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Air Monitoring at ARCO Site Fire, Nov. 1, 2017

Ohio EPA has been monitoring air quality for particulates and asbestos regularly at the Arco facility since the \$6 million cleanup began in July 2017. Since the fire started at the facility on Oct. 28, the Agency has collected real-time air quality information (tens of thousands of air quality samples) at multiple locations at and around the ARCO facility fire. Three types of monitoring have been occurring simultaneously since the beginning of the fire: continuous particulate matter; multi-point, real-time scan; and canisters, so that we can provide accurate data to the public and provide appropriate precautions as warranted.

- A continuous particulate monitor has been operating at the site since the initiation of the waste removal process in July. This monitor measures fine particulate matter that is small enough to be inhaled deep into the lungs. The level of fine particulates are usually a good indicator of potential health issues. These particles are also regulated by U.S. EPA's national air quality standards.
 - Concentrations measured to date both before and during the fire remain below the 24-hour average standard of 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).
- Three hand-held and fixed station multiple-gas, real-time detection monitors tested for total volatile organic compounds (VOCs), carbon monoxide (CO), oxygen (O_2), hydrogen sulfide (H_2S), and the lower explosive limit (LEL) for combustible gas. Measurements are taken every two seconds. CO, O_2 and LEL are monitored for the immediate safety of personnel on site and surrounding community, while total VOCs are used as a rough estimate for potentially hazardous volatile compound concentrations and to identify locations for more detailed sampling.
 - These monitors were placed upwind, downwind, and between the fire and the residences near the site, to ensure a complete 360-degree assessment of pollutants released from the ARCO site.
 - In summary, no instantaneous measurement(s) exceeded the short-term health effects threshold for VOCs taken near the residential sample locations.
 - These devices remain deployed onsite to provide continued constant measurements of air pollution generated by the site.
- Air pollution canister samples have been collected at three locations surrounding the site. Stainless steel canisters passively collect instant, 1-hour and 24-hour air samples that are quickly transported to Ohio EPA's laboratory for analysis. Over 85 VOCs can be identified by this process.
 - Instantaneous samples were collected at the upwind, downwind and residential locations on October 28th, approximately 11 a.m. No concentrations were detected above short-term health screening levels.

- Two sets of 1-hour samples were collected on October 28th at approximately 3:30 and 5 p.m. in the three locations. Results also were below health-based short-term screening levels.
- The first of 24-hour canister samples were collected at the three locations October 28th beginning at 3 p.m. These samples also yielded results below health-based short-term screening levels at the residential site.
- The 24-hour canister sampling is being continued at the site. We now have three 24-hour samples collected continually, every day, with analysis every night, to begin assessing intermediate-level exposure to any detected air pollution compounds. The samples collected near the residences have consistently demonstrated concentrations similar to concentrations in areas unaffected by the event. This is determined by comparing these residence air quality measurements to the upwind values and the pollutant averages exhibited throughout our urban areas in Ohio. This will provide the most detailed and precise information regarding longer-term average emission(s) from the fire.

Ohio EPA has requested assistance from U.S. EPA, and they are now onsite to help with air monitoring to free up Ohio EPA's monitoring resources. Ohio EPA continued to maintain the fine particulate monitoring and collect the canister sampling surrounding the ARCO fire. U.S. EPA is assisting with the deployment of the multi-point, real-time scanning equipment at four locations surrounding the fire. Concentrations measured by these units are reviewed by air pollution toxicologists three times a day and compared to short-term health protection values. The results continue to demonstrate no exceedances above these screening values.