

STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

**ORDER WQ 2007-0004**

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In the Matter of Own Motion Review of

**EAST BAY MUNICIPAL UTILITY DISTRICT WET WEATHER PERMIT  
(ORDER NO. R2-2005-0047 [NPDES NO. CA0038440]) AND TIME SCHEDULE  
ORDER (ORDER NO. R2-2005-0048)**

Issued by the  
California Regional Water Quality Control Board,  
San Francisco Region

**SWRCB/OCC FILE A-1771**

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BY THE BOARD:

In 1972, Congress enacted the Clean Water Act (Act)<sup>1</sup> with the goal “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”<sup>2</sup> The Act established the National Pollutant Discharge Elimination System (NPDES) permit program to regulate the discharge of pollutants from point sources<sup>3</sup>, such as pipes, to waters of the United States.<sup>4</sup> Point source discharges of pollutants to waters of the United States are prohibited unless they comply with the Act’s requirements.<sup>5</sup> In particular, the Act required that publicly owned treatment works (POTWs) achieve requirements based on secondary treatment levels by not later than July 1, 1977, or, if an extension was granted, “in no event later than July 1, 1988.”<sup>6</sup>

In California the State Water Resources Control Board (State Water Board) and nine Regional Water Quality Control Boards (Regional Water Boards) issue and administer

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<sup>1</sup> 33 U.S.C. § 1251 et seq.

<sup>2</sup> *Id.* § 1251(a).

<sup>3</sup> A point source is “any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.” (*Id.* § 1362(14).)

<sup>4</sup> See *id.* § 1342.

<sup>5</sup> See *id.* § 1311(a).

<sup>6</sup> *Id.* § 1311(b)(1)(B) and (i).

NPDES permits under a program approved by the United States Environmental Protection Agency (U.S. EPA).<sup>7</sup> To maintain program approval, state and federal law require that permits ensure consistency with the Clean Water Act and implementing U.S. EPA regulations.<sup>8</sup>

In this Order the State Water Board reviews on its own motion an NPDES permit<sup>9</sup> and time schedule order (TSO)<sup>10</sup> issued by the San Francisco Bay Regional Water Board (San Francisco Bay Water Board) to East Bay Municipal Utility District (EBMUD) in September 2005.<sup>11</sup> The permit and TSO regulate the intermittent discharge of primary treated sewage from three wet weather facilities to central and lower San Francisco Bay.

The Board has undertaken this review because of our concern that discharges from the wet weather facilities do not meet treatment levels that are adequate to protect water quality and meet Clean Water Act requirements. The facilities are located in a highly urbanized area, and discharges from the facilities, though intermittent, have been of appreciable quantity and frequency. The facilities discharge to receiving waters used extensively for both contact and non-contact water recreation. Two facilities discharge to receiving waters that are beneficially used for shellfish harvesting.<sup>12</sup> Nevertheless, unlike all other sewage treatment works throughout the state that discharge to waters of the United States, except those that have received a Clean Water Act section 301(h)<sup>13</sup> waiver for discharges to marine waters, the EBMUD facilities do not achieve secondary treatment standards.

The Board's review focuses on Clean Water Act sections 301(b)(1)(B) and 301(b)(1)(C).<sup>14</sup> These subsections, taken together, mandate that POTWs achieve secondary treatment, at a minimum, and any more stringent limits necessary to achieve water quality standards. We review the permit's technology-based effluent limitations, water quality-based pollutant limits and related compliance schedules, and other issues. For the reasons explained in the Order, we conclude that the permit and TSO are inconsistent with the mandates of the Clean Water Act and U.S. EPA regulations. In particular, we conclude that the permit

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<sup>7</sup> See *id.* § 1342(b).

<sup>8</sup> *Ibid.*; 40 C.F.R. part 123; Wat. Code §§ 13372, 13377.

<sup>9</sup> Order No. R2-2005-0047 [NPDES Permit No. CA0038440].

<sup>10</sup> Order No. R2-2005-0048. (See Wat. Code, § 13300.)

<sup>11</sup> See Wat. Code, § 13320, subd. (a) (authorizing the State Water Board to review on its own motion, at any time, certain actions of a Regional Water Quality Control Board).

<sup>12</sup> These are the Point Isabel and Oakport Wet Weather Facilities.

<sup>13</sup> 33 U.S.C. § 1311(h).

<sup>14</sup> *Id.* § 1311(b)(1)(B) and (C).

improperly fails to implement secondary treatment requirements and to ensure compliance with applicable water quality standards. The Order remands the permit and TSO to the San Francisco Bay Water Board for revision consistent with this Order. In addition, we direct the San Francisco Bay Water Board to amend the water quality control plan for the San Francisco Bay region (Basin Plan)<sup>15</sup> to delete language that conflicts with the Clean Water Act.

## I. BACKGROUND`

In general, POTWs employ sewage treatment technologies that fall into three categories. These are preliminary, primary, and secondary treatment. Preliminary treatment processes are physical processes intended to remove coarse and settleable solids. These processes include grit removal and screening. Primary treatment generally follows coarse solids removal and serves to remove additional floating and settleable solids. Secondary treatment involves processes to remove organic matter and, thereby, reduce turbidity and oxygen demand.<sup>16</sup>

EBMUD owns and operates a wastewater treatment plant, which serves nine cities and communities in the East Bay area.<sup>17</sup> Each city and community owns and operates its own sanitary sewer system, which delivers wastewater to EBMUD's interceptor system.<sup>18</sup> The interceptors transport sanitary sewage to the main treatment plant, where it undergoes secondary treatment and is ultimately discharged into San Francisco Bay through a mile-long outfall.

The interceptor system includes five sewage overflow structures. Two are located at the Oakland Inner Harbor and the remainder are on Elmhurst Creek, San Leandro Creek, and Temescal Creek. The interceptor system also includes the Point Isabel, San Antonio Creek, and Oakport Wet Weather Facilities. The three wet weather facilities provide primary treatment and disinfection for wet weather flows that exceed the capacity of the treatment plant. The wet weather facilities discharge to shallow, nearshore tidal areas along the East Bay shoreline.

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<sup>15</sup> Water Quality Control Plan, San Francisco Bay Basin (Region 2).

<sup>16</sup> In addition, many POTWs in California have upgraded facilities to include tertiary treatment capabilities that consist of filters, clarifiers, or other advanced treatment to achieve water quality standards.

<sup>17</sup> The cities and communities include the Cities of Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont and Stege Sanitary District (which covers El Cerrito), Kensington, and part of Richmond.

<sup>18</sup> The system consists of the 29-mile long North and South Interceptor, Adeline Interceptor, South Foothill Interceptor, and Alameda Interceptor.

### ***History of EBMUD's Sewer System***

Like many communities throughout the country, the East Bay communities served by EBMUD originally had a combined sewer system, which was constructed early in the twentieth century. A combined sewer system is a wastewater collection system owned by a state or municipality that conveys both sanitary wastes and storm water through a single-pipe system to a POTW.<sup>19</sup> When EBMUD was formed in 1944, the communities within the service area agreed to separate the collection systems for all their sewers. Sanitary wastes would be transmitted through a sanitary sewer collection system for treatment at a POTW, and storm water would be transmitted through a separate storm sewer system and discharged untreated.

By 1978, the majority of the EBMUD communities' sewer lines had been separated. Nevertheless, numerous wet weather overflows continued to occur in the sanitary sewer collection systems due to significant inflow and infiltration (I/I). Inflow is water that enters a sewer system from sources such as roof leaders, yard drains, area drains, manhole covers, and cross-connections between storm sewers and sanitary sewers.<sup>20</sup> Infiltration is water that enters the system from the ground through such means as defective pipes, pipe joints, connections, or manholes.<sup>21</sup> During winter rainfall periods, overflows due to I/I occurred at over 175 locations in the collection systems.<sup>22</sup>

In addition, the EBMUD interceptor did not have sufficient capacity to transport wet weather flows to the treatment plant. As a result, sewage overflows occurred from seven<sup>23</sup> overflow structures sited along the EBMUD interceptor. EBMUD designed and installed these structures to protect the collection system and POTW from excess flows. During a year with average rainfall, overflows occurred at one or more of the overflow structures about ten times during the winter.<sup>24</sup>

In 1979, the East Bay communities entered into a joint powers agreement with EBMUD, and in 1980 they initiated a six-year East Bay I/I Study. The study culminated in the East Bay I/I Correction Program, which began in 1987 and is scheduled to continue through

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<sup>19</sup> Combined Sewer Overflow (CSO) Control Policy, 59 Fed. Reg. 18688 (Apr. 19, 1994) (CSO Policy).

<sup>20</sup> 40 C.F.R. § 35.2005(21).

<sup>21</sup> *Id.* § 35.2005(20).

<sup>22</sup> EBMUD Wet Weather Facilities Plan Update, Final Report (May 28, 1985), p. 2-1. The administrative record submitted by the San Francisco Bay Water Board includes only portions of the Final Report.

<sup>23</sup> As discussed below, EBMUD subsequently reduced the number of overflow structures to five.

<sup>24</sup> *Supra*, fn. 22.

2017.<sup>25</sup> The program has succeeded in eliminating all known cross-connections between sewer and storm drain systems and 113 out of 115 sewer overflow points identified in the I/I study as high threats to public health.

In conjunction with the I/I study, EBMUD began facilities planning in 1977 to develop the most cost-effective project for transport, storage, and treatment of peak wet weather flows. By 1986 EBMUD had prepared a tentative facility plan and draft environmental documents for a proposed wet weather project. The recommended project envisioned several wet weather plants that would treat peak wet weather flows, new interceptors, and other features.

Prior to reissuing a permit to EBMUD based on the proposed wet weather project, the San Francisco Bay Water Board asked U.S. EPA its opinion regarding whether overflows from the community collection systems and the larger EBMUD interceptor sewers at the overflow structures were subject to secondary treatment requirements.<sup>26</sup> U.S. EPA staff responded that overflows from the seven overflow structures were not subject to secondary treatment requirements, but rather to effluent limitations based on best conventional pollution control technology (BCT), best available technology economically achievable (BAT), and basin plan water quality standards.<sup>27</sup> U.S. EPA did not address collection system overflows.<sup>28</sup>

In reliance on this determination, EBMUD began to implement the proposed wet weather facilities project in 1987. The project included construction of the three wet weather facilities, two wet weather interceptors, new storage basins and pumping facilities, and expansion of the treatment plant. The wet weather facilities replaced two of the seven overflow structures.

In 1990 the Oakport Wet Weather Facility was constructed. The facility has a design capacity of 158 million gallons per day (mgd) and provides primary treatment, utilizing coarse screens and sedimentation/disinfection basins, to wastewater from EBMUD's South Interceptor. Screenings and sludge are returned to the interceptor, and effluent is discharged to

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<sup>25</sup> See Order No. 93-134 (revising Cease and Desist Order No. 86-17, which covers sewer system overflows by the Cities of Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont, and Stege Sanitary District).

