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Commissioner
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**Summary of Microscopy Analysis of
Sampling Filters collected during and after
the November 9-11, 2016 Lackawanna Fire**

**Bureau of Air Quality Surveillance
Division of Air Resources
NYS Department of Environmental Conservation**

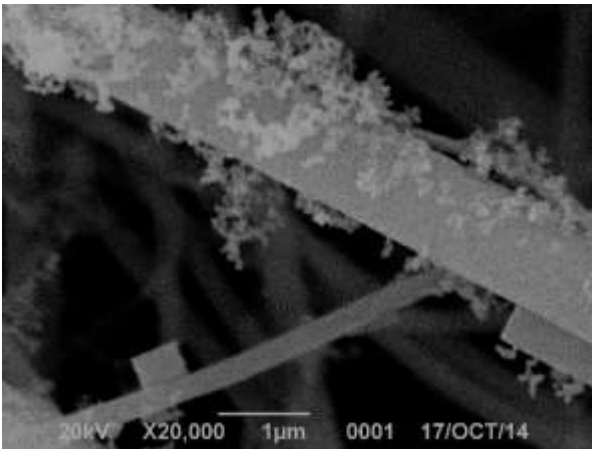
Lackawanna Fire: Microscopy Summary

In November 2016, the New York State Department of Environmental Conservation (NYSDEC) responded to a large structure fire that broke out on November 9th at the former Bethlehem Steel plant on NYS Route 5 near Lincoln Ave. The DEC's initial response included staff from the spills response program who were able to assist in the evaluation of the impacts on water and air quality in the immediate vicinity of the structure. Additional staff from the Division of Air Resources were called to help assess the impacts of the plume on neighborhoods downwind of the fire.

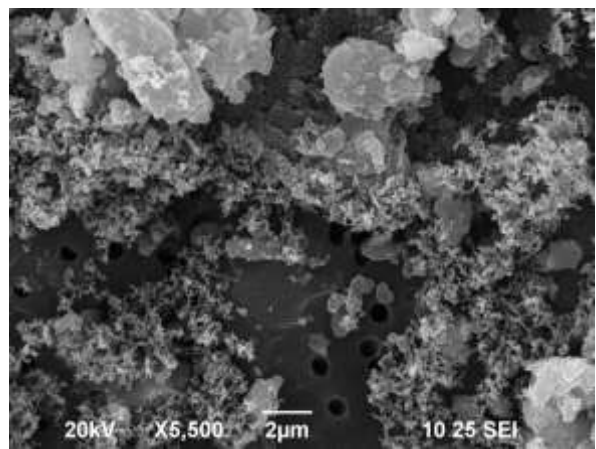
DEC assisted the on scene EPA emergency response staff by placing two Aerosol Monitors in areas where the plume from the fire was expected to impact residences. The monitors were able to provide hourly data and also could collect samples of the filtered air stream for subsequent analysis. Eight samples were collected over approximately 2 weeks. The sampled filters were submitted to the NYSDEC Particle Identification Laboratory for analysis. The laboratory's objective was to determine if any hazardous particulate matter was present in the samples.

An image of one of the sample filters is included below. All of the samples showed evidence of combustion related particulate matter. The samples from the Lackawanna fire have similar characteristics to simulated combustion related petroleum materials. The image below on the left shows what petroleum products look like after combustion.

Laboratory simulated combusted petroleum sample



Cleveland Ave and Electric Ave.



The sample filters showed that the majority of the particulate matter collected on the filters was consistent with combusted petroleum products. Petroleum based products that produce this type of particulate matter can include plastic and other synthetic materials. Elemental analysis was performed on the sample filters as well as on a piece of material that floated from the fire onto a nearby property. The analysis found carbon, calcium, silicon, salts and other commonly occurring metals found in the earth's crust.

The microscopic and elemental analysis found that the samples represented combusted petroleum based materials. The results are consistent with samples impacted by a structure fire.