

STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

ORDER WQO 2002 - 0012

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In the Matter of the Petitions of

**EAST BAY MUNICIPAL UTILITY DISTRICT  
AND  
BAY AREA CLEAN WATER AGENCIES**

For Review of Waste Discharge Requirements Order No. 01-072  
[NPDES No. CA0037702]

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

***SWRCB/OCC FILES A-1396 and A-1396(a)***

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BY THE BOARD:

**I. BACKGROUND**

On June 20, 2001, the San Francisco Bay Regional Water Quality Control Board (Regional Board) reissued a national pollutant discharge elimination system (NPDES) permit (Order No. 01-072 or "The Permit") to the East Bay Municipal Utility District (the District). The permit authorizes the District to discharge secondary-treated effluent into Central San Francisco Bay. The District and Bay Area Clean Water Agencies (BACWA or Petitioners) filed petitions for review of the permit. In this order the State Water Resources Control Board (State Board or Board) addresses the significant issues raised in the petitions and remands the permit to the Regional Board for modifications. The remaining issues are dismissed.<sup>1</sup>

The District owns and operates the Special District No. 1 wastewater treatment plant. The plant is a secondary treatment facility located in Oakland. The facility has a dry weather design capacity of 120 million gallons per day (mgd) and currently treats an annual average of 79.6 mgd of wastewater. The plant receives wastewater from the cities of Albany,

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<sup>1</sup> See *People v. Barry* (1987) 194 Cal.App.3d 158; Cal. Code Regs., tit. 23, § 2052(a)(1). Dismissed issues have either been addressed in previous State Board orders, or are determined to be not sufficiently substantial to warrant review. Petitioners, in their responses to the Draft Order, have asked to supplement the administrative record with additional evidence or incorporation of briefs, submissions and documentation from other matters. These requests are denied.

Berkeley, Emeryville, Oakland, and Piedmont and the Stege Sanitary District. Secondary-treated effluent from the facility is discharged to Central San Francisco Bay through a diffuser 5,664 feet off-shore, at a depth of 45 feet. A study conducted by the District concluded that the discharge is subject to a worst-case initial dilution greater than 15:1 and a typical dilution of 45:1. Central San Francisco Bay is on the state's Clean Water Act section 303(d)<sup>2</sup> list of impaired waters.<sup>3</sup> The pollutants impairing the Central Bay include mercury, copper, dioxin and furan compounds, chlordane, dieldrin, 4,4-DDT, diazinon, PCBs, and others.

The Clean Water Act, in general, mandates that the states develop "total maximum daily loads" (TMDLs) for all section 303(d)-listed waters. A TMDL is a water quality control strategy designed to address water body impairment and to bring the water into compliance with water quality standards.<sup>4</sup> Water quality standards for water consist of its beneficial uses, criteria to protect those uses, and an anti-degradation policy.<sup>5</sup>

The Regional Board has not yet completed TMDLs for the Central Bay although work is underway. The Regional Board is currently engaged in developing a TMDL for mercury in San Francisco Bay. The Regional Board anticipates that the U.S. Environmental Protection Agency (EPA) will develop a TMDL for dioxins and furans.

Prior to the adoption of Order No. 01-072, the District was regulated under Order No. 94-127. Before Order No. 01-072 was adopted, the EPA in May 2000, promulgated the California Toxics Rule (CTR).<sup>6</sup> The CTR established numeric criteria, the equivalent of state-

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<sup>2</sup> 33 U.S.C. § 1313(d). This section requires that the states identify waters for which technology-based effluent limitations are not stringent enough to meet water quality standards. The states must establish a priority ranking for these waters, taking into account the pollution's severity and the waters' uses. The states must then establish, "in accordance with the priority ranking, the total maximum daily load, for those pollutants . . . . Such load shall be established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality."

<sup>3</sup> See 63 Fed.Reg. 59556-59557 (Nov. 4, 1998) (notice of availability of proposed EPA decision, partially approving and partially disapproving the state's 1998 section 303(d) list). EPA transmitted the final list to the state by letter, dated May 12, 1999.

<sup>4</sup> EPA regulations currently define a TMDL as the sum of wasteload allocations for point sources, load allocations for nonpoint sources, and background sources. 40 C.F.R. § 130.2(i). A "wasteload allocation" is the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. *Id.* § 130.2(h). A "load allocation" is the portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources." *Id.* § 130.2(g).

<sup>5</sup> See 33 U.S.C. § 1313(c)(2)(A); 40 C.F.R. § 131.6.

<sup>6</sup> See 40 C.F.R. § 138.38, 65 Fed.Reg. 31682-31719 (May 18, 2000).

adopted water quality objectives,<sup>7</sup> for priority toxic pollutants<sup>8</sup> for the state's inland surface waters and enclosed bays and estuaries. The State Board concurrently adopted a policy to implement the new criteria, as well as applicable National Toxics Rule (NTR) criteria,<sup>9</sup> and priority pollutant water quality objectives.<sup>10</sup> The policy is entitled, "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000)" (Implementation Policy or Policy). Among other provisions, the Policy establishes procedures for selecting priority toxic pollutants that must be regulated in a permit, calculating effluent limitations, and establishing compliance schedules.

The permit establishes effluent limitations for 12 priority toxic pollutants.<sup>11</sup> Several of the limitations are interim performance-based limits. For all but one pollutant<sup>12</sup> subject to an interim limit, the permit Findings state that the Regional Board will impose final effluent limitations that are consistent with wasteload allocations in an adopted TMDL.

The District and BACWA filed timely petitions for review of the permit. The petitions were consolidated and are both addressed in this order. Many of the issues raised by Petitioners were recently addressed by the Board in Order WQ 2001-16,<sup>13</sup> a precedential decision, and are not discussed further here. Those issues, which are precedential against Petitioners in this case include: (1) whether a regional board may impose water quality-based effluent limitations on Publicly-Owned Treatment Works (POTWs); (2) whether Water Code section 13241 requires a regional board to consider economics and other factors when adopting an NPDES permit that implements Basin Plan water quality objectives; (3) whether regional boards may include water quality-based effluent limits and interim mass limits in an NPDES

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<sup>7</sup> Compare Wat. Code § 13050(h) ("Water quality objectives' means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.") with 40 C.F.R. 131.3(b) ("[C]riteria are elements of State water quality standards, expressed as constituent concentrations, levels, or narrative statements, representing a quality of water that supports a particular use.")

<sup>8</sup> Appendix A to 40 C.F.R. Part 423 lists 126 priority pollutants.

<sup>9</sup> See 40 C.F.R. § 131.36, 57 Fed.Reg. 60848-60923 (Dec. 22, 1992).

<sup>10</sup> See Cal. Code Regs., tit. 23, § 2914. The Board adopted the Policy on March 2, 2000. The Policy went into effect for NTR criteria and state-adopted water quality objectives on April 28, 2000, the date of Office of Administrative Law approval. It became effective for CTR criteria on May 18, 2000, the CTR's effective date.

<sup>11</sup> See Order No. 01-072, Effluent Limitations C.2. The priority pollutants regulated in the permit are: copper, mercury, silver, chromium VI, lead, nickel, zinc, cyanide 4,4-DDE, dieldrin, PCBs, TCDD Equivalent, and bis(2-ethylhexyl)phthalate.

<sup>12</sup> See discussion of bis(2-ethylhexyl) phthalate, p. 19 *infra*.

<sup>13</sup> Petition of Napa Sanitation District, SWRCB Order No. WQ 2001-16.

permit before completing TMDLs; (4) whether the Regional Board may impose interim mass limits based on narrative objectives (5) whether the Regional Board's procedure for calculating mass limits will preclude development; and (6) whether the Regional Board erred in applying the NTR saltwater aquatic life cyanide criterion of 1 (one) ug/l instead of the less stringent Basin Plan objective.

## II. CONTENTIONS AND FINDINGS

### A. Adoption of Numeric Water Quality Based Effluent Limitations (WQBELs) to Implement Narrative Water Quality Objectives

Contention: Petitioners contend that the permit improperly contains numeric WQBELs for constituents that are based on narrative water quality objectives in the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), such as bioaccumulation and toxicity. First, Petitioners cite Water Code section 13263.6(a). Second, they claim that the "bioaccumulation objective" in the Basin Plan does not authorize mass limitations. Third, they claim that a numeric effluent limitation can only be imposed for a narrative standard if the Basin Plan contains a translator mechanism.

