Harriet Tubman Middle School

Environmental Technical Advisory Committee

Meeting Minutes

October 29, 2018

4:00 – 6:00 pm

Attendees

Director Paul Anthony, Anthony Barnack, Dr. John Burnham, Dr. Raul Cal (remote), Mary Peveto, Joe Crelier, Dr. Jae Douglas, Megan Duenas, Daniel Forbes, Dr. Elliott Gall, Dr. Linda George, Dr. Christine Kendrick, Virginia LaForte, Aurelie Laguerre, Dr. William Lambert, Director Rita Moore, Mary Peveto, Tom Roick, Director Mike Rosen, Steve Simonson and Sarah Smith.

Agenda & Minutes

Building Update

Steve Simonson presented several photos of the newly remodeled interior and exterior. Included in the photos were:

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There were unanticipated monitoring delays:

- Wildfire smoke events – Abated mid 9/18
- Ongoing presence of diesel powered construction equipment – Abatr288.01-1.39 Td<0078>Tj/TT1 1 Tf0.63 0

Ratios of return air contaminant levels divided by outdoor contaminant levels are good indicators of pollutant infiltration and can indicate indoor sources of pollutants. For example:

Black Carbon RA/OA = 0.17

UFP RA/OA = 0.044

$PM_{2.5}$ RA/OA = 0.42

PM_{10} = 0.62

Question (Dr. Rita Moore): Is HVAC scrubbing black carbon? Answer (Dr. Gall): Yes, removing 90%.

Outdoor and return air monitoring data for a number of volatile organic compounds (VOC), benzene, toluene, xylenes and ethyl benzene were compared to Portland background levels and Oregon ABCs. Each of these are at or below background and ABCs except benzene. Dr. Lambert stated that "Indoor average levels of VOCs are below the Oregon DEQ's ABCs, except for benzene. However, indoor benzene levels are substantially reduced." ABCs represent protection against one excess cancer in-a-million over a 70 year exposure.

$PM_{2.5}$ classroom levels are less than 10% of outdoor levels while outdoor levels of $PM_{2.5}$ drop substantially by late morning. Basketball court levels are greater than roof levels adjacent to HVAC intake.

UFP - A table was presented showing the UFP transect data. Levels range from 43,000/cm^3 between 9-10 AM and 6,600/cm^3 after 3:34 PM.

Dr. Lambert then presented the limitations on conducting a risk assessment.

- Further monitoring is needed to evaluate the consistency of HVAC performance over a longer period of time.
- Adjustments in the delivery of filtered air to various indoor zones may further reduce infiltraeirfpredng lsen nsed,rN8 (0O3 (r2)10 ()-4 (ehrw 12 TD[10.1ug-4 (e)r)14 w rlln ns0 (do)2 (o w)4 (f

Should provide data for elevated day. HVAC serves to prevent sustained exposures to students and staff. Students have short-term exposure while outside. We have provided advice to reduce these exposures. (This commenced an extended committee discussion involving the basketball court and students going outdoors in the morning hours.)

Wind Tunnel Modeling

The work presented by PSU for the wind tunnel project included process and rationale for experiments to be done. These include four variations, wall/no-wall and current/expansion, along with four wind directions. The manufacturing of the scaled models was outlined along with the techniques and photos. Preliminary measurements were shown for the south direction at two locations. One approaching HTMS and one over HTMS. The results presented were (all 4 (o)-m(e)-1 (4.