



CONTRA COSTA  
**CLEAN WATER**  
PROGRAM

***MERCURY AND PCBS WATERSHED/MANAGEMENT  
AREAS, CONTROL MEASURES, AND LOAD  
REDUCTION – UPDATE 2022***

***Submitted in Compliance with Provision C.11.a.iii.(3), C.11.b.iii.(2),  
C.12.a.iii.(3), and C.12.b.iii.(2)***

***Municipal Regional Stormwater Permit  
NPDES Permit No. CAS612008  
Order No. R2-2015-0049***

***August 29, 2022***

***The Contra Costa Clean Water Program – A Municipal Stormwater Program consisting of  
Contra Costa County, its 19 Incorporated Cities/Towns, and the Contra Costa County Flood &  
Water Conservation District***

This report is submitted by the agencies of the



**Program Participants:**

- Cities of: Antioch, Brentwood, Clayton, Concord, Danville (Town), El Cerrito, Hercules, Lafayette, Martinez, Moraga (Town), Oakley, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon and Walnut Creek
- Contra Costa County
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## LIST OF ACRONYMS

BASMAA	Bay Area Stormwater Management Agencies Association
BMP	Best Management Practices
CCCWP	Contra Costa Clean Water Program
CIP	Capital Improvement Plan
GI	Green Infrastructure
GIS	Geographic Information System
mg/kg	milligram per kilogram
MPC	Monitoring and Pollutants of Concern Committee
MRP	Municipal Regional Permit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and Maintenance
OES	Office of Emergency Services
PCBs	Polychlorinated Biphenyls
POC	Pollutants of Concern
POTW	Publicly Owned Treatment Works
ROW	Right-of-Way
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SFEI	San Francisco Estuary Institute
SSID	Stressor/Source Identification
TMDL	Total Maximum Daily Load
W/MA	Watershed / Management Area
WY	Water Year

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## 1 INTRODUCTION

### 1.1 Purpose

This *Mercury and PCBs Watershed/Management Areas, Control Measures, and Load Reduction – Update 2022* report was prepared by the Contra Costa Clean Water Program (CCCWP) per the Municipal Regional Permit (MRP) for urban stormwater issued by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB; Order No. R2-2015-0049). This report fulfills the requirements of MRP Provisions C.11.a.iii.(3), C.11.b.iii.(2), C.12.a.iii.(3), and C.12.b.iii.(2) for updating the list of control measures reported in 2020 as necessary to account for new control measures and to report loads reduced by these control measures using the approved Interim Accounting Methodology (BASMAA, 2017).

The following MRP reporting requirements are addressed within this report:

- The list of Watershed/Management Areas (W/MAs) where control measures are currently being implemented or will be implemented during the term of the Permit;
- The number, type, and locations and/or frequency (if applicable) of control measures;
- A cumulative listing of all potentially PCBs-contaminated sites Permittees have referred to the SFBRWQCB to date, with a brief summary description of each site and where to obtain further information;
- The description, scope, and start date of mercury and PCBs control measures;
- For each structural control and non-structural best management practice (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;
- Clear statements of the roles and responsibilities of each participating Permittee for implementation of identified control measures;
- Mercury and PCBs loads reduced using the approved assessment methodology to demonstrate cumulative mercury and PCBs load reduced from each control measure implemented since the beginning of the Permit term, including supporting data and information necessary to substantiate the load reduction estimates; and

- An estimate of the amount of mercury and PCBs load reductions resulting from green infrastructure implementation during the MRP 2.0 permit term, including a description of all data used and a full description of models and model inputs relied on to generate this estimate.

This report is organized into the following sections:

1. Introduction and Background – This section describes requirements for managing mercury and PCBs per the TMDLs and the MRP, followed by the management approach that will be implemented by the CCCWP Permittees. This approach includes delineation of W/MAs based on screening of priority parcels in Old Industrial land classification for likelihood of ongoing PCBs discharge and implementation of control measures. Roles and responsibilities are also described in this section.
2. Control Measures Overview – This section provides a general description of the types of control measures that are currently being implemented or will be implemented by the Permittees during this and future permit terms to control PCBs and mercury, and any specific assumptions used for load reduction accounting.
3. Watersheds/Management Areas, Control Measures, and Schedule for each Permittee – These sections describe the Permittee-specific W/MAs and control measures identified by the Permittee that are currently being implemented in each W/MA during the MRP 2.0 permit term.
4. Loads Reduced – This section presents the estimates of mercury and PCBs loads reduced by the control measures that are currently being implemented within Contra Costa County and within the MRP region.

## 1.2 Background

### 1.2.1 Mercury and PCBs Total Maximum Daily Loads

Fish tissue monitoring in San Francisco Bay (Bay) has revealed bioaccumulation of PCBs, mercury, and other pollutants. The levels found are thought to pose a health risk to people consuming fish caught in the Bay. As a result of these findings, California has issued an interim advisory on the consumption of fish from the Bay. The advisory led to the Bay being designated as an impaired water body on the Clean Water Act "Section 303(d) list" due to PCBs, mercury, and other pollutants. In response, the SFBRWQCB has developed Total Maximum Daily Load (TMDL) water

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quality restoration programs targeting PCBs and mercury in the Bay. The general goals of the TMDLs are to identify sources of PCBs and mercury to the Bay and implement actions to control the sources and restore water quality.

Municipal separate storm sewer systems (MS4s) are one of the PCBs and mercury source/pathways identified in the TMDL plans. Local public agencies (i.e., Permittees) subject to requirements via National Pollutant Discharge Elimination System (NPDES) permits are required to implement control measures in an attempt to reduce PCBs and mercury from entering stormwater runoff and the Bay. These control measures, also referred to as BMPs, are the tools that Permittees can use to assist in restoring water quality in the Bay.

### 1.2.2 Municipal Regional Permit

NPDES permit requirements associated with Phase I municipal stormwater programs and Permittees in the Bay area are included in the MRP, which was issued to 76 cities, counties, and flood control districts in 2009 and revised in 2015.

The MRP was amended on February 13, 2019, to add the cities of Antioch, Brentwood, Oakley, and the eastern portions of unincorporated Contra Costa County and the Contra Costa County Flood Control & Water Conservation District (the East County Permittees), which are located within the jurisdiction of the Central Valley Water Board (Region 5) and were previously covered under a separate Joint Municipal NPDES Permit titled “East Contra Costa County Municipal NPDES Permit”. The East County Permittees have been implementing PCBs and mercury control measures and previous versions of this report summarized those implementation efforts and the associated load reductions. The amended MRP specifically exempts the East County Permittees from MRP Provisions C.11 and C.12, but does incorporate requirements for the Sacramento-San Joaquin Delta Estuary Methylmercury TMDL. Therefore, this report does not summarize PCBs and mercury control measure implementation or load reductions for the East County Permittees. For unincorporated Contra Costa County, this report summarizes the control measures implemented and the PCBs/mercury loads reduced within the SFBRWQCB Region 2 boundary.

Consistent with the TMDL plans, Provisions C.11.a. and C.12.a. of the MRP require the implementation of source and treatment control measures and pollution prevention strategies to reduce mercury and PCBs in urban stormwater runoff to achieve specified load reductions throughout the permit area. Specifically, the MRP requires the Permittees to:



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 MRP 2.0 permit term;
2. Identify the control measures that are currently being implemented and those that will be implemented in each watershed/management area;
3. Submit a schedule of control measure implementation; and
4. Implement sufficient control measures to achieve the mercury and PCBs load reductions stated in the permit<sup>1</sup>.

Provisions C.11.b. and C.12.b. of the MRP require the Permittees to estimate loads reduced by the control measures that have been implemented since the beginning of the Permit term. The MRP allows for load reductions from control measures implemented prior to the effective date of the Permit to be counted toward the required reductions of the MRP 2.0 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). Therefore, control measures implemented in Fiscal Year (FY) 2013/14, FY 2014/15, FY 2015/16, FY 2016/17, FY 2018/19, FY 2018/19, FY 2019/20, FY 2020/21, and FY 2021/22 (i.e., controls measures implemented between July 1, 2013 and June 30, 2022) may be reported herein.

### **1.3 Approach**

#### **1.3.1 Control Measures**

The urban stormwater runoff wasteload allocation for PCBs represents a 90 percent reduction from the estimated existing load. The TMDL implementation plans set roughly 20-year timelines for achieving the reductions but also incorporate an adaptive implementation planning approach. The adaptive approach consists of the development of a plan that includes early implementation actions based on existing knowledge that have a reasonable probability of success and an overview of options for future actions. For PCBs and mercury in the Bay, the immediate or early

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<sup>1</sup> Table 12.1 of MRP 2.0 lists interim PCB load reduction performance criteria that Permittees should achieve during the MRP 2.0 permit term. Provision C.11 does not list interim mercury load reduction performance criteria, except for green infrastructure implementation.

implementation actions are not expected to completely eliminate the Bay impairment. Therefore, future actions must be evaluated based on continued monitoring and response to the early implementation actions, as well as based on well-designed studies used for model refinement.

The MRP Fact Sheet notes that the initial focus of provisions C.11/12 is on measures designed to reduce PCBs, while also evaluating opportunities for mercury reduction. Implementation actions may fall into four categories depending on the available knowledge and confidence in a control measure's effectiveness (listed in decreasing order of confidence):

- Full-scale implementation throughout the region.
- Focused implementation in areas where benefits are most likely to occur.
- Pilot-testing in a few specific locations.
- Other: This may refer to experimental control measures, research and development, desktop analysis, laboratory studies, and/or literature review.

During the previous MRP term (i.e., MRP 1.0), Permittee effort was largely focused on gathering necessary information about control measure effectiveness through pilot projects and some focused implementation of the most effective control measures. In this term of the MRP (i.e., MRP 2.0), the emphasis has shifted towards focused and some full-scale implementation of the most effective control measures. Progress will be measured through accounting for specific load reductions as described in the report: *Interim Accounting Methodology for TMDL Loads Reduced* (BASMAA, 2017).

The Permittees, countywide stormwater programs, Bay Area Stormwater Management Agencies Association (BASMAA)<sup>2</sup>, SFBRWQCB, and other interested parties (e.g., the Regional Monitoring Program) began gathering data and developing an understanding of the sources and pathways for mercury and PCBs in the Bay in the late 1990's. These same parties developed a framework to address these pollutants throughout the following decade.

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<sup>2</sup> The dissolution of BASMAA occurred in June 2021. Coordination continues through ongoing communication of the former BASMAA member agencies and their representatives under a new moniker, Bay Area Municipal Stormwater Collaborative (BAMSC) via a Steering Committee and Subcommittees.

The Regional Stormwater Monitoring and Urban BMP Evaluation: A Stakeholder-Driven Partnership to Reduce Contaminant Loadings project funded by a State of California Proposition 13 grant and conducted by the San Francisco Estuary Institute (SFEI) defined conceptual models of sources and pathways of mercury and PCBs in Bay Area urban watersheds (McKee et al., 2006). The SFEI Proposition 13 project compiled PCBs and mercury chemical analysis results from about 600 sediment samples collected at over 360 locations throughout the Bay Area from roadways and stormwater drainage infrastructure (e.g., storm drain inlets, pump house wet wells, piping beneath manholes, and open channels) (Yee and McKee, 2010). These data supported the general hypothesis that concentrations of PCBs and mercury are elevated in specific parts of the urban landscape and showed that:

- Pollutant concentrations are highly patchy, even at moderate to small spatial (sub-kilometer) and temporal (approximately annual) scales. This patchiness reflects the episodic nature of many release and transport events and processes.
- Concentrations at sites within three kilometers of one another showed similarities in concentration, which may be due to similarities in land use, activities, or transport of shared pollutant sources.
- Individual sites and areas most contaminated with PCBs are often not those with high mercury, which is a logical finding given the different use histories and original pollutant sources.

Another outcome of the SFEI Proposition 13 project was a desktop evaluation of control measures for PCBs and mercury load reductions (Mangarella et al., 2010).

Building upon the efforts of the SFEI Proposition 13 project, BASMAA conducted an EPA grant-funded project called Clean Watersheds for a Clean Bay (CW4CB). The CW4CB project, which began in May 2010 and was completed in May 2017, is a collaboration among the MRP Permittees designed to evaluate the effectiveness of stormwater controls for PCBs and mercury. The CW4CB Project implemented a number of pilot projects for various control measures called for by the Bay PCBs and mercury TMDLs and the first term MRP. The CW4CB work products can be found on the BASMAA webpage<sup>3</sup> and included the following:

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<sup>3</sup> <https://basmaa.org/featured-programs-projects/clean-watersheds-for-a-clean-bay/>

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- Selecting five high priority subwatersheds that discharge urban runoff with PCBs and other pollutants to the Bay;
- Identifying PCBs and mercury source areas within the project subwatersheds and referring these sites to regulatory agencies for cleanup and abatement;
- Developing methods to enhance removal of sediment with PCBs and other pollutants during municipal operation and maintenance that remove sediment from streets and storm drain system infrastructure (e.g., street sweeping, and storm drain cleaning);
- Treatment control measure retrofits were designed and constructed in the public right-of-way, roadways, and easements;
- Facilitating development and implementation of a regional risk communication and exposure reduction program that focuses on educating the public about the health risks of consuming certain species of Bay fish that contain high levels of PCBs and mercury; and
- Creating public education outreach materials, project web portal, guidance manual, and technical workshops.

Monitoring data were collected for most of the pilot projects conducted as part of this project. The Permittees used the information gathered and lessons learned through the CW4CB project and the earlier projects as the basis to identify the W/MAs and control measures listed in this report.

In FY 2015/16, the CCCWP began development of a countywide Geographic Information System (GIS) pilot project focused on maintaining, analyzing, interpreting, displaying, and reporting relevant municipal stormwater program data and information related to Provisions C.10 (i.e., trash load reduction activities) and C.11/C.12 (i.e., PCBs source property identification and abatement screening activities).

With the adoption of MRP 2.0, the CCCWP expanded the countywide GIS C.3 Project Tracking and Load Reduction Accounting Tool to support additional compliance activities related to 1) C.3.b Regulated Projects reporting; 2) the C.3.j Green Infrastructure Planning and Implementation provisions; 3) the C.11 Mercury Controls and C.12 PCBs Controls provisions; and 4) C.10 Trash Load Reductions provision that provide shared benefits. This tool is critical to Permittees' ongoing work to identify watersheds and management areas where multiple-benefit control measure implementation opportunities have been identified and prioritized for

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implementation during the MRP 2.0 permit term and over the coming decades. Additionally, this GIS database is being used to track and map existing and future C.3 projects, allow ease of ongoing review of opportunities for incorporating Green Infrastructure (GI) into existing and planned Capital Improvement Plan (CIP) projects, and assist in the development of GI plans.

