

## Conference Call Notes for October 24, 2005 Dust Emissions Joint Forum

### Participants:

Tom Moore	Duane Ono	Lee Gribovicz	Lee Alter
Chat Cowherd	Gail Cooke	Julia Lester	Michael Uhl
Mike Edwards	Ken Hamilton	Rodney Langston	Tina Suarez-Murias

### Agenda Items included:

- Agenda for DEJF Meeting - Tempe, AZ, November 15-16, 2005
- Dust Definition, Julia Lester, ENVIRON
- New Mexico SIP Pilot Project, Gail Cooke, NMED
- Fine Fraction Draft Report, Chat Cowherd, MRI
- Causes of Dust, Lee Alter
- Windblown Dust Inventory, Lee Alter

### ★ Tempe Meeting Agenda ★

Lee Alter sent out a draft agenda for the November 15-16, 2005 Dust Forum Meeting in Tempe. Duane Ono went over the topics, and it was the general consensus that this agenda covers the necessary topics for the meeting. This meeting will precede a meeting of the Attribution of Haze Group. You are welcome to attend all or part of the AoH meeting. For travel information and a copy of the agenda see <http://www.wrapair.org/cal/calendar.php?op=view&id=441>.

### ★ Dust Natural/Anthropogenic Definition ★

Environ was awarded this \$65K project in late February. Julia Lester reported that they are working on the Case Study portion of the project, which will investigate the Salt Creek Wilderness in New Mexico and the Saguaro Wilderness in southern Arizona. She noted that under Step 4, the concept is that if dust was below a certain level, then that would be natural background even if it was affected by anthropogenic activities. But defining that threshold is proving to be difficult. A draft study will be available for the Tempe meeting.

### ★ New Mexico SIP Pilot Project ★

Gail Cooke noted that the technical committee consists of Duane Ono, Mike Edwards, Bruce Friedl and herself. They are working on a Pilot Project to test and demonstrate how various WRAP technical and policy products can be integrated to address the contribution of dust to regional haze at Class I areas in the WRAP region for the 2008 Regional Haze SIP's. Pilot SIPs for the Salt Creek and White Mountain Wilderness Areas in New Mexico will developed under Section 309 requirements for this project. DRI was contracted to help with this project since it's a continuation of their Causes of Dust project. A meeting of the technical review team is planned for Roswell, NM in March during the windy part of the year.

### ★ PM<sub>2.5</sub> Fine Fraction Analysis ★

Chat Cowherd explained Midwest Research Institute had released the final report on the PM<sub>2.5</sub> fraction. [Download at <http://www.wrapair.org/forums/dejf/documents/fffd/index.html>] Chat has spoken with John Bosch at EPA and they are eagerly anticipating the proposed changes to the

PM<sub>2.5</sub> emissions factors for fugitive dust in AP-42. Proposed revisions for AP-42 will be available soon. We will consider incorporating these changes into a revision of the WRAP Fugitive Dust Handbook. The PM<sub>2.5</sub> ratios that MRI is proposing are shown in the table below. Note that the agricultural tilling ratio was changed from the 0.1 value that was discussed during the conference call to 0.2 because the original PM-2.5 test data for ag tilling may be fine. If the data is fine, no adjustment is necessary. These AP-42 factor changes will be discussed at the Dust Forum meeting in Tempe next month.

### Proposed Particle Size Ratios for AP-42

Fugitive Dust Source Category	AP-42 Section	PM <sub>2.5</sub> /PM <sub>10</sub> Ratio	
		Current	Proposed
Paved Roads	13.2.1	0.25	0.15
Unpaved Roads (Public & Industrial)	13.2.2	0.15	0.1
Construction & Demolition	-	0.208 <sup>1</sup>	0.1
Aggregate Handling & Storage Piles	13.2.4	0.314	0.1
Industrial Wind Erosion	13.2.5	0.40	0.15
Agricultural Tilling	-	0.222 <sup>2</sup>	0.2 (no change)
Open Area Wind Erosion	-	-	0.15
Notes:  <sup>1</sup> AP-42 Section 13.2.3 suggests using emission factors for individual dust producing activities, eg. materials handling and unpaved roads. The WRAP Fugitive Dust Handbook recommends using a fine fraction ratio of 0.208 from a report prepared for the US EPA, Estimating Particulate Matter Emissions from Construction Operations (MRI, 1999).  <sup>2</sup> Agricultural tilling was dropped from the 5 <sup>th</sup> edition of AP-42. The WRAP Fugitive Dust Handbook recommends using a fine fraction ratio of 0.222 from Section 7.4 of the California Air Resources Board's Emission Inventory Methodology (CARB, 2003).			

