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### STATE WATER RESOURCES CONTROL BOARD

Bayview-Hunters Point	)	
Community Advocates,	)	
Communities for a	)	
Better Environment,	)	
	)	
Petitioners,	)	Petition for Review of
	)	Action by a Regional Board
	)	
Regional Water Quality Control	)	
Board-San Francisco Bay Region,	)	
	)	
Respondent	)	Water Code § 13160; 13320
	)	23 CCR 2050
	)	
	)	

### INTRODUCTION

Communities for a Better Environment (CBE) and Bayview-Hunters Point Community Advocates (Advocates) (collectively "petitioners") submit this petition for review of a regional board permit action that, we contend, improperly allows thermal and toxic discharge from the Potrero power plant and improperly exempts the plant from Basin Plan discharge requirements.

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We appreciate that the San Francisco Bay Regional Board held a hearing on this long-delayed permit, correctly found significant impacts from cooling water intake, and clearly stated its intention to prohibit continued use of once-through cooling by the plant unless proven benign. However, the Regional Board did not adequately review cooling water discharge issues, as detailed herein.

### PETITION ALLEGATIONS

Petitioners, in accordance with 23 CCR 2050, allege the following:

#### I. NAME AND ADDRESS OF PETITIONER

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#### II. SPECIFIC ACTION OR INACTION OF THE REGIONAL BOARD

Petitioners request review of the action of the Regional Water Quality Control Board, San Francisco Bay Region ("Regional Board") granting Mirant Corporation's application to renew NPDES Permit No. CA 0005687, for Potrero Power Plant Unit 3 in Southeast San Francisco, on May 10, 2006 to the extent discussed in this Petition. Regional Board Order R2-2006-0032 granting this permit renewal (the "permit") is appended hereto as Exhibit A.

III. THE DATE THE REGIONAL BOARD ACTED OR REFUSED TO ACT

The Regional Board acted, by adopting Order R2-2006-0032, thereby granting the permit, on May 10, 2006.

IV. A FULL AND COMPLETE STATEMENT OF THE REASONS THE ACTION OR FAILURE TO ACT WAS INAPPROPRIATE OR IMPROPER

**A. The Regional Board improperly failed to implement the State Board's Thermal Plan.**

When cooling water discharges are warmer than the natural temperature of receiving water, discharge permits must impose "limitations necessary to assure protection of beneficial uses." See Water Quality Control Plan for Control of Temperature in the Coastal Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan), Specific Water Quality Objectives, 4A. Permits must also impose "additional limitations . . . if necessary for the protection of specific beneficial uses and areas of special biological significance." (Thermal Plan, General Water Quality Provision 1.) Such additional limitations can include limitations on the location of discharge. (Thermal Plan, Definition 13.)

Substantial new evidence indicates that additional limitations are necessary for the protection of beneficial uses from Potrero thermal discharge E-001. Ignoring the new, reliable evidence, the Regional Board in findings 16 and 17 of its order relied on outdated studies it admits are no longer reliable and incorrectly found that Potrero's discharge was in compliance with the Thermal Plan. On the basis of this incorrect finding, the Board then failed to impose additional limitations necessary to protect beneficial uses as required by the Thermal Plan. Finally, having either ignored or deemed insufficient the new evidence regarding impacts to the beneficial uses, and having deemed older data

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insufficient, the Board failed to require studies that would address and resolve the discharge's impacts to beneficial uses. All of these Regional Board actions are inappropriate and should be reversed.

### 1. The Regional Board's Findings of Thermal Plan Compliance are Inappropriate as the Findings Fail to Properly Assess and Address New Evidence Demonstrating Adverse Thermal Impacts from the Potrero Discharge.

Studies and analyses by Mirant itself, as well as several government agencies have documented the plant's thermal impacts. Mirant sponsored surveys of benthic and intertidal communities impacted by Potrero Unit 3 discharge E-001 during 2000 and 2001. (See Tenera, 2001. Three-Month Report on the Benthic, Rocky Shoreline, and Trawl Surveys; Attachment 5 to CBE's 1/10/05 comments.) Mirant's consultant then concluded that Potrero Unit 3's thermal discharge E-001 impacts on the Bay:

"Elevated temperatures of the power plant's existing shoreline discharge ... are generally associated with noticeable changes in the species composition and abundance of intertidal and subtidal macrophytes in the immediate region of the discharge. ... Less noticeable changes in intertidal invertebrate species occurring in the same area are consistent with species compositions found in areas influenced by thermal discharge plumes. ... Following relocation [of] the existing shoreline discharge to the offshore location, the growth and abundance of several macrophyte plants seen in our 2000-2001 intertidal surveys ... are expected to increase above their present levels in the discharge area. ... The invertebrate species presently found on intertidal rocks in the area of the existing shoreline discharge will change in a secondary way to the relocation [of] the discharge. As the discharge area's macrophytes respond to the removal of existing thermal plume effects by reoccupying open space, the new plant growth will shade the present microalgae invertebrate food supply covering the area's rock surfaces. In a relatively short period of time, the intertidal community's algal and invertebrate populations should appear more like those found in similar neighboring habitats."<sup>1</sup>

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<sup>1</sup> The passage quoted refers to discharge relocation because Mirant proposed, and the Regional Board proposed to require, discharge relocation at that time. (See Tenera, 2001. Construction and Thermal Impacts and First Quarter Larval Fish Assessment, in Attachment 16 to CBE's 1/10/05 comments, at 5-8 and 5-9.)

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The California Energy Commission (CEC) staff and the National Marine Fisheries Service (NMFS) also found that Potrero's existing thermal discharge causes adverse impacts on the Bay. The CEC staff concluded that the Unit 3 thermal discharge is associated with changes in plant communities near the discharge. (See Aquatic Biology Appendix in Attachment 17 to CBE's 1/10/05 comments at 44.) NMFS concluded that the plant "is impacting the ecosystem of the San Francisco Bay due to the ... discharge of heated effluent." (See Attachment 7 to CBE's 1/10/05 comments at 16.) This evidence indicates that thermal discharge E-001 adversely impacts beneficial uses of water for estuarine habitat in San Francisco Bay.

Further, the CEC staff found that the existing Unit 3 thermal discharge may have an adverse effect on the development of Pacific Herring eggs deposited in the area contacted by the discharge plume. (See Aquatic Biology Appendix in Attachment 17 to CBE's 1/10/05 comments at 44.) NMFS also found that the thermal discharge poses a threat to the survival of Pacific Herring hatched from eggs deposited near the discharge. (See Attachment 7 to CBE's 1/10/05 comments at 10.) These findings were based in part on direct sampling of herring eggs at the Potrero site. (See CBE's 1/10/05 comments at 39, 40.) Pacific Herring support a commercial fishery in San Francisco Bay, and San Francisco's eastern shore, including the area impacted by the discharge, is among the most important areas in the Bay for deposition, incubation and hatching of Pacific Herring eggs. (Id.) This evidence indicates that fish spawning and commercial fishing are threatened or impaired by the plant's thermal discharge.

Thus, the latest and best data demonstrate that beneficial uses of water for estuarine habitat are impaired by temperature impacts of Potrero discharge E-001 and

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uses of water for fish spawning and commercial fishing are threatened or impaired by this thermal discharge. Yet the Regional Board ignored all the evidence of thermal discharge impacts after 1991, including evidence of impacts from the Discharger and other agencies, and erroneously found that available evidence shows no impact. (See Permit Finding 17.) It found that PG&E studies submitted in 1973 and 1991 “showed that the discharge did not adversely affect the receiving waters and the beneficial uses were adequately protected in the vicinity of the Potrero Power Plant.” (Id.) This finding fails to mention any of the post-1991 evidence discussed above. (Id.) It fails to mention or consider:

- Mirant’s benthic and intertidal surveys conducted in 2000 and 2001;
- Mirant’s findings of adverse Unit 3 thermal impacts based on these studies;
- The CEC staff’s 2002 finding of adverse thermal impacts from Unit 3;
- The NMFS 2003 finding of adverse thermal impacts from Unit 3; and
- The CEC and NMFS findings that the thermal discharge threatens herring.

Further, none of this evidence is mentioned or considered in any other permit finding. Finally, when petitioners pointed out that the draft permit findings relied on outdated thermal studies, the Regional Board responses to comments confirmed that it was ignoring this post-1991 evidence. In responses to comments, Board staff incorrectly wrote: “The existing study found no impact on beneficial uses caused by the elevated temperature wastes from this facility. There is no other evidence to refute this.” (Response to Comments at 21 and 22.) The Regional Board failed to explain why it rejected evidence from Mirant, the CEC and NMFS that was more recent than the pre-1991 information. This response either demonstrates that the Board ignored the evidence or was unwilling to respond to comments as required by law.

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PG&E's 15- and 33-year-old data do not by themselves provide an adequate basis for determining thermal impacts of the discharge today. Indeed, the Regional Board found that additional, more recent data are needed to assess these thermal impacts. (See Finding 17.) There is no reliable or substantial basis for the Regional Board's finding, since additional, more recent data already exist, and the Board simply failed to consider them. These data constitute sufficient evidence to find a violation of the Thermal Plan. The findings should be revised to refer to the newer available evidence and the conclusion that the discharge does impact beneficial uses.

### 2. A Finding that a Discharge Has Thermal Impacts Adversely Affecting Beneficial Uses Requires That Additional Limitations Be Imposed Beyond the Default Limitations in the Thermal Plan.

Under the Thermal Plan, additional limitations on this discharge must be imposed as necessary for the protection of specific beneficial uses. (Thermal Plan, General Water Quality Provision 1.) The Regional Board improperly failed to establish such additional limitations, requiring only studies.

Petitioners asserted to the Regional Board that the appropriate limitation is a removal of the discharge from the Bay. As discussed in petitioners' comments to the Board, removal of the discharge from the Bay is necessary to abate the impact and removal to deeper water would only create additional problems.<sup>2</sup>

The Regional Board never analyzed what limitation was appropriate. At a minimum, it should have proceeded consistently with its findings regarding the intake, holding that the thermal impacts from once-through cooling are significant, and requiring removal unless the discharger could demonstrate that the discharge was benign.

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However, as discussed above, the Regional Board made no such finding and did not address what method might be appropriate to address these impacts. This action was inappropriate and the Board should be directed to determine what additional limitations are needed.

### 3. Even if the Regional Board Was Correct in Requiring New Studies on Thermal Impacts in lieu of New Limitations, Its Should Have Required Studies to Address the Issues Raised by the new Data and Expert Evaluations.

As discussed above, the Regional Board should have found unacceptable thermal impacts from the Potrero discharge and proceeded to determine how best to implement the appropriate limitation. In lieu of this procedure, the Board, apparently recognizing the weakness in its factual justification, ordered new thermal studies.

Even if the new data offered by Petitioners were insufficient for a finding that the Thermal Plan was violated, it did identify specific areas of concern that may demonstrate unacceptable impacts. However, the studies proposed by Mirant and now affirmed by this permit do not address these areas. Both the study requirement and Mirant's study plan, specifically referenced in paragraph D 5 of the Order, fail to specify benthic or intertidal community sampling or analysis. (See Provision 5 and draft workplan submitted 1/13/06.) Thus the contemplated study would fail to assess a specific beneficial use – estuarine habitat—using the very types of data and analysis that led Mirant and other agencies to conclude that the thermal discharge causes impacts.

Mirant's study plan further admits that direct sampling of herring egg impacts at Potrero might not be possible in this study. (See draft workplan submitted 1/13/06 at 19.) Thus, the new study may not add any new Potrero site data to the evidence of impacts on

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<sup>2</sup> See petitioners' 3/20/06 comments at 6 and proposed permit cited therein and submitted 12/6/05

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herring already found by other agencies and discussed above. These incomplete provisions for study further show that the Regional Board ignored or inappropriately rejected relevant recent evidence of Potrero thermal impacts, and fail to resolve these environmental issues.

The Regional Board cannot both reject new evidence of environmental impacts as insufficient to resolve those issues, claim that existing evidence it is insufficient to resolve environmental issues, and then fail to study the very issues raised by the new evidence. To the extent the State Board concludes that additional studies are appropriate it should require that the specific issues raised by the CEC, NMFS and prior Mirant consultant data and studies should be studied in a manner to provide evidence that can resolve whether the discharge meets the Thermal Plan requirements.

### **B. The Regional Board improperly granted discharge credit for PCBs.**

The Regional Board improperly granted a PCB intake credit based on improper findings that ignored impacts of the facility and its discharge location and failed to demonstrate compliance with the State Implementation Plan (SIP). The improper intake credit allowing PCBs to discharge from Potrero Power Plant outfall E-001 in the same amounts found in intake I-001 appears in Effluent Limitation B.5.b of the permit.

#### 1. The PCBs intake credit does not comply with the SIP.

The State Implementation Plan (SIP) requires that, before a regional board may consider intake credits, the discharger must demonstrate that each of five conditions are met, including the following conditions:

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at findings 16, 20 and 36-46 and Order parts A, D.2 and D.3.

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“(4) The facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses; and

(5) The timing and location of the discharge does not cause adverse effects on water quality and beneficial uses that would not occur if the intake water pollutant had been left in the receiving water body.”

SIP §1.4.4, conditions 4 and 5 (“SIP Conditions 4 and 5”).

The Regional Board acknowledged that the discharge of polychlorinated biphenyls (PCBs) from outfall E-001 may adversely impact water quality and beneficial uses. PCBs violate water quality standards and impair beneficial uses of receiving waters. (Finding 35.) Discharge E-001 may cause or contribute to these violations. (Finding 52.) The concentrations of PCBs measured in discharge E-001 exceed water quality criteria. (Id.) The high volume of discharge (Finding 5) at these concentrations suggests significant PCBs mass loading to Bay waters. However, the Regional Board did not properly consider the causes of these impacts.

Evidence indicates that the facility contributes to these adverse impacts because the location and timing of its discharge at the shoreline near the intake physically mobilizes PCBs from buried sediment pollution into the water, intake, discharge and food web. For economy, this effect is referred to herein as “sediment pollution discharge.”

Petitioners presented six types of evidence for Potrero sediment pollution discharge:

- Pollutant discharge concentrations higher than those in ambient waters indicate a localized discharge source.
- Sediment that is directly contacted by the discharge is contaminated with PCBs and other pollutants found in the discharge.
- The discharge current digs a hole in the contaminated sediment, such that sediment pollutants must, of necessity, enter the water column as a result of discharge action.
- A portion of the resulting plume, including pollutants scoured from the sediment by discharge action, reaches the intake and thus enters the discharge.

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- Consistent with stronger discharge scouring of sediment and plume entrainment in the intake during lower tides, discharge concentrations increase at lower tides.<sup>3</sup>
- Sediment pollution gradients for PCBs and other pollutants that extend from outfall E-001 into the Bay show that this pollution is not in equilibrium.

This evidence<sup>4</sup> shows that discharge mobilization of sediment pollution is a source of PCBs in the intake. The facility alters the PCBs physically by scouring PCBs from buried sediment contamination and causing them to enter the intake and discharge in a manner that may adversely affect water quality and beneficial uses. Thus, the plant cannot meet SIP Condition 4 for intake credits, which prohibits intake credits where a facility physically alters the intake pollutant in a way that may adversely affect water quality and beneficial uses.

Further, the location of the discharge near the intake and at the shoreline in shallow water with PCB-contaminated sediment, and its consistent timing concurrent with the intake of cooling water, moves PCBs from sediment into the intake and discharge and may adversely affect water quality and beneficial uses. These adverse effects would not occur if the PCBs had been left buried in the sediment instead of being discharged into the water column and entering Bay food webs. Thus, it cannot be demonstrated that SIP Condition 5 for intake credits, which prohibits intake credits where the timing and location of the discharge may cause adverse effects, is met. Therefore, the intake credit for discharge of PCBs that was granted by the Regional Board fails to comply with the SIP.

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<sup>3</sup> Discharge increase at lower tides was observed for samples that were not strongly affected by other in-plant sources and adequately quantified pollutants that exceeded ambient sediment criteria in Potrero sediment. (See note 7 in 5/10/06 CBE slide presentation for data treatment.)

<sup>4</sup> This evidence was presented at the May 10, 2006 hearing (see testimony and slide presentation of CBE's Senior Scientist Greg Karras), based on evidence in the record including evidence submitted by CBE on 1/10/05 and by CBE and Advocates on 1/28/05 and 3/20/06.

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### 2. The Discharger failed to demonstrate that a PCBs intake credit is appropriate as required by the SIP.

To qualify for an intake credit, a discharger must demonstrate that the conditions for an intake credit are met. (SIP, § 1.4.4.) Mirant has made no such showing. In fact, Mirant failed to identify its sediment pollution discharge as a source of PCBs in its intake that is caused by the facility, or even to provide available evidence concerning its sediment pollution discharge. Mirant also failed to respond on the record after petitioners provided evidence of sediment pollution discharge caused by the facility. Petitioners first submitted this evidence to the Regional Board in January 2005. By failing to provide evidence of the sediment pollution discharge and failing to rebut evidence presented by other parties, Mirant failed to demonstrate that SIP conditions for intake credits were met.

Mirant's only evidence for meeting SIP conditions 4 and 5 was that PCBs were found in its once-through cooling system intake as well as in its discharge. Mirant asserted that it is not responsible for its discharge of PCBs that are drawn into its intake. (See Mirant's 3/20/06 comments at 2-9.) However, merely showing the presence of PCBs in intake water is not sufficient to justify intake credits. As discussed above, Mirant must show it has not physically altered the PCBs in water entering the intake, and also that the location and timing of its discharge, are not potential causes of PCBs harms. Further, Mirant's evidence of PCBs in the intake is consistent with the evidence that Potrero sediment pollution discharge is polluting the intake. Therefore, Mirant's intake data do not demonstrate that SIP conditions 4 or 5 are met.

Mirant admitted significant limitations in its PCBs monitoring data. It admitted that only two influent and two effluent samples were analyzed by adequate methods to detect PCBs in the intake and discharge. (Mirant's 3/20/06 comments at 6.) It admitted

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that its PCBs analysis might not be accurate enough for quantitative comparisons between these samples. (Mirant's 3/20/06 comments at 7.) It admitted potentially unrepresentative intake sampling. (Mirant's 3/20/06 comments at 7, 8, 15.) Mirant provided fewer data for PCBs in paired influent/effluent samples than for copper or mercury (Attachment 4 to Mirant's 3/20/06 comments), yet for copper and mercury, the Regional Board found it necessary to require an intake study before considering intake credits. (Permit Finding 58 and Provision 7.) In sum, Mirant did not provide any evidence demonstrating that SIP Condition 4 or SIP Condition 5 for intake credits has been met.

### 3. The Regional Board improperly found that SIP Condition 4 is met.

The Regional Board acknowledged that Potrero's PCBs discharge may adversely impact water quality and beneficial uses, as noted above. However, it found that SIP Condition 4 is met "because there is no evidence to suggest that the once through cooling process would alter the PCB compounds." (See Finding 58.) This finding ignores the evidence that the facility alters PCBs physically by moving PCBs from buried sediment contamination into the intake, discharge, water column and Bay food webs. The Regional Board did not cite any data refuting this evidence. The Regional Board's questions about how much weight to give this evidence do not demonstrate that the facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses. Thus, SIP Condition 4 has not been demonstrated. Therefore, the Regional Board's finding that SIP conditions for intake credit are met is erroneous and improper.

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### 4. The Regional Board improperly found that SIP Condition 5 is met.

The Regional Board acknowledged as noted above that this PCBs discharge may adversely impact water quality and beneficial uses. However, it found that SIP Condition 5 was met “because the intake and discharge location is very similar.” (Id.) That finding ignores the evidence that shoreline discharge on polluted sediment near the intake causes PCBs to enter the intake; simultaneous discharge and intake is also a cause of this, and these adverse discharge impacts would not occur if PCBs remained buried in the sediment isolated from Bay food webs.<sup>5</sup> The Regional Board cited no data refuting this evidence. No facts in the record even suggest a break in the causal chain between the timing and location of the discharge and these adverse effects. Instead, evidence in the record shows that these effects would not occur if the PCBs had been left buried in sediment. The Regional Board’s questions about the weight to give this evidence do not demonstrate that these effects are not occurring. Thus, SIP Condition 5 has not been demonstrated. Therefore, the Regional Board’s finding that SIP conditions for intake credit are met is erroneous and improper.

### 5. Granting the PCBs intake credit before conducting investigations ordered for other pollutants in the discharge was inconsistent, arbitrary and contrary to the SIP.

The Regional Board did not dispute the evidence that the discharge has scoured a hole in contaminated sediment, that the intake entrains the discharge plume, or that pollutants from the sediment enter the intake.<sup>6</sup> It accepted the evidence that pollutant

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<sup>5</sup> The Regional Board admitted its intake credit analysis ignored pollutants from sediment. See Response to Comments at 14.

<sup>6</sup> Petitioners’ evidence for these impacts is in the Regional Board record as noted above.

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concentrations in the intake and discharge increase at lower tides.<sup>7</sup> Instead, the Regional Board questioned whether after 40 years of cooling system operation, it might “be assumed that it is in equilibrium” and questioned whether sediment pollutants enter the intake because of tidal action instead of discharge action.<sup>8</sup>

However, the Regional Board did not cite any data to support the contention that the intake and discharge of PCBs is caused solely or primarily by tidal action. It cited no data to support the assertion that tidal currents suspend the polluted sediment but the massive discharge current that dug a hole in the sediment does not. Further, it did not respond to petitioners’ point that a PCBs sediment pollution gradient, extending from the discharge point into the Bay, shows that this pollution is not in equilibrium. The Regional Board’s speculation regarding alternative explanations does not demonstrate that the facility is not polluting its intake.

In any case, the Regional Board’s questions could be answered by a proper investigation to confirm and measure, or rule out, sediment pollution discharge caused by the facility. For example, composite samples could be taken at the intake during times of high-, low- and no-discharge flow and compared; and marker compounds could be measured in the sediment, Bay water and the flow at the intake and discharge. Indeed, a consultant to the Regional Board proposed a sediment re-suspension study for this

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<sup>7</sup> See Response to Comments at 14. Unfortunately, this Regional Board response misconstrues petitioners’ contention that the increased discharge at lower tides is consistent with our other evidence showing sediment pollution discharge. Further, weather data summarized in a table petitioners submitted at the hearing indicate no rain, or strong winds from a direction that could generate wind wave turbulence at the Potrero shoreline, when samples showing this increase were taken. The real dispute involves separating effects of discharge action from those of tidal action.

<sup>8</sup> See Response to Comments at 14; and Transcript at 122 (“plausible that tidal action is simply making those chemicals move around ... not a result of the discharge from the power plant”) and 204 (evidence for this effect not “very persuasive”).

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cooling system.<sup>9</sup> Petitioners did as well.<sup>10</sup> Yet, despite its apparent agreement (“in fact we need to study and understand that better”; see Transcript at 122), the Board’s permit required no such study. Moreover, it required a study to address Mirant’s admission of potentially unrepresentative intake sampling before considering intake credits—for pollutants in the discharge *other than PCBs*. (See Finding 58 and Provision 7.)

The Regional Board’s failure to require an investigation that could answer its questions about sediment contamination-related causes of PCBs discharge that, it finds, may adversely impact water quality and beneficial uses is inappropriate. Further, without any data to refute evidence in the record that this facility pollutes its intake with PCBs, and despite raising questions it could answer by getting a study for PCBs like one it ordered, in part, for other pollutants, the Regional Board granted intake credit for PCBs discharge. Granting PCBs intake credit without this investigation is inconsistent, arbitrary and contrary to SIP requirements to demonstrate conditions 4 and 5 are met *before* considering intake credits.

### 6. The PCBs intake credit constitutes prohibited backsliding.

Federal Clean Water Act §402(o) prohibits backsliding in the renewal of NPDES permits. Because of the intake credit, the new permit limit allows sediment pollution discharge of PCBs that the previous permit limit prohibited. Granting intake credit when Mirant’s intake sampling is known to be potentially unrepresentative further threatens to

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<sup>9</sup> See email message including proposed text of requirement for intake water and sediment re-suspension study to assess the appropriateness of intake water credit, from Tim Havey to Alexa LaPlante on 7/21/04, in Exhibit E of Attachment 2 to petitioners’ 3/20/06 comments.

<sup>10</sup> See Provision 4 in proposed “Community Permit” submitted by letter dated 12/6/05. Petitioners’ study was proposed before the Regional Board raised its new questions about sediment pollution discharge and before Mirant admitted potentially unrepresentative intake sampling, however; this study can and should be revised to address these new questions.

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allow discharge of PCBs from the facility's known soil contamination due to unreliable intake/effluent comparisons.

This problem is further exacerbated by the fact that, as Mirant admits, its compliance monitoring analysis methods are not sensitive enough to compare intake and effluent results reliably,<sup>11</sup> even if intake samples are representative. Indeed the Regional Board in its prior 13267 letter dated 12/21/05 incorporated into the permit, and a separate letter requesting additional monitoring of the intake and discharge, required the use of the more sensitive EPA Method 1668 for both intake and outfall monitoring and the PCB study. See letter dated 2/1/06 from Mirant to Regional Board, included by the Regional Board in the record for this permit. Yet in the permit itself, the less sensitive EPA Method 608 is required for PCB monitoring, rejecting a long-standing request by petitioners for the more sensitive study.

Then, explicitly because of Mirant's monitoring problems that the SIP requires the Regional Board to resolve before granting intake credit, the Regional Board adopted an inappropriate "compliance evaluation" method, which allows Mirant to seek an informal exemption for PCBs discharges for some vague statistical variation of the sampling.<sup>12</sup> This provision is a thinly veiled attempt to allow the discharger, whenever an approved EPA Method detects a violation, to argue against the method. This provision is

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<sup>11</sup> In fact, these methods may never measure anything. See Response to Comments at 10, 11, 16 (compliance method 10,000 times less sensitive than low-level method; using accepted compliance monitoring method "there is no discharge of PCBs"). The prior permit's prohibition allowed alternative methods that could determine compliance, had they been used properly.

<sup>12</sup> "Compliance shall be evaluated by comparing the sample result from the outfall to the result of the sample taken from the intake on the same day. If the outfall monitoring sample's analytical results indicate that the pollutant concentration is greater than the sample's analytical results at the intake, then the discharge is not in compliance, unless the discharger demonstrates to the satisfaction of the Executive Officer that the difference is within the expected statistical

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contrary to EPA requirements for enforceable quantitative limits and for self-monitoring reports that allow conclusive presumptions of violations of discharge limits when numerical limits are exceeded unless there is a typographical error. As stated by the Ninth Circuit Court of Appeals:

Were we to accept [the discharger's] argument regarding the use of sampling errors to excuse reported permit exceedances, we would be sanctioning countless additional hours of NPDES litigation and creating new, complicated factual questions for district courts to resolve. As indicated by the legislative history, Congress hoped to limit such situations. In addition, [\*\*35] if each self-monitoring report is to be considered only prima facie rather than conclusive evidence of an exceedance of a permit limitation, citizen groups like the Sierra Club would be taking a considerable risk whenever they initiated a citizen enforcement action pursuant to 33 U.S.C. § 1365. While a permittee's publicly filed reports might clearly indicate that illegal pollution was taking place, the permittee might have additional information unavailable to citizen groups indicating that sampling error rendered the reports meaningless. Finally and most importantly, allowing permittees to excuse their reported exceedances by showing sampling error would create the perverse result of rewarding permittees for sloppy laboratory practices. Such an approach would surely undermine the efficacy of the self-monitoring program.

We conclude that <sup>HN7</sup> when a permittee's reports indicate that the permittee has exceeded permit limitations, the permittee may not impeach its own reports by showing sampling error. Sierra Club v. Union Oil Co. of California, 813 F.2d 1480, 1491-92 (9th Cir. 1987), rev'd on other grounds, 485 U.S. 931, 99 L. Ed. 2d 264, 108 S. Ct. 1102, amended by 853 F.2d 667 (9th Cir.), remanded to, 716 F. Supp. 429 (N.D. Cal. 1988).

This statistical variability exemption is completely inappropriate in this case when considering that the intake credit allows Potrero's sediment pollution discharge to pollute the intake without measurement of this source, and thus mask in-plant sources, in bogus intake-outfall comparisons.

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variability of sampling and there is no substantial evidence the discharger's operations have added the pollutant to the effluent." (See Effluent Limitation B.5.b.3.)

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Thus, the new limit exempts the facility's sediment pollution discharge, then defines compliance for discharge from other sources to make violations undetectable due to bad measurement methods and the masking effect of the exempted discharge, then allows exceptions when these problems cause variable monitoring results. In light of these gaping loopholes, the permit effectively repeals the PCB prohibition, in violation of the prohibition on backsliding.

Boards may only grant exceptions to the backsliding prohibition in certain, limited circumstance. Here, there is no proposed alteration of the facility as provided in §402(o)(2)(A). There is no new information that was not available in 1994 when the prior permit was issued, other than the fact that the facility soil and near-shore sediment have been found to be polluted with PCBs that discharge due to sediment scouring and may discharge from site soil as well,<sup>13</sup> which weighs against backsliding as provided in §402(o)(2)(B). Nor have events beyond Mirant's control occurred since the 1994 permit was issued, as provided in §402(o)(2)(C). Indeed, the Regional Board has identified a PCBs investigation that Mirant could have conducted long ago to identify sources of PCBs, (Order paragraph D(8)) and Mirant can easily prevent its soil and sediment contamination inputs into its cooling system by cleaning up its PCBs contamination and/or removing its discharge from the shoreline.

Finally §402(o)(3) prohibits any backsliding, notwithstanding any applicable exception, if a change in permit requirement will contribute to a violation of a standard. The Regional Board is uncertain what the effect of the Potrero discharge is upon the San Francisco Bay, thus requiring Mirant to conduct both site sampling and discharge

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<sup>13</sup> See Advocates' comments of 12/28/04; and sediment discharge evidence discussed above.

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sampling as it attempts to develop a waste load allocation for PCBs. (See Order, para. 35.) Yet the central San Francisco Bay, as well as San Pablo Bay, has been deemed by the State of California and the US Environmental Protection Agency to be impaired as a result of PCB contamination. See In the Matter of the Petitions of Chevron U.S.A. Inc., et. al, Order No. 2002-0011, July 18, 2002, **2002 WL 1835419** (Cal.St.Wat.Res.Bd.). The Order in this case also recognizes that lower San Francisco Bay is designated impaired due to PCBs under Section 303(d).

In sum, allowing PCBs to be resuspended from sediment by the cooling system and discharged into a water column already impaired along with non-cooling water discharge from a site known to be contaminated with PCBs is inconsistent with the Clean Water Act's prohibition on backsliding, Section 402(o)(3), because the previous permit contained a prohibition on PCBs discharges. No exception can be justified in this case.

### 7. Conclusions regarding PCBs intake credit.

Potrero Power Plant discharge of PCBs in E-001 threatens the water quality and beneficial uses of San Francisco Bay. The discharge location and timing physically alters the PCBs by moving them from buried sediment into the Bay's food webs via the cooling intake and discharge, contributing to these adverse impacts. These problems fall squarely within the meaning of State Implementation Plan conditions 4 and 5 for intake credit. Mirant failed to demonstrate that these SIP conditions are met. Neither the Regional Board's failure to consider evidence that the discharge location scours PCBs from polluted sediment into the intake, nor its speculation that this *might* not be occurring, demonstrates that these conditions are met. Further, the permit weakens the PCBs discharge limit and backslides from the previous permit in violation of the Clean Water

## Petition of CBE and Advocates for Review

Act. The Regional Board's finding that Mirant demonstrated compliance with SIP conditions for intake credits and its action granting intake credit for PCBs are erroneous, unsupported by substantial evidence, contrary to the SIP, arbitrary and improper.

**C. The Regional Board erroneously granted an arbitrary, premature and impermissible exception to Basin Plan discharge requirements in a permit finding.**

Basin Plan Discharge Prohibition 1 prohibits discharges that have "characteristics of concern to beneficial uses" at any location where the effluent does not receive a minimum of 10:1 initial dilution. (San Francisco Bay Basin Plan, p. 4-5.) The Regional Board may grant an exception where the prohibition will impose "An inordinate burden . . . relative to beneficial uses protected, and an equivalent level of protection can be achieved by alternate means, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability." (See Water Quality Control Plan, San Francisco Bay Basin at page 4-5.) The text of the "inordinate burden" exception cited by the finding was truncated in a way that obscured its full meaning.

The permit makes a baseless finding<sup>14</sup> that the facility's discharge qualifies for an exception to the Basin Plan's dilution requirement based on a claim of "inordinate burden." The finding truncated the Basin Plan's text to twist its meaning, reducing the requirement to whether there is an "inordinate burden" and whether the treatment system is reliable. Staff included this finding in response to Mirant's eleventh-hour request.<sup>15</sup>

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<sup>14</sup> The finding, Finding 67, is couched conditionally, so arguably it is non-binding dicta. However, petitioners are concerned that the Regional Board will follow this practice in the future as away to avoid application of Discharge Prohibition 1 for Potrero and other dischargers, so we request that it be addressed by the State Board.

<sup>15</sup> The exception finding first appeared in a 5/2/06 revised draft permit circulated long after the close of the written comment period, and parrots language proposed by Mirant in its 3/20/06 comments.

## Petition of CBE and Advocates for Review

The finding both contradicts the Regional Board's clearly stated intent to prohibit once through cooling unless proven benign and fails to meet the Basin Plan's requirements for an exception to the dilution requirement.

If the adoption of this finding was not an oversight, it is arbitrary on its face. It is contrary to substantial evidence of shoreline discharge impacts. It is contrary to evidence for an available overall compliance option accepted by the Regional Board. Even if this evidence is judged inconclusive pending further study it is obviously premature and prejudicial to evaluation of that further study. As explained further below, the finding is inappropriate for all of these reasons.

1. The finding of inordinate burden is contrary to evidence in the record showing that it is feasible to eliminate the discharge.

The only discussion of burden in this eleventh-hour finding is the alleged burden of building a deepwater diffuser. (See Finding 67.) The Regional Board cited no cost data for this diffuser. (Id.) Moreover, even if it had such cost data, this would not be relevant evidence. As the record shows, a deepwater diffuser is not an available technology for compliance with Basin Plan Discharge Prohibition 1 by the Potrero facility because the McAteer-Petris Act prohibits placing fill in the Bay to build a discharge structure where an upland alternative is available. Here, Mirant could install upland cooling to replace its once-through cooling system; therefore McAteer-Petris would prohibit installation of a deep-water diffuser.<sup>16</sup> Even if a deep-water diffuser were

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<sup>16</sup> See the Bay Conservation and Development Commission (BCDC) decision regarding the Potrero facility; Attachment 23 to CBE's 1/10/05 comments. This decision holds that the McAteer-Petris Act would prohibit the Potrero plant from placing fill in the Bay to build an alternative Bay discharge structure where an upland alternative is available. BCDC correctly concluded that upland cooling could replace once-through cooling at the Potrero plant.

## Petition of CBE and Advocates for Review

an option, the Regional Board cited no evidence that installing a diffuser would pose an inordinate burden, and there is no evidence in the record to support such a finding.