The CCCWP's stormwater GIS platform features web maps and applications created using Esri's ArcGIS Online for Organizations environment, which access GIS data, custom web services and reports that are hosted within an Amazon cloud service running Esri's ArcGIS Server technology. The CCCWP anticipates its expanded stormwater GIS platform will be an important tool for maintaining relevant stormwater data; reviewing, analyzing, and displaying data geography; accounting for and assessing compliance with load reduction performance goals; and reporting. The data used for this platform originated from many sources over the last decade and is being reviewed and updated as needed to reflect current land uses and implementation of C.3 projects as new and redevelopment occurs.

### 1.3.2 Watershed /Management Area Delineation

Each Permittee has created a list of W/MAs and control measures (i.e., a control measure plan that describes what, where, and when control measures will be implemented) for PCBs and mercury, provided in the sections below. The ultimate goal for the listed control measures is to achieve the Contra Costa countywide PCBs load reductions listed in MRP Tables 12.1 and Table 12.2 and the mercury load reductions listed in MRP Table 11.1 during this MRP term:

- 90 g/yr PCBs by 6/30/18,
- 560 g/yr PCBs by 6/30/2020,
- 23 g/yr PCBs using green infrastructure by 6/30/2020, and
- 9 g/yr mercury using green infrastructure by 6/30/2020.

The CCCWP Permittees achieved the required PCBs load reductions in 2018 and 2020, and the PCBs and mercury load reductions using green infrastructure in 2020.

A W/MA is an area where load reduction credit will be sought for PCBs or mercury control measures. The W/MAs cover all Old Industrial and Old Urban areas but may include some New Urban areas where appropriate. W/MAs were delineated using the maps showing the 2015 PCBs source property screening results (i.e. high, moderate, and low/no likelihood), known PCBs





source properties (from the CW4CB Task 3 referrals, DTSC EnviroStor, and the State Water Board Geotracker), and land use categories (i.e., Old Industrial, Old Urban, New Urban, Open Space, and Other) from the Mercury and PCBs Control Measures Implementation Status Report (CCCWP, 2016). These factors were used to create approximate delineations based on the geography within each Permittee’s jurisdiction. If applicable, a city’s General Plan, Specific Plans, and/or Redevelopment Plans were used to form a W/MA boundary. Categorical W/MAs were also created for the non-municipally owned electrical utility (i.e., PG&E) and railroad properties (note, the categorical W/MAs can exist within or create “holes” in the other geographically based W/MAs).

The W/MAs and identified control measures may also evolve over time as the Permittees learn more about these areas through implementation of the control measures. The Permittees may adjust preliminary control measure selections as lessons are learned throughout the permit term.

### 1.3.3 Roles and Responsibilities for Implementation of Control Measures

Table 1-1 below summarizes, for each control measure, the roles, and responsibilities of the Permittees, CCCWP, and BASMAA. In a general sense, screening/sampling will primarily be conducted by the CCCWP, establishment of regional frameworks will be conducted by BASMAA, and adoption and implementation of control measures will be conducted by the Permittees.

**Table 1-1: Control Measure Roles and Responsibilities**

Control Measure Category	Roles and Responsibility		
	Permittee	Program	BASMAA
Source Property Identification and Abatement	<ul style="list-style-type: none"> <li>• Work with Program to design monitoring program.</li> <li>• Prepare referral forms, including identification of enhanced Operation and Maintenance (O&amp;M).</li> <li>• Implement enhanced O&amp;M for referred properties.</li> </ul>	<ul style="list-style-type: none"> <li>• Design and conduct POCs monitoring.</li> <li>• Compile and submit referrals to SFBRWQCB in Region 2 and the CVRWQCB in Region 5.</li> <li>• Coordinate with BASMAA on ongoing control measure adaptive management.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss ongoing control measure implementation and adaptive management at Monitoring / Pollutants of Concern (MPC) Committee.</li> </ul>
Green Infrastructure / Treatment Control Measures	<ul style="list-style-type: none"> <li>• Prepare a GI Plan.</li> <li>• Implement GI projects.</li> <li>• Gather data on C.3 projects.</li> </ul>	<ul style="list-style-type: none"> <li>• Support GI planning.</li> <li>• Compile data on C.3 projects.</li> </ul>	<ul style="list-style-type: none"> <li>• Coordinate GI planning at Development Committee.</li> <li>• Discuss control measure implementation and adaptive management at MPC Committee.</li> </ul>
Managing PCBs in Building Materials	<ul style="list-style-type: none"> <li>• Participate in BASMAA Regional Project.</li> <li>• Implement PCB in Demolition Program.</li> </ul>	<ul style="list-style-type: none"> <li>• Assist BASMAA Regional Project.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop Framework through Regional Project.</li> </ul>
Managing PCBs in Infrastructure	<ul style="list-style-type: none"> <li>• Participate in BASMAA Regional Project.</li> </ul>	<ul style="list-style-type: none"> <li>• Assist BASMAA Regional Project.</li> <li>• Conduct monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop monitoring plan and report monitoring results via Regional Project.</li> </ul>
Enhanced O&M	<ul style="list-style-type: none"> <li>• Implement enhanced O&amp;M where identified.</li> </ul>	<ul style="list-style-type: none"> <li>• Coordinate with BASMAA on ongoing control measure adaptive management.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss ongoing control measure implementation and adaptive management at MPC Committee.</li> </ul>
Diversion to POTW	<ul style="list-style-type: none"> <li>• Implement diversion where identified.</li> </ul>	<ul style="list-style-type: none"> <li>• Coordinate with BASMAA on ongoing control measure adaptive management.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss ongoing control measure implementation and adaptive management at MPC Committee.</li> </ul>
Mercury Load Avoidance and Reduction	<ul style="list-style-type: none"> <li>• Conduct collection events.</li> </ul>	<ul style="list-style-type: none"> <li>• Compile and track data.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss ongoing control measure implementation and adaptive management at MPC Committee.</li> </ul>
Illegal Dumping Cleanup	<ul style="list-style-type: none"> <li>• Identify illegal dumping sites.</li> <li>• Conduct/coordinate cleanup.</li> </ul>	<ul style="list-style-type: none"> <li>• Compile and track data.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss ongoing control measure implementation and adaptive management at MPC Committee.</li> </ul>
Stockpiles, Spills, and Disposal of PCBs	<ul style="list-style-type: none"> <li>• Identify facilities through routine inspections.</li> <li>• Conduct/coordinate cleanup.</li> <li>• Track OES reports and follow-up on spills with PG&amp;E.</li> </ul>	<ul style="list-style-type: none"> <li>• Compile and track data.</li> <li>• Coordinate w/ Permittees, BASMAA partners, SFBRWQCB, and PG&amp;E as needed.</li> </ul>	<ul style="list-style-type: none"> <li>• Discuss ongoing control measure implementation and adaptive management at MPC Committee.</li> </ul>

In addition, the Permittees are tracking control measure implementation and reporting load reductions using the GIS C.3 Project Tracking and Load Reduction Accounting Tool, which



incorporates the Interim Accounting Methodology to estimate load reductions. This report compiles and reports the county-wide list of green infrastructure projects, site referrals, and overall load reductions as well as the MRP permit area-wide overall load reductions.

Although each Permittee’s administrative structure is unique, Table 1-2 summarizes, in general, the roles and responsibilities of the various city, town, or county departments that may be related to implementation of selected control measures:

**Table 1-2: Permittee Department Roles and Responsibilities**

Department	Typical Role / Responsibility
Public Works	<ul style="list-style-type: none"> <li>• Creeks, watersheds, and stormwater management</li> <li>• Public facility services and maintenance</li> <li>• Engineering and construction services</li> <li>• Capital improvement projects</li> </ul>
Community Development / Planning Department	<ul style="list-style-type: none"> <li>• Planning/zoning/General Plan development</li> <li>• Development project review &amp; approvals</li> <li>• Construction and building inspections</li> </ul>

#### 1.3.4 Load Reduction Methodology

MRP Provisions C.11.a and C.12.a require the Permittees to demonstrate cumulative Bay Area-wide and Program area-specific mercury and PCBs load reductions over the MRP 2.0 permit term. MRP Provisions C.11.b and C.12.b required the Permittees to develop and implement an assessment methodology and data collection program to quantify mercury and PCBs loads reduced through implementation of pollution prevention, source control, and treatment control measures. The Permittees developed an *Interim Accounting Methodology for TMDLs Loads Reduced* report (BASMAA, 2017) to document the load reduction accounting assessment methodology that will be used to demonstrate progress towards achieving the load reductions required in the MRP 2.0 permit term. This report was approved by the SFBRWQCB in May 2017. The *Interim Accounting Methodology* is based on relative mercury and PCBs yields from different land use categories. The method involves using default factors for PCBs and mercury load reduction credits resulting from foreseeable control measures implemented during the MRP 2.0 permit term. This report implements the Interim Accounting System to estimate the mercury and PCBs loads reduced presented in Section 20.



MRP Provisions C.11.b and C.12.b. require the Permittees to submit, in 2018 and subsequent Annual Reports, refinements to the mercury and PCBs load reduction assessment methodology to assess load reductions in the next permit term. Those refinements are documented in the *BASMAA Source Control Load Reduction Accounting for Reasonable Assurance Analysis Report*, which was submitted with the Fiscal Year 2019/20 Annual Report. Comments were received from the Regional Water Board on the report in April 2021. A revised report was approved by the Executive Officer in January 2022. The revised accounting system will be used to estimate the mercury and PCBs load reduced in the next permit term (i.e., beginning in Fiscal Year 2022/23).

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## 2 DESCRIPTION OF CONTROL MEASURES

This section provides a general description of the types of control measures that are currently being implemented or will be implemented by the Permittees during this and future permit terms to control PCBs and mercury.

### 2.1 Source Property Identification and Abatement

Source property identification and abatement involves investigations of properties located in historically industrial land use or other land use areas where PCBs were used, released, and/or disposed of and where sediment concentrations have been found at levels significantly above urban background levels<sup>4</sup>. The source property identification and abatement control measure begins with performing investigations of these “High Likelihood” areas to identify PCBs sources to the municipal storm drain system. Once a source property is identified, the source of PCBs on the property may be abated or caused to be abated directly by the Permittee or the Permittee may choose to refer the source property to the SFBRWQCB for investigation and abatement by the SFBRWQCB or another appropriate regulatory agency with investigation and cleanup authority. Source properties may include sites that were previously remediated or are currently being remediated but have PCBs soils cleanup levels that are elevated above urban background levels or may be newly identified source properties.

The Permittees will validate the existence of significantly elevated PCBs concentrations through surface soil/sediment sampling in the right-of-way or stormwater sampling in the storm drain system where visual inspections and/or other information suggest that a specific property is a potential source of significantly elevated PCBs concentrations. Where data confirm significantly elevated PCBs concentrations (e.g., a sediment concentration equal to or greater than 1.0 mg/kg or a concentration greater than 0.5 mg/kg plus other lines of evidence) are present in soil/sediment from a potential source property or in stormwater samples, the Permittees will

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<sup>4</sup> The *Interim Accounting Methodology for TMDL Loads Reduced* report (BASMAA 2017) presents descriptive statistics for the PCBs and mercury street and storm drain sediment dataset that has been compiled by BASMAA to-date. This dataset includes 1,204 PCBs samples and 952 mercury samples taken within the street right-of-way, storm drain conveyance system, and private properties from 1999 through 2015.

take actions to cause the property to be abated or will refer that property to the SFBRWQCB to facilitate the issuance of orders for further investigation and remediation of the subject property.

For each confirmed source property, the Permittee will implement or cause to be implemented, where appropriate, one or a combination of interim enhanced operation and maintenance (O&M) measures in the street or storm drain infrastructure adjacent to the source property during the source property abatement process to remove historically deposited sediment and/or to prevent further contaminated sediment from entering the storm drain. These enhanced O&M measures will be described in the source property referral that is sent to the SFBRWQCB. If the Permittee finds that enhanced O&M measures are not justified, the Permittee must discuss these findings with the SFBRWQCB prior to submitting the source property referral. The SFBRWQCB will review the source property referral and provide comments to the Permittee within 30 days (if needed).

For those source properties that are self-abated (i.e., by the Permittee or the property owner), the Permittee will provide the Regional Water Board with sufficient documentation that source property abatement has effectively eliminated the transport of PCBs or mercury offsite and from entering the MS4 infrastructure for all transport mechanisms that apply to the site (e.g., stormwater runoff, wind, vehicle tracking). This documentation will include information on the type and extent of abatement that has occurred (e.g., have the sources of PCBs to the MS4 been completely eliminated via capping, paving, walls, plugging/removal of internal storm drains, etc.) and any water or sediment monitoring data that demonstrates the effective elimination of transport of PCBs offsite into the MS4, if available.

The CCCWP, in collaboration with the Permittees, are conducting ongoing targeted investigations and monitoring for known or suspected source properties. Source identification is one of five priority POC management information needs required by MRP provision C.8.f. The allocation of sampling effort for POC monitoring will be described in the POC Monitoring Report, due October 15 of each year, as required by MRP provision C.8.h.iv.

The properties that have been referred to the SFBRWQCB or self-abated through FY 2021/22 are listed in Table 2-1 below. No new site referrals are included for this fiscal year.



