

Lopez, Catherine

From: Greg Retzlaff [retzlaff@sterling.net]
Sent: Tuesday, January 15, 2008 1:59 PM
To: Lopez, Catherine
Cc: don.b@tfp-hi.com; William_Steiner@URSCorp.com; Karen_Beattie@URSCorp.com; John_Lague@URSCorp.com
Subject: RE: Biodiesel Grade

Hi Cathy

This is a response to your Jan 7, 2008 email to Don Bryan and John Lague where you asked about the grade of biodiesel that Tradewinds intends to utilize at the mill as an alternate fuel.

Tradewinds intends to utilize S15 biodiesel to the extent it is commercially available. We understand from Pacific Biodiesel's owners that they intend to offer S15. However, since they are not yet in operation, there is not 100% certainty that this supply will be available when Tradewinds is ready to begin operation. We further understand that Pacific Biodiesel is the only regional supplier of biodiesel. Therefore, it is difficult for Tradewinds to commit to using a particular grade of biodiesel.

In the unlikely event Tradewinds is forced to use S500 because of supply limitations, we propose that a limit be added to the permit on the quantity of S500 that can be used by Tradewinds to avoid Tradewinds emitting more sulfur than the current permit level of 4.22 lbs/hr average (while burning wood all other hours of the year).

The draft Covered Source Permit does not limit biodiesel usage, but does limit annual usage of distillate oil with a sulfur content up to 0.3% by weight to no more than 68,854 gallons. If we assume that S500 biodiesel has a nearly identical density (reasonable, since a blended product with a sulfur content this high would most likely contain a substantial fraction of petroleum diesel), then the volume of S500 that would represent the same SO₂ emissions as 68,854 gallons of diesel would be: $68,854 \times 0.3/0.05 = 413,124$ gallons. This is the volume limit recommendation for S15 biodiesel.

In order to preserve the total emissions of SO₂ at or below the level represented by the 68,854 hours of diesel fuel usage, six gallons of allowable S500 biodiesel would need to be subtracted for every gallon of 0.3% sulfur diesel fuel that is burned over any rolling 12 month period.

Tradewinds understands no similar limit on S15 biodiesel fuel is necessary because the SO₂ emission rate for this fuel, or in fact any biodiesel with sulfur content below 0.023% (230 ppm) on a weight basis, will be less than the wood combustion emission rate for wood of 0.025 lb SO₂/MMBtu that is cited in the draft permit.

Based on the reasoning above, Tradewinds suggests a condition similar to the following to preserve the SO₂ limit currently included in the draft permit :

Annual fuel usage of biodiesel fuel with a sulfur content between 230 and 500 parts per million by weight in the boiler will be limited to no more than 413,124 gallons during any 12 month rolling period. This limit will be decreased by six gallons for every gallon of diesel fuel oil used during any 12 month rolling period. Usage of biodiesel with a sulfur content below 230 parts per million by weight is not subject to 12 month rolling month limit.

Greg Retzlaff

Tradewinds

From: John_Lague@URSCorp.com [mailto:John_Lague@URSCorp.com]
Sent: Monday, January 14, 2008 1:16 PM
To: retzlaff@sterling.net
Cc: don.b@tfp-hi.com; William_Steiner@URSCorp.com; Karen_Beattie@URSCorp.com
Subject: Fw: Biodiesel Grade

Greg

Following our recent discussions, I am providing below some calculations aimed at determining reasonable fuel usage

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limits for biodiesel in the Tradewinds boiler. As shown in the attached e-mail, DOH wishes to establish such a limit that would apply in the event the biodiesel available to Tradewinds contains a sulfur content as high as 0.05% by weight (S500).

The draft Covered Source Permit does not limit biodiesel usage, but does limit annual usage of distillate oil with a sulfur content up to 0.3% by weight to no more than 68,854 gallons. If we assume that S500 biodiesel has a nearly identical density (reasonable, since a blend with a sulfur content this high would most likely contain a substantial fraction of petroleum diesel), then the volume of S500 that would represent the same SO₂ emissions as 68,854 gallons of diesel would be:

$68,854 \times 0.3/0.05 = 413,124$ gallons.

In order to preserve the total emissions of SO₂ at or below the level represented by the 68,854 hours of diesel fuel usage, six gallons of allowable S500 biodiesel would need to be subtracted for every gallon of 0.3% sulfur diesel fuel that may be burned over a one-year period.

Note that no such special limit on S15 biodiesel fuel is needed, because the SO₂ emission rate for this fuel, or in fact any biodiesel with a sulfur content below 0.023% (230 ppm) on a weight basis would be less than the wood combustion emission rate of 0.025 lb SO₂/MMBtu that is cited in the draft permit.

Based on the reasoning above, I believe Tradewinds could eliminate this issue by accepting a simple condition with the following specifications:

Annual fuel usage of biodiesel fuel with a sulfur content between 230 and 500 parts per million by weight in the boiler will be limited to no more than 413,124 gallons. This limit will be decreased by six gallons for every gallon of diesel fuel oil used during a calendar year. Usage of biodiesel with a sulfur content below 230 parts per million by weight is not subject to an annual limit.

Let me know if you have any questions or suggestions to improve this condition.

Regards - jsl

John Lague
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----- Forwarded by John Lague/SanDiego/URSCorp on 01/14/2008 11:39 AM -----

"Lopez, Catherine"
<catherine.lopez@doh.hawaii.gov>

To<John_Lague@URSCorp.com>, <don.b@tfp-hi.com>
cc"Hirai, Nolan S" <nolan.hirai@doh.hawaii.gov>
SubjectBiodiesel Grade

01/07/2008 12:03 PM

Hi John and Don,

A biodiesel question:

What grade of biodiesel is proposed for use at the Tradewinds facility (grade S15 or S500)? S15 indicating a maximum fuel sulfur content of 0.0015% and S500 indicating a maximum fuel sulfur content of 0.05%. Based on my calculations, a fuel sulfur content of 0.05% results in a higher SO₂ emission rate than the guaranteed 0.025 lb/MMBtu emission rate provided for wood burning. A

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sulfur content of 0.0015% results in lower emissions of SO₂ than the 0.025 lb/MMBtu.

If the S500 is proposed, limits on the quantity of biodiesel fired may need to be taken. Either way, the draft permit would be revised to indicate the proposed grade of biodiesel.

Please call or email me with any questions.

Cathy Lopez
808-586-4200