Findings: Applicable NPDES regulations<sup>14</sup>, which California has incorporated by reference<sup>15</sup>, set forth specific procedures for establishing WQBELs based on narrative water quality criteria. This procedure is also set forth in more detail in EPA guidance.<sup>16</sup>

#### 1. Application of Water Code Section 13263.6(a)

The Petitioners cite Water Code section 13263.6(a) as support for the contention that the Regional Board lacks the authority to impose numeric effluent limitations to enforce narrative water quality objectives. This subsection includes a requirement that regional boards prescribe effluent limitations in POTW waste discharge requirements for all substances that have been reported under the Emergency Planning and Community Right to Know Act of 1986 (EPCRA) as being discharged into the POTW and for which there is a reasonable potential to cause or contribute to a violation of any numeric water quality objective. The petitioners contend this section is more limited than Clean Water Act sections 301(b)(1)(C) and 40 CFR 122.44, which require such effluent limits regardless of whether the constituent has been

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<sup>14</sup> 40 C.F.R. § 122.44(d)(1)(vi).

<sup>15</sup> See Water Code §§ 13372 and 13377; Tit. 23, Cal. Code Regs. § 2235.2.

<sup>16</sup> Technical Support Document for Water Quality-Based Toxics Control (TSD), EPA/505/2-90-001, March 1991.

reported under EPCKRA and even if the water quality objective at issue is a narrative objective as opposed to numeric. In fact, it in no way limits the application of numeric effluent limits to these situations. In addition, section 13263.6(a) is also broader than the federal requirements in the sense that it applies to all waters of the state, even those that are not also waters of the U.S. With respect to waters of the U.S. to the extent that section 13263.6 could be construed as less stringent than federal NPDES permitting requirements, Water Code sections 13372 and 13377 clearly require that federal requirements prevail over other Water Code provisions (such as Wat.Code § 13263.6) when an NPDES permit is at issue. As noted, federal requirements clearly require effluent limitations to enforce narrative water quality objectives.<sup>17</sup>

## **2. Narrative Bioaccumulation Objective**

The Basin Plan contains a water quality objective that states: “controllable” water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life.<sup>18</sup> Petitioners point to the permit Finding relating to the difficulty in further limiting dischargers of mercury and dioxin, and claim that discharges of these substances are not “controllable,” and therefore are not subject to the water quality objective. The findings in the permit, read as a whole, state the determination of the Regional Board that the current technology of POTWs is controlling the discharges in part. Moreover, we note the success of many POTW source control programs in achieving reductions in pollutants that at one time were thought to be uncontrollable. More importantly, we read the “controllable” requirement as distinguishing between unidentifiable background sources and identifiable point and non-point sources associated with human activities that can be controlled, albeit perhaps at a significant expense. Thus, the requirements of the permit are consistent with the water quality objective.

The Petitioners also contend that the bioaccumulation objective refers to “concentrations,” and that it is therefore inconsistent to apply mass limitations to enforce the objective. The objective states that there shall not be an increase in concentrations of toxic substances in bottom sediments or aquatic life. It does not specify the types of effluent limitations (concentration-based or mass-based) that should be used to implement the objective.

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<sup>17</sup> See Note 14, *supra*.

<sup>18</sup> Water Quality Control Plan for the San Francisco Bay Basin (1995), p. 3-2.

Because increased mass discharges could result in toxic concentrations in bottom sediments or aquatic life, it is appropriate to use mass limitations.

### **3. Translator Mechanism for Adopting WQBELs for Narrative Objectives**

The Petitioners contend that the Regional Board cannot impose a numeric WQBEL based on a narrative water quality objective unless the objective contains an appropriate translator mechanism. The Petitioners argue that federal regulations (40 C.F.R. § 131.11(a)(2)) require states to explain the method they will use to translate narrative objectives into numeric water quality based effluent limitations and that the permit must include that explanation in findings.

However, for mercury and dioxin, the pollutants for which this issue was raised, the challenged limits are not WQBELs. Instead, the Regional Board imposed interim limits based on current performance or the previous permit limit, with lengthy time schedules. The interim limits are essentially limits to prevent further degradation of an impaired water body, rather than WQBELs. The Implementation Policy mandates this approach at section 2.2.1 for pollutants to which the Policy applies. The State Board has also approved this approach in Board Order WQ 2001-06. The District has demonstrated that it can comply with the interim limits. The interim limitations are not an effort to translate a narrative objective into a numeric, water quality-based limit that assures compliance with the narrative objective, and so section 131.11(a)(2) is not relevant.

In any event, the Regional Board has complied with 40 Code of Federal Regulations (C.F.R.) section 131.11(a)(2). The regulation provides that where states adopt narrative criteria for priority pollutants, they must provide information identifying the method by which they intend to regulate point source discharges of those pollutants on water quality limited segments; i.e., impaired waters, based on such narrative criteria. The informational requirement in this subsection is sometimes referred to as a “translator mechanism.” A translator mechanism is only required where the state has not adopted numeric criteria. In California, EPA adopted numeric criteria for most priority pollutants in the CTR. Where the numeric criteria in the CTR are enforced, there is no requirement for a translator mechanism pursuant to section 131.11(a)(2).

A translator mechanism is also not required for toxic pollutants for which no national guidance exists. Clean Water Act section 303(c)(2)(B) required states to adopt numeric criteria for those toxic pollutants (commonly referred to as “priority pollutants”) for which EPA had issued national criteria guidance under section 304(a). These include mercury and

2,3,7,8-TCDD (dioxin), but not other dioxin congeners. Even where the CTR did not establish criteria for all priority pollutants, or for all beneficial uses that could be impacted by priority pollutants, the state has adequately identified how it will implement its narrative criteria in the implementation procedures set forth in the Implementation Policy, at pages 28-30. These provisions supplement Basin Plan toxicity requirements, which also address how the Regional Board will implement narrative water quality objectives.<sup>19</sup>

EPA has also adopted a translator regulation that the Regional Board may properly use to develop numeric effluent limitations to implement narrative water quality objectives. Once a water quality standard has been promulgated, Clean Water Act section 301 requires all NPDES permits to incorporate discharge limitations to satisfy the standard.<sup>20</sup> EPA promulgated 40 Code of Federal Regulations section 122.44(d)(1)(vi) requiring permit writers to use one of three mechanisms to translate relevant narrative criteria into chemical-specific effluent limitations.<sup>21</sup> “The regulation allowed permit writers to put in place new chemical-specific limitations through interpretation of existing narrative criteria until states had an opportunity to adopt specific numeric criteria . . . .”<sup>22</sup> The court in *American Paper Institute* found this method to be “a preeminent example of gap-filling in the interest of a continuous and cohesive regulatory regime.”<sup>23</sup> 40 Code of Federal Regulations section 122.44(d) has been incorporated by reference into the state’s regulations.<sup>24</sup> Thus, the “translator” in section 122.44(d) is a part of the state’s regulations and EPA concurs that nothing more is required of the Regional Board to comply with section 131.11.<sup>25</sup>

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<sup>19</sup> See Basin Plan, Chapter 4.

<sup>20</sup> Clean Water Act § 301(b)(1)(C); *American Paper Institute v. EPA* (D.C. Cir. 1993) 996 [F.2D 346, 350].)

<sup>21</sup> *Ibid.*

<sup>22</sup> *American Paper Institute*, at page 353.

<sup>23</sup> *Ibid.*

<sup>24</sup> Tit. 23, Cal. Code Regs. § 2235.2.

<sup>25</sup> See October 24, 2001 letter, page 5, from Alexis Strauss, USEPA to Elizabeth Miller Jennings, SWRCB, commenting on BACWA petition of EBMUD permit. Although the Regional Board did not rely on section 122.44(d) in this case, the regulation is available for use by regional boards. Here, the Regional Board properly provided that final WQBELs will be based on wasteload allocations to be derived from TMDLs.

## B. Growth and Development

Contention: Petitioners claim that mass-based limits cannot be imposed on a POTW if additional growth and development will not appreciably degrade water quality further and elimination of the discharge from the POTW would not improve water quality.

