December 21, 2017

Subject: Health Consultation
Public Comment Version
Keystone Sanitary Landfill
Dunmore, Lackawanna County, Pennsylvania
December 12, 2017

To: Farhad Ahmed, MBBS, MPH,
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Bureau of Epidemiology,
Division of Environmental Health Epidemiology
Pennsylvania Department of Health

AND

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From: John S. Mellow
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COMMENT ONE

I would like to specifically focus on the subsurface vapor intrusion pathway that has been documented in the past, and discussed on occasion by this writer. The following section provided from the report to supplement additional concerns of this writer.

Conclusion 4 Subsurface vapor exposures: PADOH and ATSDR conclude that a data gap exists for assessing current and future potential exposures from subsurface vapor migration from the landfill into residences (i.e., vapor intrusion). Planned changes in landfill operations (including excavation, liner construction and landfilling in an area closer to the Swinick community) could adversely impact future subsurface vapor migration pathways.

Basis for Conclusion

• The subsurface geology beneath the Swinick neighborhood is complex due to mining and other human activities that modified the subsurface in the area.

• Elevated concentrations of carbon monoxide (CO) and volatile organic compounds (VOCs) have been detected in subsurface vapors and indoor air of Swinick homes in the past, but the cause of these contaminants is not known.
• Various agency reports have given different interpretations of the significance and potential source(s) of the contaminants detected in the subsurface and indoor air in the Swinick community in the past.

This writer completely agrees with this recommendation but wishes to supplement this concern with at least one historical professional paper (September 12, 2016) that the Pennsylvania Department of Environmental Protection (PADEP) has refused to further discuss. This professional paper is provided as Attachment One, and also can be downloaded at:

https://scholarsphere.psu.edu/concern/generic_works/g445cd30z

Please note that while carbon monoxide was one of the subsurface contaminants at elevated concentrations near air monitoring wells adjacent to the landfill, the levels appeared to possibly be a seasonal elevation based on the PADEP monitoring program. The potential of carbon monoxide (not attributed to the PENNDOT contractor blasting) should not be minimized as concentrations exceeded 100 parts per million on occasions.

One of the main problems was displacement of oxygen due to high concentrations of carbon dioxide. While carbon dioxide may be debated as a “contaminant”, the main concern should be that oxygen was displaced to “dangerous” levels at several locations not limited to the Housing and Urban Development (HUD) units that were constructed over a deep vertical mine tunnel. The continuous monitoring for oxygen also noted non-detection periods in boreholes located in dense residential areas.

As noted in the ATSDR/PADOH Recommendations:

“PADOH and ATSDR recommend that PADEP should consider working with the landfill to perform vapor intrusion investigations in the Swinick community to evaluate current indoor air levels of VOCs and to ensure that conditions do not change in the future after new operations commence in the historic Dunmore landfill area.”

Please include carbon dioxide that was one of the most serious concerns due to displacement of oxygen in the upper and lower Dunmore areas, and carbon monoxide that may be a subsurface concern although possibly seasonal.

As stated in the professional paper and in past media articles it would be possible that there is no longer a problem at this point in time due to gas generation decreases as well as construction changes in recent years in the unlined landfill area. However, with no current data there is no scientific logic that the problem has increased, decreased, or remain the same.

The objective would be agreement with this conclusion and support of a continued vapor
intrusion assessment (and abatement if necessary) program regardless of the expansion, and comments on this professional paper provided as an additional tool for the health agencies to consider. This professional paper also notes that the potential source of the unlined section of the landfill was not just the technical evaluation of this writer, but based on discussions of various lines of data with multiple state and federal agencies in the past. The specifics of these writers concerns should be considered on the attached professional paper.

COMMENT TWO

“PADOH and ATSDR recommend that residents monitor air quality alerts for the area (for example, via EPA’s AirNow website for the Scranton area at https://airnow.gov/index.cfm?action=airnow.local_city&mapcenter=0&cityid=608) and take protective actions as needed. This is particularly important for sensitive populations, older adults, and children.”

The citizen monitoring of the particulate matter (PM2.5) and ozone at the Scranton-Wilkes Barre air monitoring station would be another excellent recommendation. However, although this monitor may be relevant to the local region, the location (Avoca Airport?) may not be reflective or local air quality in the predominant downwind directions from the landfill and also from the combined power plants within a relatively short distance. This writer would support additional continued monitoring from this combined area considering the general wind rose patterns, observed local inversions, and potential air contaminants associated with the landfill, power plant generation, and Marcellus formation gas distribution. This writer has requested that the PADEP provide site specific monitoring in the KSL and power plant area. The email (December 20, 2017) is provided as Attachment Two and the relevance is the arguments and conclusions on the rationale for this monitoring.

COMMENT THREE

There are current statements in the media that seem to “cherry pick” the conclusion on the lack of a connection observed chemical concentrations and cancer risk based levels. This writer’s concern would be the lack of citing the “limitations” that may not reflect the expansion and that the data would be from a limited (although good from a realistic sampling program) time-frame.

In particular, the report does note that not all landfill contaminants may have been detected during the monitoring program. This can be a common problem even with the highest quality air monitoring plan that considers what can be quantitatively or qualitatively evaluated. The following statement was one of the concerns of this writer:

“In addition, a common odor causing landfill contaminant (hydrogen sulfide) was detected at high levels (13,624 μg/m3 or 9,745 ppb) during one of the MAU monitoring periods, but was not detected during the community-based air monitoring. This observed difference in our monitoring data sets warrants further
evaluation if strong sulfur odors are observed in the community in the future.”

Considering the nature of hydrogen sulfide with respect to odor threshold and potential nuisance and/or risk based levels (re: Precision National Superfund Site) that require specific types of low level detection meters believe this should be part of a continued monitoring evaluation as stated in the report. This writer would suggest that discussions with the PADEP Regional Emergency Response Team regarding potential hydrogen sulfide investigations be a part of this planning for potential continued monitoring.

Thank you for consideration of these public comments and feel free to contact me if you have any questions or concerns on the above comments. There is no need for significant comment on the vapor intrusion pathway (and the lengthy professional paper). These are provided for your consideration on addressing this recommended subsurface monitoring.

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