United States Environmental Protection Agency
Region 4
Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

# Sampling Investigation Trip Report
# North Georgia Public Water Suppliers
# Perfluorinated Compounds Study

## North Georgia including Dalton, Calhoun, Rome and Floyd County
## Conducted on March 31 and 31, 2009

**Report issued on April 28, 2009**

**SESD Project Identification Number: 09-0322**

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**Title and Approval Sheet**

Title: Sampling Investigation Trip Report
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**Approving Official:**

4.28.09

Trent Rainey, Acting Chief
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Date

**SESD Project Leader:**

4-28-09

Mike Neill, Environmental Scientist
Enforcement Section
Enforcement and Investigations Branch

Date

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## INTRODUCTION

On March 30 and 31, 2009, the United States Environmental Protection Agency (USEPA), Region 4, Science and Ecosystem Support Division (SESD) personnel conducted a public water sampling investigation in North Georgia. Public drinking water from plants in Dalton, Calhoun, Rome and Floyd County was sampled (Figure 1). USEPA SESD representatives, along with Georgia Environmental Protection Division (GAEPD) personnel, conducted sampling at public water supply plants to obtain levels of perfluorinated compounds in the drinking water. The sampling investigation was requested by the USEPA Region 4, Water Protection Division (WPD).

Personnel that participated in the investigation included:

| PERSONNEL | AFFILIATION | PHONE |
|---|---|---|
| Mike Neill | USEPA, SESD, Project Leader | 706-355-8614 |
| Marty Allen | USEPA, SESD, Sampler | 706-355-8651 |
| Bill Delfino | GAEPD | 404-463-1295 |
| Dena Haverland | Dalton Utilities | 706-529-1010 |
| Danny Stevens | Calhoun Utilities | 770-548-1816 |
| Joe Finger | Rome Utilities | 706-236-4527 |
| Lee Ross | Rome Utilities | 706-236-4560 |
| Randal Moore | Floyd County Water (Shannon) | 706-290-7640 |

## BACKGROUND

A study by the University of Georgia in 2006 sampled surface water from the Conasauga River for perfluorinated compounds (PFCs). Results showed concentrations of perfluoro-octanoic acid (PFOA) and perfluorooctyl sulfonate (PFOS) were high downstream of the Dalton Utilities Wastewater Treatment Plant (WWTP) (PFOA ranged from 253 – 1150 ng/L; PFOS ranged from 192-318 ng/L).

In January 2009, the USEPA Office of Water (OW) issued drinking water Provisional Health Advisories for PFOA (400 ng/L) and for PFOS (200 ng/L).

One Public Water Supplier (PWS) operates plants upstream of the Dalton Utilities WWTP and three PWSs (Calhoun, Rome and Floyd County) operate plants downstream of the Dalton Utilities WWTP. Sampling was conducted to determine concentrations of PFCs in the drinking water for all four PWSs.

## DISCUSSION OF FIELD ACTIVITIES

The sampling investigation was a coordinated effort with the USEPA National Enforcement Investigations Center (NEIC) laboratory providing the sample containers, and SESD's laboratory personnel preparing half the containers with sodium thiosulfate to de-chlorinate the "finished" water samples. A representative from GAEPD directed the sample team to the various plants, and SESD personnel collected the samples.

A total of fifteen samples were collected from seven public drinking water treatment plants. Both raw and finished water samples were collected. Three public water treatment plants were sampled from Dalton Utilities, and two public water treatment plants were sampled from Calhoun Utilities. One public water treatment plant was sampled from Rome Utilities. The Rome public water treatment plant uses raw water from both the Oostanaula and Etowah rivers. One public water treatment plant was sampled from Floyd County Utilities.

Table 1 provides data for the sample collection activities. Field measurements were made for the water quality parameters for the finished water samples and sample R1R2. Appendix A contains photographs taken during SESD's sampling investigation.

## METHODOLOGY

Field sampling procedures were performed by SESD's Enforcement and Investigations Branch personnel. Where applicable, field activities were conducted in accordance with SESD's Management and Quality Systems Procedures and the following field measurement and sampling procedures:

SESD Operating Procedure for Sample and Evidence Management, SESDPROC-005-R1
SESD Operating Procedure for Field pH Measurement, SESDPROC-100-R2
SESD Operating Procedure for Field Specific Conductance Measurement, SESDPROC-101-R2
SESD Operating Procedure for Field Temperature Measurement, SESDPROC-102-R2
SESD Operating Procedure for Field Turbidity Measurement, SESDPROC-103-R2
SESD Operating Procedure for Global Positioning System, SESDPROC-110-R2
SESD Operating Procedure for Potable Water Supply Sampling, SESDPROC-305-R1

Chain of Custody documentation was prepared by Kevin Simmons. The custody forms accompanied the samples for overnight delivery to the NEIC laboratory in Denver, CO. via FedEx (Airbill 816197873791) on April 1 and 2, 2009.

