

Appendix C4

ESEM/EDS Data for Test #4, Day-30 Fiberglass in High-Flow Zones

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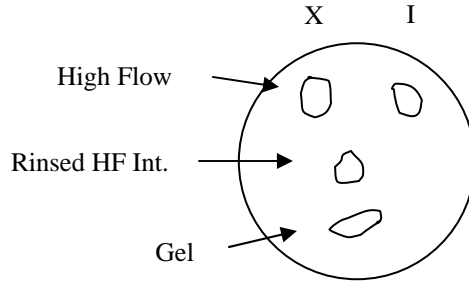
Figure C4-15. Environmental SEM image magnified 500 times for a Test #4, Day-30 interior high-flow fiberglass sample. The sample was gently prerinsed with RO water. (t4rnd06.jpg)..... C4-11

In this appendix, the fiberglass samples submerged in a high-flow zone were extracted on the date Test #4 was shut down (June 23, 2005). Both exterior and interior locations of the fiberglass samples were examined. ESEM was employed to analyze the hydrated fiberglass samples without any coating under a low-vacuum condition (i.e., 80 Pa) to minimize the modification of the fiberglass samples through a drying process. The results of Test #4, Day-30 high-flow fiberglass samples were obtained on June 24, 2005. EDS results provide a semi-quantitative elemental analysis of the debris attached on fiberglass.

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Transcribed Laboratory Log

Laboratory session from June 24, 2005.
 Test #4, Day-30 High-Flow Fiberglass



High-Flow Exterior

Image:	T4HFEx01	100 ×	ESEM image	Figure C4-1
	t4hfex02	100 ×	ESEM image	Figure C4-2
	t4hfex07	500 ×	ESEM image	Figure C4-3
	t4hfex06	800 ×	ESEM annotated image	Figure C4-4
EDS:	t4hfex05		Spot of film for t4hfex06	Figure C4-5

High-Flow Interior

Image:	t4hfin01	100 ×	ESEM image of fiberglass	Figure C4-6
	t4hfin02	100 ×	ESEM image	Figure C4-7
	t4hfin03	500 ×	ESEM image high magnification	Figure C4-8
	t4hfin04	500 ×	ESEM image high magnification	Figure C4-9

Washed (with RO Water) High-Flow Interior

Image:	T4Rnd01	100 ×	ESEM image	Figure C4-10
	t4rnd02	100 ×	ESEM image	Figure C4-11
	t4rnd03	500 ×	ESEM image	Figure C4-12
	t4rnd04	500 ×	ESEM image	Figure C4-13
	t4rnd05	500 ×	ESEM image	Figure C4-14
	t4rnd06	500 ×	ESEM image	Figure C4-15



Figure C4-1. Environmental SEM image magnified 100 times for a Test #4, Day-30 exterior high-flow fiberglass sample. (T4HFEx01.jpg)

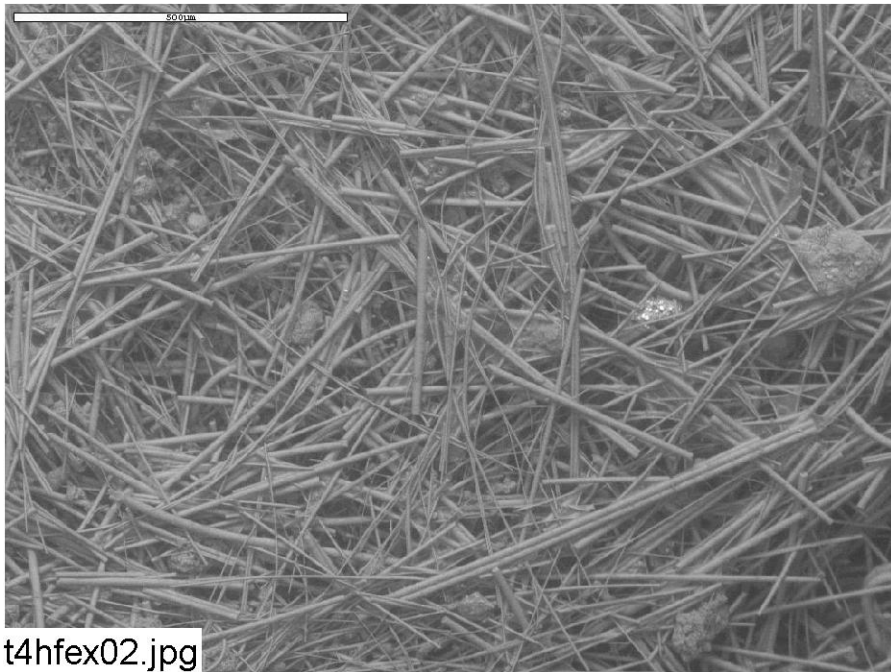


Figure C4-2. Environmental SEM image magnified 100 times for a Test #4, Day-30 exterior high-flow fiberglass sample. (t4hfex02.jpg)



Figure C4-3. Environmental SEM image magnified 500 times for a Test #4, Day-30 exterior high-flow fiberglass sample. (t4hfex07.jpg)

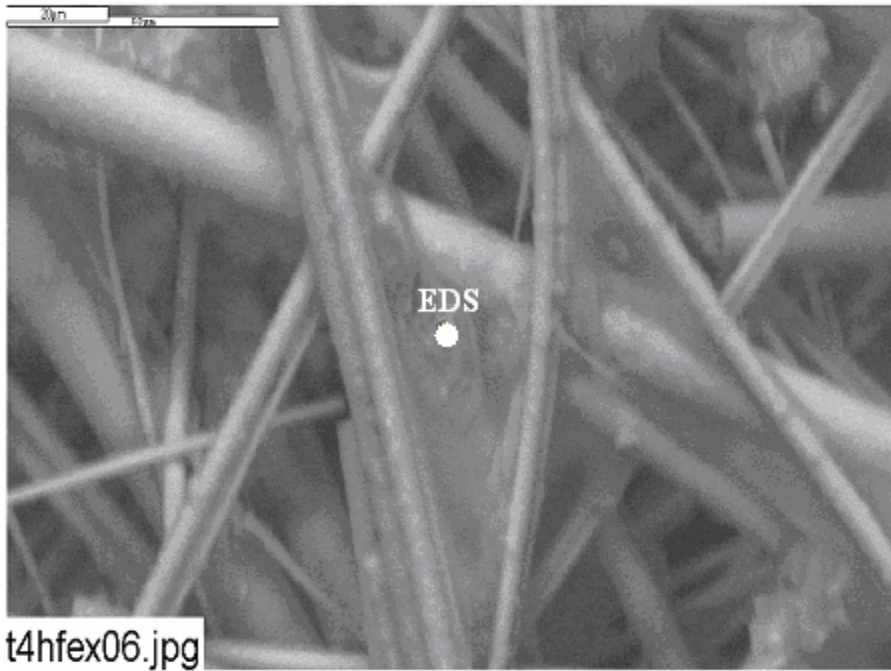


Figure C4-4. Annotated environmental SEM image magnified 800 times for a Test #4, Day-30 exterior high-flow fiberglass sample. EDS spot is shown in the picture. (t4hfex06.jpg)