Findings: The legal requirement for control of discharges is not whether the water quality would be *appreciably* degraded, but whether the discharge has the reasonable potential to cause *or contribute to* excursions above water quality standards.<sup>26</sup> Regional boards must limit discharges in order to implement water quality standards, even where the discharge is a minor contributor to water quality impairment. However, minor contributors may be afforded some relief through the TMDL process.<sup>27</sup>

In any event, the Regional Board adopted mass-based limits that are calculated in a manner that contemplates growth. For example, the mercury mass effluent limitation, which is 1.0 kg/month,<sup>28</sup> is expressed as a 12-month moving average and it appears from the record that the population of the District service area could more than double without the District incurring a violation.<sup>29</sup> This conclusion is based on an analysis of mercury data located on pages 235 through 237 of the record. These data show the 12-month moving average for the mass of mercury discharged trending downward from January 1995 through June 2000. Over this period, the 12-month moving average moved from 0.71 kg/month to 0.25 kg/month.

Even if additional growth were arrested temporarily due to imposition of the performance-based mass limits, it would not bar their imposition. Mass limitations may properly be imposed to prevent further degradation of a water body during the interim period until water quality standards are achieved. As stated in *In re: New England Plating Co.*: “The Clean Water Act and its implementing regulations clearly require the [state] to set effluent limits for an individual pollutant that had the reasonable potential to cause a water quality violation. In requiring compliance with applicable water quality standards, the Clean Water Act simply does not make any exceptions for cost or technological feasibility.”<sup>30</sup>

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<sup>26</sup> 40 C.F.R. § 122.44(d)(1)(iii).

<sup>27</sup> See Note 30, *infra*.

<sup>28</sup> The Regional Board calculated this effluent limitation by adding three standard deviations to the average value of the 12-month moving average. A normal distribution was assumed for the moving average.

<sup>29</sup> See pages 235 through 237 of the Administrative Record.

<sup>30</sup> NPDES Appeal No. 00-7, slip op. at 18 (EAB, Mar. 29, 2001).



Finally, given the fact that many of the District's final limits, consistent with the *Tosco Order*, will be ultimately based upon a TMDL, the Regional Board will no doubt consider the need for future growth in any wasteload allocations assigned to the District. The TMDLs may well make unnecessary stringent limits that approach criteria.<sup>31</sup>

### **C. Basin Plan Provisions**

Contention: Petitioners claim that certain provisions of the Basin Plan and sections of the Water Code prohibit mass limits that could have impacts on growth. First, they point to Water Code section 13263(a). Section 13263(a) of the Water Code requires regional boards to implement their Basin Plans in adopting waste discharge requirements. Page 4-7 of the Basin Plan states in pertinent part:

“Control measures must be sufficiently flexible to accommodate future changes in technology, population growth, land development, and legal requirements.”

Petitioners contend that mass limits are inflexible and cannot accommodate future changes in population and technology, and are therefore inconsistent with this Basin Plan provision.

Findings: This position lacks merit for several reasons. First, as noted above, a mass-based interim limit may be calculated in a manner that does, in fact, contemplate and accommodate a degree of increased future growth. Second, also as noted above, the Implementation Policy mandates imposition of interim performance-based limits. To the extent the Implementation Policy and the Basin Plan could be viewed as inconsistent, the Implementation Policy would prevail over the Basin Plan in any event. Third, as noted above, to the extent section 13263 is inconsistent with section 13377, section 13377 prevails when a regional board is adopting an NPDES permit.<sup>32</sup> Section 13377 provides that notwithstanding any other provision in the Porter-Cologne Act, including section 13263, regional boards must issue waste discharge requirements that ensure compliance with the Clean Water Act. As noted in Order WQ 2001-16, the Clean Water Act provides that POTWs are not exempt from the

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<sup>31</sup> See Permit 01-072, 32.a and Order WQ 2001-06, pp. 22-23.

<sup>32</sup> Water Code § 13372 and 13377.

requirement to ensure that discharges of pollutants do not cause or contribute to violations of water quality standards.<sup>33</sup>

Fourth, the Basin Plan at page 4-7, which circumscribes control measures, does not require allowance of additional pollution when setting WQBELs. While control measures must accommodate land development and population growth, the Clean Water Act precludes construing a Basin Plan as mandating that such growth and development be accommodated by increased pollution. The objective of the Clean Water Act is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”<sup>34</sup> The Congressional declaration continues: “It is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited.”<sup>35</sup>

Accordingly, the Basin Plan provision is further qualified to require control measures to accommodate legal requirements.<sup>36</sup> Thus, while control measures must accommodate growth and development under the Basin Plan provision, they need not allow increased pollution levels. Finally, control measures, as referenced in the Basin Plan, are not effluent limitations. Nor do control measures in any way restrict the calculation of effluent limitations. Control measures are the means employed to comply with effluent limitations.<sup>37</sup>

#### **D. Concentration and Mass Interim Limits for the Same Pollutant**

Contention: Petitioners argue that regional boards may not impose both concentration and mass interim limits for the same pollutant.

Findings: 40 Code of Federal Regulations section 122.45(f)(1) states that all pollutants shall be expressed in terms of mass except when applicable standards and limitations are expressed in terms of other units of measurement. Petitioners claim that this subsection prevents the Regional Board from issuing permits limiting pollutants by both mass and concentration. However, section 122.44(f)(2) states: “Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require

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<sup>33</sup> Petition of Napa Sanitation District, SWRCB Order No. WQ 2001-16 at pages 16-17.

<sup>34</sup> 33 U.S.C. § 1251(a).

<sup>35</sup> *Ibid.*

<sup>36</sup> Basin Plan, p. 4-7.

<sup>37</sup> *Id.* pp. 4-6 and 4-7

the permittee to comply with both limitations.” This language clearly endorses the application of both concentration and mass limits.

The inclusion of mass limitations is necessary to ensure that the discharge of pollutants will not exceed the level that has been deemed necessary for a particular situation. Since compliance with mass limits can be achieved by reducing flow while increasing the concentration of a pollutant, it is also necessary to limit concentrations to prevent toxic effects from occurring. Conversely, mass limits prevent dischargers from meeting their concentration limits by diluting their effluent. Therefore, EPA recommends both mass and concentration limitations.<sup>38</sup>

### **E. Double Jeopardy**

Contention: Petitioners also claim that the inclusion of both mass and concentration limitations violates the Double Jeopardy prohibition in the U.S. Constitution.

Findings: The Fifth Amendment is neither implicated in a permit issuance proceeding, nor would it be implicated from application of both mass- and concentration-based limits. Applying both limits does not implicate the discharger’s Fifth Amendment protection against “Double Jeopardy” in a potential enforcement action even though there are two possible ways to be in violation for the discharge of the same constituent. The Double Jeopardy Clause does not apply for two reasons. The Double Jeopardy Clause prohibits (1) successive punishment and (2) for the “same offense.”<sup>39</sup> Neither element is satisfied.

First, the Fifth Amendment protection does not prohibit charging a person with multiple offenses from the same act, but rather prohibits charging a person multiple times for the same offense. It should be clear from the discussion above that violating a mass-based effluent limitation and a concentration-based effluent limitation are two separate offenses. While the same conduct might violate both, each of those offenses exists to protect against different harms to the water body, and to promote different policies.<sup>40</sup> Each of these limitations is properly

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<sup>38</sup> TSD, pp. 110-111.

<sup>39</sup> *U.S. v. Gartner* (1996) 93 F.3d 633, 634, citing *Department of Revenue of Montana v. Kurth Ranch* (1994) 511 U.S. 767, 114 S.Ct. 1937, 1945, [128 L.Ed.2d 767] and *United States v. Halper* (1989) 490 U.S. 435, 451, 109 S.Ct. 1892, 1903, 104 [L.Ed.2d 487].

<sup>40</sup> *Natural Resources Defense Council, Inc. v. Texaco Refining and Marketing, Inc.* (1992) 800 F.Supp. 1, 20-21 (aff’d in part, rev’d in part on different grounds, *Natural Resources Defense Council, Inc. v. Texaco Refining and Marketing, Inc.* (3d Cir. 1993) 2 F.3d 493; *Public Interest Research Group of New Jersey, Inc. v. Powell Duffryn*

subject to separate sanctions.<sup>41</sup> Second, the Double Jeopardy Clause has no application in this proceeding in any event. Since the discharger has not been prosecuted once for any offense, much less multiple times, jeopardy has not attached, and cannot attach here.<sup>42</sup>

#### **F. Mixing Zones and Dilution Credit**

Contention: Petitioners allege that the Regional Board did not follow the procedures set forth in the Implementation Policy for granting mixing zones and dilution credit. Petitioners have argued that the Regional Board violated the Policy by granting a “stringent” 10:1 dilution ratio instead of granting the more generous dilution credits expressed by the formulas of the Policy at Table 3.