**Table 2-1: CCCWP Contaminated Sites Referred to the SFBRWQCB and Self-Abated Properties**

SITE NAME	LOCATION/APN	PROPERTY SIZE (ACRES)	YEAR REFERRED	REFERRAL OR SELF-ABATEMENT
Zeneca/Former Stauffer Chemical Company	1415 South 47 <sup>th</sup> St, Richmond	9.2	FY2019/20	Referral
UC Berkeley Richmond Field Station	1301 South 46 <sup>th</sup> St, Richmond	14	FY2019/20	Referral
Fass Metals	818 West Gertrude Ave, Richmond	0.2	FY2017/18	Referral
Sims Metal Management Richmond Facility	600 South 4th Street, Richmond / 560-240-040, 560-250-027, 560-250-025	19.3	FY 2017/18	Referral
World Corp	1014 Chesley Ave., Richmond	10.44	FY 2017/18	Referral
Port of Richmond	Point Potrero Marine Terminal, Richmond	0.72	FY 2017/18	Self-Abatement
San Diego St. Transformer Spill	R.O.W. San Diego St., Richmond	0.08	FY 2017/18	Self-Abatement
Larkey Pool Renovation Project	2771 Buena Vista Ave., Walnut Creek/171-110-021	<0.01	FY 2017/18	Self-Abatement
Radiant Avenue	Radiant Avenue, North Richmond; 408-082-030	19.5	FY 2016/17	Self-Abatement
Former Molino Enterprises. Inc.	1215 Willow Pass Rd., Pittsburg; 096-091-003-2	6.0	FY 2015/16	Referral
Rumrill Sports Complex (Former BNSF Railyard Site)	1509 Rumrill Blvd, San Pablo / 409-313-009; 409-313-009; 410-012-007; 410-012-008	4.45	FY 2015/16	Self-Abatement

## 2.2 Green Infrastructure / Treatment Control Measures

This control measure includes new development and redevelopment projects on private and public properties regulated by Provision C.3, as well as retrofit of existing infrastructure in public ROW areas and on public properties not subject to Provision C.3. See Section 3 of the Contra Costa Clean Water Program Fiscal Year 2021/22 Annual Report for further detail on C.3 implementation.



Permittees are accounting for implemented C.3. projects and public retrofit GI projects over the MRP 2.0 permit term to achieve the PCBs load reductions shown in MRP Table 12.2 and mercury load reductions shown in MRP Table 11.1. Permittees are identifying existing C.3 projects as part of this control measure and, in compliance with the requirement of MRP Provision C.3.b.i.(2), will be tracking development projects that are subject to C.3. over the MRP 2.0 permit term.

In addition, the Permittees have been conducting an ongoing review of opportunities for incorporating GI into existing and planned capital improvement projects over the MRP 2.0 permit term (a.k.a., no missed opportunities) and have developed a GI Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements, in compliance with MRP Provision C.3.j.

## **2.3 Managing PCBs In Building Materials and Infrastructure**

### **2.3.1 PCBs in Building Materials**

The Permittees have developed and implemented, in cooperation with BASMAA, a protocol for managing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition. PCBs from these structures can enter storm drains during and/or after demolition through vehicle track-out, airborne releases, soil erosion, stormwater runoff, or improper waste disposal. Applicable structures include, at a minimum, commercial, public, institutional, and industrial structures constructed between the years 1950 and 1980 and 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 the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures<sup>5</sup>.

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in building materials. This Regional Project developed an implementation framework, guidance

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<sup>5</sup> 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. The City of Clayton has been approved for this exemption and documentation was included in its 2017 Annual Report.



materials, and tools for local agencies to ensure that PCBs-containing materials and wastes are properly managed during building demolition. This Regional Project also provided training materials and a workshop for municipal staff and an outreach workshop for the industry on implementing the framework/protocols developed via the project. The tools and materials developed as part of the project build upon materials and outputs developed in 2010-2011 by the San Francisco Estuary Partnership with State Water Board grant funding, called the “PCBs in Caulk Project”, as well as subsequent and parallel activities by BASMAA. See Section 12 of the Contra Costa Clean Water Program Fiscal Year 2020/21 Annual Report for further details on compliance with this MRP provision. Specific activities undertaken by the Permittees are discussed in the Permittee-specific sections of this report.

In addition, BASMAA has developed an assessment methodology and data collection program to quantify the PCBs loads reduced through implementation of the protocol developed by the BASMAA Regional Project, summarized below:

1. The municipality informs demolition permit applicants that their projects are subject to the MRP Provision C.12.f requirements, necessitating, at a minimum, an initial screening for priority PCBs-containing materials.
2. For every demolition project, applicants complete and submit a version of BASMAA’s model “PCBs Screening Assessment Form” (Screening Form) or equivalent to the municipality.
3. The municipality reviews the Screening Form to make sure it is filled out correctly and is complete and works with the applicant to correct any deficiencies.
4. The municipality then issues the demolition permit or equivalent, according to its procedures.
5. The countywide programs compile the completed Screening Forms and any supporting documents. Municipalities submit forms for applicable structures only to the countywide program; forms for exempt sites need not be submitted. The countywide program compiles the forms and works with the other MRP countywide programs to manage and evaluate the data, and to assist Permittees with associated MRP reporting requirements.

Data collection started with implementation of the new program on July 1, 2019. When sufficient amounts of new data have been collected, the data will support:



- Development of a revised estimate of the reduction in PCBs loading to stormwater runoff resulting from implementation of the new program, and
- Evaluation of various aspects of the PCBs management program and the effectiveness of potential future refinements.

### 2.3.2 PCBs in Infrastructure

PCBs may also be found in storm drain or roadway infrastructure in public rights-of-way such as caulk and sealants used in storm drains and between concrete curbs and street pavement. The Program and Permittees participated in a BASMAA Regional Project to characterize the levels of PCBs in caulks/sealants used in storm drains and roadway infrastructure to quantify the potential PCBs load reduction benefits that may result from public infrastructure improvements. A project report prepared by the BASMAA Regional Project was included in the Contra Costa Clean Water Program Fiscal Year 2017/18 Annual Report. The results of these investigations will inform the development and implementation of control measures to address this potential source of PCBs into the storm drain system.

## 2.4 **Enhanced Operation and Maintenance**

Routine MS4 O&M activities include street sweeping, drain inlet cleaning, and pump station maintenance. In addition, culverts and channels are also routinely maintained (i.e., desilted). Enhancements to routine operations and new actions such as storm drain line and street flushing may enhance the Permittees' ability to reduce PCBs and mercury in stormwater. PCBs load reductions achieved through implementation of enhanced O&M control measures, aside from enhanced O&M control measures associated with source property referrals, may be counted as part of the overall load reductions during the MRP 2.0 permit term.

Many of the Permittees have installed inlet-based full trash capture devices in response to the trash control requirements of MRP Provision C.10. These devices enhance the capture of sediments that may be contaminated with PCBs. In addition, these inlets are typically cleaned more frequently as a result of the installation of the full trash capture device. Therefore, the Permittees are conducting an enhanced O&M activity for each of these inlets. The load reduction

achieved by this enhanced O&M implementation effort<sup>6</sup> was estimated in the FY 2017/18 annual report. This estimate does not reflect any increases in enhanced O&M efforts in FY 2021/22.

The following assumptions were used for calculating the reported loads reduced by enhanced O&M control measures:

- Inlet-Based Trash Devices Cleaning
  - Basket, connector pipe screen (CPS), and inlet filters that are listed in the AGOL system were included. The drainage area listed for each device was used for the load reduction calculation. Only operational devices installed since FY 2013-14 were included.
  - The default trash device cleanout frequency enhancement was from annual to semi-annual, as this cleanout frequency is required by MRP Provision C.10, unless a more frequent frequency was reported by the Permittee (or no enhancement was reported).
  - If cleanout occurs three times per year, a 'quarterly' frequency was assumed for the purposes of the calculation, as three times per year is not a viable calculation option per the Interim Accounting Methodology. This assumption was assumed to be equivalent to quarterly cleanouts, as a mid-dry season cleanout occurrence is considered superfluous for the purposes of sediment removal.
  
- Street Sweeping Enhanced O&M

One permittee, Concord, has enhanced their sweeping from None to Annually. However, an annual street sweeping frequency is not an enhancement option in the Interim Accounting Methodology. In order to consider this enhancement, the calculation used the least frequent sweeping option, Monthly, and scaled this load reduction linearly to Annual by dividing the estimated load reduced by 12.6

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<sup>6</sup> The load reduction estimates account only for the change in inlet cleaning frequency, per the Interim Accounting Methodology, and do not estimate loads reduced due to the increase in sediment captured by the inlet-based full trash capture devices.

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- Desilting

Permittees have conducted some desilting; however, the data needed to estimate loads reduced are difficult to collect for these projects. Therefore, there was no desilting load reduction included in the estimate.

## 2.5 Diversion to POTW

This control measure consists of diverting dry weather and/or first flush events from MS4s to publicly owned treatment works (POTWs) as a method to reduce loads of PCBs and mercury in urban runoff. A pilot diversion project was conducted at the North Richmond Pump Station, but there is no ongoing diversion.

## 2.6 Source Controls and Other Control Measures

### 2.6.1 Mercury Load Avoidance and Reduction

Mercury load avoidance and reduction includes a number of source control measures listed in the California Mercury Reduction Act adopted by the State of California in 2001. These source controls include material bans, reductions of the amount of mercury allowable for use in products, and mercury device recycling. The following source controls bans are included:

- Sale of cars that have light switches containing mercury;
- Sale or distribution of fever thermometers containing mercury without a prescription;
- Sale of mercury thermostats; and,
- Manufacturing, sale, or distribution of mercury-added novelty items.

In addition, fluorescent lamps manufacturers continue to reduce the amount of mercury in lamps sold in the U.S. Manufacturers have significantly reduced the amount of mercury in fluorescent linear tube lamps.

Mercury Device Recycling Programs resulting in Mercury load reduction generally include three types of programs that promote and facilitate the collection and recycling of mercury-containing devices and products:

- Permittee-managed household hazardous waste (HHW) drop-off facilities and curbside or door-to-door pickup;



- Private business take-back and recycling programs (e.g., Home Depot); and,
- Private waste management services for small and large businesses.

The Program conducted a Methylmercury Control Study in response to Provision C.11.i of the East County Permit<sup>7</sup>, which states: “Permittees shall conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury and shall develop and evaluate additional BMPs as needed to reduce mercury and methylmercury discharges to the Delta and meet methylmercury waste load allocations...”. The Methylmercury Control Study Final Report was submitted to the Central Valley Regional Water Board in October 2018<sup>8</sup>. CCCWP conducted reasonable potential analyses (i.e., RAA modeling) and submitted preliminary results to the CVRWQCB in March 2022.

The Program coordinates with Permittees and local household hazardous waste (HHW) collection facilities to implement mercury collection and recycling in accordance with MRP Provisions C.11.a.i and C.11.a.ii.

CCCWP Permittees collect HHW at three regional facilities in the County:

- Central Contra Costa Sanitary District (CCCSD);
- Delta Diablo Sanitation District (DDSD); and,
- West Contra Costa Integrated Waste Management District (WCCIWMA).

CCCSD serves the communities of Concord, Clayton, Martinez, Pleasant Hill, Orinda, Lafayette, Moraga, Walnut Creek, Danville, San Ramon, and Unincorporated County. DDSD serves Pittsburg, Antioch, Oakley, and Bay Point. WCCIWMA serves Richmond, Pinole, El Sobrante, El Cerrito, San Pablo, and portions of Unincorporated Contra Costa County.

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<sup>7</sup> East Contra Costa County Municipal NPDES Permit (NPDES Permit No. CAS083313, Order No. R5-2010-0102).

<sup>8</sup> This report can be found on the CCCWP website [at: https://www.cccleanwater.org/userfiles/kcfinder/files/Methylmercury\\_Control\\_Studies\\_Progress\\_Report\\_FINAL\\_Oct2015%281%29.pdf](https://www.cccleanwater.org/userfiles/kcfinder/files/Methylmercury_Control_Studies_Progress_Report_FINAL_Oct2015%281%29.pdf).

The types of data collected at each facility are slightly different as is the level of differentiation between types of mercury containing devices and the level of specificity in reporting the data. These efforts are no longer required to be reported but will be tracked for mercury loads reduced through implementation of mercury avoidance and reduction control measures.

In addition, Table 2-2 below lists some mercury spill response efforts in Contra Costa County.

**Table 2-2: Mercury Spills in Contra Costa County**

SPILL DATE	CITY	LOCATION	INCIDENT TYPE	QUANTITY/ CONCENTRATION	DATE OF FINAL SPILL REPORT
3/13/2017	Antioch	2209 Manzanita Dr	Spill	5-gal(s) Mercury	3/13/2017
3/7/2017	Rossmoor	3324 Tice Creek Dr. Apt. 11	Spill	"a few" ml/g of Mercury spilled	3/10/2017
1/22/2017	Antioch	2206 Mandarin Way	Spill	Small Unk Mercury amount	1/26/2017
12/22/2016	Antioch	2324 Mandarin Way	Spill	1 oz Mercury	12/22/2016

### 2.6.2 Illegal Dumping Clean-Up

This source control measure entails clean-up of construction and demolition debris from illegal dumping areas that contain PCBs. This control measure will apply to construction and demolition illegal dumping only during the MRP 2.0 permit term but may be expanded to other types of illegally dumped trash if supported by monitoring data.

### 2.6.3 Stockpile, Spills, and Disposal of PCBs

This control measure includes the proper clean-up and disposal of stockpiles, spills, and/or improperly disposed quantities of PCBs. The measure would involve, for instance, a concentrated source of PCBs (e.g., a barrel) that is found leaking and cleaned-up or properly disposed and the clean-up of transformer spills by PG&E.

CCCWP and BASMAA representatives have been working with SFBRWQCB staff to ensure thorough documentation and clean-up completion of PG&E PCBs transformer spills. PCBs transformer spill reporting is inconsistent through the OES reporting system and often cases are closed before the municipality or SFBRWQCB staff hear of the spill. This activity could have a significant effect on where PCBs in the public right-of-way are found, as many spills happen in residential areas. Residential areas are not typically considered high likelihood areas for PCBs, so



no other control measures have been developed specifically for these areas. SFBRWQCB and BASMAA representatives are working on better defining agency roles and responsibilities in responding to spills, at least for their own agencies, and are working on getting PG&E to cooperate to make a smoother and more transparent process as we try to reduce the loading of PCBs into the San Francisco Bay, San Joaquin/Sacramento Rivers Delta, and Suisun and San Pablo Bays.

CCCWP staff has been compiling information on PCBs transformer spills that have occurred since 2014 (there are additional data from earlier years). Table 2-3 presents a partial list of the spills that have happened throughout Contra Costa County from November 2014 – May 2019. All information on the spills and clean-ups are not currently available, as the process to get documentation of the completion of a clean-up is difficult. PG&E has many private contractors that are called out at odd hours in all types of weather to do the clean-up. Locating one representative who can confirm PG&E's process or progress on spills has proven impossible. Many spills are less than 49 gallons and less than 50 ppm, but still have significant levels of PCBs concentrations (e.g., 5 gallons of transformer oil with a PCBs concentration of 44 ppm).