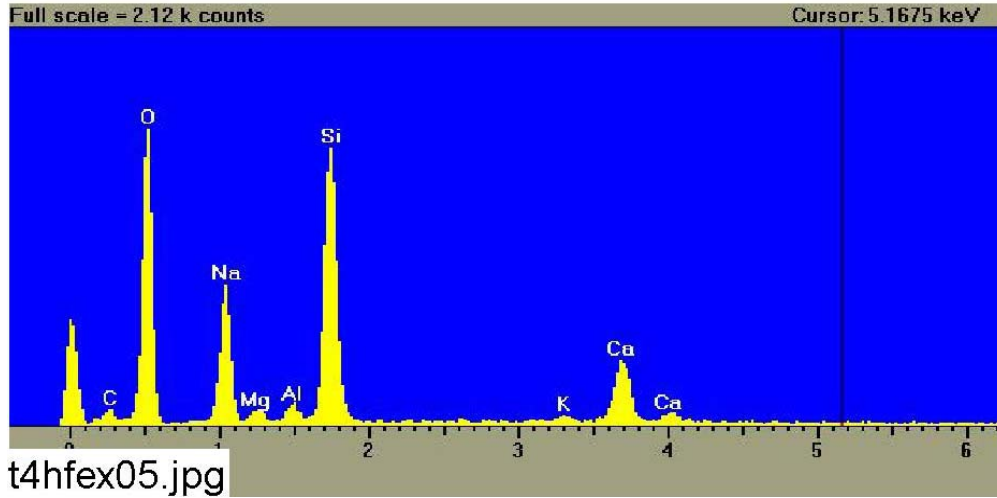


Figure C4-5. EDS counting spectrum for the spot of film between fibers shown in Figure C4-4. (t4hfex05.jpg)

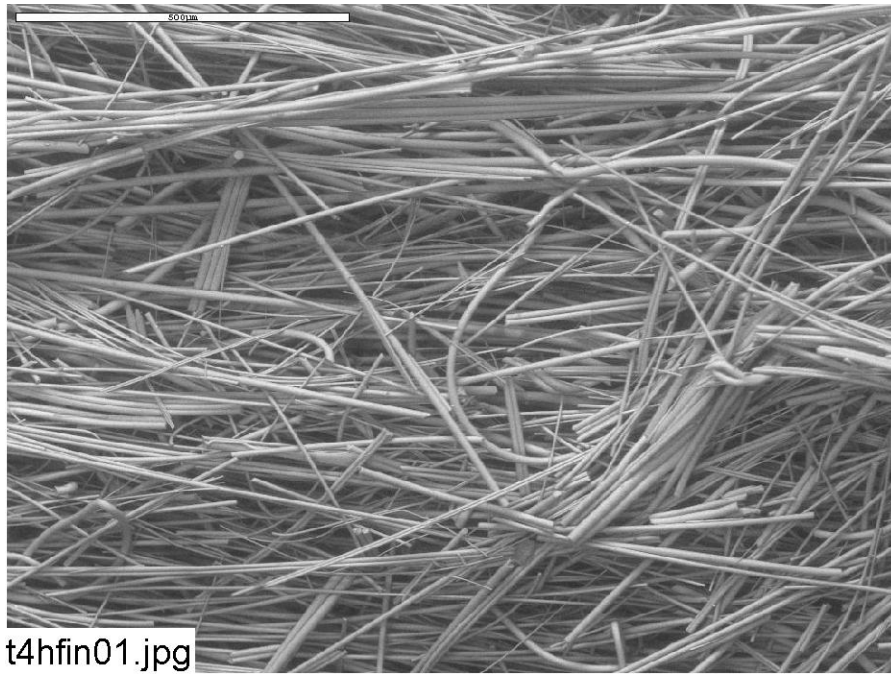


Figure C4-6. Environmental SEM image magnified 100 times for a Test #4, Day-30 interior high-flow fiberglass sample. (t4hfin01.jpg)

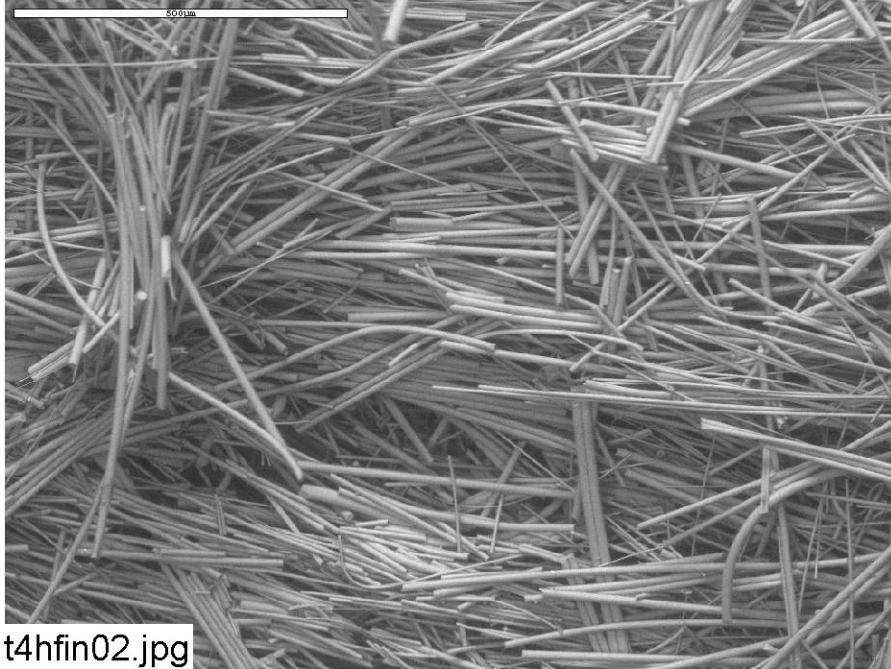


Figure C4-7. Environmental SEM image magnified 100 times for a Test #4, Day-30 interior high-flow fiberglass sample. (t4hfin02.jpg)

