

New York State Department of Environmental Conservation

Division of Air Resources

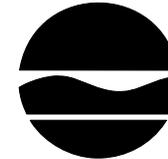
Bureau of Air Quality Surveillance – Air Pollution Microscopy Lab

625 Broadway, Albany, New York 12233-3256

Phone: (518) 525-2741 • Fax: (518) 525-2730

Website: www.dec.ny.gov

Dlhershe@gw.dec.state.ny.us



Joe Martens
Commissioner

TO: Al Carlacci

DATE: October 10, 2012

FROM: Dan Hershey

SUBJECT: Second Round of Attica Residential Samples –Hillcrest Industries Area – Wyoming County

A second round of residential samples were collected in the Hillcrest Industrial area of Attica by Michael Emery. Region 9 collected the samples and submitted them to the BAQS Microscopy Lab for analysis. The lab was asked to determine the composition of the dust impacting the neighborhood and also to determine if a source or sources at Hillcrest Industries was contributing to the problem.

In my earlier report to you (August 30, 2012), I indicated that particulate from Hillcrest Industries was impacting on the 4 residential areas sampled. Analysis for the second round of sampling has shown that the four residences are still being impacted by particulate from Hillcrest Industries.

Of the 4 residential complainant samples, all had some impact from one or more sources at Hillcrest. In addition to the materials common to the previous samples, a porous black sooty material was noted. These particles were quite large in size, some being 90 microns or larger. In general the second round of sampling was very similar to the first round. Fractured glass continues to be the most predominant particulate observed. There were less glassy spheres and slag in the second round.

Sampling

Michael Emery placed out four (4) residential samplers (large Petri dishes w/ carbon tape) on 8/23/2012. They were left out for 7 days and left at the same locations previously sampled. The addresses are included below. Previously and included in my August 30th report to you, eleven (11) source samples were collected at Hillcrest Industries and submitted for analysis. This latest group of samples was compared to those previously collected source samples.

Residential Samples:

