Technical Expert Working Group Conference Call

Friday December 1, 2006
10:00 a.m. – 11:15 a.m.

DRAFT CALL SUMMARY

Attendees:

EPA Region 3 and contractors: Jennie Saxe, Laura Dufresne, and Karen Sklenar

The Aqueduct and contractors: Patty Gamby, Elizabeth Turner, Miranda Brown

DCWASA and contractors: Rich Giani, Maureen Donnelly, and John Civardi

George Washington University: Marina Moses

City of Falls Church: Bob Etris

Arlington County: Dave Hundelt

The meeting was led by Jennie Saxe.

Agenda

There were no changes or additions to the agenda. The meeting agenda is included as Attachment A to this call summary.

Summary of Discussions by Topic Area

I. DC WASA pipe loops

Rich Giani provided an update on the pipe loops in an e-mail to the TEWG dated November 30, 2006. Currently, only pipe loops 1 and 3 are active for lead monitoring, both running with distribution system water. Lead levels in these loops are similar, hovering around 10 ppb.

II. DC WASA Update on LCR Sampling Results

Rich Giani reported that DC WASA has completed the most recent round of LCR monitoring and is currently performing QA/QC of sampling results. Preliminary data indicate that out of 107 samples, five exceeded the action level. They are waiting for results from one additional sample.

III. WA Pipe Loop Update

Patty Gamby provided a general overview of WA's recent pipe loop results, including data received since WA returned to chloramine after simulating a chlorine burn. Data discussed were current up to October 10, 2006. Ms. Gamby provided most of her discussion in a memo sent to the group prior to the meeting. The majority of the memo provided operational history, with

notes on the chlorine burn and current operations provided at the end. The entire memo is provided as Attachment B to this conference call summary.

IV. To Burn or Not to Burn

Ms. Gamby reported that WA had consulted with Vern Snoeyink and together, they reached the conclusion that the rise in lead levels after the chlorine burn in the WA pipe loops is clearly associated with temperature and not necessarily due to the chlorine burn. Although he could not participate in the TEWG call, Tom Jacobus reported to Ms. Gamby that he is comfortable that pipe loop data show no significant increases in lead associated with the chlorine burn. Dr. Snoeyink recommended that WA and its customers consider doing the chlorine burn in the Fall instead of the Spring. If the chlorine burn were to happen in the Spring, he recommended conducting it as early as possible.

Rich Giani reported that he generally agreed with moving forward with a chlorine burn in mid-March of 2007. Because this is a big decision for DC WASA, it is being reviewed by their board. He expects them to make a decision prior to the upcoming water quality meeting on December 14, 2006. Mr. Giani pointed out that the burn would require significant coordination with DC WASA's other water quality monitoring programs, namely DBP monitoring for the IDSE. DC WASA plans to study the impacts of the burn on the growth of nitrifying bacteria

Bob Etris reported that Falls Church is on-board with a chlorine burn in March 2007 as long as DC WASA agrees. Dave Hundelt similarly reported that Arlington County would like to see a chlorine burn in the Spring of 2007 as long as it does not cause problems for DC WASA.

V. Future Call Schedule

Jennie Saxe stated that she would distribute a separate e-mail with the TEWG call schedule for December 2006 through June 2007. [*The e-mail was sent to the TEWG on December 4, 2006.*]

Attachment A
Proposed Agenda from EPA Region 3
TEWG Meeting
December 1, 2006

1. DC WASA pipe loops
2. DC WASA – update on LCR sampling results
3. Washington Aqueduct pipe loops (any data from fall chlorine burn)
4. Feelings on 2007 chlorine burn (in light of the above)
5. Future call schedule

Attachment B
Summary Memorandum for the TEWG Meeting, distributed by Patty Gamby of the Washington Aqueduct on December 1, 2006

TO: TEWG

FROM: Patty Gamby, Washington Aqueduct

DATE: December 1, 2006

This memo is intended to provide a brief overview and update of operations issues as well as observations of the data trends in relation to the Washington Aqueduct Pipe Loop Study. The memo will be discussed along with several charts at today's TEWG conference call.