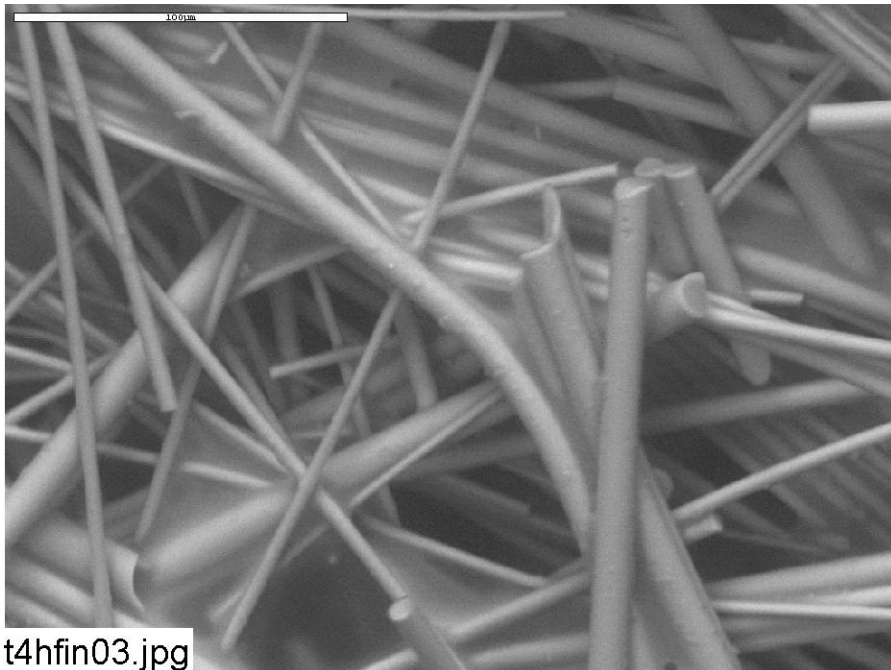


Figure C4-8. Environmental SEM image magnified 500 times for a Test #4, Day-30 interior high-flow fiberglass sample. (t4hfin03.jpg)

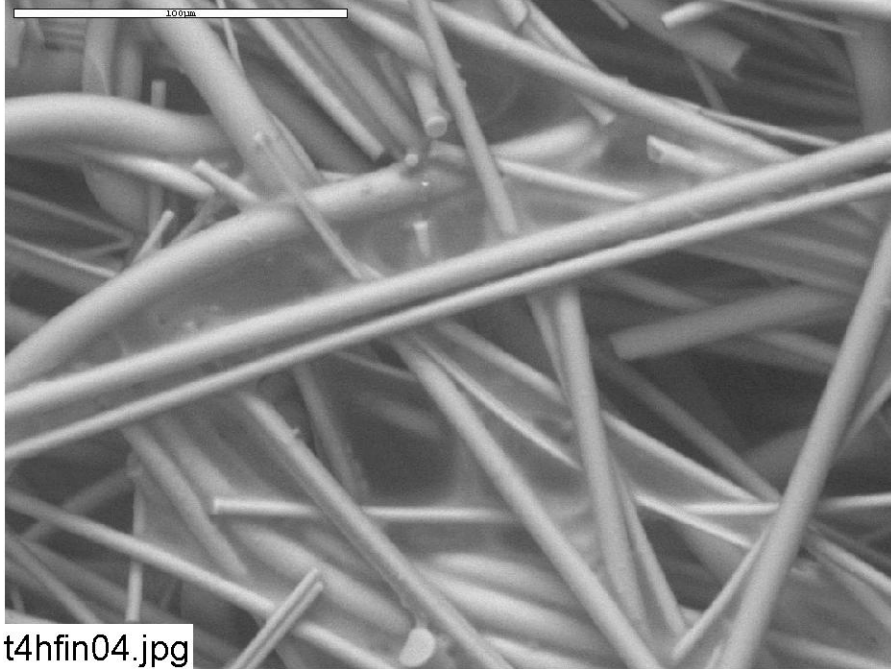


Figure C4-9. Environmental SEM image magnified 500 times for a Test #4, Day-30 interior high-flow fiberglass sample. (t4hfin04.jpg)

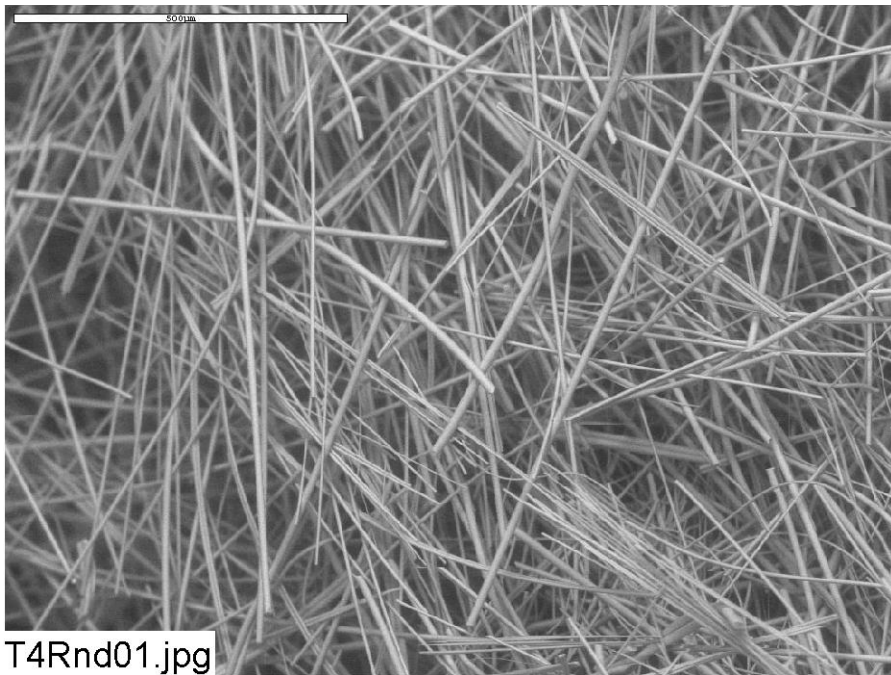


Figure C4-10. Environmental SEM image magnified 100 times for a Test #4, Day-30 interior high-flow fiberglass sample. The sample was gently prerinsed with RO water. (T4Rnd01.jpg)

