From: WESTERSUND Joe
To: BOLING Brian
Cc: artglass2016
Subject: art glass rule: responding to comment re Bullseye monitoring and wind direction
Date: Friday, August 19, 2016 10:03:53 AM

Hi Brian,

In the art glass permanent rulemaking we received several comments about possible other sources of the metals pollution around Bullseye. Some gave detailed arguments about wind direction. Here's my summary:

"The pollution measured around Bullseye may be coming from other sources. DEQ should have collected more wind direction and velocity data. If DEQ does collect that data, it is likely that metals pollution near Bullseye is actually coming from fly ash used in making cement at the Lehigh Cement facility. There may be other point sources and mobile sources of these pollutants."

Would you be the right person to draft a response to that summary comment?

-Joe

----------comment text below----------

It's important to use fundamental scientific methods to describe the problem around the Fred Meyer Daycare. There is some serious flaws to the methodology used to document the heavy metals detected in the air. The biggest problem with the Wide Area Sampling Plan is that the DEQ failed to collect wind data. Without wind data, it is speculation as the the source of the heavy metals around the daycare. DEQ needs to start over with the plan or include wind direction & velocity data with the plan. Because wind data wasn't collected, the DEQ has put theory ahead of facts - this leads to trying to get the facts to fit the theory. It's supposed to be the other way around - do experiments to collect data - then form your theory based on the results. As it is, when you do compare wind direction & velocity data - it's pretty apparent that over 90% of the sample data was taken when Bullseye Glass was downwind or abeam the air quality monitoring station. When you look at the data to see where the heavy metals are coming from - it points across the street to the Lehigh Southwest Cement. The highest lead levels detected at Fred Meyer were when the monitoring station was directly downwind of Lehigh. Lehigh Cement was upwind of the monitoring station for 51 days out of 104 - This means that the data that the DEQ is referring to to make decisions is based mostly on the heavy metals from Lehigh Cement. The problem is that the Lehigh Cement is adding fly ash to the concrete. Fly ash is coal ash. If you look at the air sample data, you will see the same ratio in heavy metals in fly ash as whit is detected. The data also shows that particulate is being lofted into the atmosphere via the same physical processes as dust storms - higher the wind velocity, higher the concentration of particulate. The air sampling data is consistent with cement dust being kicked up by the wind. The data is not consistent with chimney emissions. When is the DEQ going to do some *real* science to solve this problem? When is the DEQ going to tell the parents of the kids at the daycare that their kids daycare is across the street from a hazardous waste treatment facility. Concrete is just one method to encapsulate contaminants - it's just in process across the street until

water and aggregate is added to solidify it. The fly ash is just as hazardous as the fly ash that is regulated at the generator - probably explains the heavy metals in north Portland at CalPortland Cement. When id the DEQ going to tell people about the hazardous waste that is being treated in Portland. When is the State going to regulate the safe handling & transportation of fly ash?
https://data.oregon.gov/views/54i7-gnrh/files/cd3696dc-b2d9-400c-bcfc-f2279424eed8?filename=wind-by-degrees.png&content_type=image%2Fpng

There is really no way to proceed without all the facts about the air quality. Without wind direction & velocity data, you cannot effectively identify or rule out the sources of heavy metals detected at the daycare. DEQ needs to start over - DEQ needs to collect wind data at the same location and times the air sampling is done. DEQ also needs to understand that ambient air monitoring in an error - ambient air monitoring is typically employed in buildings with closed environments. For outside, wind data is imperative as the atmosphere is dynamic. When wind direction & velocity data is compared to the air sampling data - it indicates that the highest heavy metal concentrations detected at the daycare came from nearly 40 degrees south of Bullseye Glass - the location of Lehigh Southwest Cement. Lehigh is within 100' feet of the monitoring station with a huge footprint - meaning that anytime the wind is from 285 through 325, the air monitoring station is downwind. Wind direction and velocity data indicate that the air monitoring station was downwind of Lehigh for 51 out of 104 days sampled - about 6 days it was downwind of Bullseye Glass.

Similar pattern at Powell Park & 22nd - Monitoring station is only downwind for a few days out of 104.

The detected levels are quite different between the two stations. All things being equal, then the detected levels should be similar or closer than they are. The reason for the discrepancy is that Powell Park monitoring station is farther away from Lehigh.

It's not possible to engage in rulemaking without *all* the facts. The proposed rules will do nothing to reduce the heavy metals being lofted into the atmosphere at Lehigh. The infants & children under 5 will still be in harms way. This IS the reason why wind direction & velocity data is critical. The health & safety of children is at stake. DEQ must get it right the first time. STOP - START OVER COLLECT WIND DATA.
https://data.oregon.gov/views/54i7-gnrh/files/465aa1ac-6426-4a7a-9699-56dfe7ac4bdc?filename=daycare-cement.jpg&content_type=image%2Fjpeg

Graphical depiction of wind direction data from May 8, 9, 10. Wind direction & velocity data do not support the DEQ folk theory about the sources of heavy metals in SE Portland. Today, Flint reminds us why is it critically important to use sound scientific methods when dealing with lead exposure.

Who is responsible for this? There needs to be some accountability at the DEQ. How can the State govern effectively without all the facts?
https://data.oregon.gov/views/54i7-gnrh/files/a5bdedc1-a026-485a-8858-22275c16cc61?filename=wind-dir+copy.png&content_type=image%2Fpng

This is the info graphic I intended to include in previous comments.

When wind data is compared to the air sampling data, it shows for example, the winds on 5/9/2016 were from 299 from 8 to 25 mph. The day preceding, 314, the day after 308. Wind direction and velocity data indicate that the source of lead detected near the daycare was from Lehigh Southwest. Encapsulating toxins in concrete is one method of hazardous waste treatment. Fly ash is added to improve performance. Sampling data detected a similar rate of occurrence of heavy metals.

Because no wind data was collected or analyzed, this has led to the perpetuation of folk theory as fact. DEQ needs to get all the facts first. This is why it is necessary to STOP & START OVER.

No wind data is a HUGE error. How can you say for sure where things are coming from when you have this daycare that is jutting into industrial zoned land - or, a target rich environment. It's imperative that the DEQ either identify or rule out sources in this environment.

Impossible to engage in rulemaking with shoddy science.
https://data.oregon.gov/views/54i7-gnrh/files/182a2f9c-dd79-4d80-b6e9-0f2b94a4fd27?filename=wind-by-degrees.jpg&content_type=image%2Fjpeg

How does the DEQ reconcile the placement by the moss study of the hotspot around Uroboros Glass west of the glass factory considerably? Is there hazardous waste being treated by CalPortland cement along the Willamette? Wind direction & velocity data is needed to identify or rule out sources.

Joe Westersund
Oregon Department of Environmental Quality
811 SW 6th Avenue, Portland, OR 97204
(503) 229-6240 office
westersund.joe@deq.state.or.us
Usual Schedule: 8am - 5pm, M-F