Instead, the evidence in the record overwhelmingly indicates that compliance with Discharge Prohibition 1 is feasible through a measure that can also comply with requirements to minimize entrainment impacts—upland cooling. All recent government reviews of cooling alternatives at Potrero have found that alternatives to once-through cooling are available. (See petitioners' 3/20/06 comments at 9-13.) The only cost data in the record for this solution suggests that its cost may be justified by the impacts from Potrero plant entrainment alone. Indeed, when asked about upland cooling at the hearing, Mirant indicated only that the economics of this solution at Potrero is a question. (See Transcript at 165.) Moreover, when the Regional Board focused on this solution at the hearing—in the context of entrainment impacts—it stated its intention to prohibit once-through cooling unless proven benign. (Finding 22.) The finding of inordinate burden is contrary to all evidence in the record, arbitrary, and inappropriate.

Further, costs that Mirant would incur to comply with other laws cannot be weighed as an undue burden, they are simply the cost of doing business. Mirant has estimated the capital cost of wet/dry cooling at Potrero that could replace a Bay cooling water flow equivalent to that used by Unit 3 at approximately \$74 million. See Attachment 25 to CBE's 1/10/05 comments at 2-14. An "informal valuation" by the Regional Board's expert of the cost for replacing habitat lost to entrainment at Potrero resulted in a "best estimate" of \$20-47 million and could range up to \$93 million. (Petitioners' 3/20/06 comments, Attachment 1, App ii at 15.)

## Petition of CBE and Advocates for Review

The Regional Board, after substantive discussion in the hearing, added a finding stating its intention to prohibit once-through cooling discharge at Potrero unless Mirant demonstrates that its discharge has no significant adverse effects on the Bay. (See Paragraph 22.) It added this finding to the section of the permit titled "Clean Water Act section 316(b)—Entrainment and Impingement Impacts" where it also added a finding of significant entrainment impacts. (See Paragraph 21.) It then adopted these findings along with provisions for further study of entrainment, impingement, thermal *and* toxic discharge impacts, *and* of alternative cooling technologies. (See Provisions 2-8.)

Compliance with dilution requirements cannot be an inordinate burden if the discharge is to be eliminated anyway because of these cooling system impacts. Costs incurred to meet 316(b) and the Thermal Plan cannot properly be double-counted by assuming that all costs of replacing once-through cooling apply only to compliance with Basin Plan Prohibition 1. Further, the Regional Board clearly stated that its final assessment is not yet complete pending further study of these issues. The conclusion that an exception applies because of an inordinate burden is based on this house of cards, which collapses readily before 316(b) analysis and before the text of the exception itself. Therefore, the finding of inordinate burden is arbitrary, inappropriate and premature.

2. The finding of equivalent protection is contrary to evidence in the Regional Board record showing pollutant discharge impacts.

To grant an exception to Basin Plan Prohibition 1, the Regional Board must find that the discharger is achieving "an equivalent level of protection . . . by alternate means, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability." (Basin Plan, p. 4-5). There is no basis for concluding that this shoreline discharge is as good for the Bay as if it was not there at all, and indeed, the

## Petition of CBE and Advocates for Review

permit does not support the exception with such a finding. The facility's discharge causes toxic as well as thermal impacts, as discussed above and in petitioners' comments before the Regional Board. The Board specifically identified chronic toxicity concerns, increasing the monitoring frequency on that basis. (See Transcript at 203-220, esp. 204.) Even after it arbitrarily ignored many of these impacts or erroneously attributed them to other causes, the Regional Board found that moving the discharge to an offshore location would provide "little benefit." (See Finding 67.<sup>17</sup>) It thus acknowledged some impact from the shoreline discharge. Further, the Regional Board stated its intent to prohibit once-through cooling discharge based on its total Bay impacts, as noted above. It thus necessarily found that keeping the discharge in shallow water would not provide equivalent protection to removing the discharge.

The permit relies on a factually unsupported conclusion that the facility's "treatment system" is "extremely reliable." The exception requires *protection* that is the same as removing the discharge, by means such as *improving* its treatment system or altering the discharge location. Abundant evidence shows the shallow near-shore waters are *not* protected from the continuous effects of the discharge. This is first purpose of the prohibition, regardless of treatment. (Basin Plan at Table 4-1.) Further, there is no *improvement* in treatment and no Regional Board analysis of the extent of impact if an upset occurs. Since whether or not the existing treatment system is "extremely reliable," the shoreline discharge is worse for the Bay than the absence of the discharge would be, the system's reliability is irrelevant to the analysis. Yet this erroneous Regional Board analysis is the only "equivalent protection" analysis the permit provides. Therefore, the

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<sup>17</sup> Even by this inappropriately limited Regional Board analysis, upland cooling—the only

## Petition of CBE and Advocates for Review

Regional Board's finding of equivalent protection is contrary to the evidence, arbitrary and inappropriate.

Further, even if the State Board finds that the Regional Board appropriately considered the evidence of discharge impacts inconclusive, the finding was premature. No less than nine studies of the discharge ordered by the Regional Board in this same permit<sup>18</sup> prove beyond doubt that the extent of discharge impacts is still in question. The Regional Board did *not* have evidence to evaluate all discharge impacts, let alone any basis for concluding that this shoreline discharge is as good for the Bay as if it was not there at all. Therefore, the finding of "equivalent protection" is premature and without factual basis.

### 3. Conclusions regarding Basin Plan dilution requirement exception.

The arbitrarily adopted permit finding that the discharge qualifies for an exception to Basin Plan Discharge Prohibition 1 based on "inordinate burden" and "equivalent protection" is contrary to the overwhelming burden of evidence in the Regional Board's record, obviously premature, and inappropriate. Unfortunately, the effect of this finding is arbitrary and capricious: it prejudices the Regional Board's stated intent to prohibit the plant's continued use of once-through cooling unless proved benign based on review of all once-through cooling impacts—including discharge impacts.

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available compliance solution identified for continued plant operation—would provide greater benefit than moving the discharge point offshore in the Bay, by eliminating the discharge.

<sup>18</sup> The Regional Board ordered accelerated monitoring of chronic toxicity at the hearing. It ordered "special studies" including: effluent characterization; receiving water monitoring; a mercury source study; a thermal discharge study; an intake water study; and a PCB stormwater sediment study, in addition to the standard self-monitoring program and standard provisions and reporting requirements. (See provisions 2, 3, 4, 5, 7, 8, 16 and 17.) It found that it *could* decide to apply the Basin Plan dilution requirement based on the study results. (See Finding 67.)

## Petition of CBE and Advocates for Review

It appears that when the Board ruled and modified its staff's proposed permit to reflect its concerns with once through cooling, the staff failed to volunteer that the existing language included a contradictory finding. There is no need to address an exception now with the numerous pending studies proceeding pursuant to the Regional Board's considered intent to prohibit once-through cooling unless proved benign within approximately two years' time.

Petitioners respectfully seek the State Board's help in correcting this obvious error. The Regional Board should be ordered to rescind, or in the alternative, reconsider this finding based on evidence from ongoing investigations of this discharge.

### V. THE MANNER IN WHICH THE PETITIONER IS AGGRIEVED

The petitioners are aggrieved by the Regional Board's action because it allows Mirant Corp. to continue operating the Potrero power plant in a manner that adversely affects Bay habitat with near-shore warm-water outflow and discharges pollutants in toxic amounts. It further exacerbates environmental injustice in Southeast San Francisco communities by allowing the continued impairment of beneficial uses of San Francisco Bay waters for subsistence fishing. It also results in skewed studies leading to the 316(b) decision upon the termination of this permit, which may result in an inappropriate decision.

Polychlorinated biphenyls (PCBs), mercury and dioxins that are discharged into the Bay's food webs by the cooling system exacerbate significant threats to the health of subsistence anglers. A health advisory issued by the Office of Environmental Health Hazard Assessment indicates that health risks from eating Bay fish contaminated with PCBs, mercury and dioxins include neurotoxicity and increased risk of cancer. The U.S.

## Petition of CBE and Advocates for Review

Environmental Protection Agency designated the Bay, including receiving waters impacted by this discharge, as impaired because of the health risks to subsistence anglers from these pollutants. As petitioners testified at the permit hearing, a high percentage of Bayview and Hunters Point residents—14% of residents surveyed—reported that they eat fish from San Francisco Bay.

Communities for a Better Environment (“CBE”) is an environmental health and justice non-profit organization, promoting clean air, clean water and the development of toxin-free communities. CBE provides grassroots organizing, environmental research and legal assistance to under-served urban communities. Its members use the Bay and enjoy its aesthetic beauty and recreational opportunities, including fishing and boating.

Bayview-Hunters Point Community Advocates is a non-profit organization concerned with the health effects of nearby industry on the residents of the Bayview-Hunters Point neighborhood. “Advocates” works to improve the quality of life in the neighborhood through advocacy, information, community organizing, education and economic development. Its members use the bay, including the shoreline near the Potrero facility, for recreation and other uses, as well as enjoy its aesthetic beauty.

Both of these public interest organizations and their members are adversely affected by the impacts of the Potrero power plant once-through cooling system. They have submitted written comments on drafts of the permit and participated in meetings with the Regional Board staff and in all public proceedings regarding the review of this permit.

In addition, these organizations anticipate participating in the review of the studies required in this permit leading to a decision on the future of once-through cooling

## Petition of CBE and Advocates for Review

at this site. The Regional Board's failure to require sufficient studies to examine the impacts described in this petition may result in an inadequate scientific record undermining this future decision when this permit terminates in 2008.

### VI. THE SPECIFIC ACTION WHICH PETITIONER REQUESTS

For the reasons set forth herein petitioners respectfully ask that the State Board, after reviewing this matter:

1. Order the Regional Board to impose additional limitations on discharge E-001 to ensure the protection of beneficial uses as required by Thermal Plan General Water Quality Provision 1.
2. Order the Regional Board to require comprehensive studies of thermal and toxic impacts from this site including additional sampling and review of the impacted benthic ecosystem and additional sampling and review of the impact upon herring eggs.
3. Order the Regional Board to consider all relevant evidence of thermal and toxic impacts from discharge E-001 in establishing appropriate requirements for this discharge.
4. Vacate the intake credit improperly granted for PCBs in discharge E-001 and restore the 1994 PCB prohibition without the compliance evaluation provisions in the new permit;
5. Order an investigation to confirm and measure the extent of PCBs discharge in E-001 that is caused by impacts from the facility's once-through cooling system discharge and intake on contaminated sediment near the facility; and
6. Order the Regional Board to rescind, or in the alternative, reconsider its finding that discharge E-001 qualifies for an exception to Basin Plan Discharge Prohibition 1 based on evidence from ongoing investigations of this discharge.

## Petition of CBE and Advocates for Review

### VII. STATEMENT OF POINTS AND AUTHORITIES IN SUPPORT OF LEGAL ISSUES RAISED IN THE PETITION

Points and authorities in support of legal issues raised in the petition are stated in section IV above. Petitioners also refer to their comments to the Regional Board which included points and authorities submitted on March 20, 2006.

### VIII. A STATEMENT THAT THE PETITION HAS BEEN SENT TO THE APPROPRIATE REGIONAL BOARD AND THE DISCHARGER, IF NOT THE PETITIONER.

Copies of this petition have been sent to the Regional Board and the discharger, Mirant. See attached proof of service by mail.

### IX. A STATEMENT THAT THE SUBSTANTIVE ISSUES OR OBJECTIONS RAISED IN THE PEITION WERE RAISED BEFORE THE REGIONAL BOARD, OR AN EXPLANATION OF WHY THE PETITIONER WAS NOT REQUIRED OR WAS UNABLE TO RAISE THESE SUBSTANTIVE ISSUES OR OBJECTIONS, BEFORE THE REGIONAL BOARD.

The substantive issues and objections raised in this petition were raised before the Regional Board in timely written comments and at the Regional Board's hearing for adoption of the permit, on May 10, 2006, to the extent possible within a 3 minute time limit on oral public hearing comments. The exception language, PCBs compliance evaluation method, and responses to comments addressing thermal impacts, were added to the tentative order and made available to petitioners a week before the hearing and no written comments were allowed at that point.

**Petition of CBE and Advocates for Review**

**CONCLUSION**

For the foregoing reasons, petitioners respectfully submit that the Regional Board's action on renewal of the NPDES permit for the Potrero power plant as to the points discussed in this Petition was improper, inappropriate, unlawful, and not supported by substantial evidence. Petitioners respectfully request that the State Board grant this petition and review the Regional Board's action.

Dated June 8, 2006

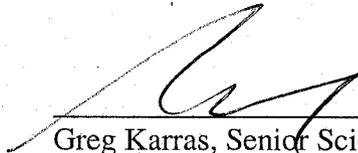
Respectfully Submitted,



Alan Ramo, Attorney for Petitioners



Shana Lazerow, Attorney for Petitioner CBE



Greg Karras, Senior Scientist for Petitioner CBE

Attachments: Proof of service

Exhibit A. Regional Board Order R2-2006-0032.

## PROOF OF SERVICE

I, Angelina Martinez, declare that I am at least 18 years of age and not a party to the above entitled action. My business address is 1440 Broadway, Suite 701, Oakland, CA 94162. On March 2, 2006, I served the **PETITION FOR REVIEW OF ACTION BY A REGIONAL BOARD** to which this proof of service is attached, by Federal Express overnight mail delivery, addressed to the following:

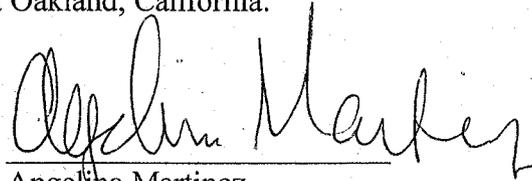
Attn: Ted Cobb, Assistant Chief Counsel  
Tam M. Doduc, Chair  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

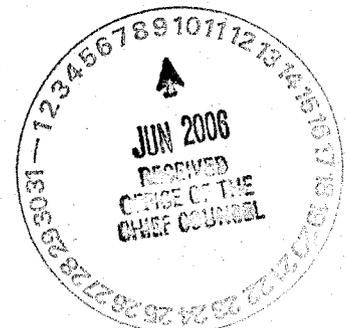
On the same date, I also served copies of the above document to the following persons by U.S. Mail in Oakland Post Office:

Dave Hansell, Plant Manager  
Mirant California, LLC  
1201-A Illinois St.  
San Francisco, CA 94107

Bruce Wolfe, Executive Director  
San Francisco Bay Regional Water Quality Control Board  
1515 Clay St. Suite 1400  
Oakland, CA 94612

I declare under penalty of perjury that the foregoing is true and correct, and that this declaration was executed on June 8, 2006, at Oakland, California.

  
\_\_\_\_\_  
Angelina Martinez



# Exhibit A



Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

May 10, 2006

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**ORDER NUMBER: R2-2006-0032**

**NPDES PERMIT NO. CA0005657**

**WASTE DISCHARGE REQUIREMENTS FOR:**

**MIRANT POTRERO, LLC  
POTRERO POWER PLANT  
SAN FRANCISCO, SAN FRANCISCO COUNTY**

Adopted: May 10, 2006

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

May 10, 2006

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**ORDER NUMBER: R2-2006-0032  
NPDES PERMIT NO. CA0005657**

**REISSUING WASTE DISCHARGE REQUIREMENTS FOR:  
MIRANT POTRERO, LLC  
POTRERO POWER PLANT  
SAN FRANCISCO, SAN FRANCISCO COUNTY**

**FINDINGS**

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. *Discharger and Permit Application.* Mirant Potrero, LLC (hereinafter called the Discharger) has applied for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

**Facility Description**

2. *Facility Location.* The Discharger owns and operates the Potrero Power Plant (power plant), located at 1201-A Illinois Street, San Francisco, San Francisco County, California. The facility was previously owned and operated by the Pacific Gas and Electric Company (PG&E). The Discharger took ownership from PG&E on April 19, 1999. A location map of the facility is included as Attachment A of this Order.
3. *Generation Capacity.* The power plant consists of four generating units (Units 3-6). Unit 3 generates 203 net megawatts (MW) and withdraws and discharges cooling water from San Francisco Bay. This withdrawal and discharge is regulated by the Board. Units 4-6 are turbine combustion units that do not withdraw or discharge cooling water and are not regulated by the Board.
4. *Discharge Location.* Wastewater and some stormwater are discharged into Lower San Francisco Bay, a water of the State and United States, via a submerged shoreline outfall. Stormwater is also discharged through other shoreline outfalls, which are permitted under the Statewide General & Industrial Stormwater Permit. The Discharger has not provided evidence to evaluate dilution credits, therefore the Order does not grant dilution credits for these discharges. The discharge points are listed in Table 1:

**Table 1. Discharge Locations**

Outfall Number	Discharge Description	Latitude	Longitude
E-001	Unit 3 Wastewater Discharge	37° 45' 23.70"	122° 22' 48.90"
E-002	<i>Discharge Eliminated</i>		
E-003	Stormwater Runoff <sup>1</sup>	37° 45' 21.80"	122° 22' 48.70"
E-004	<i>Discharge Eliminated</i>		
E-005	Stormwater Runoff <sup>1</sup>	37° 45' 27.20"	122° 22' 49.10"
E-006 <sup>2</sup>	<i>Discharge Eliminated</i>		

5. *Discharge Description and Volume.* The Report of Waste Discharge describes the discharges as depicted by Table 2:

**Table 2. Discharge Description and Volume**

Outfall Number	Contributory Waste Stream	Treatment Description	Maximum Daily Flow (MGD)	Annual Average Flow (MGD)
E-001	Unit 3 Once-Through Cooling	Screening, Shock Chlorination, Dechlorination	226	203
	A. Auxiliary Cooling Water System	Screening	2.42	2.18
	B. Unit 3 Intake Screen Wash (Intermittent)	Screening	0.36	0.108
	C. Unit 3 Boiler Blowdown and Drains (Intermittent)	No Treatment	0.17	0.017
	D. Stormwater Runoff	Screening, Best Management Practices	0.02	3.5x10 <sup>-4</sup>
	E. Stormwater Runoff and Heat Exchanger Flushes	Screening, Best Management Practices	0.4	6.6x10 <sup>-3</sup>
F. Thermal Demusseling (Intermittent)	Heat Treatment	0.377	0.01	
E-002	Discharge Eliminated			
E-003	Stormwater Runoff	Best Management Practices	0.2	3.3x10 <sup>-3</sup>
E-004	Discharge Eliminated			
E-005	Stormwater Runoff	Best Management Practices	0.2	3.3x10 <sup>-3</sup>
E-006	Discharge Eliminated			

<sup>1</sup> Discharges covered under the General Industrial Stormwater Permit. (See Findings 11 and 12).

<sup>2</sup> Outfall E-006, bioassay lab, is now closed as the Discharger has implemented the new acute toxicity requirements of this permit which include testing conducted off-site.

6. Boiler chemical cleaning waste, oil sludge, fireside and waterside washes, and stormwater runoff are treated on-site. Treated wastewater is discharged to a sanitary sewer under an Industrial Pretreatment Permit issued by the City and County of San Francisco. Treatment sludge is disposed of offsite.
7. The U.S. Environmental Protection Agency (U.S. EPA) and the Board originally classified this Discharger as a minor discharger because the flow is predominately non-contact cooling water (more than 90 percent), contains less than 1 MGD of process wastewater, and the maximum generating capacity is less than 500 MW. However, concerns regarding the impacts of discharges from power plants have prompted the Board to re-classify the Discharger as a major discharger. Impacts from (1) the intake of bay water, (2) the discharge of heated wastewater, and (3) the high volume of discharge are expected to be more of a water quality threat than that of a minor discharger.

### Process Description

8. *Industrial Process.* The Discharger withdraws water from Lower San Francisco Bay via a shoreline surface water intake structure to cool the condensers. Cooling water passes through a set of traveling screens with a screen opening of 3/8 inches. Sodium hypochlorite is injected periodically into the intake channel to control biofouling on the condenser tubes. A de-chlorinating agent (sodium bisulfite) is added to the waste stream prior to final discharge. A process schematic diagram is included as Attachment B of this Order.
9. *Intake Screen Design Specification.* The intake screen design specification is listed below.

<u>Velocities</u>	<u>Intake Unit 3</u>
Maximum Approach Screen ft/sec	0.7
Maximum Through-Screen ft/sec	1.5

### Effluent Characterization

10. Table A in the Fact Sheet presents the quality of the discharge at Outfall E-001 and the intake water quality at Intake I-001, as indicated in the Discharger's Report of Waste Discharge (ROWD) dated November 17, 2003. The data are a compilation of (1) conventional and non-conventional pollutants, from June 2001 through January 2006; (2) mercury, from June 2002 through January 2006; and (3) other inorganic priority pollutants from April 2004 through to January 2006.

### Stormwater Discharge

11. *Stormwater Regulations.* U.S. EPA promulgated federal regulations for storm water discharges on November 19, 1990. The regulations (Title 40 Code of Federal Regulations [40 CFR] Parts 122, 123, and 124) require specific categories of industrial activity (industrial storm water) to obtain an NPDES permit and to implement Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to control pollutants in industrial storm water discharges.
12. *Coverage under Statewide Storm Water General Permit.* The State Water Resources Control Board's (the State Board's) statewide NPDES permit for storm water discharges associated with industrial activities (NPDES General Permit CAS000001- the General Permit) was adopted on November 19, 1991, amended on September 17, 1992, and reissued on April 17, 1997. The Discharger has coverage

under the General Permit for storm water discharges from E-003 and E-005, therefore, these two storm water discharges are covered under the General Permit.

### **Regional Monitoring Program**

13. On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program (RMP) for San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region, under authority of section 13267 of the California Water Code, to report on the water quality of the estuary. These permit holders responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute (formerly the Aquatic Habitat Institute). This effort has come to be known as the San Francisco Bay Regional Monitoring Program for Trace Substances. This Order specifies that the Discharger shall continue to participate in the RMP, which involves collection of data on pollutants and toxicity in water, sediment and biota of the estuary. Annual reports from the RMP are referenced elsewhere in this Order.

### **Applicable Plans, Policies and Regulations**

14. Water quality objectives (WQOs), water quality criteria (WQC), effluent limitations, and calculations contained in this Order are based on the statutes, regulations, policies, documents, and guidance detailed in Section III of the attached Fact Sheet, which is incorporated here by reference.

### **Beneficial Uses**

15. Beneficial uses for Lower San Francisco Bay receiving water, as identified in the Basin Plan and based on known uses of the receiving waters in the vicinity of the discharge, are:
  - Industrial Service Supply
  - Navigation
  - Water Contact Recreation
  - Non-contact Water Recreation
  - Ocean Commercial and Sport Fishing
  - Wildlife Habitat
  - Preservation of Rare and Endangered Species
  - Fish Migration
  - Shellfish Harvesting
  - Estuarine Habitat

### **State Thermal Plan and Clean Water Act Section 316(a)**

16. On September 18, 1975, the State Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan). The Thermal Plan contains WQOs governing cooling water discharges. The Thermal Plan provides specific numeric and narrative WQOs for new discharges of heat. Thermal discharges defined as "existing" discharges are subject to narrative WQOs. Existing discharges of heat to Enclosed Bays (including San Francisco Bay) must "comply with limitations necessary to assure protection of beneficial uses." The Thermal Plan applies to the discharge from Outfall E-001.
17. The Discharger is considered an existing, continuous discharger as defined in the Thermal Plan. PG&E performed two thermal studies for the power plant. These studies were submitted in 1973 and

1991. Effluent limitations for temperature (Effluent Limitations 1.c.) are based on the results of these studies. These studies showed that the discharge did not adversely affect the receiving waters and the beneficial uses were adequately protected in the vicinity of the Potrero Power Plant. Because the studies were performed over a decade ago, updated thermal studies are warranted in order to verify that the temperature requirements in this order continue to protect beneficial uses. This Order contains a provision requiring the Discharger to perform a thermal study to characterize the effects of the thermal plume on the aquatic habitat and aquatic species in the near-field environment. Among other items, the update will include a reassessment of the potential impacts of thermal demusseling.

#### **Clean Water Act Section 316(b) – Entrainment and Impingement Impacts**

18. Section 316(b) of the Clean Water Act (33 U.S.C. Section 1326(b)) requires that the location, design, construction, and capacity of cooling water intake structures reflect Best Technology Available (BTA) for minimizing adverse environmental impacts.
19. The impact of the Discharger's intake cooling water system is a function of the number of organisms entrained (drawn into the cooling water system) and impinged (drawn on to the intake screens).
20. On July 9, 2004, U.S. EPA promulgated new requirements to minimize adverse environmental impacts associated with existing cooling water intake structures under Section 316(b) of the Clean Water Act. These requirements became effective on September 7, 2004. This regulation, commonly referred to as "316(b) Phase II Rule," requires existing dischargers to comply with entrainment and impingement mortality reduction performance standards, if certain threshold levels of entrainment and impingement mortality are exceeded, by (1) implementing technologies, operational measures, or restoration measures; (2) demonstrating that currently implemented measures are in compliance with the Phase II Rule; or (3) developing a site-specific compliance alternative.
21. PG&E submitted a 316(b) Demonstration Study report in January 1980 in order to comply with the Clean Water Act. The 1980 study showed that impingement losses of fish were low. They consisted primarily of northern anchovy, which exhibits a large and highly productive population in the Bay system. Entrainment losses were also low and primarily consisted of northern anchovy, pacific herring, and gobies. Mirant submitted an Entrainment Characterization Study in March 2005. A peer review of this study by Dr. Pete Raimondi (Review of Mirant-Potrero 316(b) Determination, September 2005) determined that the impacts from entrainment are significant. The data will be further reassessed as part of the Comprehensive Demonstration Study as required by the 316(b) Phase II Rule.
22. This Order requires the Discharger to submit technical reports to comply with Code of Federal Regulations, Title 40, Part 125, Subpart J – Requirements Applicable to Cooling Water Intake Structure for Phase II Existing Facilities Under Section 316(b) of the Clean Water Act. These studies have been required pursuant to a December 21, 2005, information requirement letter sent to the Discharger by the Board pursuant to Section 13267 of the California Water Code ("the 13267 letter") (Attachment D). The requirements of the 13267 letter have been incorporated into this Order. Preparing these reports will comply with the 316(b) Phase II Rule. A Comprehensive Demonstration Study, including an assessment of the entrainment and impingement mortality impacts of the facility and a description of the alternative selected for compliance with the Phase II Rule's performance standards, is to be submitted by November 30, 2007, in accordance with the 13267 letter. It is the intention of this Board to prohibit the discharge of once through cooling water, to the extent allowed by law, unless the Discharger demonstrates that its discharge has no significant adverse environmental

effects on San Francisco Bay. This Board intends to resolve this issue no later than December 31, 2008.

### **Basis for Effluent Limitations**

#### **General Basis**

#### ***Applicable Water Quality Objectives and Criteria***

23. The WQOs and WQC applicable to the receiving water of this discharge are from the Basin Plan; the U.S. EPA's May 18, 2000, Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (the California Toxics Rule, or the CTR); and U.S. EPA's National Toxics Rule (the NTR).
24. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in fresh water, lead, mercury, nickel, silver, zinc, and total polynuclear aromatic hydrocarbons (PAHs) in salt water. The narrative toxicity objective states in part "[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms." The bioaccumulation objective states in part "[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife and human health will be considered." Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.
25. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries such as San Francisco Bay, except where the Basin Plan's Tables 3-3 and 3-4 specify numeric objectives for certain of these priority toxic pollutants; the Basin Plan's numeric objectives apply over the CTR (except in the South Bay south of the Dumbarton Bridge).
26. The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to, and including, Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving water for this Discharger.
27. State Implementation Policy: On March 2, 2000, State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Regional Water Boards in their basin plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by U.S. EPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP became effective on May 18, 2000. The State Water Board subsequently amended the SIP, and the amendments became effective on July 13, 2005. The SIP includes procedures for determining the need for and calculating WQBELs and requires dischargers to submit data sufficient to do so.

28. On January 21, 2004, the Board adopted Resolution No. R2-2004-0003 amending the Basin Plan (1) to update the dissolved water quality objectives for metals identical to the CTR; (2) to change the Basin Plan definitions of marine, estuarine and freshwater to be consistent with the CTR definitions; and (3) to update NPDES implementation provisions to be consistent with the SIP, and other editorial changes. On October 4, 2004, the Office of Administrative Law (OAL) approved the Board's Basin Plan Amendment, which had been approved by the State Board on July 22, 2004.
29. Where numeric effluent limitations have not been established or updated in the Basin Plan, 40 CFR Part 122.44(d) specifies that water quality-based effluent limitations (WQBELs) may be set based on U.S. EPA criteria, supplemented where necessary by other relevant information, to attain and maintain narrative WQC to fully protect designated beneficial uses. The Fact Sheet for this Order discusses the specific bases and rationales for effluent limitations and is incorporated as part of this Order.

***Basin Plan and CTR Receiving Water Salinity Policy***

30. The Basin Plan and CTR state that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance.

***Receiving Water Salinity***

31. The receiving waters for the subject discharge are the waters of Lower San Francisco Bay. Board staff evaluated RMP salinity data from the two nearest receiving water stations, Alameda and Yerba Buena Island, for the period February 1993 – August 2003. During that period, the receiving water's minimum salinity was 11.4 parts per thousand (ppt), its maximum salinity was 30.8 ppt, and its average salinity was 23.9 ppt. These data are all well above both the Basin Plan and CTR thresholds for salt water; therefore, the reasonable potential analysis (RPA) and limitations in this Order are based on marine or saltwater WQOs/WQC.

***Technology Based Effluent Limitations***

32. Technology based effluent limitations for conventional pollutants are established for steam electric power plants at 40 CFR Part 423, including limitations for discharges of boiler blowdown that apply to the Discharger. These limitations are included in the Order for outfall E-001C and are the same as in the previous Order.

***Water Quality-Based Effluent Limitations (WQBELs)***

33. Toxic substances are regulated by WQBELs derived from Basin Plan Tables 3-3 and 3-4, the CTR, the NTR, and/or best professional judgment (BPJ) as defined in Section IV of the attached Fact Sheet. WQBELs in this Order are revised and updated from the limits in the previous Order, and their presence in this Order is based on the evaluation of the Discharger's data as described below under the Reasonable Potential Analysis (RPA). Numeric WQBELs are required for all constituents that have a reasonable potential to cause or contribute to an excursion above any State water quality

standard. Reasonable potential is determined and final QBELs are developed using the methodology outlined in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan or the SIP). If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. Further details about the effluent limitations are given below and in the associated Fact Sheet.

#### ***Receiving Water Ambient Background Data used in RPA***

34. Ambient background values are used in the RPA and in the calculation of effluent limitations. For the RPA, ambient background concentrations are the observed maximum water column concentrations. The SIP states that for calculating QBELs, ambient background concentrations are either the observed maximum ambient water column concentrations or, for criteria/objectives intended to protect human health from carcinogenic effects, the arithmetic mean of observed ambient water concentrations. Data from the RMP station at Yerba Buena Island, located in the Central Bay, are used to represent ambient background for this discharge. This is because this station has the most long-term monitoring for metals, has a complete database and scientifically peer-reviewed database for other priority pollutants, and is in a location that reasonably represents the quality of the receiving water.

#### ***Constituents Identified in the 303(d) List***

35. On June 6, 2003, U.S. EPA approved a revised list of impaired waterbodies prepared by the State. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the Federal Clean Water Act to identify specific waterbodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. Lower San Francisco Bay is listed as an impaired waterbody. The pollutants impairing Lower San Francisco Bay include chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, PCBs, dioxin-like PCBs, and nickel. Copper, which was previously identified as impairing Lower San Francisco Bay, was not included as an impairing pollutant in the 303(d) list approved in 2003 and has been placed on the new Monitoring List.

#### ***Total Maximum Daily Loads (TMDLs) and Waste Load Allocations (WLAs)***

36. The Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list for Lower San Francisco Bay within the next ten years, with the exception of dioxin and furan compounds. For dioxins and furans, the Board intends to consider this matter further after U.S. EPA completes its national health reassessment. Future review of the 303(d) list for Lower San Francisco Bay may result in revision of the schedules and/or provide schedules for other pollutants.
37. The TMDLs will establish wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources, and will result in achieving the water quality standards for the waterbodies. Final QBELs for 303(d)-listed pollutants in this discharge will be based on WLAs contained in the respective TMDLs.
38. The Board's strategy to collect water quality data and to develop TMDLs is summarized below:
  - a. *Data collection*—The Board has given dischargers the option to collectively assist in developing and implementing analytical techniques capable of detecting 303(d)-listed pollutants to at least

their respective levels of concern or WQOs. This collective effort may include development of sample concentration techniques for approval by U.S. EPA. The Board will require dischargers to characterize the pollutant loads from their facilities into the water quality-limited waterbodies. The results will be used in the development of TMDLs, and may be used to update or revise the 303(d) list and/or change the WQOs for the impaired waterbodies including Lower San Francisco Bay.

- b. *Funding mechanism*—The Board has received, and anticipates continuing to receive, resources from Federal and State agencies for TMDL development. To ensure timely development of TMDLs, the Board intends to supplement these resources by allocating development costs among dischargers through the RMP or other appropriate funding mechanisms.

### *Interim Limitations and Compliance Schedules*

39. Section 2.1.1 of the SIP states:

“the compliance schedule provisions for the development and adoption of a TMDL only apply when: ... (b) the Discharger has made appropriate commitments to support and expedite the development of the TMDL. In determining appropriate commitments, the RWQCB should consider the discharge’s contribution to current loadings and the Discharger’s ability to participate in TMDL development.”

The Discharger agrees to assist the Board in TMDL development through active participation in and contribution to the RMP.

40. The SIP and the Basin Plan authorize compliance schedules in a permit if an existing discharger cannot immediately comply with a new and more stringent effluent limitation. Compliance schedules for limitations derived from CTR or the NTR WQC are based on Section 2.2 of the SIP, and compliance schedules for limitations derived from Basin Plan WQOs are based on the Basin Plan. Both the SIP and the Basin Plan require the discharger to demonstrate the infeasibility of achieving immediate compliance with the new limitation to qualify for a compliance schedule. The SIP and Basin Plan require the following documentation to be submitted to the Board to support a finding of infeasibility:
- Descriptions of diligent efforts the discharger has made to quantify pollutant levels in the discharge, sources of the pollutant in the waste stream, and the results of those efforts.
  - Descriptions of source control and/or pollution minimization efforts currently under way or completed.
  - A proposed schedule for additional or future source control measures, pollutant minimization, or waste treatment.
  - A demonstration that the proposed schedule is as short as practicable.
41. Until final WQBELs or WLAs are adopted for 303(d)-listed pollutants, State and Federal antibacksliding and antidegradation policies and the SIP require that the Board include interim effluent limitations for them. The interim effluent limitations will be the lower of the current performance or the previous permit’s limitations.
42. On July 13, 2004, the Discharger submitted a feasibility study (the 2004 Feasibility Study), asserting it is infeasible to immediately comply with the WQBELs, calculated according to SIP Section 1.4, for

copper and mercury. Board staff conducted statistical analysis of recent data for these pollutants, as further detailed in later findings under the heading *Development of Specific Effluent Limitations* and also in Section IV.6, Table D of the attached Fact Sheet. Based on these analyses for copper and mercury, the Board concurs that it is infeasible to achieve immediate compliance. Therefore, this Order establishes compliance schedules for copper and mercury.

