

Technical Expert Working Group Conference Call
Friday, February 24, 2006

Attendees:

EPA Region 3 and contractors: Rick Rogers, George Rizzo, Jennie Saxe, Karen Sklenar, Stephanie Jones
The Aqueduct and contractors: Tom Jacobus, Patricia Gamby, Nicolle Boulay, Lloyd Stowe
DCWASA and contractors: Rich Giani, Maureen Donnelly
Falls Church City: Matt Jacobi
EPA Headquarters: Jeff Kempic

The meeting was led by Rick Rogers.

Agenda

The proposed meeting agenda is included below as Attachment A. There were no additions to the agenda

Summary of Discussions by Topic Area

I. Summary of recent tap water lead sampling results (DCWASA, EPA)

Rich Giani summarized the most recent tap water lead results. At the time of the call, the 90th percentile was still holding at 15 ppb. The last round of results had not come in by the time of the call. DCWASA has continued following a lead sampling schedule of approximately 100 samples being collected every six months.

II. Review of DCWASA Pipe Loop Data (DCWASA)

Rich Giani gave a brief overview of the pipe loop studies, discussing data sent in an email to the TEWG, summarized as follows:

- Loops 1 & 3 are control loops and represent what is most likely going on in the distribution system. Since the reduction in orthophosphate, DCWASA has not seen any further reduction in lead and may be seeing a slight increase. It's hard to tell right now and so they are watching these loops very closely. The loops are updated as of February 22, 2006, and the lead reading in pipe loop 1 was back down to 6 ppb.
- Loop 5 is the stannous chloride application. DCWASA began with an initial dose of 1.6 mg/L as instructed by the contractor. During this time, they saw an increase in particulate lead levels but a decrease in dissolved lead. Overall, total lead increased. As of February 13th, DCWASA was instructed to reduce the concentration to 0.25 mg/L. DCWASA currently does not have enough data to indicate the effect of this change, but it will keep the group posted. Since the drop, lead levels are not increasing and are in fact beginning to come down. Rich stated that it is unknown if this is because of the

orthophosphate, noting that Mike Schock mentioned that chloride may have enhanced the dissolving of lead oxide. Even with the orthophosphate present this is still occurring, and Rich stated that DCWASA wanted to see if they could achieve levels lower than the control. Mike Schock is interested in studying the scales.

III. Review of Aqueduct Pipe Loop Data (WA, Contractors)

Nicolle Boulay reviewed the data on the flow-through pipe loops set up at the Aqueduct. She walked attendees through a series of graphs of pipe loop results and a memo summarizing results that were sent to the TEWG members before the call.

- The pipe loop conditioning phase began on January 7, 2005. During this phase, the pipe loops were exposed to Washington Aqueduct finished water;
- On March 7, the pipe loops were put in automatic mode and were fed chemically-conditioned water, according to the Pipe Loop Plan.
- We decided to discontinue the operation of Racks 1 (Zinc Orthophosphate), 4 (no orthophosphate inhibitor) and 5 (low chloramines dose) because we felt that the data we had was sufficient to draw conclusions. Sampling for these Racks was discontinued on February 3rd. Because we have discontinued these racks, I have not included the charts for these racks with this Monthly Report.
- The Racks that are remaining (Racks 2, 3, 6 & 7) will be operated until June 2006. Rack 7 (finished water) will likely be operated longer. The phosphate dose in Racks 2 and 6 is currently 1 mg/L (Rack 6 was lowered to 1 mg/L in mid-February). Rack 3 has 3 mg/L phosphate. In the spring, we will run a chlorine burn event in Racks 2 and 3 to see if temperature affects lead release during a chlorine burn. Rack 6 will be used as a control to compare to Rack 2.
- On September 5th, in Rack 3 we switched from chloramines to free chlorine. And on November 4th, we switched from free chlorine to chloramines. To date, we have not seen a significant increase in lead release since we switched back to chloramines.
- On September 12th, we lowered the phosphate concentration in Rack 2 from a target of 3 mg/L to a target of 2 mg/L. And on November 14th, we switched from a target phosphate concentration of 2 mg/L to 1 mg/L. To date, we have not seen a significant increase in lead due to the decreased phosphate dose.