<sup>26</sup> Letter from Roger B. James, Executive Officer, San Francisco Bay Water Board, to Frank Covington, Water Management Division, EPA (Jun. 3, 1986). BCT and BAT are the technology-based standards applicable to non-POTW discharges. (See 33 U.S.C. § 1311(b); 40 C.F.R. § 125.3.)

<sup>27</sup> Letter from Frank M. Covington, Director, Water Management Division, EPA, to Roger James, Executive Officer, San Francisco Bay Water Board (Jun. 18, 1986).

<sup>28</sup> As discussed later in this Order, U.S. EPA subsequently reversed its decision that the overflow structures are not subject to secondary treatment standards.

East Creek Slough. The discharge location is approximately 700 feet upstream of the Oakland Inner Harbor, in the lower San Francisco Bay.

The Point Isabel Wet Weather Facility was constructed in 1993. The facility has a design capacity of 100 mgd and provides primary treatment to wastewater from EBMUD's North Interceptor. Treatment components include coarse screens, bar screens, grit chambers, and sedimentation/disinfection basins. Screenings are taken to a landfill, and grit and sludge are returned to the interceptor. Effluent from the facility is discharged to central San Francisco Bay.

The San Antonio Creek Wet Weather Facility was completed in 1996 with a design capacity of 51 mgd. The facility provides primary treatment, consisting of grit removal, fine screening, and disinfection, to wastewaters from EBMUD's South Interceptor. Both screenings and grit are returned to the interceptor. The effluent is discharged to the Oakland Inner Harbor, in lower San Francisco Bay.

The discharge frequency per year from 1998 to 2003 averaged 2 for the San Antonio facility, 7.2 for the Oakport facility, and 8.6 for the Point Isabel facility. The total discharge volume per year for the three facilities during this time period ranged from 214 to 549 million gallons.<sup>29</sup>

The wet weather facilities also serve as storage facilities. When the main treatment plant has sufficient capacity, wastewater flows stored in the facilities can be returned to the interceptors for transport to the treatment plant. The interceptor system has a hydraulic capacity of 760 mgd.

The main treatment plant has an average dry weather flow design capacity of 120 mgd. During wet weather, the plant can provide secondary treatment for up to 168 mgd and primary treatment for an additional 157 mgd, approximately, of wastewater. The plant's San Francisco Bay outfall has a reported capacity ranging from about 320 to 360 mgd. The plant also has one eleven-million-gallon wet weather storage basin.

#### ***Clean Water Act Permitting History of EBMUD's Overflow Structures and Wet Weather Structures***

In 1976, the San Francisco Bay Water Board first issued an NPDES permit to EBMUD for discharges from the seven overflow structures. The permit, among other provisions, required EBMUD to eliminate untreated overflows from its interceptors. In 1984, the

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<sup>29</sup> The total volume discharged from all three facilities in 1997/1998 was 1,073,000,000 gallons.

permit was reissued and updated with respect to the seven overflow structures to prescribe secondary treatment limits and water quality-based effluent limitations for approximately 20 toxic pollutants.

In 1987, in response to the U.S. EPA determination on discharges from the EBMUD overflow structures, the San Francisco Bay Water Board revised the EBMUD permit to delete the secondary treatment limits for the overflow structures and replaced them with numeric technology-based effluent limits for three conventional pollutants, pH, total coliform, and chlorine residual.<sup>30</sup> Based on EBMUD studies and analyses, the San Francisco Bay Water Board concluded that BCT/BAT was primary treatment. The 1987 permit revision also removed all effluent limitations for toxic pollutants. The permit was subsequently reissued in 1992 and 1998, with no changes in effluent limitations. Most recently, the San Francisco Bay Water Board revised the permit in 2005. The 2005 permit once again contains effluent limitations based on BCT/BAT for conventional pollutants, which have remained largely unchanged since 1987.<sup>31</sup> The 2005 permit added interim limits for several heavy metals.

The San Francisco Bay Water Board adopted a TSO to accompany the 2005 permit. The TSO states that it was issued because discharges of toxic pollutants from the wet weather facilities threaten to violate the receiving water limitations specified in the permit. The TSO requires that EBMUD conduct a series of investigations over the next four years to address various topics, including potential treatment upgrades, toxic pollutant offsets, additional wet weather flow storage and transportation, and regional I/I management and reduction.

In March 2006, the State Water Board requested that the San Francisco Bay Water Board provide the administrative record for the permit and TSO. The San Francisco Bay Water Board submitted the record in May 2006.<sup>32</sup> In August 2006 the State Water Board requested public comment on whether the Board should review the EBMUD permit and TSO on its own motion. The Board received comment letters from the San Francisco Bay Water Board and EBMUD.

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<sup>30</sup> The effluent limitations appear to apply to discharges from the proposed wet weather facilities, which were constructed several years later.

<sup>31</sup> The only change made in the limits since 1987 was a change in 2005 in the median coliform limit for the San Antonio facility from 1,000 to 240 most probable number per 100 milliliters.

<sup>32</sup> In our review, we have also considered the 1986, 1995, and 2005 Basin Plans and correspondence from Alexis Strauss, Director, Water Division, U.S. EPA Region 9, to Tom Howard, Acting Executive Director, State Water Board (Nov. 29, 2006), and to Celeste Cantú, former Executive Director, State Water Board (Oct. 22, 2006). In addition, we have considered the websites listed in footnotes 35, 36, and 39 and the Eastshore State Park General Plan, which is referenced in footnote 37 of this Order.

## II. ISSUES AND FINDINGS

### A. Secondary Treatment

Issue: In Clean Water Act section 301(b)(1)(B) Congress mandated that POTWs achieve, at a minimum, effluent limitations based on secondary treatment. The San Francisco Bay Water Board and EBMUD contend, for various reasons, that the wet weather facilities are not subject to this requirement. Their specific contentions and the Board's analysis of each follow.

Our analysis must first be placed in a water quality context, however. Congress mandated that POTWs achieve secondary treatment, in part, because secondary treatment generally results in "the removal of 80 to 90 percent of all harmful wastes," specifically total suspended solids (TSS) and biochemical oxygen demand (BOD), in sewage.<sup>33</sup> Primary treatment, in contrast, removes significantly less. For example, EBMUD has reported that the removal efficiency for the Oakport and Point Isabel facilities for TSS is 41 and 42 percent, respectively, and for BOD, 24 and 38 percent, respectively. The facilities' diminished efficacy results in two to three times the level of pollution, as measured by TSS and BOD, that Congress deemed appropriate.

As stated previously, the three wet weather facilities are located in a highly urbanized area and discharge to receiving waters that support significant water contact and non-contact recreational uses and, for two facilities, shellfish beds. The Point Isabel Wet Weather Facility, for example, which discharges primary treated effluent to the shallow bay waters off Point Isabel, borders the Point Isabel Regional Shoreline.<sup>34</sup> This park is intensively used due to its designation as a public off-leash dog park.<sup>35</sup> It is, in fact, the largest in the nation. Adjacent to the park and the wet weather facility is the Bay Trail, which stretches north toward Richmond. The trail is popular with cyclist, rollerbladers, and walkers. The Point Isabel shoreline is now also part of Eastshore State Park.<sup>36</sup> The general plan for the Eastshore State Park recommends extending the Bay Trail around the bay side of the Point Isabel Wet Weather

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<sup>33</sup> Remarks of Rep. Vanik, Debate on H.R. 11896, 93<sup>rd</sup> Cong., 1<sup>st</sup> Session. (1972), reprinted in A Legislative History of the Water Pollution Control Act Amendments of 1972, Serial No. 93-1 (Jan. 1973), p. 495.

<sup>34</sup> The San Francisco Bay Water Board's findings misstate the discharge point as the Richmond Inner Harbor – located over one mile to the northwest.

<sup>35</sup> See <http://www.ebparks.org/parks/ptisable.htm>.

<sup>36</sup> See <http://www.ebparks.org/parks/eastshpk.htm>; [www.parks.ca.gov/default.asp?page\\_id=520](http://www.parks.ca.gov/default.asp?page_id=520).



Facility.<sup>37</sup> The general plan also recommends expanding and enhancing shoreline access for aquatic recreation, particularly windsurfing, in the area just north of the wet weather facility.<sup>38</sup>

The Oakport Wet Weather Facility discharges significant volumes of primary treated effluent to the shallow waters of East Creek Slough, tributary to San Leandro Bay. The receiving waters are part of the Martin Luther King Jr. Regional Shoreline.<sup>39</sup> The San Antonio Creek Wet Weather Facility discharges to deep waters in the Oakland Inner Harbor south of Estuary Park. A notable feature of Estuary Park is the Jack London Aquatic Center. The center provides facilities and equipment to support rowing, kayaking and dragon boating. The center runs programs with Oakland schools and community groups, with a focus on middle school and high school youth.

Given that the wet weather facilities are located in relatively sensitive areas and discharge to receiving waters that support extensive public recreational uses, we are gravely concerned about the potential public health and other water quality impacts associated with the discharge of primary treated sewage. As the following discussion indicates, we conclude that the San Francisco Bay Water Board cannot, in any event, legally authorize the discharge of primary treated sewage from the wet weather facilities.

The San Francisco Bay Water Board and EBMUD contend that Clean Water Act section 301(b)(1)(B) does not apply to the wet weather facilities because they are not POTWs, citing the holding in *Montgomery Environmental Coalition v. Costle* (D.C. Cir. 1980) 646 F.2d 568 (*Montgomery*)<sup>40</sup>, and U.S. EPA's 1986 determination on the overflow structures. They also contend that U.S. EPA regulations defining secondary treatment do not apply to facilities that discharge intermittently during wet weather. The San Francisco Bay Water Board argues that whether secondary treatment standards apply "is an issue without a practical difference in terms of permit requirements" and, therefore, need not be resolved until some unspecified future time. Finally, EBMUD and the San Francisco Bay Water Board maintain that the permit and TSO are consistent with a "decades-old" regulatory strategy in the Basin Plan for wet weather overflows, which was approved by the State Water Board.<sup>41</sup>

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<sup>37</sup> Eastshore State Park General Plan (Dec. 6, 2002), p. III-89.

<sup>38</sup> *Id.* p. III-88.

<sup>39</sup> See <http://www.ebparks.org/parks/mlk.htm>.

<sup>40</sup> They also cite a follow-up decision in *Montgomery Environmental Coalition v. EPA* (D.C. Cir. 1983) 1983 U.S. App. LEXIS 27509, 19 ERC (BNA) 1169 (*Montgomery II*).

<sup>41</sup> See San Francisco Bay Regional Board response to the Board's request for comment on own motion review (Sept. 1, 2006). It is unclear from the record when the provisions were included in the Basin Plan. The record indicates that they were in the Basin Plan at least as of 1985.

