

Preface to Appendices

Eleven separate appendices were developed to capture more of the images and information obtained for Test #2. Several appendices are further divided into subappendices to better segregate the information according to the time point in the test when the samples were extracted from the test apparatus, the type of samples being evaluated, or the type of examinations performed.

Section 3.3 of this report reviewed the nomenclature adopted for reporting ICET results. This nomenclature is used in the caption labels for most of the figures presented in the appendices.

As noted in Section 3.3, the data presented in the appendices are largely qualitative in nature, consisting primarily of ESEM, SEM, and TEM micrographs and EDS spectra. Each appendix represents a separate session of laboratory work that can be traced to a batch of samples that were typically processed in chronological order.

Transcriptions of the logbooks are provided for each appendix to better document commonalities that existed among the samples at the time of analysis. Logbook information was developed for most, but not all, of the images presented in the appendices. Interpretation and understanding of the images and their accompanying EDS spectra can be improved by referring frequently to the logbook sample descriptions and sequences.

Typically, a relatively large quantity of a test sample was delivered for SEM or TEM analysis, and then several small subsamples of each item were examined. Note that each subsample was assigned a sequential reference number during the laboratory session. These reference numbers have been cited in the figure captions whenever possible to preserve the connection between the micrographs and the notebook descriptions. Electronic file names have also been stamped on the images to permit retrieval of the original data files, which are archived elsewhere. Individual data sets for a given sample item have been collated into a typical sequence of (1) visual image, (2) EDS spectra, and (3) semiquantitative mass composition.

Semiquantitative mass compositions are also presented for most of the EDS spectra. These results are obtained from a commercial algorithm that decomposes the spectra into the separate contributions of each element.

The appendices are listed below.

Appendix A: SEM/EDS Data for Test-2 Day-15 High-Volume Filter

Appendix B: SEM/EDS Data for Test-2 Day-30 Corrosion Products

Appendix C1: SEM/EDS Data for Unused and Test-2 Day-30 Aluminum Coupons

Appendix C2: SEM/EDS Data for Unused and Test-2 Day-30 Copper Coupons

Appendix C3: SEM/EDS Data for Unused and Test-2 Day-30 Galvanized Steel Coupons

Appendix C4: SEM/EDS Data for Unused and Test-2 Day-30 Steel Coupons

Appendix D1: ESEM and SEM/EDS Data for Test-2 Day-16 Fiberglass in High- and Low-Flow Zones

Appendix D2: ESEM and SEM/EDS Data for Test-2 Day-30 Fiberglass in High- and Low-Flow Zones

Appendix D3: ESEM and SEM/EDS Data for Test-2 Day-30 Drain Collar Fiberglass

Appendix D4: ESEM and SEM/EDS Data for Test-2 Day-30 Birdcage Fiberglass

Appendix E: SEM/EDS Data for T2D30 Sediment

Appendix F1: TEM Data for Test-2 Day-4 Solution Samples

Appendix F2: TEM Data for Test-2 Day-17 Solution Samples

Appendix F3: TEM Data for Test-2 Day-30 Solution Samples

Appendix G: Test-2 Total Organic Carbon (TOC) Concentration

Appendix H: UV Absorbance Spectrum – Day-30 Solution Sample

Appendix I: XRD and XRF Data for Test-2 Day-30 Sediment and Fiberglass in Birdcage

Appendix J: ESEM and SEM/EDS Data for Test-2 Day-4 Filtrate and Fiberglass Samples

Appendix K: ICET Test 2; Pre-Test, Test, and Post-Test Project Instructions