Sample #1 – 92 Georges Dr

Sample #2 – 20 Jackson St

Sample #3 – 9 South Pearl St

Sample #4 – 27 Favor St

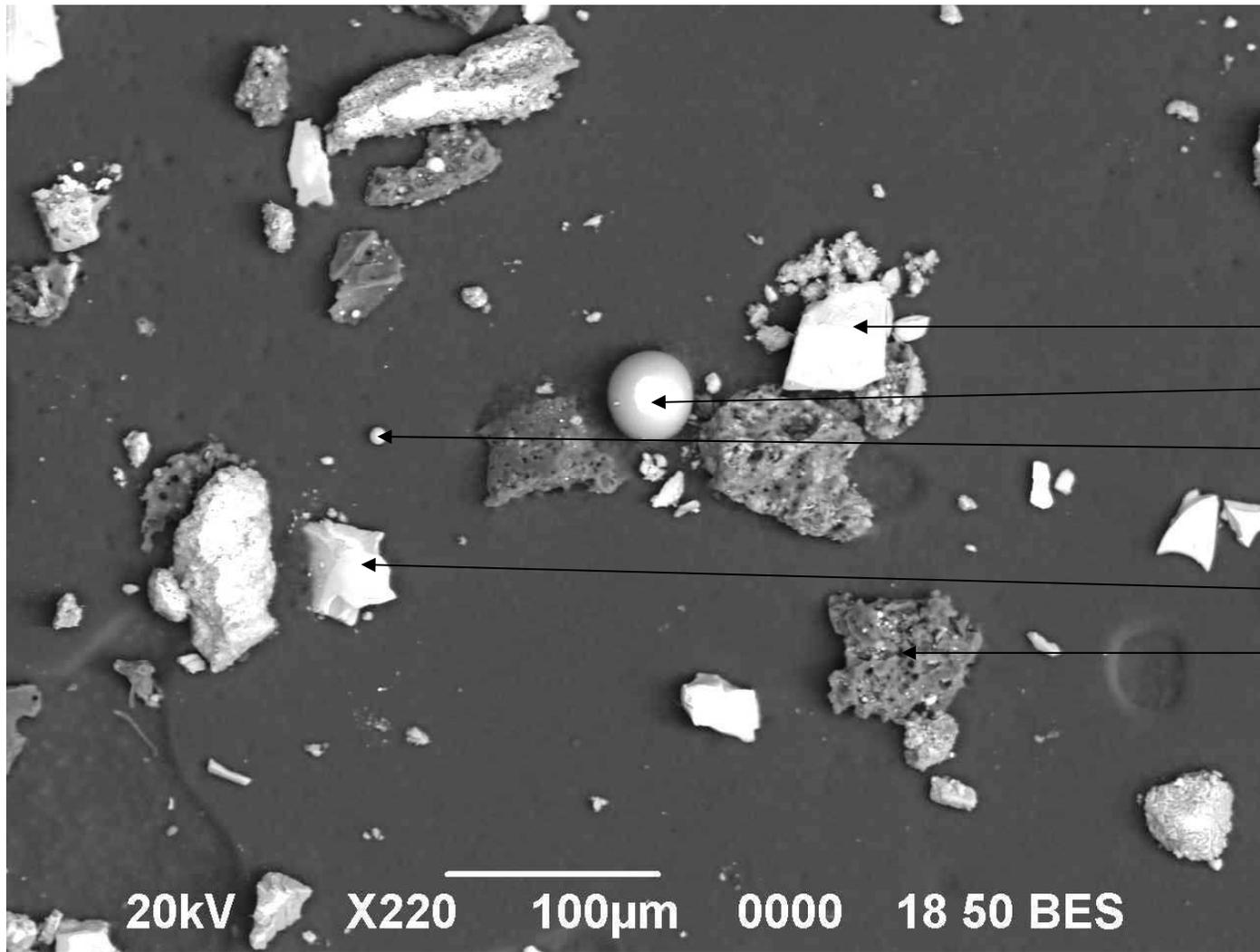
Analysis

The samples were analyzed by both optical and scanning electron microscopy. Photomicrographs of the samples were collected and are included in this report. The samples were compared to reference materials found in the McCrone “Particle Atlas,” to in house reference standards, and to source samples collected by the Region. Particle sizing was performed on all residential samples. Attribution of source particulate to residential samples was based on the morphology of the samples.

RESULTS

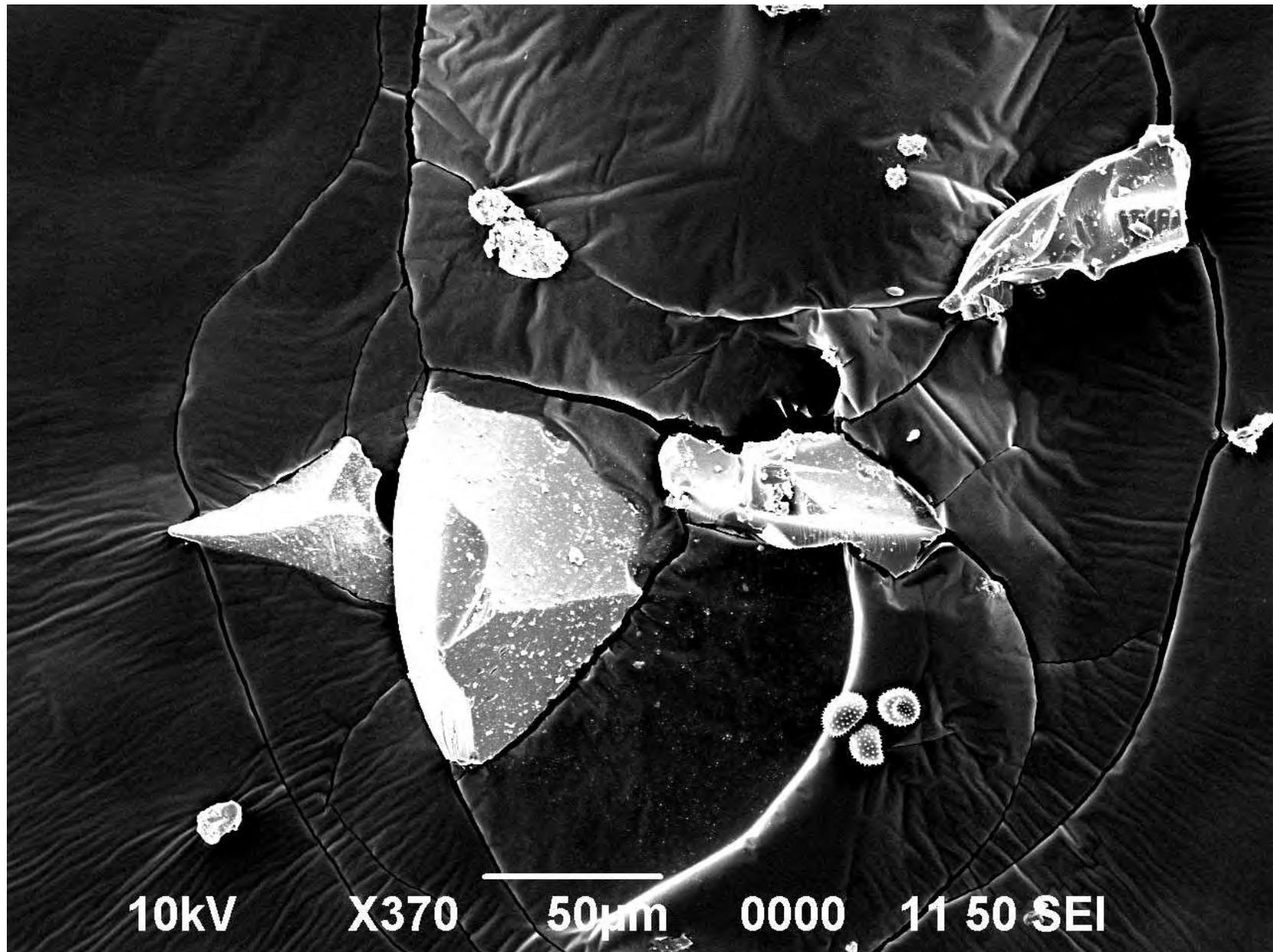
On the next page is a typical example of the dust found on all 4 residences. Representative photomicrographs of each sample site are included in the following pages. Some images are taken with the electron microscope and some with the stereomicroscope. Electron microscopic images were taken with either the Backscatter Detector (BES) or the Secondary Electron Detector (SEI).

Particle size of the dust found at the 4 residences was consistent with the source material acquired from Hillcrest Industries. In the following image, fractured glass, glass beads, and slag material are noted. These materials were found at the residential sites. This second round of samples had considerably more biological material in them, especially ragweed pollen and plant fibers. In addition to the materials common to the previous samples, a porous black sooty material was noted. It was most evident in the 20 Jackson St and 27 Favor St samples. The black soot was quite large in size and well above 10 microns, some measuring 90 microns and larger. The 9 S Pearl St sample contained the heaviest loading of particulate, some of the largest size particles, and had slag in it where the others seemed to have either no or a lot less slag. Fractured glass was common to all 4 samples. Glass beads were observed in 3 of the four samples. They did not seem to be in the 20 Jackson St sample. Glass beads observed were measured in the 10 to 50 micron range.