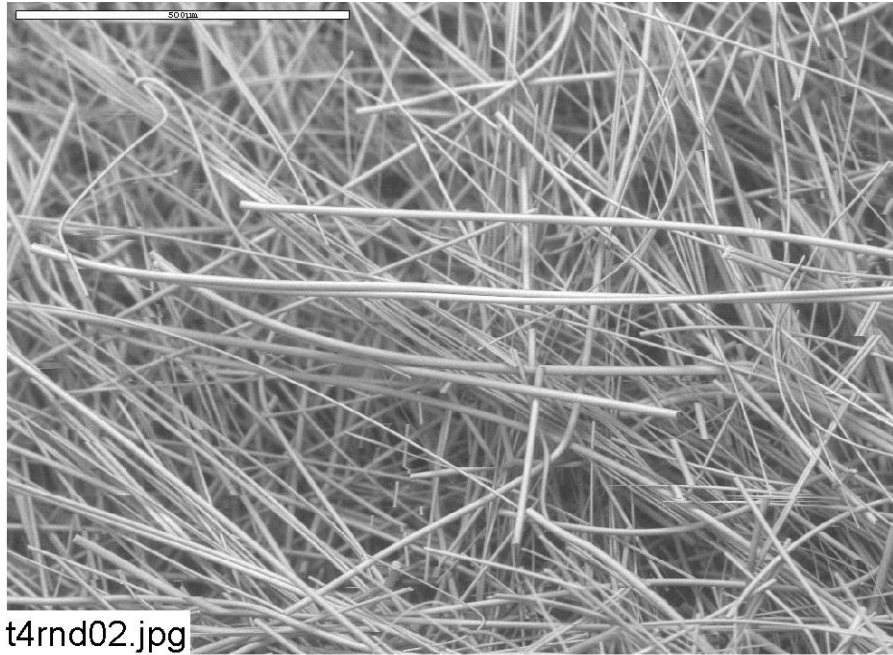


Figure C4-11. Environmental SEM image magnified 100 times for a Test #4, Day-30 interior high-flow fiberglass sample. The sample was gently prerinsed with RO water. (t4rnd02.jpg)

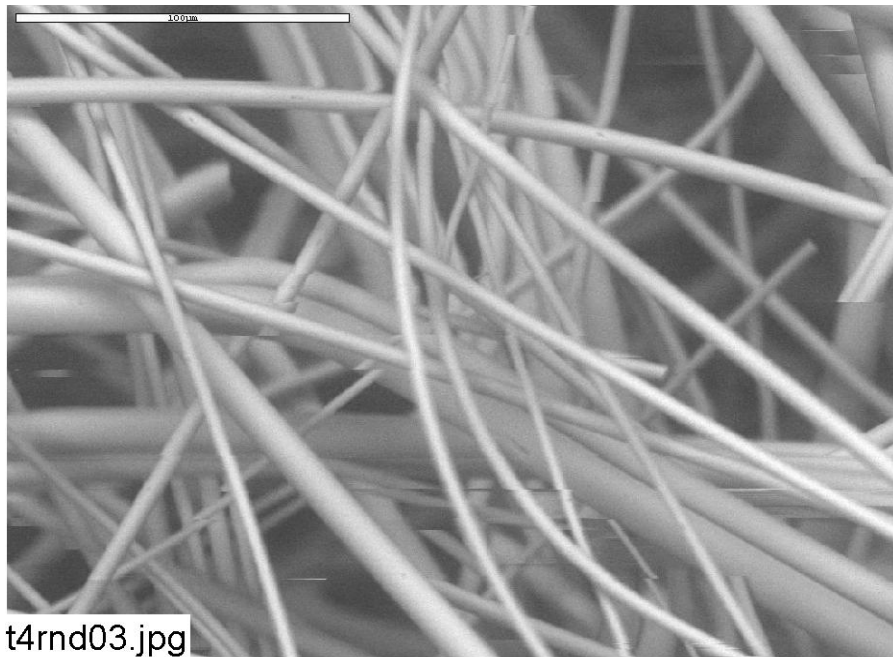


Figure C4-12. Environmental SEM image magnified 500 times for a Test #4, Day-30 interior high-flow fiberglass sample. The sample was gently prerinsed with RO water. (t4rnd03.jpg)

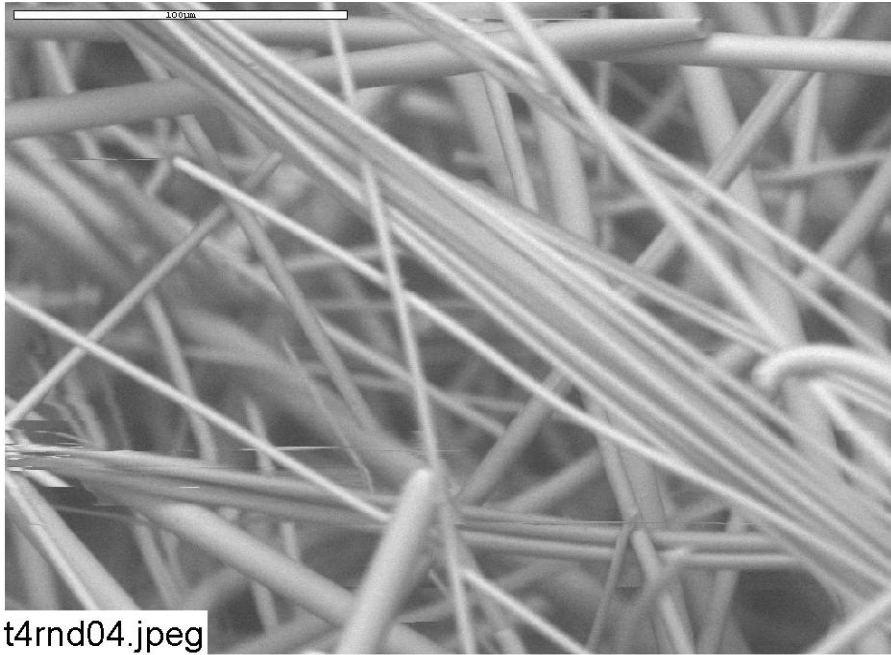


Figure C4-13. Environmental SEM image magnified 500 times for a Test #4, Day-30 interior high-flow fiberglass sample. The sample was gently prerinsed with RO water. (t4rnd04.jpg)