Findings: There is some merit to Petitioners’ allegation. The Policy provides that priority pollutant objectives must be met throughout a water body except within any mixing zone granted by a regional board.<sup>43</sup> A “mixing zone” is defined in the Policy as “a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.”<sup>44</sup> The term “dilution ratio” is defined as “the critical low flow of the upstream receiving water divided by the flow of the effluent discharged.”<sup>45</sup> “Dilution credit” is the “amount of dilution granted to a discharge in the calculation of a water quality based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and the receiving water.”<sup>46</sup> The availability of dilution is generally described as assimilative capacity. If the pollutant concentrations in the receiving water equal or exceed the water quality objective concentration, then no assimilative capacity exists to dilute the effluent for that pollutant, and the discharger must meet the objective as an “end of pipe” effluent limit.

Before the State Board adopted the Implementation Policy, only four of the regional boards, including the San Francisco Bay region, were authorized by federal law to grant

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Terminals, Inc. (3d Cir. 1990) 913 F.2d 64, 78-79, cert. denied, 498 U.S. 1109, 111 S.Ct. 1018, 112 L.Ed.2d 1100 (1991).

<sup>41</sup> *Ibid.*

<sup>42</sup> U.S. v. Gartner, *supra*.

<sup>43</sup> Policy, p. 13.

<sup>44</sup> *Id.* Appendix 1-4.

<sup>45</sup> *Id.* Appendix 1-2.

<sup>46</sup> *Ibid.*

dilution credits to NPDES dischargers because their Basin Plans granted this authority.<sup>47</sup> While adoption of a statewide Implementation Policy provided new dilution credit authority to the other five regional boards, it simultaneously superseded and potentially limited the remaining four regional boards that had previously operated under their own dilution credit policies contained in their Basin Plans.

### **1. Relationship Between the Implementation Policy and Basin Plan Provisions Regarding Mixing Zones and Dilution Credit**

The introduction of the Implementation Policy reads “except as provided in section 4, this Policy supersedes basin plan provisions regarding implementation of water quality standards for priority pollutants to the extent that (1) they apply to implementation of water quality standards for priority pollutants, and (2) they regard the same subject matter as that addressed in this Policy with respect to priority pollutant standards.”<sup>48</sup> Because Implementation Policy section 1.4.2 implements water quality standards by providing a procedure for granting dilution credits and mixing zones, these provisions are controlling for all dilution credits issued in NPDES permits that are based on numeric priority pollutant objectives. Regional Board Basin Plan procedures for establishing mixing zones for such pollutants are therefore superseded.

### **2. Regional Board Discretion to Grant a Discharger Dilution Credit**

The Implementation Policy authorizes the Regional Board to grant dilution credits, and establishes procedures for calculating mixing zones and dilution ratios, but it does not require the Regional Board to grant dilution credits to any discharger. The introduction to section 1.4.2 of the Policy, entitled Mixing Zones and Dilution Credits, reads: “The [Regional Board] *may* grant mixing zones and dilution credits to dischargers in accordance with the provisions of this section.” (Emphasis added.) Further, “the allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge” and “pollutant-by pollutant” basis.<sup>49</sup> Recent State Board orders have described this discretion in similar terms.<sup>50</sup> Because of

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<sup>47</sup> See Functional Equivalent Document for Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, Third Public Draft, January 31, 2000, (hereinafter referred to as FED) at Volume 49. Under 40 C.F.R. § 131.13, the State Board and regional boards may include in water quality standards policies affecting their implementation including mixing zones, subject to approval by EPA.

<sup>48</sup> Section 4 pertains to toxicity testing – not dilution credit.

<sup>49</sup> Policy, p. 13.

the above language, the Policy clearly does not require regional boards to grant dilution credits to dischargers. But where, as in this permit, a regional board does grant dilution credit, it must do so consistent with the Policy.

### **3. Magnitude of Dilution Credit**

As noted above, Petitioners have argued that the Regional Board violated the Policy by granting a “stringent” 10:1 dilution credit instead of granting the more generous dilution credits expressed by the formulas of the Policy at Table 3. The argument cites Policy section 1.4.2.1, which reads, “the mixing zone and dilution credit shall be determined using the parameters specified in Table 3.”<sup>51</sup> This argument is misleading because it ignores the language on the same page that clarifies that the Table 3 calculation is a *maximum* dilution ratio.

This paragraph provides that, “In no case shall the RWQCB grant a dilution credit that is greater than the calculated dilution ratio.”<sup>52</sup> Once the Regional Board makes the Table 3 calculations, it “*shall deny or significantly limit* a mixing zone and dilution credit as necessary to protect beneficial uses . . . .”<sup>53</sup> Consequently, the Petitioners are incorrect in claiming the Policy requires the Regional Board to grant dilution credit for the maximum dilution ratio produced by a Table 3 calculation. Furthermore, as discussed below, Table 3 does not apply to the EBMUD discharge because the discharge is incompletely mixed. Finally, Water Code section 13263(b) provides that a regional board is not obligated to assign the entire assimilative capacity of a receiving water to a particular discharger.

Numeric objectives exist for each of the disputed pollutants for which the Regional Board applied a 10:1 dilution ratio. Consequently, these pollutants are subject to the Implementation Policy. Since it appears the Regional Board may have mechanically applied the 10:1 Basin Plan dilution ratio without considering the Policy provisions, we remand the permit to the Regional Board for further consideration or clarification.

### **4. Pollutant Specific Determination**

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<sup>50</sup> See State Board Order No. WQ 2001-06, at p. 19 (“Factually, dilution may be considered if the receiving waters actually have the capacity to dilute the effluent to levels below the applicable water quality objective or criteria.”); Order No. WQ 2001-16 (Napa Order), at p. 22 (“In all cases, the Regional Boards have the discretion to determine whether or not a mixing zone and dilution credits are appropriate for a discharge.”).

<sup>51</sup> Implementation Policy, p. 14.

<sup>52</sup> *Ibid.*

<sup>53</sup> Implementation Policy p. 15.

The permit and the Regional Board response to the petition state that, based on a study conducted by the District, worst case initial dilution for the discharge is greater than 15:1 with a typical dilution ratio of 45:1.<sup>54</sup> The Regional Board states that the dilution ratio formulas in Table 3 of the Implementation Policy only apply to rivers, and not to the Central Bay. In general, we agree with the Regional Board. The Policy uses the terms “completely mixed discharges” and “incompletely mixed discharge.”<sup>55</sup> Completely mixed discharges only apply to water bodies in which the discharge is well mixed with the receiving water within two stream widths.<sup>56</sup> Discharges to bays do not generally meet this criterion and are therefore incompletely mixed discharges.

However, the Policy also has dilution credit provisions for incompletely mixed discharges. For such discharges, the Policy provides that site-specific dilution studies may be performed by dischargers and considered by the regional boards.<sup>57</sup> In such circumstances, a regional board may only allow dilution credit if it is satisfied that the site-specific study demonstrates that it is appropriate.<sup>58</sup>

While the permit applied a 10:1 dilution credit for most pollutants, it denied any dilution credit for all pollutants termed “bioaccumulative.” NPDES permits must ensure compliance with water quality objectives – including narrative objectives.<sup>59</sup> Consequently, when adopting effluent limitations, if there is insufficient evidence to establish that assimilative capacity exists, then, particularly for bioaccumulative pollutants, dilution credit must be denied to ensure compliance with water quality objectives.<sup>60</sup> However, if the evidence is clear that there is assimilative capacity currently and no potential bioaccumulation problems are expected, then dilution should be considered. For example, if the background concentration were below water quality objectives, and aquatic organism tissue concentrations were below protective concentration thresholds, then some allowance of dilution might be appropriate – particularly where it is clear that source control measures will not result in attainment of effluent limits

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<sup>54</sup> Permit, Finding 7.

<sup>55</sup> Policy, p. 14.

<sup>56</sup> *Id.*, Appendix 1-1.