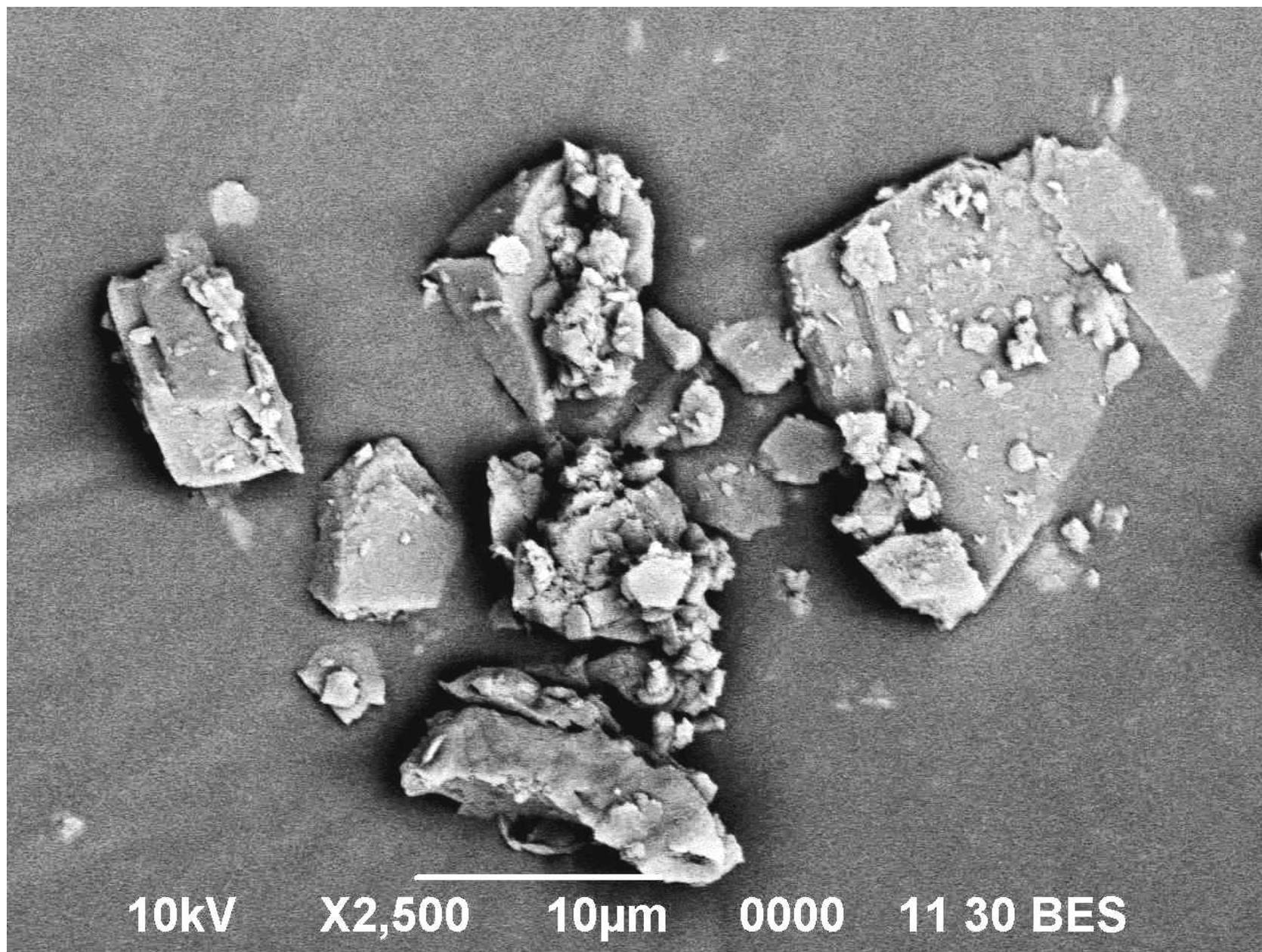


- Fractured glass- 65 microns
- Glass bead- 40 microns
- Glass bead- 5 microns
- Fractured glass- 55 microns
- Slag- 74 microns

