

C.12. Polychlorinated Biphenyls (PCBs) Controls

The Permittees shall implement the following control program for PCBs. The Permittees shall implement PCBs control measures (source control, treatment control, and 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 implement the urban runoff requirements of the PCBs TMDL. Permittees shall reduce PCBs loads by a specified amount during the term of the Permit, thereby making substantial progress toward achieving the urban runoff PCBs wasteload allocation in the Basin Plan. The allocation, on an aggregate and regionwide basis, is 2 kg/yr (1.6 kg/yr allocated to Permittees) to be achieved by March 2030. This wasteload allocation represents a load reduction from all urban runoff sources to the Bay of approximately 18 kg/yr (14.4 kg/yr from Permittees) compared to loads estimated using data collected in 2003. 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 implement PCBs source and treatment control measures and pollution prevention strategies to achieve PCBs load reductions in Table 12.1 throughout the area covered by this Permit (permit-area).
- ii. Implementation level** –To comply with this provision element, Permittees shall:
 - (1) Identify the watersheds or portions of watersheds (management areas) 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 management area;
 - (3) Submit a schedule of control measure implementation; and
 - (4) Implement sufficient control measures to achieve the permit-area-wide reduction stated below or the county-specific load reduction performance criteria shown in Table 12.1. The Permittees shall demonstrate achievement of these load reductions as required in 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 Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term (e.g., they were implemented after the 2014 Integrated Monitoring Report was submitted).

For all Permittees combined, these county-specific average annual PCBs load reduction performance criteria shall total 0.5 kg/yr by June 30, 2018, and 3.0 kg/yr by June 30, 2020. The June 30, 2020, deadline shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020. The Fact Sheet describes the amount of PCBs load reduction benefit associated with implementing a number of control measures.

The Permittees may meet the load reductions as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 12.1. If neither the permit-area-wide total load reduction criteria nor the county-specific load reduction criterion is achieved, Permittees shall achieve load reductions consistent with their share of the county total. The individual Permittee share of the county load reduction performance criteria is the proportion of county population in each municipality.

If all the Permittees in a county wish to use an alternative method of distributing the county load reductions, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2017 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.

Table 12.1 PCBs Load Reductions Performance Criteria by County

County	PCBs load reduction (g/yr) by June 30, 2018	PCBs Load Reduction (g/yr) by June 30, 2020
Alameda Permittees	160	940
Contra Costa Permittees	90	560
San Mateo Permittees	60	370
Santa Clara Permittees	160	940
Solano Permittees: Suisun City, Vallejo, Fairfield	30	190
Totals	500	3000

iii. Reporting

- (1) The Permittees shall report by April 1, 2016, progress toward developing a list of the watersheds and management areas 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 and management areas. This list should include watersheds containing contaminated sites referred to the Water Board as well.
- (2) The Permittees shall report in their 2016 Annual Report the list of watersheds and management areas where control measures are currently being implemented or will be implemented during the term of the Permit (C.12.a.ii(1)) along with the specific control measures (C.12.a.ii(2)) that are currently being implemented and those that will be implemented in these watersheds and management areas

and an implementation schedule (C.12.a.ii(3)) for these control measures. In addition to the list of watersheds and management areas, this report shall include:

- a. The number, type, and locations and/or frequency (if applicable) of control measures;
 - b. A cumulative listing of all potentially PCB-contaminated sites Permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information;
 - c. The description, scope, and start date, of PCBs control measures;
 - d. 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
 - e. Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified under C.12.a.ii(2).
- (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.
- (4) All Permittees in a county may submit, in the 2017 Annual Report, an alternative (different from the default described in C.12.a.ii(4)) and supporting information to derive Permittee-specific proportions of load reduction criteria.

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

- i. Task Description** – The Permittees shall develop, document, and implement an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of pollution prevention, source control, and treatment control measures, including PCBs source control, stormwater treatment, green infrastructure and other measures. The Permittees shall use the assessment methodology to demonstrate progress toward achieving the load reductions required in this Permit term and the program area wasteload allocations.