Finding: The State Water Board disagrees with these contentions. We conclude that the wet weather facilities are POTWs and that the *Montgomery* case does not apply to either the EBMUD wet weather facilities or the overflow structures. We, like U.S. EPA, conclude that U.S. EPA's 1986 determination on the overflow structures was incorrect. Further, we disagree with the contention that the U.S. EPA secondary treatment regulations necessarily do not apply to the EBMUD wet weather facilities. We conclude that the San Francisco Bay Water Board's rationale for not including secondary treatment requirements in the EBMUD permit was erroneous. We address the steps that must be taken to conform the permit and TSO to Clean Water Act requirements. Finally, we conclude that the San Francisco Bay Water Board must revise Basin Plan provisions that purport to authorize the discharge of raw or partially treated sewage that does not meet secondary treatment standards to waters of the United States.

### **1. The D.C. Circuit's Decision in *Montgomery***

U.S. EPA regulations define a POTW as "a treatment works as defined by section 212 of the [Clean Water] Act, which is owned by a . . . municipality (as defined by section 502(4) of the [Clean Water] Act)."<sup>42</sup> A "treatment works" includes "any devices and systems used in the storage, treatment . . . of municipal sewage or industrial wastes of a liquid nature."<sup>43</sup> Sewers, pipes and other conveyances are included "only if they convey wastewater to a POTW Treatment Plant."<sup>44</sup> A "municipality" means a public body created under state law with jurisdiction over the disposal of sewage, industrial wastes or other wastes, and includes cities, counties, districts, and other similar entities.<sup>45</sup>

The wet weather facilities are "treatment works." They both treat and store municipal sewage of a liquid nature. They are owned by EBMUD, a municipality. Therefore, the facilities are POTWs. The fact that the facilities treat or store sewage flows only during wet weather events is immaterial to their classification as POTWs. Similarly, the dilute nature of the influent does not change the facilities' classification. The Clean Water Act and implementing regulations do not differentiate between wet weather flows and dry weather flows in the

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<sup>42</sup> 40 C.F.R. §§ 122.2, 403.3.

<sup>43</sup> 33 U.S.C. § 1292(2)(A); 40 C.F.R. § 403.3.

<sup>44</sup> 40 C.F.R. § 403.3.

<sup>45</sup> 33 U.S.C. § 1362(4).

classification of POTWs. Consequently, the San Francisco Bay Water Board lacked the discretion to regulate the facilities as non-POTWs.<sup>46</sup>

The *Montgomery* decision does not change this conclusion. This case addressed a permit for discharges from the District of Columbia's Blue Plains Waste Water Treatment System. The system includes the Blue Plains treatment plant, a huge facility located on the Potomac River with a capacity of 650 mgd. The plant treats wastewater from combined sewers that collect sanitary sewage and rainwater in the metropolitan Washington, D.C. area.<sup>47</sup> When inflow exceeds plant capacity during wet weather, excess flows receive only partial treatment prior to discharge to the Potomac River.<sup>48</sup> Extreme loads beyond the plant's capacity for even partial treatment are discharged untreated through combined sewer overflow (CSO) points.

In *Montgomery*, the appellate court upheld U.S. EPA's interpretation that "treatment works" excludes CSO overflow points and, therefore, rejected arguments by environmental groups that discharges from these points must meet secondary treatment standards.<sup>49</sup> U.S. EPA reasoned that the overflow points did not provide storage or treatment, but rather were for the uninhibited discharge of sewage and, hence, the overflow points were not a "treatment works." The court upheld this interpretation because it was consistent with the common understanding of "treatment" and appropriately defined the scope of Clean Water Act section 301(b)(1)(B). The court concurred with U.S. EPA that the discharges must be regulated under a permit, but that effluent limitations were properly based on BCT/BAT requirements and any more stringent limitations necessary to achieve water quality standards.

The *Montgomery* holding reflected U.S. EPA's traditional approach to regulation of CSO discharges. Combined sewer systems are intentionally designed to collect and convey large volumes of flow, including storm water runoff, municipal sewage, and commercial and industrial wastes to a POTW. While combined sewer systems convey all dry weather flows to the treatment works, the systems face particular flow management challenges during wet

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<sup>46</sup> Accord *In the Matter of: City of Port St. Joe and Florida Coast Paper Company*, 7 E.A.D. 275, 1997 WL 433759 (EPA Environmental Appeals Board, Jul. 30, 1977) (EPA Region IV lacked the discretion to regulate a wastewater treatment plant as an industrial facility, rather than a POTW, because the treatment plant was owned by a municipality and treated municipal and industrial wastes of a liquid nature).

<sup>47</sup> *In the Matter of: District of Columbia, Department of Public Works*, 6 E.A.D. 470, 1996 WL 24948 (EPA Environmental Appeals Board, May 3, 1996).

<sup>48</sup> Discharges from the Blue Plains facility are required to meet discharge levels more stringent than achievable through secondary treatment in order to achieve water quality standards for the Potomac. *Montgomery II, supra*, fn. 2.

<sup>49</sup> See *Montgomery, supra*, 646 F.2d at 589-592.

weather events. Consequently, combined sewer systems are typically designed to convey the maximum amount of wet weather flow to the treatment plant for treatment and to allow excess flows, beyond the capacity of the treatment plant, to be discharged at CSO overflow points.

The *Montgomery* decision formed the foundation for U.S. EPA's 1989 CSO Strategy<sup>50</sup> and 1994 Policy<sup>51</sup>. The strategy and policy provide that CSOs are point sources that must be regulated under an NPDES permit and must comply with both technology-based and water quality-based permit requirements, but that they are not subject to secondary treatment standards. CSOs are defined as discharges from a combined sewer system prior to reaching the headworks of the POTW treatment plant. Discharges from the treatment plant itself, however, must meet secondary treatment standards.<sup>52</sup> In addition, in 2000 Congress amended the Clean Water Act to require that permits for discharges from combined sewer systems conform to U.S. EPA's 1994 CSO Policy.<sup>53</sup>

The EBMUD collection system is not a combined system.<sup>54</sup> This is a crucial distinction between the permitting requirements for the Blue Plains facility considered in the *Montgomery* case and EBMUD's facilities. The wet weather facilities receive wastewater only from separate sanitary sewers. Hence, the *Montgomery* decision does not apply. The fact that rainwater and storm flows affect the system through I/I does not change the fact that the wet weather facilities are a POTW, and not part of a combined sewer system.

EBMUD and the San Francisco Bay Water Board contend, nevertheless, that *Montgomery* logically applies to the EBMUD wet weather facilities because the facilities do not "convey wastewater to a POTW Treatment Plant" and because the EBMUD facilities are factually the same as the Blue Plains facility. As we explained above, however, the EBMUD facilities are significantly different from the Blue Plains facility. In addition, there are no reported court decisions or U.S. EPA policies that apply the *Montgomery* court's holding to separate sanitary sewer overflows, and certainly not to discharges from treatment works.

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<sup>50</sup> National CSO Control Strategy, 54 Fed. Reg. 37370 (Sep. 8, 1989) (CSO Strategy).

<sup>51</sup> CSO Policy, *supra*, fn. 19.

<sup>52</sup> CSO Strategy, *supra*, fn. 50, at p. 37371, fn. 1. The CSO Policy states that, under certain limited circumstances, a permit may allow a CSO-related bypass of the secondary portion of the POTW for combined sewer flows. The POTW would have to meet the requirements in 40 C.F.R. § 122.41(m) for approval of an anticipated bypass. (CSO Policy, *supra*, fn. 19, at 18693-18694).

<sup>53</sup> Pub.L. No. 106-554 (Dec. 21, 2000), 114 Stat. 2763, codified in 33 U.S.C. § 1342(q).

<sup>54</sup> EBMUD's NPDES permit application states that 100 percent of the flows to the wet weather facilities are from separate sanitary sewers, rather than from combined sewers. (Letter to Loretta Barsamian, former San Francisco Bay Water Board executive officer, from David R. Williams, Director of Wastewater, EBMUD, Attachment A, p. 3 (Jul. 23, 2002).)

EBMUD and the San Francisco Bay Water Board also point out that in 1986 U.S. EPA Region 9 determined, in reliance on *Montgomery*, that EBMUD's seven overflow structures were not POTWs. They contend that, although U.S. EPA has now changed its position, the 1986 determination that the EBMUD interceptor overflow structures were not POTWs was correct. EBMUD argues that construction of the three wet weather facilities constituted BCT/BAT for discharges from the interceptor overflow structures.

In 1986, U.S. EPA concluded that, although the EBMUD interceptor system was a separate sanitary sewer system, it functioned like a combined sewer system due to high I/I.<sup>55</sup> In addition, U.S. EPA relied on the fact that the EBMUD interceptor overflow structures did not convey sewage to the treatment plant. Because U.S. EPA determined that the overflow structures were not part of a POTW, U.S. EPA also concluded that the regulatory prohibition against "bypass"<sup>56</sup> did not apply.<sup>57</sup>

In our view, U.S. EPA's 1986 determination was incorrect and not supportable by U.S. EPA's regulations. First, as we explained above, the *Montgomery* holding does not apply to overflows from separate sanitary sewers. Second, the overflow structures are part of the EBMUD interceptor system, which is unquestionably part of a POTW. In addition, the "treatment works" definition, by implication, excludes only those "[s]ewers, pipes and other conveyances" that do not convey wastewater to a treatment plant. The overflow structures are not conveyances and, thus, are not covered by this implied exclusion.<sup>58</sup>

U.S. EPA has now reached the same conclusion that we have reached. The record indicates that, at least by 2001, U.S. EPA reversed its 1986 conclusion and informed EBMUD and the San Francisco Bay Water Board of its change in position.<sup>59</sup> U.S. EPA ultimately sent a comment letter on the EBMUD draft permit in 2004, which stated that its 1986

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<sup>55</sup> Neither U.S. EPA regulations, Environmental Appeals Board decisions, nor court decisions identify I/I as a basis for classifying a collection system as a combined system.

<sup>56</sup> Bypass is the intentional diversion of waste streams from any portion of a treatment facility, (40 C.F.R. § 122.41(m).)

<sup>57</sup> But see *United States v. Toledo* (1999 N.D. Ohio) 63 F. Supp. 2d 834 (discharges of minimally treated wastewater by a POTW, during routine wet weather events, through a bypass outfall due to inadequate treatment plant capacity violated bypass prohibition).

<sup>58</sup> As we discuss later in Section II. C.1, we conclude that the overflow structures are most appropriately subject to discharge prohibitions.

