C.12. Polychlorinated Biphenyls (PCBs) Controls

The Permittees shall implement the following control programs for PCBs. The Permittees shall implement PCBs control measures (source control, treatment control or pollution prevention strategies) in areas where benefits are most likely to accrue (focused implementation) and report on those control measures according to the provisions below. The provisions constitute implementation of the urban runoff requirements of the PCBs TMDL. Permittees must reduce PCBs loads by a specified amount during the term of the permit, thereby making substantial progress toward achieving the urban runoff PCBs load allocation. The aggregate, regionwide, urban runoff wasteload load allocation of 2 kg/yr (representing a load reduction from all urban runoff sources of approximately 18 kg/yr compared to loads estimated using data collected in 2003) should be achieved by March 2030. The Permittees may comply with any requirement of this Provision through a collaborative effort.

C.12.a. Implement Control Measures to Achieve PCBs Load Reductions.

i. Task Description – Permittees shall continue implementing existing or initiate new PCBs source and treatment control measures and pollution prevention strategies to achieve PCBs load reductions throughout the area covered by the permit.

ii. Implementation level – In order to comply with this provision element, Permittees shall:

(1) Identify the watersheds in which PCBs control measures are currently being implemented and those in which new control measures will be implemented during the term of this permit,

(2) Identify the control measures that are currently being implemented and those that will be implemented in each watershed, and

(3) Submit a schedule of control measure implementation.

(4) Implement sufficient control measures to achieve county-specific load reductions shown in Table 12.1 and demonstrate achievement of these load reductions by using the accounting methods established according to provision C.12.b. Load reductions from control measures implemented prior to the effective date of this permit may be counted toward the required reductions of this permit term if these control measures were established or implemented during the last permit term, but load reductions from the activity were not realized or credited during the last permit term.

For all Permittees combined, these county-specific average annual PCBs load reductions total 0.5 kg/yr during each of the first two years of the permit and 3.0 kg/yr during each of the final three years of the permit. The Countywide Urban Runoff Programs are responsible for specific portions of these Permit area totals shown in Table 12.1 below. These county-specific expected load reductions allocate responsibility for load

reductions to individual county programs according to the same proportions used to establish county-specific load allocations in the PCBs TMDL.

Table 12.1 Expected PCBs Load Reductions by County

County Program	**PCBs load reduction (g/year) during first two years of permit**	**PCBs Load Reduction (g/year) for final 3 years of permit**
Alameda	160	940
Contra Costa	90	560
San Mateo	60	370
Santa Clara	160	940
Solano (unincorporated, Suisun City, Vallejo, Fairfield)	15	95
Totals	**500**	**3000**

Fairfield-Suisun constitutes approximately one-half the population of Solano County so the load reduction requirements for Fairfield-Suisun are one-half of those calculated for Solano County as a whole.

iii. Reporting

(1) The Permittees shall report by February 1, 2016 a list of the watersheds (or portions therein) where PCBs control measures are currently being implemented and those in which control measures will be implemented (C.12.a.ii(1)) during the term of this permit as well as the monitoring data and other information used to select these watersheds.

(2) The Permittees shall report in their 2016 Annual Report the specific control measures (C.12.a.ii(2)) that are currently being implemented and those that will be implemented in watersheds identified under C.12.a.iii(1) and an implementation schedule (C.12.a.ii(3)) for these control measures. This report shall include:

a. The number, type, and locations and/or frequency (if applicable) of control measures;

b. The description, scope, and start date, of pollution prevention measures;

c. For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement; and

d. Clear statements of the responsibilities of each participating Permittee for implementation of pollution prevention or control measures.

(3) Beginning with the 2017 Annual Report and continuing in all Annual Reports, Permittees shall update all the information required under C.12.a.iii(2) as necessary to account for new control measures implemented but not described in the 2016 Annual Report.

C.12.b. Assess PCB Load Reductions from Stormwater

Task Description – The Permittees shall develop and implement an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the provisions of this permit or load reductions achieved through other relevant efforts not explicitly required by the provisions of this permit. The Permittees shall use the assessment methodology to demonstrate progress toward the interim load reduction milestones to be achieved during the term of the permit and demonstrate progress toward attainment of the program area allocations. A reasonable foundation for the load reduction accounting system was submitted by Permittees in December 2013 in the Integrated Monitoring Report for the previous permit. This task element consists of updating the work from that document, justifying assumptions and selected parameters used to quantify the load reduction benefit for each type of control measure, and indicating what information will be collected and submitted to confirm the load reduction benefit for each unit of activity.

i. Implementation Level – The Permittees shall demonstrate progress toward and ultimate achievement of load reduction requirements stated in C.12.a.ii.(4). This shall be accomplished by quantifying the PCBs load reductions achieved through implementing pollution prevention, source control and treatment control efforts required by the provisions of this permit as well as PCBs load reductions achieved through other relevant efforts not explicitly required by the provisions of this permit.

ii. Reporting

(1) The Permittees shall submit, for Executive Officer approval, by April 1, 2016, a full description of the measurement and estimation methodology and rationale for the approaches used to assess PCBs load reductions achieved through PCBs source control, stormwater treatment, green infrastructure projects, and other stormwater management measures implemented during the term of this permit. This methodology should justify the choices for parameters used to estimate load reduction benefits and identify the data that will be collected and submitted in support of any claim of load reduction benefit associated with implemented control measures.