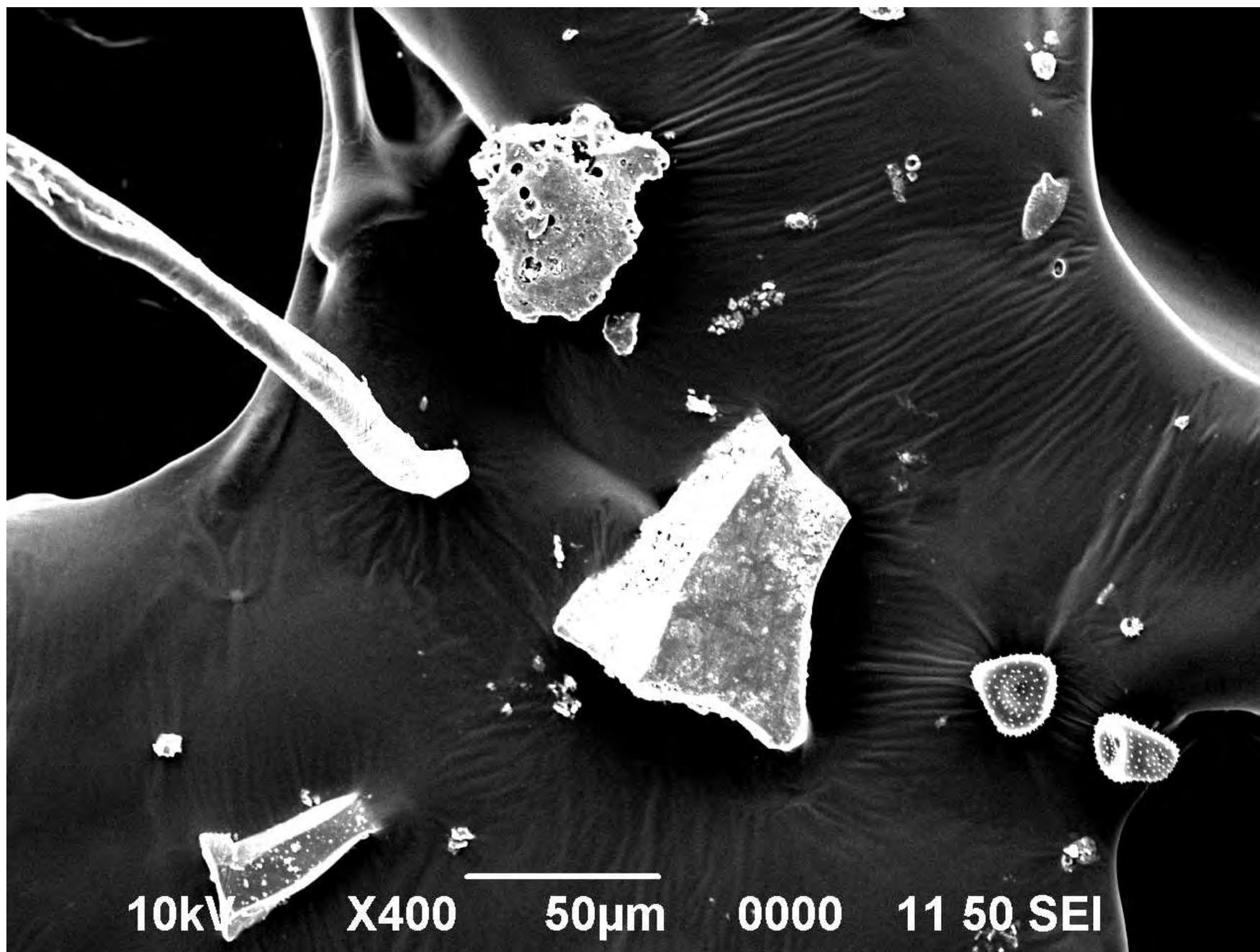
Residential Samples:
Sample #1 – 92 Georges Dr – 370X SEM SEI Image



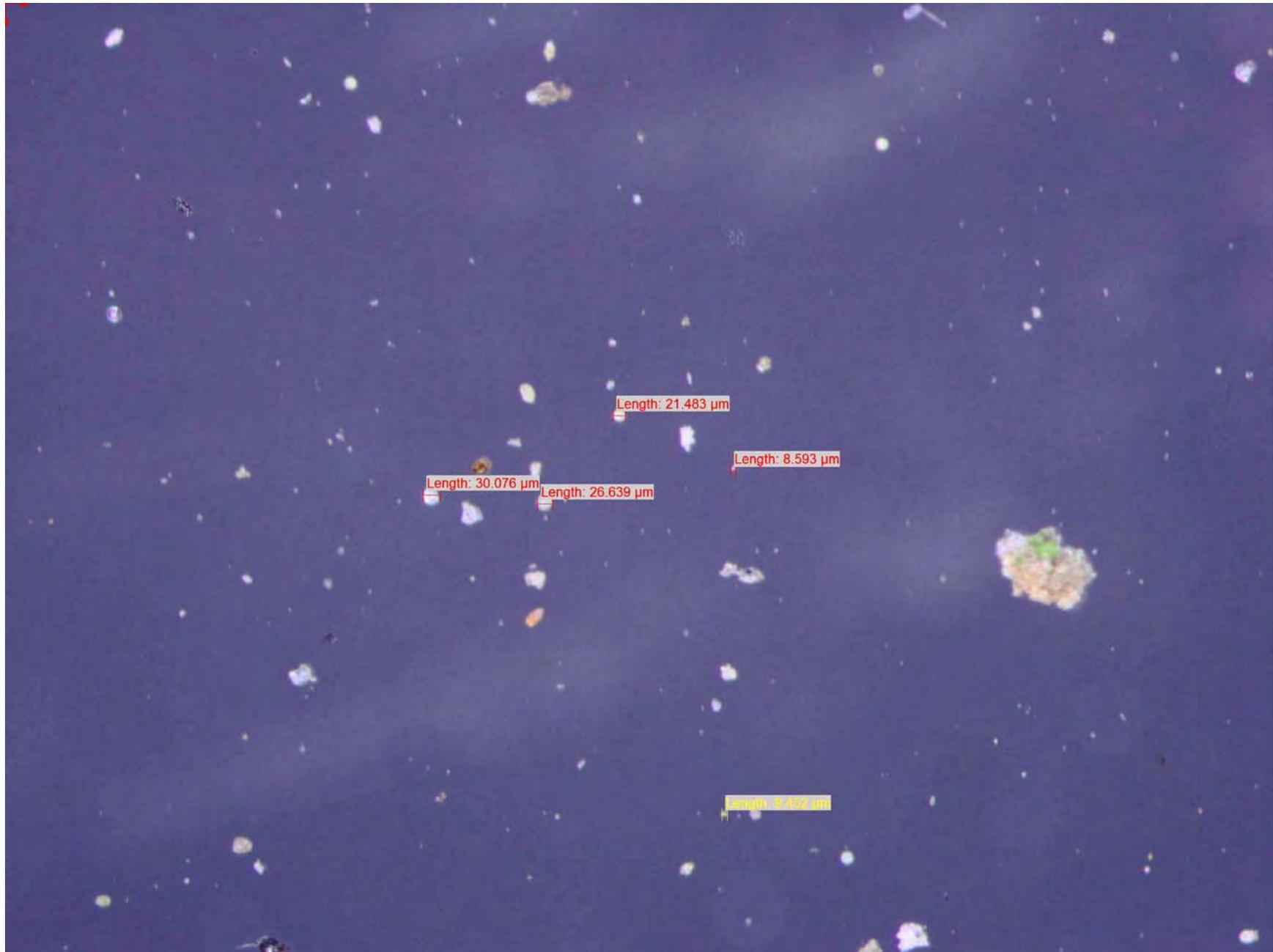
Sample #1 (Cont.)- 92 Georges Dr - 2500X SEM Backscattered Image