<sup>59</sup> See, e.g., e-mail from Terry Oda, EPA, to Nancy Yoshikawa, EPA, and Lila Tang, San Francisco Bay Water Board (Feb. 28, 2001); e-mail from Lila Tang, San Francisco Bay Water Board, to Ben Horenstein, EBMUD (Mar. 9, 2001).

position was erroneous and that any releases from the EBMUD collection system and treatment plant must meet, at a minimum, secondary treatment requirements.<sup>60</sup>

Finally, extending the holding in *Montgomery* to separate sanitary sewer overflows would significantly undercut the Clean Water Act mandate that POTWs achieve, at a minimum, secondary treatment requirements. It also conflicts with the effort, both nationwide and in California, to prevent sanitary sewer overflows from occurring in the first instance. In May 2006, for example, this Board took action to address the threat to water quality and public health posed by sanitary sewer overflows by adopting general waste discharge requirements for collection system owners or operators.<sup>61</sup> The requirements prohibit sanitary sewer overflows that reach waters of the United States or create a nuisance and mandate that system owners or operators develop and implement a sewer system management plan to prevent sanitary sewer overflows.

For the foregoing reasons, we conclude that the three wet weather structures and the five remaining overflow structures are part of the POTW. This conclusion is consistent with U.S. EPA Region 9's current analysis. Below we identify the regulatory consequences of this conclusion.

## **2. Secondary Treatment Regulations**

Clean Water Act section 301(b)(1)(B) requires that POTWs achieve effluent limitations based on secondary treatment as defined by U.S. EPA. Biological treatment facilities such as oxidation ponds, lagoons, ditches and trickling filters are deemed the equivalent of secondary treatment.<sup>62</sup> U.S. EPA has defined secondary treatment in regulations at title 40, Code of Federal Regulations, part 133. EBMUD and the San Francisco Bay Water Board contend that the regulations apply only to continuously discharging facilities that use biological treatment and do not apply to wet weather facilities that discharge intermittently.

U.S. EPA based the regulations on performance data from a sample of well-designed and well-operated secondary treatment plants. With the exception of the facilities that are deemed equivalent to secondary treatment, the regulations do not specify the type of treatment process to be used to meet secondary treatment requirements. Nor do they preclude the use of non-biological facilities.

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<sup>60</sup> Letter from Alexis Strauss, Director, Water Division, EPA, to Bruce Wolfe, Executive Officer, San Francisco Bay Water Board (Sep. 7, 2004).

<sup>61</sup> State Water Board Order No. 2006-0003-DWQ.

<sup>62</sup> 33 U.S.C. § 1314(d)(4).

In general, the regulations establish concentration limits and percent removal requirements for TSS and five-day BOD and a limitation on pH.<sup>63</sup> Most POTWs are required to meet an 85 percent removal requirement for TSS and BOD; however, facilities eligible for equivalent treatment are subject to less stringent percent removal requirements.<sup>64</sup> Additionally, the permit issuing authority can substitute less restrictive percent removal requirements or mass loading limits for the percent removal requirements if the discharger meets certain criteria.<sup>65</sup> These include a demonstration that the less concentrated influent is not the result of excessive I/I.

EBMUD's wet weather facilities were not built to provide secondary treatment, and it is unknown whether the facilities can be upgraded to provide secondary treatment. This is not the only option available to EBMUD, however. Other alternatives, such as achieving additional I/I improvements and increasing treatment plant capacity, may enable EBMUD to achieve the minimum treatment levels mandated by the Clean Water Act by treating all influent at its secondary treatment facility.

### **3. San Francisco Bay Water Board Rationale with Respect to Secondary Treatment**

The San Francisco Bay Water Board chose to not impose secondary treatment requirements on EBMUD because it was "an issue without a practical difference" in terms of permit requirements and "need not be resolved at this time".<sup>66</sup> We disagree. The San Francisco Bay Water Board's rationale was wrong both legally and factually.

The San Francisco Bay Water Board lacked the discretion to decline to include secondary treatment requirements in the EBMUD permit. The Board reiterates that the Clean Water Act required that POTWs achieve secondary treatment by no later than July 1, 1988. The San Francisco Bay Water Board had no authority to extend this deadline.<sup>67</sup> The San Francisco Bay Water Board was required to issue a permit that "appl[ied] and ensure[d] compliance with all applicable provisions of the [Clean Water Act]", in other words, a permit that contained secondary treatment limits.<sup>68</sup>

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<sup>63</sup> See 40 C.F.R. §§ 133.102 (secondary treatment), 133.105 (treatment equivalent to secondary).

<sup>64</sup> *Ibid.*

<sup>65</sup> *Id.* § 133.103(d).

<sup>66</sup> Order No. R2-2005-0047, finding 14.c.(3).

<sup>67</sup> *Accord Save Our Bays and Beaches v. City and County of Honolulu* (D. Hawai'i 1994) 904 F. Supp. 1098, 1121-1122.

<sup>68</sup> Wat. Code, § 13377.

Practically speaking, the permit and TSO would have looked significantly different had the San Francisco Bay Water Board required compliance with secondary treatment requirements. The permit would have included secondary treatment limits and percent removal requirements, and the TSO would have included a time schedule to achieve those requirements. Instead, the EBMUD permit contains no limits or percent removal requirements for TSS or BOD.

The TSO likewise neither contains effluent limits for these pollutants nor a schedule to comply with secondary treatment requirements. The TSO was not issued due to the failure to achieve secondary treatment, but rather was based on a finding that the discharges had the reasonable potential to violate a narrative toxicity objective.<sup>69</sup> While the TSO requires EBMUD to investigate treatment upgrades, it does not require that EBMUD investigate upgrading treatment to secondary standards. The record reflects that a prior draft version of the TSO did specifically require EBMUD to study the feasibility of upgrading treatment to secondary but this language was deleted in the final version. EBMUD correctly interprets the TSO to require studies that will form the basis for a reassessment of BCT/BAT, rather than studies assessing how to achieve secondary treatment, during the next permit round.<sup>70</sup>

#### **4. Action on Remand**

We have concluded that the San Francisco Bay Water Board must revise the EBMUD permit to include effluent limits based on secondary treatment standards. Likewise, the TSO must be revised to ensure that the endpoint for the EBMUD studies and investigations is either to achieve secondary treatment standards or cease discharge from the three wet weather facilities.

This does not mean that EBMUD must construct secondary treatment plants at the three facility sites. The ideal solution for the East Bay communities may, in fact, be to eliminate excess wet weather flows through I/I improvements. The State Water Board fully endorses the efforts of EBMUD's blue ribbon panel to come up with an appropriate long-term solution to the problem. The panel was formed to develop a consensus-based solution, and it represents a broad spectrum of interests, including representatives from U.S. EPA Region 9, non-governmental organizations, local government and others. The State Water Board emphasizes that the panel's efforts are not incompatible with this Order.

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<sup>69</sup> TSO, finding 16.

<sup>70</sup> See EBMUD response, dated September 6, 2006, to the State Water Board's request for comments on own motion review.



The San Francisco Bay Water Board has the discretion, on remand, to craft a new TSO that builds on the studies in the existing TSO and the work of the blue ribbon panel. The San Francisco Bay Water Board can base the compliance schedule in the new TSO on a record that incorporates these studies and work. Further, the TSO should address the interim use of the three wet weather facilities until the discharges either cease or achieve secondary standards.

### **5. Basin Plan's Wet Weather Provisions**

The Basin Plan contains a conceptual approach to controlling wet weather wastewater overflows that includes treatment levels, ranging from no treatment to secondary, that vary depending on beneficial use protection categories.<sup>71</sup> The conceptual approach is intended to “[allow] for the evaluation of costs and benefits” in controlling overflows.<sup>72</sup> For example, the Basin Plan recommends secondary treatment for flows up to a 20-year recurrence interval for areas where the aquatic environment should be free of the risks associated with the discharge of untreated sewage, such as areas with year-round shellfish harvesting beds. Above those flows, the Basin Plan states that overflows are allowed.<sup>73</sup> For areas not requiring year-round protection, such as public beaches and other water contact areas, the Basin Plan provides for secondary treatment for all flows up to a 2-year recurrence interval; primary treatment up to a 20-year interval; and, above 20 years, overflows are allowed.<sup>74</sup> For areas where water quality may be limited due to the pollution effects of urbanization, the Basin Plan provides for secondary treatment to a half-year recurrence interval; primary treatment to a 5-year recurrence interval; and, above 5 years, overflows are allowed.<sup>75</sup>

The conceptual approach outlined in the Basin Plan is in clear conflict with the Clean Water Act, which unequivocally requires that POTWs achieve secondary treatment. The secondary treatment requirement reflects the *minimum* acceptable treatment technology that POTWs must achieve.<sup>76</sup> Because the requirement is technology-based, the requirement is independent of any water quality considerations.<sup>77</sup> It is irrelevant that the quality or beneficial

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<sup>71</sup> Basin Plan, pp. 4-15 through 4-17 and Table 4-8 on page 4-73.

<sup>72</sup> *Id.* at p. 4-16.

<sup>73</sup> *Id.* Table 4-8.

<sup>74</sup> *Ibid.*

<sup>75</sup> *Ibid.*

<sup>76</sup> 33 U.S.C. § 1311(b)(1)(B).

<sup>77</sup> See, e.g., *Environmental Protection Agency v. California ex rel. State Water Resources Control Bd.* (1976), 426 U.S. 200, 204, 219.

uses of the receiving waters for a POTW's discharge may have been impacted by urbanization or other factors. Congress has already determined that secondary treatment is the appropriate treatment level for sanitary sewage and, by implication, that the treatment costs are appropriate. Likewise, state law "forbids a regional board's consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act."<sup>78</sup>

The Clean Water Act does not contain an exception under which POTWs can discharge raw or partially treated sewage to waters of the United States during wet weather events.<sup>79</sup> Because the Basin Plan purports to authorize discharges in conflict with secondary treatment requirements, we will direct the San Francisco Bay Water Board to initiate basin plan amendments to revise its wet weather strategy.

In the interim, the Basin Plan provisions that conflict with the Clean Water Act and state law may not be implemented. In directing revisions to the wet weather strategy, we note that an appropriate wet weather strategy can be an effective tool for protecting the environment and conserving public resources; however, the strategy cannot abrogate federal law. The San Francisco Bay Water Board retains considerable flexibility to set wet weather water quality standards and a program of implementation for wet weather. The strategy can afford POTWs appropriate flexibility for meeting water quality standards as required by section 301(b)(1)(C) of the Clean Water Act during wet weather.

## **B. Water Quality-Based Effluent Limitations**

In addition to minimum technology-based effluent limitations, the Clean Water Act in section 301(b)(1)(C) requires that NPDES permits include any more stringent limits necessary to achieve water quality standards.<sup>80</sup> The limits must control all pollutants that are or may be discharged at a level that "will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard . . . ."<sup>81</sup> The analysis that is

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<sup>78</sup> *City of Burbank v. State Water Resources Control Board* (2005) 35 Cal. 4<sup>th</sup> 613, 626 [26 Cal. Rptr. 3d 304, 108 P.3d 862].

<sup>79</sup> The Clean Water Act allowed EPA to modify secondary treatment requirements for POTWs discharging into marine waters under certain circumstances; however, the time for filing an application for a modification has now expired. (See 33 U.S.C. § 1311(h) and (j).)