43. For limitations based on CTR or NTR criteria, this Order establishes a compliance schedule as allowed by the CTR, SIP and Basin Plan provides for a 10-year compliance schedule (mercury and copper) to implement measures to comply with new standards as of the effective date of those standards. This provision has been construed as authorizing compliance schedules for new interpretations of existing standards (such as the numeric WQOs specified in the Basin Plan) resulting in more stringent limitations than those in the previous permit. Due to the adoption of the SIP, the Board has newly interpreted these objectives. As a result of applying the SIP methodologies, the effluent limitations for some pollutants are more stringent than those in the prior permit, and compliance schedules may be appropriate for the new limitations for those pollutants. Additionally, in 2004, the Board established new water quality objectives as described in Finding 28. The Board may take appropriate enforcement actions if interim limitations and requirements are not met.

This Order establishes compliance schedules that extend beyond one year for copper and mercury. Pursuant to the SIP and 40 CFR 122.47, the Board shall establish interim numeric limitations and interim requirements to control the pollutant. This Order establishes interim limitations for these pollutants based on the previous permit limitations or existing plant performance. This Order also establishes interim requirements in a provision for development and/or improvement of a Pollution Prevention and Minimization Program to reduce pollutant loadings to the facility, and for submittal of annual reports on this Program.

The actual final WQBELs for some pollutants will likely be based on either the site-specific objective (SSO) or TMDLs/WLAs as described in other findings specific to each of the pollutants.

In other permits, the Board established interim mass limitations for mercury. For this Discharger, however, the Board does not expect that the Discharger is a source of significant mercury loading to Lower San Francisco Bay, as there are no known mercury sources to wastewater at this facility. Therefore, no mass limits are established in this Order. However, since the assumption regarding no known mercury source is based on general knowledge and not actual data, a provision has been included requiring the Discharger to conduct a study to identify any mercury loadings through monitoring of the low volume process wastewater described in Finding 5, e.g. boiler blowdown. The study also requires the Discharger to investigate mercury source control options, as appropriate.

#### *Antibacksliding and Antidegradation*

44. The limitations in this Order are in compliance with the Clean Water Act Section 402(o) prohibition against establishment of less stringent WQBELs because the limits from the previous Order have not been relaxed in this Order.

#### **Specific Basis**

##### *Reasonable Potential Analysis*

45. As specified in 40 CFR 122.44(d) (1) (i), permits are required to include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the

reasonable potential to cause, or contribute to an excursion above any State water quality standard." Using the method prescribed in Section 1.3 of the SIP, Board staff has analyzed the effluent data to determine if the discharges, which are the subject of this Order, have a reasonable potential to cause or contribute to an excursion above a State water quality standard ("Reasonable Potential Analysis" or "RPA"). For all parameters that have reasonable potential, numeric WQBELs will be established if the data justify it. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the NTR and the CTR.

#### ***Reasonable Potential Methodology***

46. The method for determining reasonable potential involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent based on effluent concentration data. The RPA for all constituents is based on zero dilution, according to section 1.3 of the SIP. There are three triggers in determining reasonable potential.
- a. The first trigger is activated when the maximum effluent concentration (MEC) is greater than or equal to the lowest applicable WQO/WQC, which has been adjusted for pH and translator data, if appropriate. An MEC that is greater than or equal to the (adjusted) WQO/WQC means that there is reasonable potential for that constituent to cause or contribute to an excursion above the WQO/WQC and a WQBEL is required.
  - b. The second trigger is activated when observed maximum ambient background concentration (B) is greater than the (adjusted) WQO/WQC, and the pollutant was detected in any of the effluent samples.
  - c. The third trigger is activated after a review of other information determines that a WQBEL is required even though the requirements of triggers 1 and 2 are not met. A limitation is only required under certain circumstances to protect beneficial uses.

#### ***RPA Determinations:***

47. The RPA was based on effluent water data collected from June 2002 to January 2006 for nearly all priority pollutants except for certain metals discussed below. Historic metals effluent data (prior to April 28, 2004) are not valid for certain metals (silver, arsenic, cadmium, chromium, copper, nickel, lead, selenium, thallium, and zinc) because the analyses did not properly account for saline matrix interference. In response, the Discharger conducted an expedited sampling program (10 samples) from April 28, 2004 to May 25, 2004 for the metals in question. The Discharger continued to collect additional data from June 2, 2004 through December 2005 for cadmium, copper, selenium, and silver, and through January 2006 for mercury. The Board discarded a November 2004 sampling event from this data set because it appeared to be anomalously high and would have resulted in artificially inflating the performance based limits for copper and mercury.
48. The MEC, WQOs/WQC, bases for the WQOs/WQC, background concentrations used and reasonable potential conclusions from the RPA are summarized in Table 3. (Further details on the RPA can be found in the Fact Sheet.) Based on the methodology described above and in the SIP, copper and mercury were found to have reasonable potential and the Board is establishing numeric interim limits as further described in Findings 56 and 57. Based on the available data for dioxin and furan compounds ("dioxin TEQ," see Finding 51) and PCBs (see Finding 52), the Board does find reasonable potential for these pollutants.

**RPA Results for Impairing Pollutants**

49. While TMDLs and WLAs are being developed, interim concentration limitations are established in this Order for 303(d)-listed pollutants that have a reasonable potential to cause or contribute to an excursion above the water quality standard. The only constituents on the 303(d) list for which the RPA determined a need for effluent limitations are mercury, dioxin TEQ, and PCBs. Final determination of reasonable potential for some other constituents could not be performed owing to the lack of an established WQO or WQC.

**Table 3. Reasonable Potential Analysis Summary**

CTR No.	Constituent <sup>[1]</sup>	WQO/WQC (µg/L)	Basis <sup>[2]</sup>	MEC (µg/L)	Maximum Ambient Background Conc. (µg/L)	Reasonable Potential (Trigger Type)
2	Arsenic	36	BP	4.67	2.46	No
4	Cadmium	9.4	BP	0.7	0.1268	No
5b	Chromium (total)	50	BP	9.1	4.4	No
6	Copper	3.73	BP	7.67	2.45	Yes (Trigger 1)
7	Lead	8.5	BP	4.7	0.8	No
8	Mercury*	0.025	BP	0.0505	0.0086	Yes (Trigger 1)
9	Nickel*	8.3	BP	4.42	3.68	No
10	Selenium	5.0	NTR	3.4	0.39	No
11	Silver	2.2	BP	0.450	0.0516	No
12	Thallium	6.3	CTR, hh	0.7	0.21	No
13	Zinc	86	BP	18.9	4.4	No
14	Cyanide	1.0	NTR	<2.2	<0.4	No
16	2,3,7,8-TCDD	1.4×10 <sup>-8</sup>	BP	<8.7×10 <sup>-7</sup>	8.0×10 <sup>-9</sup>	No
	Dioxin TEQ*	1.4×10 <sup>-8</sup>	BP	1.3×10 <sup>-7</sup>	1.95×10 <sup>-7</sup>	Yes [7]
68	Bis (2-ethylhexyl) Phthalate	5.9	CTR, hh	Undetermined [5]	<0.5	No
109	4,4'-DDE*	0.00059	CTR, hh	<0.045	0.000693	No
111	Dieldrin*	0.00014	CTR, hh	<0.031	0.000264	No
119-125	Total Polychlorinated Biphenyls (PCBs)*	0.00017	CTR, hh	0.00103 [6]	0.00146[6]	Yes (Triggers 1, 2)
	CTR nos. 17-126 except 68, 109 and 111	Various or NA	CTR, hh	Non-detect, less than WQO, or no WQO	Less than WQO or not available	No or undetermined <sup>[4]</sup>

[1] \* Indicates constituents on 303(d) list, dioxin TEQ applies to Toxicity Equivalent (TEQs) of 2,3,7,8-TCDD.

- [2] BP = Basin Plan; Basin Plan WQOs are for the protection of saltwater aquatic life; for dioxin TEQ, it is based on the narrative objective for bioaccumulation  
CTR = California Toxics Rule, NTR = National Toxics Rule, hh = human health
- [3] See Finding 46 for the definition of three trigger types.
- [4] RPA was "undetermined" (1) where there was no applicable WQO/WQC; (2) where effluent or ambient background data was either unavailable or insufficient to conduct an analysis; or (3) where all reported detection limits of the pollutant were greater than the applicable WQO/WQC.
- [5] See Finding 50 for a discussion of Bis (2-ethylhexyl) Phthalate.
- [6] Based on total PCB congeners using non-promulgated low detection level results for MEC, and maximum ambient background concentrations. See Finding 52 for further details.
- [7] See Finding 51.

### *Specific Pollutants*

#### 50. *Bis (2-ethylhexyl) Phthalate*

The Discharger collected over three years of effluent data (2002-2006) for bis (2-ethylhexyl) phthalate. Bis (2-ethylhexyl) phthalate was detected in the effluent above the WQO. It is a common laboratory contaminant often found in the sampling collection and analysis process. In 2004, the Discharger conducted an analysis to identify the potential source of the pollutant and submitted the results to the Board on April 14, 2004. The Discharger identified the most likely source of the pollutant to be inappropriate equipment used in the sample collection process. Board staff concurs with the Discharger's evaluation, and this Order requires continued semiannual monitoring for bis (2-ethylhexyl) phthalate to provide data using proper sampling and analysis methods. Should there be no detections of bis (2-ethylhexyl) phthalate in the first four semiannual samples, the Executive Officer may terminate the requirement for continued sampling if the Discharger demonstrates in writing that potential sources of this constituent are still not present at its facility.

#### 51. *Dioxin TEQ*

- a. The CTR establishes a numeric human health WQC of 0.014 picogram per liter (pg/L) for 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD) based on consumption of aquatic organisms. The preamble of the CTR states that California NPDES permits should use toxicity equivalents (TEQs) where dioxin-like compounds have a reasonable potential with respect to narrative criteria. In U.S. EPA's National Recommended WQOs, December 2002, U.S. EPA published the 1998 World Health Organization (WHO) Toxicity Equivalence Factor (TEF)<sup>3</sup> scheme. In addition, the CTR preamble states U.S. EPA's intent to adopt revised WQC guidance subsequent to their health reassessment for dioxin-like compounds. The SIP requires a limitation for 2,3,7,8-TCDD, if there is a reasonable potential, and requires monitoring for a minimum of 3 years by all major NPDES dischargers for the other 16 dioxin and furan compounds.
- b. The Basin Plan contains a narrative WQO for bioaccumulative substances:

"Many pollutants can accumulate on particulates, in sediments, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in

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<sup>3</sup> The 1998 WHO scheme includes TEFs for dioxin-like PCBs. Since dioxin-like PCBs are already included within "Total PCBs," for which the CTR has established a specific standard, dioxin-like PCBs are not included in this Order's version of the TEF scheme.

concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.”

This narrative WQO applies to dioxin and furan compounds, based in part on the consensus of the scientific community that these compounds associate with particulates, accumulate in sediments, and bioaccumulate in the fatty tissue of fish and other organisms.

- c. U.S. EPA's 303(d) listing determined that the narrative objective for bioaccumulative pollutants was not met because of the levels of dioxins and furans in fish tissue.
- d. The Discharger has monitored for dioxins and furans for 3 years. The results for 2,3,7,8-TCDD are all non-detect, although all detection limits have been above the WQC. Some of the congeners used in calculating dioxin TEQ have been detected. All are near or below the quantification limit for the analysis. There is no known source of dioxins to the discharge, and, for all samples with intake/outfall pairs, the intake dioxin TEQ is calculated as higher than the outfall dioxin TEQ. In addition, Ambient water quality data provided in the May 15, 2003 Bay Area Clean Water Agencies (BACWA) report (including supplemental data in the June 15, 2004 Appendix 3: San Francisco Bay Ambient Water Quality Monitoring: Final CTR Sampling Update) also shows dioxin TEQ levels exceeding the WQC. The Board concludes that although the facility's discharge does not appear to be a source of dioxins, since dioxins were detected in the outfall and the U.S. EPA has determined that the Bay is impaired thus warranting a precautionary approach, then there is a reasonable potential for dioxin TEQ.
- e. Although there is reasonable potential, no effluent limits for dioxins TEQ have been set in this permit. This is because the discharge has concentrations above what would be the calculated water quality based effluent limits, so that it is infeasible for the Discharger to immediately comply due to the high concentrations in the intake. However, because of the predominance of non-detect data (e.g., 5 out of the 7 discharge samples were non-detect), it is impossible to calculate an interim performance based limit, or calculate intake credits. Therefore, no limits for dioxin TEQ is established in this permit, but the permit requires the Discharger to conduct semi-annual monitoring in order to collect sufficient data for effluent limit determination in the future.

## 52. PCBs. -

All three triggers were considered in evaluating RPA for PCBs:

Trigger 1 (MEC>WQO): PCB effluent data from January 2005 indicate detectable concentrations when the minimum detection limits are 0.00002 and 0.0002 µg/L. The highest detectable value (0.00103 µg/L) is greater than the WQO (0.00017 µg/L). Therefore, trigger 1 is activated (pursuant to the SIP).

Trigger 2 (B>WQO, and detected in the effluent): Regional Monitoring Program data show a maximum concentration at Yerba Buena Island of 0.00107 µg/L based on total PCB congeners, which is above the criterion of 0.00017 µg/L. Furthermore, data submitted by the Discharger in March 2005 indicate that PCBs were detected in the intake water at levels (0.000262 µg/L) greater than WQO and was detected in the effluent. The intake water is also representative of ambient background. Based on these data, trigger 2 is activated.

Trigger 3 (other information): The Discharger provided data indicating there are no sources of PCBs at the facility (e.g., no transformers). Levels of PCBs have been characterized in soil and groundwater

data at the facility. The facility is paved in the areas of soil contaminated with PCBs, so there is no surface water exposure, and the data show that groundwater is not impaired with PCBs. However, due to specific concerns regarding PCB-contamination from historic activities, this Order requires a PCB Stormwater Sediment Study (see Provision 8). The concern is that historic activities may have created potential sources to stormwater runoff. The study includes a PCB analysis of the sediments in the storm drain system and a requirement for a proposal for future actions to minimize PCB-contaminated sediments, if appropriate. The focus of the study is on the sediments because PCBs are hydrophobic. Analysis of the sediments would yield more useful information than analysis of the stormwater because of limits of detection.

Discharge Prohibition A.3 of this Order prohibits the discharge of PCBs and therefore a water quality based effluent limit based on the RPA may be less stringent and is therefore unnecessary. However, because PCBs have been measured in Bay water and the intake, intake credits allowing for no increase in the discharge as compared to the intake are appropriate (see Finding 58).

53. *Other Organics.*

The Discharger has performed sampling and analysis for most organic constituents listed in the CTR. The data were used to perform the RPA. The full RPA is presented as an attachment to the Fact Sheet. The Discharger will continue to monitor for these constituents in the effluent and the receiving water in accordance with the Board's August 6, 2001 letter and Self-Monitoring Program using analytical methods that provide the best feasible detection limits. When additional data become available, further RPA will be conducted to determine whether to add numeric effluent limitations to the Order or to continue monitoring.

54. *Effluent Monitoring.* This Order does not include effluent limitations for constituents that do not show reasonable potential, but continued monitoring for them is required as described in the SMP and a separate letter dated August 6, 2001, from the Executive Officer. If concentrations of these constituents increase significantly the Discharger will be required to investigate the source of the increases and establish remedial measures if the increases result in a reasonable potential to cause or contribute to an excursion above the applicable WQO/WQC.

55. *Permit Reopener.* This Order includes a reopener provision to allow numeric effluent limitations to be added or deleted in the future for any constituent that exhibits or does not exhibit, respectively, reasonable potential. The Board will make this determination based on monitoring results.

**Development of Effluent Limitations**

56. *Copper*

- a. *Copper WQC.* The saltwater criteria for copper in the CTR are 3.1 µg/L for chronic protection and 4.8 µg/L for acute protection. Included in the CTR are translator values to convert the dissolved criteria to total criteria. Using the CTR translator of 0.83, translated criteria of 3.73 µg/L for chronic protection and 5.8 µg/L for acute protection were used to determine reasonable potential and calculate effluent limitations.
- b. *RPA Results.* This Order establishes effluent limitations for copper because the 7.67 µg/L MEC exceeds the governing WQC of 3.73 µg/L, demonstrating reasonable potential by Trigger 1 as defined in a previous finding.

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- c. *WQBELs for Copper.* The copper WQBELs calculated according to the SIP procedures (prior to the application of any appropriate intake credits) are 2.9 µg/L as the AMEL and 5.8 µg/L as the MDEL.
  - d. *Immediate Compliance Infeasible.* The July 13, 2004 Feasibility Study asserts the Discharger cannot immediately comply with the copper WQBELs. Based on a statistical analysis of the Discharger's effluent data from April 2004, through December 2005, the assertion of infeasibility is substantiated for copper (see Section IV.A.6 and Table D of the attached Fact Sheet for detailed results of the statistical analysis). As stated in the July 13, 2004, Feasibility Study, it appears likely that most, if not all, of the copper present in Outfall E-001 is derived directly from copper already present in the Bay water obtained from Intake I-001. In addition, an addendum to the Feasibility Study submitted by the Discharger on July 21, 2004 states that because of the lack of information regarding potential temporal variations in Outfall E-001 copper concentrations, the WQBEL calculations are uncertain. However, the Discharger identified the potential for copper to be released from weathering of alloys (corrosion) in its once-through cooling-water system. The monthly copper sampling and the intake water study required by this Order will provide the additional data necessary to evaluate this potential source.
  - e. *Interim Performance-based Limitation (IPBL).* Because it is infeasible that the Discharger will immediately comply with the copper WQBELs, this order establishes a copper IPBL of 8.6 µg/L. The IPBL is based on the 99.87<sup>th</sup> percentile of the 23 effluent samples collected from April 2004 through December 2005. The previous order did not include a copper effluent limitation.
  - f. *Plant Performance and Attainability.* During the period April 2004, through December 2005, the Discharger's effluent concentrations for copper ranged from <0.695 µg/L to 7.67 µg/L (23 samples). All 23 samples were below the interim limitation of 8.6 µg/L. It is therefore expected that the facility can comply with the interim limitation for copper. In accordance with Section 2.2.2 of the SIP, this Order requires that the Discharger collect additional data to allow a more complete assessment of reasonable potential for copper (effluent sampling). In the meantime, the Discharger must comply with the IPBL.
  - g. *Term of Interim Effluent Limitation.* The copper interim limitation shall remain in effect until May 18, 2010, or until the Board amends the limitations based on additional data or an SSO. However, during the next permit reissuance, the Board may re-evaluate the copper interim limitation.
  - h. *Antibacksliding/Antidegradation.* There were no WQBELs for copper in the previous permit; therefore, antibacksliding and antidegradation provisions do not apply.
57. *Mercury WQO/WQC.* Both the Basin Plan and the CTR include objectives and criteria that govern mercury in the receiving water. The Basin Plan specifies objectives for the protection of aquatic life of 0.025 µg/L as a 4-day average and 2.1 µg/L as a 1-hour average. The CTR specifies a long-term average criterion for protection of human health of 0.051 µg/L.
- a. *RPA results.* This Order establishes effluent limitations for mercury because the 0.0505 µg/L MEC exceeds the governing WQO of 0.025 µg/L, demonstrating reasonable potential by Trigger 1 as defined in a previous finding.

- b. *Effluent Concentration Limitation for Mercury.* The mercury WQBELs calculated according to the SIP procedures (prior to the application of any appropriate intake credits) are 0.018 µg/L as the AMEL and 0.046 µg/L as the MDEL.
  - c. *Immediate Compliance Infeasible.* The July 13, 2004 Feasibility Study asserts that the Discharger cannot immediately comply with the mercury WQBELs. Based on statistical analysis of the Discharger's effluent data from June 2002 through January 2006 the assertion of infeasibility is substantiated for mercury (see Section IV.A.6 and Table D of the attached Fact Sheet for detailed results of the statistical analysis). As stated in the July 13, 2004 Feasibility Study, the Discharger believes that virtually all the mercury discharged from Outfall E-001 originates from mercury already present in the Bay water obtained from Intake I-001. The average intake concentrations are greater than average effluent concentrations. A mercury study provision is required by this Order. This study will provide data for the Discharger to assess any potential source of this pollutant to the Bay.
  - d. *IPBL.* Because it is infeasible that the Discharger will immediately comply with the mercury WQBELs, this Order establishes a mercury IPBL of 0.032 µg/L. The IPBL is based on the 99.87<sup>th</sup> percentile of ultra-clean effluent samples collected from June 2002 through January 2006. The previous Order did not include a mercury limitation.
  - e. *Plant Performance and Attainability.* During the period June 2002 through January 2006, the Discharger's effluent concentrations ranged from 0.00232 µg/L to 0.0505 µg/L (33 samples). All 33 samples, except for one, were below the interim limitation of 0.032 µg/L. The one sample that exceeded the IPBL (0.0505 µg/L, collected on December 19, 2002), corresponded to an even higher concentration at the intake (0.1002 µg/L). It is therefore expected that the facility can comply with the interim limitation of 0.032 µg/L for mercury.
  - f. *Term of IPBL.* The mercury IPBL shall remain in effect until April 28, 2010 or until the Board amends the limitation based on additional data, SSOs, or the WLA in the TMDL. During the next permit reissuance, Board staff may, however, reevaluate the mercury IPBL.
  - g. *Mercury Study.* As a prerequisite to being granted the compliance schedule and interim limitations described above, the Discharger is required by a provision of this Order to perform studies to identify mercury loadings in its facility, and to implement mercury source control strategies, as appropriate. The Board may consider reopening the permit to include an interim mass limit if the study shows that the Discharger is contributing mass loading to the Bay.
  - h. *Expected Final Mercury Limitations.* Final mercury WQBELs will be consistent with the WLA assigned in the adopted mercury TMDL. A mass limitation based on the WLA will be incorporated. While the TMDL is being developed, the Discharger will comply with the performance-based mercury concentration limitation to cooperate in maintaining current ambient receiving water conditions.
  - i. *Antibacksliding/Antidegradation.* There were no WQBELs for mercury in the previous permit; therefore, antibacksliding and antidegradation provisions do not apply.
58. *Intake Water Credits* The SIP (Section 1.4.4) allows intake water credits provided a discharger meets the following conditions to the satisfaction of the Board:

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- a. The observed maximum ambient background concentration and the intake water concentration of the pollutant exceed the most stringent applicable WQO/WQC for that pollutant;
- b. The intake water credits are consistent with any TMDL applicable to the discharge;
- c. The intake water is from the same water body as the receiving water body;
- d. The facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses; and
- e. The timing and location of the discharge does not cause adverse effects on water quality and beneficial uses that would not occur if the intake water pollutant had been left in the receiving water body.

For PCBs, the Discharger has met all the criteria described above. The Discharger meets criteria a and c based on the information provided in Finding 52. This Discharge meets criteria d because there is no evidence to suggest that the once through cooling process would alter the PCB compounds. The Discharger meets criteria e because the intake and discharge location is very similar. Finally, the Discharge will meet criteria b once the TMDL is established. For the other pollutants found to have reasonable potential to cause or contribute to an excursion above WQOs/WQC, this Order directs the Discharger to evaluate whether intake water credits are appropriate.

#### Whole Effluent Acute Toxicity

59. This Order includes monitoring and effluent limitations for whole-effluent acute toxicity that are similar to the previous Order. However, a change was made in that monthly monitoring is required during a one-year screening phase; afterwards, if requested by the Discharger and approved by the Executive Officer, acute toxicity may be reduced to quarterly. Should quarterly monitoring demonstrate toxicity in accordance with Effluent Limitation B.3, the Discharger is required to return to monthly monitoring (see SMP Footnote [4]). Compliance evaluation is based on 96-hour bioassays. All bioassays shall be performed according to the U.S. EPA-approved method in 40 CFR Part 136, currently "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water, 5th Edition," with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP). The previous Order required monthly flow-through monitoring for acute toxicity with sticklebacks and sanddabs. The Discharger's self-monitoring data indicate that from 2001 through 2003, with one exception, survival rates ranged from 90 to 100 percent, all of which comply with the effluent limitations. In order to perform the 5th Edition acute toxicity test, the Discharger needs to switch to two new species tested concurrently. These two new species shall be topsmelt (*Atherinops affinis*) and inland silverside (*Menida beryllina*). After one year of testing, upon the approval of the Executive Officer, the Discharger may select the more sensitive species and use that organism for future compliance monitoring. If there is no statistical difference in species survival rates after the year of testing, the Discharger has the option to choose either species for future testing.

#### Whole Effluent Chronic Toxicity

60. a. Permit Requirements. This permit includes requirements for chronic toxicity monitoring based on the Basin Plan narrative toxicity objective, and in accordance with U.S. EPA and State Board Task Force guidance and BPJ. This permit includes the Basin Plan narrative toxicity objective as the

applicable effluent limitation, implemented via monitoring with numeric values as "triggers" to initiate accelerated monitoring and to initiate a chronic toxicity reduction evaluation (TRE) as necessary. The permit requirements for chronic toxicity are also consistent with the CTR and SIP requirements.

- b. *Compliance Species.* From May 26, 2004 to August 30, 2004, the Discharger monitored effluent using critical life stage toxicity tests on red abalone (*Haliotis rufescens*), giant kelp (*Macrocystis pyrifera*), mysid shrimp (*Mysidopsis bahia*), and topsmelt (*Atherinops affinis*) to generate information on toxicity test species sensitivity. The test results indicated that giant kelp (*Macrocystis pyrifera*) was the most sensitive species. Based on the foregoing results, the Discharger selected and the Board approved *Macrocystis pyrifera* as the species to use for bioassay testing.
- c. *Permit Reopener.* The Board will consider amending this permit to include numeric toxicity limitations if the Discharger fails to aggressively implement all reasonable control measures included in its approved TRE workplan, following detection of consistent significant non-artifactual toxicity.

#### **Pollutant Minimization/Pollution Prevention**

61. The Discharger has established a Pollution Prevention Program under the requirements specified by the Board.
  - a. Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (i.e., reportable priority pollutants) the Discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.
  - b. There may be some redundancy between the Pollution Prevention Program and the Pollutant Minimization Program requirements.
  - c. Where the two programs' requirements overlap, the Discharger is allowed to continue, modify, or expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
  - d. For constituents identified under Effluent Limitations, Section B, the Discharger will conduct appropriate source control or pollutant minimization measures that are consistent with its approved Pollution Prevention Program. For constituents with compliance schedules under this permit, the applicable source control and pollutant minimization requirements of Section 2.1 of the SIP will also apply.

#### **Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy**

62. *SIP-Required Dioxin Study.* The SIP states that each Board shall require major and minor publicly owned treatment works (POTWs) and industrial dischargers in its region to conduct effluent monitoring for the 2,3,7,8-TCDD congeners, whether or not an effluent limitation is required for 2,3,7,8-TCDD. The Discharger complied with this requirement by submitting the effluent monitoring results of this study on January 28, 2004.
63. On August 6, 2001, the Board sent a letter to all the permitted dischargers pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority

pollutants. This formal request for technical information addresses the insufficient effluent and ambient background data, and the dioxin study. The letter (described above) is referenced throughout the permit as the "August 6, 2001 Letter."

64. Pursuant to the August 6, 2001 Letter from Board Staff, the Discharger was required to submit workplans and sampling results for characterizing the levels of selected constituents in the effluent. The Discharger collected and analyzed 4 effluent samples for the 126 priority pollutants during 2002/2003. With the exception of certain metals (see next finding), these data were used in the RPA and limitation calculations in this Order.
65. As discussed in a previous finding, Board staff's review of effluent monitoring data collected prior to April 28, 2004 for certain metals found that these data may have been affected by salinity and were not valid for use in the RPA. The Discharger conducted an expedited monitoring program for the metals between April 28, 2004 and June 2, 2004 and the data were used in the RPA and effluent limitation calculations. However, the sampling period is too short to characterize potential temporal variations in the influent and the effluent. The SMP includes a requirement to conduct additional monthly monitoring for these inorganic priority pollutants until a total of 24 months of temporally representative data are collected. When more monitoring data are available, the permit may be reopened to include effluent limitations, if reasonable potential is shown.

#### **Monitoring Requirements (Self-Monitoring Program)**

66. The SMP includes monitoring at the outfalls for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. Monthly monitoring is required for copper and mercury because they have been observed in the influent and effluent. Semiannual monitoring for bis (2-ethylhexyl) phthalate is required for two years to verify no reasonable potential for this pollutant. Sampling requirements for all CTR inorganic priority pollutants until 24 months of temporally representative data are collected are also included. This Order continues the requirement for monthly acute toxicity monitoring and allows for a reduction in sampling frequency should the conditions indicated in Finding 61 be met. Semiannual chronic toxicity sampling has been added to determine compliance with permit requirements. The chlorine monitoring frequency has been changed from daily to hourly when chlorinating.

#### **Basin Plan Discharge Prohibition**

67. The Basin Plan (Table 4-1, Item 1) prohibits the discharge of any wastewater that has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive an initial dilution of at least 10:1. Based on the factors described below, the Board finds that this prohibition does not apply to this discharge, and even if it did, the discharge qualifies for an exception to the prohibition.

As indicated in the Basin Plan, the Board considers discharges of treated sewage and other discharges where the treatment process is subject to upset to contain particular characteristics of concern. The Basin Plan states: "This prohibition will .... Provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions ..." The dilution requirement is to provide a contingency in the event of temporary treatment plant malfunction and to minimize public contact with undiluted waste. However this discharge does not contain treated sewage and does not contain wastewater from a treatment process subject to upset. Therefore the prohibition does not apply in this context.

Moreover, virtually all of the once through cooling water discharge consists of Bay water taken from the Bay with minimal characteristics of concern except thermal waste. The water is used for condensing steam through heat exchangers and is returned to the Bay at a temperature higher than that of the intake. The Basin Plan, in addition to requiring that the receiving water temperature not be altered if doing so adversely affect beneficial uses, refers to regulation of thermal waste by the State Thermal Plan (see Finding 16 of this Order). The other characteristics of potential concern are chlorine, pH, and possibly the toxic pollutants copper and mercury. The Discharger has excellent compliance with its permit limits for chlorine and pH, which demonstrates excellent reliability of its treatment system for these parameters. For copper and mercury, this Order requires the Discharger to determine if its processes contribute these pollutants to the discharge. Existing information does not suggest that the discharge is a substantial source of these pollutants. Likewise, data suggest that the plant does not add PCBs or dioxin TEQ to the circulating bay water. If the investigations show that these processes do constitute a substantial source of these pollutants to the Bay and the discharge is effectively wastewater that constitutes a threat to beneficial uses, the Board could consider imposing Prohibition 1, and require an initial 10:1 dilution.

In addition, even if Prohibition 1 did apply, the Basin Plan provides an exception: "Exceptions to Prohibitions 1, ... will be considered where: An inordinate burden would be placed on the discharger relative to beneficial uses protected ...." This section further states, "In reviewing requests for exceptions, the Regional Board will consider the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water ...." Because the treatment system is extremely reliable, and construction of a deepwater outfall would result in very little benefit, even if Prohibition 1 applied to this discharge, it appropriately qualifies for an exception to the prohibition.

#### **Other Discharge Characteristics and Permit Conditions**

68. *O & M Manual.* Operations and Maintenance Manuals and Procedures are maintained by the Discharger for purposes of providing plant and regulatory personnel with a source of information describing all equipment, recommended operation strategies, process control monitoring, and maintenance activities as they pertain to compliance with this permit. In order to remain a useful and relevant document, the manual or procedures shall be kept updated to reflect significant changes in relevant facility equipment and operation practices.
69. *NPDES Permit.* This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.
70. *Notification.* The Discharger and interested agencies and persons have been notified of the Board's intent to reissue requirements for the existing discharge and have been provided an opportunity to submit their written views and recommendations.
71. *Public Hearing.* The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

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**IT IS HEREBY ORDERED**, pursuant to the provisions of Division 7 of the California Water Code and regulations adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

**A. DISCHARGE PROHIBITIONS**

1. Discharge of wastewater at a location or in a manner different from that described in this Order is prohibited.
2. Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by an NPDES permit, to a storm drain system or waters of the State are prohibited.
3. There shall be no discharge of polychlorinated biphenyl compounds, such as those commonly used for transformer fluid.

**B. EFFLUENT LIMITATIONS**

The following effluent limitations apply to effluent discharged to San Francisco Bay:

**Conventional Pollutants**

1. Discharge E-001 shall not exceed the following limitations:
  - a. The pH of the discharge shall not exceed 8.5 nor be less than 6.5 standard units. If the Discharger employs continuous pH monitoring, the Discharger shall be in compliance with the pH limitation specified herein, provided that both of the following conditions are satisfied:
    - (1) The total time during which the pH values are outside the required range shall not exceed 7 hours and 26 minutes in any calendar month.
    - (2) No individual excursion from the required range of pH values shall exceed 60 minutes.
  - b. Chlorine residual: 0.0 mg/L, as instantaneous maximum.
  - c. Temperature Requirement:

The temperature of the discharge shall not exceed a daily average of 86 degrees F except on days when thermal demusseling occurs. During thermal demusseling, the discharge temperature shall not exceed 100 degrees F for more than four hours or a maximum of 110 degrees F. Thermal demusseling shall not occur more than twice per month for each half condenser.
2. Discharge E-001C (Boiler Blowdown) shall not exceed the following limitations:

Constituent	Units	30-Day Average	Maximum Daily
Total Suspended Solids	mg/L	30	100
Oil and Grease	mg/L	10	20

## Toxic Pollutants

### 3. Whole Effluent Acute Toxicity

Representative samples of E-001 shall meet the following limitations for acute toxicity. Compliance with these limitations shall be achieved in accordance with Provision D.10 of this Order.

a. The survival of bioassay test organisms in 96-hour bioassays of undiluted effluent shall be:

- (1) an 11-sample median value of not less than 90 percent survival <sup>(b(1))</sup>; and
- (2) an 11-sample 90th percentile value of not less than 70 percent survival <sup>(b(2))</sup>.

b. These acute toxicity limitations are further defined as follows:

(1) 11-sample median limit:

Any bioassay test showing survival of 90 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or fewer bioassay tests also show less than 90 percent survival.

(2) 90th percentile limit:

Any bioassay test showing survival of 70 percent or greater is not a violation of this limit. A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or fewer bioassay tests also show less than 70 percent survival.

(3) If the Discharger demonstrates to the satisfaction of the Executive Officer that toxicity exceeding the levels cited above is caused by ammonia and that the ammonia in the discharge is not adversely impacting receiving water quality or beneficial uses, then such toxicity does not constitute a violation of this effluent limit.

c. Bioassays shall be performed using the most up-to-date U.S. EPA protocol and the most sensitive species as specified in writing by the Executive Officer based on the most recent screening test results. Bioassays shall be conducted in compliance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," currently 5th Edition (EPA-821-R-02-012), with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP) upon the Discharger's request with justification.