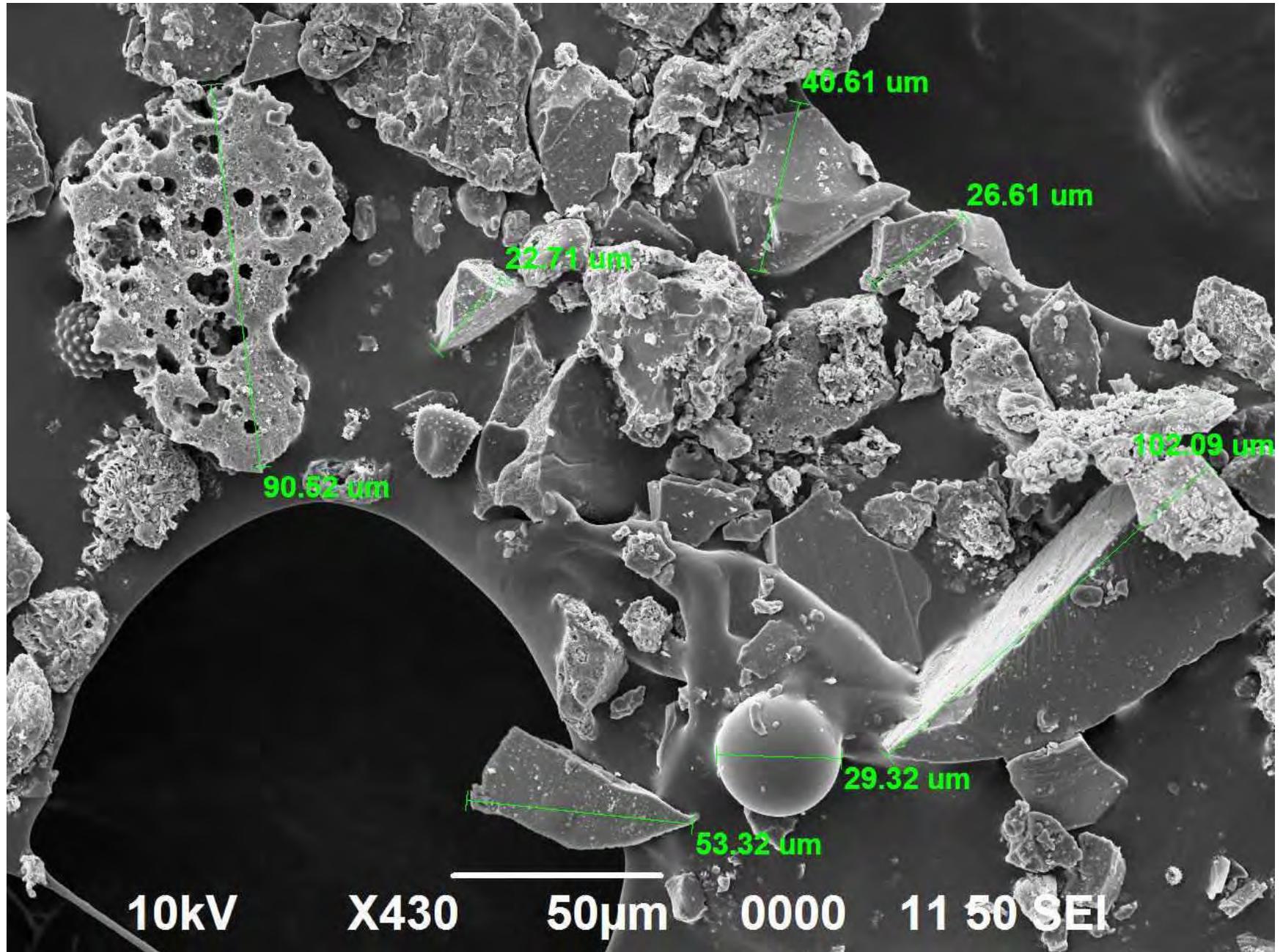
Sample #1 (Cont.)- 92 Georges Dr - 400x SEM SEI Image



