

AR226-0062

Acute Toxicity to <i>Daphnia magna</i> for FM-3820 (28% PFOS)	EnviroSystems of Resource Analysts, Inc.)	3/26/91	Robust Summary and Final Report
Toxicity to Algae (<i>Selenastrum capricornutum</i>) for FM-3820 (28% PFOS)	EnviroSystems of Resource Analysts, Inc.)	June, 1991	Robust Summary and Final Report

Summary Reports

Title	Laboratory or Author	Completion Date	Type
Final Comprehensive Report: FC 95	3M Env. Lab	3/15/79	Robust Summary, comments from Stephen A. Boyd from MSU and Final Report

Environmental Monitoring**Part 1: Multi-City Study****Title****Laboratory or Author****Completion Date****Type**

1	Design and Structure of Multi-City Study	Battelle Memorial Institute	5/1/00	Report
2	Low Level Drinking Water Analytical Method	3M Env. Lab	4/28/00	Method
3	Fluorochemical Characterization of Drinking Water Samples. Columbus, GA (W2336)	Centre Analytical Laboratories, Inc.	2/29/00	Final Report
4	Fluorochemical Characterization of Drinking Water Samples. Pensacola, FL (W2176)	Centre Analytical Laboratories, Inc.	2/28/00	Final Report
5	Fluorochemical Characterization of Drinking Water Samples. Port St. Lucie, FL (W2363)	Centre Analytical Laboratories, Inc.	2/28/00	Final Report
6	Fluorochemical Characterization of Drinking Water Samples. Decatur, Alabama (W1979)	Centre Analytical Laboratories, Inc.	2/28/00	Final Report
7	Fluorochemical Characterization of Drinking Water Samples. Mobile, Alabama (W2151)	Centre Analytical Laboratories, Inc.	2/28/00	Final Report
8	Fluorochemical Characterization of Drinking Water Samples. Cleveland, Tennessee (W1973)	Centre Analytical Laboratories, Inc.	2/28/00	Final Report
9	Draft Drinking Water Health Advisory (DWHA) - PFOS	3M Corporate Toxicology	7/7/99	Report
10	Battelle Field Sampling Procedures Review. Columbus Georgia City Survey regarding Empirical Human Exposure Assessment. Multi-City Study	3M Env. Lab	8/3/99	Final Report
11	Multi-City Study. Field Report for Cleveland Tennessee and Decatur Alabama - Battelle Duxbury Activities	Battelle Memorial Institute	7/9/99	Final Report
12	Multi-City Study. Field Report for Columbus Georgia and Port St. Lucie Florida - Battelle Duxbury Activities	Battelle Memorial Institute	10/26/99	Final Report
13	Final Multi-City Study. Field Report for Mobile Alabama and Pensacola Florida - Battelle Duxbury Activities	Battelle Memorial Institute	9/29/99	Final Report
14	Quality assurance Project Plan for Empirical Human Exposure Assessment. Multi-City Study Sampling Task	Battelle Memorial Institute	5/14/99	QAP
15	Amendment 1 to the Quality Assurance Project Plan and Associated SOP's	Battelle Memorial Institute	6/16/99	Amendment

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Part 2: Biosphere Studies

	Title	Laboratory or Author	Completion Date	Type
16	LCMSMS Analysis of Extracts Reported in: "Preliminary Report Analysis of Perfluorinated Compounds in Environmental Samples"	Michigan State University (P. Jones and K. Kannan)	4/7/99	Report
17	Analysis of Fluorochemicals in Wild Bird Livers	3M Env. Lab	4/28/99	Final Report
18	Screening of PFOS levels in Eagle and Albatross	3M Env. Lab	5/8/98	Report

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ENVIRONMENTAL MONITORING:
PART ONE -- MULTI-CITY STUDY

The multi-city study was designed to obtain preliminary data about dispersion of fluorochemicals in the environment, uptake into foods and presence in drinking water to understand the potential sources of human and environmental exposures that might result from this type of dispersion. The multi-city study paired a city having manufacturing or commercial use of fluorochemical products based on customer sales with a city that does not. Initially six cities, (three pairs) are being examined. The study may be expanded depending on further results.

The multi-city study will yield environmental distribution data as well as data on potential sources of human exposure. The cities were selected to represent urban locations with various levels of fluorochemical releases and various types of municipal water supplies. The samples to be obtained, where possible, include: urban air, surface water column and surface microlayer, sediment, river fish, drinking water intake, treated drinking water, tap water, the influent to and effluent from publicly-owned waste treatment works, sludge, and municipal landfill leachate. Additionally, a "market basket" of several food products will be sampled. These include: beef, pork, chicken, hot dogs, catfish, eggs, milk, bread, green beans, apples from grocery stores and, if possible, produce from local farmers' markets.

The attached material data provides more detail on the design and structure of the study and represents the first results from the multi-city study. Included are reports on the quality assurance plan and field sampling procedures used and the results of the drinking water samples taken from the six cities. The results indicate that drinking water in four cities (Decatur, Alabama; Cleveland, Tennessee; Mobile, Alabama; and Port St. Lucie, Florida) did not contain detectable levels of fluorochemicals. Only two cities (Columbus, Georgia, and Pensacola, Florida) contained detectable levels of sulfonated fluorochemicals in the drinking water. The results show that the levels are in the range of 40-60 parts per trillion of perfluorooctane sulfonate. Only one city, Columbus, Georgia, showed very low detectable levels of perfluorooctanoate.

Also included is a copy of a draft "lifetime" drinking water health advisory developed for PFOS. This advisory reflects a very conservative approach based on application of "safety factors." The advisory level of 1 part per billion should not be misconstrued as threshold for danger or concern, but only a reference point based on application of conservative methods and the information available to date. A comparison of the drinking water data from the multi-city study indicates that there are two orders of magnitude of safety between the draft drinking water advisory and the results from these two cities in the multi-city study.