### 4. Whole Effluent Chronic Toxicity

a. Compliance with the Basin Plan narrative toxicity objective shall be demonstrated according to the following tiered requirements based on results from representative samples of the treated effluent meeting test acceptability criteria and Provision D.11:

(1) Routine monitoring;

- (2) Accelerated monitoring after exceeding a three sample median value of 1 chronic toxicity unit (1 TUc)<sup>4</sup> or a single sample maximum of 2 TUc or greater; accelerated monitoring shall be performed on a monthly basis;
  - (3) Return to routine monitoring if accelerated monitoring does not exceed either "trigger" in "2," above;
  - (4) Initiate approved toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) work plan if accelerated monitoring confirms consistent toxicity above either "trigger" in "2," above;
  - (5) Return to routine monitoring after appropriate elements of TRE work plan are implemented and either the toxicity drops below "trigger" level in "2," above or, based on the results of the TRE, the Executive Officer authorizes a return to routine monitoring.
- b. *Test Species and Methods:* The Discharger shall conduct routine monitoring with the most sensitive species determined during the most recent chronic toxicity screening performed by the Discharger and approved by the Executive Officer. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests, and definitions of terms used in the chronic toxicity monitoring are identified in Attachment A of the SMP. The Discharger shall comply with these requirements as applicable to the discharge.

**5. Toxic Substances Effluent Limitations**

- a. The discharge of effluent with constituents at concentrations greater than the limitations shown in Table 4 is prohibited.

**Table 4. Effluent Limitations for Toxic Pollutants**

<u>Constituent</u>	<u>WQBEL</u>		<u>Interim Limits</u>		<u>Units</u>	<u>Notes</u>
	<u>Daily Max</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>		
Copper				8.6	µg/L	(1)(2)(4)
Mercury				0.032	µg/L	(1)(3)(4)

Footnotes:

- (1) (a) All analyses shall be performed using current USEPA methods, or equivalent methods approved in writing by the Executive Officer.

<sup>4</sup> A TUc equals 100 divided by the no observable effect level (NOEL). The NOEL is determined from IC<sub>25</sub>, EC<sub>25</sub>, or NOEC values. Monitoring and TRE requirements may be modified by the Executive Officer in response to the degree of toxicity detected in the effluent or in ambient waters related to the discharge. Failure to conduct the required toxicity tests or a TRE within a designated period shall result in the establishment of effluent limitations for chronic toxicity

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- (b) Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period; Monthly = calendar month).
- (2) Interim limits for copper shall remain in effect until May 18, 2010, or until the Board amends the limits based on site-specific objectives or the Waste Load Allocations in the TMDLs.
- (3) Mercury: Effluent mercury monitoring shall be performed by using ultraclean sampling and analysis techniques to the maximum extent practicable, with a minimum level of 0.002 µg/l, or lower. The interim limit for mercury shall remain in effect until April 28, 2010, or until the Board amends the limit based on the Waste Load Allocation in the TMDL for mercury.
- (4) As outlined in Section 2.4.5 of the SIP, the following are Minimum Levels that the Discharger shall achieve for pollutants with effluent limits. The table below indicates the highest minimum level that the Discharger's laboratory must achieve for calibration purposes.

<u>Constituent</u>	<u>Minimum Level</u>	<u>Units</u>
Copper	0.5	µg/L
Mercury	0.002	µg/L

- b. The discharge of Polychlorinated Biphenyl compounds (PCBs) at concentrations greater than intake concentrations is prohibited.

(1) Intake Water Credit: The Discharger has met the conditions specified in Section 1.4.4, Intake Water Credits, of the SIP. These credits are to offset any concentrations of the pollutant found in the intake water.

(2) Monitoring: The Discharger shall monitor the PCB concentrations in the cooling water at the intake and at the outfall (E-100) on the same day using EPA Method 608. The intake sample shall be collected immediately before the sample from the outfall.

(3) Compliance Evaluation: Compliance shall be evaluated by comparing the sample result from the outfall to the result of the sample taken from the intake on the same day. If the outfall monitoring sample's analytical results indicate that the pollutant concentration is greater than the sample's analytical results at the intake, then the discharge is not in compliance, unless the discharger demonstrates to the satisfaction of the Executive Officer that the difference is within the expected statistical variability of sampling and there is no substantial evidence the discharger's operations have added the pollutant to the effluent.

### C. RECEIVING WATER LIMITATIONS

1. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:
  - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
  - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
  - c. Alteration of temperature (except as allowed by this Order), turbidity, or apparent color beyond present natural background levels;
  - d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
  - e. Toxic or other deleterious substances present in concentrations or quantities that cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
  
2. The discharge of waste shall not cause the following limitations to be exceeded in waters of the State at any place within one foot of the water surface:
  - a. Dissolved Oxygen:           5.0 mg/L, minimum  
  
The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
  - b. Dissolved Sulfide:           0.1 mg/L, maximum
  - c. pH:                            Variation from normal ambient pH by more than 0.5 pH units
  - d. Un-ionized Ammonia:        0.025 mg/L as N, annual median; and  
  
  0.16 mg/L as N, maximum
  - e. Nutrients:                    Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
  
3. The discharge shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted there under. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

## D. PROVISIONS

### 1. Permit Compliance and Rescission of Previous Waste Discharge Requirements

The Discharger shall comply with all sections of this Order upon the effective date of this Order. At which time the requirements prescribed by this Order supersede the requirements prescribed by Order No. 94-056, and Order No. 94-056 is rescinded.

#### Special Studies

### 2. Effluent Characterization for Selected Constituents

The Discharger shall continue to monitor and evaluate the discharge from Outfall E-001 for the constituents listed in Enclosure A of the Board's August 6, 2001 Letter. Compliance with this requirement shall be achieved in accordance with the specifications stated in the Board's August 6, 2001 Letter under Effluent Monitoring for Minor Dischargers. The effluent monitoring (see the SMP) required for specific metals until 24 months of temporally representative data has been taken may be used to fulfill, in part, this effluent characterization requirement.

*Reporting:* On an annual basis, the Discharger shall summarize the data collected, evaluate the sampling frequency and propose any recommended changes in the SMR annual report submittal. A final report that presents all the data shall be submitted to the Board no later than 180 days prior to the permit expiration date. This final report shall be submitted with the application for permit reissuance.

### 3. Receiving Water Monitoring

The Discharger shall continue to collect or participate in collecting background ambient receiving water data with other Dischargers and/or through the RMP. This information is required to perform RPA and to calculate effluent limitations. To fulfill this requirement, the Discharger shall submit data sufficient to characterize the concentration of each toxic pollutant listed in the CTR in the ambient receiving water. The data on the conventional water quality parameters (pH, salinity, and hardness) shall also be sufficient to characterize these parameters in the ambient receiving water at a point after the discharge has mixed with the receiving waters. The frequency of the monitoring shall consider the seasonal variability of the receiving water.

*Reporting:* BACWA submitted a sampling plan dated September 28, 2001, for a collaborative group monitoring program. The Executive Officer conditionally approved this plan in November 2001. An interim report was submitted to the Board on May 15, 2003. The Discharger shall submit a final report that presents all the data to the Board 180 days prior to permit expiration. This final report shall be submitted with the application for permit reissuance. The final report generated from the BACWA study can be used for submission.

### 4. Mercury Study

The Discharger shall conduct a Mercury Discharge Study to characterize mercury levels in the influent, in internal process waste streams, and in the discharge, and to develop source control measures, if appropriate. A workplan was submitted to the Water Board on February 1, 2006, that included, but is not limited to, mercury levels in the influent (I-001), the effluent (outfall E-001) and boiler blowdown (outfall E-001C). The study shall be

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completed no later than May 1, 2007, with quarterly progress reports submitted within the self monitoring reports. If controllable onsite sources of mercury are identified during the course of the study, measures to control releases shall be identified and implemented.

These provisions were described in an Information Requirement Letter (13267 Letter), attached, sent to the discharger in December 2005.

#### 5. Thermal Study and Schedule

The Discharger shall conduct a Thermal Effects Study to characterize the effects of the thermal plume from the discharge on the aquatic habitat and aquatic species and to ensure that the facility is complying with the State Thermal Plan (State Water Board *Water Quality Control Plan for Control of Temperature in the Coastal Interstate Waters and Enclosed Bays and Estuaries of California*, September 18, 1975). Depending on the results of the final study, the Board may amend the permit to modify the temperature requirement.

A draft workplan was submitted to the Water Board on January 13, 2006. A Technical Working Group, including representatives from the National Marine Fisheries Service and the California Department of Fish and Game, will review the workplan and amend it as appropriate. The Discharger will then finalize the Thermal Effects Study workplan. The study will also include a reassessment of the potential impacts from de-musseling operations and shall be completed no later than May 1, 2007, with quarterly progress reports submitted within the self-monitoring reports.

These provisions were described in an Information Requirement Letter (13267 Letter), attached, sent to the Discharger in December 2005.

#### 6. Comprehensive Demonstration Study and Schedule

The Discharger shall conduct studies specified in Code of Federal Regulations, Title 40, Part 125, Subpart J: Requirements Applicable to Cooling Water Intake Structures for Phase II Existing Facilities Under Section 316(b) of the Clean Water Act. Specifically, 40 CFR §125.95: "As an owner or operator of a Phase II existing facility, what must I collect and submit when I apply for my reissued NPDES permit?"

The Discharger submitted a *Proposal for Information Collection* as specified in 40 CFR §125.95(b)(1) to the Board for its review and approval. This Proposal is preliminary to the Comprehensive Demonstration Study (CDS) and it describes what would be gathered for the CDS. The requirements of a CDS are defined in 40 CFR §125.95(b) and further described in the Federal Register Volume 69, No. 131, July 4, 2004.

The CDS shall include an *Impingement Mortality and/or Entrainment Characterization Study*, as described in 40 CFR §125.95(b)(3). The Discharger submitted an Entrainment Characterization Report to the Board on March 21, 2005, which will be reanalyzed, finalized and submitted with the CDS. Impingement studies will commence no later than May 2006, and the studies are estimated to take one year to complete. The results of the Impingement Mortality Study and the results of the 2005 Entrainment Characterization

Study will be submitted in one report by July 30, 2007, pursuant to the 13267 letter. Progress reports shall be submitted to the Board at regular quarterly intervals, within the Self-Monitoring Reports, and at meetings that will be held with the Discharger's technical advisors and Board staff. Draft reports, describing the different elements of the CDS, shall be submitted to the Board between July 30 and September 30, 2007. Board staff may require independent peer review of the findings, particularly in regard to costs and benefits. The complete CDS, incorporating all the appropriate sections of 40 CFR§125.95(b), shall be submitted to the Water Board by November 30, 2007.

These provisions were described in the 13267 letter, attached, sent to the Discharger in December 2005.

**7. Intake Water Study and Schedule**

The Discharger shall conduct an intake water study to assess the appropriateness of intake water credits. Depending on the results of the final study, the Board may consider intake water credits for the next permit reissuance. An Intake Water Study Plan, shall be submitted to the Executive Officer within three months following the effective date of this Order. The Plan, as approved by the Executive Officer, shall be implemented within sixty days. If within this time period the Executive Officer does not provide comments, the Study Plan shall be deemed approved. Progress reports shall be submitted at least every six months and a final report, acceptable to the Executive Officer and documenting the results of the intake water characterization, shall be submitted not later than December 31, 2008.

**8. PCB Stormwater Sediment Study and Schedule**

The Discharger shall conduct a Polychlorinated Biphenyl (PCB) Stormwater Study to determine if there is compliance with the prohibition on PCB discharges. Oils containing PCBs were historically used at the facility, and PCB-contaminated soil has been detected and may be in storm drain sediments that could be discharged to the Bay. A workplan was submitted to the Board on February 1, 2006. The study shall be completed no later than May 1, 2007, with quarterly progress reports submitted within the self-monitoring reports.

**9. Pollutant Minimization Program (PMP)**

- a. The Discharger shall develop and conduct, in a manner acceptable to the Executive Officer, a Pollutant Minimization Program in order to reduce pollutant loadings of copper, and mercury to the receiving waters.
- b. The Discharger shall submit an annual report, acceptable to the Executive Officer, no later than February 28<sup>th</sup> of each year. Annual reports shall cover January through December of the preceding year.

Annual report shall include at least the following information:

- (i) *A brief description of the facility.*
- (ii) *A discussion of the current pollutants of concern. Periodically, the Discharger shall analyze its own situation to determine which pollutants are currently a problem and/or*

which pollutants may be potential future problems. This discussion shall include the reasons why the pollutants were chosen.

- (iii) *Identification of sources for the pollutants of concern.* This discussion shall include how the Discharger intends to estimate and identify sources of the pollutants. The Discharger should also identify sources or potential sources not directly within the ability or authority of the Discharger to control such as pollutants in the water supply and air deposition.
  - (iv) *Identification of tasks to reduce the sources of the pollutants of concern.* This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement tasks themselves or participate in group, regional, or national tasks that will address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that will address its pollutants of concern whenever it is efficient and appropriate to do so. A time line shall be included for the implementation of each task.
  - (v) *Continuation of outreach tasks for employees.* The Discharger shall develop outreach tasks for its employees. The overall goal of this task is to inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of pollutants of concern into the facility. The Discharger may provide a forum for employees to provide input to the Program.
  - (vi) *Discussion of criteria used to measure the Program's and tasks' effectiveness.* The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item b.(iii), b.(iv), and b.(v).
  - (vii) *Documentation of efforts and progress.* This discussion shall detail all of the Discharger's activities in the Pollutant Minimization Program during the reporting year.
  - (viii) *Evaluation of Program's and tasks' effectiveness.* The Discharger shall utilize the criteria established in b.(vi) to evaluate the Program's and tasks' effectiveness.
  - (ix) *Identification of specific tasks and time schedules for future efforts.* Based on the evaluation, the Discharger shall detail how it intends to continue or change its tasks in order to more effectively reduce the amount of pollutants in its effluent.
- c. According to Section 2.4.5 of the SIP, when there is evidence that a priority pollutant is present in the effluent above an effluent limitation and either:
- (i) A sample result is reported as detected, but not quantified (less than the Minimum Level) and the effluent limitation is less than the reported Minimum Level; or
  - (ii) A sample result is reported as not detected (less than the Method Detection Limit) and the effluent limitation is less than the Method Detection Limit;

the Discharger shall expand its existing Pollutant Minimization Program to include the reportable priority pollutant.

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A priority pollutant becomes a reportable priority pollutant when (1) there is evidence that it is present in the effluent above an effluent limitation and either (c)(i) or (c)(ii) is triggered or (2) the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level.

- d. If triggered by the reasons in Provision 9.c. and notified by the Executive Officer, the Discharger's Pollution Minimization Program shall, within 6 months, also include:
  - (i) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures approved by the Executive Officer when it is demonstrated that source monitoring is unlikely to produce useful analytical data;
  - (ii) Quarterly monitoring for the reportable priority pollutant(s) in the influent, or alternative measures approved by the Executive Officer when it is demonstrated that influent monitoring is unlikely to produce useful analytical data;
  - (iii) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
  - (iv) Development of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
  - (v) An annual status report that shall be sent to the Board including:
    1. All Pollution Prevention monitoring results for the previous year;
    2. A list of potential sources of the reportable priority pollutant(s);
    3. A summary of all actions undertaken pursuant to the control strategy; and
    4. A description of actions to be taken in the following year.
- e. To the extent that the requirements of the Pollution Prevention Program and the Pollutant Minimization Program overlap, the Discharger is allowed to continue, modify, or expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
- f. These Pollution Prevention/Pollutant Minimization Program requirements are not intended to fulfill the requirements of the Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).

## Toxicity Requirements

### 10. Whole Effluent Acute Toxicity

Compliance with acute toxicity requirements of this Order shall be achieved in accordance with the following:

- a. From permit effective date until not later than June 30, 2007:
  - i. Compliance with the acute toxicity effluent limitations of this Order shall be evaluated by measuring survival of test organisms exposed to 96-hour bioassays
  - ii. Test organisms shall be the current testing species.
  - iii. All bioassays may be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," 5th Edition, with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).
- b. As approved by the Board, the Discharger began conducting static renewal instead of flow-through bioassays in June 2005. Since December 2005, the Discharger has concurrently tested topsmelt (*Atherinops affinis*), three-spined stickleback (*Gasterosteus aculeatus*), and speckled sanddab (*Citharichthys stigmaeus*) as part of a sensitivity screening analysis. After sufficient testing, the Discharger shall obtain the approval of the Executive Officer to reduce routine monitoring to one species. If there is no statistical difference in species survival rates, the Discharger has the option to choose either species for future testing.
- c. All bioassays shall be performed according to the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms," (currently 5th Edition), with exceptions granted to the Discharger by the Executive Officer and the Environmental Laboratory Accreditation Program (ELAP).

### 11. Whole Effluent Chronic Toxicity

The Discharger shall monitor and evaluate the effluent from the plant for chronic toxicity in order to demonstrate compliance with the Basin Plan narrative toxicity objective. Compliance with this requirement shall be achieved in accordance with the following.

- a. The Discharger shall conduct routine chronic toxicity monitoring in accordance with the SMP of this Order.
- b. If data from routine monitoring exceed either of the following evaluation parameters, then the Discharger shall conduct accelerated chronic toxicity monitoring. Accelerated monitoring shall be performed on a monthly basis.
- c. Chronic toxicity evaluation parameters:
  - (1) A three sample median value of 1 TU<sub>c</sub>; and
  - (2) A single sample maximum value of 2 TU<sub>c</sub>.

- (3) These parameters are defined as follows:
  - (a) Three-sample median: A test sample showing chronic toxicity greater than 1 TU<sub>c</sub> represents an exceedance of this parameter, if one of the past two or fewer tests also show chronic toxicity greater than 1 TU<sub>c</sub>.
  - (b) TU<sub>c</sub> (chronic toxicity unit): A TU<sub>c</sub> equals 100/NOEL (e.g., If NOEL = 100, then toxicity = 1 TU<sub>c</sub>). NOEL is the no observed effect level determined from IC<sub>25</sub>, EC<sub>25</sub>, or NOEC values.
  - (c) The terms IC, EC, NOEL and NOEC and their use are defined in **Attachment A** of the Self-Monitoring Program (SMP).
- d. If data from accelerated monitoring tests are found to be in compliance with the evaluation parameters, then routine monitoring shall be resumed.
- e. If accelerated monitoring tests continue to exceed either evaluation parameter, then the Discharger shall initiate a chronic toxicity reduction evaluation (TRE).
- f. The TRE shall be conducted in accordance with the following:
  - (1) The Discharger shall prepare and submit to the Board for Executive Officer approval a TRE workplan. An initial generic workplan shall be submitted within 120 days of the date of adoption of this Order. The workplan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities.
  - (2) The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test observed to exceed either evaluation parameter.
  - (3) The TRE shall be conducted in accordance with an approved workplan.
  - (4) The TRE needs to be specific to the discharge and Discharger facility, and may be in accordance with current technical guidance and reference materials including U.S. EPA guidance materials. TRE should be conducted as a tiered evaluation process, such as summarized below:
    - (a) Tier 1 consists of basic data collection (routine and accelerated monitoring).
    - (b) Tier 2 consists of evaluation of optimization of the process including operation practices, and in-plant process chemicals.
    - (c) Tier 3 consists of a toxicity identification evaluation (TIE).
    - (d) Tier 4 consists of evaluation of options for additional effluent processes.
    - (e) Tier 5 consists of evaluation of options for modifications of in-plant processes.
    - (f) Tier 6 consists of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.

- (5) The TRE may be ended at any stage if monitoring finds there is no longer consistent toxicity.
  - (6) The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. All reasonable efforts using currently available TIE methodologies should be employed.
  - (7) As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with chronic toxicity evaluation parameters.
  - (8) Many recommended TRE elements parallel required or recommended efforts of source control, pollution prevention and stormwater control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to comply with TRE requirements.
  - (9) The Board recognizes that chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.
- g. Chronic Toxicity Monitoring Screening Phase Requirements, Critical Life Stage Toxicity Tests and definitions of terms used in the chronic toxicity monitoring are identified in **Attachment A** of the SMP. The Discharger shall comply with these requirements as applicable to the discharge.

## 12. Optional Mass Offset

The Discharger may submit to the Board for approval a mass offset plan to reduce 303(d)-listed pollutants to the same watershed or drainage basin. The Board may modify this Order to allow an approved mass offset program.

## Facilities Status Reports and Permit Administration

### 13. Operations and Maintenance Manual, Review and Status Reports

The Discharger shall maintain Operations and Maintenance Manuals (O & M Manuals) as described in the findings of this Order for the Discharger's facilities. The O & M Manuals shall be maintained in useable condition, and available for reference and use by all applicable personnel.

- a. The Discharger shall regularly review, and revise or update as necessary, the O & M Manual(s) in order for the document(s) to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and revisions or updates shall be completed as necessary. For any significant changes in facility equipment or operation practices, applicable revisions shall be completed within 90 days of completion of such changes.

- b. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its O & M Manual, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each Annual Self-Monitoring Report, a description or summary of review and evaluation procedures and applicable changes to its O & M Manual.

**14. Contingency Plan, Review and Status Reports.**

- a. The Discharger shall maintain a Contingency Plan as required by Board Resolution 74-10 (attached), and as prudent in accordance with current facility emergency planning. The discharge of pollutants in violation of this Order where the Discharger has failed to develop and/or adequately implement a contingency plan will be the basis for considering such discharge a willful and negligent violation of this Order pursuant to Section 13387 of the California Water Code.
- b. The Discharger shall regularly review, and update as necessary, the Contingency Plan in order for the plan to remain useful and relevant to current equipment and operation practices. Reviews shall be conducted annually, and updates shall be completed as necessary.
- c. The Discharger shall provide the Executive Officer, upon his or her request, a report describing the current status of its Contingency Plan, including any recommended or planned actions and an estimated time schedule for these actions. The Discharger shall also include, in each Annual Self-Monitoring Report, a description or summary of review and evaluation procedures, and applicable changes to, its Contingency Plan.

**15. New Water Quality Objectives**

As new or revised water quality objectives come into effect for the Bay and contiguous water bodies (whether statewide, regional or site-specific), effluent limitations in this Order will be modified as necessary to reflect updated water quality objectives. Adoption of effluent limitations contained in this Order are not intended to restrict in any way future modifications based on legally adopted water quality objectives.

**16. Self-Monitoring Program**

The Discharger shall comply with the Self-Monitoring Program (SMP) for this Order as adopted by the Board. Self-Monitoring Reports (SMRs) shall be received by the Board no later than 45 days after the end of the reporting month. The SMP may be amended by the Executive Officer pursuant to U.S. EPA regulations 40 CFR122.63.

**17. Standard Provisions and Reporting Requirements**

The Discharger shall comply with all applicable items of the *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (attached), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in "Standard Provisions," the specifications of this Order shall apply.

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**18. Permit Reopener**

The Board may modify, or revoke and reissue, this Order and Permit if present or future investigations demonstrate that the discharge(s) governed by this Order will or have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.

**19. NPDES Permit Effective Date**

This Permit is effective starting on July 1, 2006. This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

**20. Order Expiration and Reapplication**

- a. This Order expires on December 31, 2008.
- b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements. The application shall be accompanied by a summary of all available water quality data including conventional pollutant data from no less than the most recent three years, and of toxic pollutant data no less than from the most recent five years, in the discharge and receiving water. Additionally, the Discharger must include with the application the final results of any studies that may have bearing on the limitations and requirements of the next permit. Such studies include dilution studies, translator studies and alternate bacteria indicator studies, and whole effluent toxicity (acute and/or chronic) screening studies.

**21. Change in Control or Ownership**

- a. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board.
- b. To assume responsibility of operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions and Reporting Requirements, August 1993, Section E.4). Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on May 10, 2006.

  
BRUCE H. WOLFE  
Executive Officer

**Attachments:**

- A. Discharge Facility Location Map
- B. Discharge Facility Process Diagrams
- C. Self Monitoring Program, Part B
- D. Information Requirement Letter (13267 Letter) December 2005
- E. Fact Sheet
- F. The following documents are part of this Permit, but are not physically attached due to volume. They are available on the web at: [www.waterboards.ca.gov/sanfranciscobay/Download.htm](http://www.waterboards.ca.gov/sanfranciscobay/Download.htm) or [http://www.geotracker.waterboards.ca.gov/reports/site\\_documents.asp?global\\_id=SL18380800&assigned\\_name=SLICSITE](http://www.geotracker.waterboards.ca.gov/reports/site_documents.asp?global_id=SL18380800&assigned_name=SLICSITE)

- Self-Monitoring Program, Part A (August 1993)
- Standard Provisions and Reporting Requirements, August 1993
- Regional Water Board Resolution No. 74-10
- August 6, 2001 Regional Water Board staff letter, "Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy"

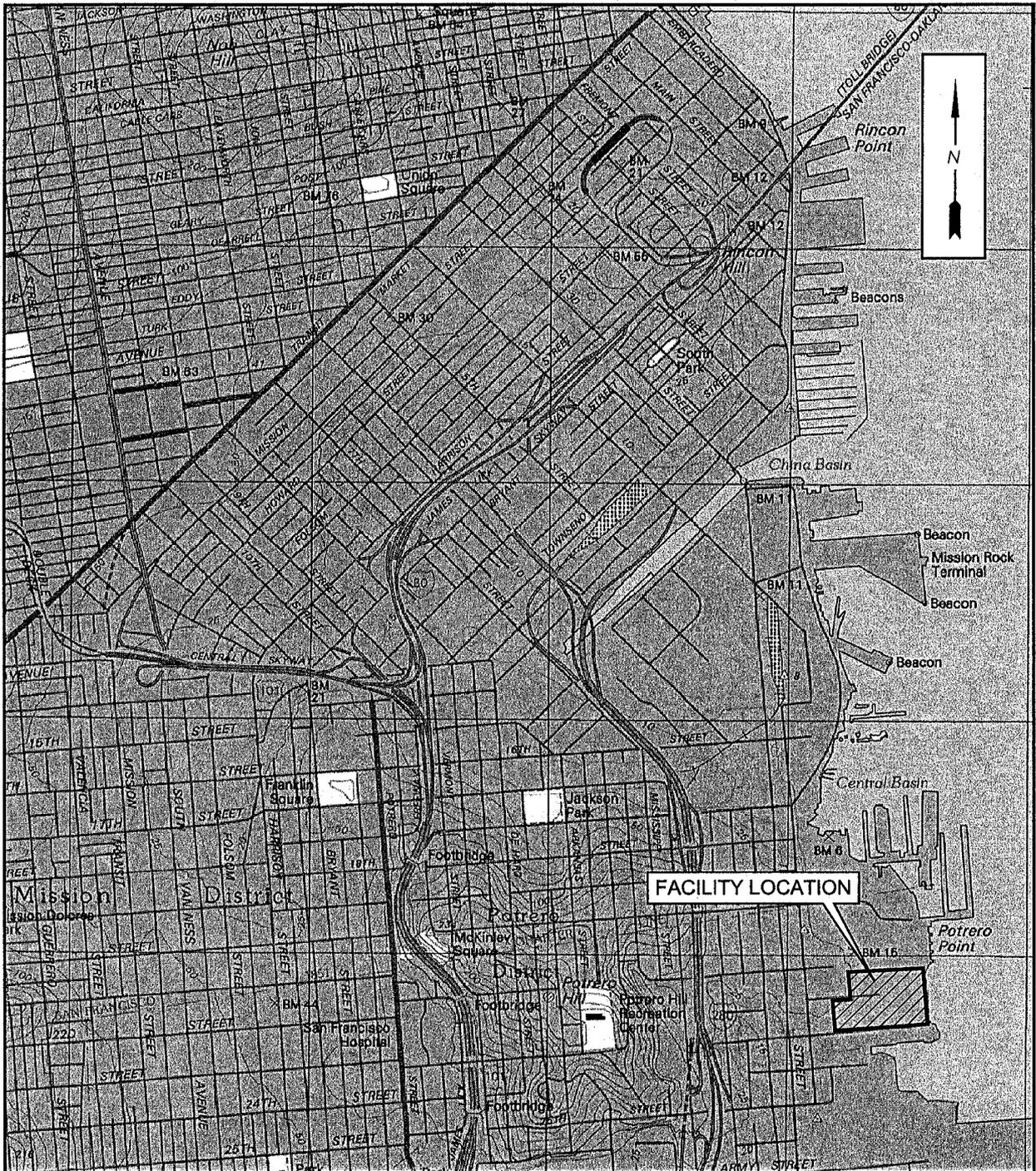
Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

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Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No.R2-2006-0032

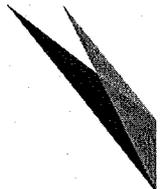
**Attachment A**  
Discharge Facility Location Map

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032



SCALE:  
 0 2000  
 FEET

SOURCE:  
 U.S.G.S. QUAD SHEET  
 SAN FRANCISCO NORTH, CA  
 PHOTOREVISED 1980



**MIRANT**

**FACILITY LOCATION MAP**  
 Potrero Power Plant  
 Mirant Potrero, LLC  
 1201-A Illinois Street, San Francisco, California 94107

November 2003

Figure **1**

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

May 10, 2006

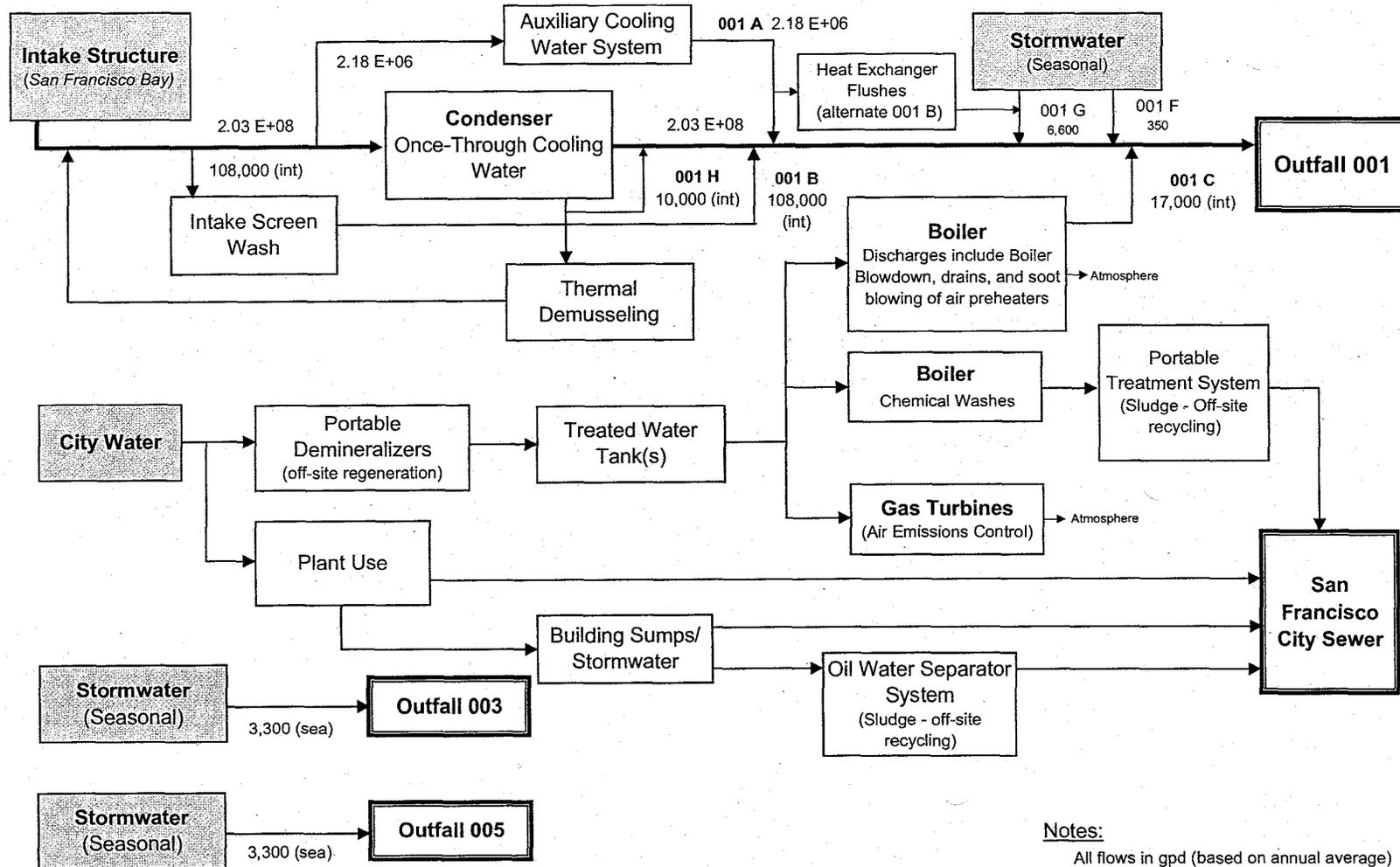
**Attachment B**  
Discharge Facility Process Diagram

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

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# Water Flow Schematic Potrero Power Plant

NPDES Permit CA0005657



**Notes:**

All flows in gpd (based on annual average)  
 (int) = intermittent flows  
 (sea) = seasonal flows

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

May 10, 2006

**Attachment C**  
**Self-Monitoring Program**

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

May 10, 2006

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

May 10, 2006

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**TENTATIVE SELF-MONITORING PROGRAM  
FOR**

**MIRANT POTRERO, LLC  
POTRERO POWER PLANT  
SAN FRANCISCO  
SAN FRANCISCO COUNTY**

**NPDES PERMIT NO. CA0005657**

**ORDER NO. R2-2006-0032**

**Consists of:**

**Part A (not attached)**

**August 1993**

**and**

**Part B (Attached)**

**Adopted: May 10, 2006**

**CONTENTS:**

- I. DESCRIPTION of SAMPLING and OBSERVATION STATIONS
- II. SCHEDULE of SAMPLING, ANALYSES and OBSERVATIONS (Table 1)
- III. REPORTING REQUIREMENTS
- IV. ADDITIONS TO PART A OF SELF MONITORING PROGRAM
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- VI. CHRONIC TOXICITY REPORTING REQUIREMENTS
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- X. SELF-MONITORING PROGRAM CERTIFICATION



Sampling Station			I-001		E-001		E-001C		
			Influent		Effluent		Boiler Blowdown		
Type of Sample:			G	C-24	G	C-24	G	C-24	
Parameter	Units	Notes							
Acute Toxicity	% Survival	[6]				M			
Copper	µg/L & kg/mo		M		M				
Mercury	µg/L & kg/mo	[7]	M		M		[7]		
Dioxin TEQ	pg/L	[8]	2/Y		2/Y				
Bis(2-ethylhexyl) Phthalate	µg/L	[9]	2/Y		2/Y				
Selected Metal Constituents (except those specified above)	µg/L or ppb	[10]	2/Y		2/Y				
PCBs	µg/L	[11]	2/Y		2/Y				
Selected Constituents (except those listed above)		As specified in Table 1 of August 6, 2001 letter							

**LEGEND FOR TABLE 1**

Sampling Stations:

I = facility influent  
 E = facility effluent

Types of Samples:

G = grab  
 C-24 = composite sample, 24 hours (includes continuous sampling, such as for flows)

Frequency of Sampling:

Cont/D = continuous monitoring & daily reporting  
  
 H = once each hour (at hourly intervals)  
 M = once each month  
 W = once each week  
 2/Y = twice each calendar year (at about 6-months intervals)

Parameter and Unit Abbreviations:

mgd = million gallons per day  
 mg/L = milligrams per liter  
 µg/L = micrograms per liter  
 ppb = parts per billion  
 kg/mo = kilograms per month  
 pg/L = picograms per liter

**FOOTNOTES FOR TABLE 1**

- [1] Additional details regarding sampling, analyses and observations are given in Section VI of this SMP, *Specifications for Sampling, Analyses and Observations* (SMP Section VI).
- [2] Flow Monitoring.  
 Flow monitoring indicated as continuous monitoring in Table 1 shall be conducted by continuous measurement or calculation of flows, and reporting of the following measurements:  
*Influent (I-001), and Effluent (E-001):*
- a. Daily:
    - (1) Average Daily Flow (mgd)
    - (2) Maximum Daily Flow (mgd)
    - (3) Minimum Daily Flow (mgd).
  - b. Monthly: The same values as given in a. above, for the calendar month.