In response to a question regarding a plan for summarizing this data, Nicolle stated that a summary report should be prepared in June 2006.

IV. Review of Treatment Decisions: Orthophosphate Dose Reduction, Chlorine Burn (or Not) Spring 2006 (WA, Wholesale Customers)

There has been debate on both a possible reduction in orthophosphate dose as well as whether to return to an annual chlorine burn in the spring. Rick Rogers invited Patricia Gamby to update the group on any treatment decisions.

- Orthophosphate Dose Reduction: Ms. Gamby explained that, as a result of Rich Giani's concern with cloudy water, the orthophosphate dose was cut on January 30, 2006, with the dose of water leaving both plants at 2.2 mg/L.
- Chlorine Burn: After a meeting with customers, WA deemed it prudent to delay the chlorine burn this year so as not to disturb any lead scales.
- Nitrification: WA is also working on a joint nitrification plan with its customers to address the need for better monitoring.

Matthew Jacobi stated that depending on pipe loop data and existing circumstances, he would like to have a chlorine burn next year. Rick Rogers asked if, because there will be no chlorine burn, Falls Church was planning on conducting nitrification indicator monitoring. Matthew replied that Falls Church is participating in a WA/wholesale customer effort. They have been monitoring since the addition of orthophosphate, working with WA customers on monitoring triggers under an action plan. He stated that he feels that good progress is being made on this.

Patricia Gamby raised one final issue—the chlorine to ammonia ratio. Last fall, free ammonia numbers were higher than WA would like. At the last meeting with WA customers, WA noted that the Dalecarlia Plant is running at 0.3 and that water leaving this McMillan Plant is at 0.2. To reduce the amount of free ammonia leaving Dalecarlia, WA is changing from a 4:1 Chlorine to ammonia ratio to a 5:1 ratio in order to reduce the level by one tenth. WA has also set up monitoring on its SCADA system. WA expects any issues to be very minor and will troubleshoot as necessary.

V. FYI Update: Perchlorate Sampling Results (EPA's sampling in Upper Potomac, Spring Valley Superfund Site) (EPA, WA)

Rick Rogers stated that he wanted to get everyone up to speed on perchlorate monitoring in the Potomac River in West Virginia. The perchlorate issue water first reported in the newspapers discussing the detection of perchlorate in D.C. groundwater linked to the Spring Valley Superfund Site, a World War I munitions dump located in Northwest D.C (Appendix B, Washington Post, November 19, 2004, *DC Water Test Finds Toxic Substance*). Monitoring wells were recently drilled near the Dalecarlia treatment plant as part of a groundwater study. Two monitoring wells downgradient from the waste disposal pit—relatively distant from the reservoir—tested at 60 and 70 ppb for perchlorate. South of the reservoir on McArthur Boulevard, water tested at 48 ppb for perchlorate.

There is evidence of source of low level amounts of perchlorate in the Potomac in West Virginia that are higher than in other areas. This is being termed “background level” because it is becoming evident that finding perchlorate exists in small amounts in almost all surface water. There have been papers theorizing that perchlorate forms in the atmosphere and raining down upon us.

WA is also looking at potential sources of perchlorate upstream of Spring Valley, all the way up to West Virginia. They identified a potential source of perchlorate in a small community along

the Potomac River

WA is working on conducting sampling up- and downstream of the river point source to see if perchlorate occurs above that source. EPA was hoping to see if there were any spikes during this period, but this did not occur. A minimal amount of perchlorate has been detected so far, but EPA is continuing to look at the situation very closely to see what releases exist there and elsewhere. EPA will be in touch with WA about this.

VI. Questions and Agenda Items for the Next Call

Rick Rogers prompted the group for any additional questions and opened discussion of possible agenda items for the next call.