<sup>80</sup> Under state law, the water boards establish beneficial uses and water quality objectives in their basin plans. Together with an anti-degradation policy, these beneficial uses and water quality objectives serve as water quality standards under the Clean Water Act. In Clean Water Act parlance, state beneficial uses are called "designated uses" and state water quality objectives are called "criteria." Throughout this order, we use the relevant term depending on the statutory scheme.

<sup>81</sup> 40 C.F.R. § 122.44(d)(1)(i).

performed to determine what pollutants require water quality-based effluent limits is referred to as the “reasonable potential analysis”.

The permit must include water quality-based effluent limitations for all pollutants with “reasonable potential”.<sup>82</sup> If the water quality standard or state implementing regulations includes a provision authorizing compliance schedules in NPDES permits, then the permit may include a compliance schedule to achieve a final water quality-based effluent limitation for the pollutant.<sup>83</sup> If the standard or state implementing regulations does not include this authority, the permit must contain a final water quality-based effluent limit for the pollutant. If the discharger is unable to meet the final limit, the permitting authority can include a compliance schedule in a separate enforcement order, such as a TSO.

The San Francisco Bay Water Board contends that the permit complies with section 301(b)(1)(C), in large part, because the San Francisco Bay Water Board was authorized to include compliance schedules in the permit under the Basin Plan and this Board’s Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). In addition, the San Francisco Bay Water Board argues that the technology-based permit limits for chlorine, bacteria, and pH protect water quality, apparently obviating the need for additional water quality-based effluent limitations on these or other parameters.

The San Francisco Bay Water Board’s approach to implementing water quality standards in the EBMUD permit was erroneous in several respects. The San Francisco Bay Water Board did not appropriately implement applicable Basin Plan objectives for total coliform, toxicity, or un-ionized ammonia; used an out-dated version of the Basin Plan to analyze whether effluent limitations had to be included in the permit; failed to include any limits for some pollutants with reasonable potential; and abused its discretion in adopting “compliance schedules.”

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<sup>82</sup> 33 U.S.C. § 301(b)(1)(C); 40 C.F.R. § 122.44(d)(1)(i).

<sup>83</sup> See *In re Star-Kist Caribe, Inc.* (Apr. 16, 1990) 3 E.A.D. 172, 1990 WL 324290, modification denied May 26, 1992, 4 E.A.D. 33, 1992 WL 141237. The opinion held that NPDES permits may contain compliance schedules to meet water quality-based effluent limitations if: (1) the effluent limitation is based on a post-July 1, 1977 water quality standard and (2) the applicable standard or implementing state regulations explicitly authorize compliance schedules in permits.

## 1. Coliform, Toxicity and Un-ionized Ammonia Objectives

The EBMUD permit limits total coliform in effluent discharged from the wet weather facilities to 240 most probable number per 100 milliliters (240 MPN/100 ml) as a moving median of five consecutive samples and 10,000 MPN/100 ml for any single sample. The coliform limits are technology-based, and reflect the San Francisco Bay Water Board's case-by-case determination of BAT/BCT for wet weather overflows.<sup>84</sup>

The permit and Fact Sheet do not discuss the applicable Basin Plan objectives in Table 3-1 or effluent limitations in Table 4-2 for coliform. The Basin Plan contains objectives for both fecal and total coliform for varying beneficial uses. The most stringent objectives are for shellfish harvesting, which the permit identifies as a beneficial use, among others, of central and lower San Francisco Bay. The fecal coliform objectives are a median value of <14 MPN/100 ml and a 90<sup>th</sup> percentile of <43 MPN/100 ml; the total coliform objectives are a median of <70 MPN/100 ml and a 90<sup>th</sup> percentile of <230 MPN/100 ml. Table 4-2 prescribes effluent limitations for conventional pollutants. The list includes total coliform limits for shallow waters of 240 MPN/100 ml as a daily maximum and 2.2 MPN/100 ml as a seven-sample median.<sup>85</sup> Both the Table 3-1 objectives and Table 4-2 effluent limitations for total coliform are more stringent than the technology-based effluent limitations in EBMUD's permit.

A rough comparison of coliform bacteria data from the three wet weather facilities indicates that Point Isabel discharges appear to be in compliance with Tables 3-1 and 4-2, but that San Antonio and Oakport discharges are likely not in compliance. The State Water Board notes, however, that the Table 3-1 coliform objectives are based on a minimum of five consecutive samples equally spaced over a 30-day period. It may not be possible, given the intermittent nature of the wet weather facility discharges, to determine compliance with these objectives. The Table 4-2 seven-sample median limit poses similar difficulties.

Nonetheless, the discharges have been of appreciable volume and frequency and two of the three facilities discharge to shallow waters. The San Francisco Bay Water Board must ensure that discharges from the wet weather facilities do not cause or contribute to exceedances of any applicable Basin Plan objectives for coliform and that the discharges protect the recreational and shellfish harvesting uses of Central and Lower San Francisco Bay. The permit must include water quality-based coliform limits that implement applicable Basin

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<sup>84</sup> Order No. R2-2005-0047, Att. C (Fact Sheet), p. 8.

<sup>85</sup> The table also states that the San Francisco Bay Water Board "may consider establishing less stringent requirements for any discharge during wet weather," but does not include any guidance on how effluent limitations that protect beneficial uses are developed under these circumstances.

Plan objectives or explain the San Francisco Bay Water Board's rationale for why limits are not legally required.

Likewise, the permit does not contain findings concerning reasonable potential or limitations or other requirements governing whole effluent toxicity (WET). The Basin Plan includes water quality objectives for both acute and chronic toxicity and bioassay requirements to evaluate compliance with the objectives.<sup>86</sup> In general, the wet weather facility discharges can be expected to exhibit reasonable potential for WET because the effluent receives only primary treatment, and the effluent at all three facilities demonstrated reasonable potential for many individual toxic pollutants. On remand, the San Francisco Bay Water Board must address reasonable potential for WET and, if reasonable potential exists, include appropriate acute WET limitations based on Basin Plan Tables 4-4 and 4-5 for intermittent discharges and chronic toxicity requirements implementing Table 4-6 in the permit.<sup>87</sup>

The permit contains receiving water limits for ammonia but does not include either effluent limitations or monitoring requirements for this pollutant.<sup>88</sup> The Basin Plan has numeric objectives for un-ionized ammonia to protect against the chronic toxic effects of ammonia in receiving waters because "[a]mmonia is generally accepted as one of the principle toxicants in municipal waste discharges."<sup>89</sup> Although there is no facility-specific effluent monitoring data for ammonia, the effluent can appropriately be characterized as having reasonable potential to exceed the ammonia objective.<sup>90</sup> The effluent is municipal wastewater that is not treated to secondary standards, and two facilities discharge to areas with limited dilution. Further, any anticipated improvements in I/I reduction will result in higher strength municipal wastewater over time. We believe that it is inappropriate to implement the objective with receiving water limitations only, especially given the fact that two of the facilities discharge to waters with minimal dilution. On remand, the San Francisco Bay Water Board must revise

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<sup>86</sup> Basin Plan, ch. 3. The Basin Plan provides, in part, that "[t]here shall be no acute toxicity in ambient waters. Acute toxicity is defined as a median of less than 90 percent survival, or less than 70 percent survival, 10 percent of the time, of test organisms in a 96-hour static or continuous flow test." In addition, "[t]here shall be no chronic toxicity in ambient waters." The Basin Plan states that "[a]s a minimum, compliance will be evaluated using the bioassay requirements contained" in the following chapter.

<sup>87</sup> Table 4-4 includes acute toxicity effluent limits, Table 4-5 specifies test species and protocols, and Table 4-6 addresses chronic toxicity monitoring.

<sup>88</sup> See Order No. R2-2005-0047, Receiving Water Limitation D.3.d.

<sup>89</sup> Basin Plan, ch. 3.

<sup>90</sup> See U.S. EPA's Technical Support Document for Water Quality-based Toxics Control (March 1991), EPA 505 2-90-001, 3.2 at page 50.

the permit to include appropriate effluent limitations for un-ionized ammonia and monitoring requirements.

## 2. Basin Plan Objectives for Lead, Nickel, and Zinc Pollutants

Since 1986, the San Francisco Bay Water Board's Basin Plan has contained water quality objectives for selected toxic pollutants for saline and fresh surface waters.<sup>91</sup> The pollutants include lead, nickel, mercury, zinc, and others. In 1992 U.S. EPA promulgated the National Toxics Rule (NTR), which established numeric criteria<sup>92</sup> for priority toxic pollutants for 14 states, including California.<sup>93</sup> Criteria for about 40 out of the 126 priority pollutants applied to California waters.<sup>94</sup> In 2000 U.S. EPA promulgated numeric criteria for California for most of the remaining priority pollutants in the California Toxics Rule (CTR).<sup>95</sup> The 1986 Basin Plan objectives for toxic pollutants continued in effect, however, because U.S. EPA promulgated "around" these objectives.<sup>96</sup> The objectives remained unchanged until 2004 when the San Francisco Bay Water Board replaced the bulk of the objectives, excluding mercury, with objectives based on California Toxics Rule criteria.<sup>97</sup> The revised objectives took effect upon U.S. EPA approval on January 5, 2005.<sup>98</sup>

Although the EBMUD permit was adopted on September 21, 2005, the San Francisco Bay Water Board did not use the revised 2005 water quality objectives for lead, nickel, or zinc in the reasonable potential analysis. Rather, the permit Fact Sheet references the 1995 Basin Plan as the basis for the reasonable potential analysis for lead, nickel, and zinc.<sup>99</sup> The 1995 Basin Plan updated some provisions of the prior basin plan, but did not change the 1986 objectives for lead, nickel, or zinc. The 1986 objectives for lead, nickel, and

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<sup>91</sup> See 1986 Basin Plan, Tables III-2A and III-2B; 1995 Basin Plan Tables 3-3 and 3-4; 2005 Basin Plan Tables 3-3 and 3-4.

<sup>92</sup> As discussed earlier, criteria are the Clean Water Act's equivalent to water quality objectives.

<sup>93</sup> 40 C.F.R. § 131.36.

<sup>94</sup> *Id.* § 131.36(d)(10).

<sup>95</sup> *Id.* § 131.38.

<sup>96</sup> See *id.* (b)(1), fn. b. to table. The footnote provided that "[c]riteria apply to California waters except for those waters subject to objectives in Tables III-2A and III-2B of the [Basin Plan] that were adopted by the [San Francisco Bay Water Board] and the [State Water Board], approved by EPA, and which continue to apply."

<sup>97</sup> See Cal. Code Regs., tit. 23, § 3914.

<sup>98</sup> See 40 C.F.R. § 131.21(c).