<sup>57</sup> *Id.*, p. 15

<sup>58</sup> *Ibid.*

<sup>59</sup> Wat. Code 13377; 40 C.F.R. 122.44 (d). The Basin Plan includes a narrative objective for bioaccumulative pollutants.

<sup>60</sup> While the Policy does not apply to narrative objectives, its requirements are instructive and useful as guidance.

without dilution credit and advanced treatment would be required. Because of the possibility that such circumstances may exist for some bioaccumulative pollutants, it was inappropriate for the Regional Board to foreclose the possibility of dilution credit for all bioaccumulative pollutants. However, where there is pollutant-specific evidence of a lack of assimilative capacity, for instance due to fish tissue studies showing the presence of bioaccumulative pollutants at concentrations with the potential to threaten public health, then denial of dilution credit is clearly appropriate. In any case, the permit Findings must be revised on remand to state an adequate basis for either granting or denying dilution credit.

EPA guidance indicates that mixing zones are appropriately denied to compensate for uncertainties in the protectiveness of the water quality criteria or uncertainties in the assimilative capacity of the water body.<sup>61</sup> Here, the permit Findings indicate the Regional Board may not have accepted the conclusions of the District's study indicating an average dilution ratio of 45:1, with a worst case of 15:1.<sup>62</sup> The Regional Board applied a 10:1 dilution ratio, either as an application of a superseded portion of its Basin Plan, or as a true worst-case estimate of the dilution ratio in this case. The Regional Board must provide some clarification on this issue, and justification in the findings if it readopts the 10:1 ratio, or revises it, on remand. As in the TMDL context, where there is uncertainty, use of safety factors is appropriate in assigning available dilution capacity.<sup>63</sup> However, if the Regional Board rejects the conclusions of the District's dilution study based on uncertainty the Regional Board must articulate the sources of uncertainty and indicate what additional kinds of evidence or analysis would be required to eliminate the uncertainty.

The EPA guidance also notes that not all bioaccumulative pollutants pose the same threat because some of these pollutants are more bioaccumulative than others. EPA notes that, although any pollutant with a bioconcentration factor (BCF) greater than 1.0 indicates a potential for bioaccumulation, the threat is not generally considered significant unless the BCF

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<sup>61</sup> Water Quality Standards Handbook, 2d ed. USEPA 1993 pp. 5-8.

<sup>62</sup> Compare permit Findings 7 and 31.

<sup>63</sup> See Note 2, *supra*.



exceeds 100.<sup>64</sup> EPA also notes that the concentration of the pollutant in the discharge also is a factor in determining whether the discharge could result in a bioaccumulation hazard.<sup>65</sup>

The Implementation Policy at section 1.4.2.2.B adopts this guidance by noting that a regional board should consider the presence of bioaccumulative pollutants and the potential for bioaccumulation when deciding whether or not to grant dilution credit.

**a. Dieldrin, 4,4-DDE, Mercury, and TCDD Equivalents**

BACWA objects to the Regional Board denying dilution credits for mercury, TCDD equivalents, Dieldrin, bis(2-ethylhexyl)phthalate, and 4,4 – DDE. It states that the denial of dilution credits was inconsistent with the Implementation Policy and the Basin Plan and that the Regional Board may not base denial of dilution credits solely upon the fact that the pollutants may be bioaccumulative.

Dilution credits are discussed in section 1.4.2 of the Implementation Policy. In this section, the Policy states that a dilution credit may be provided in accordance with the provisions of the section. One of these provisions is in 1.4.2.2 (B), which states that:

“The Regional Board shall deny or significantly limit a mixing zone and dilution credit as necessary to protect beneficial uses, meet the conditions of this Policy, or to comply with other regulatory requirements. Such situations may exist based upon the quality of the discharge, hydraulics of the water body, or the overall discharge environment (including water column chemistry, organism health, and potential for bioaccumulation) . . . .”

For mercury, TCDD equivalents, Dieldrin, and 4,4 - DDE, assimilative capacity does not appear to exist. Indeed, all of these pollutants have been found in fish near the outfall at concentrations of potential health concern.<sup>66</sup> Therefore, it was appropriate for the Regional Board to deny dilution credits. On remand, the Regional Board must amend the permit Findings to refer to the studies documenting this impairment. Because of these health concerns, these pollutants have been placed on the Clean Water Act section 303(d) list for San Francisco Bay

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<sup>64</sup> Water Quality Standards Handbook, 2d ed. USEPA 1993 pp. 5-8.

<sup>65</sup> *Id.*, pp. 5-9.

<sup>66</sup> The concentrations of these contaminants are documented in the May 1997 report “Contaminant Concentrations in Fish from San Francisco Bay 1997” issued by the San Francisco Estuary Institute. This report is hereby added to the record. Based on fish tissue analyses, the San Francisco Bay Regional Water Quality Control Board placed mercury and PCBs on the 303(d) list. The U.S. Environmental Protection Agency Region 9 (USEPA), in a letter to the State Board dated May 12, 1999, that partially approved and partially disapproved California’s 303(d) list added dioxins, furans, Dieldrin, Chlordane, and DDT.

and TMDLs are being developed for them. Studies for establishing the TMDLs will evaluate the persistence of the pollutants and their transport mechanisms and will recommend pollutant loads for effluent discharges. After adoption of the TMDLs, final effluent limitations will be developed based on these pollutant loads.<sup>67</sup>

**b. Bis(2-ethylhexyl)phthalate**

For bis(2-ethylhexyl)phthalate (Bis-2), there is no evidence in the record that the pollutant is accumulating in fish in San Francisco Bay. Bis-2 is not on the 303(d) list, and no TMDL is being developed for it. Hence, additional studies may be able to show that dilution credits may be provided for Bis-2 without impairing public health. The studies might evaluate concentrations of Bis-2 in aquatic organisms near the outfall to see if the existing discharge is causing or contributing to impairment. They might also evaluate the persistence of the pollutant in the San Francisco Bay environment and its potential for bioaccumulation. Petitioners should be given an opportunity to present any such evidence to the Regional Board.

The permit currently contains only an interim limit for Bis-2. However, given the lack of a planned TMDL for this pollutant, the Policy requires that the permit be revised on remand to include a final limit that will ensure compliance with the numeric CTR objective.<sup>68</sup> The interim performance-based limit for Bis-2 may be retained as part of a compliance schedule.

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<sup>67</sup> The effluent limitations in the permit for mercury, TCDD equivalents, and bis(2-ethylhexyl)phthalate are listed as interim effluent limitations in the permit. These interim limitations are based on current plant performance or the limitation in the previous permit. Limitations for 4,4 - DDE and Dieldrin are listed as final effluent limitations and are based on the pollutant criteria, without allowance for any dilution credits. Interim limitations were set for mercury, TCDD equivalents, and bis(2-ethylhexyl)phthalate because the District's current effluent quality would not comply with a water quality based effluent limitation for these pollutants. Final effluent limitations were set for Dieldrin and 4,4 - DDE because existing data showed that the District could comply with water quality based effluent limitations for these pollutants. This is consistent with the procedures in the Implementation Policy.

<sup>68</sup> Implementation Policy, section 2.1.

### **c. Dilution Credit for Cyanide**

BACWA contends that the dilution analysis for cyanide was incorrect because the Regional Board assumed the background concentration to be 1 ug/l when the limited monitoring data showed all non-detect values with a detection limit of 1 ug/l. BACWA alleges that in calculating available dilution, the background concentration should be assumed to be some number less than the detection limit, such as 0.99 or 0.5 ug/l, where all background monitoring data indicates non-detect (<1 ug/l) values.