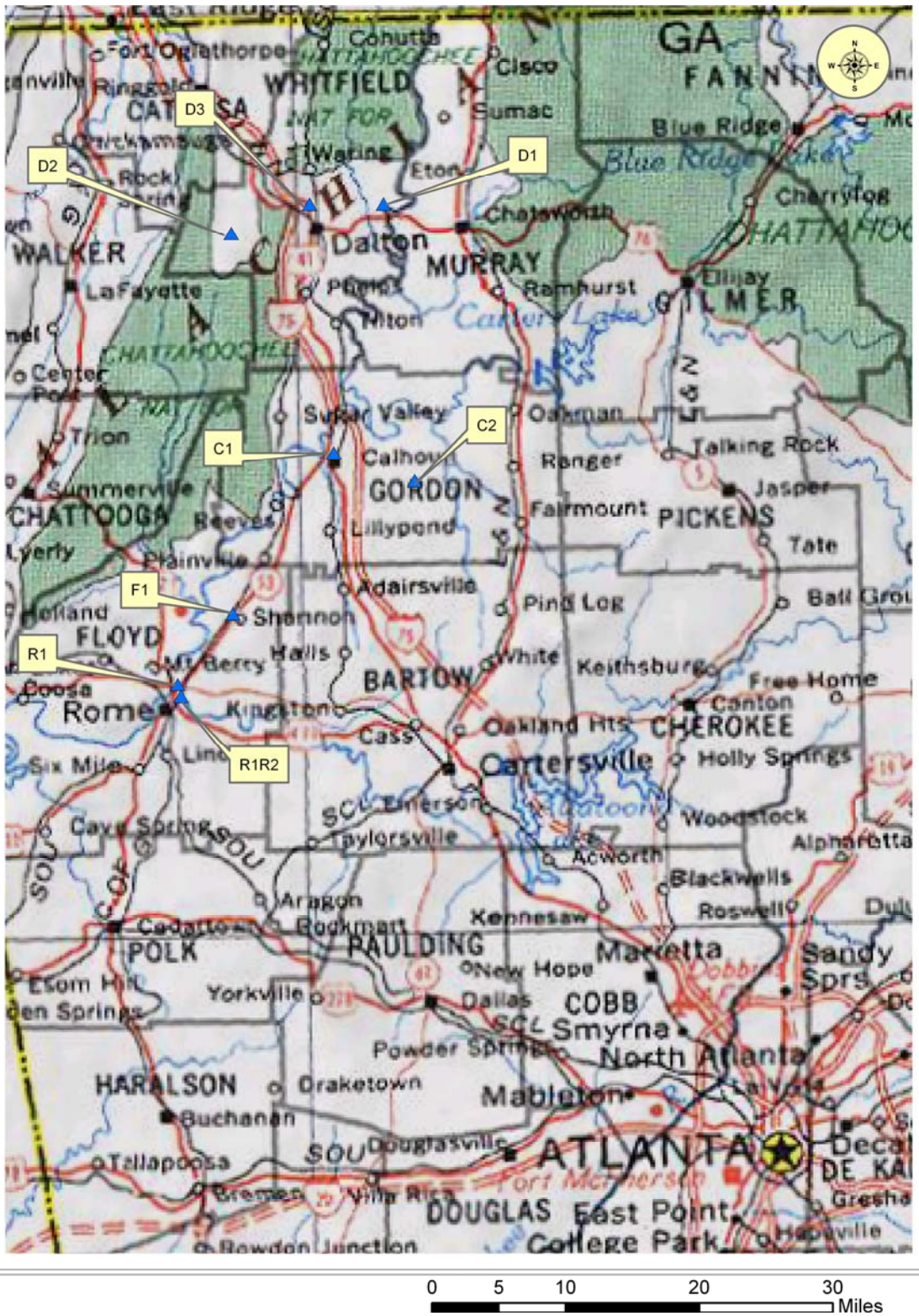
Samples collected from the Dalton Utilities plants were split with Ms Dena Haverland.