### ★ Causes of Dust Analysis ★

DRI submitted a draft of its "Causes of Dust" report. The report characterizes the likely sources of dust for worst-days days at different sites for the period from 2001 to 2003. The study investigated local, regional and international (Asian) sources of dust impact in the WRAP region (644 records). The report is provided in three parts, totaling about 4 MB. It can be downloaded at [http://www.wrapair.org/Lee/Causes\\_of\\_Dust/](http://www.wrapair.org/Lee/Causes_of_Dust/)

DRI also created a back trajectory / wind erodibility map for each day in the database. A sample map and legend are provided in Figures 43 and 44 on the site above. There are a total of 210 maps for 177 days. (Some days have more than one map since two or more events may have occurred in disparate parts of the WRAP region.) The file containing these maps is big: 184 MB

when compressed. When uncompressed, the files consume 40 GB. DRI is going to make these maps available in a more convenient format when the final report is submitted. In the meantime, if you want to examine some of these maps, the 184 MB compressed file is posted on the page below (maps.zip). Using the Unzip program, you can extract one or a selected few maps at a time if you don't want to blow up your hard drive. <ftp://ftp.dri.edu/pub/Ilias/>

DRI will present these results and discuss next steps at the Nov 15-16 meeting in Tempe (90 minutes for presentation and discussion). The project review team will have conference call on November 7 at 11 am Mountain. To participate in that call, dial 312-461-9324, then 685926.

#### ★ Windblown Dust Model ★

The windblown dust model is done, and Lee Alter indicated that as many improvements to the data have been made as possible given project resources and given the comments received during the project and in response to the draft report. The CMAQ Emission Modeling is proceeding with the resultant dust inventory. Lee Gribovicz explained that he had received some concern over the accuracy of this inventory, and he asked about what opportunity there had been for comment on the windblown inventory output. Duane felt that the inventory had been a topic of discussion on a number of DEJF calls and meetings, and that because of the highly variable nature of wind blown dust emissions, refinements to the model inputs were not likely to significantly improve the model. Duane also noted the availability of other Dust Forum results (e.g., Causes of Dust ambient analysis) intended to balance or compensate for weaknesses in the windblown dust model. Mike Uhl explained that Staff in the Clark County Planning Department, have looked at the results, and have concerns over what has been presented. He asked about some sort of formal process to elicit comments, and he wondered if the dissatisfaction from stakeholders is high, what alternatives were left to the WRAP to improve the results. Duane thought that this was a case of “buyer beware,” and the results are what they are. The WRAP does need a placeholder for windblown dust in the §308 analyses, and others noted that this dust model concept was developed prior to the formation of the DEJF. Tom Moore felt that it was best to move on to the question of how to work within the uncertainties that certainly were present with the windblown dust inventory, and not dwell on improving a product that most feel is impossible to fully quantify. It was emphasized that the WRAP wouldn't draw conclusions on RH control strategies based on these results alone, but that the whole process of the Attribution of Haze work was to obtain a solid “Weight of Evidence” from all the modeling and monitoring analyses available to the Planners. It was agreed that a final report should be written and it should summarize the concerns of the group regarding the use of the wind blown dust emissions inventory.

#### ★ Next Call ★

The DEJF calls are typically held on the fourth Tuesday of each month, but that would be the week of Thanksgiving. And with the DEJF meeting being held a couple of weeks earlier, it was decided that the November call would be canceled. A December conference call time will be set at the November meeting.

*Much thanks to Lee Gribovicz for his help in drafting these notes.*