pavement repair. In preparing cutback asphalt, asphalt cement is blended or “cut back” with a diluent, typically from 25 to 45 percent by volume of petroleum distillates, depending on the desired viscosity. Emulsified asphalt is now used in most of the same applications as cutback asphalt, but is a lower VOC alternative to cutback asphalt. Instead of blending asphalt cement with petroleum distillates, emulsified asphalts use a blend of asphalt cement, water and an emulsifying agent.

Discussion: The Department is proposing these amendments as part of its effort to satisfy the RACT requirements mandated under the CAA and regulations related to the 1997 8-hour ozone NAAQS. According to the EPA’s Final Rule to Implement the 8-Hour Ozone NAAQS (70 FR 71612, November 29, 2005), areas classified as “moderate” nonattainment or higher¹ must submit a demonstration, as a revision to the SIP, that their current rules fulfill 8-hour ozone RACT requirements for all CTG categories and all major, non-CTG sources. This demonstration can be made with either a new RACT determination or a certification that previously-required RACT controls represent RACT for the 8-hour ozone NAAQS. For those cases in which states have new stationary sources not covered by existing RACT regulations, or when new data or technical information indicates that a previously adopted RACT measure does not represent a newly-available RACT control level, states are required to update their rules.

Maine has determined that its previous asphalt paving regulations no longer constituted RACT under the 8-hour ozone standard. Chapter 131 was originally adopted in 1993, and was based on 1977 and 1979 CTGs published by EPA. Maine’s regulation, Chapter 131 Cutback Asphalt and Emulsified Asphalt, prohibited the use of cutback asphalt on public roads during the ozone season, but allowed for a number of exemptions.

As part of the regional effort to address the Federal 1997 8-hour NAAQS for ozone, the OTC commissioned a study (MACTEC Report February 2007) to quantify the emission reduction benefits from potential new controls, which they deemed to be reasonable. The Department’s proposed amendments are based on the OTC control measure summary (which serves as guidance to OTC member states to use to develop rules), included in the MACTEC Report and RACT regulations in other northeast states. Maine is proposing to amend its Chapter 131 Cutback and Emulsified Asphalt rule to prohibit the use of cutback asphalt during the ozone season and limit the use of emulsified asphalt to that which contains not more than 6.0 ml of oil distillate (as determined using the American Society for Testing and Materials Methods or American Association of State Highway and Transportation Officials Methods) for all asphalt paving activities.

¹ Because Maine is included in the OTC under section 184 of the CAA, the RACT requirements apply statewide.

Changes: The Department made two changes to the proposed rule based on comments received at the June 18, 2009 public hearing and during the comment period. First, the Department agrees that cutback asphalt should be allowed for use during the May 1 through September 15 time period if it meets the same standards as emulsified asphalt, i.e. the asphalt contains no greater than 0.1 percent VOC by weight or produces no greater than 6.0 milliliters of oil distillate. (The ASTM and AASHTO test methods for cutback asphalt have been included in Section 3). Second, the Department removed the requirement to store asphalt that does not meet the standards, in a sealed container during the May 1 through September 15 time period due to concerns of pressure build-up.

Environmental Issues:

Volatile organic compounds contribute to ground-level ozone formation or smog which aggravates respiratory ailments such as asthma, bronchitis, and emphysema. The presence of ozone impedes the breathing of even healthy people.

Departmental Recommendation:

The Department recommends that the Board adopt the rule as presented.

Estimated Time of Presentation:

10 minutes