**Table 1 – Sample Data**

| Sample Stations | Description | Date | Times | Sampler | Analyses | Coordinates | Field Measurements* |
|---|---|---|---|---|---|---|---|
| D1F<br>D1R | Dalton Utilities<br>Dalton Water Works<br>VD Parrott Jr.<br>Water Treatment<br>Conasauga river water | 3-30 | 13:17<br>13:15 | M. Allen | PFCs | 34.78865°<br>-84.88020° | Temp:12.2° C<br>Cond: 148.0 µS/cm<br>pH: 6.79 SUs<br>Turb: 0.16 NTUs |
| D2F<br>D2R | Dalton Utilities<br>Freeman Springs Rd.<br>Water Treatment Plant<br>Groundwater | 3-30 | 14:17<br>14:15 | M. Allen | PFCs | 34.76009°<br>-85.08093° | Temp:15.9° C<br>Cond: 232.1 µS/cm<br>pH: 7.05 SUs<br>Turb: 0.08 NTUs |
| D3F<br>D3R | Dalton Utilities<br>Mill Creek<br>Water Treatment Plant<br>Membrane filtration | 3-30 | 15:00<br>14:57 | M. Allen | PFCs | 34.79018°<br>-84.97707° | Temp:15.9° C<br>Cond: 223.3 µS/cm<br>pH: 6.84 SUs<br>Turb: 0.11 NTUs |
| C1F<br>C1R | Calhoun Utilities<br>Mauldin Road<br>Water Treatment Plant<br>Oostanaula river water | 3-30 | 16:07<br>16:05 | M. Allen | PFCs | 34.51872°<br>-84.95238° | Temp:14.5° C<br>Cond: 138.5 µS/cm<br>pH: 6.49 SUs<br>Turb: 0.21 NTUs |
| C2F<br>C2R | Calhoun Utilities<br>Brittney Drive<br>Water Treatment Plant<br>Groundwater | 3-30 | 16:45<br>16:40 | M. Allen | PFCs | 34.48687°<br>-84.84694° | Temp: 16.4° C<br>Cond: 297.1 µS/cm<br>pH: 6.89 SUs<br>Turb: 0.06 NTUs |
| R1F<br>R1R1 | Rome Utilities<br>Bruce Hammler -<br>Blossom Hill<br>Water Treatment Plant<br>Oostanaula river water | 3-31 | 09:38<br>09:35 | M. Allen | PFCs | 34.27015°<br>-85.16196° | Temp:14.4° C<br>Cond: 185.9 µS/cm<br>pH: 7.35 SUs<br>Turb: 0.58 NTUs |
| R1R2 | Rome Utilities<br>Etowah river water | 3-31 | 10:00 | M. Allen | PFCs | 34.25726°<br>-85.15796° | Temp:11.8° C<br>Cond: 123.1 µS/cm<br>pH: 6.71 SUs<br>Turb: 43.6 NTUs |
| F1F<br>F1R | Floyd County Utilities<br>Shannon<br>Water Treatment Plant<br>Woodward Creek | 3-31 | 10:55<br>10:45 | M. Allen | PFCs | 34.34590°<br>-85.08792° | Temp:12.8° C<br>Cond: 196.4 µS/cm<br>pH: 6.91 SUs<br>Turb: 3.20 NTUs |

* Field measurements were made on the finished water samples and sample R1R2.

Figure 1. Sample Locations



# APPENDIX A

# SESD SAMPLING INVESTIGATION PHOTOGRAPHS


Photo 01 taken by M. Neill 3/30/09
D1 sample location. Raw on left, and Finished 3rd from left.

Photo 02 taken by M. Neill 3/30/09
D2 –Freeman Springs water source.

Photo 3 taken by M. Neill 3/30/09
D2 sample location. Raw on left, and Finished on the right.

Photo 4 taken by M. Neill 3/30/09
D3 sample location. Raw on left, and Finished on the right.

Photo 5 taken by M. Neill 3/30/09
C1 sample location. Raw on right, and Finished on left.

Photo 6 taken by M. Neill 3/30/09
C2R sample location.
(Source 400′ well.)

Photo 7 taken by M. Neill 3/30/09
C2F sample location.

Photo 8 taken by M. Neill 3/31/09
R1 sample location. Raw on left, and Finished 3rd from left.

Photo 9 taken by M. Neill 3/31/09
R1R2 sample location was at intake from the Etowah River.

Photo 10 taken by M. Neill 3/31/09
F1R sample location.

Photo 11 taken by M. Neill 3/31/09
F1F sample location.

- END OF REPORT-