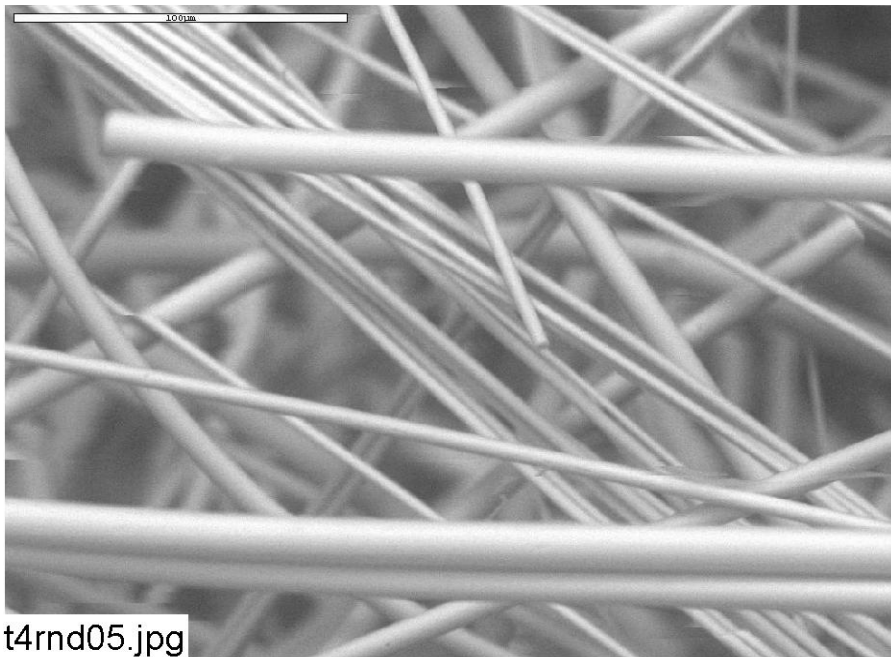


Figure C4-14. Environmental SEM image magnified 500 times for a Test #4, Day-30 interior high-flow fiberglass sample. The sample was gently prerinsed with RO water. (t4rnd05.jpg)



Figure C4-15. Environmental SEM image magnified 500 times for a Test #4, Day-30 interior high-flow fiberglass sample. The sample was gently prerinsed with RO water. (t4rnd06.jpg)

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Appendix C5

ESEM/EDS Data for Test #4, Day-30 Fiberglass Inserted in Front of Header in a High-Flow Zone

Figures

- Figure C5-1. Environmental SEM image magnified 100 times for a Test #4, Day-30 exterior high-flow fiberglass sample in front of the header (inserted on Day 4). (t4d30hx1.jpg) C5-4
- Figure C5-2. Environmental SEM image magnified 500 times for a Test #4, Day-30 exterior high-flow fiberglass sample in front of the header (inserted on Day 4). (t4d30hx2.jpg) C5-4
- Figure C5-3. Annotated environmental SEM image magnified 1000 times for a Test #4, Day-30 exterior high-flow fiberglass sample in front of the header (inserted on Day 4). The EDS spot is shown in the picture. (t4d30hx5.jpg) C5-5
- Figure C5-4. EDS counting spectrum for the spot of coating substance on fiberglass shown in Figure C5-3. (t4d30hx4.jpg) C5-5
- Figure C5-5. Environmental SEM image magnified 100 times for a Test #4, Day-30 interior high-flow fiberglass sample in front of the header (inserted on Day 4). (t4d30hI6.jpg) C5-6
- Figure C5-6. Annotated environmental SEM image magnified 500 times for a Test #4, Day-30 interior high-flow fiberglass sample in front of the header (inserted on Day 4). The EDS spot is shown in the picture. (t4d30hI9.jpg) C5-6
- Figure C5-7. EDS counting spectrum for the spot of substance attached on fiberglass shown in Figure C5-6. (t4d30hI8.jpg) C5-7
- Figure C5-8. Annotated environmental SEM image magnified 1000 times for a Test #4, Day-30 interior high-flow fiberglass sample in front of the header (inserted on Day 4). The EDS spot is shown in the picture. (t4d30hi.jpg) C5-7
- Figure C5-9. EDS counting spectrum for the spot of substance attached on fiberglass shown in Figure C5-8. (t4d30hI0.jpg) C5-8

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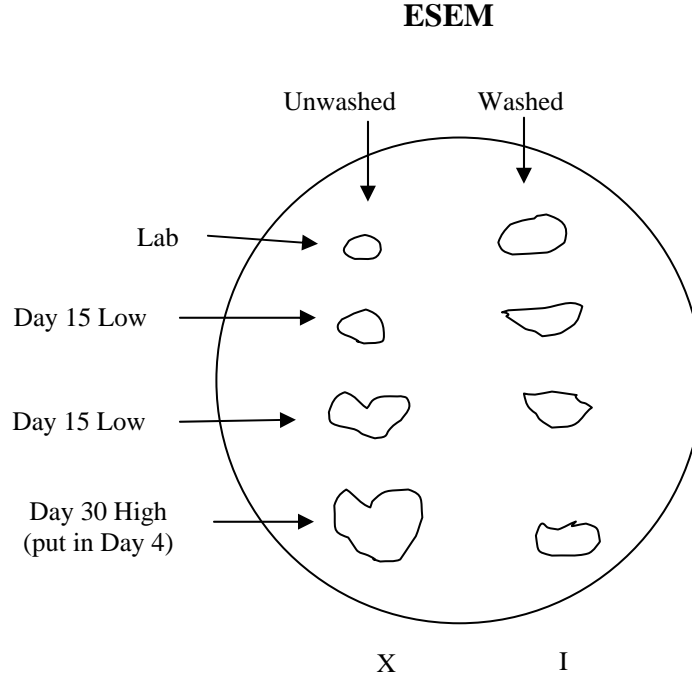
The high-flow fiberglass samples inserted in front of a header were extracted on June 23, 2005, the date Test #4 was shut down. Both exterior and interior locations of the fiberglass samples were examined. ESEM was employed to analyze the hydrated fiberglass samples without any coating under a low-vacuum condition (i.e., 80 Pa) to minimize the modification of the fiberglass samples through a drying process. The results of Test #4, Day-30 high-flow fiberglass samples were obtained on June 23, 2005. EDS results provide a semi-quantitative elemental analysis of the debris attached on fiberglass.