BASMAA conducted a regional Stressor/Source Identification (SSID) project, in compliance with MRP Provision C.8.e, that developed a regional SSID workplan to further understand the magnitude and extent of PCBs released by electrical utility equipment spills, and to identify controls that could be implemented to reduce the water quality impacts of this source. In FY 2018-19, the regional SSID project developed the SSID workplan. As a result of this project, BASMAA sent a letter to the SFBRWQCB requesting that the Regional Water Board use its authority under Section 13267 of the California Water Code to compel private electrical utilities operating in the Bay Region to provide technical information that is needed to support further investigation of electrical utility equipment and properties as potential sources of PCBs to MS4s in the Bay Region.

**Table 2-3: PG&E Transformer Pole Spills in Contra Costa County**

SPILL DATE	CITY	LOCATION	INCIDENT TYPE	QUANTITY/ CONCENTRATION	DATE OF FINAL SPILL REPORT FROM PGE AND SFBRWQCB
5/3/2019	El Sobrante	711 Alhambra Road	Spill	5-gals PCB Mineral Oil 103 ppm	Not determined
1/31/2018	Richmond	600 South 4th Street	Fire/Explosion		2/12/2018
1/9/2018	Concord	2395 Willow Pass Rd	Spill	50 gal(s) Non-PCB Insulating Oil	1/9/2018
Not determined	Richmond	665 S 31st St.	Storm Drain/Creek	120-gal(s) Petroleum Mineral oil (non-PCB)	10/3/2017
6/26/2017	El Cerrito	984 King Ave	Spill	3-gal, unknown concentration PCBs	Not determined
6/26/2017	El Cerrito	984 King Ave	Spill	3-gal(s) Transformer oil 9.5 ppm	6/27/2017
6/23/2017	Richmond	4480 Bell Ave.	Spill	5-gal(s) Petroleum Mineral oil (Unknown PCB)	6/24/2017
6/5/2017	Richmond	4949 Cypress Ave	Spill	1 gal(s) Petroleum Mineral oil (non-PCB)	6/6/2017
6/3/2017	Pittsburg	493 Rich Spring Dr.	Spill	3 gal(s) Non-PCB Mineral Oil	6/6/2017
5/9/2017	Danville	134 Verde Mesa Drive	Spill	20 gal(s) Mineral Oil (Unknown PCB)	5/9/2017
4/9/2017	Pinole	2621 Appian Way	Spill	180 gal(s) Mineral Oil (non-PCB)	4/9/2017
4/6/2017	Richmond	1100 S 27th St.	Spill	1 gal, 25 PPM PCBs	Not determined
4/5/2017	Richmond	209 Parr Blvd	Spill	1 gal(s) Petroleum Mineral oil (25 ppm PCB)	4/6/2017
1/12/2017	Lafayette	3584 Mt. Diablo Blvd	Spill	10-gal(s) Transformer Oil (Unknown PCB)	1/14/2017
11/19/2016	Pleasant Hill	624 Contra Costa Blvd.	Spill	50 gal	Not determined
11/10/2016	Moraga	806 Crossbrook Dr	Spill	5-gal, 280 ppm PCBs	Not determined
10/21/2016	Alamo	Corner of Danville Blvd x Stone Valley Road	Spill	5 gal	Not determined
8/31/2016	Concord	1494 Washington Blvd	Spill	42,658 gal	Not determined





<b>SPILL DATE</b>	<b>CITY</b>	<b>LOCATION</b>	<b>INCIDENT TYPE</b>	<b>QUANTITY/ CONCENTRATION</b>	<b>DATE OF FINAL SPILL REPORT FROM PGE AND SFBRWQCB</b>
6/12/2016	Discovery Bay	2426 Pinehurst Ct.	Spill	1 gal, unknown PCBs	Not determined
4/5/2016	Orinda	Orinda	Spill	20-gal, undefined conc.	Not determined
3/6/2016	Concord	1354 Babel Ln, Concord	Spill	30-gal, 31 ppm (reported to OES as 1,000 ppm)	Not determined
2/7/2016	Richmond	5610 Bayview, Richmond	Spill	13 gal, <2 ppm	3/2/2016
5/4/2015	Richmond	5635 San Diego St, Richmond	Spill	60-gal, 45 ppm	11/16/2015
11/14/2014	Richmond	Port of Richmond	Spill	48,303 kg, 600,000 mg/kg	Early 2016

### 3 CITY OF CLAYTON

#### 3.1 List of Watersheds / Management Areas and Control Measures

The watersheds / management areas (W/MAs) the City of Clayton are listed in Table 3-1 below.

**Table 3-1: City of Clayton PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
CLA-1: Old Urban	738.1	0	100.0	0	0	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 3-2 and are described in the sections below.

**Table 3-2: City of Clayton Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	23.5	0	55.7	44.3	0	0
Large Full Trash Capture Devices	0	0	0	0	0	0
Enhanced O&M Measures <sup>1</sup>	167.9	0	5.3	46.9	47.8	0

**Notes:** Control measure implementation data may be incomplete for FY 2021/22.

1. Includes inlet-based full trash capture device clean out.

#### 3.2 Scope and Schedule of PCBs Control Measures

##### 3.2.1 Source Property Identification and Abatement

###### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of Clayton have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.



### *Ongoing Investigations*

No further investigation is warranted in the City of Clayton.

#### 3.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within the W/MA will be subject to the development standards in effect at the time an application is made, such as applicable provisions of MRP section C.3. See the City of Clayton's Green Infrastructure Plan for further information.

#### 3.2.3 Managing PCBs in Building Materials and Infrastructure

##### *Managing PCBs in Building Materials*

The City of Clayton has been approved for exemption pursuant to C.12.f.i and C.12.f.iii.

##### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

#### 3.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of Clayton include clean out of inlet-based full trash capture devices on a semi-annual basis.

#### 3.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 3.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the San Francisco Bay, San Joaquin/Sacramento Rivers Delta, and Suisun and San Pablo Bays.



*Illegal Dumping Cleanup*

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

*Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

## 4 CITY OF CONCORD

### 4.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Concord are listed in Table 4-1 below.

**Table 4-1: City of Concord PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
CON-1: Old Urban	13,047.7	0.1	76.8	6.6	16.2	0.3
CON-2: Old Industrial	1,073.1	19.2	20.5	47.8	12.4	0
CON-3: Military Base	5,344.7	0	1.0	0	5.1	93.9
CON-PGE: Categorical PG&E	21.9	0.9	92.4	0.3	6.4	0
CON-RAIL: Categorical Railroad	49.6	30.6	12.0	1.5	55.9	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented in each of these W/MAs are summarized in Table 4-2 and are described in the sections below.

**Table 4-2: City of Concord Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	129.9	8.5	66.4	9.2	16.0	0
Large Full Trash Capture Devices	0	0	0	0	0	0
Enhanced O&M Measures <sup>1</sup>	1,335.0	1.6	91.2	4.9	2.1	0.2

**Notes:**

1. Includes enhanced street sweeping and inlet-based full trash capture device clean out.

## 4.2 Scope and Schedule of PCBs Control Measures

### 4.2.1 Source Property Identification and Abatement

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of Concord have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

Ongoing investigations may result in a property referral in the future.

### 4.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application is made, such as demolition standards and applicable provisions of MRP section C.3. See the City of Concord's Green Infrastructure Plan for further information.

### 4.2.3 Managing PCBs in Building Materials and Infrastructure

#### *Managing PCBs in Building Materials*

As part of the demolition for the planned Veranda shopping center project, the building materials and surrounding onsite soils for the existing Chevron offices on Diamond Boulevard were tested and materials identified as below the residential numeric detection limits for PCBs (<0.25 ppm), per EPA guidance, were designated for haul away and disposal at an approved site, thereby mitigating a measured volume of PCBs that otherwise had the potential to migrate into downstream receiving waters.

The Program and Permittees participated in the BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. The City of Concord was actively involved in the region-wide discussions and development of the program to reduce the migration of PCBs during building demolition through participation on the Regional Project Technical Advisory Committee. The City began implementing the program on July 1, 2019.



### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

#### 4.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of Concord include clean out of inlet-based full trash capture devices on a semi-annual basis. In addition, the City of Concord Public Works department has implemented an enhanced street sweeping program. Numerous streets that historically had limited access for street sweeping due to parked cars are being posted “no parking” so that they can be swept clean. This enhanced maintenance activity is happening annually. The effort involves extensive public notifications, placing over 150 barricades, trimming trees, re-painting red-curbs, and towing vehicles that remain on the street. The list of locations is provided below.

- Carey Drive; from Monument Boulevard to Victory Lane
- Frisbi Court; from Lacey Lane to the end of the street
- Virginia Lane; from Monument Boulevard to Premier Place
- Oakmead Drive; from Monument Boulevard to Toyon Drive
- Laguna Street; from Amador Drive to Detroit Avenue
- Victory Lane; from Monument Boulevard to Linden Drive
- Robin Lane; from Virginia Lane to Meadow Lane
- Toyon Drive; from Oakmead Drive to Ellis Street
- Riley Court; from Meadow Lane to the end of the street
- Reganti Place; from Reganti Drive to the end of the street
- Lacey Lane; from Monument Boulevard to Tilson Drive
- Ellis Street; from Toyon Drive to Clayton Road
- Sierra Road; from Oak Grove Road to Fox Meadow Way
- Pine Street; from Clayton Road to the end of the Street
- Toyon Oakmead to Oakmead



- San Miguel Cowell to Via Montanas

#### 4.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 4.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the San Francisco Bay, San Joaquin/Sacramento Rivers Delta, and Suisun and San Pablo Bays.

##### *Illegal Dumping Cleanup*

The Permittees does identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

##### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs are addressed as they are identified through industrial facility inspection and spill notification programs.



## 5 TOWN OF DANVILLE

### 5.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the Town of Danville are listed in Table 5-1 below.

**Table 5-1: Town of Danville PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
DAN-1: Danville Town Boundary	11,554.2	0.1	38.9	21.5	39.6	0
DAN-PGE: Categorical PG&E	14.4	0	75.1	24.9	0	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The majority of the Town is residential with a lot of preserved open space areas and hillsides. Old Urban commercial uses are concentrated in the old downtown area on Hartz Avenue and along San Ramon Valley Boulevard. A portion of the older residential areas are also identified as old urban.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 5-2 and are described in the sections below.

**Table 5-2: Town of Danville Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	598.2	0	7.1	2.9	90.0	0.
Large Full Trash Capture Devices	0	0	0	0	0	0
Enhanced O&M Measures <sup>1</sup>	112.2	0	96.5	2.7	0.8	0

**Notes:**

1. Includes inlet-based full trash capture device clean out.

## 5.2 Scope and Schedule of PCBs Control Measures

### 5.2.1 Source Property Identification and Abatement

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

Danville has no known or suspected source properties. No properties within the Town of Danville have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

No further investigation is warranted in the Town of Danville.

### 5.2.2 Green Infrastructure / Treatment Control Measures

All redevelopment in Danville will be subject to C.3 regulations. See the Town of Danville's Green Infrastructure Plan for further information.

### 5.2.3 Managing PCBs in Building Materials and Infrastructure

#### *Managing PCBs in Building Materials*

The Program and Permittees participated in the BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. Danville began implementation of the program on July 1, 2019.

#### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

### 5.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the Town of Danville include clean out of inlet-based full trash capture devices on a semi-annual basis.

### 5.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

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## 5.2.6 Source Controls and Other Control Measures

### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the San Francisco Bay, San Joaquin/Sacramento Rivers Delta, and Suisun and San Pablo Bays.

### *Illegal Dumping Cleanup*

The Town of Danville regularly identifies and cleans up illegal dumping throughout town, including construction and demolition debris.

### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through the Town's established industrial facility inspection and spill notification programs.

## 6 CITY OF EL CERRITO

### 6.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of El Cerrito are listed in Table 6-1 below.

**Table 6-1: City of El Cerrito PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
ELC-1: Old Urban	2,023.2	0	98.0	0.4	1.5	0
ELC-2: Old Industrial and High Likelihood	0.7	73.5	2.7	0	23.7	0
ELC- PGE: Categorical PG&E	29.9	26.4	38.8	0.1	34.7	0
ELC- RAIL: Categorical Railroad	9.4	0	100.0	0	0	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 6-2 and are described in the sections below.

**Table 6-2: City of El Cerrito Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	14.6	1.4	91.1	2.7	4.8	0
Large Full Trash Capture Devices	0	0	0	0	0	0
Enhanced O&M Measures <sup>1</sup>	417.3	0.2	95.9	2.7	1.2	0

**Notes:**

1. Includes inlet-based full trash capture device clean out.

## 6.2 Scope and Schedule of PCBs Control Measures

### 6.2.1 Source Property Identification and Abatement

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of El Cerrito have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

Ongoing investigations may result in a property referral in the future.

### 6.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application is made, such as demolition standards and applicable provisions of Section C.3. See the City of El Cerrito's Green Infrastructure Plan for further information.

### 6.2.3 Managing PCBs in Building Materials and Infrastructure

#### *Managing PCBs in Building Materials*

The City of El Cerrito participated in the BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. The City of El Cerrito began implementation of the program on July 1, 2019.

#### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

### 6.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of El Cerrito include clean out of inlet-based full trash capture devices on a semi-annual basis.

### 6.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

### 6.2.6 Source Controls and Other Control Measures

#### *Mercury Load Avoidance and Reduction*

The City of El Cerrito has partnered with RecycleMore to offer Household Hazardous Waste (HHW) Collection at an additional site, located at the El Cerrito Recycling Center. This service provides residents in the City of El Cerrito with an even more convenient location for disposing of materials containing HHW, including products that contain mercury. El Cerrito, along with other permittees, is also actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay and Delta.

#### *Illegal Dumping Cleanup*

The City of El Cerrito Public Works department actively works to identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs. Public Works Staff respond whenever an illegal dumping complaint is received, in addition to completing weekly inspections and cleanups throughout the community.