OPERATION HISTORY:

- 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, 2005 the pipe loops were put in automatic mode and were fed chemically-conditioned water, according to the Pipe Loop Plan.
- **Fall chlorine burn:** On September 5th, 2005 in Rack 3 we switched from chloramine to free chlorine. On November 4th, we switched back from free chlorine to chloramine. This switch was intended to simulate a Fall chlorine burn. The data showed a clear and nearly immediate drop in lead concentrations when the switch from chloramine to free chlorine was made. The data did not show a significant increase in lead release after switching back to chloramines, but it may show a very slight increase after the switch.
- **Reducing Phosphate Concentration:** On September 12th, 2005 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 lowered the phosphate concentration from a target of 2 mg/L to 1 mg/L. In this rack the data did not show a discernible increase in lead due to the decreased phosphate dose.
- **Reducing Phosphate Concentration, Plant Water:** At the Washington Aqueduct plants the PO_4 dose to the finished water was decreased from 3 mg/L to 2.4 mg/L at the end of January 2006. In this rack lead levels continued in a slight upward trend which had begun in the month before the PO_4 level was decreased. In the same time period the temperature was increasing. The trend of lead levels appears to track closely with increase in temperature but the correlation can not be concluded at this time.
- **Scaled Down Operation:** Operation of Racks 1 (Zinc Orthophosphate), 4 (no orthophosphate inhibitor) and 5 (low chloramines dose) was discontinued because we concluded that the data we had was sufficient to draw conclusions from these racks. Sampling for these Racks was discontinued on February 3, 2006. Charts for these racks will not be included with the monthly report.
- The Racks that are remaining (Racks 2, 3, 6 & 7) continue to be operated. Rack 7 (finished water) will be operated indefinitely.

- The phosphate dose in Racks 2 and 6 is currently 1 mg/L (Rack 6 was lowered from 3 mg/l to 1 mg/L in mid-February).
- Rack 3 continues to have 3 mg/L phosphate.

- **Spring Chlorine Burn:** Ammonia to all three test racks in service (excluding rack 7, the control rack) was turned off on 4/14/06 to simulate a spring chlorine burn. This was done as previously discussed to observe the effect of a chlorine burn with typical spring water temperature (note that the earlier chlorine burn was simulated in September, in fall temperatures). During this event we are able to observe and compare the effects of a spring chlorine burn in the loops at 1 mg/l phosphate (racks 2 and 6) and at 3 mg/l (rack 3). Prior to 4/14/06, in Rack 2, 3 and 6, lead levels appear to be rising slightly. After the switch to free chlorine (to mimic the seasonal burn) lower lead levels can be seen in Racks 2, 3 and 6. In Rack 7 (plant water, which did not see the switch to free chlorine) lead levels appear to continue rising. The increase in lead in Rack 7 appears that it could be due to the increase in water temperature as the treatment and control strategy of the finished water has not changed since January 2006.
- The ammonia was turned on again on 5/12/2006 to return to chloramines, resulting in 4 weeks of free chlorine in the loops. A decrease in lead levels can be seen in Racks 2, 3 and 6 after the switch to free chlorine. This is consistent with what was observed during the earlier chlorine burn simulation. In Rack 2 and 6, and more noticeably in Rack 3, the increase in lead levels appears to have started just before the return to chloramines and may be correlated to both the return to chloramines as well as temperature. However, a regression analysis performed by CH2MHill did not show a good correlation between lead levels and temperature. This effect requires further consideration and study.
- The data that we have to date does not clearly show the impact of the chlorine burn, especially considering the potential temperature effect, although it does lead to the conclusion that the effect of the chlorine burn, if any, is not particularly significant.

CURRENT OPERATION:

- The data on the charts is through October 10, 2006.
- During the last TEWG call WA reported that the four active loops (including loop 7, the plant water loop which will be operated indefinitely) would continue to be operated until the water temperature begins to fall. The data presented reflects the seasonal fall in temperature. Temperatures continue to fall.
- As anticipated, lead levels in the loops appear to be decreasing with the fall in temperature. This apparent trend has been observed over the past year. This may translate to an expectation that the lead levels in the loops would rise when the temperatures begin to rise in the spring.