



Meeting Minutes
Big Dry Creek Watershed Association

Date/Time: March 15, 2007, 1:00 to 3:00 p.m.

Location: Broomfield Water Treatment Plant, 4395 W. 144th Avenue

Topic: Results of 2006 Big Dry Creek Sampling and Analysis Program

1. Presentation of 2006 Water Quality Analysis

Jane Clary, Wright Water Engineers, provided a handout summarizing the 2006 water quality data analysis and presented the key findings to the group. The memorandum summarizing the findings will be posted to the Big Dry Creek Watershed Association website (after April 6, 2007) and can be downloaded for more detail (www.bigdrycreek.org). A few findings of particular interest include:

- Over 4,800 records for data collected in 2006 were added to the BDCWA water quality database.
- Segment 1 (the main stem) of Big Dry Creek is listed on the 2006 303(d) List for Colorado for non-attainment of stream standards for *E. coli* and selenium. Each of these constituents has a temporary modification to the stream standard currently in place. Additionally, a portion of the stream downstream of the Weld County line is listed on the Monitoring and Evaluation (M&E) portion of the 303(d) list for total recoverable iron.
- Segment 1 of Big Dry Creek does not attain the currently assigned acute or chronic standards for dissolved selenium at bdc1.5. Although the stream segment as a whole attained the temporarily modified chronic stream standard for dissolved selenium, it did not meet the underlying chronic standard at any monitoring location on the stream except at the upstream-most location (bdc0.5).

- Although the overall stream segment met the temporarily modified fecal coliform and *E. coli* standards, the stream slightly exceeded the underlying (unmodified) *E. coli* standard. The geometric mean concentrations of *E. coli* for the past five years exceeds the underlying stream standard at all locations on the stream except for bdc1.0 and bdc4.0.
- Total recoverable iron met the stream standard at all locations during 2006; however, the five-year 50th percentile value of 1.17 exceeds the stream standard at bdc6.0.
- One sample at bdc6.0 in the agricultural area detected mercury above the acute standard; however, this site does not have a history of detections of mercury.
- Due to uncertainty related to the regulatory status of the new total ammonia standard, compliance with this standard was not assessed. The stream continues to comply with the pre-2006 unionized ammonia standard.
- All other constituents attained the stream standards during 2006.
- Selenium-related comments:
 - Seasonal variation in selenium concentrations during 2006 was present with lower concentrations during the irrigation season (May-October) and higher concentrations during the non-irrigation season (November-April).
 - As has been the case since 2003, the highest concentrations of selenium were present at monitoring location bdc1.5, located just downstream of Front Range Community College, upstream of both the wastewater discharges and agricultural influences. The area upstream of this monitoring location has been the focus of follow-up field sampling and investigations. The source of elevated selenium is believed to be naturally elevated selenium in groundwater.
- Bacteria-related trends and observations:
 - Geometric mean concentrations for both *E. coli* and fecal coliform are the lowest in grab samples from the Broomfield and Westminster WWTP effluent. For the five-year time period, wastewater grab samples were well below the stream standard.
 - The highest concentrations of both *E. coli* and fecal coliform are present at bdc2.0. The five year geometric mean exceeds the temporarily modified standard of 401/100 mL at this location, whereas all other locations meet the modified standard. The underlying

standard of 205/100 mL is exceeded for the five-year period at all locations except bdc4.0.

- During 2006, *E. coli* and fecal coliform concentrations were higher than typically observed at upstream open space locations bdc1.0 and bdc1.5. In general, it appears that concentrations at these locations are increasing. An increase in beaver activity and dams has been noted in this area by Westminster Parks staff, Aquatics Associates, and city field staff in this area.
- Multi-year data plots show that the drought conditions in 2002 continue to show the highest *E. coli* and fecal coliform concentrations at each monitoring location.
- Seasonal variation is evident for 2006, which is consistent with previous analyses conducted by BDCWA.
- New standards for total ammonia and temperature were discussed. Mary Fabisiak reported that Dr. Lewis is conducting modeling for the Big Dry Creek dischargers related to the ammonia standard, but additional review is needed prior to discussing the results. Given that a temporary modification to the WWTP permits is in place until 2011, it is worthwhile to note that unionized ammonia concentrations were well below the “old” stream standards in 2006.
- David Carter identified an error in the total ammonia plot. (*A corrected plot was distributed via email following the meeting.*)
- Flows appeared to be less variable in the lower watershed than in recent years. High flows associated with storm events were significantly lower than those observed in the past several years.
- The group determined that sampling for fecal coliform and contract laboratory analysis for selenium could be dropped from the sampling program. The Broomfield WWTP will conduct the selenium analysis, but an annual split will continue to be sent to ACZ for additional QA.

