

# City of Palo Alto

## Public Works Department

P.O. Box 10250  
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October 29, 2012

Robert Schlipf  
California Regional Water Quality Control Board  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

Via E-mail: [rschlipf@waterboards.ca.gov](mailto:rschlipf@waterboards.ca.gov)

**SUBJECT: Comments on Tentative Order for Municipal and Industrial Wastewater Discharges of Mercury and PCBs in the San Francisco Bay**

Dear Mr. Schlipf:

Thank you for this opportunity to comment on the subject Tentative Order (TO). It is our understanding that the San Francisco Bay Regional Water Quality Control Board (Regional Board) plans to adopt the TO that reissues an NPDES permit for 2013 through 2017 for all municipal wastewater treatment plants and industrial facilities that discharge treated wastewater potentially containing low level mercury and PCBs to San Francisco Bay. Palo Alto agrees with the decision to monitor PCBs via method 1668C for the 40 congeners observed in fish tissue by the Regional Monitoring Program.

While Palo Alto concurs that the TO is a well thought-out continuation of the Regional Board's mercury and PCB control program in the San Francisco Bay, Palo Alto has concerns with the quality of the data collected using method 1668C, which we understand to be for research only and as shown below, may not accurately reflect actual PCB concentrations. Palo Alto is aware that under the current permit and TO, compliance is based on method 608.

The City of Palo Alto has collected and analyzed PCB samples using EPA Method 1668C quarterly since May 2011 as per a requirement in the Mercury and PCB Watershed Permit. Prior to this quarterly sampling, the City participated in a BACWA study in which samples were collected in November 2008 and February 2009. Table 1 summarizes the results for the sum of the 66 PCB congeners used in the development of the PCB total maximum daily loads (TMDL) calculation.

**Table 1: Summary of Palo Alto's PCB 1668C Data (all values are pg/L).**

Sample Date	Lab	Sum of 66 Congeners (ND=MDL)	Sum of 66 Congeners (Method Blank)	Blank Corrected (Sum of 66)
11/17/2008	Lab 1	608	110	498
2/15/2009	Lab 1	659	393	266
5/8/2011	Lab 2	1177	609	568
8/9/2011	Lab 2	929	537	392
11/7/2011	Lab 2	1715	935	779
2/7/2012	Lab 2	1118	512	606
5/6/2012	Lab 2	1065	849	216
8/9/2012	Lab 2	1213	981	232

#### **Statistical Summary of the Data**

The data used in the statistical analysis was compiled from the above described quarterly sampling and BACWA study. The data set is comprised of eight different samples that include the sum of the 66 PCBs congeners listed in Table F-14 of the *Tentative Order for Municipal and Industrial Wastewater Discharges of Mercury and PCBs to San Francisco Bay* (Tentative Order). Summation concentrations for each of the eight sampling events and their associated method blanks were calculated treating non-detects equal to zero, as well as treating non-detects equal to the method detection limit (MDL). Finally, a blank corrected value for each sample was obtained by subtracting the 66 congener total of the method blank from the respective sample summation; note that samples were analyzed by two different laboratories.

A t-test was performed on a data set compiled from the above described quarterly sampling and BACWA study. The City of Palo Alto determined that there is a significant difference between sample results that were not blank corrected ( $M=1060$ ,  $SD=349$ ) and sample results that were blank corrected ( $M=448$ ,  $SD=199$ ),  $t(7)=5.790$ ,  $p=0.00067$ . Additionally, the City calculated that between 18% and 81% of each non-blank corrected sample could be attributed to elevated congener levels in the associated method blank.

#### **Concerns with Validity of the Data**

The City of Palo Alto is concerned about the accuracy and integrity of PCB data collection using EPA Method 1668C. The City has seen drastically different PCB effluent concentrations. This variation can be partially attributed to elevated method blank levels. Method 1668C does not, however, allow for blank correction based on the results of one method blank. As detailed above, a significant difference between blank and non-blank corrected data was observed. (Note: Blank corrected data was obtained by simply subtracting the associated method blank from the reported sample concentration.) Additionally, the City calculated that up to 81% of reported sample concentrations could



be attributed to method blank contamination. Due to these issues, it is possible that the City of Palo Alto's data listed in Appendix F-3 of the Tentative Order does not accurately represent Palo Alto data. The City feels that the data in Appendix F-3 should be footnoted or flagged as experimental data which contains high blank values. Additionally, based on the effluent concentrations published in Appendix F-3, one could incorrectly conclude that the City of Palo Alto exceeds the Average Monthly Effluent Limit and the Maximum Daily Effluent Limits. Flagging the high blank data as experimental would eliminate any confusion.

**Plans for Inter-laboratory Study**

The City plans to undertake an inter-laboratory comparison study in November 2012. Split samples will be sent to at least three different laboratories and analyzed by Method 1668C. Sample results and method blank results will be compared to one another. Based on the results received, the City may consider switching labs if it is determined that the current lab analysis is not representing Palo Alto's data accurately. Concurrently we will strongly encourage a more extensive interagency study that will provide more scientifically defensible data. The inter-laboratory study may also show that it is not possible to get accurate results using the 1668C method.

The City of Palo Alto appreciates the Regional Board's close attention to the comments made herein. If you have any questions please contact Karin North at 650-329-2104.

Regards,



Ken Torke  
Watershed Protection Manager