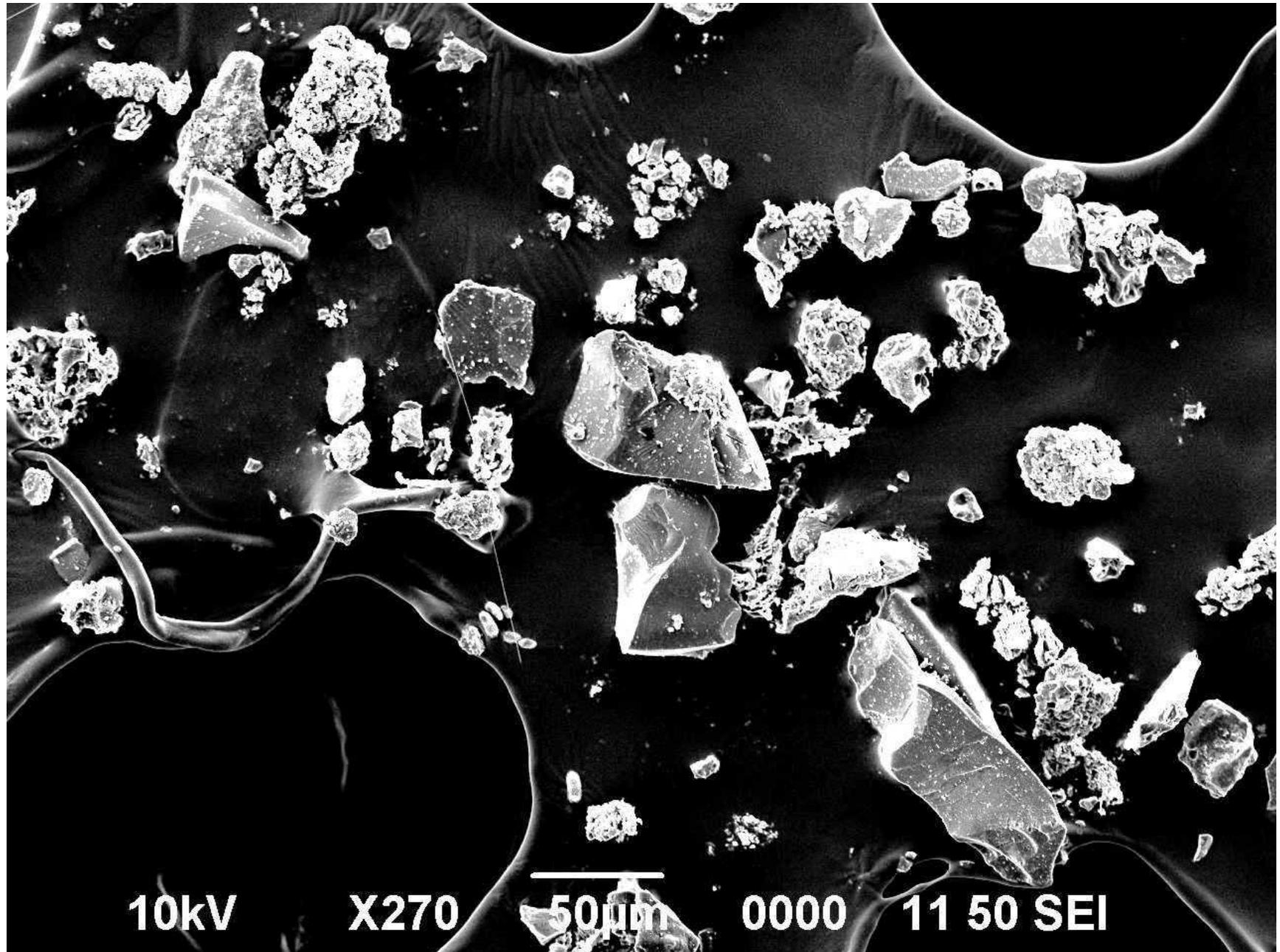
Sample #1 (Cont.)– 92 Georges Dr - 63X Stereo Microscope Image



