

Walker, Elizabeth (AIR)

From: Osbourn, Scott [Scott_Osbourn@golder.com]
Sent: Tuesday, June 10, 2008 1:07 PM
To: Read, David
Subject: FW: Hg in Forest Understory

It struck me that your estimate of potential mercury emissions from combustion of wood waste (even though the BG&E project is not combustion, but gasification of the feedstock) seemed high. I had one of Golder's engineers review your calculation, with the same assumptions. He came up with a value of 103 grams per year (0.23 lb/yr), not 123 lb/yr.

We're working on our final responses to the Department's RAI and will be in contact shortly.

Scott Osbourn (P.E.) | Senior Consultant | Golder Associates Inc.
5100 West Lemon Street, Suite 114, Tampa, Florida, USA 33609
T: +1 (813) 287-1717 | D: +1 (813) 769-5304 | F: +1 (813) 287-1716 | C: +1 (727) 278-3358 | E:
Scott_Osbourn@golder.com | www.golder.com

This email transmission is confidential and may contain proprietary information for the exclusive use of the intended recipient. Any use, distribution or copying of this transmission, other than by the intended recipient, is strictly prohibited. If you are not the intended recipient, please notify the sender and delete all copies. Electronic media is susceptible to unauthorized modification, deterioration, and incompatibility. Accordingly, the electronic media version of any work product may not be relied upon.

Please consider the environment before printing this email.

From: Cobb, Phil
Sent: Tuesday, June 10, 2008 12:09 PM
To: Osbourn, Scott
Subject: RE: Hg in Forest Understory

Scott,

If you do the unit analysis of that equation from David Read at the state, the result is grams/yr, not lb/yr. So his calculation overestimates the lb/yr emissions by a factor of 454 (the conversion of g to lb). The result of his calculation should be 103 g/yr, not 123 lb/yr. Let me know if there is anything else that I can help you with.

Phil

Philip Cobb (Ph.D., E.I.) | Staff Engineer | Golder Associates Inc.
6241 NW 23rd Street, Suite 500, Gainesville, Florida, USA 32653
T: +1 (352) 336-5600 | D: +1 352 336-5600 | F: +1 (352) 336-6603 | E: pcobb@golder.com | www.golder.com

This email transmission is confidential and may contain proprietary information for the exclusive use of the intended recipient. Any use, distribution or copying of this transmission, other than by the intended recipient, is strictly prohibited. If you are not the intended recipient, please notify the sender and delete all copies. Electronic media is susceptible to unauthorized modification, deterioration, and incompatibility. Accordingly, the electronic media version of any work product may not be relied upon.

Please consider the environment before printing this email.

From: Osbourn, Scott
Sent: Monday, June 09, 2008 6:57 PM

To: Cobb, Phil
Subject: FW: Hg in Forest Understory

Can you please do me a favor and double check this calculation by the DEP. This seems like an awful lot of mercury from gasification of wood waste. Charge to 073-89628-0100.

Scott Osbourn (P.E.) | Senior Consultant | Golder Associates Inc.
5100 West Lemon Street, Suite 114, Tampa, Florida, USA 33609
T: +1 (813) 287-1717 | D: +1 (813) 769-5304 | F: +1 (813) 287-1716 | C: +1 (727) 278-3358 | E:
Scott_Osbourn@golder.com | www.golder.com

This email transmission is confidential and may contain proprietary information for the exclusive use of the intended recipient. Any use, distribution or copying of this transmission, other than by the intended recipient, is strictly prohibited. If you are not the intended recipient, please notify the sender and delete all copies. Electronic media is susceptible to unauthorized modification, deterioration, and incompatibility. Accordingly, the electronic media version of any work product may not be revised upon

Please consider the environment before printing this email.

From: Read, David [mailto:David.Read@dep.state.fl.us]
Sent: Wednesday, June 04, 2008 9:02 AM
To: Osbourn, Scott
Subject: Hg in Forest Understory

Scott attached is an article on the concentration of Hg in forest understory. The range that is given is 14 to 71 nanograms per gram of fuel. An approximation of possible Hg emissions from BG&E (assuming 1% of the fuel is understory*) is:

$(730 \text{ tpd fuel}) \times (0.01 \text{ tons understory/tons fuel}) \times (2000 \text{ lbs/ton}) \times (454 \text{ grams/lb}) \times (((14 + 71)/2) \times 10^{-9} \text{ grams Hg/grams fuel}) \times (365 \text{ days/yr}) = \underline{\underline{123 \text{ lbs Hg per year.}}}$

This rough calculation shows why it is important to know exactly what the definition of woody biomass is. If it is solely chipped tree trunks then Hg emissions will probably be minimal, but if only a little bit of understory is included Hg emissions may be significant.

* Foliage and ground litter, not tree trunks

Thanks

David Lyle Read
Engineering Specialist II
Special Projects Section
Bureau of Air Regulation (BAR)
Division of Air Resource Management (DARM)
Florida DEP
Ph: 850-414-7268 or David.Read@dep.state.fl.us