<sup>99</sup> Order No. R2-2005-0047, Att. C, pp. 9-10. The Fact Sheet and permit erroneously cite the Basin Plan as the source for values for lead, nickel, and zinc. While the Basin Plan did include objectives for lead, nickel, and zinc, the values identified in the Fact Sheet and permit are different than the Basin Plan objectives. The cited lead, nickel, and zinc values were never adopted into the Basin Plan and were not legally in effect at the time the San Francisco Bay Water Board adopted its orders.

zinc, expressed as 4-day or 24-hour averages, are total recoverable concentrations and are more stringent than the comparable 2005 objectives, which are expressed as dissolved values.<sup>100</sup> Because effluent limitations for lead, nickel, and zinc were calculated using the 1995 objectives, the resulting effluent limitations are more stringent than limitations based on the 2005 objectives.

On remand, the San Francisco Bay Water Board should conduct reasonable potential analyses using the applicable water quality objectives for lead, nickel, and zinc. Moreover, as we discuss below in Section II B. 4 of this Order, because the current chronic, marine objectives for lead, nickel, and zinc are less stringent than prior objectives, it is inappropriate to provide schedules of compliance within the NPDES permit for these constituents.

### **3. Water Quality-Based Effluent Limitations**

The San Francisco Bay Water Board conducted a reasonable potential analysis for the three wet weather facilities and developed lists of toxic pollutants requiring limits. The lists identified from 13 to 16 pollutants per facility.<sup>101</sup> The San Francisco Bay Water Board included interim, performance-based limits for six pollutants for each facility in the EBMUD permit.<sup>102</sup> The permit did not include interim limits for the remaining pollutants. Final permit limits are referenced in the permit findings.<sup>103</sup> For the reasons that we explain below, final enforceable permit limits were required for all limitations implementing NTR and CTR criteria and the Basin Plan mercury objective.

### **4. Compliance Schedules**

In general, under the Clean Water Act and implementing U.S. EPA regulations, permits for new dischargers may not include schedules that provide time for the discharger to comply with water quality-based permit requirements.<sup>104</sup> Compliance schedules, however, can be included in permits for existing dischargers if a state has compliance schedule authority in its

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<sup>100</sup> The 1995 Basin Plan objective for lead as a 4-day average was 5.6 µg/L (total recoverable); the 2005 objective was 8.1 µg/L (dissolved). The 1995 Basin Plan objective for nickel as a 24-hour average was 7.1 µg/L (total recoverable); the 2005 objective, expressed as a 4-day average, was 8.2 µg/L (dissolved). The 1995 Basin Plan objective for zinc was 58.0 µg/L (total recoverable); the 2005 objective was 81.0 µg/L (dissolved).

<sup>101</sup> See Order No. R2-2005-0047, finding 34.

<sup>102</sup> *Id.* Effluent Limitation C.2.

<sup>103</sup> See *id.* Finding 54, Fact Sheet IV. 6.b (2).

<sup>104</sup> See 33 U.S.C. § 1311 (b); 40 C.F.R. § 122.47(a)(2). The regulation allows a compliance schedule for a new source or new discharger only when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised after commencement of construction but less than three years before commencement of the relevant discharge.

water quality standards or regulations.<sup>105</sup> If a state does not have this authority, permits must contain final water quality-based effluent limitations, and the state can allow additional time to comply only in a separate enforcement order. In California, the Water Boards typically issue TSOs or cease and desist orders<sup>106</sup> to cover those cases where a compliance schedule cannot be included in the permit.

Compliance schedules in a permit give a discharger time to comply with water quality-based effluent limitations without fear of enforcement by third parties or the permitting authority. They are appropriate when an existing discharger receives a new or more stringent effluent limitation for which immediate compliance is impossible or impracticable. A compliance schedule enables a discharger to install appropriate treatment technology, make operational modifications, implement pollution prevention strategies, or take other appropriate measures to achieve compliance.<sup>107</sup> A permit schedule gives the discharger some breathing room to take necessary measures to comply with an effluent limit.

The Clean Water Act defines a compliance schedule as “a schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with an effluent limitation, other limitation, prohibition, or standard.”<sup>108</sup> Compliance schedules must require compliance with applicable water quality-based limitations “as soon as possible”.<sup>109</sup>

The EBMUD permit includes “compliance schedules” to achieve water quality standards for six pollutants--copper, lead, mercury, nickel, silver, and zinc. The permit contains interim limits for these constituents, which were generally calculated based on the past performance levels of the three wet weather facilities.<sup>110</sup> The permit contains final limits for these pollutants in the permit findings.<sup>111</sup> EBMUD and the San Francisco Bay Water Board

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<sup>105</sup> See *In re Star-Kist Caribe, Inc.*, *supra*.

<sup>106</sup> *Id.* §13301.

<sup>107</sup> See, e.g., SIP § 2,1.

<sup>108</sup> 33 U.S.C. § 1362(17).

<sup>109</sup> See 40 C.F.R. § 122.47(a)(1).

<sup>110</sup> Order No. R2-2005-0047, finding 42.

<sup>111</sup> U.S. EPA Region 9 has recently taken the position that the final water quality-based effluent limitations must be included within the enforceable provisions of an NPDES permit—even if the final effluent limitations do not take effect until after the NPDES permit has set to expire. (See, Letter from Alexis Strauss, Director, Water Division, U.S. EPA Region 9 to Tom Howard, Acting Executive Director, State Water Board (Nov. 29, 2006) at p. 6.) This position is contrary to prior State Water Board decisions that have allowed a final water quality-based effluent limitation that does not take effect until after the NPDES permit’s expiration to be identified in the permit’s findings. (See State Water Board Order No. WQ 2001-06.) The State Water Board intends to address this issue in a statewide water quality control policy on compliance schedules, which is currently being developed.



contend that the interim limits were authorized under the San Francisco Bay Water Board's authority to include compliance schedules in the permit.

The compliance schedules in the EBMUD permit are specious, at best. They do not contain a final endpoint. Other than studies, the schedules do not contain an enforceable sequence of actions or operations leading to compliance with the effluent limitations. The schedules do not include enforceable final limits where final limits are required; and, some schedules are unauthorized.

None of the schedules has a final end date. All of the schedules state that the interim limit will remain in effect until a specified date, which is either April 28 or May 18, 2010, or January 1, 2015, or until the San Francisco Bay Water Board "amends the limit based on site-specific objectives [SSOs] or the Waste Load Allocation in the [total maximum daily load] TMDL."<sup>112</sup> The permit does not qualify this statement with "whichever occurs first", and, hence, the schedules are open-ended. This conclusion is reinforced by additional language, which states that the interim limits may be reevaluated during the next permit reissuance.<sup>113</sup> If the April 28 or May 18, 2010 dates were meaningful, then the interim limits could not be reevaluated during the next permit reissuance because the permit is scheduled to expire on March 31, 2010, shortly before the specified dates. As stated above, compliance schedules must lead to compliance with applicable standards "as soon as possible"<sup>114</sup> and must have an enforceable endpoint.

In addition, the permit findings indicate that only mercury has been identified as an impairing pollutant for which a TMDL must be developed.<sup>115</sup> The permit findings do not address whether any of the pollutant with interim limits are scheduled for SSO development.<sup>116</sup> In any event, neither TMDL nor SSO development can justify indefinitely postponing compliance with water quality standards. The permit requires EBMUD to participate in a region-wide effort to develop TMDLs or SSOs for copper, mercury, nickel, cyanide and other pollutants. The

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<sup>112</sup> See *id.* Effluent Limitation C.2, notes (2), (3), and (4). Generally, the Clean Water Act requires that the states develop TMDLs for those waters that do not meet water quality standards after implementation of technology-based controls. (See 33 U.S.C. § 1313(d).) A TMDL is the sum of waste load allocations for point sources, load allocations for nonpoint sources and natural background. (40 C.F.R. § 130.2(i).)

<sup>113</sup> *Ibid.*

<sup>114</sup> 40 C.F.R. §122.47(a)(1).

<sup>115</sup> See Order No. R2-2005-0047, findings 47 & 48. Mercury is listed as an impairing pollutant for the lower San Francisco Bay.

<sup>116</sup> The permit fact sheet states that EBMUD is participating in the Clean Estuary Partnership copper and nickel study for San Francisco Bay north of the Dumbarton Bridge, but does not explain the purpose of the study. (Fact Sheet, 6.b(5), pp. 13-14.)

apparent rationale for this requirement was that “[s]upport for TMDLs is required by the SIP (2.1.1) and is a condition for granting compliance schedules for pollutants for which TMDLs are being conducted.”<sup>117</sup> The reference to the SIP subsection on TMDL-based compliance schedules is particularly troubling because the Board has consistently advised the Regional Water Boards that the SIP provisions on TMDL-based compliance schedules were not approved by U.S. EPA. In fact, they have now been formally disapproved.<sup>118</sup>

Likewise, the SIP clearly states that, despite SSO development, “in no event may a compliance schedule exceed the maximum time period allowed for compliance with the CTR criteria . . . or priority pollutant objectives . . . , unless an exception has been granted . . . .”<sup>119</sup> The SIP also makes it clear that a discharger may choose to conduct studies necessary to support development of an SSO, but that these studies must be conducted “concurrently with the actions necessary to achieve compliance” with applicable CTR-based limits.<sup>120</sup>

Compliance schedules are required to contain an enforceable schedule of remedial measures leading to compliance with the applicable standards. The EBMUD permit contained interim limits and study requirements during the four and one-half year permit term.<sup>121</sup> The studies are primarily “a paper effort”, entailing review of available literature and data.<sup>122</sup> We do not believe that these provisions meet the regulatory requirement for a schedule of enforceable remedial measures leading to compliance with water quality standards. In fact, several studies focus on analyzing various means of avoiding upgrading treatment at the wet weather facilities. For example, EBMUD was required to analyze the “feasibility of meeting permit limits by combining the (wet weather facility discharges) and the Discharger’s main treatment plant under a single one-system permit.”<sup>123</sup> Similarly, EBMUD must “describe[] in detail a proposed study of offsetting reductions in loading of toxic priority pollutants that the

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<sup>117</sup> Fact Sheet, 7.d., p. 15.

<sup>118</sup> See letter to Celeste Cantú, former Executive Director, State Water Board, from Alexis Strauss, Director, Water Division, U. S. EPA Region 9 (Oct. 22, 2006).

<sup>119</sup> SIP, § 5.2, p. 31.

<sup>120</sup> *Ibid.*

<sup>121</sup> See Order No. R2-2005-0047, Provs. E.1, and E.4 and Time Schedule Order No. R2-2005-0047.

<sup>122</sup> See TSO, Requirements A.1 (“This study is not expected to require pilot and/or bench studies but instead will rely on a review of existing literature, available data . . . .”), A.2 – A.5 (similar language), A.6 (“This study is expected to be a paper effort, using existing available data . . . .”).

<sup>123</sup> TSO, Requirement A.2.