The Regional Board was correct in not adopting an effluent limit allowing dilution. Implementation Policy section 1.4.3.1 provides that the background concentration should be assumed to be the detection limit when all monitoring data is non-detect. Consequently, no dilution is available. Nevertheless, compliance will not be a problem because given the limited data, the Regional Board included an interim performance based limit of 10 ug/l, which will apply until a cyanide study can be completed.<sup>69</sup>

### **5. Summary of Dilution Credit Conclusions**

The Implementation Policy supersedes the Basin Plan regarding the granting of dilution credits and mixing zones in the implementation of toxic pollutant standards. The Regional Board has discretion to decide whether to grant the District dilution credit. If the Regional Board decides to allow dilution credit, it must follow the provisions of the Implementation Policy. Since it appears the Regional Board may have applied the Basin Plan dilution credit provisions in granting a 10:1 dilution ratio without considering the Policy provisions, we remand the permit to the Regional Board for further consideration. If dilution credit is granted, the Regional Board must consider each discharge on a case-by-case and pollutant-by-pollutant basis in determining appropriate dilution credit. The assumption that assimilative capacity did not exist for all bioaccumulative pollutants was inappropriate because if pollutant-specific evidence can be identified that clearly demonstrates the existence of assimilative capacity currently, and no potential bioaccumulation problems, then dilution credit should be considered. Mixing zones are appropriately denied to compensate for uncertainties in the protectiveness of the water quality criteria or uncertainties in the assimilative capacity of the

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<sup>69</sup> Permit, Findings 42-45.

water body. Although the Regional Board properly denied dilution credits for mercury, TCDD equivalents, Dieldrin, and 4,4 – DDE, the Regional Board must amend the permit Findings to refer to the studies documenting bioaccumulation-related impairment for these pollutants.

### **G. Daily and Instantaneous Maximum Limits**

Contention: Petitioners allege that the Regional Board may not impose daily and instantaneous maximum limits. An instantaneous maximum limit is violated if any measurement (e.g., a grab sample or reading from a continuous analyzer) exceeds the limit. A daily maximum limit refers to the highest allowable concentration of a pollutant calculated as the arithmetic mean of all measurements throughout the day.<sup>70</sup> Petitioners cite 40 Code of Federal Regulations section 122.45(d)(2) in support of the argument that federal regulations require all permit effluent limitations for continuous discharges from POTWs to be stated only as average weekly and average monthly discharge limitations. They further argue that subdivision (d)(1) of that section requires all other discharges (i.e., aside from POTWs) to have permit effluent limitations stated as maximum daily and average monthly discharge limitations.

Findings: NPDES permits frequently include effluent limitations that are stated as daily maximum, daily median, 4-day, or 1-hour average limitations. These limitations are often in addition to average weekly or average monthly limitations. The NPDES regulations at 40 Code of Federal Regulations section 122.45(d) state:

“For continuous discharges all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall *unless impracticable* be stated as:

(1) Maximum daily and average monthly discharge limitations for all discharges other than publicly owned treatment works; and

(2) Average weekly and average monthly discharge limitations for POTWs.”  
(Emphasis added.)

Daily maximum and instantaneous limitations are used in permits to implement acute water quality criteria because it is impracticable to use weekly average limitations to protect against acute water quality effects. Weekly averages are effective for monitoring the performance of biological wastewater treatment plants, whereas the daily and instantaneous maximum limitations are necessary for preventing fish kills or mortality to aquatic organisms.

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<sup>70</sup> Policy, Appendix 1-3.

This approach is consistent with the Implementation Policy.<sup>71</sup> It is also in accord with EPA's guidance on writing water quality-based permits.<sup>72</sup> Accordingly, the Regional Board properly used daily maximum effluent limitations in the permit to protect against acute water quality effects. Nevertheless, consistent with this Order and the Implementation Policy, the Regional Board must include a finding in the permit on remand explaining the impracticability of weekly average limits.

## **H. Third Party Review**

Contention: Petitioners have objected to permit Finding 60, which discusses establishment of baseline programs and program review by third parties.

Findings: There are limits to what may be delegated to regional board staff, and what is appropriate for entities apart from the regional board. Simply including a finding that such programs and review may be used is not a delegation however. If there will be no consequences relevant to the District resulting from the third-party consultation, the Regional Board may employ consultants for purposes, including to establish baseline programs, and to review program proposals and reports for adequacy. However, the Regional Board may not substitute a consultant's judgment for its own. Also, Finding 60 is just a finding. As such, it cannot and does not require anything. If the intent expressed in the finding is carried out in a subsequent Regional Board action, we will apply the standard set forth above in our review of any dispute that may arise.

## **I. Mass Offsets**

A mass offset generally refers to efforts by a discharger to reduce pollutant loads to a watershed from other sources to compensate for its own discharge.

Contention: Petitioners object to the optional mass offset program set forth in Provision F.9 of the permit on the basis that there is no authority for such programs in the Water Code, Implementation Policy, or Basin Plan. Provision F.9 provides that the Regional Board will consider any proposed optional mass offset plan that might be submitted by the District as a means of reducing pollutant loads in the watershed.

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<sup>71</sup> See p. 8, § 1.4.

<sup>72</sup> TSD, p. 96, § 5.2.3.

Findings: There is no provision in federal or state law that precludes a regional board from entertaining an offset proposal as an alternative means of achieving compliance with mass effluent limitations. So long as any such program is consistent with all applicable federal and state authorities, the Regional Board is free to consider it.

## **J. Development and Implementation of New Analytical Methods**

Contention: BACWA asserts that the Regional Board improperly delegated the responsibility for developing and implementing new analytical methods to the District and other Regional Monitoring Program (RMP) participants.<sup>73</sup>

Response: While a finding does not constitute a delegation, permit Finding 39.c. appears to be directive in tone. It states:

“To assist in developing the TMDL, the Discharger *shall* participate in a special study, through the RMP, to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limits for these dioxin and furan compounds. Furthermore, the Discharger shall have the preferred method approved by the EPA.” (Emphasis added.)

Finding 47, however, appears to encourage the discharger to participate in the RMP study, but seems to confer discretion in that regard:

“To assist in developing the TMDL, the Discharger *should* participate in a special study, through the RMP, to investigate the feasibility and reliability of different methods of increasing sample volumes to lower the detection limits for dieldrin.” (Emphasis added.)

The Regional Board response notes that it did not delegate the responsibility for developing and implementing new analytical methods to the District. The Regional Board notes that the discussion occurs only in the findings, and therefore contends that it “is not a permit requirement.”<sup>74</sup> The Regional Board further explains that its staff’s August 6, 2001 letter elucidates that the District has two options: (1) either use the available EPA Method, or (2) participate in the relevant study.<sup>75</sup> Given this subsequent development, on remand, the Regional Board must amend Finding 39.c to delete the mandate language. Alternatively, the

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<sup>73</sup> Various Bay dischargers, including the District participate in a collaborative effort to collect data on pollutants in the Bay. This effort, known as the RMP is managed by the San Francisco Bay Estuary Institute and funded by the dischargers.

<sup>74</sup> Regional Board Response to Petition, p. 25.

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

Regional Board could include a permit provision that requires the District to select one of the options discussed in the August 6 letter.

In terms of power to act in this area, where dischargers have been granted a compliance schedule, the Implementation Policy grants broad authority to the regional boards to establish conditions to support and expedite TMDL development.<sup>76</sup> In these circumstances, a study to develop improved detection limits is within the regional board's authority to require, and inclusion of a requirement to conduct such a study may be appropriate.

#### **K. Prohibition Against Unpermitted Discharges to Storm Drain Systems and State Waters**

Contention: BACWA argues that the prohibition against unpermitted discharges to storm drain systems or other waters of the state is inappropriate.

Findings: Permits often contain a prohibition against discharging wastes other than those authorized by the permit to storm drains or waters of the state. BACWA contends that POTWs have constituents in their effluent that do not require effluent limitations, and that the permit appears to prohibit the discharge of such constituents. BACWA further argues that there are no findings to support the prohibition, and that the effluent limitations, toxicity testing requirements, and receiving water limitations provide adequate protection.

The Second Circuit Court of Appeals in *Atlantic States Legal Foundation, Inc. v. Eastman Kodak Co.*<sup>77</sup> addressed the issue of whether discharges that are not specifically limited in NPDES permits are prohibited. The court held that Clean Water Act section 402(k) acts as a “shield” to allow the discharge of constituents that are not specifically limited or prohibited by the permit. The court pointed out that the EPA did not intend to limit every pollutant in NPDES permits; only those with the reasonable potential to cause or contribute to exceedance of water quality standards.<sup>78</sup> The Ninth Circuit Court of Appeals, in *Northwest Environmental Advocates v. City of Portland*, has not completely followed this reasoning.<sup>79</sup> The court in *Northwest* held that citizens, through Clean Water Act section 505, could enforce all permit conditions, including requirements to comply with water quality standards. Enforcement is not limited to “effluent limitations.” Finally, the Fourth Circuit most recently addressed the issue in

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<sup>76</sup> Implementation Policy, § 2.1.1.