- [3] Oil & Grease Monitoring  
Each Oil & Grease sample event shall consist of a composite sample comprised of three grab samples taken at equal intervals during the sampling date, with each grab sample being collected in a glass container. The grab samples shall be mixed in proportion to the instantaneous flow rates occurring at the time of each grab sample, within an accuracy of plus or minus 5%. Each glass container used for sample collection or mixing shall be thoroughly rinsed with solvent rinsings as soon as possible after use, and the solvent rinsings shall be added to the composite sample for extraction and analysis.
- [4] Chlorine residual: Monitor dechlorinated effluent at a minimum, every hour, when conducting the chlorination. Report, on a daily basis, both maximum and minimum concentrations, for samples taken both prior to, and following dechlorination. Report each non-zero residual event along with the cause and corrective actions taken. Total chlorine dosage (kg/day) shall be recorded on a daily basis.
- [5] Critical Life Stage Toxicity Test shall be performed and reported in accordance with the Chronic Toxicity Requirements specified in Sections V and VI of the Self-Monitoring Program contained in this Order.
- [6] Acute toxicity shall be measured with flow-through bioassays. Effluent used for fish bioassays must be dechlorinated prior to testing. Monitoring of the bioassay water shall include, on a daily basis, the parameters specified in the U.S. EPA-approved method, such as pH, dissolved oxygen, ammonia nitrogen, and temperature. These results shall be reported. If the fish survival rate in the effluent is less than 70 percent or if the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new batches of fish and shall continue as soon as practicable until compliance is demonstrated. If there are no violations after one year of monthly acute toxicity testing after the Discharger switches to the U.S. EPA 5<sup>th</sup> Edition, acute toxicity testing frequency may be changed to quarterly, upon approval by the Executive Officer. After any change to quarterly monitoring the monitoring frequency will return to monthly if either: (1) acute toxicity is observed in violation of the permit limitations or (2) changes occur in the volume or characteristics of the effluent that might cause acute toxicity. Monthly monitoring is then required until three consecutive months without violation of the acute toxicity limitations. (See Finding 61 of the permit).
- [7] The Discharger may, at its option, sample effluent mercury either as grab or as 24-hour composite samples. Use ultra-clean sampling (U.S. EPA 1669) to the maximum extent practicable and ultra-clean analytical methods (U.S. EPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as U.S. EPA 245), if that alternative method has an ML of 2 ng/L or less. Sampling for boiler blowdown should be consistent with the Discharger's Mercury Study as specified in Provision D.4 of the NPDES permit.
- [8] Chlorinated dibenzodioxins and chlorinated dibenzofurans shall be analyzed using the latest version of U.S. EPA Method 1613; the analysis shall be capable of achieving one-half of the U.S. EPA MLs. In addition, the Discharger shall participate as appropriate the regional collaborative effort to validate the 4-liter sample methodology for lowering the detection limit for dioxins. At a minimum, the Discharger is required to monitor twice a year for the life of this Order. Alternative methods of analysis must be approved by the Executive Officer.

- [9] Monitoring for Bis(2ethylhexyl)Phthalate may be terminated by the Executive Officer after 4 monitoring events if it is not observed in the effluent and the Discharger continues to demonstrate that there are no sources of this pollution at the facility.
- [10] Semi-annually conduct influent and effluent monitoring for silver, arsenic, beryllium, cadmium, chromium, copper, nickel, lead, antimony, selenium, thallium, and zinc. until a total of 24 months of temporally representative data unimpacted by saline-matrix interference is collected.
- [11] EPA Method 608. The Discharger shall collect monthly samples at both the influent and effluent station for PCBs during first year of the effective date of this Self-Monitoring Program, after which the minimum frequency shall be as specified in the Table 1, above.

Table 2 lists the MLs (SIP) of the priority constituents included in Table 1. For compliance monitoring, analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to the MLs given below. All MLs are expressed as µg/L, approximately equal to parts per billion (ppb).

**Table 2. Minimum Levels (µg/l or ppb)**

CTR #	Constituent [1]	Types of Analytical Methods [2]											
		GC	GC MS	LC	Color	FAA	GF AA	ICP	ICP MS	SPG FAA	HYD RIDE	CV AA	DCP
6.	Copper [3]					25	5	10	0.5	2			1000
8.	Mercury [4]								0.5			0.2	

**FOOTNOTES FOR TABLE 2**

- [1] According to the SIP, method-specific factors (MSFs) can be applied. In such cases, this additional factor must be applied in the computation of the reporting limit. Application of such factors will alter the reported ML (as described in section 2.4.1). Dischargers are to instruct laboratories to establish calibration standards so that the ML value is the lowest calibration standard. At no time is the discharger to use analytical data derived from the extrapolation beyond the lowest point of the calibration curve.
- [2] Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e. EPA 200.9); DCP = Direct Current Plasma.
- [3] For copper, the Discharger may also use the following laboratory techniques with the relevant minimum level: GFAA with a minimum level of 5 µg/L and SPGFAA with a minimum level of 2 µg/L.

- [4] Use ultra-clean sampling (EPA 1669) to the maximum extent practicable, and ultra-clean analytical methods (EPA 1631) for mercury monitoring. The Discharger may use alternative methods of analysis (such as EPA 245), if that alternate method has a Minimum Level of 2 ng/l or less.

### III. REPORTING REQUIREMENTS

- A. If any discrepancies exist between Part A and Part B of the SMP, Part B prevails.
- B. Sections C.3. and C.5. are satisfied by participation in the Regional Monitoring Program.
- C. Modify Section F.4 as follows:

#### **Self-Monitoring Reports**

For each calendar month, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the requirements listed in Self-Monitoring Program, Part A. The purpose of the report is to document performance, effluent quality and compliance with waste discharge requirements prescribed by this Order, as demonstrated by the monitoring program data and the Discharger's operation practices. The report shall be submitted to the Board 45 days after the reporting period ends.

[And add at the end of Section F.4 the following:]

- g. The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. The ERS format includes, but is not limited to, a transmittal letter, summary of violation details and corrective actions, and transmittal receipt. If there are any discrepancies between the ERS requirements and the "hard copy" requirements listed in the SMP, then the approved ERS requirements supercede.
- D. Add at the end of Section F.5, Annual Reporting, the following:
    - d. A plan view drawing or map showing the Discharger's facility, flow routing and sampling and observation station locations.
  - E. Amend Section E as Follows:

#### **Recording Requirements – Records to be Maintained**

Written reports, electronic records, strip charts, equipment calibration and maintenance records, and other records pertinent to demonstrating compliance with waste discharge requirements including SMP requirements, shall be maintained by the Discharger in a manner and at a location (e.g., plant or Discharger offices) such that the records are accessible to Board staff. These records shall be retained by the Discharger for a minimum of 3 years. The minimum period of retention shall be extended during the course of any unresolved litigation regarding the subject discharges, or when requested by the Board or by the Regional Administrator of U.S. EPA, Region IX. More detail on such records is outlined in Part A of the SMP.

#### IV. ADDITIONS TO PART A OF SELF-MONITORING PROGRAM

##### Reporting Data in Electronic Format:

The Discharger has the option to submit all monitoring results in electronic reporting format approved by the Executive Officer. If the discharger chooses to submit the SMRs electronically, the following shall apply:

- a. *Reporting Method:* The discharger shall submit SMRs electronically via the process approved by the Executive Officer in a letter dated December 17, 1999, Official Implementation of Electronic Reporting System (ERS).
  - b. *Modification of reporting requirements:* Reporting requirements F.4 in the attached *Self-Monitoring program, Part A*, dated August 1993, shall be modified as follows. In the future, the Board intends to modify Part A to reflect these changes.
  - c. *Monthly Report Requirements:* For each calendar month, a self-monitoring report (SMR) shall be submitted to the Board in accordance with the following:
    - i. The report shall be submitted to the Board no later than the first day of the second month after the reporting period ends.
    - ii. *Letter of Transmittal:* Each report shall be submitted with a letter of transmittal. This letter shall include the following:
      - (1) Identification of all violations of effluent limits or other discharge requirements found during the monitoring period;
      - (2) Details of the violations: parameters, magnitude, test results, frequency, and dates;
      - (3) The cause of the violations;
      - (4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrence, and dates or time schedule of action implementation. If previous reports have been submitted that address corrective actions, reference to such reports is satisfactory;
      - (5) Signature: The letter of transmittal shall be signed by the discharger's principal executive officer or ranking elected official, or duly authorized representative, and shall include the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."
- (6) Compliance evaluation summary: Each report shall include a compliance evaluation summary. This summary shall include the number of samples in violation of applicable effluent limits.
- (7) Results of analyses and observations.
- (8) Tabulations of all required analyses and observations, including parameter, sample date, sample station, and test result.

- (9) If any parameter is monitored more frequently than required by this permit and SMP, the results of this additional monitoring shall be included in the monitoring report, and the data shall be included in data calculations and compliance evaluations for the monitoring period.
- (10) Calculations for all effluent limits that require averaging of measurements shall utilize an arithmetic mean, unless specified otherwise in this permit or SMP.

## V. CHRONIC TOXICITY MONITORING REQUIREMENTS

- A. Test Species and Frequency: The Discharger shall collect 24-hour composite samples at E-001 on consecutive days for critical life stage toxicity testing as indicated below:

<u>Test Species</u>	<u>Frequency</u>
<i>Macrocystis pyrifera</i>	monthly

If the Discharger uses two more species, after at least twelve test rounds, the Discharger may request the Executive Officer to decrease the required frequency of testing, and/or to reduce the number of compliance species to one. Such a request may be made only if toxicity exceeding the TUc values specified in the effluent limitations was never observed using that test species.

- B. Conditions for Accelerated Monitoring: The Discharger shall accelerate the frequency of monitoring to monthly, or as otherwise specified by the Executive Officer, after exceeding a three sample median value of 1 TUc<sup>5</sup> or a single sample maximum of 2 TUc.
- C. Methodology: Sample collection, handling and preservation shall be in accordance with U.S. EPA protocols. The test methodology used shall be in accordance with the references cited in the Permit, or as approved by the Executive Officer. A concurrent reference toxicant test shall be performed for each test.
- D. Dilution Series: The Discharger shall conduct tests at 100%, 50%, 25%, 12.5%, and 6.25%. The "%" represents percent effluent as discharged.

## VI. CHRONIC TOXICITY REPORTING REQUIREMENTS

- A. Routine Reporting: Toxicity test results for the current reporting period shall include the following, at a minimum, for each test:
1. Sample date(s)
  2. Test initiation date
  3. Test species
  4. End point values for each dilution (e.g., number of young, growth rate, percent survival)

---

<sup>5</sup> The detection limit (DL) of the chronic toxicity test is determined by the highest percent of effluent to be used. For example, with 100% effluent, the DL is 1 TUc (1/100%).

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5. NOEC value(s) in percent effluent
6. IC<sub>15</sub>, IC<sub>25</sub>, IC<sub>40</sub>, and IC<sub>50</sub> values (or EC<sub>15</sub>, EC<sub>25</sub> ... etc.) in percent effluent
7. TUC values (100/NOEC, 100/IC<sub>25</sub>, and 100/EC<sub>25</sub>)
8. Mean percent mortality ( $\pm$  s.d.) after 96 hours in 100% effluent
9. NOEC and LOEC values for reference toxicant test(s)
10. IC<sub>50</sub> or EC<sub>50</sub> value(s) for reference toxicant test(s)
11. Available water quality measurements for each test (i.e., pH, D.O., temperature, conductivity, hardness, salinity, ammonia)

- B. Compliance Summary: The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table of chronic toxicity data from at least eleven of the most recent samples. The information in the table shall include the items listed above under VI. A, item numbers 1, 3, 5, 6(IC<sub>25</sub> or EC<sub>25</sub>), 7, and 8.

## VII. MISCELLANEOUS REPORTING

- A. The Discharger shall retain and submit (when required by the Executive Officer) the following information concerning the monitoring program for organic and metallic pollutants:
1. Description of sample stations, times, and procedures.
  2. Description of sample containers, storage, and holding time prior to analysis.
  3. Quality assurance procedures together with any test results for replicate samples, sample blanks, and any quality assurance tests, and the recovery percentages for the internal surrogate standard.
- B. The Discharger shall submit in the monthly SMR the metallic and organic test results together with the detection limits (including unidentified peaks) and MLs. All unidentified (non-Priority Pollutant) peaks detected in the U.S. EPA 624, 625 test methods shall be identified and semi-quantified. Hydrocarbons detected at <10  $\mu\text{g/L}$  based on the nearest internal standard may be appropriately grouped and identified together as aliphatic, aromatic, and unsaturated hydrocarbons. All other hydrocarbons detected at >10  $\mu\text{g/L}$  based on the nearest internal standard shall be identified and semi-quantified.

## VIII. SELECTED CONSTITUENTS MONITORING

- A. Effluent monitoring shall include evaluation for all constituents listed in Table 1 by sampling and analysis of final effluent.
- B. Analyses shall be conducted using the lowest commercially available and reasonably achievable detection levels. The objective is to provide quantification of constituents sufficient to allow evaluation of observed concentrations with respect to respective WQOs.

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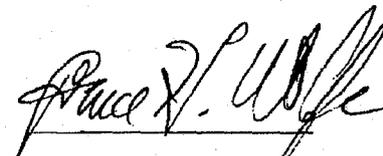
**IX. MONITORING METHODS AND MINIMUM DETECTION LEVELS**

The Discharger may use the methods listed in Table 2, above, or alternative test procedures that have been approved by the U.S. EPA Regional Administrator pursuant to 40 CFR 136.4 and 40 CFR 136.5 (revised as of May 14, 1999).

**X. SELF-MONITORING PROGRAM CERTIFICATION**

I, Bruce H. Wolfe, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in Board Order No. R2-2006-0032.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.
3. Is effective as of July 1, 2006

  
BRUCE H. WOLFE  
Executive Officer

## CHRONIC TOXICITY

### DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS

#### I. Definition of Terms

- A. No observed effect level (NOEL) for compliance determination is equal to  $IC_{25}$  or  $EC_{25}$ . If the  $IC_{25}$  or  $EC_{25}$  cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber.  $EC_{25}$  is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.
- C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an  $IC_{25}$  is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as U.S. EPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

#### II. Chronic Toxicity Screening Phase Requirements

- A. The Discharger shall perform screening phase monitoring:
  1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or
  2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of the screening phase shall, at a minimum, consist of the following elements:
  1. Use of test species specified in Tables 1 and 2 (attached), and use of the protocols referenced in those tables, or as approved by the Executive Officer.
  2. Two stages:
    - a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Table 3 (attached).

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- b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results and as approved by the Executive Officer.
  3. Appropriate controls.
  4. Concurrent reference toxicant tests.
- C. The Discharger shall submit a screening phase proposal to the Executive Officer for approval. The proposal shall address each of the elements listed above.

**Table A. Critical Life Stage Toxicity Tests for Estuarine Waters**

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	<i>(Skeletonema costatum)</i> <i>(Thalassiosira pseudonana)</i>	Growth rate	4 days	1
Red alga	<i>(Champia parvula)</i>	Number of cystocarps	7-9 days	3
Giant kelp	<i>(Macrocystis pyrifera)</i>	Percent germination; germ tube length	48 hours	2
Abalone	<i>(Haliotis rufescens)</i>	Abnormal shell development	48 hours	2
Oyster	<i>(Crassostrea gigas)</i>	Abnormal shell development;	48 hours	2
Mussel	<i>(Mytilus edulis)</i>	Percent survival		
Echinoderms				
urchins	<i>(Strongylocentrotus purpuratus,</i> <i>S. franciscanus)</i>	Percent fertilization	1 hour	2
sand dollar	<i>(Dendraster excentricus)</i>			
Shrimp	<i>(Mysidopsis bahia)</i>	Percent survival; growth	7 days	3
Shrimp	<i>(Holmesimysis costata)</i>	Percent survival; growth	7 days	2
Topsmelt	<i>(Atherinops affinis)</i>	Percent survival; growth	7 days	2
Silversides	<i>(Menidia beryllina)</i>	Larval growth rate; percent survival	7 days	3

**Toxicity Test References:**

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-90/003. July 1994.

**Table B. Critical Life Stage Toxicity Tests for Fresh Waters**

Species	(Scientific Name)	Effect	Test Duration	Reference
Fathead minnow	<i>Pimephales promelas</i>	Survival; growth rate	7 days	4
Water flea	<i>Ceriodaphnia dubia</i>	Survival; number of young	7 days	4
Alga	<i>Selenastrum capricornutum</i>	Cell division rate	4 days	4

**Toxicity Test Reference:**

4. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, third edition. EPA/600/4-91/002. July 1994.

**Table C. Toxicity Test Requirements for Stage One Screening Phase**

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay <sup>[2]</sup>	
	Ocean	Marine/Estuarine	Freshwater
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater <sup>[1]</sup> Marine/Estuarine	0 4	1 or 2 3 or 4	3 0
Total number of tests	4	5	3

[1] The freshwater species may be substituted with marine species if:

- (a) The salinity of the effluent is above 1 part per thousand (ppt) greater than 95 percent of the time, or
- (b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

[2](a) Marine/Estuarine refers to receiving water salinities greater than 1 ppt at least 95 percent of the time during a normal water year.

- (b) Fresh refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Tentative Order

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

## **Attachment D**

Information Requirement Letter (13267 Letter) December 2005

Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032



Alan C. Lloyd, Ph.D.  
Agency Secretary

## California Regional Water Quality Control Board San Francisco Bay Region

1515 Clay Street, Suite 1400, Oakland, California 94612  
(510) 622-2300 • Fax (510) 622-2460  
<http://www.waterboards.ca.gov/sanfranciscobay>



Arnold Schwarzenegger  
Governor

December 21, 2005  
File No: 2169.6025 (DW)  
38S0038 (DW)

Mirant Potrero, LLC  
Attn.: Ron Kino ([Ronald.kino@mirant.com](mailto:Ronald.kino@mirant.com))  
Director of EH & S  
1201-A Illinois Street  
San Francisco, CA 94107

**SUBJECT: Mirant Potrero Power Plant Permit Reissuance - Requirement for Technical Reports on Intake Studies and Discharge Studies**

Dear Mr. Kino:

This letter requires that you submit technical reports on Intake Studies and Discharge Studies for the subject power plant. As explained below, this information is needed to supplement your NPDES Permit Renewal Application.

### Background

Electric power has been generated at this site since the early 1900s. Currently the power plant consists of a 206-MW steam turbine unit (known as Unit 3) and three 52-MW combustion turbine units (known as Units 4, 5 and 6). Unit 3, fueled by natural gas, serves intermediate loads and Units 4, 5 and 6, fueled by oil, are used primarily to serve peaking loads.

Up to 226 million gallons per day of water are pumped from the Bay for condensing steam and cooling water through heat exchangers for the Unit 3 generating plant. The water is drawn through an intake structure near the northeast corner of the site. It is discharged through a shoreline outfall located south of the intake and directly east of Unit 3.

An NPDES permit was issued to this facility on May 18, 1994, Order No. 94-056. It specified all the conditions for the intake and discharge of water. Since the conditions for this permit had not significantly changed, this Order was administratively extended via letter on April 20, 1999, to be in effect until May 18, 2004. On November 17, 2003, Mirant Potrero LLC submitted an NPDES Permit Renewal Application for the Potrero Power Plant. Water Board staff acknowledged that the application was complete on December 29, 2003, and subsequently responded with a draft NPDES Permit in July 2004. This letter was followed by a Tentative Order, NPDES Permit No. CA0005657, that was circulated on November 15, 2004. This Tentative Order was significantly more detailed than the 1994 Order.

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The Tentative Order was subject to extensive comment from individuals and community groups in the neighborhood of the plant, from organizations concerned with the impacts on the operations on marine life (both from the intake of cooling water and other releases from the plant), and from parties interested in replacing this power plant with a new generation facility.

Interest groups commented on several parts of the Tentative Order, including the potential impacts of discharges from the plant to the Bay. The main concern was that information required under new Clean Water Act regulations [known as Phase II of section 316(b)] that established performance standards for cooling water intake structures had not been adequately addressed. These performance standards were adopted as federal regulations on September 7, 2004. The regulations require that the permit applicant describe how specified reductions in adverse environmental impacts caused by the impingement of marine organisms on cooling water intake structures and the entrainment of marine organisms through the cooling system would be met.

The regulations define the components of a *Comprehensive Demonstration Study* (CDS) that specify how reductions in adverse environmental impact are to be achieved. Without this study and other information on the impacts of discharges to surface water, the NPDES permit for this site would only specify preliminary requirements. Instead:

**You are required to submit technical reports containing the following information:**

(1) Studies specified in Code of Federal Regulations, Title 40, Part 125, Subpart J: Requirements Applicable to Cooling Water Intake Structures for Phase II Existing Facilities Under Section 316(b) of the Clean Water Act. Specifically, 40 CFR§125.95, "As an owner or operator of a Phase II existing facility, what must I collect and submit when I apply for my reissued NPDES permit?"

Submit a *Proposal for Information Collection* as specified in 40 CFR §125.95(b)(1) to the Water Board by February 17, 2006. This Proposal is preliminary to the CDS and it describes what would be gathered for the CDS. The requirements of a CDS are defined in 40 CFR §125.95(b) and further described in the Federal Register Volume 69, No. 131, July 4, 2004. The Water Board will review and approve, as appropriate, the proposal, within 60 days of receipt.

The CDS shall include an *Impingement Mortality and/or Entrainment Characterization Study*, as described in 40 CFR §125.95(b)(3). An Entrainment Characterization Report was submitted to the Water Board on March 21, 2005. Impingement studies will commence no later than April 2006, and we estimate the studies will take one year to complete. The Impingement Mortality Study, which will incorporate the Entrainment Characterization Report, shall be submitted by July 30, 2007. Progress reports shall be submitted to the Water Board at regular quarterly intervals, within the Self-Monitoring Reports, and at meetings that will be held with your technical advisors and Water Board staff. Draft reports, describing the different elements of the CDS, shall be submitted to the Water Board between July 30 and September 30, 2007. Water Board staff will likely require independent peer review of your findings, particularly in regard to costs and benefits. The complete CDS, incorporating all the appropriate sections of 40 CFR§125.95(b), shall be submitted to the Water Board by November 30, 2007.

(2) A Polychlorinated Biphenyl (PCB) Stormwater Study, to determine if there is compliance with the prohibition on PCB discharges. Oils containing PCBs were historically used at the facility, and PCB contaminated soil has been detected and may be in storm drain sediments that could be discharged to the Bay. A workplan shall be submitted to the Water Board by February 1, 2006, that will include sampling from catch basins leading to outfalls E-001, E-003 and E-005. Analysis of the samples shall include, as appropriate, the low level PCB analysis described by US EPA Method 1668. The study shall be completed within 12 months (but no later than May 1, 2007) from the date of approval of the workplan by the Water Board, with quarterly progress reports submitted to the Water Board at regular intervals.

(3) A Mercury Discharge Study to characterize mercury levels in the influent, in internal process waste streams, in the discharge, and to develop source control measures, if appropriate. A workplan shall be submitted to the Water Board by February 1, 2006, that will include, but not be limited to, mercury levels in the influent (I-001), the effluent (outfall E-001) and in boiler blowdown (outfall E-001C). The study shall be completed within 12 months (but no later than May 1, 2007) from the date of approval of the workplan by the Water Board, with quarterly progress reports submitted at regular intervals. If controllable onsite sources of mercury are identified during the course of the study, measures to control releases shall be identified and implemented.

(4) A Thermal Effects Study, to characterize the effects of the thermal plume from the discharge on the aquatic habitat and aquatic species and to ensure that the facility is complying with the State Thermal Plan (State Water Board *Water Quality Control Plan for Control of Temperature in the Coastal Interstate Waters and Enclosed Bays and Estuaries of California*, September 18, 1975). A draft workplan shall be submitted to the Water Board by January 13, 2006. After Mirant submits its draft workplan, a Technical Working Group, including representatives from the National Marine Fisheries Service and the California Department of Fish and Game, will review the workplan and amend as appropriate. Mirant will then finalize the Thermal Effects Study workplan. The study will also include a reassessment of the potential impacts from de-musseling operations and shall be completed in 12 months (but no later than May 1, 2007) from the date of approval of the workplan by Water Board staff, with quarterly progress reports submitted at regular intervals.

These information requirements were indicated in the Tentative Order circulated on November 15, 2004. The time allowed for the submission of the Sub-part J information is consistent with the Supplementary Information to the regulations (Federal Register, Vol. 69, No.131, Friday July 9, 2004, p. 41631).

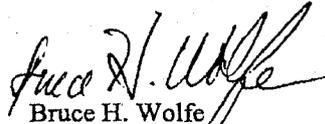
This requirement for technical reports is made pursuant to Water Code §13267, which allows the Water Board to require technical reports from persons whose activities may have an impact on water quality. The attachment provides additional information about §13267 requirements.

Mr. Kino

- 4 -

If you have any questions, please contact Derek Whitworth of my staff at (510) 622 2349 [e-mail [dwhitworth@waterboards.ca.gov](mailto:dwhitworth@waterboards.ca.gov)].

Sincerely,

  
Bruce H. Wolfe  
Executive Officer

Attachment  
13267 Fact Sheet  
Cc Mailing list

*Preserving, enhancing, and restoring the San Francisco Bay Area's waters for over 50 years*

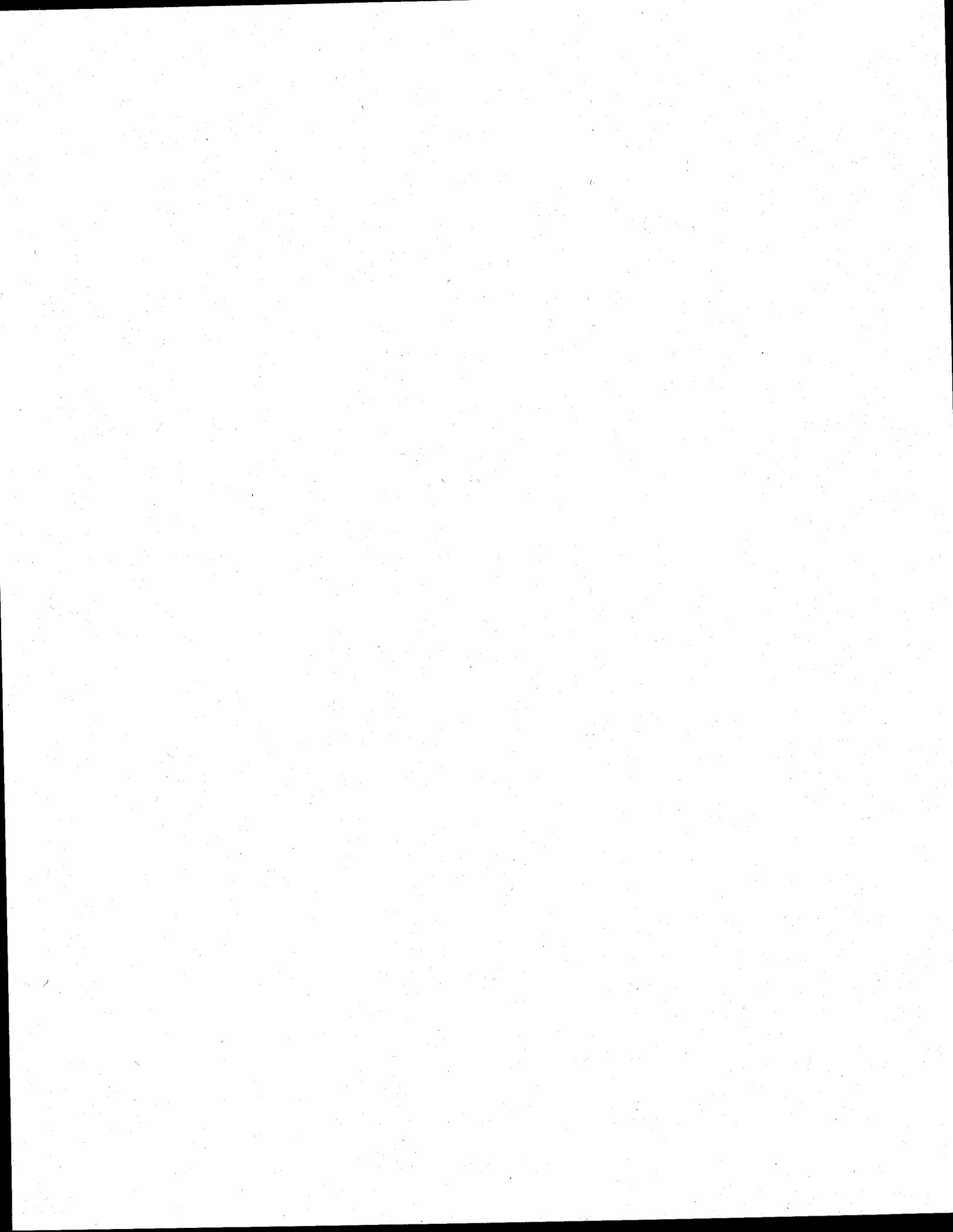
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Mirant Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

## **Attachment E**

### **Fact Sheet**



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION  
1515 CLAY STREET, SUITE 1400  
OAKLAND, CA 94612  
(510) 622-2300 Fax: (510) 622-2460

FACT SHEET  
for

NPDES PERMIT AND WASTE DISCHARGE REQUIREMENTS FOR

POTRERO POWER PLANT  
MIRANT POTRERO, LLC.  
SAN FRANCISCO COUNTY

NPDES PERMIT NO. CA0005657  
ORDER NO. R2-2006-0032

**PUBLIC NOTICE:**

**Written Comments**

- Interested persons are invited to submit written comments concerning this draft permit.
- Comments must be submitted to the Regional Board no later than 5:00 p.m. on March 20, 2006.
- Send comments to the Attention of Derek Whitworth.

**Public Hearing**

- The draft permit will be considered for adoption by the Board at a public hearing during the Board's regular monthly meeting at: Elihu Harris State Office Building, 1515 Clay Street, Oakland, CA; 1<sup>st</sup> floor Auditorium.
- This meeting will be held on: May 10, 2006 starting at 9:00 am.

**Additional Information**

- For additional information about this matter, interested persons should contact Water Board staff member: Derek Whitworth, Phone: (510) 622-2349;  
email: [dwhitworth@waterboards.ca.gov](mailto:dwhitworth@waterboards.ca.gov)

This Fact Sheet contains information regarding a reissuance of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permit for the Mirant Potrero, LLC Potrero Power Plant for industrial wastewater discharges. The Fact Sheet describes the factual, legal, and methodological basis for the sections addressed in the proposed permit and provides supporting documentation to explain the rationale and assumptions used in deriving the effluent limitations.

## 1. INTRODUCTION

The Discharger applied for reissuance of waste discharge requirements and a permit to discharge wastewater to waters of the State and the United States. The application and Report of Waste Discharge are dated November 17, 2003.

### 1. Facility Description

The Discharger owns and operates the Potrero Power Plant, located at 1201-A Illinois Street, San Francisco, San Francisco County, California. The facility was previously owned and operated by the Pacific Gas and Electric Company (PG&E). The Discharger acquired ownership from PG&E on April 19, 1999.

The Potrero Power Plant is a natural gas-fired steam electric generating station. Unit 3 withdraws and discharges cooling water from San Francisco Bay and has a maximum generating capacity of 203 net megawatts (MW). There are three other generating units, Units 4-6, which are combustion turbine units that do not withdraw or discharge cooling water and are not regulated by this Order.

Wastewater is discharged to Lower San Francisco Bay via surface outfalls located at the shoreline. One wastewater outfall is covered under this Order (Outfall E-001). Outfall E-001 discharges wastewater composed of non-contact cooling water, intake screen wash water, boiler blowdown, storm water, heat exchanger flushes and thermal demusseling discharges. Up to 226 million gallons per day (mgd) of water are discharged through Outfall E-001.

Wastewater discharges via outfalls E-002, E-004 and E-006 have been eliminated. The previous Order for Potrero Power Plant covered discharges from Outfalls E-003, E-005, and E-006. The E-006 outfall discharged wastewater associated with the operation of the bioassay laboratory. The bioassay tests are now conducted off-site. The E-003 and E-005 outfalls are composed entirely of stormwater runoff. The Discharger has applied for coverage of Outfalls E-003 and E-005 under the General Permit for Stormwater Discharges (Industrial, NPDES #CAS000001). These two outfalls are not covered by this Order.

The Discharger had proposed to significantly upgrade the facility in concert with adding a new unit - the Unit 7 project. In addition to installing a new 540 MW combined-cycle generator, the facility proposed to build a new intake structure that would service both Unit 3 and proposed Unit 7 by installing more modern technologies to minimize adverse impacts to aquatic life. Under the Unit 7 project, the outfall, currently a submerged shoreline outfall, would be relocated to a submerged offshore location and incorporate diffuser ports to reduce the signature of the thermal plume. As of the adoption of this Order, the Discharger is no longer actively pursuing the Unit 7 project.

### 2. Process Description

The Discharger's process consists of intake water screening, heat treatments for mussel control, chlorination and dechlorination for biofouling control and best management practices. Dechlorinated effluent from the facility is discharged into Lower San Francisco Bay. Effluent discharged via Outfall E-001 is discharged from a submerged shoreline outfall at latitude 37° 45' 23.70" and longitude 122° 22' 48.90".

The U.S. Environmental Protection Agency (U.S. EPA) and the Board originally classified this Discharger as a minor discharger because the flow is predominately non-contact cooling water (more than 90 percent), contains less than 1 mgd of process wastewater, and the maximum

generating capacity is less than 500 MW. However, concerns regarding the impacts of discharges from power plants have prompted the Board to re-classify the Discharger as a major discharger. Impacts from (1) the intake of bay water, (2) the discharge of heated wastewater, and (3) the high volume of discharge are expected to be more of a water quality threat than that of a minor discharger.

### 3. Receiving Water Beneficial Uses

The receiving waters for the subject discharges are the waters of Lower San Francisco Bay. The beneficial uses for Lower San Francisco Bay, as identified in the Regional Board's June 21, 1995 Water Quality Control Plan San Francisco Bay Basin (Region 2) (the Basin Plan) and based on known uses of the receiving waters near the discharge, are:

- a. Industrial Service Supply
- b. Navigation
- c. Water Contact Recreation
- d. Noncontact Water Recreation
- e. Ocean Commercial and Sport Fishing
- f. Wildlife Habitat
- g. Preservation of Rare and Endangered Species
- h. Fish Migration
- i. Shellfish Harvesting
- j. Estuarine Habitat

### 4. Receiving Water Salinity

Salinity data from three Central San Francisco Bay monitoring stations (Yerba Buena, Point Isabel, and Richardson Bay) monitored through the San Francisco Bay Regional Monitoring Program for Trace Substances (the RMP) are all well above both the Basin Plan and California Toxics Rule (CTR) thresholds for salt water; therefore, the reasonable potential analysis (RPA) and effluent limitations specified in this Order for discharges to San Francisco Bay are based on saltwater Basin Plan water quality objectives (WQOs) and saltwater CTR and National Toxics Rule (NTR) water quality criteria (WQC).