#### *Stockpiles, Spills, and Disposal of PCBs*

El Cerrito has done significant outreach to educate the public that only rain should enter creeks and storm drains. This has included featuring related articles in the City's "News & Views" newsletter, the City's "Greener El Cerrito" newsletter, and in the City's "Green Happenings" e-newsletter. City staff also provided outreach materials at events such as the City's 4<sup>th</sup> of July Festival and Earth Day in 2018. Through these outreach methods, the City has actively encouraged residents to report spills and illicit discharges and to properly dispose of Household Hazardous Waste. Stockpiles and spills of PCBs are addressed as they are identified through industrial facility inspection and spill notification programs.

The City of El Cerrito's Public Works staff responds to reports of spills and discharges as soon as possible by containing spills and vacuuming or diverting spills away from the MS4 to a permeable landscape. Staff normally investigates the complaint on the same business day. In cases where the complaint is received after business hours, staff is dispatched as an emergency through the



El Cerrito Police Department, at which time the after-hours crew responds, contains, or diverts and investigates.

## 7 CITY OF HERCULES

### 7.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Hercules are listed in Table 7-1 below.

**Table 7-1: City of Hercules PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
HER-1: Old Urban	479.9	23.9	44.3	20.0	11.7	0
HER-2: Old Industrial/ High Likelihood	64.3	51.6	18.7	10.0	19.7	0
HER-PGE: Categorical PG&E	2.4	29.0	59.6	11.5	0	0
HER-RAIL: Categorical Railroad	26.1	88.5	0.5	0	10.9	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 7-2 and are described in the sections below.

**Table 7-2: City of Hercules Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	52.1	21.5	0	0.6	77.9	0
Large Full Trash Capture Devices	286.0	18.4	21.1	48.1	12.4	0
Enhanced O&M Measures <sup>1</sup>	72.4	0.1	0.1	96.1	3.6	0

1. Notes: Control measure implementation data may be incomplete for FY 2021/22. Includes inlet-based full trash capture device clean out.



## **7.2 Scope and Schedule of PCBs Control Measures**

### **7.2.1 Source Property Identification and Abatement**

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of Hercules have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

Ongoing investigations may result in a property referral in the future.

### **7.2.2 Green Infrastructure / Treatment Control Measures**

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application is made, such as demolition standards and applicable provisions of section C.3. See the City of Hercules' Green Infrastructure Plan for further information.

### **7.2.3 Managing PCBs in Building Materials and Infrastructure**

#### *Managing PCBs in Building Materials*

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. Hercules began implementation of the program on July 1, 2019.

#### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

### **7.2.4 Enhanced Operation and Maintenance Control Measures**

Enhanced O&M control measures that have been implemented by the City of Hercules include clean out of inlet-based full trash capture devices on a semi-annual basis.



### 7.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

### 7.2.6 Source Controls and Other Control Measures

#### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

#### *Illegal Dumping Cleanup*

The Permittees does identify and clean up illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

#### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs are addressed as they are identified through industrial facility inspection and spill notification programs.

## 8 CITY OF LAFAYETTE

### 8.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Lafayette are listed in Table 8-1 below.

**Table 8-1: City of Lafayette PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
LAF-1: Old Urban	5,869.8	0	100.0	0	0	0

**Notes:** Control measure implementation data may be incomplete for FY 2021/22.

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 8-2 and are described in the sections below.

**Table 8-2: City of Lafayette Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	27.5	0	69.5	0	30.5	0
Large Full Trash Capture Devices	0	0	0	0	0	0
Enhanced O&M Measures <sup>1</sup>	31.8	0	95.0	5.0	0	0

**Notes:**

1. Includes enhanced street sweeping, enhanced storm drain inlet cleaning, and full trash capture device clean out.

## **8.2 Scope and Schedule of PCBs Control Measures**

### **8.2.1 Source Property Identification and Abatement**

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

The City of Lafayette has no known or suspected source properties. No properties within the City of Lafayette have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

No further investigations are warranted in the City of Lafayette.

### **8.2.2 Green Infrastructure / Treatment Control Measures**

The City of Lafayette requires all new development, redevelopment, and infrastructure projects within the City to comply with the applicable sections of the MRP Provision C.3 and demolition standards at the time of application. When projects are determined to be unregulated, the City requires the project to implement LID design standards to the fullest extent practicable. Although limited opportunities are available to incorporate green infrastructure into the City's capital improvement program, the City will continue to look for opportunities to incorporate green infrastructure when possible. See the City of Lafayette's Green Infrastructure Plan for further information.

### **8.2.3 Managing PCBs in Building Materials and Infrastructure**

#### *Managing PCBs in Building Materials*

The Program and Permittees actively participated in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. The City of Lafayette began implementation of the program on July 1, 2019.

#### *Managing PCBs in Infrastructure*

The Program and Permittees also participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.



#### 8.2.4 Enhanced Operation and Maintenance Control Measures

The City of Lafayette has been street sweeping since 1969. Though the program has changed throughout the years, the areas swept today include commercial and arterial streets once a week, residential streets once a month, and City owned parking lots once a month. This schedule amounts to approximately 6,400 acres swept a year and was established pre-MRP.

Established before fiscal year 2013/2014, the City of Lafayette has been cleaning drain inlets once a year in preparation of the wet season except for the inlet-based full trash capture units which are currently professionally cleaned three times per year. If any drain inlet is in need of maintenance between cleanings or was missed because of lack of access, the City's maintenance crew performs the cleaning. The City of Lafayette also employs Futures Explored trash pickup patrols to clean up litter in the downtown where a majority of the pedestrian traffic is and hosts an annual creek cleanup day.

Since fiscal year 2013/2014, enhanced O&M control measures that have been implemented by the City of Lafayette are more on-land trash pickups as trash is seen and as needed, and installation of new double recycle/trash cans around the downtown. These activities have resulted in increased trash reduction above what is required by the permit.

#### 8.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 8.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay. As street lighting containing mercury or high-pressure sodium pressure lighting fixtures fail, the City of Lafayette is properly disposing of the old fixture and replacing it with LED lighting.

##### *Illegal Dumping Cleanup*

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs. The City of Lafayette also picks up other illegally dumped items within the public right-of-way as they become known.

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*Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs. The City of Lafayette has experienced no specific PCBs incidents of dumping that require cleanup to date.

## 9 CITY OF MARTINEZ

### 9.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Martinez are listed in Table 9-1 below.

**Table 9-1: City of Martinez PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
MTZ-1: Old Urban	2,776.0	0	100.0	0	0	0
MTZ-2: Refinery/Industrial	648.2	51.5	7.1	19.0	22.4	0
MTZ-3: Downtown/Commercial	177.7	31.1	42.1	24.8	2.1	0
MTZ-PGE: Categorical PG&E	16.8	7.8	27.0	0	65.3	0
MTZ-RAIL: Categorical Railroad	10.8	61.5	9.9	0	28.6	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 9-2 and are described in the sections below.

**Table 9-2: City of Martinez Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	72.3	15.2	36.7	32.6	15.5	0
Large Full Trash Capture Devices	4.1	39.0	53.7	7.3	0	0
Enhanced O&M Measures <sup>1</sup>	410.9	1.8	63.0	15.5	19.6	0

**Notes:**

1. Includes enhanced street sweeping and inlet-based full trash capture device clean out.

## 9.2 Scope and Schedule of PCBs Control Measures

### 9.2.1 Source Property Identification and Abatement

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of Martinez have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

The City of Martinez conducted visual windshield inspection of potential Old Industrial and High Likelihood parcels. Although no investigations are currently underway, future investigations have the potential to result in a property referral.

### 9.2.2 Green Infrastructure / Treatment Control Measures

As required by the MRP, all regulated development, redevelopment, capital improvement, and infrastructure projects within the W/MA will be subject to the development standards in effect at the time an application is made, and the applicable provisions of Section C.3 of the MRP, including the installation of low impact development drainage design facilities such as bioretention basins. Non-regulated projects are encouraged to install one or more LID elements. See the City of Martinez's Green Infrastructure Plan for further information.

### 9.2.3 Managing PCBs in Building Materials and Infrastructure

#### *Managing PCBs in Building Materials*

The Program and Permittees actively participated in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. The City of Martinez began implementation of the program on July 1, 2019.

#### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.





#### 9.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of Martinez include clean out of inlet-based full trash capture devices on a semi-annual basis and enhanced street sweeping.

#### 9.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 9.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

- In 2014, the City replaced 487 streetlights (throughout the City) from high-pressure sodium (HPS) lamps to LED. The replaced lights contain approximately 25 mg /each of mercury.
- In FY 2013-14 & FY 2014-15, the City replaced approximately 3,910 linear feet of florescent lights. The replaced lights contain approximately 2.5 mg mercury/linear foot.
- In FY 2013-14 & FY 2014-15, the City replaced approximately 97 compact lights. The replaced lights contain approximately 5 mg mercury/each.

##### *Illegal Dumping Cleanup*

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

##### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

## 10 TOWN OF MORAGA

### 10.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the Town of Moraga are listed in Table 10-1 below.

**Table 10-1: Town of Moraga PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
MOR-1: Old Industrial	22.8	100.0	0	0	0	0
MOR-2: Old Urban	2,382.4	0	99.9	0	0.1	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 10-2 and are described in the sections below.

**Table 10-2: Town of Moraga Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	18.9	0	36.0	0	64.0	0
Large Full Trash Capture Devices	0	0	0	0	0	0
Enhanced O&M Measures <sup>1</sup>	198.3	15.3	76.3	2.9	5.4	0

**Notes:** Control measure implementation data may be incomplete for FY 2021 -2022.

1. Includes inlet-based full trash capture device clean out.

## 10.2 Scope and Schedule of PCBs Control Measures

### 10.2.1 Source Property Identification and Abatement

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the Town of Moraga have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

No further investigations are warranted in the Town of Moraga.

### 10.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application is made, such as demolition standards and applicable provisions of section C.3. See the Town of Moraga's Green Infrastructure Plan for further information.

### 10.2.3 Managing PCBs in Building Materials and Infrastructure

#### *Managing PCBs in Building Materials*

The Town of Moraga participated in the BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. Moraga began implementation of the program on July 1, 2019.

#### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

### 10.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the Town of Moraga include clean out of inlet-based full trash capture devices on a semi-annual basis.



### 10.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

### 10.2.6 Source Controls and Other Control Measures

#### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in order to reduce mercury loading to the Bay.

#### *Illegal Dumping Cleanup*

The Permittees will identify, and cleanup illegal dumping of construction and demolition debris as needed.

#### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs are addressed as they are identified through industrial facility inspection and spill notification programs.

## 11 CITY OF ORINDA

### 11.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Orinda are listed in Table 11-1 below.

**Table 11-1: City of Orinda PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
ORI-1: Old Urban	5,274.1	0	93.9	0	6.0	0
ORI-2: Downtown	44.0	0	97.5	0.5	2.0	0
ORI-PGE: Categorical PG&E	154.0	22.7	0.1	4.0	73.2	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 11-2 and are described in the sections below.

**Table 11-2: City of Orinda Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	17.0	0	100.0	0	0	0
Large Full Trash Capture Devices	0	0	0	0	0	0
Enhanced O&M Measures <sup>1</sup>	33.4	0	99.7	0	0.3	0

**Notes:** Control measure implementation data may be incomplete for FY 2021 -2022.

1. Includes enhanced street sweeping and inlet-based full trash capture device clean out.

## **11.2 Scope and Schedule of PCBs Control Measures**

### **11.2.1 Source Property Identification and Abatement**

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of Orinda have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

The City of Orinda is largely old urban. There are no suspected source properties contained in the City of Orinda's W/MAs. The only old industrial areas are owned and operated by PG&E and included in WMA 4. Therefore, no ongoing inspection or abatement is required.

### **11.2.2 Green Infrastructure / Treatment Control Measures**

The City of Orinda requires developers to follow the Stormwater C.3 Guidebook developed by the Contra Costa Clean Water Program for all new development or redevelopment. See the City of Orinda's Green Infrastructure Plan for further information.

### **11.2.3 Managing PCBs in Building Materials and Infrastructure**

#### *Managing PCBs in Building Materials*

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1.

#### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2. Orinda began implementation of the program on July 1, 2019.

### **11.2.4 Enhanced Operation and Maintenance Control Measures**

Enhanced O&M control measures that have been implemented by the City of Orinda include clean out of inlet-based full trash capture devices on a semi-annual basis and enhanced street sweeping.



#### 11.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 11.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

##### *Illegal Dumping Cleanup*

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

##### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

## 12 CITY OF PINOLE

### 12.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Pinole are listed in Table 12-1 below.

**Table 12-1: City of Pinole PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
PIN-1: Old Industrial/ High Likelihood	95.0	64.8	7.0	21.5	6.6	0
PIN-2: Old Urban Commercial	367.7	0	91.1	0.9	7.9	0
PIN-3: Old Urban Residential	1,919.3	0	85.5	1.5	13.0	0
PIN-PGE: Categorical PG&E	4.6	0	0	0.	100.0	0
PIN-RAIL: Categorical Railroad	3.6	13.6	0	0	86.4	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 12-2 and are described in the sections below.

**Table 12-2: City of Pinole Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	22.9	0	80.8	0	19.2	0
Large Full Trash Capture Devices	18.0	70.0	7.8	0	22.2	0
Enhanced O&M Measures <sup>1</sup>	206.2	5.6	84.6	6.2	3.6	0

**Notes:** Control measure implementation data may be incomplete for FY 2021 -2022.

1. Includes inlet-based full trash capture device clean out.



## 12.2 Scope and Schedule of PCBs Control Measures

### 12.2.1 Source Property Identification and Abatement

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of Pinole have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

Ongoing investigations may result in a property referral in the future.

### 12.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3. See the City of Pinole's Green Infrastructure Plan for further information.

### 12.2.3 Managing PCBs in Building Materials and Infrastructure

#### *Managing PCBs in Building Materials*

The Program and Permittees are actively participating in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. Pinole began implementation of the program on July 1, 2019.

A universal waste and suspect hazardous building materials inventory was conducted prior to demolition activities on a 3-story commercial building and associated outbuilding located at 1617 and 1627 Canyon Drive in Pinole in February 2017. This inventory identified 100 gallons of hydraulic fluid in the passenger elevator equipment above ground storage tank that was suspected of containing PCBs that was recommended for proper disposal.

#### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.



#### 12.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of Pinole include clean out of inlet-based full trash capture devices on a semi-annual basis.

#### 12.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 12.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

##### *Illegal Dumping Cleanup*

The Permittees does identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

##### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs are addressed as they are identified through industrial facility inspection and spill notification programs.