For control measures that become operational at any time during year 5 of the permit term, the estimated load reduction credited to the Permittee for this control measure shall be the estimated PCBs load removed during one full year of operation. For control measures requiring construction or installation of new infrastructure that are under construction but not fully operational as of the end of the permit term, one-half (50%) of the estimated PCBs yearly load reduction shall be counted in year 5 with the remaining 50% load reduction credited during the future year that the infrastructure element is fully operational.

(2) Beginning with the 2016 Annual Report, Permittees shall report annually the loads reduced using the approved estimation methodology to demonstrate cumulative PCBs load reduced from each control measure implemented since the beginning of permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates, including appropriate reference to the control measures described in the reporting required under C.12.a.

(3) In their 2018 and subsequent Annual Reports the Permittees shall submit, for Executive Officer approval, any updates, if necessary, to the measurement and estimation methodologies to assess PCBs load reductions.

C.12.c. Plan and Implement Green Infrastructure to reduce PCBs loads –

i. Task Description – Permittees shall implement green infrastructure projects during the term of the permit to achieve PCBs load reductions of 120 g/year over the final three years of the permit term. Additionally, Permittees shall provide reasonable assurance of PCBs load reductions of at least 3 kg/yr throughout the Permit area by 2040 through implementation of green infrastructure plans required by provision C.3.b.iii.

ii. Implementation level – Permittees shall:

(1) Implement sufficient green infrastructure projects to achieve county-specific load reductions shown in Table 12.2 and demonstrate achievement of these load reductions by using the accounting methods established according to provision C.12.b.ii(1). PCBs load reductions achieved through implementation of green infrastructure may be counted as part of the overall load reductions required during this permit term under C.12.a.ii(4). Load reductions from green infrastructure projects implemented prior to the effective date of this permit may be counted toward the required green infrastructure reductions of this permit term if these projects were established or implemented during the last permit term, but load reductions from the activity were not realized or credited during the last permit term.

For all Permittees combined, these county-specific average annual PCBs load reductions from green infrastructure projects total 120 g/yr during each of the final three years of the permit. The Countywide Urban Runoff Programs are responsible for specific portions of these Permit area totals shown in Table 12.2 below. The total expected PCBs load reductions and county-specific expected PCBs load reductions from green infrastructure projects are derived from an expected number of green infrastructure projects for each county (see Fact Sheet).

Table 12.2 Expected PCBs Load Reductions via Green Infrastructure Implementation by County

County Program	**PCBs Load Reduction (g/year) for final 3 years of permit through green infrastructure**
Alameda	32
Contra Costa	24
San Mateo	31
Santa Clara	27
Solano County (unincorporated, Suisun City, Vallejo, Fairfield)	6
Totals	**120**

(2) Permittees shall provide reasonable assurance of future PCBs load reductions by doing the following:

a. Quantify the relationship between areal extent of green infrastructure implementation and PCBs load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.

b. Estimate the amount and characteristics of land area that will be treated through green infrastructure future years 2020, 2030, and 2040.

c. Estimate the amount of PCBs load reductions that will result from green infrastructure implementation by future years 2020, 2030, and 2040.

d. Quantitatively demonstrate that PCBs reductions of at least 3 kg/yr will be realized by 2040 through implementation of green infrastructure projects.

e. Ensure that the calculation methods, models, model inputs and modeling assumptions used to fulfill C.12.c.ii.(2)a.-d. have been validated through a peer review process.

iii. Reporting

(1) The Permittees shall submit in their 2017 Annual Report, as part of reporting for C.12.b.ii(1), the quantitative relationship between green infrastructure implementation and PCBs load reductions. This submittal shall include all data used and a full description of models and model inputs relied on to establish this relationship.

(2) The Permittees shall submit in their 2019 Annual Report an estimate of the amount and characteristics of land area that will be treated through green infrastructure implementation by future years 2020, 2030, and 2040. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.

(3) The Permittees shall submit in their 2019 Annual Report a demonstration with reasonable assurance that PCBs reductions of at least 3 kg/yr will be realized by 2040 through implementation of green infrastructure projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance demonstration.

(4) The Permittees shall submit as part of reporting for C.12.b.ii(2), beginning with their 2019 Annual Report an estimate of the amount of PCBs load reductions result from green infrastructure implementation during term of the permit. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.