Discharger could implement in lieu of reducing such discharges from the [wet weather facilities].”<sup>124</sup> Additional studies address the feasibility of using SSOs to achieve compliance.<sup>125</sup>

In addition, the compliance schedules failed to include final enforceable effluent limitations where they were required. The San Francisco Bay Water Board found that the EBMUD discharges had the reasonable potential to cause or contribute to an exceedance of the CTR chronic, saltwater, aquatic life criteria for copper and silver.<sup>126</sup> The permit included interim limits for these pollutants and a compliance schedule, but no final enforceable limits. The SIP authorizes compliance schedules in permits for existing dischargers of up to five years to achieve compliance with effluent limits implementing CTR criteria.<sup>127</sup> In no case, however, can the schedule go beyond May 18, 2010.<sup>128</sup> If the compliance schedule is within the permit term, the final effluent limitation must be included in the permit provisions.<sup>129</sup> If the compliance schedule exceeds the length of the permit, at a minimum, the final effluent limitation must be included in the permit findings.<sup>130</sup>

In this case, the EBMUD permit was adopted on September 21, 2005. NPDES permits are issued for a fixed term, not to exceed five years.<sup>131</sup> Under ordinary circumstances, the permit would have expired on September 21, 2010. If the permit had been issued for the normal five-year term, the San Francisco Bay Water Board would have been required to include final limits for copper and silver in the permit because the absolute latest date for compliance was May 18, 2010. The record reflects, however, that the San Francisco Bay Water Board intentionally shortened the permit term in order to avoid putting final enforceable effluent limitations in the permit.<sup>132</sup> In our view, this approach is an abuse of discretion. This is particularly egregious given that about one and one-half months after the permit expires, the

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<sup>124</sup> *Id.*, Requirement A.3.

<sup>125</sup> *Id.*, Requirement A.6.

<sup>126</sup> *Id.* Att. C, Tables 1, 2, 3, 7, 8, 9. The CTR chronic saltwater silver criterion is 1.9 µg/L dissolved or 2.2 µg/L total recoverable. The tables in finding 34 of the permit erroneously cite the Basin Plan as the source for the silver value.

<sup>127</sup> SIP, § 2.1. The SIP’s compliance schedule provisions essentially mirrored compliance schedule provisions in the CTR at 40 C.F.R. § 131.38(e). The CTR provisions expired on May 18, 2005.

<sup>128</sup> *Ibid.*

<sup>129</sup> *Id.* § 2.2.1.

<sup>130</sup> *Ibid.* As discussed, *supra*, fn. 111, U.S. EPA Region 9 has recently called into question its willingness to continue approving permits that do not include the final limit within the permit’s enforceable provisions.

<sup>131</sup> 33 U.S.C. § 1342(b)(1)(B).

<sup>132</sup> See, e.g., e-mail from Jenny Chen, San Francisco Bay Water Board, to Terry Oda, EPA (Jun. 1, 2004), stating that permits issued over the last three years were generally given a term of 4 years and 11 months to make the compliance schedule, which normally is five years for CTR criteria, exceed the permit life.

San Francisco Bay Water Board will be unable to include a compliance schedule in the reissued permit for CTR-based effluent limitations. It is obvious that when the permit expires, EBMUD will not be able to significantly change its processes to meet final limits set less than two months away.

Likewise, we conclude that the permit should have contained final effluent limitations for lead, nickel, and zinc. The permit includes interim limits for these pollutants that will remain in effect until January 1, 2015 (or until the San Francisco Bay Water Board amends the limits based on a site-specific objective or a TMDL). The San Francisco Bay Water Board based the schedules on Basin Plan provisions authorizing permit compliance schedules of up to 10 years for new objectives or standards although, as explained above, the San Francisco Bay Water Board conducted its reasonable potential analysis using objectives in effect since 1986.<sup>133</sup>

In any event, the San Francisco Bay Water Board should have used the revised objectives for lead, nickel, and zinc in 2005 Basin Plan in the reasonable potential analysis and in calculating limits. As discussed previously, these objectives replaced objectives that had been in effect for almost 20 years. In general, the revised, 2005 chronic marine objectives for lead, nickel and zinc are less stringent than the 1986 objectives. To the extent that the revised objectives are less stringent than the objectives they replaced, the San Francisco Bay Water Board should not have included compliance schedules in the permit. Compliance schedules are not appropriate where, as in this case, revised objectives are adopted that are less stringent than objectives that were in effect for 20 years.

The Board recognizes that some 2005 objectives that were based on CTR criteria are more stringent than the objectives previously in effect. In those cases, from a policy standpoint, we conclude that compliance schedules may be included in the permits of existing dischargers, but that it is inappropriate for the San Francisco Bay Water Board to authorize schedules that extend beyond May 18, 2010 for effluent limitations implementing objectives that are identical to CTR criteria. The reasons for this conclusion are several-fold. First, the 2005 objectives replaced objectives for the same pollutants, which had been in place for almost 20 years. Dischargers had a significant time period to achieve compliance with these objectives. Second, authorizing compliance schedules extending to January 2015 for the 2005 objectives is patently unfair to all other dischargers who must achieve compliance by May 18, 2010, for

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<sup>133</sup> The 1995 Basin Plan amendment authorized compliance schedules in permits for the first time. This amendment was effective on November 13, 1995.

CTR-based effluent limitations. Third, allowing compliance schedules for these objectives to exceed May 18, 2010, is contrary to the intent of the CTR and SIP, both of which require compliance with CTR-based effluent limitations by no later than May 18, 2010. Finally, allowing schedules to extend until May 18, 2010 still provides five years for dischargers to come into compliance with the revised objectives.

In addition, the permit must include a final limit for mercury. The permit includes an interim limit for mercury and a compliance schedule stating that the limit would remain in effect until April 28, 2010, ten years after the effective date of the SIP (or until the San Francisco Bay Water Board amended the limit based on a site-specific objective or TMDL). The applicable water quality objective for mercury was adopted in 1986 and was not among the objectives revised in 2005. Further, in establishing the CTR, U.S. EPA explicitly promulgated around the San Francisco Bay Water Board's mercury objective.<sup>134</sup> The objective is not "new" and, therefore, does not fall within the Basin Plan provisions authorizing compliance schedules in permits for "new objectives or standards". The San Francisco Bay Water Board apparently concluded that adoption of the SIP resulted in a "new interpretation" of the objective. This conclusion was in error.

In Order WQ 2001-06, this Board construed the Basin Plan to authorize the San Francisco Bay Water Board to include a compliance schedule in a refinery permit to achieve compliance with final effluent limits implementing a narrative objective that pre-dated the Basin Plan's compliance schedule provisions.<sup>135</sup> The Board concluded that this construction was reasonable because when the narrative objective was adopted, affected dischargers were not on notice that the objective would be implemented at a later date by including numeric effluent limitations for a specific pollutant or pollutants, such as dioxins, in the permit. Relying on principles of fairness, the State Water Board determined that when a narrative objective is reinterpreted to establish a new or more-stringent numeric effluent limitation, dischargers could be given time to comply with the new effluent limitations using the Basin Plan's general compliance schedule authority. In contrast, in this case the numeric mercury objective has remained unchanged since 1986.

Further, the SIP did not "newly interpret" the mercury objective. The SIP established consistent procedures to implement water quality standards for toxics, including procedures to calculate effluent limitations. The SIP did not change, revise, or newly interpret

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<sup>134</sup> 40 C.F.R. § 131.38(b)(1), fn. b.

<sup>135</sup> In Order No. 2001-06, the State Water Board reviewed waste discharge requirements for two San Francisco Bay area refineries on the Board's own motion.

the underlying standard. In fact, the San Francisco Bay Water Board was required to implement the mercury objective in permits, where reasonable potential existed, once the objective went into effect in 1986. This was true even under the San Francisco Water Board's erroneous assumption that the EBMUD interceptor overflow points were CSO overflow points. Even CSO permits must include requirements to implement water quality standards.<sup>136</sup> If the water quality standard is out-of-date or otherwise inappropriate, the San Francisco Bay Water Board must take steps to revise the standard, but cannot simply ignore or indefinitely postpone implementing the standard.

Finally, we note that the permit identified two pollutants as having reasonable potential, which are constituents covered in the NTR. The pollutants are cyanide for all three wet weather facilities and tetrachloroethylene for the Oakport Wet Weather Facility. These pollutants are among the pollutants for which the permit referenced final limits in the permit findings. We further observe that compliance schedules are not authorized for NTR-based effluent limitations.<sup>137</sup> On remand, the permit must include appropriate final water quality-based limits for these constituents.

## **C. Additional Issues**

### **1. Overflow Structures**

On remand, the permit must clearly prohibit waste discharges from the five overflow structures along the EBMUD interceptor. The current permit is ambiguous and can be read to authorize discharges from these structures—even though they provide no treatment and are not subject to any effluent limitations. The permit includes the overflow structures in the “Facility Description” and states that “[d]ischarges of untreated sewage from the remaining 5 overflow structures may occur as a result of [I/I] during winter storm events that are greater than a 5-year storm event. . . .”<sup>138</sup> The permit also references the Basin Plan provisions under which “above the 5-year recurrence interval,” raw sewage overflows are allowed.”<sup>139</sup>

The permit contains three discharge prohibitions, none of which clearly prohibit discharges from the overflow structures. Prohibition A.1 prohibits the discharge of “treated wastewater” in a manner “not described in this Order.” The overflow structures discharge

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<sup>136</sup> 33 U.S.C. § 1311(b)(1)(C). Accord *Montgomery*, *supra*, 646 F.2d 568, 575.

<sup>137</sup> The NTR did not include compliance schedule authority. The SIP authorizes compliance schedules only for CTR-based effluent limitations and specifically excludes limits implementing NTR criteria. SIP, 2.1, fn. 3. The Basin Plan authorizes compliance schedules only for “new objectives or standards,” i.e. objectives or standards adopted after 1995. U.S. EPA promulgated the NTR in 1992.

<sup>138</sup> Order No. R2-2005-0047, finding 7.

<sup>139</sup> *Id.* finding 12.

untreated wastewater in a manner described in the order. Prohibition A.2 covers dry weather discharges from the wet weather outfalls. Prohibition A.3 is so vague as to be unenforceable. The prohibition states that discharges to state waters are prohibited except that EBMUD must design, construct, and operate its interceptor system and wet weather facilities to achieve a long-term average of not more than 10 discharges per year per discharge location, for a total of no more than 100 mg per year. These are goals, however, and they “will not be used to determine compliance or non-compliance with this prohibition.” The permit further provides that compliance with the prohibition can be demonstrated by compliance with the TSO requirements and “the April 1988 Wet Weather Facilities Operating and Control Plan”.<sup>140</sup> The plan, however, is not incorporated into the permit nor included in the administrative record.