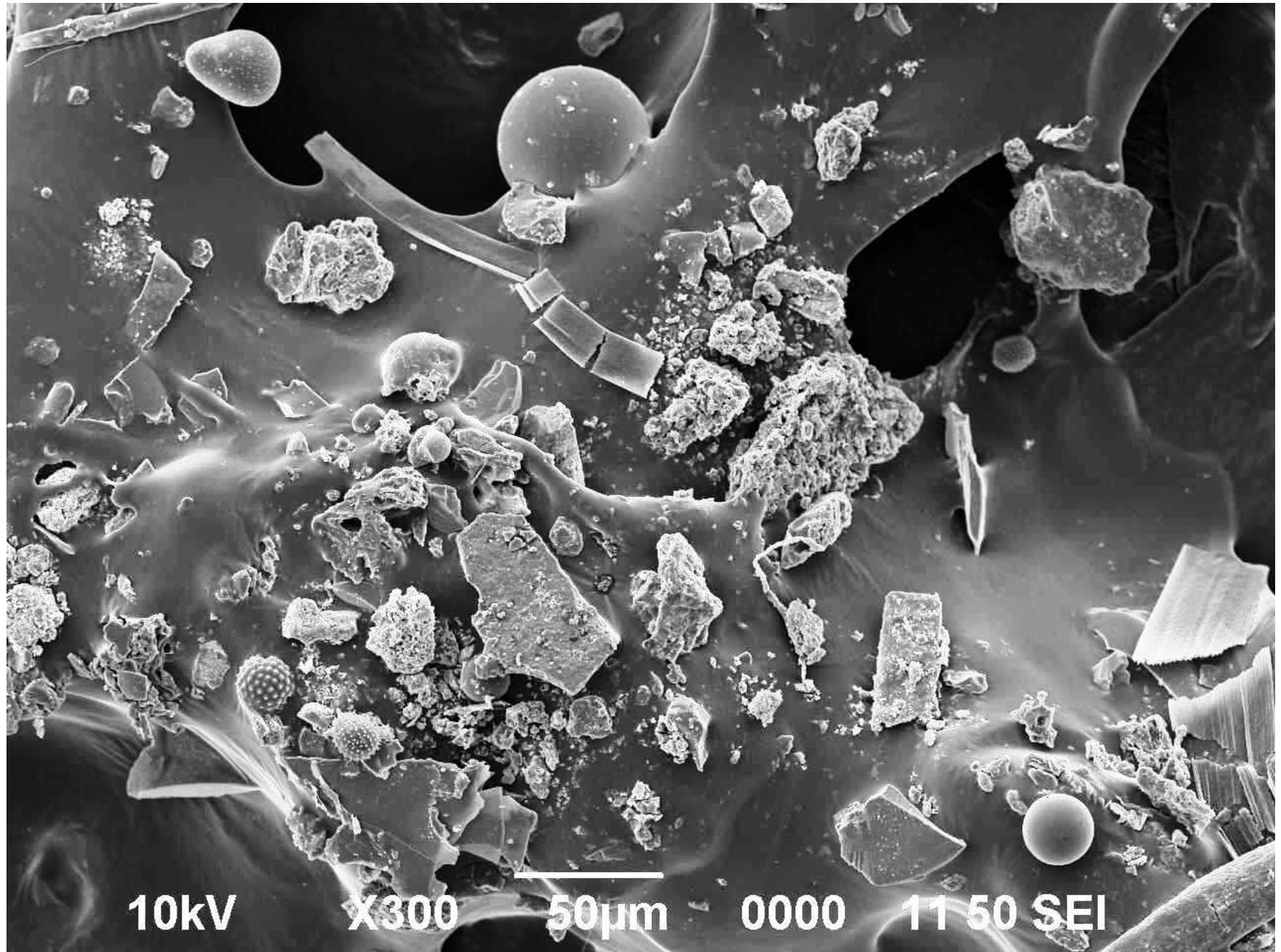
Sample #2 – 20 Jackson St - 430X SEM SEI Microscope Image



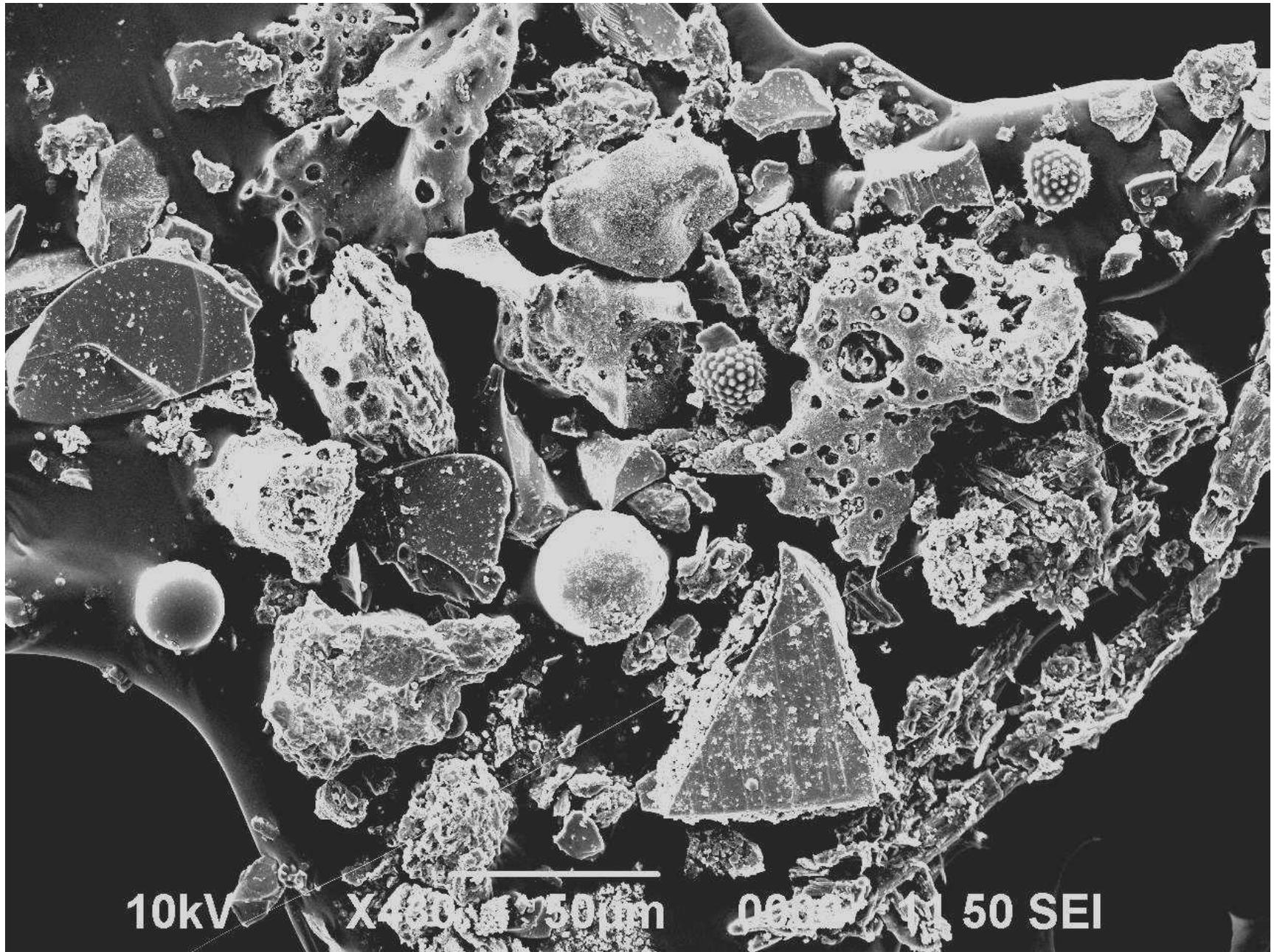
Sample #2 (Cont.)- 20 Jackson St - 270X SEM SEI Microscope Image