C.12.d. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

i. Task Description – Permittees shall prepare a plan and schedule for PCBs control measure implementation and provide reasonable assurance that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations.

ii. Implementation level – Permittees shall prepare a PCBs control measures implementation plan and provide reasonable assurance that the plan will result in PCBs load reductions sufficient to attain the PCBs TMDL load allocations. The plan must:

(1) identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects); and

(2) include a schedule according to which these technically and economically feasible control measures will be fully implemented; and

(3) provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

iii. Reporting

(1) Permittees shall submit the plan and schedule in the 2019 Annual Report.

C.12.e. Evaluate PCBs Presence in Caulks/Sealants Used in Storm Drain or Roadway Infrastructure in Public Rights-of-Way

i. Task Description –Permittees shall collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations. PCBs are most likely present in material applied during the 1970s so the focus of the investigations should be on structures installed during this era.

ii. Implementation Level –

Permittees shall collect at least 20 composite samples (throughout the Permit area) of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way and analyze this material for PCBs in such a way as to be able to detect a minimum PCBs concentration of 200 parts per billion. This sampling and analysis will count toward partial fulfillment of the monitoring effort aimed at finding PCBs sources (see management information need in C.8.f).

iii. Reporting –

(1) Permittees shall report on the results (including all data gathered) of this investigation no later than the 2017 Annual Reports.

C.12.f. Manage PCB-Containing Materials and Wastes during Building Demolition and Renovation Activities

i. Task Description – At the time of submittal of an application for a demolition or renovation (demo/reno) permit, the Permittees shall require the applicant or project proponent to determine whether PCBs are present in the structure and, if so, to take follow up actions prior to issuance of the permit. This requirement shall apply only to potential PCB-containing structures which are structures built or remodeled between the years 1950 and 1980. Single-family residential structures are excluded.

ii. Implementation Level –

At the start of the third year of the permit term and thereafter, before issuing a demo/reno permit for a potential PCB-containing structure, each Permittee shall require the permit applicant to do the following:

(1) Sample caulking around concrete joints, masonry joints, doors, and windows. Sample exterior paint, mastics, glazing, and coating on acoustic tiles.

(2) Have the samples analyzed for total PCBs. The lab should follow the approach referenced in U.S. EPA's PCB regulations, such as method 3500B/3540C from U.S. EPA's SW-846, Test Methods for Evaluating Solid Waste, for chemical extraction of PCBs. For analyzing extracts, Method 8082 from U.S. EPA's SW-846 or a method capable of detecting total PCBs at a concentration of 25 parts per million (for all PCBs in total) or less is appropriate.

(3) In lieu of sampling and analysis, the demo/reno permit applicant may assume the building materials listed in C.12.f.ii.(1) contain PCBs at concentrations equal to or greater than 50 parts per million and manage these materials in accordance with U.S.EPA regulations.

(4) Submit all analytical results, including the list of materials assumed to contain PCBs under C.12.f.ii.(3) where applicable, with the potential PCB-containing structure address and permit applicant contact information to the Permittee and to the Water Board.

(5) Where PCBs are present or assumed present in any building material at a concentration equal to or greater than 50 parts per million, prior to issuance of a demo/reno permit the Permittee shall require and verify that the demo/reno proponent has a letter or email from U.S. EPA, Region IX or Water Board stating that PCBs-containing materials have been adequately removed.

iii. Reporting –

(1) In their 2016 and 2017 Annual Reports, the Permittees shall summarize the steps they have taken to begin implementing this requirement, which could include developing ordinances or policies, obtaining information materials, updating or supplementing permit application forms, developing a tracking tool for potential PCB-containing structures, and training relevant staff as needed to comply with this sub-provision.

(2) Beginning with their 2018 Annual Report, the Permittees shall list all potential PCB-containing structures that have applied for a demo/reno permit, with the current reporting year's applicants on top, with the potential PCB-containing structures address, project proponent contact information, and date of permit issuance for each project.

C.12.g. Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins

i. Task Description – The Permittees shall conduct or cause to be conducted studies aimed at better understanding the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas.

ii. Implementation Level – The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the sediment and food web PCBs concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, especially in Bay margins, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.

iii. Reporting – The Permittees shall submit in their 2016 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a preliminary schedule. The Permittees shall report on status of the studies in their 2017 Annual Report. The Permittees shall report in the March 15, 2019 Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

C.12.i. Implement a Risk Reduction Program

i. Task Description – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of PCBs in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and

potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence fishers and their families. The risk reduction framework developed in the previous permit term, which funded community based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.

ii. Implementation Level –

(1) At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement.

(2) In year four of the permit term, Permittees shall evaluate the effectiveness of their risk reduction program.

iii. Reporting – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2019 Annual Report.