## I. DESCRIPTION OF EFFLUENT

Table A below presents the quality of the discharge at Outfall E-001 and the intake water quality at Intake I-001, as indicated in the Discharger's Report of Waste Discharge (ROWD) dated November 17, 2003; for conventional and most non-conventional pollutants from June 2001 through June 2004. Mercury sampling data were collected from June 2002 through June 2004, and cyanide from March 2002 through February 2004. The reported values for several metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) are the result of a separate monitoring period (April through June 2004) required by the Board to replace improperly analyzed data for these constituents submitted by the Discharger. Further discussion of these replacement data can be found in Section IV.1 of this Fact Sheet.

**Table A. Summary of Intake and Discharge Data**

Parameter	Outfall (E-001)		Intake (I-001)	
	Average	Range of reported values	Average	Range of reported values
Biochemical oxygen demand (BOD)	<6 <sup>[1]</sup>	--	--	--
Chemical oxygen demand (COD)	850 <sup>[1]</sup>	--	--	--
Total organic carbon, mg/L	2.5 <sup>[1]</sup>	--	8.7 <sup>[1]</sup>	--
Chlorine residual, mg/L	--	0.0 - 0.09	--	--
TSS, mg/L <sup>[2]</sup>	11	<4 - 22.0	41	<1.0 - 180
Temperature, °F	68.2	48.6 - 95.4	58.1	48.2 - 74.5
Oil and Grease, mg/L <sup>[2]</sup>	All ND	<1 - <5.1	--	--
pH, standard unit	7.77	7.05 - 8.27	7.75	6.99 - 8.24
Ammonia	<0.20 <sup>[1]</sup>	--	--	--
Acute Toxicity, Percent Survival - stickleback <sup>[3]</sup>	95.2	75 - 100	--	--
Acute Toxicity, Percent Survival - Sandabb <sup>[3]</sup>	99.8	90 - 100	--	--
Antimony, µg/L <sup>[4]</sup>	0.3	<0.4 - 0.4	0.26	<0.22 - 0.4
Arsenic, µg/L	3.04	2.06 - 4.67	3.11	2.17 - 4.18
Beryllium, µg/L <sup>[4]</sup>	All ND	<0.5	All ND	<0.34
Cadmium, µg/L <sup>[5]</sup>	0.18	<0.05 - 0.5	0.24	<0.05 - 0.611
Chromium, Total, µg/L	1.53	0.65 - 2.72	1.72	0.75 - 2.33
Copper, µg/L <sup>[5]</sup>	3.22	<0.695 - 7.17	2.78	<0.695 - 5.39
Lead, µg/L	1.09	0.6 - 1.94	1.20	0.45 - 2.44
Mercury, µg/L	0.01	0.00303 - 0.0505	0.0094	0.0029 - 0.1002
Nickel, µg/L <sup>[5]</sup>	2.25	<0.7 - 4.33	2.27	<0.7 - 4.61
Selenium, µg/L <sup>[5]</sup>	1.16	<0.825 - 3.4	1.87	<0.825 - 5.89
Silver, µg/L <sup>[5]</sup>	0.18	<0.012 - 0.389	0.21	<0.12 - 0.39
Thallium, µg/L <sup>[5]</sup>	0.19	<0.111 - 0.5	0.24	<0.105 - 0.35
Zinc, µg/L <sup>[5]</sup>	5.60	<0.75 - 18.9	5.26	<0.75 - 19.8
Cyanide, µg/L	All ND	<5 - <10	All ND	<5 - <10

ND = non-detect

[1] Only one sample is available from the Discharger's ROWD.

[2] Effluent values are for E-001C - boiler blowdown wastewater

[3] These are based on data collected from January 1999 through June 2004.

[4] Only two samples are available.

[5] Average was calculated with the non-detected values being replaced with half detection limit.

## II. GENERAL RATIONALE AND REGULATORY BASES

- the Federal *Water Pollution Control Act*, Sections 301 through 305, 307, and 316 and amendments thereto, as applicable (the Clean Water Act – the CWA);
- the Board's *Water Quality Control Plan San Francisco Bay Basin (Region 2)* (the Basin Plan);
- the State Water Resource Control Board's (the State Board's) *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Policy - the SIP);
- The State Board's *Water Quality Control Plan for Control of Temperature in the Coastal Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan)
- the U.S. EPA's May 18, 2000 *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (the California Toxics Rule – the CTR);
- the U.S. EPA's National Toxics Rule as promulgated [Federal Register Volume 57, 22 December 1992, page 60848] and subsequently amended (the NTR);
- the U.S. EPA's *Quality Criteria for Water* [EPA 440/5-86-001, 1986], and subsequent amendments, (the U.S. EPA Gold Book);
- applicable Federal Regulations [40 CFR Parts 122 and 131];
- 40 CFR Part 131.36(b) and amended [Federal Register Volume 60, Number 86, 4 May 1995, pages 22229-22237];
- 40 CFR Part 125 [Federal Register Volume 69, 9 July 2004, pages 41576 et seq. (316(b) Phase II Rule)]
- the U.S. EPA's December 10, 1998 *National Recommended Water Quality Criteria* compilation [Federal Register Vol. 63, No. 237, pp. 68354-68364];
- the U.S. EPA's December 27, 2002 *Revision of National Recommended Water Quality Criteria* compilation [Federal Register Vol. 67, No. 249, pp. 79091-79095]; and
- guidance provided with State Board actions remanding permits to the Board for further consideration.

## III. SPECIFIC RATIONALE

Several specific factors affecting the development of limitations and requirements in the proposed Order are discussed as follows:

### 1. Recent Facility Performance

Section 402(o) of Clean Water Act (CWA) and 40 CFR § 122.44(l) require that water quality-based effluent limitations (WQBELs) in re-issued permits be at least as stringent as in the previous permit. The SIP specifies that interim effluent limitations, if required, must be based on current

facility performance or on previous permit limitations, whichever is more stringent (unless anti-backsliding requirements are met). In determining what constitutes "recent plant performance," best professional judgment (BPJ) was used. Effluent data collected from June 2001 through December 2005 for conventional and most non-conventional pollutants, except as noted below, are considered representative of recent plant performance. Mercury sampling data collected from June 2002 through January 2006 and cyanide data collected from March 2002 through January 2006 are considered representative of recent plant performance.

The Board did not use sample data collected for several inorganic constituents (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) from June 2001 through June 2003 to assess the recent plant performance with regard to effluent composition. Analyses for these constituents during this time period were flawed for one or more of the following reasons: (1) improper or untimely filtration and preservation of dissolved metal samples; (2) improper dilution of samples such that the adjusted reporting limit exceeded regulatory standards; and (3) failure to adjust sample results for some metals (e.g. copper) to account for saline matrix interference. After reviewing the data and attempting to identify valid sample results, Board staff concluded that all samples for these constituents collected during this time period were unreliable and therefore discarded. The Discharger conducted an expedited sampling program from April 28 through May 25, 2004 and regular monthly monitoring until January 2006 to provide additional valid sample results for use in determining reasonable potential or setting WQBELs.s. [

## **2. Impaired Water Bodies on 303(d) List**

On June 6, 2003, the U.S. EPA approved a revised list of impaired water bodies prepared by the State (hereinafter referred to as the 2002 303(d) list), prepared pursuant to provisions of Section 303(d) of the federal CWA requiring identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. The pollutants impairing Lower San Francisco Bay include chlordane, DDT, diazinon, dieldrin, dioxin compounds, exotic species, furan compounds, mercury, nickel, PCBs, and dioxin-like PCBs. Copper, which was previously identified as impairing Lower San Francisco Bay, was not included as an impairing pollutant in the 2002 303(d) list and has been placed on the new Monitoring List.

The SIP requires final effluent limitations for all 303(d)-listed pollutants to be based on total maximum daily loads (TMDLs) and associated wasteload allocations (WLAs). The SIP and U.S. EPA regulations also require that final concentration-based WQBELs be included for all pollutants having reasonable potential to cause or contribute to an exceedance of applicable water quality standards (having reasonable potential or RP). The SIP requires that where the discharger has demonstrated infeasibility to meet the final WQBELs, interim performance-based limitations (IPBLs) or previous permit limitations (whichever is more stringent) be established in the permit, together with a compliance schedule that shall remain in effect until final effluent limitations are adopted. The SIP also requires the inclusion of appropriate provisions for waste minimization and source control where interim limitations are established.

## **3. State Thermal Plan and Clean Water Act Section 316(a)**

On September 18, 1975, the State Board adopted the Water Quality Control Plan for Control of Temperature in the Coastal Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan). The Thermal Plan contains WQOs governing cooling water discharges. The Thermal Plan provides specific numeric and narrative WQOs for new discharges of heat. Thermal discharges defined as "existing" discharges are subject to narrative WQOs. Existing discharges of

heat to Enclosed Bays (including San Francisco Bay) must “comply with limitations necessary to assure protection of beneficial uses.”

The Discharger is considered an existing, continuous discharger as defined in the Thermal Plan. The most recent studies of the effects associated with thermal discharges were submitted in 1991 for both Potrero and Hunters Point Power Plants by PG&E. An updated study is required to characterize the effects of the thermal plume on the aquatic habitat and aquatic species in the near-field environment. Among other items, the update will include a reassessment of the potential impacts of thermal demusseling.

#### 4. Entrainment and Impingement Impacts—Clean Water Act Section 316(b)

On July 23, 2004, U.S. EPA promulgated new requirements to minimize adverse environmental impacts associated with existing cooling water intake structures under Section 316(b) of the Clean Water Act. This regulation, commonly referred to as “316(b) Phase II,” became effective on September 7, 2004, 60 days after its publication in the Federal Register on July 9, 2004. The 316(b) regulations require existing facilities to either demonstrate a current ability to meet the performance standards outlined in the rule, or select one of four other compliance alternatives to minimize adverse environmental impacts associated with cooling water intake structure operations. If unable to demonstrate immediate compliance with the performance standards, the facility must undertake a multi-step process, which, together with input from the permitting authority (e.g., the Board), will determine the most economically and technologically feasible alternatives when making an assessment of Best Technology Available (BTA).

The Phase II Rule establishes performance standards for the reduction of impingement mortality and/or entrainment when compared to a baseline assessment. Impingement mortality of fish and shellfish must be reduced by 80 to 95 percent of the baseline number, while entrainment must be reduced by 60 to 90 percent. As an estuarine facility defined in 40 CFR Part 125.93, the Discharger is required to meet the performance standards for both impingement mortality and entrainment.

The Phase II Rule requires that under ordinary circumstances, a facility submit the appropriate study components (certification of compliance, Comprehensive Demonstration Study, etc.) as part of its NPDES renewal application; however, because most of the study requirements involve substantial effort on the part of the facility and significant input from the permitting authority, U.S. EPA incorporated submission schedule flexibility for facilities whose permits expire within the time period of July 9, 2004 and January 8, 2008. Such facilities must submit a completed 316(b) Phase II package *no later* than three years and 180 days after publication in the Federal Register, or January 8, 2008.

The current permit for the Discharger was due to expire in 1999, and was administratively extended to 2004. The permit is listed as backlogged by US EPA Region 9. Situations such as these, i.e. long expired permits, were not discussed in the Phase II regulation. It is appropriate to establish a program to comply with these regulations within the permit. An information requirement letter (Attachment F to the Order) sent pursuant to Water Code §13267 specifies a schedule for compliance with these regulations (dated December 21, 2005). The schedule imposes a more stringent timeline for the Discharger to submit the final CDS than the EPA rule dictates. The due date is as soon as could reasonably be expected given that the Discharger must first complete a one-year impingement study.

A 2001 study prepared by the Discharger, *Construction and Thermal Impacts and First Quarter Larval Fish Assessment*, a subsequent *6-month report on larval fish surveys*, and a March 2005

Entrainment Characterization Report based on the 2001 data may be usable components of an eventual Comprehensive Demonstration Study. These studies seek to identify the species composition and abundance of larval fishes and cancer crabs in the vicinity of the facility as well as estimate potential losses due to entrainment through the facility intake structure. In 1978 and 1979, Potrero Power Plant, then owned by PG&E, conducted a field study (*316(b) Demonstration Study*) of the both the entrainment and impingement of fishes and shellfishes resulting from the operation of the cooling water intake structure. That study is insufficient for the purposes of the Phase II Rule. Data collected at that time are 27 to 28 years old and may not sufficiently represent the near-field environment around Potrero due to changing waterbody conditions and operations at the facility itself. In addition, sampling and analysis methods have improved considerably as the scope of knowledge concerning 316(b)-related issues has expanded. The 2001 study, on the other hand, may be considered acceptable, *in part*, for inclusion in the overall 316(b) Phase II submission package. Sampling and analysis methodologies are more consistent with the accepted protocols for entrainment studies conducted today.

**5. Basis for Prohibitions**

- a). Prohibition A.1 (no discharges other than as described in the permit): This prohibition is based on the California Water Code section 13260 that requires filing of a report of waste discharge before a permit to discharge can be granted and the discharge commences. The Discharger's application addresses only those discharges addressed in this permit, thus another other discharge would not be permitted and must be prohibited.
- b). Prohibition A.2 (no discharges other than storm water to storm drains or waters of the State other than as described in the permit): This prohibition is based on similar rationale as for 5 a).
- c). Prohibition A.3 (no discharge of polychlorinated biphenyl compounds (PCBs), such as those commonly used for transformer fluid. This prohibition is based on 40CFR423.12(2) and 40CFR423.13(a).

**6. Basis for Effluent Limitations**

- a) Effluent Limitations B.1 (Outfall E-001) and B.2 (Outfall E-001C): The effluent limits for conventional pollutants are as follows:

Constituent	Units	Monthly Average	Daily Average	Daily Maximum	Instantaneous Maximum
B.1.a. pH	standard	(not to exceed 8.5 nor be less than 6.5)			
B.1.b. Total Chlorine Residual	mg/L	--	--	--	0.0
B.1.c. Temperature	degrees F	--	86	--	--
		(temperature of discharge not to exceed 100 degrees F for more than four hours, or 110 degrees F maximum during thermal demusseling)			
B.2.a Total Suspended Solids	mg/L	30	--	100	--
B.2.b Oil and Grease	mg/L	10	--	20	--

- b) Effluent Limitation B.1.a (pH, minimum 6.5, maximum 8.5): This effluent limitation is unchanged from the previous permit. The limitation is based on the Basin Plan (Chapter 4, Table 4-2), which is derived from federal requirements (40 CFR 133.102) for shallow water discharges. Compliance with this previous permit effluent limitation has been demonstrated by existing plant performance.

- c) Effluent Limitation B.1.b (Total Chlorine Residual): This effluent limitation is unchanged from the previous permit. The limitation is based on the Basin Plan (Chapter 4, Table 4-2), which is derived from federal requirements (40 CFR 133.102). Compliance has been demonstrated by existing plant performance.
- d) Effluent Limitation B.1.c (Temperature): This effluent limitation is unchanged from the previous permit. The limitation is based on the California Thermal Plan. This is a previous permit effluent limitation and compliance has been demonstrated by existing plant performance.
- e) Effluent Limitation B.2.a (Total Suspended Solids): This effluent limitation is unchanged from the previous permit and is based on the effluent limitation guidelines at 40 CFR Part 423. Compliance has been demonstrated by existing plant performance.
- f) Effluent Limitation B.2.b (Oil and Grease): This effluent limitation is unchanged from the previous permit and is based on the effluent limitation guidelines at 40 CFR Part 423. Compliance has been demonstrated by existing plant performance.
- g) Effluent Limitation B.3 (Whole Effluent Acute Toxicity): The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alternations in population, community ecology, or receiving water biota. These effluent toxicity limitations are necessary to ensure that this objective is protected. The whole effluent acute toxicity limitations for an eleven-sample median and an eleven-sample 90<sup>th</sup> percentile value are consistent with the previous permit and are based on the Basin Plan (Table 4-4, pg. 4-70). The previous Order required testing of two species (sanddab and three-spine stickleback). This Order requires the Discharger to use the U.S. EPA's most recently promulgated testing method, currently the 5<sup>th</sup> edition with two testing species, topsmelt (*Atherinops affinis*) and inland silverside (*Menidia beryllina*) tested concurrently, until a more sensitive species can be identified.
- h) Effluent Limitation B.4 (Whole Effluent Chronic Toxicity): The chronic toxicity limitation is based on the Basin Plan's narrative toxicity objective on page 3-4. Chronic toxicity requirements were not included in the previous Order, but have been added in this Order consistent with a case by case determination provided by the Basin Plan. The main factors considered include: this is a major discharger; the volume of flow is significant; and the Board intends to ensure that the discharge does not exhibit consistent chronic toxicity.
- i) Effluent Limitation B.5 (Toxic Substances):

**1) Reasonable Potential Analysis (RPA)**

Code of Federal Regulations Title 40, Part 122.44(d)(1)(i) (40 CFR 122.44(d)(1)(i)) specifies that permits must include WQBELs for all pollutants "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard" (have Reasonable Potential or RP). Thus, assessing whether a pollutant has RP is the fundamental step in determining whether or not a WQBEL is required. The following sections describe the RPA and the results of such an analysis for the pollutants identified in the Basin Plan and the CTR.

- i) *WQOs and WQC*: The RPA uses Basin Plan WQOs, including narrative toxicity objectives in the Basin Plan and applicable WQC in the CTR/NTR, or site-specific objectives (SSOs) if available, after adjusting for site-specific hardness and translators, if applicable. The governing WQOs/WQC are shown in Attachment 1 of this Fact Sheet.
- ii) *Methodology*: The RPA uses the methods and procedures prescribed in Section 1.3 of the SIP. Board staff has analyzed the effluent and background data and the nature of facility operations to determine if the discharge shows reasonable potential with respect to the governing WQOs or WQC. Attachment 1 of this Fact Sheet shows the results of the multi-step process described in Section 1.3 of the SIP.
- iii) *Effluent and background data*: The RPA is based on effluent data collected by the Discharger from April through December 2005 for most inorganic priority pollutants except for mercury (June 2002- January 2006) and cyanide (March 2002 – January 2006) and from June 2002 though January 2006 for certain organic priority pollutants. Water quality data collected from San Francisco Bay at the Yerba Buena Island monitoring station through the RMP in 1993 to 2003 were reviewed to determine the maximum observed background values. The RMP station at Yerba Buena Island, located in the Central Bay, has been sampled for most of the inorganic and some of the organic toxic pollutants; however, not all the constituents listed in the CTR were analyzed by the RMP during this time. On May 15, 2003, a group of several San Francisco Bay Region dischargers (known as the Bay Area Clean Water Agencies, or BACWA) submitted a collaborative receiving water study, entitled the *San Francisco Bay Ambient Water Monitoring Interim Report*. The study was supplemented in June 2004 with Appendix 3: *San Francisco Bay Ambient Water Quality Monitoring: Final CTR Update*. This study summarizes the monitoring results from sampling events from January 2002 to August 2003 for the remaining priority pollutants not monitored by the RMP. The RPA was conducted and the WQBELs were calculated using RMP data from 1993 through 2003 for inorganics and organics at the Yerba Buena Island, and additional data from the BACWA *Ambient Water Monitoring Interim Report* for the Yerba Buena Island RMP station from 2002 and 2003.
- iv) *RPA determination*: The RPA results are shown below in Table B and Attachment 1 of this Fact Sheet. The pollutants that exhibit reasonable potential are copper, mercury, PCBs, and dioxins TEQ. A detected effluent value for bis (2-ethylhexyl) phthalate, which exceeded the applicable WQC, was not included in the analysis as noted in Footnote 4 of Table B.

**Table B. Summary of Reasonable Potential Analysis**

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>[1]</sup> (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background or Minimum DL <sup>[1]</sup> (µg/L)	RPA Results <sup>[2]</sup>
1	Antimony	0.6	4300	1.8	N
2	Arsenic	4.67	36	2.46	N
3	Beryllium	1.16	NA	<0.01	N
4	Cadmium	0.7	9.4	0.1268	N
5b	Chromium (VI)	NA	50	4.4	N
6	Copper	7.67	3.73	2.45	Y

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>[1]</sup> (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background or Minimum DL <sup>[1]</sup> (µg/L)	RPA Results <sup>[2]</sup>
7	Lead	4.7	8.5	0.8	N
8	Mercury	0.0505	0.025	0.0086	Y
9	Nickel	4.42	8.3	3.68	N
10	Selenium	3.4	5.0	0.39	N
11	Silver	0.45	2.2	0.0516	N
12	Thallium	0.7	6.3	0.21	N
13	Zinc	18.9	86	4.4	N
14	Cyanide	<2.2	1	<0.4	N
16	2,3,7,8-TCDD	<0.0000008 7	0.000000014	0.000000008	Ud
	Dioxin TEQ	0.00000013	0.000000014	0.000000195	Y <sup>[3]</sup>
17	Acrolein	<2.5	780	<0.5	N
18	Acrylonitrile	<0.21	0.66	0.03	N
19	Benzene	<0.11	71	<0.05	N
20	Bromoform	<0.34	360	<0.5	N
21	Carbon Tetrachloride	<0.15	4.4	0.06	N
22	Chlorobenzene	<0.12	21000	<0.5	N
23	Chlorodibromomethane	<0.25	34	<0.05	N
24	Chloroethane	<0.29	NA	<0.5	Uo
25	2-Chloroethylvinyl Ether	<5	NA	<0.5	Uo
26	Chloroform	<0.15	NA	<0.5	Uo
27	Dichlorobromomethane	<0.15	46	<0.05	N
28	1,1-Dichloroethane	<0.13	NA	<0.05	Uo
29	1,2-Dichloroethane	<0.24	99	0.04	N
30	1,1-Dichloroethylene	<0.22	3.2	<0.5	N
31	1,2-Dichloropropane	<0.39	39	<0.05	N
32	1,3-Dichloropropylene	NA	1,700	NA	N
33	Ethylbenzene	<0.09	29,000	<0.5	N
34	Methyl Bromide	<0.66	4,000	<0.5	N
35	Methyl Chloride	<0.34	NA	<0.5	Uo
36	Methylene Chloride	0.43	1,600	22	N
37	1,1,2,2-Tetrachloroethane	<0.17	11	<0.05	N
38	Tetrachloroethylene	<0.2	8.85	<0.05	N
39	Toluene	<0.15	200,000	<0.3	N
40	1,2-Trans-Dichloroethylene	<0.24	140,000	<0.5	N
41	1,1,1-Trichloroethane	<0.15	NA	<0.5	N
42	1,1,2-Trichloroethane	<0.15	42	<0.05	N
43	Trichloroethylene	<0.14	81	<0.5	N
44	Vinyl Chloride	<0.13	525	<0.5	N
45	2-Chlorophenol	<0.101	400	<1.2	N
46	2,4-Dichlorophenol	<0.101	790	<1.3	N

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>[1]</sup> (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background or Minimum DL <sup>[1]</sup> (µg/L)	RPA Results <sup>[2]</sup>
47	2,4-Dimethylphenol	<0.505	2,300	<1.3	N
48	2-Methyl-4,6-Dinitrophenol	<0.505	765	<1.2	N
49	2,4-Dinitrophenol	<0.505	14,000	<0.7	N
50	2-Nitrophenol	<0.101	NA	<1.3	Uo
51	4-Nitrophenol	<0.505	NA	<1.6	Uo
52	3-Methyl-4-Chlorophenol	<0.101	NA	<1.1	Uo
53	Pentachlorophenol	<0.328	7.9	<1	N
54	Phenol	<0.101	4,600,000	<1.3	N
55	2,4,6-Trichlorophenol	<0.101	6.5	<1.3	N
56	Acenaphthene	<0.0101	2,700	<b>0.0015</b>	N
57	Acenaphthylene	<0.0101	NA	<b>0.00053</b>	N
58	Anthracene	<0.0101	110,000	<b>0.0005</b>	N
59	Benzidine	<0.505	0.00054	<0.0015	N
60	Benzo(a)Anthracene	<0.0101	0.049	<b>0.0053</b>	N
61	Benzo(a)Pyrene	<0.0101	0.049	<b>0.00029</b>	N
62	Benzo(b)Fluoranthene	<0.0202	0.049	<b>0.0046</b>	N
63	Benzo(ghi)Perylene	<0.0101	NA	<b>0.0027</b>	Uo
64	Benzo(k)Fluoranthene	<0.0202	0.049	<b>0.0015</b>	N
65	Bis(2-Chloroethoxy)Methane	<0.101	NA	<0.3	Uo
66	Bis(2-Chloroethyl)Ether	<0.101	1.4	<0.3	N
67	Bis(2-Chloroisopropyl)Ether	<0.101	170,000	NA	N
68	Bis(2-Ethylhexyl)Phthalate	Un-determined	5.9	<0.5	N <sup>[4]</sup>
69	4-Bromophenyl Phenyl Ether	<0.101	NA	<b>0.23</b>	Uo
70	Butylbenzyl Phthalate	<0.152	5,200	<0.5	N
71	2-Chloronaphthalene	<0.0101	4,300	<0.3	N
72	4-Chlorophenyl Phenyl Ether	<0.101	NA	<0.3	Uo
73	Chrysene	<0.0126	0.049	<b>0.0024</b>	N
74	Dibenzo(a,h)Anthracene	<0.0101	0.049	<b>0.00064</b>	N
75	1,2 Dichlorobenzene	<0.101	17,000	<0.3	N
76	1,3 Dichlorobenzene	<0.1	2,600	<0.3	N
77	1,4 Dichlorobenzene	<0.9	2,600	<0.3	N
78	3,3-Dichlorobenzidine	<0.505	0.077	<0.001	N
79	Diethyl Phthalate	<0.101	120,000	<0.21	N
80	Dimethyl Phthalate	<0.101	2,900,000	<0.21	N
81	Di-n-Butyl Phthalate	<0.253	12,000	<0.5	N
82	2,4-Dinitrotoluene	<0.101	9.1	<0.27	N
83	2,6-Dinitrotoluene	<0.101	NA	<0.29	Uo

# in CTR	PRIORITY POLLUTANTS	MEC or Minimum DL <sup>[1]</sup> (µg/L)	Governing WQO/WQC (ug/L)	Maximum Background or Minimum DL <sup>[1]</sup> (µg/L)	RPA Results <sup>[2]</sup>
84	Di-n-Octyl Phthalate	<0.101	NA	<0.38	Uo
85	1,2-Diphenylhydrazine	<0.101	0.54	<b>0.0037</b>	N
86	Fluoranthene	<0.0101	370	<b>0.011</b>	N
87	Fluorene	<0.0101	14,000	<b>0.939</b>	N
88	Hexachlorobenzene	<0.101	0.00077	<b>0.0000202</b>	N
89	Hexachlorobutadiene	<0.101	50	<0.3	N
90	Hexachlorocyclopentadiene	<0.5	17,000	<0.31	N
91	Hexachloroethane	<0.101	8.9	<0.2	N
92	Indeno(1,2,3-cd) Pyrene	<0.0101	0.049	<b>0.004</b>	N
93	Isophorone	<0.101	600	<0.3	N
94	Naphthalene	<b>0.898</b>	NA	<b>0.0023</b>	Uo
95	Nitrobenzene	<0.101	1,900	<0.25	N
96	N-Nitrosodimethylamine	<0.505	8.1	<0.3	N
97	N-Nitrosodi-n-Propylamine	<0.101	1.4	<0.001	N
98	N-Nitrosodiphenylamine	<0.101	16	<0.001	N
99	Phenanthrene	<b>0.0243</b>	NA	<b>0.0061</b>	Uo
100	Pyrene	<0.0101	11,000	<b>0.0051</b>	N
101	1,2,4-Trichlorobenzene	<0.101	NA	<0.3	Uo
102	Aldrin	<0.0095	0.00014	NA	N
103	alpha-BHC	<0.0076	0.013	<b>0.000496</b>	N
104	beta-BHC	<0.0095	0.046	<b>0.000413</b>	N
105	gamma-BHC	<0.0085	0.063	<b>0.0007034</b>	N
106	delta-BHC	<0.012	NA	<b>0.000042</b>	N
107	Chlordane	<0.47	0.00059	<b>0.00018</b>	N
108	4,4'-DDT	<0.06	0.00059	<b>0.000066</b>	N
109	4,4'-DDE	<0.045	0.00059	<b>0.000693</b>	Ud
110	4,4'-DDD	<0.06	0.00084	<b>0.000313</b>	N
111	Dieldrin	<0.031	0.00014	<b>0.000264</b>	Ud
112	alpha-Endosulfan	<0.029	0.0087	<b>0.000031</b>	N
113	beta-Endosulfan	<0.041	0.0087	<b>0.000069</b>	N
114	Endosulfan Sulfate	<0.06	240	<b>0.0000819</b>	N
115	Endrin	<0.027	0.0023	<b>0.000036</b>	N
116	Endrin Aldehyde	<0.06	0.81	NA	N
117	Heptachlor	<0.0095	0.00021	<b>0.000019</b>	N
118	Heptachlor Epoxide	<0.015	0.00011	<b>0.000094</b>	N
119-125	PCBs	<b>0.00103</b>	0.00017	<b>0.00146</b>	Y
126	Toxaphene	<1	0.0002	NA	N
	Tributyltin	NA	0.01	<0.001	Ud
	Total PAHs	NA	15	<b>0.052</b>	N

- [1] Values for MEC or maximum background in bold are the actual detected concentrations, otherwise the values shown are the minimum detection levels.  
NA = Not Available (there is no monitoring data or WQO/WQC for this constituent).
- [2] RP = Yes, if either MEC or Background > WQO/WQC.  
RP = No, if both MEC or background < WQO/WQC or all effluent concentrations non-detect and background < WQO/WQC or no background available.  
RP = Uo (undetermined if no objective promulgated)  
RP = Ud if effluent data non-detect above the WQO/WQC.
- [3] Using the updated, recent monitoring data (through 2006), there is no reasonable potential for 2,3,7,8-TCDD, as it remains undetected at the facility Outfall, and therefore, there is no reasonable potential for 2,3,7,8-TCDD under the SIP. With respect to dioxin TEQ, the most recent data contain some detections of various congeners, but those detections were all near or below the quantification limit for the analysis, and for all samples with intake/outfall pairs, the intake dioxin TEQ is calculated as higher than the outfall dioxin TEQ, suggesting that the facility is not, in fact, adding dioxins to the water. This is consistent with other information, since there are no sources of dioxins to the discharge. However since dioxin TEQ was detected in the outfall, and the Bay was listed by the U.S. EPA as impaired by dioxin TEQ, the Board concludes that the facility could be a potential source of dioxin TEQ and there is reasonable potential for Dioxin TEQ.

Although there is reasonable potential, no effluent limits for dioxins TEQ have been set in this permit. This is because the discharge has concentrations above what would be the calculated water quality based effluent limits, so that it is infeasible for the Discharger to immediately comply due to the high concentrations in the intake. However, because of the predominance of non-detect data (e.g., 5 out of the 7 discharge samples were non-detect), it is impossible to calculate an interim performance based limit, or calculate intake credits. Therefore, no limits for dioxin TEQ is established in this permit, but the permit requires the Discharger to conduct semi-annual monitoring in order to collect sufficient data for effluent limit determination in the future.

- [4] The Discharger identified inappropriate collection equipment (now removed) as the source of bis (2-ethylhexyl) phthalate. The Board agrees with the Discharger's assertion and has not established an effluent limitation. Four additional semiannual samples will be required at which time the Board will re-evaluate RP, the need for continued sampling and the possible establishment of an effluent limitation.
- v) *Constituents with limited data:* Reasonable potential could not be determined for some of the organic priority pollutants due to the absence of effluent data or applicable WQOs/WQC. As required by the Board's August 6, 2001 Letter from Board staff to all permittees, the Discharger is required to continue to monitor for those pollutants in this category using analytical methods that provide the best detection limits reasonably feasible. These pollutants' RP will be reevaluated in the future to determine whether there is a need to add numeric effluent limitations to the permit or to continue monitoring.
- vi) *Pollutants with no reasonable potential:* WQBELs are not included in the Order for constituents that do not have reasonable potential to cause or contribute to exceedance of applicable WQOs or WQC. However, monitoring for those pollutants is still required, under the provisions of the Board's August 6, 2001 Letter. If concentrations of these constituents are found to increase significantly, the Discharger will be required to investigate the source(s) of the increase(s). Remedial measures are required if the increases pose a threat to water quality in the receiving water.
- vii) *Permit reopener:* The permit includes a reopener provision to allow numeric effluent limitations to be added for any constituent that in the future exhibits reasonable potential to cause or contribute to exceedance of a WQO or WQC. This determination, based on monitoring results, will be made by the Board.

## 2) Dilution

The Basin Plan (Table 4-1, Item 1) prohibits the discharge of any wastewater that has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive an initial dilution of at least 10:1. In part, the Basin Plan states:

“This prohibition will (a) provide an added degree of protection from the continuous effects of waste discharge, (b) provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions, (c) minimize public contact with undiluted wastes, and (d) reduce the visual (aesthetic) impact of waste discharges.”

Based on the factors described below, this prohibition does not apply to this discharge, and even if it did, the discharge qualifies for an exception to the prohibition.

As indicated in the Basin Plan, discharges of treated sewage and other discharges where the treatment process is subject to upset to contain particular characteristics of concern. The Basin Plan states, “This prohibition will .... Provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions ...” The dilution requirement is to provide a contingency in the event of temporary treatment plant malfunction and to minimize public contact with undiluted waste. However this discharge does not contain treated sewage and does not contain wastewater from a treatment process subject to upset. Therefore, the prohibition does not apply in this context.

Moreover, virtually all of the once through cooling water discharge consists of Bay water taken from the Bay with minimal characteristics of concern except thermal waste. The water is used for condensing steam through heat exchangers and is returned to the Bay at a temperature higher than that of the intake. The Basin Plan, in addition to requiring that the receiving water temperature not be altered if doing so adversely affect beneficial uses, refers to regulation of thermal waste by the State Thermal Plan (see Finding 16 of this Order). The other characteristics of potential concern are chlorine, pH, and possibly the toxic pollutants copper and mercury. The Discharger has excellent compliance with its permit limits for chlorine and pH, which demonstrates excellent reliability of its treatment system for these parameters. For copper and mercury, this Order requires the Discharger to determine if its processes contribute these pollutants to the discharge. Existing information does not suggest that the discharge is a substantial source of these pollutants. Likewise, data suggest that the plant does not add PCBs or dioxin TEQ to the circulating bay water. If the investigations show that these processes do constitute a substantial source of these pollutants to the Bay and the discharge is effectively wastewater that constitutes a threat to beneficial uses, the Board could consider imposing Prohibition 1, and require an initial 10:1 dilution.