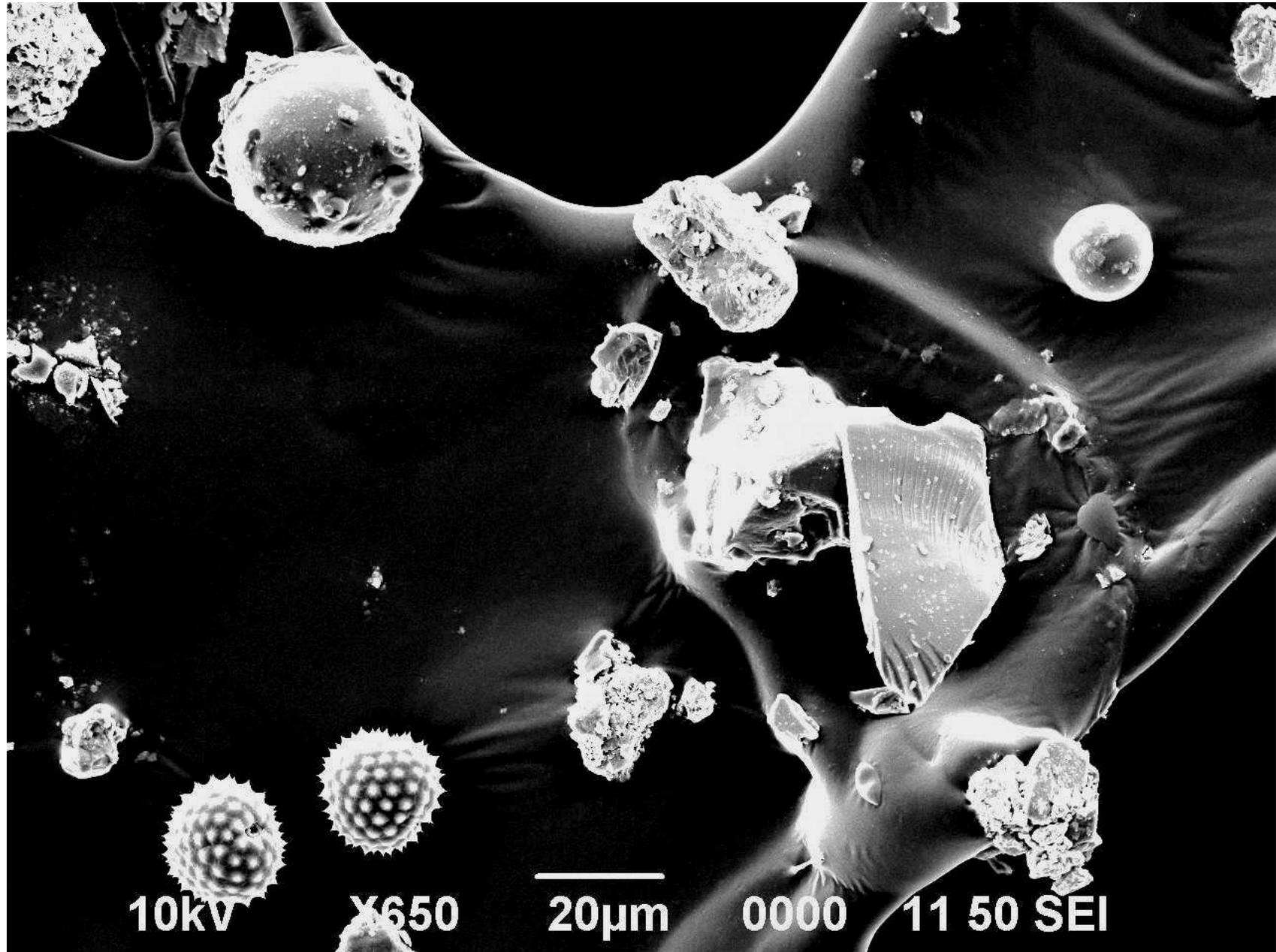
Sample #2 (Cont.)- 20 Jackson St - 300X SEM SEI Microscope Image



Sample #2 (Cont.)- 20 Jackson St - 430X SEM SEI Microscope Image



Sample #2 (Cont.)- 20 Jackson St - 650X SEM SEI Microscope Image



Sample #2 (Cont.)– 20 Jackson St - 63X Stereo Microscope Image