### 13 CITY OF PITTSBURG

#### 13.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Pittsburg are listed in Table 13-1 below.

**Table 13-1: City of Pittsburg PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
PIT-1: Old Urban	3,042.6	0	100.0	0	0	0
PIT-2: Southern Energy Delta/ Genon	859.0	28.4	0	0	71.6	0
PIT-3: USS Posco Industries	442.6	80.1	0	19.9	0	0
PIT-4: Dow Chemical Company	433.5	66.3	1.2	7.9	24.6	0
PIT-5: Old Industrial	78.6	56.0	16.4	10.3	17.3	0
PIT-6: Camp Stoneman	382.8	84.2	1.4	8.6	5.9	0
PIT-7: Waterfront Industrial	84.2	89.6	0	9.3	1.0	0
PIT-PGE: Categorical PG&E	348.3	12.5	3.1	0.7	83.7	0
PIT-RAIL: Categorical Railroad	106.2	93.0	0	3.1	3.9	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 13-2 and are described in the sections below.

**Table 13-2: City of Pittsburg Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Source Property Identification and Abatement	6.0	100.0	0	0	0	0
Green Infrastructure and Treatment	176.6	16.9	26.6	28.8	27.7	0
Large Full Trash Capture Devices <sup>1</sup>	436.4	1.8	62.9	33.0	2.3	0



Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Enhanced O&M Measures <sup>2</sup>	221.8	1.7	41.2	34.5	22.6	0

**Notes:**

1. Includes Hydrodynamic Separator (HDS) and Gross Solids Removal Device (GSRD) units.
2. Includes inlet-based full trash capture device clean out.

### 13.2 Scope and Schedule of PCBs Control Measures

#### 13.2.1 Source Property Identification and Abatement

*PCBs-Contaminated Properties Referred to the Regional Water Board*

One property within the City of Pittsburg was referred to the SFBRWQCB in FY 2015-16 as a result of implementation of the Source Property Identification and Abatement control measure to date.

**Table 13-3: City of Pittsburg Contaminated Sites Self-Abated or Referred to the SFBRWQCB (FY 2013/14 through FY 2019/20)**

SITE NAME	LOCATION/APN	PROPERTY SIZE (ACRES)	YEAR	Referral/ Self-Abatement
Former Molino Enterprises, Inc.	1215 Willow Pass Rd., Pittsburg; 096-091-003-2	6.0	FY 2015-16	Referral

*Ongoing Investigations*

Ongoing investigations of other parcels may result in a property referral in the future.

#### 13.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application is made, such as demolition standards and applicable provisions of section C.3. See the City of Pittsburg’s Green Infrastructure Plan for further information.



### 13.2.3 Managing PCBs in Building Materials and Infrastructure

#### *Managing PCBs in Building Materials*

The City of Pittsburg participated in the BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. The City began implementation of the program on July 1, 2019. The City received a Community-wide Brownfield Assessment Grant to conduct Phase I and Phase II Environmental Site Assessments on City-owned and private parcels. As part of this effort, five parcels will be sampled for contaminants including PCBs.

#### *Managing PCBs in Infrastructure*

The City also participated in the BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

### 13.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of Pittsburg include clean out of inlet-based full trash capture devices on a semi-annual basis. In addition, the City of Pittsburg enhanced the street sweeping schedule for more effective street sweeping and debris removal. Staff will explore the possibility of incorporating other enhancements in conjunction with maintenance of the MS4.

### 13.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

### 13.2.6 Source Controls and Other Control Measures

#### *Mercury Load Avoidance and Reduction*

The City participates in a regional Household Hazardous Wastes program with the Delta Household Hazardous Waste Facility. The City promotes the use of this facility for the collection of mercury containing items for residents and small businesses through brochures and through contact with the general public at year-round publicly hosted events.

The Permittees are actively implementing mercury recycling programs in order to reduce mercury loading to the Bay.



### *Illegal Dumping Cleanup*

The City is active at identifying and removing illegally dumped construction and demolition debris. The City has Public Works staff dedicated to addressing illegally dumped material within the Public Right of Ways and City owned property. Debris is typically removed as discovered by staff, or within 24 hours of a notification. PW staff are trained on the proper disposal protocols for hazardous substances.

### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

## 14 CITY OF PLEASANT HILL

### 14.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Pleasant Hill are listed in Table 14-1 below.

**Table 14-1: City of Pleasant Hill PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
PLH-1: Old Urban	4,509.0	0	80.2	6.3	13.5	0
PLH-2: Old Industrial	20.2	100.0	0	0	0	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 14-2 and are described in the sections below.

**Table 14-2: City of Pleasant Hill Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	72.0	0	99.9	0	0.1	0
Large Full Trash Capture Devices	35.8	0	93.6	6.1	0.3	0
Enhanced O&M Measures <sup>1</sup>	547.8	0	94.5	2.5	3.0	0

**Notes:** Control measure implementation data may be incomplete for FY 2021 -2022.

1. Includes inlet-based full trash capture device clean out.

## **14.2 Scope and Schedule of PCBs Control Measures**

### **14.2.1 Source Property Identification and Abatement**

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of Pleasant Hill have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

The City of Pleasant Hill has not identified any source properties but will continue its inspection of commercial/industrial facilities required by Provision C.4 which may identify source properties in the future, albeit unlikely given the commercial rather than industrial nature of the facilities inspected. Ongoing investigations may result in a property referral in the future.

### **14.2.2 Green Infrastructure / Treatment Control Measures**

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application is made, such as demolition standards and applicable provisions of section C.3. See the City of Pleasant Hill's Green Infrastructure Plan for further information.

### **14.2.3 Managing PCBs in Building Materials and Infrastructure**

#### *Managing PCBs in Building Materials*

The Program and Permittees actively participated in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. The City of Pleasant Hill began implementation of the program on July 1, 2019.

#### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.



#### 14.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of Pleasant Hill include clean out of inlet-based full trash capture devices on a semi-annual basis.

#### 14.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 14.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

##### *Illegal Dumping Cleanup*

The Permittees does identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

##### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs are addressed as they are identified through industrial facility inspection and spill notification programs.

## 15 CITY OF RICHMOND

### 15.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Richmond are listed in Table 15-1 below.

**Table 15-1: City of Richmond PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
RIC-1: Old Urban	5,563.0	6.3	85.1	4.9	3.7	0
RIC-2: Point Pinole	329.4	31.6	0	31.9	36.5	0
RIC-3: Santa Fe Channel	833.6	63.8	7.0	6.5	22.7	0
RIC-4: Zeneca Site	63.4	100.0	0	0	0	0
RIC-PGE: Categorical PG&E	6.6	42.7	0	15.5	41.9	0
RIC-Rail: Categorical Rail	467.6	80.9	5.7	1.1	12.3	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 15-2 and are described in the sections below.

**Table 15-2: City of Richmond Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Source Property Identification and Abatement	30.5	100.0	0	0	0	0
Green Infrastructure and Treatment	350.8	43.1	22.8	7.2	26.9	0
Large Full Trash Capture Devices <sup>1</sup>	2,786.5	5.6	89.7	2.4	2.3	0
Enhanced O&M Measures <sup>2</sup>	970.7	5.0	89.2	3.7	2.1	0

**Notes:** Control measure implementation data may be incomplete for FY 2021/22.

1. Includes Hydrodynamic Separator (HDS) and Gross Solids Removal Device (GSRD) units.
2. Includes inlet-based full trash capture device clean out.

## 15.2 Scope and Schedule of PCBs Control Measures

### 15.2.1 Source Property Identification and Abatement

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

Six properties within the City of Richmond have been referred to the SFBRWQCB or have been abated as a result of implementation of the Source Property Identification and Abatement control measure to date (Table 15-3). Two new source properties were identified in FY 2019/20 – Zeneca and the UC Berkeley Richmond Field Station. Both of these properties discharge directly to the Bay, therefore there is no opportunity for the City of Richmond to implement enhanced O&M measures. Thus, no load reduction credit has been taken for these source property referrals.

**Table 15-3: City of Richmond Contaminated Sites Self-Abated or Referred to the SFBRWQCB (FY 2013/14 through FY 2019/20)**

SITE NAME	LOCATION/APN	PROPERTY SIZE (ACRES)	YEAR	Referral/ Self-Abatement
Zeneca/Former Stauffer Chemical Company	1415 South 47 <sup>th</sup> St, Richmond	9.2	FY 2019/20	Referral
UC Berkeley Richmond Field Station	1301 South 46 <sup>th</sup> St, Richmond	14	FY 2019/20	Referral
Sims Metal Management Richmond Facility	600 South 4th Street, Richmond / 560-240-040, 560-250-027, 560-250-025	19.3	FY 2017-18	Referral
World Corp	1014 Chesley Ave., Richmond	10.44	FY 2017-18	Referral
Port of Richmond	Point Potrero Marine Terminal, Richmond	0.72	FY 2017-18	Self-Abatement
San Diego St. Transformer Spill	R.O.W. San Diego St., Richmond	0.08	FY 2017-18	Self-Abatement

### *Ongoing Investigations*

The City of Richmond, through its C.4 business inspection program, continuously inspects and investigates industrial and commercial properties for potential sources of PCBs in the Santa Fe Channel, Zeneca, and North Richmond management areas. Moreover, City staff inspects PG&E maintenance yards, located in its jurisdiction, to warrant that all PCBs containing transformers and equipment are properly contained and disposed. Ongoing investigations may result in a property referral in the future.

Through the plan checking process, any properties that apply for grading permits for the purpose of site remediation under clean up orders by State regulatory agencies (i.e., State Water Resources Control Board and Department of Toxic Substance Control) are required to submit monitoring results for PCBs prior to permit issuance.

Currently, the City does not perform any source identification in residential Old Urban or New Urban management areas.

#### 15.2.2 Green Infrastructure / Treatment Control Measures

Development and redevelopment projects in all management areas are subjected to the Contra Costa County C.3 requirements. See the City of Richmond's Green Infrastructure Plan for further information.

#### 15.2.3 Managing PCBs in Building Materials and Infrastructure

##### *Managing PCBs in Building Materials*

The Program and Permittees actively participated in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. Richmond began implementation of the program on July 1, 2019.

##### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.



#### 15.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of Richmond include clean out of inlet-based full trash capture devices on a semi-annual basis.

#### 15.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 15.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

##### *Illegal Dumping Cleanup*

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

The City of Richmond utilizes the 1-800-NO DUMPING hotline for reports of illegal dumping activities. When reports are received by the City abatement crew, illegally dumped materials are abated and sorted according to the type of wastes and disposed of accordingly.

##### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

The City of Richmond staff diligently investigates, enforces, and follows up on the removal, disposal, and remediation of spills from transformers belonging to PG&E as they are reported.

## 16 CITY OF SAN PABLO

### 16.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of San Pablo are listed in Table 16-1 below.

**Table 16-1: City of San Pablo PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
SPB-1: Rumrill Industrial Area	45.2	22.9	52.7	16.7	7.7	0
SPB-2: Giant Highway Industrial Area	22.7	73.9	9.5	16.5	0	0
SPB-3: Old Urban	1,599.1	0.8	88.4	0.6	10.2	0
SPB-RAIL	0.1	89.3	10.7	0	0	0
SPB-PG&E	0.2	0	0	0	100.0	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 16-2 and are described in the sections below. The City will be assessing Clean Watersheds for a Clean Bay results, development applications, sampling results, and other pilot projects to gain a clear understanding of the economic and environmental impacts of each project. The City will use this information to make informed decisions in the future about funding programs that provide additional PCBs and mercury reductions.

**Table 16-2: City of San Pablo Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Source Property Identification and Abatement	4.5	100.0	0	0	0	0
Green Infrastructure and Treatment	36.6	10.9	69.1	0.8	19.1	0
Large Full Trash Capture Devices	0	0	0	0	0	0



Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Enhanced O&M Measures <sup>1</sup>	660.1	2.6	90.9	2.3	4.2	0

**Notes:**

1. Includes inlet-based full trash capture device clean out.

## 16.2 Scope and Schedule of PCBs Control Measures

### 16.2.1 Source Property Identification and Abatement

Over the 2014-2015 and 2015-2016 reporting periods the City of San Pablo (in conjunction with the Contra Costa Clean Water Program) screened 132 parcels, revised the high-likelihood parcels to 11 and collected samples at six of the 11 sites. Of the six samples collected, there was one sample in the City of San Pablo that contained PCBs levels above 1.0 mg/kg.

Since the initial sampling, the City of San Pablo performed further research into the neighborhood surrounding the site with the elevated PCBs sample and learned that this area is adjacent to a previously referred (2009) PCBs contaminated site; however, this site is located in a different jurisdiction. In January 2017, the City of San Pablo in conjunction with CCCWP performed additional sampling to eliminate other properties surrounding the area and worked with the Contra Costa Clean Water Program and the City of Richmond to perform sediment sampling around the previously referred PCBs contaminated site at 1014 Chesley Avenue. One additional sampling event occurred in May 2017, which confirmed that the site was still leaking PCBs into the public right-of-way. Over the 2017-2018, reporting year the City of San Pablo transferred this site to the City of Richmond since the property is located in the City of Richmond’s jurisdiction. The City of San Pablo will continue to work with the City of Richmond and SFBRWQCB regarding the status of this property, however information regarding this progress can be found in the City of Richmond section.

In addition, the City of San Pablo attended various meetings regarding a potential contaminated site at 1411 Rumrill Avenue in San Pablo. The City attended a meeting in February 2018 to discuss the potential for an abatement process and credit for this abatement. The City is currently working on a “complete streets” project that will address runoff from this parcel. The site is currently under construction. Once construction is complete, the City will submit documentation for abatement of the site.



*PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of San Pablo have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date. While no properties within the City of San Pablo have been referred to the Regional Water Board by the Contra Costa Clean Water Program, one PCBs-contaminated self-abated property has been reported to the SFBRWQCB.

**Table 16-3: City of San Pablo Contaminated Sites Self-Abated or Referred to the SFBRWQCB (FY 2013/14 through FY 2019/20)**

SITE NAME	LOCATION/APN	PROPERTY SIZE (ACRES)	YEAR REFERRED	Referral/ Self-Abatement
Rumrill Sports Complex (Former BNSF Railyard Site)	1509 Rumrill Blvd, San Pablo / 409-313-009; 409-313-009; 410-012-007; 410-012-008	4.45	FY 2015-16	Self-Abatement

*Ongoing Investigations*

Ongoing investigations may result in a property referral in the future.