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Transcribed Laboratory Log

Laboratory session from June 23, 2005.

Test #4, Day-30 High-Flow Fiberglass Inserted in Front of Header



High-Flow Exterior (put in on Day 4)

Image:	t4d30hx1	100 ×	ESEM image	Figure C5-1
	t4d30hx2	500 ×	ESEM image	Figure C5-2
	t4d30hx5	1000 ×	ESEM annotated image	Figure C5-3
EDS:	t4d30hx4		EDS on coating of fiberglass shown in t4d30hx5	Figure C5-4

High-Flow Interior (put in on Day 4)

Image:	t4d30hi6	100 ×	ESEM image of fiberglass	Figure C5-5
	t4d30hi9	500 ×	ESEM annotated image	Figure C5-6
EDS	t4d30hi8		EDS on web in t4d30hi9	Figure C5-7
Image	t4d30hi	1000 ×	ESEM annotated image	Figure C5-8
EDS	t4d30hi0		EDS on spot in t4d30hi	Figure C5-9

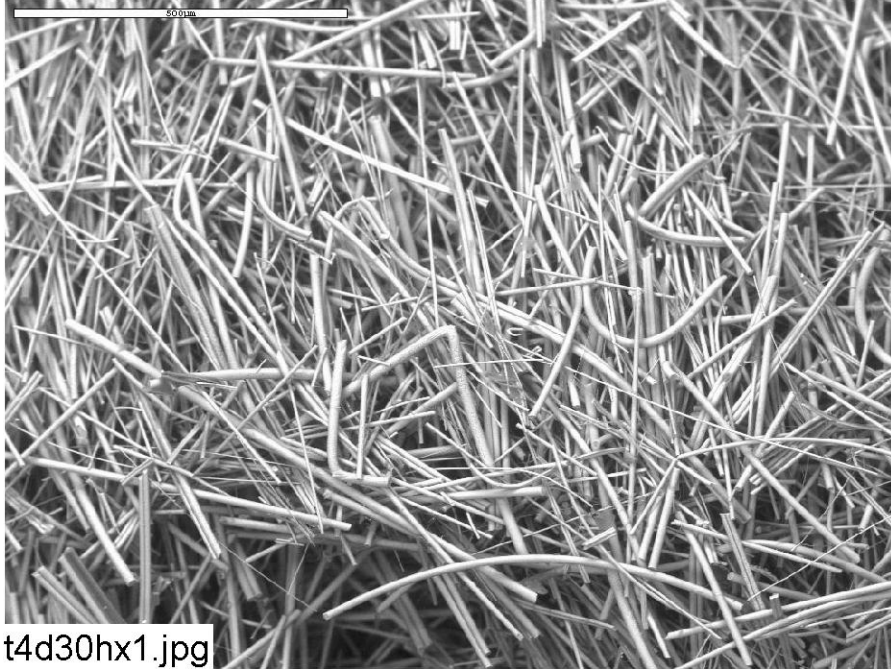


Figure C5-1. Environmental SEM image magnified 100 times for a Test #4, Day-30 exterior high-flow fiberglass sample in front of the header (inserted on Day 4). (t4d30hx1.jpg)

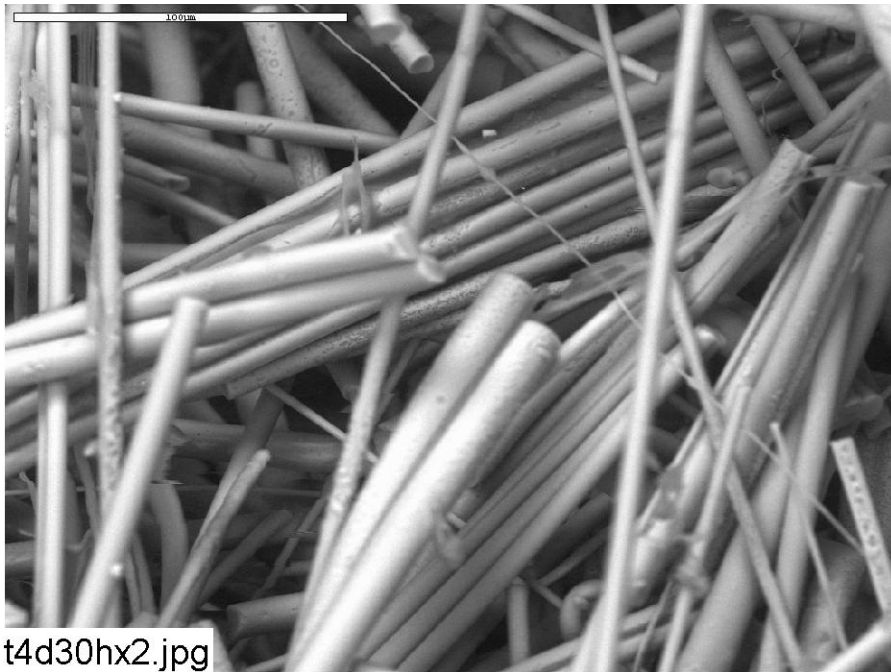


Figure C5-2. Environmental SEM image magnified 500 times for a Test #4, Day-30 exterior high-flow fiberglass sample in front of the header (inserted on Day 4). (t4d30hx2.jpg)