Karen Sklenar noted that the February 2006 issue of the AWWA Journal has an article on free chlorine, chloramines and lead release and speciation, apparently based out of Tampa, FL. The author does not present many conclusions on the issue, but one point came out that free ammonia does not attack lead.

Appendix A: Draft Meeting Agenda for February 24, 2006

- I. Summary of recent tap water lead sampling results (DCWASA, EPA)
- II. Review of DCWASA Pipe Loop Data (DCWASA)
- III. Review of Aqueduct Pipe Loop Data (WA, Contractors)
- IV. Review of Treatment Decisions: Orthophosphate Dose Reduction, Chlorine Burn (or Not) Spring 2006 (WA, Wholesale Customers)
- V. FYI Update: Perchlorate Sampling Results (EPA's sampling in Upper Potomac, Spring Valley Superfund Site) (EPA, WA)
- VI. Questions and Agenda Items for the Next Call

Appendix B: Washington Post Article on Perchlorate in D.C. Groundwater

D.C. Water Test Finds Toxic Substance

By Carol D. Leonnig
Washington Post Staff Writer
Friday, November 19, 2004; Page B01

A more refined test of the water in the Washington Aqueduct has revealed the presence of perchlorate, a toxic chemical typically found in weapons and explosives, federal officials said yesterday.

The discovery of the chemical in the water supply challenges the prevailing theory of the U.S. Army Corps of Engineers, which has argued that contamination from buried World War I munitions in the Spring Valley neighborhood to the north poses no threat to Dalecarlia Reservoir along MacArthur Avenue NW.

Thomas P. Jacobus, chief of the Washington Aqueduct, said perchlorate in the reservoir measured between 1.2 and 1.8 parts per billion (ppb) and did not pose a health risk. He said he has ordered weekly tests of the water and is recommending that the corps accelerate its search for the source of perchlorate contamination.

"I'm obviously concerned about anything that has to do with drinking water. . . . But there is no cause for alarm," Jacobus said.

The corps operates the aqueduct, which supplies drinking water to more than a million people in the District, Arlington County and the city of Falls Church. It is also overseeing a multimillion-dollar cleanup of chemical contamination in Spring Valley.

Environmental Protection Agency and District government officials said last night that there was no need for immediate action but agreed that aggressive monitoring of perchlorate was now needed.

"I have a level of concern, given the context of that site," Gregg A. Pane, director of the D.C. Department of Health, said. "While there are no immediate steps called for, we are going to be taking a close look and be very vigilant about this."

Perchlorate -- a chemical that disrupts the thyroid and is linked to hormonal dysfunction, developmental delays and infertility -- is considered a health risk to humans. The EPA has said perchlorate could harm humans at levels of 1 ppb.

There is no federal standard for the chemical. The EPA is awaiting a recommendation from a scientific panel to set one. In the meantime, the agency can require the cleanup if contamination levels reach 4 ppb.

The EPA last summer detected much higher levels of perchlorate within 200 yards of the reservoir. The aqueduct, which had argued until last month that there was no immediate reason to monitor nearby groundwater or determine the source of the contamination, began more refined testing at the reservoir after the EPA findings were made public last month.

For residents in Spring Valley, the test results released yesterday justified their earlier demands for immediate investigation.

"This is exactly what we've been worrying about," said Peter deFur, a scientist hired by residents to review the contamination. "Why the heck has the aqueduct been waiting so long to use the more sophisticated tests, I don't know.

"I think we have to assume it's been going on for a long time," deFur said, referring to possible exposure to perchlorate. "This is serious."

Tom Voltaggio, deputy director of the EPA's mid-Atlantic office that oversees the District, said the agency will closely monitor the new tests and push for more aggressive efforts to find the source of the contamination.

Bob Nelson, a spokesman for the corps, said there are no plans to change the current strategy. But he said the agency will continue to work with regulators to identify perchlorate in the area and take appropriate measures as needed.

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