**16.2.2 Green Infrastructure / Treatment Control Measures**

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application is made, such as demolition standards and applicable provisions of section C.3. See the City of San Pablo’s Green Infrastructure Plan for further information.

**16.2.3 Managing PCBs in Building Materials and Infrastructure**

**Managing PCBs in Building Materials**

The Program and Permittees actively participated in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. The City of San Pablo assisted in this project by providing municipality representatives in the Technical Advisory Committee and the Steering Committee. The City began full implementation of the program on July 1, 2019.





### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

#### 16.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of San Pablo include clean out of inlet-based full trash capture devices on a semi-annual basis.

In the 2016-17 reporting year, the City of San Pablo desilted 400 linear feet of Wildcat Creek to remove sediment that is blocking storm drains. This desilting project resulted in the removal of 800 cubic yards of sediment from the creek. As the data needed to determine the PCBs and mercury load reductions for this desilting are not available, no load reduction credit has been included in this report for this project.

#### 16.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 16.2.6 Source Controls and Other Control Measures

### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

### *Illegal Dumping Cleanup*

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.



## 17 CITY OF SAN RAMON

### 17.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of San Ramon are listed in Table 17-1 below.

**Table 17-1: City of San Ramon PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
SRM-1: Old Urban	916.9	0	93.9	4.7	1.5	0
SRM-PGE: Categorical PG&E	84.5	15.9	13.8	2.6	67.6	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The City of San Ramon has identified one WMA that covers old urban areas within the City. There are no areas within the City’s jurisdiction that are categorized as old industrial land use (pre-1974) as defined in the initial Source Property Identification and Abatement study conducted by the Contra Costa Clean Water Program. There are a limited number of commercial buildings within WMA 1 that were constructed pre-1974. Those units are located within the City of San Ramon Northwest Specific Plan and are subject to redevelopment as the residential and commercial markets develop in the area. One PG&E storage facility that may have contained power transformers will be included in a county-wide categorical WMA.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 17-2 and are described in the sections below.

**Table 17-2: City of San Ramon Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	336.6	0	2.6	17.3	80.1	0
Large Full Trash Capture Devices	0	0	0	100.0	0	0
Enhanced O&M Measures <sup>1</sup>	232.3	0	39.3	60.1	0.6	0

**Notes:** Control measure implementation data may be incomplete for FY 2021/22.

1. Includes inlet-based full trash capture device clean out.

## 17.2 Scope and Schedule of PCBs Control Measures

### 17.2.1 Source Property Identification and Abatement

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

No properties within the City of San Ramon have been referred to the SFBRWQCB as a result of implementation of the Source Property Identification and Abatement control measure to date.

#### *Ongoing Investigations*

No further investigations are warranted in the City of San Ramon.

### 17.2.2 Managing PCBs in Building Materials and Infrastructure

#### *Managing PCBs in Building Materials*

The Program and Permittees actively participated in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. San Ramon began implementation of the program on July 1, 2019.

#### *Managing PCBs in Infrastructure*

The Program and Permittees participated in a BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

### 17.2.3 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of San Ramon include clean out of inlet-based full trash capture devices on a semi-annual basis.

### 17.2.4 Diversion to POTW

No diversion to POTW control measures are proposed.

### 17.2.5 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application is made, such as

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demolition standards and applicable provisions of section C.3. See the City of San Ramon's Green Infrastructure Plan for further information.

#### 17.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

##### *Illegal Dumping Cleanup*

The City of San Ramon typically removes items from illegal dumping sites within 24 hours of notification or discovery by staff.

##### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

## 18 CITY OF WALNUT CREEK

### 18.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within the City of Walnut Creek are listed in Table 18-1 below.

**Table 18-1: City of Walnut Creek PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
WCR-1: Downtown Core	775.7	0.9	96.3	0.4	2.5	0
WCR-2: Shadelands	233.7	5.3	86.4	0	8.3	0

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 18-2 and are described in the sections below.

**Table 18-2: City of Walnut Creek Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Green Infrastructure and Treatment	149.3	1.2	84.2	0	14.6	0
Large Full Trash Capture Devices	20.7	0	99.5	0	0.5	0
Enhanced O&M Measures <sup>1</sup>	734.9	0	89.9	3.8	6.3	0

**Notes:**

1. Includes inlet-based full trash capture device clean out.

## 18.2 Scope and Schedule of PCBs Control Measures

### 18.2.1 Source Property Identification and Abatement

#### *PCBs-Contaminated Properties Referred to the Regional Water Board*

During renovation of the Larkey Pool swim center, 27 linear feet of PCBs-containing concrete slab expansion joint caulking, approximately 6 inches in width, were removed. The self-abatement form for this project was provided in a previous annual report.

#### *Ongoing Investigations*

Ongoing investigations may result in a property referral in the future.

### 18.2.2 Green Infrastructure / Treatment Control Measures

As required by the Municipal Regional NPDES Permit (MRP, provision C.3.j), the City of Walnut Creek requires the inclusion of low impact development (LID) drainage design into storm drain infrastructure on public and private lands (including streets, storm drains, parking lots, building roofs and others). When a project is not considered as a regulated project under provision C.3 (such as a single-family residence project), it is encouraged to install one or more LID elements. See the City of Walnut Creek's Green Infrastructure Plan for further information.

### 18.2.3 Managing PCBs in Building Materials and Infrastructure

#### *Managing PCBs in Building Materials*

The City of Walnut Creek participated in the BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. The City of Walnut Creek began implementation of the program on July 1, 2019.

#### *Managing PCBs in Infrastructure*

The City of Walnut Creek also participated in the BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.



#### 18.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by the City of Walnut Creek include clean out of inlet-based full trash capture devices on a semi-annual basis.

#### 18.2.5 Diversion to POTW

No diversion to POTW control measures are proposed.

#### 18.2.6 Source Controls and Other Control Measures

##### *Mercury Load Avoidance and Reduction*

The City of Walnut Creek participates in the regional recycling efforts of mercury-containing thermometer and devices through the Central Contra Costa Sanitary District (CCCSD) household hazardous waste program.

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

##### *Illegal Dumping Cleanup*

The City has not encountered any incidents involving illegal dumping of PCBs and/or mercury containing materials and related cleanups.

The Permittees will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.

##### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

## 19 UNINCORPORATED CONTRA COSTA COUNTY

### 19.1 List of Watersheds / Management Areas and Control Measures

The W/MAs within Unincorporated Contra Costa County are listed in Table 19-1 below. Note that although MRP Provisions C.11/C.12 apply only to the portion of Unincorporated Contra Costa County within Region 2, the County has mapped W/MAs countywide.

**Table 19-1: Unincorporated Contra Costa County PCBs and Mercury Watershed Management Areas (W/MAs) and Associated Land Uses**

W/MA Identifier	Total Area <sup>1</sup> (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
CCC-1: High Likelihood and Source Properties	5,931.2	51.7	9.1	2.8	22.8	13.6
CCC-2: Old Industrial Areas	1,055.0	99.9	0	0	0.1	0
CCC-3: North Richmond Pump Station (NRPS) Drainage Area	182.2	0.1	86.7	3.7	9.6	0
CCC-4: Infrastructure Improvement Areas (old industrial and old urban areas with very limited or no storm drain systems adjacent to industrial areas)	560.8	0	30.3	42.4	27.3	0
CCC-5: Enhanced Operations and Maintenance Areas (old industrial and old urban areas with curb, gutter, and storm drain systems)	1,856.4	0	90.9	2.7	6.3	0
CCC-PGE: Categorical PG&E	1,775.3	3.7	2.2	0.7	93.4	0
CCC-RAIL: Categorical Railroad	639.9	9.8	2.0	15.0	72.4	0.9

**Notes:**

1. Land use breakdown as of IMR land use year 2013.

These W/MAs are designated based on the types of control measures and actions that may be taken to reduce PCBs flowing or present in the stormwater drainage system. These areas represent priority areas within Contra Costa County. The control measures that are currently being implemented during the term of the permit in each of these W/MAs are summarized in Table 19-2 and are described in the sections below.



**Table 19-2: Unincorporated Contra Costa County Area Treated by Area-Based Control Measure Category (FY 2013/14 through FY 2021/22)**

Control Measure Category	Total Area Treated (Acres)	% Old Industrial	% Old Urban	% New Urban	% Open Space	% Other
Source Property Identification and Abatement	19.5	100.0	0	0	0	0
Green Infrastructure and Treatment	216.7	3.2	34.1	2.7	59.9	0
Large Full Trash Capture Devices	0	0	0	0	0	0
Enhanced O&M Measures <sup>1</sup>	1,158.8	1.6	85.1	2.7	10.2	0.3

**Notes:**

1. Includes enhanced street sweeping and inlet-based full trash capture device clean out.

**19.2 Scope and Schedule of PCBs Control Measures**

**19.2.1 Source Property Identification and Abatement**

The Fass Metals site was referred to the SFBRWQCB in FY 2017/18, although no load reduction credit has been taken for this source property due to the inability to implement enhanced O&M. A self-abatement report was submitted for a second site on Radiant Avenue in North Richmond.

**Table 19-3: Unincorporated Contra Costa County Contaminated Sites Self-Abated or Referred to the SFBRWQCB (FY 2013/14 through FY 2019/20)**

SITE NAME	LOCATION/APN	PROPERTY SIZE (ACRES)	YEAR	Referral/ Self-Abatement
Radiant Avenue	Radiant Avenue, North Richmond; 408-082-030	19.5	FY 2016/17	Self-Abatement
Fass Metals	818 West Gertrude Ave, Richmond	0.2	FY2017/18	Referral

*Ongoing Investigations*

Properties designated as High Likelihood or old industrial in Contra Costa County will be further investigated to see if they are properties likely to have PCBs. Contra Costa County will work with



County C.4 industrial inspectors under the Commercial and Industrial Inspection Program to investigate the likelihood of PCBs on these High Likelihood Properties. These investigations will be coordinated with industrial facility inspections over the next few years. Ongoing investigations may result in a property referral in the future.

#### 19.2.2 Green Infrastructure / Treatment Control Measures

Any development, redevelopment, and infrastructure projects within each of the W/MAs will be subject to the development standards in effect at the time an application would be made, such as demolition standards and applicable provisions of section C.3. See the Contra Costa County's Green Infrastructure Plan for further information

#### 19.2.3 Managing PCBs in Building Materials and Infrastructure

##### *Managing PCBs in Building Materials*

The Program and Permittees actively participated in a BASMAA Regional Project to address PCBs in building materials as described in Section 2.3.1. Contra Costa County's Building Inspector Management participated on the Regional Project Technical Advisory Committee. The County began implementing a PCBs in Building Materials Program on July 1, 2019.

##### *Managing PCBs in Infrastructure*

The Program and Permittees participated in the BASMAA Regional Project to address PCBs in infrastructure as described in Section 2.3.2.

#### 19.2.4 Enhanced Operation and Maintenance Control Measures

Enhanced O&M control measures that have been implemented by Contra Costa County include clean out of inlet-based full trash capture devices on a semi-annual basis. Some units were initially installed in 2013, including a total of 139 connector pipe screens and top hats. The County installed an additional 147 connector pipe screens in FY 2016/17 in the unincorporated communities of Bay Point, Richmond, and Rodeo. These systems are maintained to reduce not only debris but accumulated sediment from flowing to the Bay. They treat a total of 383.5 acres. Additional systems were installed in sections of North Richmond and Bay Point during FY 2018/19. As of the close of FY 2021/22, the County has installed a total of 463 full trash capture devices that treat 1,153 acres.



In addition, Contra Costa County began implementing enhanced street sweeping in FY 2015/16 as listed in Table 19-4 below.

**Table 19-4: Unincorporated Contra Costa County Enhanced O&M Control Measures (FY 2013/14 through FY 2021/22)**

Enhanced O&M Control Measure Type	Baseline Frequency	Enhanced Frequency	New Treatment Area (acres)	Location
Street Sweeping	Monthly	Biweekly	55.0	Crockett Commercial
Street Sweeping	Monthly	Biweekly	27.5	El Sobrante Commercial (excluding San Pablo Dam Road)
Street Sweeping	Monthly	Biweekly	13.4	El Sobrante Commercial (only including San Pablo Dam Road)
Street Sweeping	Monthly	Biweekly	19.5	Pacheco Commercial
Street Sweeping	Monthly	Biweekly	32.7	Richmond Pkwy
Street Sweeping	Monthly	Biweekly	83.3	Rodeo Commercial
Street Sweeping	Monthly	Biweekly	17.8	San Pablo Ave Commercial

Several areas of the County have roadside ditches and other areas have curb and gutter or curb and gutter interspersed with roadside ditches. As development takes place over time, Contra Costa County will develop curb and gutter and storm drain systems in some areas of the County, particularly in residential areas adjacent or near to old industrial areas. Contra Costa County Public Works Maintenance operates and maintains storm drain infrastructure by cleaning and repairing it to reduce debris and sediment that flows the Bay.

Contra Costa County has street sweeping in most areas that have curb and gutter. In some of the old urban and old industrial areas that have curb and gutter and storm drain infrastructure, Contra Costa County has enhanced the street sweeping frequency from once to twice per month. These areas include approximately 249 acres of commercial and some residential areas in the unincorporated areas of Crockett, Pacheco, Richmond, and Rodeo. These areas include old industrial, old urban, new urban and open space.



### 19.2.5 Diversion to POTW

Contra Costa County maintains the North Richmond pump station in North Richmond. A temporary diversion was planned under MRP 1.0. The diversion provided an opportunity to coordinate more with West County Wastewater District, test how a diversion could work, and discuss potential future diversions. Contra Costa County is investigating the possibility of building more permanent diversion infrastructure and coordinating with West County Wastewater District to potentially find a way to divert more stormwater drainage discharges.

### 19.2.6 Source Controls and Other Control Measures

#### *Mercury Load Avoidance and Reduction*

The Permittees are actively implementing mercury recycling programs in all W/MAs in order to reduce mercury loading to the Bay.

Household hazardous waste facilities collect materials and devices containing mercury. There may be other opportunities over time to collect mercury or identify additional sources and take measures to reduce discharges to the MS4. Contra Costa County's Landscaping and Lighting District has coordinated with PG&E to replace mercury-containing light fixtures with LED fixtures. As a result, Contra Costa County has converted all of its mercury and/or high-pressure sodium vapor street lights to Light Emitting Diode (LED) street lights. In addition, the County Public Works Department had also converted all fluorescent bulbs in the main office building to LED.