As the Board discussed previously, the EBMUD interceptor overflow structures are part of a POTW. Discharges of sewage from the structures must meet secondary treatment requirements and any more stringent requirements necessary to achieve water quality standards. Because the structures do not provide any treatment, the permit must clearly and unambiguously prohibit discharges from the structures.

## **2. Basin Plan Prohibition No. 1**

Prohibition No. 1 in Table 4-1 of the Basin Plan prohibits the discharge of wastewater at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1 or into any non-tidal water, dead-end slough, or to similar confined waters or their tributaries. Exceptions to this prohibition are allowed if “an inordinate burden would be placed on the discharger relative to beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability.”<sup>141</sup> Importantly, this Basin Plan Prohibition No. 1 contains a conjunctive test. An exception may be granted upon a finding of (1) an inordinate burden on the discharger *and* (2) an equivalent level of environmental protection. We have been unable to identify any place where the San Francisco Bay Water Board considered the second factor, as required to grant an exception.

The San Francisco Bay Water Board granted EMBUD an exception to Prohibition No. 1 in the 2005 permit.<sup>142</sup> The permit states that the San Francisco Bay Water Board found in the prior permit that requiring that the discharges achieve a 10:1 dilution would

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<sup>140</sup> Order No. R2-2005-0047, B. Implementation and Enforcement of Prohibition A.3.

<sup>141</sup> Basin Plan, p. 4-5.

<sup>142</sup> Order No. R2-2005-0047, findings 20 and 21.

have placed an inordinate burden on EBMUD relative to the beneficial uses protected. It is unclear whether the record for the 2005 permit includes any evidence supporting this finding. There is no evidence in the record or permit findings, however, on the second required condition for an exception, i.e. “and equivalent level of environmental protection.” On remand, the San Francisco Bay Water Board must include findings in the revised permit that address both conditions for an exception, and must reconsider whether there is an evidentiary basis for granting an exception.

### **3. Self-Monitoring Program**

The self-monitoring program for the EBMUD permit requires monthly monitoring for total coliform, BOD, and TSS, rather than monitoring for each discharge event from the wet weather facilities.<sup>143</sup> Given the intermittent nature of the discharges from the three facilities, monthly monitoring is not sufficient. The self-monitoring program must be revised to require EBMUD to monitor each discharge event. Monitoring of each discharge is necessary to assess compliance with permit limits and evaluate facility performance.<sup>144</sup>

The self-monitoring program must also be revised to include appropriate monitoring for dissolved oxygen and sulfide. The permit includes numeric receiving water limitations for these substances but no monitoring requirements. Since the wet weather facilities provide less-than-secondary treatment for BOD and TSS, the discharges contain waste loads that may settle to bay mud and deplete oxygen in the receiving waters over extended periods. The oxygen depletion may in turn stimulate anaerobic bacterial activity to generate sulfides beyond natural levels. Accordingly, appropriate monitoring must be in place to implement the receiving water limitations.

The self-monitoring program does not require influent monitoring. Influent monitoring is necessary in order to assess facility performance. It is also necessary because secondary treatment is the applicable standard for the wet weather facilities. Influent monitoring of BOD and TSS must be conducted for each discharge event to determine the percent removal achieved by treatment.

In addition, the self-monitoring program provides that total coliform samples may be taken at any time during a discharge. No fecal coliform monitoring is required. In contrast,

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<sup>143</sup> *Id.* Att. B, Table 1.

<sup>144</sup> See 40 C.F.R. § 122.48 (b) (monitoring must include the type, intervals, and frequency sufficient to yield data which are representative of the monitored activity). The San Francisco Bay Water Board has indicated that it intends to revise the self-monitoring program as described in this section and to require monitoring for whole effluent toxicity and ammonia.



the prior permit required a grab sample of both total and fecal coliform at least once per hour during a discharge event. We are concerned that the total coliform sampling regime will not yield data that are representative of the discharges, as required by U.S. EPA regulations.<sup>145</sup> Fecal coliform data are, likewise, necessary to determine compliance with the applicable Basin Plan Table 3-1 objectives. If less frequent monitoring of total and fecal coliform is warranted, the San Francisco Bay Water Board should consider requiring a grab sample of total and fecal coliform at the first indication of a peak or plateau in flow during each discharge event. This requirement would be more likely to yield representative data.

Footnote 6 to Table 1 in the self-monitoring program states that BOD and TSS monitoring conducted pursuant to the TSO can replace the requirements in the self-monitoring program. This footnote should be deleted or replaced with language stating that any changes in the monitoring program must be consistent with the applicable U.S. EPA regulations on permit modification.<sup>146</sup> Likewise, Provision E.8 in the permit must be revised to clarify that the executive officer cannot revise the self-monitoring program if the revisions are not minor modifications. Minor modifications in a self-monitoring program consist of requiring more frequent monitoring or reporting.<sup>147</sup>

#### **4. Standard Conditions**

U.S. EPA regulations require that all NPDES permits include specific conditions, either expressly or by reference.<sup>148</sup> These are minimum requirements, and the states can impose more stringent conditions.<sup>149</sup> The standard conditions include provisions, for example, on bypasses and upsets. The EBMUD permit in Provision E.9 requires that the discharger comply with the standard conditions, but also provides that where the permit provisions differ

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<sup>145</sup> See *ibid.*

<sup>146</sup> See *id.* §§ 122.62, 122.63.

<sup>147</sup> *Id.* § 122.63(b).

<sup>148</sup> *Id.* §§ 122.41, 123.25(a)(12).

<sup>149</sup> *Id.* § 123.25(a).

from related provisions in the standard conditions, the permit provisions apply. This language is inconsistent with the regulations and must be revised. The permit must require compliance with the standard conditions, at a minimum, unless the permit contains more stringent provisions.

### **III. CONCLUSIONS**

1. The EBMUD wet weather facilities are POTWs and, as such, any permit regulating the discharge of wastewater from these facilities must require compliance with secondary treatment standards.
2. In general, the U.S. EPA regulations governing secondary treatment do not specify the treatment process that must be used to achieve secondary treatment standards.
3. The 1986 U.S. EPA determination that the EBMUD overflow structures functioned like CSO structures was incorrect.
4. The San Francisco Bay Water Board's rationale for failing to impose secondary treatment requirements on EBMUD in the wet weather facilities permit was erroneous.
5. The San Francisco Bay Basin Plan provisions governing wet weather wastewater overflows from POTWs conflict with applicable Clean Water Act requirements and must be revised.
6. The San Francisco Bay Water Board must revise the EBMUD permit to include effluent limits based on secondary treatment requirements and any more stringent limits necessary to implement water quality standards and must revise the TSO to ensure that the endpoint for the EBMUD studies is either to achieve secondary treatment standards or cease discharge from the wet weather facilities. In developing a revised TSO, the San Francisco Bay Water Board has the discretion to consider the studies currently being done under the original TSO and the efforts of EBMUD's blue ribbon panel, which the State Water Board endorses. As part of implementing the blue ribbon panel's recommendations, the San Francisco Bay Water Board may need to explore issuing additional enforcement orders for the satellite collection systems, and EBMUD may need to exercise any control it has over the satellite collection systems.
7. The San Francisco Bay Water Board must revise the EBMUD permit to address whether discharges from the wet weather facilities have reasonable potential to cause or contribute to an exceedance of the Basin Plan coliform and toxicity water quality objectives and, if reasonable potential exists, to include water-quality based effluent limitations for coliform and WET.
8. The San Francisco Bay Water Board must revise the EBMUD permit to include appropriate effluent limitations and monitoring requirements for un-ionized ammonia.

9. The San Francisco Bay Water Board must revise the EBMUD permit to include appropriate water quality-based effluent limitations for all pollutants with reasonable potential, including enforceable final limits for limits implementing NTR and CTR criteria and the Basin Plan mercury objective.
10. The San Francisco Bay Water Board must use the current, applicable Basin Plan in conducting the reasonable potential analysis.
11. The San Francisco Bay Water Board abused its discretion in shortening the permit term in order to avoid putting final limits for CTR constituents in the permit.
12. Compliance schedules, if authorized, must have an endpoint that is consistent with the compliance schedule authorization.
13. The EBMUD permit must be revised to include final permit limits for copper, silver, lead, nickel, mercury and zinc.
14. Compliance schedules in NPDES permits are authorized under the San Francisco Bay Basin Plan to implement the 2005 objectives, where those objectives are more stringent than objectives in effect previously.
15. In NPDES permits, it is inappropriate for the San Francisco Bay Water Board to include compliance schedules that go beyond May 18, 2010, where authorized, for effluent limitations that are based on Basin Plan objectives that are identical to CTR criteria.
16. It is inappropriate for the San Francisco Bay Water Board to include compliance schedules in NPDES permits for effluent limitations implementing 2005 objectives that are less stringent than the objectives previously in effect.
17. Conclusions 14, 15, and 16 are non-precedential as the State Water Board anticipates addressing these issues in a forthcoming compliance schedule policy.
18. Adoption of the SIP did not result in a “new interpretation” of the Basin Plan’s numeric objective for mercury.
19. The compliance schedule authorization in the San Francisco Bay Basin Plan does not authorize a compliance schedule for numeric objectives that predated the effective date of the authorization provision and that have not been revised since the effective date of the objectives.
20. Compliance schedules are not authorized for effluent limitations implementing NTR criteria.
21. The EBMUD permit must be revised to clearly and unambiguously prohibit waste discharges from the EBMUD overflow structures.

22. The permit must be revised to add findings demonstrating that both conditions for an exception to Basin Plan Prohibition No. 1 are met. The findings must be supported by evidence in the record.
23. The self-monitoring program must be revised to require effluent monitoring for total coliform, BOD, and TSS for each discharge event.
24. The self-monitoring program must be revised to include appropriate monitoring requirements for dissolved oxygen and sulfide.
25. The self-monitoring program must be revised to require influent monitoring of BOD and TSS.
26. The self-monitoring program must be revised to ensure that representative total and fecal coliform samples are taken.
27. Provision E.8 of the permit and footnote 6 to Table 1 of the self-monitoring program must be revised to ensure that changes to the self-monitoring program are consistent with the applicable U.S. EPA regulations on permit modifications.
28. Provision E.9 of the permit must be revised to delete language stating that if the standard provisions differ from permit provisions the permit provisions prevail. Provision E.9 must ensure that the discharger complies with the minimum federally-required standard conditions.

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#### IV. ORDER

The EBMUD wet weather facilities permit and TSO are remanded to the San Francisco Bay Water Board for revisions consistent with this Order. The San Francisco Bay Water Board is directed to amend its Basin Plan to delete or revise provisions governing wet weather overflows of wastewater from POTWs consistent with this Order and the Clean Water Act.

#### CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 1, 2007.

AYE: Tam M. Doduc  
Arthur G. Baggett, Jr.  
Charles R. Hoppin  
Frances Spivy-Weber

NO: None

ABSENT: None

ABSTAIN: None

Board Member Wolff recused himself from this item.



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Song Her  
Clerk to the Board