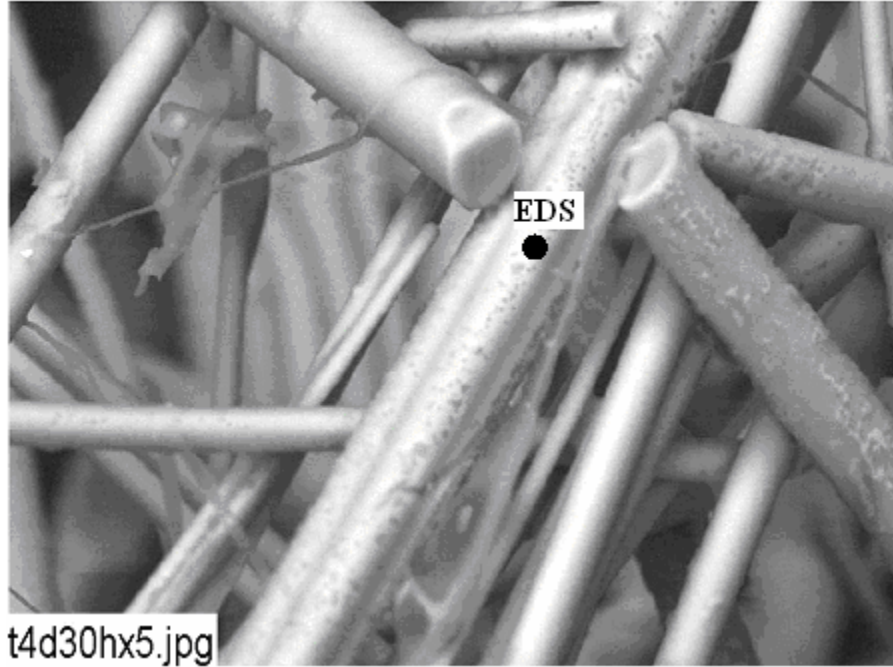


Figure C5-3. Annotated environmental SEM image magnified 1000 times for a Test #4, Day-30 exterior high-flow fiberglass sample in front of the header (inserted on Day 4). The EDS spot is shown in the picture. (t4d30hx5.jpg)

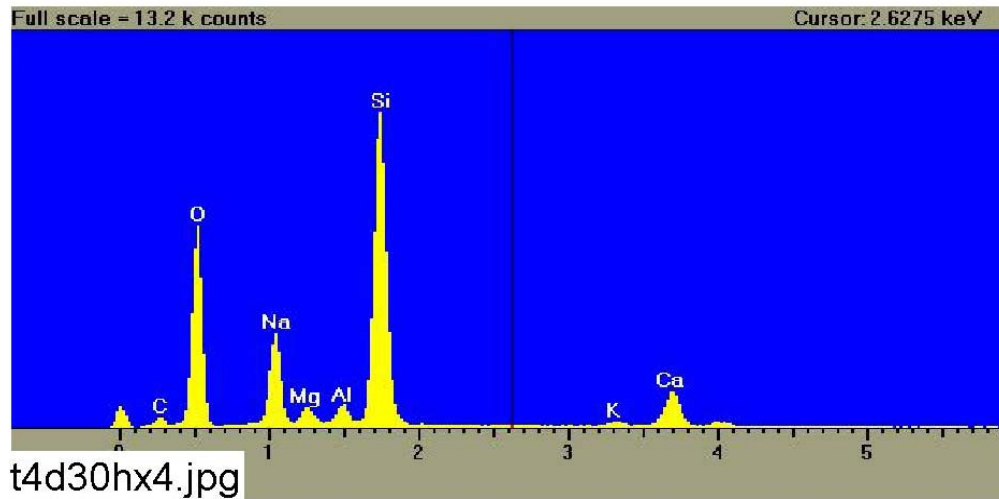


Figure C5-4. EDS counting spectrum for the spot of coating substance on fiberglass shown in Figure C5-3. (t4d30hx4.jpg)

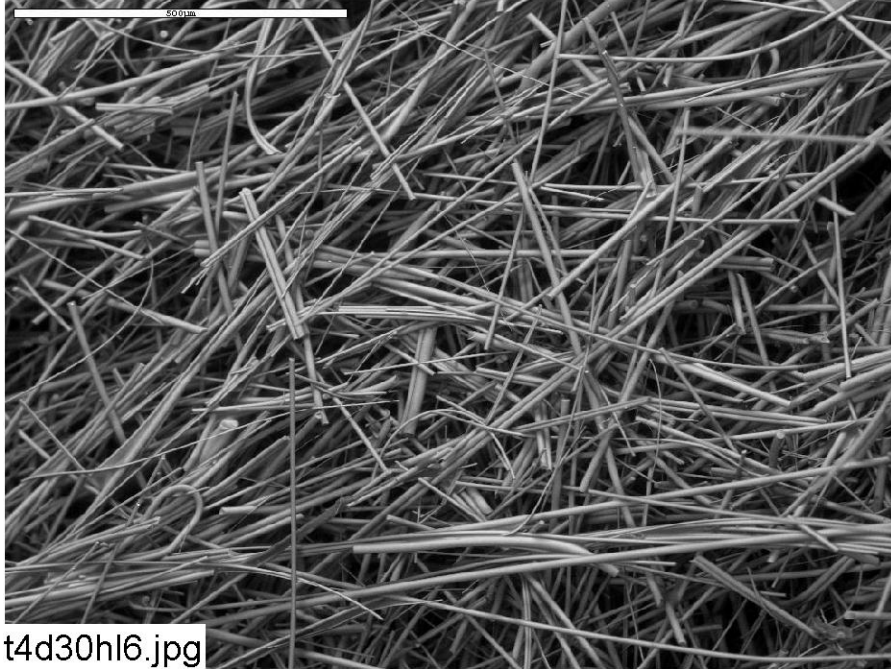


Figure C5-5. Environmental SEM image magnified 100 times for a Test #4, Day-30 interior high-flow fiberglass sample in front of the header (inserted on Day 4). (t4d30hI6.jpg)

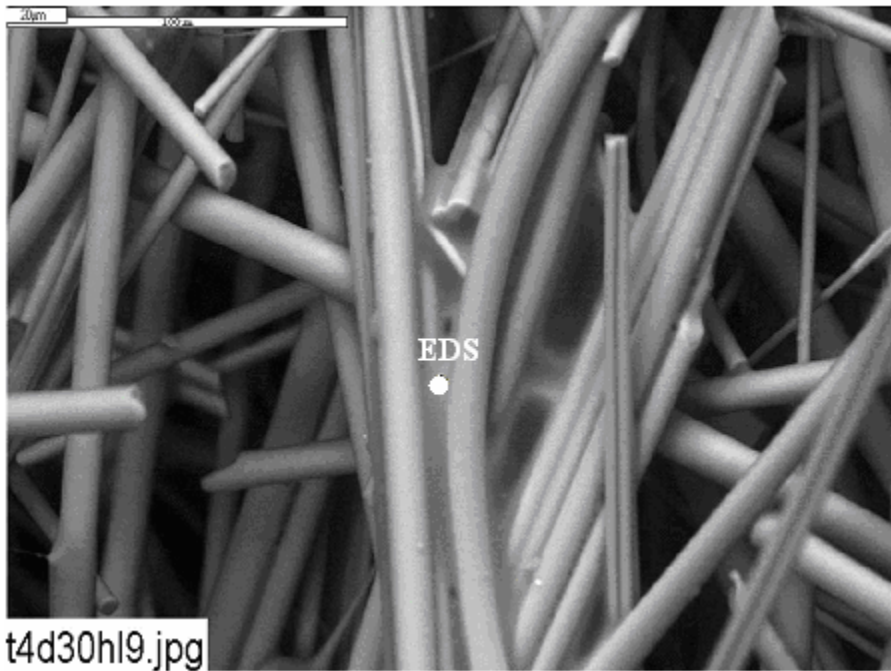


Figure C5-6. Annotated environmental SEM image magnified 500 times for a Test #4, Day-30 interior high-flow fiberglass sample in front of the header (inserted on Day 4). The EDS spot is shown in the picture. (t4d30hI9.jpg)