A reasonable and technically sound load reduction accounting system is described in the Fact Sheet and is based on information submitted by Permittees in the January 2014 Integrated Monitoring Report. This task consists of documenting the method described in the Fact Sheet or any alternative methodology, updating and refining the accounting system to account for new information, justifying assumptions, analytical methods, sampling schemes and parameters used to quantify the load reduction for each type of control measure, and indicating what information will be collected and submitted to confirm the calculated load reduction for each unit of activity.

- ii. Implementation Level** – The Permittees shall adequately quantify the PCBs load reductions achieved through all the pollution prevention, source control, and

treatment control measures Permittees will implement in this Permit term, except for measures to manage PCB-containing materials and wastes during building demolitions (C.12.f).

For this Permit term, the Permittees will receive a total of 2000 g/yr (2 kg/yr) PCBs load reduction value if they have developed and implemented effective protocols for managing PCB-containing materials during demolition so that PCBs do not drain into the MS4 as required in provision C.12.f. The 2000 g/yr PCBs load reduction value shall be in furtherance of meeting the June 30, 2020, 3000 g/yr requirement in Table 12.1.

The Permittee-specific portion of the 2000 g/yr PCBs load reduction value shall be based on the proportion of county population in each municipality. If all the Permittees in a county wish to use an alternative method of distributing the county load reductions for managing PCB-containing materials during demolition, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2019 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.

iii. Reporting

- (1) In their 2016 Annual Report the Permittees shall submit for approval by the Executive Officer the assessment methodology and data collection program required in C.12.b.i. and described in C.12.b.ii.
- (2) Beginning with the 2017 Annual Report, Permittees shall report annually the loads reduced using the default (from the Fact Sheet) or alternative approved assessment methodology to demonstrate cumulative PCBs load reduced from each control measure implemented since the beginning of the 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 refinements, if necessary, to the measurement and estimation methodologies to assess PCBs load reductions in the subsequent Permit.
- (4) All Permittees in a county may submit, in the 2019 Annual Report, an alternative (different from the default population-based method) and supporting information to derive Permittee-specific shares of load reduction value associated with implementation of C.12.f.

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 reduction performance criteria in Table

12.2 in furtherance of meeting the 3000 g/year load reduction criteria required in C.12.a.ii.(4) and Table 12.1. Green infrastructure projects on both public and private land can serve to achieve this load reduction requirement. Additionally, Permittees shall prepare a reasonable assurance analysis (see below and the Fact Sheet) to demonstrate quantitatively that PCBs load reductions of at least 3 kg/yr will be achieved by 2040 through implementation of green infrastructure throughout the permit-area.

**Table 12.2 PCBs Load Reduction Performance Criteria via Green Infrastructure
Implementation by County**

County Permittees	PCBs Load Reduction (g/yr) by June 30, 2020, through green infrastructure
Alameda Permittees	37
Contra Costa Permittees	23
San Mateo Permittees	15
Santa Clara Permittees	37
Solano Permittees: Suisun City, Vallejo, Fairfield	8
Totals	120

ii. Implementation Level

- (1) The Permittees shall implement green infrastructure projects so that PCBs loads are collectively reduced by 120 g/yr by June 30, 2020, which shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020. Permittees shall demonstrate achievement of these load reductions by using the accounting methods approved under provision C.12.b.iii(1). 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 and implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term.

The Permittees may meet the load reduction as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 12.2. If neither the permit-area-wide total load reduction nor the county-specific load reduction is achieved, Permittees shall achieve load reductions consistent with their share of the county total under provision C.12.a.ii(4).