In addition, even if Prohibition 1 did apply, the Basin Plan provides an exception: “Exceptions to Prohibitions 1, .... will be considered where: An inordinate burden would be placed on the discharger relative to beneficial uses protected ....” This section further states, “In reviewing requests for exceptions, the Regional Board will consider the reliability of the discharger’s system in preventing inadequately treated wastewater from being discharged to the receiving water ....” Because the treatment system is extremely reliable, and construction of a deepwater outfall would result in very little benefit, even if Prohibition 1 applied to this discharge, it appropriately qualifies for an exception to the prohibition.

### 3) Final Water Quality-Based Effluent Limitations

Toxic substances are regulated by WQBELs derived from the Basin Plan, Tables 3-3 and 3-4, the CTR, the NTR, and/or best professional judgment (BPJ) as defined in Section IV of the attached Fact Sheet. WQBELs in this Order are revised and updated from the limits in the previous Order, and their presence in this Order is based on the evaluation of the Discharger's data as described below under the RPA. Numeric WQBELs are required for all constituents that have a reasonable potential to cause or contribute to an excursion above any State water quality standard. Reasonable potential is determined and final WQBELs are developed using the methodology outlined in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (the State Implementation Plan or the SIP). If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with a compliance schedule to achieve the final limits. The WQOs or WQC used for each pollutant with Reasonable Potential is indicated in Table C below as well as in Attachment 2. Although reasonable potential for pollutants PCBs and dioxins TEQs has been found, effluent limits for these two classes of pollutants have not been set. For PCBs there is a discharge prohibition, so there is no limit, and for dioxins TEQs, there is insufficient data showing that there, concentrations in the outfall is greater than the intake.

**Table C. Water Quality Objectives/Criteria for Pollutants with RP**

Pollutant	Chronic WQO/WQC (µg/L)	Acute WQO/WQC (µg/L)	Human Health WQC (µg/L)	Basis of Lowest WQO /WQC Used in RPA
Copper	3.73	5.78	--	BP
Mercury	0.025	2.1	0.051	BP

### 4) Interim Limitations

Interim effluent limitations were derived for those constituents (copper and mercury) for which the Discharger has shown infeasibility of complying with the respective final limitations and has demonstrated that compliance schedules are justified based on the discharger's source control and pollution minimization efforts in the past and continued efforts in the present and future. The interim effluent concentration limitations for copper and mercury are based on statistical analyses of data submitted by the discharger. The interim limitation analysis for mercury used only ultraclean data. The interim limitations are also discussed in more detail below.

### 5) Feasibility Evaluation

The discharger submitted an infeasibility study on July 13, 2004 for copper and mercury. For constituents from which Board staff could perform a meaningful statistical analysis (i.e., copper and mercury), it used self-monitoring data from 2004 -2005 for copper and 2002 – 2006 for mercury and compared the mean, 95<sup>th</sup> percentile, and 99<sup>th</sup> percentile with the long-term average (LTA), AMEL, and MDEL to confirm if it is feasible for the Discharger to comply with interim WQBELs. If the LTA, AMEL, and MDEL all exceed the mean, 95<sup>th</sup> percentile, and 99<sup>th</sup> percentile, respectively, it is infeasible for the Discharger to comply with interim WQBELs. Table D below shows these comparisons in µg/L:

**Table D: Summary of Feasibility Analysis**

<u>Constituent</u>	<u>Mean vs. LTA</u>	<u>95<sup>th</sup> vs. AMEL</u>	<u>99<sup>th</sup> vs. MDEL</u>	<u>Feasible to Comply</u>
Copper (based on Weibull distribution fit)	3.1 > 1.88	6.8 > 2.9	8.6 > 5.8	No
Mercury (based log-logistic distribution fit)	0.007 < 0.010	0.023 > 0.018	0.032 < 0.046	No

This permit establishes a compliance schedule until May 18, 2010 for copper and April 28, 2010 for mercury. These compliance schedules exceed the length of the permit; therefore, the calculated final limitations are intended for point of reference for the feasibility demonstration.

During the compliance schedules, interim limitations are included based on current treatment facility performance or on previous permit limitations, whichever is more stringent, to maintain existing water quality. **Attachment 5** details the general basis for final compliance dates. The Board may take appropriate enforcement actions if interim limitations and requirements are not met.

- i. **Copper – Further Discussion and Rationale for Interim Effluent Limitation:** Interim effluent limitations are required for copper since the Discharger has demonstrated and the Board verified that the final effluent limitations calculated according to the SIP (AMEL of 2.9 µg/L and MDEL of 5.8 µg/L) will be infeasible to meet. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance or on the previous Order's limitation, whichever is more stringent. Self-monitoring data from 2004 to 2005 indicate that effluent copper concentrations ranged from < 0.695 µg/L to 7.67 µg/L (23 samples). Board staff calculated an interim performance-based limitation (IPBL) of 8.6 µg/L (3 standard deviations above the mean). The previous permit did not contain an effluent limitation for copper. Therefore, 8.6 µg/L is established in this Order as the interim limitation and will remain effect until December 30, 2009, or until the Board amends the limitation based on additional data.
- ii. **Mercury – Further Discussion and Rationale for Interim Effluent Limitation:** Interim effluent limitations are required for mercury since the Discharger has demonstrated and the Board verified that the final effluent limitations calculated according to the SIP (AMEL of 0.018 µg/L and MDEL of 0.046 µg/L) will be infeasible to meet. The SIP requires the interim numeric effluent limitation for the pollutant be based on either current treatment facility performance or on the previous Order's limitation, whichever is more stringent. The previous permit did not contain an effluent limitation for mercury. Effluent concentrations from 2002 through 2006 ranged from < 0.004 to 0.0505 µg/L (33 samples). Board staff calculated an IPBL of 0.032 µg/L (3 standard deviations above the mean). This IPBL shall remain in effect until April 28, 2010, or until the Board amends the limitation based on a WLA in the TMDL for mercury. However, during the next permit reissuance, the Board may reevaluate the interim mercury limitation.

**6. Attainability of Interim Performance-Based Limitations**

i. Copper

During the period April 2004, through December 2005, the Discharger's effluent concentrations for copper ranged from  $<0.70 \mu\text{g/L}$  to  $7.67 \mu\text{g/L}$  (23 samples). All 23 samples were below the interim limitation of  $8.6 \mu\text{g/L}$ . It is therefore expected that the facility can comply with the interim limitation for copper.

ii. Mercury

During the period June 2002 through January 2006, the Discharger's effluent concentrations ranged from  $0.0023 \mu\text{g/L}$  to  $0.0505 \mu\text{g/L}$  (33 samples). All 33 samples, except for one, were below the interim limitation of  $0.032 \mu\text{g/L}$ .

**7. Basis for Receiving Water Limitations**

- 1). Receiving water limitations C.1 and C.2 (conditions to be avoided): These limitations are based on the previous permit and the narrative/numerical objectives contained in Chapter 3 of the Basin Plan, pages 3-2 – 3-5.
- 2). Receiving water limitation C.3 (compliance with State Law): This requirement is in the previous permit, requires compliance with Federal and State law, and is self-explanatory.

**8. Basis for Self-Monitoring Requirements**

The SMP includes monitoring at the outfall for conventional, non-conventional, and toxic pollutants, and acute and chronic toxicity. For copper and mercury, the Discharger will perform monthly monitoring to demonstrate compliance with interim limitations. In lieu of near field discharge-specific ambient monitoring, it is generally acceptable that the Discharger participate in collaborative receiving water monitoring with other dischargers under the provisions of the Board's August 6, 2001 Letter and the RMP.

**9. Basis for Provisions**

- a) Provision D.1. (Permit Compliance and Rescission of Previous Permit): Time of compliance is based on 40 CFR 122. The basis of this Order superceding and rescinding the previous permit is 40 CFR 122.46.
- b) Provision D.2 (Effluent Characterization Study): This provision is based on the Basin Plan and the SIP.
- c) Provision D.3 (Receiving Water Study): This provision is based on the Basin Plan and the SIP.
- d) Provision D.4 (Mercury Compliance Study): This provision, based on BPJ, requires the Discharger to assess contributions of mercury in the bay from their process water. These data will facilitate a mass limit or support a finding indicating there is minimum contribution of

- mercury into the bay from the facility. This study was required in the December 21, 2005 13267 letter.
- e) Provision D.5 (Thermal Study): This provision, based on the Thermal Plan and Section 316(a) of the Clean Water Act, requires the Discharger to characterize the extent of impacts associated with the thermal discharge. The Discharger submitted the most recent thermal plume characterization study relevant to Unit 3 in 1991. Completion of an updated thermal study will provide the Board with more definitive data to assess adverse impacts, if any, associated with the discharge of heated water during the next reissuance process. This study was required in the December 21, 2005 13267 letter.
  - f) Provision D.6 (Impingement/Entrainment Study): This provision is based on revised regulations under Clean Water Act Section 316(b) for existing facilities to determine BTA for minimizing adverse environmental impacts associated with impingement and/or entrainment. The Phase II Rule for cooling water intake structures effective September 7, 2004 require all existing steam electric facilities that meet certain requirements to either adopt a pre-approved technology to minimize adverse environmental impacts or conduct a Comprehensive Demonstration Study to identify the most cost-effective compliance strategy. The Discharger submitted an Entrainment Characterization Report to the Board on March 21, 2005. That report was peer reviewed, but has not been finalized. As noted in the Proposal for Information Collection submitted on February 17, 2006, the Discharger will further revise its analysis of this data in the context of the complete Comprehensive Demonstration Study. Impingement studies will commence no later than April 2006, pursuant to the December 21, 2005 13267 letter.
  - g) Provision D.7 (Intake Water Study): This provision, based on the SIP and Basin Plan, requires the Discharger to assess the appropriateness, if any, of intake water credits for pollutants for which a reasonable potential has been determined. Current influent and ambient background data indicate the presence of some pollutants in the intake. At this time, data are insufficient to determine the validity of granting intake credits as defined in section 1.4 of the SIP. Collection of additional intake data will ensure sufficient data to make an accurate determination of intake credits, if requested by the Discharger, during the next permit reissuance.
  - h) Provision D.8 (PCB Stormwater Sediment Study): This provision is based BPJ. Although PCBs were not detected in the effluent, the detection limits are above the WQO. The storm drain sediments have not been analyzed for PCBs. PCBs are more likely to be found in sediments than in the water. This study is required in order to verify that there is no presence of PCBs in storm drain sediment that could contribute to PCBs in the stormwater discharged. This study was required by the December 21, 2005 13267 letter.
  - i) Provision D.9 (Pollutant Minimization Program): This provision is based on the Basin Plan, pages 4-25 – 4-28, and the SIP, Section 2.1.
  - j) Provision D.10 (Whole Effluent Acute Toxicity): This provision establishes conditions by which compliance with permit effluent limitations for acute toxicity will be demonstrated. The Discharger is currently conducting a sensitivity screening on topsmelt (*Atherinops affinis*), three-spined stickleback (*Gasterosteus aculeatus*), and speckled sanddab (*Citharichthys stigmaeus*). All acute toxicity testing is in accordance with 5<sup>th</sup> Edition U.S. EPA protocol.

- k) Provision D.11. (Whole Effluent Chronic Toxicity): This provision establishes conditions and protocol by which compliance with the Basin Plan narrative WQO for toxicity will be demonstrated. Conditions include required monitoring and evaluation of the effluent for chronic toxicity and numerical values for chronic toxicity evaluation to be used as “triggers” for initiating accelerated monitoring and toxicity reduction evaluation(s). This provision also requires the Discharger to conduct screening phase monitoring and implement toxicity identification and reduction evaluations when there is consistent chronic toxicity in the discharge. New testing species and/or test methodology may be available before the next permit renewal. Characteristics, and thus toxicity, of the process wastewater may also have changed during the life of the permit. This screening phase monitoring is important to help determine which test species is most sensitive to the toxicity of the effluent for future compliance monitoring. The proposed conditions in the draft permit for chronic toxicity are based on the Basin Plan narrative WQO for toxicity, Basin Plan effluent limitations for chronic toxicity (Basin Plan, Chapter 4), U.S. EPA and State Board Task Force guidance, applicable federal regulations [40 CFR 122.44(d)(1)(v)], and BPJ.
- l) Provision D.12 (Optional Mass Offset): This option is provided to encourage the Discharger to further implement aggressive reduction of mass loads to San Francisco Bay.
- m) Provision D.13 (Operations and Maintenance Manual and Reliability Report) and D.14 (Contingency Plan Update and Status Report): These provisions are based on the Basin Plan, the requirements of 40 CFR 122, and the previous permit.
- n) Provision D.15 (New Water Quality Objectives): This provision allows future modification of the permit and permit effluent limitations as necessary in response to updated WQOs that may be established in the future. This provision is based on 40 CFR 123.
- o) Provision D.16 (Self-Monitoring Program): The Discharger is required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions. Monitoring requirements are contained in the Self Monitoring Program (SMP) of the Permit. This provision requires compliance with the SMP and is based on 40 CFR 122.63. The SMP is a standard requirement in almost all NPDES permits issued by the Board, including this Order. It contains definitions of terms, specifies general sampling and analytical protocols, and sets out requirements for reporting of spills, violations, and routine monitoring data in accordance with NPDES regulations, the California Water Code, and Board’s policies. The SMP also contains a sampling program specific for the facility. It defines the sampling stations and frequency, the pollutants to be monitored, and additional reporting requirements. Pollutants to be monitored include all parameters for which effluent limitations are specified. Monitoring for additional constituents, for which no effluent limitations are established, is also required to provide data for future completion of RPAs.
- p) Provision D.17 (Standard Provisions and Reporting Requirements): The purpose of this provision is to require compliance with the standard provisions and reporting requirements given in this Board's document titled *Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993* (the Standard Provisions), or any amendments thereafter. That document is incorporated in the Order as an attachment to it. Where provisions or reporting requirements specified in the Order are different from equivalent or related provisions or reporting requirements given in the Standard Provisions, the permit specifications shall apply. The standard provisions and reporting requirements

given in the above document are based on various state and federal regulations with specific references cited therein.

- q) Provision D.18 (Permit Reopener): This provision is based on 40 CFR 123.
- r) Provision D.19 (NPDES Permit): This provision is based on 40 CFR 123.
- s) Provisions D.20 (Order Expiration and Reapplication): This provision is based on 40 CFR 122.46(a).
- t) Provisions D.21 (Change in Control or Ownership): This provision is based on 40 CFR 122.61.

#### **V. WASTE DISCHARGE REQUIREMENT APPEALS**

Any person may petition the State Water Resources Control Board to review the decision of the Board regarding the Waste Discharge Requirements. A petition must be made within 30 days of the Board public hearing.

## **VI. ATTACHMENTS**

- Attachment 1:** RPA Results for Priority Pollutants
- Attachment 2:** Calculation of Final WQBELs
- Attachment 3:** Intake and Effluent Data
- Attachment 4:** RMP Data
- Attachment 5:** General Basis for Final Compliance Dates

## **Attachment 1**

### **RPA Results for Priority Pollutants**

Mirant Poirero Power Plant  
NPDES Permit Reissuance

Input for RPA

Green highlight checks for input inconsistency (see "input check" spreadsheet for logic)  
Yellow highlights are user input

Constituent name	EFFLUENT DATA				Input Check	RECEIVING WATER (BACKGROUND) DATA (B)				Input Check	7) Review other information in the SIP page 4. If information is unavailable or insufficient, by the RWQCB shall establish interim monitoring requirements
	Effluent Data Available (Y/N)?	Are all data points non-detects (Y/N)?	If all data points ND Enter the max detection limit (MDL) (ug/L)	Enter the pollutant effluent detected max conc (ug/L)		B Available (Y/N)?	Are all B non-detects (Y/N)?	If all data points ND Enter the max detection limit (MDL) (ug/L)	Enter the Detected Maximum Background Conc		
1 Anthracene	Y	N				Y	N	1.8			
2 Arsenic	Y	N	4.67			Y	N	2.48			
3 Barium	Y	N	0.34			Y	N	0.215			No Criteria
4 Cadmium	Y	N	0.5			Y	N	0.1255			
54 Chromium (III)	Y	N				Y	N	4.4			
55 Chromium (VI)	Y	N	0.64			Y	N	4.4			
5 Chromium Total	Y	N				Y	N	4.4			
6 Copper	Y	N	7.17			Y	N	2.45			
7 Lead	Y	N	1.96			Y	N	0.8			
8 Mercury (303d listed)	Y	N	4.33			Y	N	0.005			
9 Nickel (303d listed)	Y	N	3.4			Y	N	0.30			
10 Selenium (303d listed)	Y	N	0.369			Y	N	0.0518			
11 Silver	Y	N	0.5			Y	N	0.21			
12 Thallium	Y	N	18.9			Y	N	4.4			
13 Zinc	Y	N	5			Y	N	0.8			
14 Cyanide	Y	N	0.4			Y	N	0.5			
15 Sulfides	Y	N	0.000015			Y	N	1.00E-09			No Criteria
16 3,3',5'-TCDF (303d listed)	Y	Y	0.000015			Y	Y	7.10E-08			
17 Dieldrin	Y	Y	0.5			Y	Y	0.03			
18 Acrylonitrile	Y	Y	2.5			Y	Y	0.05			
19 Benzene	Y	Y	0.5			Y	Y	0.05			
20 Biphenyl	Y	Y	0.5			Y	Y	0.5			
21 Carbon Tetrachloride	Y	Y	0.5			Y	Y	0.06			
22 Chlorobenzene	Y	Y	0.5			Y	Y	0.5			
23 Chlorobromobenzene	Y	Y	0.5			Y	Y	0.5			
24 Chloroethane	Y	Y	0.5			Y	Y	0.5			No Criteria
25 2-Chloroethylvinyl ether	Y	Y	0.5			Y	Y	0.5			No Criteria
26 Chloroform	Y	Y	0.5			Y	Y	0.5			No Criteria
27 Dichlorobromobenzene	Y	Y	0.5			Y	Y	0.05			
28 1,1-Dichloroethane	Y	Y	0.5			Y	Y	0.05			No Criteria
29 1,2-Dichloroethane	Y	Y	0.5			Y	Y	0.5			
30 1,1-Dichloroethylene	Y	Y	0.5			Y	Y	0.5			
31 1,2-Dichloroethylene	Y	Y	0.5			Y	Y	0.05			
32 1,3-Dichlorobenzene	Y	Y	0.5			Y	Y	0.5			
33 Ethylbenzene	Y	Y	0.5			Y	Y	0.5			
34 Methyl Bromide	Y	Y	1			Y	Y	0.5			No Criteria
35 Methyl Chloride	Y	Y	1			Y	Y	0.5			
36 Methylene Chloride	Y	Y	1			Y	Y	0.5			No Criteria
37 1,1,2,2-Tetrachloroethane	Y	Y	0.5			Y	Y	0.5			
38 Tetrachloroethylene	Y	Y	0.5			Y	Y	0.05			
39 Toluene	Y	Y	0.5			Y	Y	0.5			
40 1,2-Trans-Dichloroethylene	Y	Y	0.5			Y	Y	0.5			
41 1,1,1-Trichloroethane	Y	Y	0.5			Y	Y	0.5			No Criteria
42 1,1,2-Trichloroethane	Y	Y	0.5			Y	Y	0.5			
43 Trichloroethylene	Y	Y	0.5			Y	Y	0.5			
44 Vinyl Chloride	Y	Y	0.5			Y	Y	0.5			
45 2-Chlorophenol	Y	Y	0.101			Y	Y	1.3			
46 2,4-Dichlorophenol	Y	Y	0.101			Y	Y	1.3			
47 2,4,6-Trichlorophenol	Y	Y	0.505			Y	Y	1.3			
48 2-Methyl-4,6-Dichlorophenol	Y	Y	0.505			Y	Y	1.3			
49 4-Chlorophenol	Y	Y	0.505			Y	Y	0.7			
50 2-Nitrophenol	Y	Y	0.101			Y	Y	1.3			No Criteria
51 4-Nitrophenol	Y	Y	0.505			Y	Y	1.3			No Criteria
52 3-Methyl-4-Chlorophenol	Y	Y	0.101			Y	Y	1.1			No Criteria
53 Pentachlorophenol	Y	Y	0.328			Y	Y	1			
54 Phenol	Y	Y	0.101			Y	Y	1.3			
55 2,4,6-Trichlorophenol	Y	Y	0.101			Y	Y	1.3			
56 Acenaphthene	Y	Y	0.0101			Y	N	0.0015			
57 Acenaphthylene	Y	Y	0.0101			Y	N	0.00053			No Criteria
58 Anthracene	Y	Y	0.0101			Y	N	0.0005			
59 Benz[a]anthracene	Y	Y	0.0101			Y	N	0.0015			
60 Benz[b]fluoranthene	Y	Y	0.0101			Y	N	0.00053			
61 Benz[k]fluoranthene	Y	Y	0.0101			Y	N	0.00053			
62 Benzofluoranthene	Y	Y	0.0202			Y	N	0.0045			
63 Benzofluoranthene	Y	Y	0.0101			Y	N	0.0027			No Criteria
64 Benzofluoranthene	Y	Y	0.0202			Y	N	0.0045			
65 Benzo[a]anthracene	Y	Y	0.101			Y	Y	0.3			No Criteria
66 Benzo[a]anthracene	Y	Y	0.101			Y	Y	0.3			
67 Benzo[a]anthracene	Y	Y	0.101			Y	Y	0.3			
68 Benzo[a]anthracene	Y	Y	7.43			Y	Y	0.5			
69 4-Bromophenyl Phenyl Ether	Y	Y	0.101			Y	Y	0.23			No Criteria
70 4-Bromophenyl Phenyl Ether	Y	Y	0.101			Y	Y	0.152			
71 4-Bromophenyl Phenyl Ether	Y	Y	0.101			Y	Y	0.3			No Criteria
72 4-Chlorophenyl Phenyl Ether	Y	Y	0.101			Y	Y	0.3			No Criteria
73 Chloroform	Y	Y	0.0126			Y	N	0.0004			
74 Chlorobenzene	Y	Y	0.0101			Y	N	0.0004			
75 1,2-Dichlorobenzene	Y	Y	0.5			Y	Y	0.8			
76 1,3-Dichlorobenzene	Y	Y	0.5			Y	Y	0.5			
77 1,4-Dichlorobenzene	Y	Y	0.101			Y	Y	0.5			
78 1,3-Dichlorobenzene	Y	Y	0.505			Y	Y	0.001			
79 Diethyl Phthalate	Y	Y	0.101			Y	Y	0.24			
80 Dimethyl Phthalate	Y	Y	0.101			Y	Y	0.24			
81 Di-n-Butyl Phthalate	Y	Y	0.253			Y	Y	0.5			
82 2,4-Dimethylphthalate	Y	Y	0.101			Y	Y	0.27			
83 2,6-Dimethylphthalate	Y	Y	0.101			Y	Y	0.26			No Criteria
84 Di-n-Octyl Phthalate	Y	Y	0.101			Y	Y	0.38			No Criteria
85 1,2-Diphenylhydrazine	Y	Y	0.101			Y	N	0.0027			
86 Fluoranthene	Y	Y	0.0101			Y	N	0.011			
87 Fluorene	Y	Y	0.0101			Y	N	0.00208			
88 Hexachlorobenzene	Y	Y	0.101			Y	N	0.0000202			
89 Hexachlorobenzene	Y	Y	0.5			Y	N	0.011			
90 Hexachlorocyclopentadiene	Y	Y	0.505			Y	N	0.31			
91 Hexachlorocyclopentadiene	Y	Y	0.101			Y	N	0.2			
92 Indene (1,2,3-cd) pene	Y	Y	0.0101			Y	N	0.004			
93 Naphthalene	Y	Y	0.101			Y	N	0.3			
94 Naphthalene	Y	Y	0.237			Y	N	0.0023			No Criteria
95 Nicosolone	Y	Y	0.101			Y	N	0.25			
96 N-Nicosolone	Y	Y	0.05			Y	N	0.1			
97 N-Nicosolone-Propylamine	Y	Y	0.101			Y	N	0.001			
98 N-Nicosolone-Propylamine	Y	Y	0.101			Y	N	0.001			
99 Phenanthrene	Y	Y	0.0101			Y	N	0.0001			No Criteria
100 Pyrene	Y	Y	0.0101			Y	N	0.0051			
101 1,2,4-Trichlorobenzene	Y	Y	0.5			Y	N	0.3			No Criteria
102 Nitro	Y	Y	0.05			Y	N				
103 alpha-BHC	Y	Y	0.05			Y	N	0.000486			
104 beta-BHC	Y	Y	0.05			Y	N	0.000413			
105 gamma-BHC	Y	Y	0.05			Y	N	0.000334			
106 delta-BHC	Y	Y	0.05			Y	N	0.000042			No Criteria
107 Chlordane (303d listed)	Y	Y	0.05			Y	N	0.00015			
108 4,4'-DDE (303d listed)	Y	Y	0.05			Y	N	0.000113			
109 4,4'-DDE (linked to DDT)	Y	Y	0.05			Y	N	0.000093			
110 4,4'-DDD	Y	Y	0.05			Y	N	0.000113			
111 Dieldrin (303d listed)	Y	Y	0.05			Y	N	0.000054			
112 alpha-Endosulfan	Y	Y	0.05			Y	N	0.000031			
113 beta-Endosulfan	Y	Y	0.05			Y	N	0.000069			
114 Endosulfan Sulfate	Y	Y	0.05			Y	N	0.000019			
115 Endosulfan	Y	Y	0.05			Y	N	0.000039			
116 Endrin Aldehyde	Y	Y	0.05			Y	N				
117 Heptachlor	Y	Y	0.05			Y	N	0.000019			
118 Heptachlor Epoxide	Y	Y	0.05			Y	N	0.00004			
119-125 PCBs sum (2)	Y	Y	0.5			Y	N				
126 Toxaphene	Y	Y	1			Y	N				
Total PAHs	Y	Y				Y	N	0.001			0.052

Mirant Potrero, LLC—Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

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## **Attachment 2**

### **Intake and Effluent Data**

Mirant Potrero, LLC—Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

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Mirant Potrero Power Plant

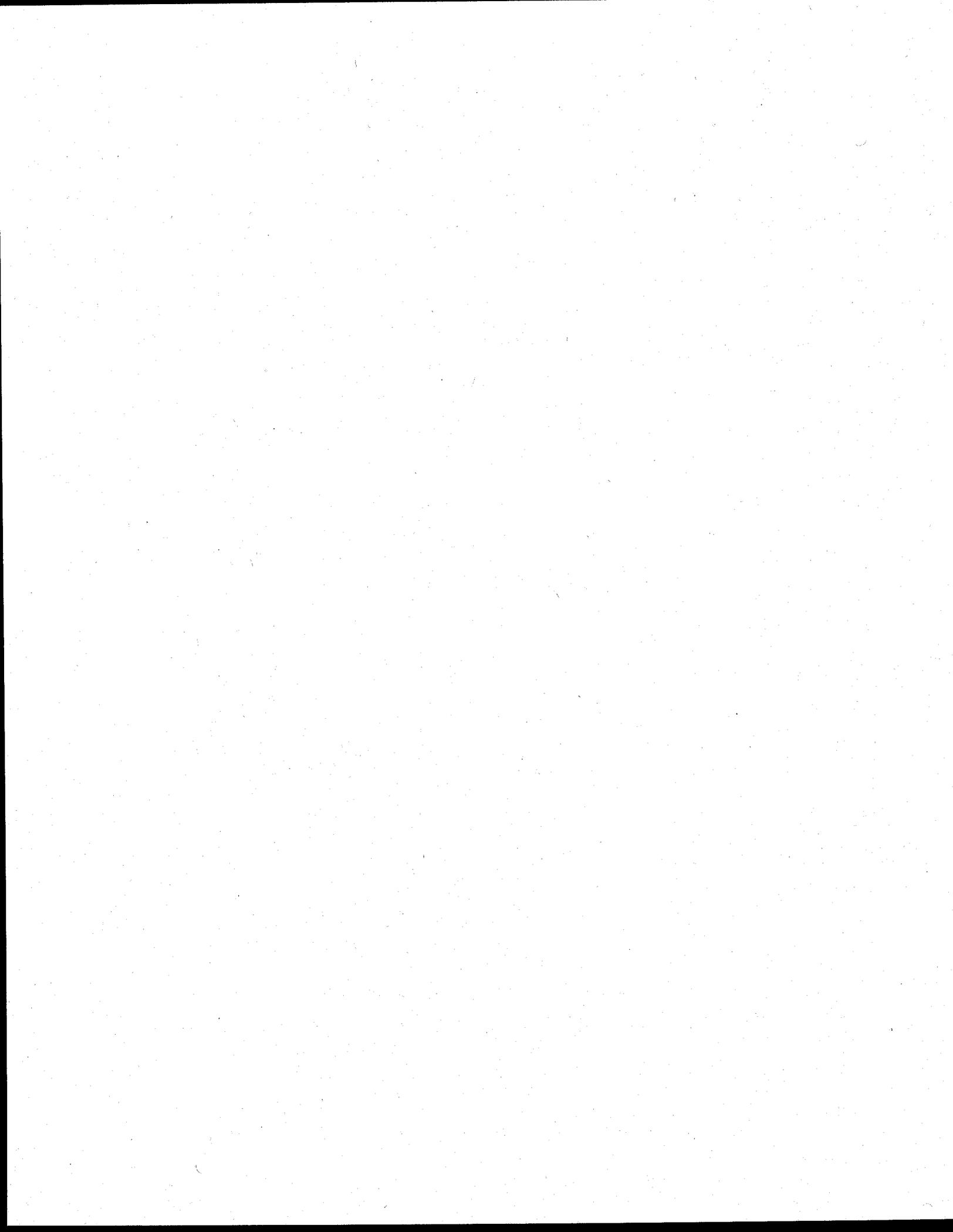
Intake Water Quality Data  
(Inorganics)

Intake I-001															
Date	Antimony (ug/L)	Arsenic (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Copper (ug/L)	Lead (ug/L)	Mercury (ug/L)	Nickel (ug/L)	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Zinc (ug/L)	Cyanide (ug/L)	
6/23/1999								< 0.2							
12/8/1999								< 0.2							
7/5/2000								< 0.1							
12/13/2000								< 0.2							
7/12/2001								< 0.2							
10/24/2001								< 0.2							
3/21/2002													< 10		
4/26/2002													< 10		
5/28/2002													< 10		
6/25/2002								0.0172					< 10		
7/23/2002								0.00498					< 10		
8/14/2002								0.00862					< 10		
9/18/2002								0.00288					< 10		
10/2/2002								0.00337					< 10		
11/21/2002								0.00438					< 10		
12/19/2002								0.1002					< 10		
1/23/2003								0.00895					< 10		
2/7/2003								0.00589					< 10		
3/28/2003													< 10		
4/30/2003													< 10		
5/7/2003													< 10		
6/30/2003															
8/25/2003															
9/25/2003															
10/22/2003								< 0.03							
10/30/2003								0.0088					< 10		
11/7/2003													< 10		
12/4/2003								0.0091					< 10		
1/31/2004								0.0115					< 5		
2/9/2004								0.00533					< 5		
3/3/2004								0.0196							
4/2/2004								0.00621							
4/29/2004	< 0.22	2.7	< 0.34	0.35	0.75	2.7	0.45		< 0.7	2.7	0.25	0.2	< 0.75		
4/28/2004	0.4	2.55	< 0.34	0.45	1.7	2.7	0.75		1.75	5.85	0.3	0.3	< 0.75		
5/4/2004		2.17		0.389	1.61	5.39	1.17		4.61	< 0.825	< 0.12	0.333	11.7		
5/5/2004		2.39		0.333	1.61	4.67	1.28	0.00944	2.61	< 0.825	< 0.12	0.333	7.56		
5/11/2004		2.83		0.167	2.28	3.78	1.33		1.61	< 0.825	0.17	0.222	19.8		
5/13/2004		3.39		< 0.05	1.44	3.17	1		0.722	< 0.825	< 0.12	0.111	< 0.75		
5/19/2004		3		0.25	1.2	2.8	0.6		2.35	< 0.825	0.2	0.2	6.85		
5/18/2004		3.2		< 0.05	2.3	1.8	1		3.75	< 0.825	0.25	0.35	< 0.75		
5/24/2004		4.78		0.611	2.33	2.83	2.44		4.17	5.89	0.39	0.278	< 0.75		
5/25/2004		4.11		0.0566	1.94	< 0.695	1.94		3.06	1.78	0.39	< 0.105	4.83		
6/2/2004			< 0.05		< 0.695			0.00521		< 0.825	0.35			< 5	

Mirant Potrero Power Plant

Effluent Water Quality Data  
(Inorganics)

Outfall E-001																
Date	Antimony (ug/L)	Arsenic (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Copper (ug/L)	Lead (ug/L)	Mercury (ug/L)	Nickel (ug/L)	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Zinc (ug/L)	Cyanide (ug/L)		
3/21/2002																< 10
4/26/2002																< 10
5/28/2002																< 10
6/25/2002								0.00923	<							< 10
7/23/2002								0.00448								< 10
8/14/2002								0.00778								< 10
9/18/2002								0.00303								< 10
10/2/2002								0.00322								
11/21/2002								0.00464	<							< 10
12/19/2002								0.05050								< 10
1/23/2003								0.01380								< 10
2/7/2003								0.00617								< 10
3/28/2003								0.01070								< 10
4/30/2003																< 10
5/7/2003																< 10
6/30/2003																
8/25/2003																
9/25/2003																
10/22/2003									<							
10/30/2003								0.00640								< 10
11/7/2003																< 10
12/4/2003								0.00400								< 10
1/31/2004								0.00506								< 5
2/9/2004								0.00526								< 5
3/3/2004								0.00403								
4/2/2004								0.00679								
4/29/2004	< 0.4	2.55	< 0.5	0.4	0.65	4.7	0.75		< 0.7	2.55	0.25	0.15	< 0.75			
4/28/2204	0.4	2.65	< 0.5	0.5	0.8	2.25	0.6		< 0.7	3.4	0.25	0.5	< 0.75			
5/4/2004		2.06			0.222	1.72	5	1	4.28	< 0.825	< 0.12	< 0.105	3.06			
5/5/2004		2.67			0.444	1.06	3.61	1.39	0.0101	1.56	< 0.825	< 0.12	< 0.105	18.9		
5/11/2004		3.17	<	0.05	1.44	7.17	0.889		1.72	< 0.825	< 0.121	0.278	1.13			
5/13/2004		3.5	<	0.05	1.11	2.28	0.722		< 0.7	< 0.825	< 0.12	< 0.105	5.89			
5/19/2004		2.55		0.05	1.8	3	0.95		3.2	< 0.825	0.25	0.15	8.65			
5/18/2004		2.55		0.1	1.65	2.4	0.85		3.2	< 0.825	0.2	0.4	6.2			
5/24/2004		4		0.167	2.39	3.33	1.94		3.17	1.94	0.389	0.222	2.72			
5/25/2004		4.67		0.0556	2.72	1.28	1.78		4.33	2	0.389	< 0.105	8.72			
6/2/2004			<	0.05		< 0.695		0.00864	<	0.825	0.2					



Mirant Potrero, LLC—Potrero Power Plant  
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## **Attachment 3**

### **RMP Data**

Mirant Potrero, LLC—Potrero Power Plant  
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RMP Yerba Buena Total Metals Data