<sup>77</sup> 12 F.3d 353 (2d Cir. 1994).

<sup>78</sup> *Id.*, at 358.

<sup>79</sup> 56 F.3d 979 (9th Cir. 1995).

*Piney Run Preservation Association v. County Commissioners of Carroll County*.<sup>80</sup> This court held that discharges of pollutants not listed in the permit are shielded *as long as they were disclosed to the permitting authority and they can be reasonably contemplated*. The final issue in all of these cases is how to define the meaning of the permit. Thus, broad permit requirements implementing water quality standards, not stated as effluent limitations, may be included in permits and are enforceable, but unless clearly stated, the discharge of pollutants disclosed to the permitting authority, and which can be anticipated as part of the discharge, will not be subject to enforcement action.

NPDES permits issued in California routinely include broad requirements to comply with water quality standards, similar to the language considered in *Northwest*. The language in the prohibition challenged, however, is potentially much broader. This language prohibits all discharges other than those authorized by the permit. The difficulty with this language is that it could mean that the discharge of any constituents not specifically listed in effluent limitations is prohibited. And yet, the numeric effluent limitations in the permit will not include those constituents that are known or thought to occur in the effluent, but are discharged at levels that do not constitute reasonable potential to cause or contribute to exceedance of water quality standards. The reasonable potential analysis is used to determine which constituents need WQBELs. This means that constituents may be in the discharge, but do not have “reasonable potential,” and will not result in a WQBEL. We conclude that the prohibition at issue is acceptable in permits, but that it is interpreted to apply only to constituents that are not anticipated in the discharge, and have not been disclosed by the discharger. On remand the Regional Board must include clarifying language in a footnote to Prohibition A.5 that reflects this interpretation.

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<sup>80</sup> 268 F.3d 255; 2001 WL 1193211 (4th Cir. 2001).



## **L. Individual Versus Regional Monitoring**

Contention: BACWA argues that Provision E.5a (sic)<sup>81</sup> of the permit is unreasonable for requiring the District to perform monitoring that is more appropriately performed by the RMP. As discussed above,<sup>82</sup> the Regional Monitoring Program (RMP) is comprised of various Bay dischargers, including the District, that participate in a collaborative effort to collect data on pollutants in the Bay. This effort is managed by the San Francisco Bay Estuary Institute and funded by the dischargers.

Findings: BACWA objects to special studies regarding background water quality characterization and site-specific objective studies. In some cases, such tasks are performed as part of the RMP. Regional boards have broad authority to require monitoring and reports concerning discharges of waste.<sup>83</sup> There is no allegation that the burden of performing the monitoring and studies did not bear a reasonable relationship to the need for the studies. Instead, BACWA claims that the RMP should prepare the reports rather than the permittee. In this permit, the Regional Board cannot dictate reports and studies to be done by those other than the permittee. Should the District arrange for the studies to be performed by the RMP, there would be no violation of the permit. The Regional Board is not, however, required to specify that in the permit. The permit does note that the District is free to coordinate with other POTWs to acquire the necessary information.<sup>84</sup>

## **M. Reasonable Potential**

As set forth in 40 Code of Federal Regulations section 122.44(d), permits must limit any pollutant that is or may be discharged at a level that causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard, including narrative criteria. The analysis to determine what pollutants must have permit limits is commonly called the "reasonable potential analysis."

Contention: Petitioners challenge effluent limit analyses for DDE, dieldrin, TCDD equivalents, and bis(2-ethylhexyl)phthalate on the basis that the reasonable potential analysis was not performed properly.

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<sup>81</sup> BACWA appears to be referring to Provision F.15.

<sup>82</sup> See Note 71.

<sup>83</sup> Water Code §§ 13267 and 13383.

<sup>84</sup> Permit, Provision F.15.

Findings: The reasonable potential analyses were performed properly.

### **1. DDE and Dieldrin**

The Implementation Policy has three triggers for determining reasonable potential. The first trigger compares the maximum observed effluent concentration (MEC) to the water quality objective. If the MEC exceeds the objective, a finding of reasonable potential is made. The second trigger compares the observed maximum receiving water background concentration to the water quality objective. If the background concentration exceeds the objective, reasonable potential is also found. The third trigger allows the Regional Board to review other information to determine if a water quality-based effluent limitation is needed to protect beneficial uses.

When the Regional Board performed the reasonable potential analyses for 4,4 – DDE (DDE) and dieldrin, it found that DDE and dieldrin had not been detected in the effluent from the plant. It did, however, find that water samples taken near Yerba Buena Island by the RMP had concentrations of DDE and Dieldrin that exceeded water quality objectives. Hence, the Regional Board made a finding of reasonable potential for these pollutants.

The RMP takes water quality samples three times a year at stations located throughout the San Francisco Bay Estuary. It analyzes these samples and conducts extensive quality checks of sampling data before publishing them. The sampling station closest to the District effluent outfall is the Yerba Buena Island sampling station.

Graphs that present water quality data for the Yerba Buena Island sampling station for DDE and dieldrin are shown in Figures 4 and 5 on page 338 of the Administrative Record. These graphs were prepared by the District and submitted to the Regional Board in a comment letter to the tentative NPDES permit on June 5, 2001. The first graph shows one exceedance of the water quality objective for DDE. On April 20, 1998, a sample with a concentration of 690 pg/l DDE was taken. The water quality objective for DDE is 590 pg/l. The second graph shows three exceedances of the water quality objective for dieldrin. The most recent occurred on January 1, 1997. The concentration was 184 pg/l. The water quality objective for dieldrin is 140 pg/l.

The District argues that the Regional Board should not have found reasonable potential for DDE and dieldrin because the pollutants were never found in its effluent and were found in the receiving water at concentrations that exceeded the water quality objectives only one to three times. The District also states that during these times, the San Francisco Bay

outflow conditions were atypically high; and, therefore, the samples were not representative. Under the Implementation Policy; however, only one exceedance of the water quality objective is required to trigger a finding of reasonable potential. This exceedance can be in either the effluent or in the receiving water. High flow conditions are also typical for the San Francisco Bay as they occur during most wet years.

## 2. TCDD Equivalents

The permit has an interim effluent limitation of 0.14 pg/l for tetrachlorodibenzodioxin (TCDD) equivalents that was based on the limitation in the previous permit. TCDD equivalents are defined in the permit as the sum of the concentrations of specified chlorinated dibenzodioxins and chlorinated dibenzofurans multiplied by their respective toxic equivalency factors (TEFs).

The RMP has not been analyzing water quality samples for TCDD equivalents, and the record contains no receiving water data for them. The record contains effluent data for TCDD equivalents from samples taken between December 1995 and October 2000 from the District treatment plant.

The District states in its petition that the data do not support the conclusion that TCDD equivalents are present in its effluent because the congeners were detected at concentrations below the lower method calibration limit (LMCL). As such, it is the District's position that the data should be considered suspect and not of adequate quality for making a finding of reasonable potential.

The District is correct in stating that the congeners were found at concentrations below the LMCL. But this does not invalidate a finding that there is a reasonable potential that the pollutants are present at concentrations that exceed 0.014 pg/l equivalents.<sup>85</sup> Analytical instruments do have a range in which the presence of a chemical can be detected, but the amount cannot be accurately quantified. The lower value of this range is called the minimum detection level (MDL) in the Implementation Policy. The upper range is called the minimum level (ML), which is equivalent to the LMCL. Laboratory methods have procedures for evaluating if a

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<sup>85</sup> The California Toxics Rule (CTR) lists a criterion for 2,3,7,8 – Tetra CDD of 0.014 pg/l. The CTR does not list criteria for other dioxin and furan congeners but states in its preamble that “if the discharge of dioxin or dioxin-like compounds has a reasonable potential to cause or contribute to a violation of a narrative criterion, numeric water quality-based effluent limits for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme”. For the reasonable potential analysis, the Regional Board used a criterion of 0.014 pg/l for TCDD equivalents.

response is instrument noise or the presence of a chemical. Therefore, estimated values below the ML should not be taken to be non-detects. Although values recorded between the MDL and the ML should not be considered to be an accurate quantification, they can be used to evaluate reasonable potential. In this case, they do indicate that there is a reasonable potential that TCDD equivalents are present at concentrations that exceed 0.014 pg/l equivalents.