2. Discussion of Next Steps for *E. coli* Study

- Jane provided a handout of the current Colorado Water Quality Control Division’s *E. coli* Sampling Guidance for the South Platte River.
- The group agreed that moving forward with a coordinated *E. coli* dry weather sampling program limited to the open space area between bdc1.0 and bdc2.0 in general accordance with the Colorado Water Quality Control Division’s Sampling Guidance for the South Platte River was important. The actual number of sampling events will be smaller than what is

recommended for the South Platte. The need to coordinate regarding the timing of Standley Lake releases under Northglenn's augmentation plan was noted.

- Special studies related to *E. coli* are not currently funded under baseline BDCWA dues. The details of scope, budget and funding sources will be worked out via email.
- Jessica Stevens (Adams County) noted that in her previous work in California that *E. coli* concentrations expected for a reference watershed were used as a baseline in an *E. coli* TMDL. The purpose of the reference watershed was to acknowledge a baseline of naturally occurring *E. coli* concentrations in the TMDL.
- A recent pathogen monitoring guidance document prepared by the American Water Works Association Research Foundation and the U.S. Environmental Protection Agency in 2006 was discussed. The study identified beavers as a significant source of pathogens. The presence of several beaver dams in the Big Dry Creek open space behind Front Range Community College was noted in this context and could be a potential source of bacteria in that reach of stream.

3. Miscellaneous Business

- Mary Fabisiak provided an update on the Nutrient Criteria Workgroup. A rulemaking hearing will be held in 2011, which is anticipated to result in nutrient criteria for lakes/reservoirs and rivers/streams.
- Mary also provided an update on the schedule for the South Platte River Basin (Regulation 38) schedule, which includes an issues formulation hearing in October 2007, with the hearing in June 2009. The next revision to the Basic Standards (Regulation 31) is scheduled for June 2010.
- BDCWA Long-range meeting schedule:
 - a. May 22, 2007, 10:00 a.m. to 12:00 p.m.: Board meeting focusing on budget planning and results of aquatic life monitoring program.
 - b. July 26, 2007, 1:00 to 3:00 p.m.: Public/general membership meeting, results of dry weather *E. coli* sampling.
 - c. September 11, 2007, 10:00 a.m. to 12:00 p.m.: Board meeting/election of officers.
 - d. December 6, 2007, 1:00 to 3:00 p.m.: Public/general membership meeting, topic to be determined.

- Big Dry Creek is hosting the March SPCURE meeting on March 20, 2007 and is also on the agenda for the March 23, 2007 Water Environment Planning Committee (WEPC) meeting at Denver Regional Council of Governments.

Attendance at March 15, 2006 BDCWA Meeting

Last Name	First Name	Organization Name
Carter	David	City of Westminster
Clary	Jane	Wright Water Engineers, Inc.
Crowley	Chris	City of Thornton
Fabisiak	Mary	City of Westminster
Fiehweg	Bob	NREL
Hand	Brittney	City of Thornton-Water Quality
Hubbard	Laura	City of Broomfield-Environmental Lab
Julian	Lesa	City of Broomfield
O'Neill	Connie	North Front Range Water Quality Planning Authority
Reilley	Robin	Denver Regional Council of Governments
Sauter	Sarah	Colorado Watershed Network
Stanley	Shelley	City of Northglenn
Stevens	Jessica	Adams County
Sturgeon	Becky	City of Broomfield
Wood	Alice	Integral Consulting/Barr-Milton Watershed Assoc.

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