#### *Illegal Dumping Cleanup*

Illegal dumps are cleaned from Contra Costa County's road right-of-way regularly and disposed of properly by Contra Costa County's Public Works or where appropriate, Hazardous Materials. Illegal dumping consists of many types of material including furniture, trash, construction material and debris, and potentially hazardous materials or wastes. Where possible, information is used to track down the owner of the material and properly dispose of the material or recover costs of disposing.

The County will identify and cleanup illegal dumping of construction and demolition debris where illegal dumping of construction and demolition debris occurs.



### *Stockpiles, Spills, and Disposal of PCBs*

Stockpiles and spills of PCBs will be addressed as they are identified through industrial facility inspection and spill notification programs.

Spills of PCBs occur due to accidents, weather, worn out transformers, or other reasons. The County may also find or be notified about stockpiles of materials. The County has trained Hazardous Materials and Environmental Health Inspectors on the importance of the identification and correct disposal of PCBs related to stormwater and the Municipal Regional Stormwater Permit (MRP 2.0). The County Watershed Program coordinates with Haz Mat to complete stormwater inspections and has communicated the importance of relaying information relating to PCBs sources to the Watershed Program. The County has also been involved in a Code Enforcement Task Force and has communicated the importance of working with stormwater managers to identify and communicate the potential presence of PCBs when there are spills or stockpiled material. The County works with the Contra Costa County Hazardous Materials staff and the Clean Water Program to inform program staff of spill incidents within unincorporated County. Where these spills involve other agencies or organizations, Contra Costa County will work with the agencies or property owners as appropriate.

## 20 LOADS REDUCED

This section presents estimates of the loads reduced by the control measures that are reported in the preceding sections of this report (Sections 3 through 22) for each Permittee and county-wide for FY 2013/14 through FY 2021/22. The loads reduced reported in this section reflect previous fiscal years’ reporting, although previously reported load reductions may have been revised.

### 20.1 Loads Reduced – PCBs

Table 20-1 reports the estimated PCBs loads reduced for each Permittee for all control measures. Note that this table reflects the load reduction achieved through implementation of the program and protocol for managing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition. This load reduction is equivalent to 373.3 g/yr, which has been allocated to each Permittee in FY 2018/19 based on their population in the year 2000.

Table 20-2 reports the PCBs loads reduced for all Permittees for each control measure. The results indicate that the load reductions required through Green Infrastructure by June 30, 2020 (23 g/yr) and the overall load reductions required by June 30, 2020 (560 g/yr) by the Contra Costa Permittees was exceeded.

**Table 20-1: PCBs Loads Reduced by the Permittees (FY 2013/14 through FY 2021/22)**

Permittee	PCBs Loads Reduced (g/yr)									
	FY2013-2014	FY2014-2015	FY2015-2016	FY2016-2017	FY2017-2018	FY2018-2019	FY2019-2020	FY2020-2021	FY2021-2022	Cumulative Load Reduced
Clayton	0	0.36	0.01	0	0	4.11	0	0	0	4.48
Concord	0.03	0.95	0.26	0.46	1.60	56.81	0	0.55	0.02	60.68
Danville	0.08	0.21	0.26	0.14	0.13	15.20	0.29	0.17	0.33	16.81
El Cerrito	0	0.16	0.05	0.24	0.05	11.19	0	0.03	0	11.72
Hercules	0	1.40	0	0	0.01	9.45	0	0	0	10.86
Lafayette	0.04	0.05	0.04	0	0.04	11.99	0.01	0.11	0	12.28
Martinez	0	0.40	0.05	0.97	0.07	14.07	0.14	0	0.04	15.74
Moraga	0.16	0.06	0	0.17	0.02	4.88	0	0	0	5.29
Orinda	0.39	0.01	0	0.05	0.03	6.82	0	0	0	7.30
Pinole	0.02	0.34	0	0.10	0.11	8.26	0.01	0	0	8.84
Pittsburg	0.54	1.34	12.26	0.31	0.10	23.10	0	0.02	0.94	38.61
Pleasant Hill	0.04	0.74	0.87	0.01	0	16.18	0	0	0	17.84
Richmond	0.29	7.23	0.85	2.71	70.62	61.49	0.79	1.27	0	145.25
San Pablo	0	0.20	18.52	0.08	0.22	14.65	0.01	0.30	0.02	34.00
San Ramon	0	0.17	0	0	0.08	17.30	0	0.22	0	17.77
Walnut Creek	0.23	1.17	0.11	0.39	0.13	29.70	0.62	0.53	0.07	32.95
Unincorporated County	0.44	0.07	0.48	79.29	0.19	86.92	0.77	0.03	0.33	168.52
<b>TOTAL - All Permittees</b>	<b>2.2</b>	<b>14.9</b>	<b>33.8</b>	<b>84.9</b>	<b>73.4</b>	<b>392.1</b>	<b>2.6</b>	<b>3.2</b>	<b>1.8</b>	<b>608.9</b>

Note: Control measure implementation data may be incomplete for FY 2021/22.



**Table 20-2: PCBs Loads Reduced Within Contra Costa County (FY 2013/14 through FY 2021/22)**

Control Measure Category	PCBs Loads Reduced (g/yr)										Required Load Reductions 6/30/2020 (g/yr)
	FY 2013-2014	FY 2014-2015	FY 2015-2016	FY 2016-2017	FY 2017-2018	FY 2018-2019	FY 2019-2020	FY 2020-2021	FY 2021-2022	Cumulative Load Reduced	
Source Property Identification and Abatement <sup>1</sup>	0	0	30.06	78.68	63.23	0	0	0	0	171.97	--
Green Infrastructure and Treatment	2.24	8.53	3.41	4.29	3.21	9.48	2.46	2.42	1.69	37.73	<b>23.00</b>
Large Full Trash Capture Devices	0	4.41	0.03	0	6.53	9.08	0	0.81	0.00	20.86	--
Enhanced O&M	0	1.90	0.25	1.95	0.44	0.24	0.18	0.01	0.06	5.03	--
Manage PCBs in Building Materials	0	0	0	0	0	373.33	0	0	0.	373.33	--
Diversion to POTW	0	0	0	0	0	0	0	0	0	0.	--
Source Controls/ Other	0	0	0	0	0	0	0	0	0	0	--
<b>TOTAL - All Control Measures</b>	<b>2.2</b>	<b>14.9</b>	<b>33.8</b>	<b>84.9</b>	<b>73.4</b>	<b>392.1</b>	<b>2.6</b>	<b>3.2</b>	<b>1.8</b>	<b>608.9</b>	

**Notes:**

1. Load Reduced = (Source Property Area (ac)) x (4.065 – 0.0303 (g/ac/yr)). Acres associated with this control measure can be found in each Permittee section of this report.
2. For parcel-based projects, Load Reduced = (Project Area (ac)) x (Existing Yield – 0.0035 (g/ac/yr)). For green street or regional retrofit projects, Load Reduced = (Project Drainage Area (ac)) x (area-weighted PCBs yield (g/ac/yr)) x 0.70. Acres associated with this control measure can be found in each Permittee section of this report.
3. Load Reduced = (Project Drainage Area (ac)) x (area-weighted PCBs yield (g/ac/yr)) x 0.20. Acres associated with this control measure can be found in each Permittee section of this report.

“--” indicates no required load reduction target or loads reduced.





## 20.2 Loads Reduced – Mercury

Table 20-3 and Table 20-4 report the estimated mercury loads reduced for each Permittee and county-wide, respectively. The mercury load performance criterion via green infrastructure implementation for Contra Costa County is 9 g/yr by June 30, 2020; the results in Table 20-4 indicate that this performance criterion was exceeded.

Note that these estimated load reductions do not account for loads reduced by the Mercury Load Avoidance and Reduction source control measure. CCCWP will continue to annually compile and report the number of mercury-containing products collected at household hazardous waste facilities. Translation of that collection information to loads reduced from urban stormwater discharges is challenging and may not be necessary to show attainment of the mercury load reduction goals.

**Table 20-3: Mercury Loads Reduced by the Permittees (FY 2013/14 through FY 2021/22)**

Permittee	Mercury Loads Reduced (g/yr)									Cumulative Load Reduced
	FY2013-2014	FY2014-2015	FY2015-2016	FY2016-2017	FY2017-2018	FY2018-2019	FY2019-2020	FY2020-2021	FY2021-2022	
Clayton	0	2.47	0.06	0	0	0	0	0	0	2.53
Concord	0.17	9.16	3.16	3.33	10.95	0.97	0.03	7.47	0.20	35.44
Danville	0.57	1.46	1.69	0.32	0.89	0.47	1.96	1.13	0.02	8.51
El Cerrito	0	1.16	0.40	1.75	0.38	0.81	0	0.23	0.01	4.74
Hercules	0	17.42	0	0	0.05	14.22	0	0	0	31.69
Lafayette	0.30	0.35	0.24	0	0.27	1.65	0.05	0.76	0	3.62
Martinez	0	5.85	0.57	11.31	0.05	1.58	0.90	0.01	0.32	20.59
Moraga	1.07	0.46	0.00	1.92	0.11	0.17	0	0	0	3.73
Orinda	2.65	0.06	0.00	0.33	0.03	0.06	0	0.02	0	3.15
Pinole	0.12	4.18	0.00	0.63	0.76	1.99	0.09	0	0	7.77
Pittsburg	4.45	10.40	5.58	1.96	0.71	23.58	0.01	0.15	13.83	60.67
Pleasant Hill	0.26	5.24	5.88	0.10	0	6.92	0	0	0	18.40
Richmond	2.86	102.19	9.46	25.06	87.93	122.91	11.37	12.99	0	374.77
San Pablo	0	1.55	11.44	0.53	1.67	0.09	0.09	2.05	0.14	17.56
San Ramon	0	1.19	0	0	0.56	0.36	0	0	0	2.11
Walnut Creek	2.74	8.08	0.72	2.60	0.84	5.66	4.17	3.61	0.45	28.87
Unincorporated County	2.98	0.45	1.78	25.30	1.26	4.29	9.32	0.03	2.25	47.66
<b>TOTAL - All Control Measures</b>	<b>18.2</b>	<b>171.7</b>	<b>41.0</b>	<b>75.1</b>	<b>106.5</b>	<b>185.7</b>	<b>28.0</b>	<b>28.4</b>	<b>17.2</b>	<b>671.8</b>

Note: Control measure implementation data may be incomplete for FY 2021/22.



**Table 20-4: Mercury Loads Reduced Within Contra Costa County (FY 2013/14 through FY 2021/22)**

Control Measure Category	Mercury Loads Reduced (g/yr)									Cumulative Load Reduced
	FY2013-2014	FY2014-2015	FY2015-2016	FY2016-2017	FY2017-2018	FY2018-2019	FY2019-2020	FY2020-2021	FY2021-2022	
Source Property Identification and Abatement <sup>1</sup>	0	0	8.08	21.16	17.00	0	0	0	0	46.24
Green Infrastructure and Treatment <sup>2</sup>	18.18	115.45	32.29	38.41	28.39	112.80	26.68	20.68	16.73	409.61
Large Full Trash Capture Devices <sup>3</sup>	0	42.37	0.43	0.01	58.40	70.96	0	7.54	0	179.71
Enhanced O&M Measures <sup>4</sup>	0	13.86	0.21	15.57	2.66	2.00	1.31	0.19	0.50	36.30
Diversion to POTW	0	0	0	0	0	0	0	0	0	0
Source Controls/Other <sup>4</sup>	--	--	--	--	--		0	0	0	0
<b>TOTAL - All Permittees</b>	<b>18.2</b>	<b>171.7</b>	<b>41.0</b>	<b>75.1</b>	<b>106.5</b>	<b>185.7</b>	<b>28.0</b>	<b>28.4</b>	<b>17.2</b>	<b>671.8</b>

**Notes:**

1. Load Reduced = (Source Property Area (ac)) x (4.065 – 0.0303 (g/ac/yr)). Acres associated with this control measure can be found in each Permittee section of this report.
2. For parcel-based projects, Load Reduced = (Project Area (ac)) x (Existing Yield – 0.0035 (g/ac/yr)). For green street or regional retrofit projects, Load Reduced = (Project Drainage Area (ac)) x (area-weighted PCBs yield (g/ac/yr)) x 0.70. Acres associated with this control measure can be found in each Permittee section of this report. The Mercury Load Performance Criteria via Green Infrastructure Implementation for Contra Costa County is 9 g/yr by June 30, 2020.
3. Load Reduced = (Project Drainage Area (ac)) x (area-weighted PCBs yield (g/ac/yr)) x 0.20. Acres associated with this control measure can be found in each Permittee section of this report.
4. See individual Permittee sections for how loads were estimated.
5. "--" indicates no required load reduction target.



## 21 REFERENCES

- BASMAA, 2017. Interim Accounting Methodology for TMDL Loads Reduced, Version 1.1. Prepared by Geosyntec Consultants and EOA, Inc. for the Bay Area Stormwater Management Agencies Association (BASMAA). March 2017.
- Contra Costa Clean Water Program, 2016. Mercury and PCBs Control Measures Implementation Status Report. Submitted in Compliance with Provision C.11.a.iii.(1) and C.12.a.iii.(1) Municipal Regional Stormwater Permit NPDES Permit No. CAS612008 Order No. R2-2015-0049. March 31, 2016.
- Mangarella, P., Havens, K., Lewis, W., and McKee, L.J., 2010. Task 3.5.1: Desktop Evaluation of Controls for Polychlorinated Biphenyls and Mercury Load Reduction. A Technical Report of the Regional Watershed Program: SFEI Contribution 613. San Francisco Estuary Institute, Oakland, CA.
- McKee, L., Mangarella, P., Williamson, B., Hayworth, J., and Austin, L., 2006. Review of Methods Used to Reduce Urban Stormwater Loads: Task 3.4. A Technical Report of the Regional Watershed Program: SFEI Contribution #429. San Francisco Estuary Institute, Oakland, CA.
- Yee, D., McKee, L.J., 2010. Task 3.5: Concentrations of PCBs and Mercury in Soils, Sediments, and Water in the Urbanized Bay Area: Implications for Best Management. A Technical Report of the Watershed Program. SFEI Contribution 608. San Francisco Estuary Institute, Oakland, CA 94621.