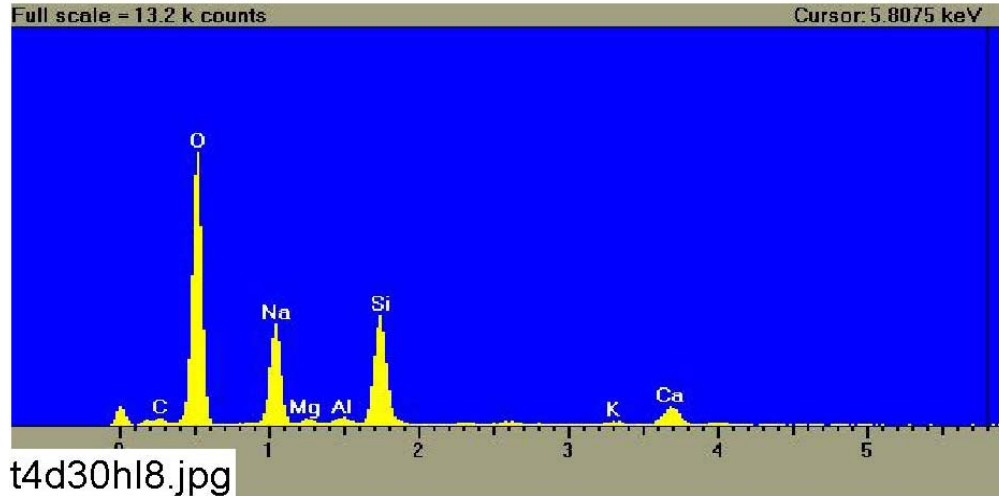


Figure C5-7. EDS counting spectrum for the spot of substance attached on fiberglass shown in Figure C5-6. (t4d30hi8.jpg)

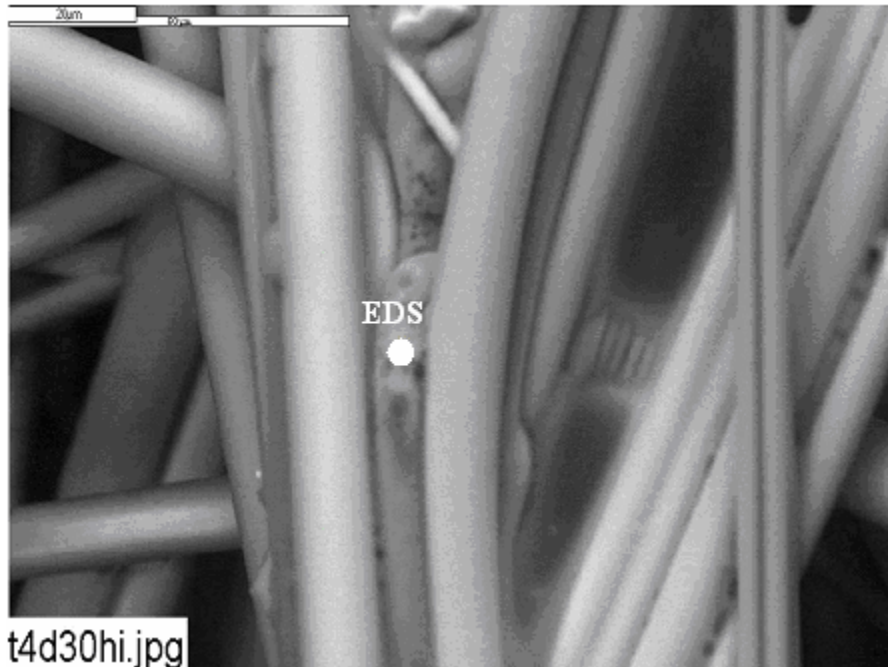


Figure C5-8. Annotated environmental SEM image magnified 1000 times for a Test #4, Day-30 interior high-flow fiberglass sample in front of the header (inserted on Day 4). The EDS spot is shown in the picture. (t4d30hi.jpg)

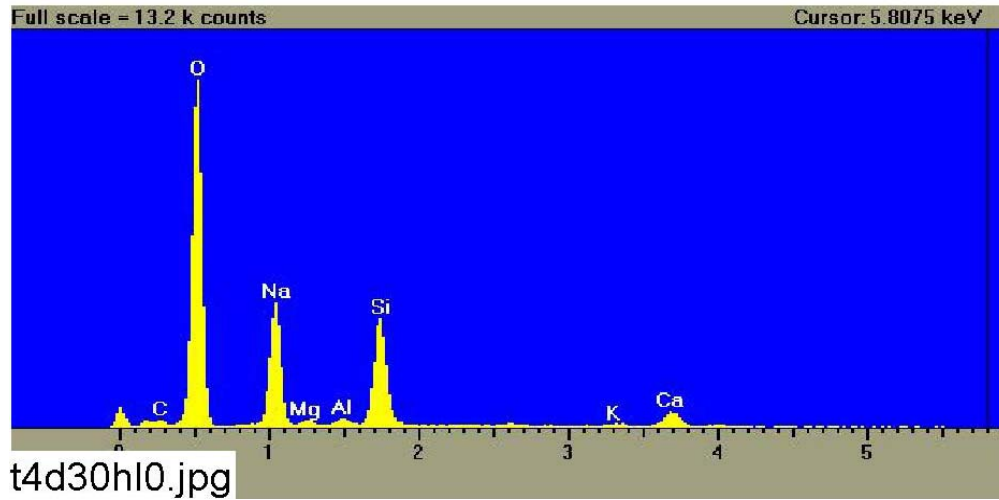


Figure C5-9. EDS counting spectrum for the spot of substance attached on fiberglass shown in Figure C5-8. (t4d30h10.jpg)