

Memorandum

Florida Department of Environmental Protection

TO: Trina Vielhauer
THROUGH: Scott Sheplak
FROM: Jonathan Holtom *JH.*
DATE: November 5, 2002
SUBJECT: Asphalt Binders

According to information provided by Tom Davis, P.E., of ECT, Inc. for TECO's asphalt-based coal binder/dust suppressant:

- The asphalt-based binder would comprise approximately 3.5 weight percent of the treated coal.
- The asphalt-based binder (in the liquid phase) is an emulsion comprised primarily of asphalt (from 45 to 65%, by weight) and water (from 34.905 to 54.945%, by weight). It will also contain minor amounts of tall oil (0.03 to 0.05%, by weight) and caustic soda (from 0.025 to 0.045%, by weight).
- Their claim is that, at high combustion temperatures, they expect essentially complete combustion of the binder hydrocarbons to carbon dioxide and water.
- The sulfur content of the asphalt-based binder is 1.4%, by weight, which is lower than the sulfur content of the coal (2.5%) to which it is applied. (However, we do not have reasonable assurances that they will be able to proportionately and consistently reduce the amount of coal that is burned on an hourly basis to ensure that SO₂ will not increase as a result of this added sulfur.)
- For the 2,100 tons of treated coal in question, and assuming a minimum 90% control efficiency from their FGD, emission of SO₂ would be 0.2 tons. If allowed to use this asphalt-based binder treated coal for all of their annual usage (4.1 million tons of coal per year), based on the above information, the potential SO₂ increase is 402 tpy.

There have been no test burns for this material. We sent them a letter in May (attached) of this year telling them that we did not concur that this material falls within the scope of the "chemical dust suppressants" that are authorized by condition 57 of Appendix TV-3, of their Title V permit. We also told them in that letter that if they wished to use this material, they would need to apply for a construction permit that would allow a test burn and postpone the PSD applicability determination pending the test results.

Other types of binders that we have agreed fall within the scope of "chemical dust suppressants" include: molasses-based binders, polyvinyl acetate (the main component of chewing gum) emulsion, and various brands of latex-based binders. In addition to the asphalt-based binder, we

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have also previously denied concurrence for dust suppressants that are based on tall oil and tall oil pitch.

With the past requests with which we have concurred, we have sent a letter of acknowledgement (not a formal agency action) that the requested material falls within the scope of the Appendix TV condition. We have not placed any limits on the amounts since this material is applied to each piece of coal that they are authorized to burn. We do request that they keep a copy of MSDS for the particular material on site for agency inspection along with a statement from their fuel supplier that this is the only material that has been added to their coal. Any desires to change to a different suppressant required prior concurrence from the department.

Each request has been a case-by-case evaluation to determine if the addition of the particular material could result in a modification to the emissions unit. The condition that is in Appendix TV that allows the application of "chemical dust suppressants" to yards, roads and open stock piles was (apparently) intended for something to be sprayed over the surface of a pile. Because application of these dust suppressants is being applied to the entire surface area of each piece of coal rather than to the surface of a stock pile, the resultant amount of additional chemical is much greater than what I believe was originally intended. In order to help with these determinations, it may be helpful to promulgate a rule that defines what could qualify as a chemical dust suppressant.

As a reminder, what we are evaluating for use as a dust suppressant is being sold to the consumer as a "synthetic fuel" in order for the supplier to receive a tax credit for developing alternative types of fuel. In some cases, entrepreneurs are purchasing the coal from the mine for the same price that our power plants have been buying it, adding a chemical to the coal, then selling it to our power plants as a synthetic fuel at a discounted price.

Please let me know if you would like any further information regarding these dust suppressants.