Calculation of toxic equivalents assuming the non-detects are zero values and using the J-flag values,<sup>86</sup> yields toxic equivalents that are as much as 633 times higher than 0.014 pg/l. Although this factor should be considered to be imprecise, its size justifies a finding of reasonable potential.

### **3. Bis(2-ethylhexyl)phthalate**

In its petition, the District states that effluent data used by the Regional Board for its reasonable potential analysis for bis-2 are invalid. The reason cited was likely laboratory contamination. The petition states that laboratory “blank” samples often show detectable concentrations of bis-2. The analyses of the District effluent, however, were performed at certified laboratories, and the record contains no documents from the laboratories stating that the data are invalid. Consequently, given the information in the record, the Regional Board was correct to assume that the data were valid and to make a determination that there is a reasonable potential that the pollutant is present at a concentration that exceeds the objective.

Concerning the possibility of receiving inaccurate analyses from laboratories and, therefore, incurring a violation, it is the responsibility of dischargers to work with laboratories to ensure good quality assurance/quality control procedures – particularly when monitoring for ubiquitous pollutants such as bis-2, which is present in many plastics. In its response to the draft Order, the District indicated that it was gathering evidence that may demonstrate that the monitoring data relied upon by the Regional Board in its reasonable potential analysis were, in fact, invalid. The Regional Board comments on the draft Order indicate that it is willing to consider any new evidence the District can produce. Consequently, the conclusion in this Order that a final WQBEL is required for Bis-2 will not apply if the Regional Board determines on remand that the District discharge does not have a reasonable potential to cause or contribute to a violation of the Bis-2 objective.

### **N. Azobenzene as a Surrogate for 1,2 Diphenylhydrazine**

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<sup>86</sup> J-flag values are measurements that are lower than the lower method calibration limit.

The Self Monitoring Program adopted by the Regional Board requires the District to monitor for 1,2-diphenylhydrazine (DPH). The Regional Board did not impose an effluent limit for DPH.

Contention: The District objects to the monitoring requirement because it is an expensive analytical procedure. The District argues that federal regulations allow the use of azobenzene as an analytical surrogate for DPH and that azobenzene is already included in the list of constituents monitored for using EPA Method 625, which the District uses to detect a variety of other pollutants.

Findings: In Table II of Appendix D to 40 Code of Federal Regulations section 122, DPH is included in a list of organic toxic pollutants as “1,2-diphenylhydrazine (azobenzene).” In its response to the petition, the Regional Board notes that it has recently sent a letter agreeing to this District suggestion as long as the District monitored specifically for DPH if azobenzene were ever detected at concentrations exceeding 1 ug/l. We agree with the Regional Board response. On remand, the Regional Board must amend the Monitoring Program in accordance with its letter that agreed to accept azobenzene as a surrogate for DPH.

#### **O. Background Monitoring Stations**

Contention: the District argues that Provision F.15 in the permit is too general by referring to monitoring “waters upstream from the facility” and that the Provision should be modified to refer specifically to Yerba Buena Island and Richardson Bay as the monitoring stations.

Findings: Provision F.15 is a requirement that the District submit a sampling plan to the Executive Officer for approval, so that Regional Board staff can perform a reasonable potential analysis for various pollutants. One aspect of the plan would be identification of background monitoring stations. Consequently, the District is free to propose its suggested monitoring stations to the Executive Officer and the permit need not be modified to identify these stations.

### **III. CONCLUSIONS**

1. The Regional Board properly imposed effluent limitations to implement narrative water quality objectives.
2. The Regional Board did not err by imposing interim performance based limits.

3. Mass-based limits can be imposed on a POTW even if additional growth and development will not appreciably degrade water quality further and elimination of the discharge from the POTW would not improve water quality.

4. Regional boards may impose both concentration and mass interim limits for the same pollutant.

5. Inclusion of both mass and concentration limitations does not violate the Double Jeopardy prohibition in the U.S. Constitution.

6. The Implementation Policy supersedes the Basin Plan regarding the granting of dilution credits and mixing zones in the implementation of toxic pollutant standards.

7. The Regional Board has discretion to decide whether to grant the District dilution credit.

8. If the Regional Board decides to allow dilution credit, it must follow the provisions of the Implementation Policy.

9. Since it appears the Regional Board may have applied the Basin Plans dilution credit provisions in granting a 10:1 dilution ratio without considering the Policy provisions, we remand the permit to the Regional Board for further consideration.

10. If dilution credit is granted, the Regional Board must consider each discharge on a case-by-case and pollutant-by-pollutant basis in determining appropriate dilution credit.

11. The assumption that assimilative capacity did not exist for all bioaccumulative pollutants was inappropriate because if pollutant-specific evidence can be identified that clearly demonstrates the existence of assimilative capacity currently and no potential bioaccumulation problems then dilution credit should be considered. However, if there is insufficient evidence to establish that assimilative capacity exists, then, particularly for bioaccumulative pollutants, dilution credit must be denied to ensure compliance with water quality objectives.

12. Mixing zones are appropriately denied to compensate for uncertainties in the protectiveness of the water quality criteria or uncertainties in the assimilative capacity of the water body.

13. Although the Regional Board properly denied dilution credits for mercury, TCDD equivalents, Dieldrin, and 4,4 – DDE, the Regional Board must amend the permit Findings to refer to the studies documenting bioaccumulation related impairment for these pollutants.

14. Given the lack of a planned TMDL for bis(2-ethylhexyl)phthalate, the Policy requires that the permit be revised on remand to include a final limit that will ensure compliance with the numeric CTR objective.

15. The Regional Board was correct in denying dilution credit for cyanide.

16. The Regional Board properly included daily maximum effluent limitations in the permit to protect against acute water quality effects. However, the Regional Board must include a finding in the permit on remand explaining the impracticability of weekly average limits.

17. The Regional Board may employ consultants to establish baseline programs, and to review program proposals and reports for adequacy. However, the Regional Board may not substitute a consultant's judgment for its own.

18. The Regional Board may consider any proposed optional mass offset plan that might be submitted by the District as a means of reducing pollutant loads in the watershed.

19. The Regional Board must either amend Finding 39.c to delete the language mandating participation in a study through the RMP or include a permit provision that sets forth the options discussed in the August 6, 2001 letter from the Regional Board.

20. The Implementation Policy grants broad authority to the regional boards to require dischargers who have been granted a compliance schedule, to establish conditions to support and expedite TMDL development including the power to require a discharger to submit a study to develop improved detection limits.

21. A prohibition against unpermitted discharges to storm drain systems or other waters of the state may only be included in permits if the prohibition is interpreted to mean that it only applies to constituents that are not anticipated in the discharge, and have not been disclosed by the discharger. On remand the Regional Board must include clarifying language in a footnote to Prohibition A.5 that reflects this interpretation.

22. In Permit Provision F.15, the Regional Board correctly ordered the District to perform monitoring that could be performed voluntarily by the RMP.

23. The Regional Board properly performed the reasonable potential analysis for DDE, Dieldrin, TCDD equivalents, and bis(2-ethylhexyl)phthalate.

24. The Regional Board must amend the Monitoring Program in accordance with its letter that agreed to accept azobenzene as a surrogate for DPH.

25. Permit Provision F.15 need not be modified to specifically refer to Yerba Buena Island and Richardson Bay as monitoring stations.

26. The conclusion in this Order that a final WQBEL is required for Bis-2 will not apply if the Regional Board determines, based on a review of new evidence on remand, that the EBMUD discharge does not have a reasonable potential to cause or contribute to a violation of the Bis-2 objective.

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**IV. ORDER**

IT IS HEREBY ORDERED THAT Order No. 01-072 is remanded to the Regional Board for review and revision consistent with the discussion and findings of this Order.

IT IS FURTHER ORDERED THAT the petitions of the District and Bay Area Clean Water Agencies are otherwise denied.

**CERTIFICATION**

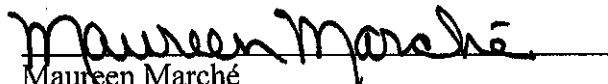
The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on July 18, 2002.

AYE: Arthur G. Baggett, Jr.  
Peter S. Silva  
Richard Katz  
Gary M. Carlton

NO: None

ABSENT: None

ABSTAIN: None

  
Maureen Marché  
Clerk to the Board