- (2) Permittees shall prepare a reasonable assurance analysis that demonstrates how green infrastructure will be implemented in order to achieve a PCBs load reduction of 3 kg/yr across the permit-area by 2040. This analysis shall include 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 by 2020, 2030, and 2040;
 - c. Estimate the amount of PCBs load reductions that will result from green infrastructure implementation by 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; and
 - 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 2018 Annual Report, as part of reporting for C.12.b.iii(3), 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 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through green infrastructure implementation by 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 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively 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 analysis.
- (4) The Permittees shall submit as part of reporting for C.12.b.iii(4), beginning with their 2019 Annual Report an estimate of the amount of PCBs load reductions resulting from green infrastructure implementation during the 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 reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.
- ii. Implementation level** – Permittees shall prepare a PCBs control measures implementation plan and corresponding reasonable assurance analysis that demonstrates quantitatively that the plan will result in PCBs load reductions sufficient to attain the PCBs TMDL wasteload allocations by 2030. 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

Permittees shall submit the plan and schedule in the 2020 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

Permittees shall report on the results (including all data gathered) of this investigation no later than the 2018 Annual Report.

C.12.f. Manage PCB-Containing Materials and Wastes During Building Demolition Activities So That PCBs Do Not Enter Municipal Storm Drains

- i. Task Description** – Permittees shall develop and implement or cause to be developed and implemented an effective protocol for managing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition so that PCBs do not enter MS4s. PCBs from these structures can enter storm drains during and/or after demolition through vehicle track-out, airborne releases, soil erosion, or stormwater runoff.

Applicable structures include, at a minimum, commercial, public, institutional and industrial structures constructed or remodeled between the years 1950 and 1980 with building materials with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt.

A Permittee is exempt from this requirement if it provides evidence acceptable to the Executive Officer that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

ii. Implementation Level

- (1) The Permittees shall develop a protocol by June 30, 2019, that includes each of the following components, at a minimum:
 - a. The necessary authority to ensure that PCBs do not enter MS4s from PCB-containing materials in applicable structures at the time such structures undergo demolition;
 - b. A method for identifying applicable structures prior to their demolition; and
 - c. Method(s) for ensuring PCBs are not discharged to the storm drain from demolition of applicable structures.
- (2) By July 1, 2019, and thereafter, the Permittees shall implement or cause to be implemented the PCBs management protocol for ensuring PCBs are not discharged to MS4s from demolition of applicable structures via vehicle track-out, airborne releases, soil erosion, or stormwater runoff.
- (3) By July 1, 2019, Permittees shall develop an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of the protocol for controlling PCBs during demolition of applicable structures.

iii. Reporting

- (1) In their 2016, 2017, and 2018 Annual Reports, the Permittees shall summarize the steps they have taken to begin implementing this requirement, which could include working with State and local agencies on inter-agency coordination regarding building demolitions, developing ordinances or policies, obtaining information materials, updating or supplementing permit application materials, developing a tracking tool for potential PCB-containing structures, and training relevant staff as needed to comply with this sub-provision.

- (2) Each Permittee seeking exemption from C.12.f requirements must submit in its 2017 Annual Report documentation, such as historic maps or other historic records, that clearly demonstrates that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.
- (3) In their 2020 Annual Report, the Permittees shall provide documentation demonstrating implementation with each of the minimum requirements in C.12.f.ii(1)(a)-(c).
- (4) In their 2020 Annual Report and thereafter, the Permittees shall provide documentation of each of the following items:
 - a. The number of applicable structures that applied for a demolition permit during the reporting year; and
 - b. A running list of the applicable structures that applied for a demolition permit (since the date the PCBs control protocol was implemented) that had material(s) with PCBs at 50 ppm or greater, with the address, demolition date, and brief description of PCBs control method(s) used.
- (5) In their 2020 Annual Report, Permittees shall submit an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the protocol for controlling PCBs during building demolition. This should be reported at the regional level on behalf of all Permittees.

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 concerning 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 2017 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 2018 Annual Report. The Permittees shall report in the March 15, 2020, 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.h. 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. Permittees should work with local health departments, the Bay Area Clean Water Agencies, and the Western States Petroleum Association to leverage resources for this program and to appropriately target at-risk populations.
- 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 3,000 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 2020 Annual Report.