Station C	Station	Date	Ag*	As	Cd*	Co	Cr	Cu*	Fe	Hg	MeHg	Mn*	Ni*	Pb*	Se	Zn*	
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	ng/L	µg/L	µg/L	µg/L	µg/L	µg/L	
BC10	Yerba Buena Island	3/3/1993	0.0037	1.82	0.0333	NA	0.86	2.45	NA	0.004	NA	NA	2.74	0.24	0.132	1.86	
BC10	Yerba Buena Island	5/24/1993	0.0516	1.78	0.0685	NA	1.42	1.61	NA	0.0035	NA	NA	1.79	0.24	0.234	1.87	
BC10	Yerba Buena Island	9/13/1993	0.0093	2.3	0.0641	NA	0.9	1.66	NA	0.0039	NA	NA	1.46	0.27	0.275	1.76	
BC10	Yerba Buena Island	2/3/1994	0.013	2.18	0.0628	NA	1.07	1.68	NA	0.0042	NA	NA	2.13	0.28	0.39	3.26	
BC10	Yerba Buena Island	4/20/1994	0.0165	2.02	0.0951	NA	1.78	2.34	NA	0.0064	NA	NA	3.21	0.8	0.27	3.22	
BC10	Yerba Buena Island	8/17/1994	0.009	2.46	0.1268	NA	1.17	2.02	NA	0.0029	NA	NA	2.06	0.19	0.27	1.77	
BC10	Yerba Buena Island	2/8/1995	0.0026	1.55	0.032	NA	0.85	2.27	NA	0.0025	NA	NA	2.81	0.15	0.07	2.01	
BC10	Yerba Buena Island	4/27/1995	0.0033	1.63	0.048	NA	1.64	1.8	NA	0.0034	NA	NA	2.63	0.35	0.18	2.23	
BC10	Yerba Buena Island	8/16/1995	0.01	2.02	0.09	NA	0.6	1.33	NA	0.0022	NA	NA	1.43	0.18	e 0.04	1.48	
BC10	Yerba Buena Island	2/7/1996	0.004	1.75	0.07	NA	1.2	2.1	NA	0.005	NA	NA	2.3	0.3	0.3	4.4	
BC10	Yerba Buena Island	4/30/1996	0.004	1.61	0.05	NA	0.7	1.2	NA	0.002	NA	NA	1.2	0.1	0.11	1.2	
BC10	Yerba Buena Island	7/26/1996	0.007	2.13	0.1	NA	4.4	1.8	NA	0.004	NA	NA	2.5	0.3	0.09	2.4	
BC10	Yerba Buena Island	1/23/1997	NA	1.47	0.03	NA	3.28	1.8	NA	0.0001	NA	NA	2.4	0.34	0.11	2.4	
BC10	Yerba Buena Island	4/14/1997	NA	2.11	0.07	NA	1.41	1.8	NA	0.0038	NA	NA	1.9	0.28	0.11	2.8	
BC10	Yerba Buena Island	7/30/1997	NA	2.22	0.1	NA	1.39	1.5	NA	0.0026	NA	NA	2.3	0.25	0.14	1.7	
BC10	Yerba Buena Island	1/29/1998	0.01	1.98	0.04	NA	3.05	2.2	NA	0.0055	NA	NA	3.5	0.67	0.15	4.2	
BC10	Yerba Buena Island	4/20/1998	0.004	1.52	0.02	NA	2.69	2.1	NA	0.003	NA	NA	2.4	0.35	0.19	2.6	
BC10	Yerba Buena Island	7/22/1998	0.004	1.92	0.07	NA	0.71	1.3	NA	0.0023	NA	NA	1.6	0.16	0.12	2	
BC10	Yerba Buena Island	2/4/1999	0.005	1.68	0.038	NA	0.65	1.8	NA	b 0.0035	NA	NA	2.3	0.29	0.11	2.3	
BC10	Yerba Buena Island	4/14/1999	0.006	1.11	0.068	NA	2.09	1.6	NA	b 0.0068	q 0.06	NA	2.2	0.35	e 0.02	2.5	
BC10	Yerba Buena Island	7/16/1999	0.012	2.14	0.126	NA	3.33	2.3	NA	b 0.007	q b 0.04	NA	3.7	0.63	0.11	3.9	
BC10	Yerba Buena Island	2/4/2000	0.011	1.39	0.091	NA	NA	2.01	NA	b 0.0069	p 0.025	NA	3.014	0.74823	ND	2.996	
BC10	Yerba Buena Island	7/14/2000	0.007	1.71	0.086	NA	NA	0.815	NA	Q	ND, p	NA	1.086	0.23813	e 0.039	1.266	
BC10	Yerba Buena Island	2/8/2001	NA	2.16	NA	NA	NA	NA	NA	NR	B	NA	NA	NA	e 0.08	NA	
BC10	Yerba Buena Island	8/3/2001	NA	b 2.08	NA	NA	NA	NA	NA	0.0086	0.197	NA	NA	NA	e 0.08	NA	
	Maximum		0.0516	2.46	0.1268		0	4.4	2.45	0	0.0086	0.197	0	3.7	0.8	0.39	4.4
	Average		0.00965	1.86083	0.06868	#DIV/0!	1.67571	1.8037	#DIV/0!	0.00368	0.197	#DIV/0!	2.28957	0.33506	0.17689	2.44009	

RMP Yerba Buena Total PAHs

Station Code	Station	Date	2-Methylphenanthrene ng/L	Methylanthracene ng/L	Total Alkanes ng/L	SUM PAHS (SFEI) ng/L	SUM LPAHS (SFEI) ng/L	Biphenyl ng/L	Naphthalene ng/L	1-Methylnaphthalene ng/L	2-Methylnaphthalene ng/L	2,6-Dimethylnaphthalene ng/L	2,3,5-Trimethylnaphthalene ng/L	Acenaphthene ng/L	Acenaphthylene ng/L	Anthracene ng/L
BC10	Yerba Buena Island	3/3/93	0.627			11	3.27	NA	NA	NA	NA	NA	NA	NA	NA	0.01
BC10	Yerba Buena Island	2/3/94		ND	2983	13	2.11	NA	NA	0.26	0.41	NA	NA	NA	NA	0.02
BC10	Yerba Buena Island	4/20/94		NA	793	29	2.74	NA	NA	0.27	NA	NA	NA	NA	NA	0.17
BC10	Yerba Buena Island	8/17/94		NA	136	10	1.2	NA	NA	NA	NA	NA	NA	NA	NA	0.08
BC10	Yerba Buena Island	2/8/95			208	9	1.56	NA	NA	NA	NA	NA	NA	NA	NA	ND
BC10	Yerba Buena Island	4/27/95			96	14	1.97	NA	NA	NA	NA	NA	NA	NA	NA	Q
BC10	Yerba Buena Island	8/16/95			105	14	2.97	NA	NA	NA	NA	NA	NA	NA	NA	Q
BC10	Yerba Buena Island	2/7/96				37	17.08	1.4	2.3	0.88	2.56	0.26	0.24	0.69	0.53	0.09
BC10	Yerba Buena Island	4/30/96				25	12.14	0.6	1.1	1.24	Q	0.39	0.19	1.3	0.22	ND
BC10	Yerba Buena Island	7/26/96				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BC10	Yerba Buena Island	1/23/97				26	11.93	0.3	0.4	0.56	0.87	ND	ND	0.97	ND	ND
BC10	Yerba Buena Island	4/14/97				24	4.67	0.2	0.2	0.19	0.32	ND	ND	0.77	ND	ND
BC10	Yerba Buena Island	7/30/97				24	7.27	0.2	0.4	0.18	0.21	0.13	0.12	1.5	0.17	0.44
BC10	Yerba Buena Island	1/29/98				52	10.3	ND	ND	ND	ND	ND	ND	1.4	0.3	0.5
BC10	Yerba Buena Island	4/20/98				S	S	b 0.43	ND	ND	ND	B	B	B	ND	B
BC10	Yerba Buena Island	7/22/98				S	S	ND	ND	ND	0.44	ND	ND	1.4	ND	ND
BC10	Yerba Buena Island	2/4/99				17	0.8	ND	ND	ND	0.23	ND	ND	0.13	ND	ND
BC10	Yerba Buena Island	4/14/99				20	4.7	0.2	0.29	ND	0.44	ND	ND	0.24	ND	ND
BC10	Yerba Buena Island	7/16/99				34	6.8	B	0.24	0.4	B	0.47	ND	0.88	0.11	0.35
BC10	Yerba Buena Island	7/14/00				13.28	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
BC10	Yerba Buena Island	8/3/01				19	4.4	1.2	ND	ND	ND	ND	ND	ND	ND	ND
	Maximum		0.627	0	2983	52	17.08	1.4	2.3	1.24	2.56	0.47	0.24	1.5	0.53	0.5
	Average		0.6270	0.0000	1043.4286	23.3305	6.0416	0.6875	0.9038	0.5800	0.8933	0.3440	0.1975	0.9800	0.3100	0.2400

RMP Yerba Buena Total PAHs

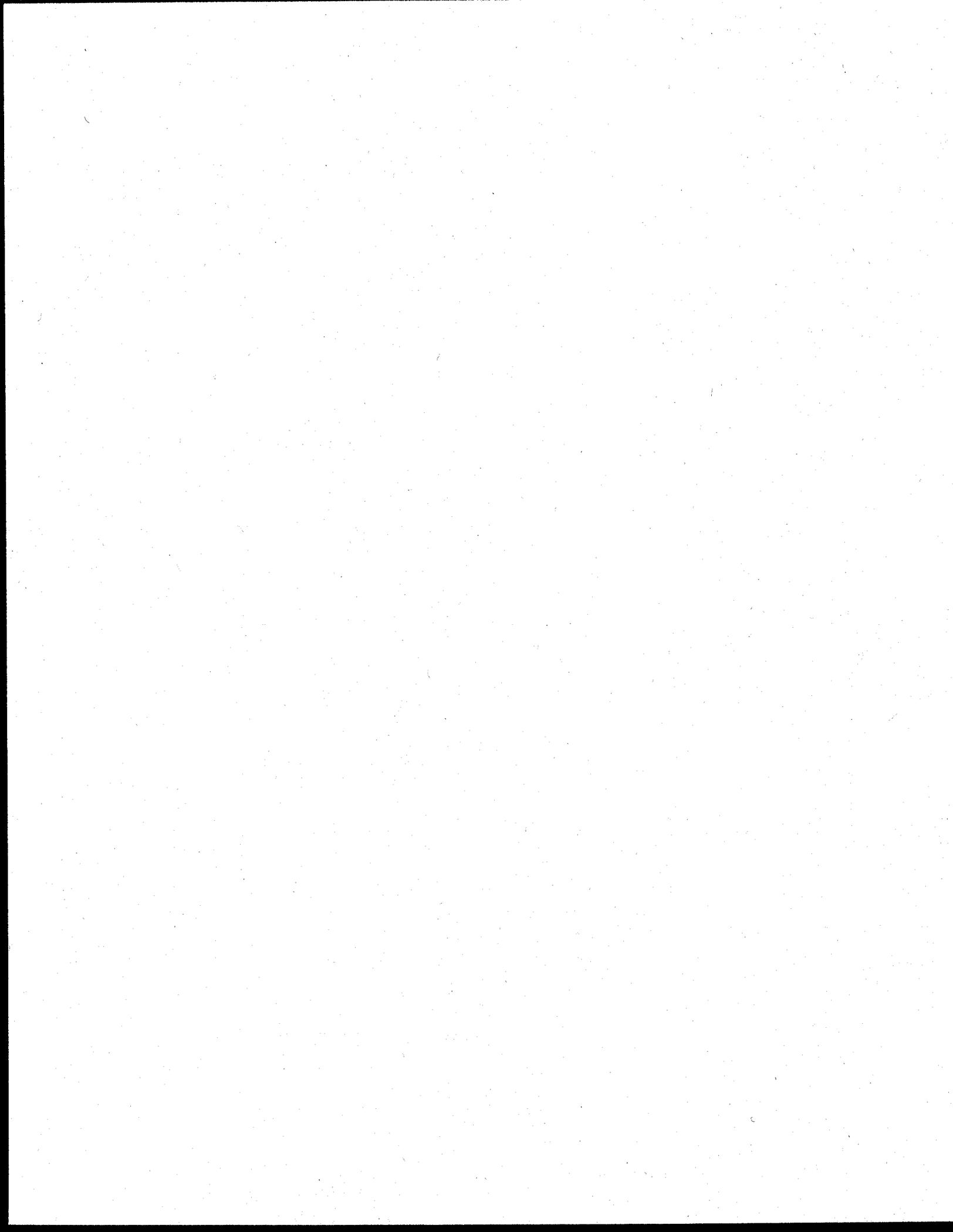
Date	Dibenzothiophene ng/L	Fluorene ng/L	Phenanthrene ng/L	1-Methylphenanthrene ng/L	SUM HPAHS (SFEI) ng/L	Benz(a)anthracene ng/L	Chrysene ng/L	Pyrene ng/L	Benzo(a)pyrene ng/L	Benzo(e)pyrene ng/L	Benzo(b)fluoranthene ng/L	Benzo(k)fluoranthene ng/L	Dibenz(a,h)anthracene ng/L	Perylene ng/L	Benzo(ghi)perylene ng/L	Fluoranthene ng/L	Indeno(1,2,3-cd)pyrene ng/L
3/3/93	NA	NA	2.86	0.41	8	0.09	0.59	0.84	0.02	0.65	1.09	0.33	0.04	NA	ND	4.03	0.21
2/3/94	NA	NA	1.42	NA	11	0.33	0.98	1.6	0.04	0.89	1.41	0.59	0.03	NA	ND	4.91	0.52
4/20/94	NA	NA	2.3	NA	26	1.18	e 1.41	5.1	e 0.02	e 2.65	e 3.96	e 1.22	0.35	NA	NA	6.6	e 3.31
8/17/94	NA	NA	1.12	ND	9	NA	0.42	1.6	ND	0.64	1	0.31	0.25	NA	0.1	3.8	0.7
2/8/95	NA	NA	1.43	0.13	7	0.06	0.67	1.76	ND	0.66	0.97	0.47	0.1	NA	NA	2.52	0.22
4/27/95	NA	NA	1.97	Q	12	Q	1.14	1.1	Q	1.6	2.2	0.62	0.39	NA	NA	2.7	2
8/16/95	NA	NA	2.27	0.7	11	0.39	1.07	1.03	0.29	1.02	1.13	0.78	0.4	NA	NA	3.93	0.65
2/7/96	0.22	1.75	5.1	1.12	20	1.12	1.48	4.1	0.04	2.5	1.86	1.48	0.64	ND	ND	4.7	2.5
4/30/96	0.09	2.08	4.65	0.28	12	0.79	0.72	1.3	ND	0.97	1.44	0.52	0.14	ND	ND	6	0.6
7/26/96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1/23/97	ND	1.85	6	0.95	14	1.14	0.45	4	ND	0.81	0.96	0.35	ND	ND	ND	6.71	ND
4/14/97	0.15	0.65	2.25	ND	19	1.9	0.99	3.29	ND	1.8	2.4	0.81	0.25	ND	2.7	2.8	2.4
7/30/97	0.2	1.1	2.39	0.23	17	1.34	0.79	3.9	ND	0.96	1.4	0.44	0.12	ND	ND	7	0.68
1/29/98	0.3	1.8	6.1	B	41	5.3	2.4	b 8.3	ND	3.2	4.6	1.5	0.6	ND	0.38	11	4
4/20/98	ND	B	CE	b 6.6	26	CE	0.65	b 19	ND	1.2	2.1	0.57	ND	ND	0.93	B	1.6
7/22/98	ND	1.4	CE	ND	9	CE	0.41	B	ND	0.48	0.8	ND	ND	ND	ND	b 7.8	ND
2/4/99	ND	0.24	NA	0.2	16	2.6	1.1	3.4	ND	1.4	1.8	0.7	0.2	ND	0.2	3.9	0.9
4/14/99	ND	0.6	2.5	0.5	15	0.2	1.1	3.4	ND	1.8	2.7	0.9	0.2	ND	ND	3.4	1.6
7/16/99	0.37	1.1	b 2.8	B	27	1.7	1.8	b 5.3	ND	2.9	4.2	1.4	0.4	ND	ND	6.3	3.1
7/14/00	ND	0.38	1.42	ND	11.48	1.3	0.67	2.18	ND	1.2	1.9	0.57	ND	ND	ND	3	0.66
8/3/01	ND	0.62	2.6	ND	14	1.8	0.81	2.9	ND	1.3	2.1	0.62	ND	ND	ND	3.5	1.4
	0.37	2.08	6.1	1.12	41	5.3	2.4	5.1	0.29	3.2	4.6	1.5	0.64	0	2.7	11	4
	0.2429	1.2038	3.0871	0.5640	17.4514	1.5612	1.0320	2.7412	0.1360	1.4590	2.0330	0.7611	0.2969	0.0000	1.1683	5.1474	1.5411

RMP Yerba Buena Total Pesticides

Station Code	Station	Date	Methylchlorpyrifos pg/L	p,p'-DDMU pg/L	Toxaphene pg/L	Trifluralin pg/L	Chlorpyrifos pg/L	Dacthal pg/L	Diazinon pg/L	Endosulfan I pg/L	Endosulfan II pg/L	Endosulfan Sulfate pg/L	Oxadiazon pg/L	SUM DDTs (SFEI) pg/L	o,p'-DDD pg/L	o,p'-DDE pg/L	o,p'-DDT pg/L	p,p'-DDD pg/L	
BC10	Yerba Buena Island	3/3/1993					1210	1161	NA	23.268	Q	Q	1317	196	18	ND	T	100	
BC10	Yerba Buena Island	2/3/1994	ND	35.8	ND	ND	2185	1515	NA	ND	ND	ND	3244	222	21.1	e 2.4	ND	121.5	
BC10	Yerba Buena Island	4/20/1994	NA	NA	NA	NA	142	178	2800	ND	ND	ND	3	354	32	4.8	ND	229	
BC10	Yerba Buena Island	8/17/1994	NA	NA	NA	NA	206	80	540	ND	ND	ND	180	142	9.5	1.7	ND	88	
BC10	Yerba Buena Island	2/8/1995					134	661	8100	ND	ND	ND	132	106	2	4	ND	12	
BC10	Yerba Buena Island	4/27/1995					137	294	2400	ND	ND	ND	ND	376	38	5	4	170	
BC10	Yerba Buena Island	8/16/1995					4	39	460	ND	ND	ND	9	151	16	4	2	68	
BC10	Yerba Buena Island	2/7/1996					ND	165	13000	ND	ND	ND	2	341	27	6	Q	126	
BC10	Yerba Buena Island	4/30/1996					151	172	1700	31	69	11	50	249	33	16	Q	95	
BC10	Yerba Buena Island	7/26/1996					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BC10	Yerba Buena Island	1/23/1997					194	11	4522	ND	ND	81.9	13	546	20	17	M	313	
BC10	Yerba Buena Island	4/14/1997					66	79	1300	ND	ND	26	ND	439	64	7	M	197	
BC10	Yerba Buena Island	7/30/1997					231	ND	640	ND	ND	ND	ND	260	15	17	M	144	
BC10	Yerba Buena Island	1/29/1998					B	b 280	3455	ND	ND	39.7	b 2017	S		52	T	B	
BC10	Yerba Buena Island	4/20/1998					B	ND	M	ND	ND	11.5	ND	S		b 23	B	Q	B
BC10	Yerba Buena Island	7/22/1998					B	b 54	400	ND	ND	21	175	S	B	B	B	B	
BC10	Yerba Buena Island	2/4/1999					B	152	5200	20	19	41	491	221	34	b 8.4	Q	84	
BC10	Yerba Buena Island	4/14/1999					b 80	3	1500	ND	39	28	4002	182	b 25	5.1	Q	50	
BC10	Yerba Buena Island	7/16/1999					4	7	3040	2	ND	39	ND	150	13	3.5	Q	58	
BC10	Yerba Buena Island	7/14/2000					22	10	370	3.6	ND	12	49	164	21	13	3.3	83	
BC10	Yerba Buena Island	8/3/2001					44	8.6	ND	ND	ND	7	196	161	Q	Q	Q	62	
	Maximum			35.8			2185	1515	13000	31	69	81.9	4002	546	64	17	4	313	
	Average			35.8			337.857143	283.475	3089.188	15.9736	42.3333333	28.9181818	704.5	250.588235	25.975	8.007692	3.1	117.6765	

RMP Yerba Buena Total Pesticides

Date	p,p'-DDE pg/L	p,p'-DDT pg/L	SUM Chlordanes (SFEI) pg/L	alpha- Chlordane pg/L	gamma- Chlordane pg/L	cis- Nonachlor pg/L	trans- Nonachlor pg/L	Heptachlor pg/L	Heptachlor Epoxide pg/L	Oxychlorda ne pg/L	Sum HCHs (SFEI) pg/L	alpha-HCH pg/L	beta-HCH pg/L	delta-HCH pg/L	gamma- HCH pg/L	Aldrin pg/L	Dieldrin pg/L	Endrin pg/L	Hexachlorob enzene pg/L	Mirex pg/L
3/3/1993	50	28	75	25	24	Q	25	NA	NA	NA	348	148	93	NA	107	NA	264	NA	16	NA
2/3/1994	51.8	6 24.9	84	36	20.2	10.5	17.4	NA	ND	ND	1284	424	157	NA	703.4	NA	171.1	NA	ND	NA
4/20/1994	88	ND	103	33	28	12.2	21.3	ND	9.3	ND	1197.7	389	413	ND	396	NA	93	CE	NA	8.8
8/17/1994	43	ND	101	28	32.3	8.3	12.9	19	ND	ND	847.4	295	349	ND	203.6	NA	16	ND	8.9	ND
2/8/1995	88	ND	165	18	24	5	22	ND	94	2	540	190	86	34	230	NA	ND	9	16	ND
4/27/1995	151	8	110	25	27	14	24	ND	16	4	771	373	155	7	237	NA	ND	ND	4	ND
8/16/1995	32	29	65	17	14	5	12	2	11	3	640	312	160	6	162	NA	53	2	2	ND
2/7/1996	127	55	180	46	27	10	29	2	63	4	835	346	171	7	310	NA	64	ND	12	ND
4/30/1996	74	32	119	29	25	CE	13	8	38	6	1095	496	322	7	270	NA	4	16	5	ND
7/26/1996	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1/23/1997	133	63	155	35	27	4	14	ND	16	60	408	190	71	7	140	NA	184	ND	13.2	ND
4/14/1997	105	66	144	27	14	8	21	ND	32	43	501	250	111	ND	140	NA	78	ND	20.2	ND
7/30/1997	84	ND	161	30	20	6	29	ND	34	41	484	223	130	ND	131	NA	75	ND	8.6	ND
1/29/1998	T	b 167	116.4	b 51	36	5.4	T	ND	24	ND	385	114	131	ND	140	NA	110	ND	T	T
4/20/1998	693	B	S	b 39	B	b 4.2	25	ND	B	ND	S	B	B	b 53	B	NA	ND	B	bi 2.2	ND
7/22/1998	b 73	7	S	B	B	B	B	B	B	2.1	553	b 250	150	B	153	NA	39	B	bi 8.5	ND
2/4/1999	82	13	49	13	15	B	13	ND	6.3	2.2	388	124	82	6.9	175	NA	55	14	B	ND
4/14/1999	76	26	46	13	13	Q	10	ND	10	ND	220	81	80	6.5	53	NA	28	ND	14	ND
7/16/1999	74	1.6	38	5	7	2.9	6.8	13	2.8	ND	323	160	99	3.5	60	NA	24	1.6	10	ND
7/14/2000	44	B	48	7.3	2.4	2.7	15	3.3	8.8	8.6	155	85	28	42	ND	NA	22	36	B	ND
8/3/2001	69	b 31	53	4.6	4.9	2.4	5.9	ND	25	b 10	215	145	16	ND	54	NA	19	ND	b 22	ND
	693	66	180	46	36	14	29	19	94	60	1284	496	413	42	703.4		264	36	20.2	
	114.7111	29.87273	100.688889	23.052941	20.044444	6.8857143	17.572222	7.88333333	26.01333333	15.990909	588.952632	241.388889	147.57895	12.69	203.611		76.4176	13.1	10.6692308	



## **Attachment 4**

### **Calculation of Final WQBELs**

Mirant Potrero, LLC—Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

Fact Sheet, page 31 of 36  
May 10 2006

Mirant Potrero Power Plant  
NPDES Permit Reissuance

Effluent Limitation Calculations (Per Section 1.4 of the SIP)

PRIORITY POLLUTANTS	Copper	Mercury	Dioxin	4,4'-DDE	Dieldrin
Units	ug/L	ug/L	pg/L	ug/L	ug/L
Basis and Criteria type	CTR, SW	BP, SW	CTR HH	CTR HH	CTR HH
Lowest WQO	3.7	0.025	0.014	0.00059	0.00014
Translators					
Dilution Factor (D) (if applicable)	0	0	0	0	0
no. of samples per month	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	N	N	N
HH criteria analysis required? (Y/N)	N	Y	Y	Y	Y
Applicable Acute WQO	5.8	2.1			
Applicable Chronic WQO	3.7	0.025			
HH criteria		0.051	0.014	0.00059	0.00014
Background (max conc for Aquatic Life calc)	2.46	0.0086	0.071	0.000693	0.000264
Background (avg conc for HH calc)		0.0037	0.03165	0.00011	0.00008
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	Y	Y	Y	Y
ECA acute	5.8	2.1			
ECA chronic	3.7	0.025			
ECA HH		0.051	0.014	0.00059	0.00014
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	Y	Y	Y
avg of data points	3.215	0.0096			
SD	1.72	0.0122			
CV calculated	0.535	1.268	N/A	N/A	N/A
CV (Selected) - Final	0.535	1.268	0.6	0.6	0.6
ECA acute mult99	0.35	0.17			
ECA chronic mult99	0.56	0.31			
LTA acute	2.05	0.35			
LTA chronic	2.08	0.01			
minimum of LTAs	2.05	0.01			
AMEL mult95	1.49	2.20	1.55	1.55	1.55
MDEL mult99	2.83	6.04	3.11	3.11	3.11
AMEL (aq life)	3.05	0.02			
MDEL(aq life)	5.80	0.05			
MDEL/AMEL Multiplier	1.90	2.75	2.01	2.01	2.01
AMEL (human hlth)		0.051	0	0.00059	0.00014
MDEL (human hlth)		0.140	0	0.00118	0.00028
minimum of AMEL for Aq. life vs HH	3.05	0.017	0.01	0.00059	0.00014
minimum of MDEL for Aq. Life vs HH	5.80	0.046	0.03	0.00118	0.00028
Current limit in permit (30-d avg)	N/A	N/A	N/A	N/A	N/A
Current limits in permit (daily)	N/A	N/A	N/A	N/A	N/A
Final limit - Calculated AMEL	3.0	0.017	0.014	0.00059	0.00014
Final limit - Calculated MDEL	5.8	0.046	0.028	0.00118	0.00028
Max Effl Conc (MEC)	7.17	0.0505	ND	ND	ND
Feasible for immediate compliance?	No	No	No	No	No
Interim Limits for those where TMDL is final limit	10.3	0.056	NA	0.05	0.01

Mirant Potrero Power Plant  
NPDES Permit Reissuance

Effluent Limitation Calculations (Per Section 1.4 of the SIP)

PRIORITY POLLUTANTS	Copper	Mercury
Units	ug/L	ug/L
Basis and Criteria type	CTR, SW	BP, SW
Lowest WQO	3.7	0.025
Translators		
Dilution Factor (D) (if applicable)	0	0
no. of samples per month	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y
HH criteria analysis required? (Y/N)	N	Y
Applicable Acute WQO	5.8	2.1
Applicable Chronic WQO	3.7	0.025
HH criteria		0.051
Background (max conc for Aquatic Life calc)	2.46	0.0086
Background (avg conc for HH calc)		0.0037
Is the pollutant Bioaccumulative(Y/N)? (e.g., Hg)	N	Y
ECA acute	5.8	2.1
ECA chronic	3.7	0.025
ECA HH		0.051
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N
avg of data points	3.215	0.0096
SD	1.72	0.0122
CV calculated	0.535	1.268
CV (Selected) - Final	0.535	1.268
ECA acute mult99	0.35	0.17
ECA chronic mult99	0.56	0.31
LTA acute	2.05	0.35
LTA chronic	2.08	0.01
minimum of LTAs	2.05	0.01
AMEL mult95	1.49	2.20
MDEL mult99	2.83	6.04
AMEL (aq life)	3.05	0.02
MDEL(aq life)	5.80	0.05
MDEL/AMEL Multiplier	1.90	2.75
AMEL (human hith)		0.051
MDEL (human hith)		0.140
minimum of AMEL for Aq. life vs HH	3.05	0.017
minimum of MDEL for Aq. Life vs HH	5.80	0.046
Current limit in permit (30-d avg)	N/A	N/A
Current limits in permit (daily)	N/A	N/A
Final limit - Calculated AMEL	3.0	0.017
Final limit - Calculated MDEL	5.8	0.046
Max Eff Conc (MEC)	7.17	0.0505
Feasible for immediate compliance?	No	No
Interim Limits for those where TMDL is final limit	10.3	0.056

Mirant Potrero, LLC—Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

Fact Sheet, page 32 of 36  
May 10 2006

## **Attachment 5**

### **General Basis for Final Compliance Dates**

Mirant Potrero, LLC—Potrero Power Plant  
NPDES Permit No. CA0005657  
Order No. R2-2006-0032

Fact Sheet, page 33 of 36  
May 10 2006

**General Basis for Final Compliance Dates [1]**  
**for Discharges North of the Dumbarton Bridge**  
*Revised February 1, 2006*

Constituent	Reference for applicable standard	Maximum compliance schedule allowed	Compliance date and Basis
Cyanide Selenium	NTR	10 years	<b>April 28, 2010</b> (10 years from effective date of SIP). Basis is the SIP.
Copper (salt)	CTR	5 years	<b>May 18, 2010</b> (this is 10 years from effective date of CTR/SIP). Bases are CTR and SIP.
Mercury PAH EPA 610	Numeric Basin Plan (BP)	10 years	<b>April 28, 2010</b> , which is 10 years from effective date of SIP (April 28, 2000). Basis is the Basin Plan, See note [2a].
Arsenic Cadmium Chromium (VI) Copper (fresh) Lead Nickel Silver (CMC) Zinc	Numeric BP	10 years	<b>January 1, 2015</b> . This is 10 years (using full months) from effective date of 2004 BP amendment (January 5, 2005). Basis is the Basin Plan section 4.3.5.6. See note [2b]. Also, see note [3] for permits issued prior to effective date of 2004 BP amendment.
Dioxins/Furans Tributyltin Other toxic pollutants not in CTR	Narrative BP using SIP methodology	10 years	<b>10-yr from effective date of permit</b> (which is when new standard is adopted; no sunset date). Basis is the Basin Plan, see note [2c].
Other priority pollutants on CTR and not listed above	CTR	5 years	<b>May 18, 2010</b> (this is 10 years from effective date of CTR/SIP). Basis is the CTR and SIP.

[1] These dates are maximum allowable compliance dates applicable. As required by the Basin Plan, CTR, SIP, and 40CFR122.47, compliance should be as short as possible. These are only applicable for discharges north of the Dumbarton Bridge because applicable criteria for the south bay are different than those cited above.

- For pollutants where there are planned TMDLs or SSOs, and final WQBELs may be affected by those TMDLs and SSOs, maximum timeframes may be appropriate due to the uncertain length of time it takes to develop the TMDL/SSO.
- However, for pollutants without planned TMDLs or SSOs, the State Board in the EBMUD remand order (WQO 2002-0012), directs the Regional Board to establish schedules that are as short as feasible in accordance with requirements.

[2] The Basin Plan provides for a 10-year compliance schedule for implementation of measures to comply with new standards as of the effective date of those standards. This provision has been construed to authorize compliance schedules for new interpretations of existing standards, such as the numeric and narrative water quality objectives specified in the Basin Plan, if the new interpretations result in more stringent limits than in the previous permit.

- a. For the numeric objectives in place since the 1995 Basin Plan, due to the adoption of the SIP, the Water Board has newly interpreted these objectives. The effective date of this new interpretation is the effective date of the SIP (April 28, 2000) for implementation of these numeric Basin Plan objectives.
- b. For numeric objectives for the seven pollutants adopted in the 2004 Basin Plan (amendments), the Water Board has newly adopted these objectives. The effective date of these new objectives is the approval date of the 2004 Basin Plan by U.S. EPA (January 5, 2005) for implementation of these numeric Basin

Plan objectives. December is the last full month directly preceding the sunset date. Compliance should be set on the first day of the month to ease determination of monthly average limits. Therefore, compliance must begin on January 1, 2015.

- c. For narrative objectives, the Board must newly interpreted these objectives using best professional judgment as defined in the Basin Plan for each permit. Therefore, the effective date of this new interpretation will be the effective date of the permit.

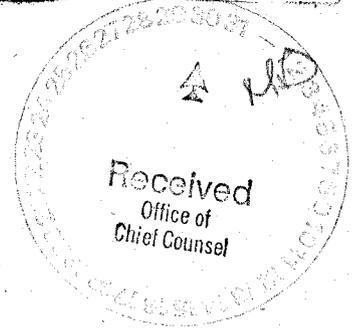
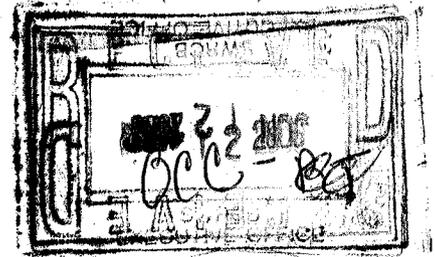
[3] The schedules established in permits effective prior to the 2004 Basin Plan (amendments) should be continued into subsequent permits reissued after the 2004 Basin Plan. For example, Permit XX, adopted Nov 2004 became effective Feb 1, 2005. Permit XX establishes a compliance schedule for copper to end April 1, 2010. When next reissued in 2010, the compliance deadline for the same copper limit should remain April 1, 2010. However, if in applying the 2004 BP objective results in a more stringent limit for copper, then a new compliance schedule may extend to the new date in 2015, provided discharger XX justifies the need for the longer compliance schedule.

**ENVIRONMENTAL LAW AND JUSTICE CLINIC**

June 9, 2006

Tam M. Doduc, Chair  
State Water Resources Control Board  
1001 I Street, 22<sup>nd</sup> Floor  
P.O. Box 100  
Sacramento, CA 95812-0100

Attn: Tim Cobb and Elizabeth Miller Jennings



Re: **Petition for review of regional board action on Potrero power plant permit (Related File, SWRCB/OCC File A-1739)**

Dear Ms. Doduc:

We are submitting an amended proof of service and revised page 24 for the petition filed today. Please add these pages to the petition.

Sincerely,

A handwritten signature in black ink, appearing to read 'Alan Ramo'. The signature is written in a cursive style and is enclosed in a hand-drawn oval.

Alan Ramo, Esq.  
Golden Gate University School of Law  
Environmental Law and Justice Clinic  
Attorney for petitioners

Attachment: Revised page 24 of Petition and amended proof of service

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## Petition of CBE and Advocates for Review

The Regional Board in the hearing added a provision to its order (wrongly inserted in the findings by staff) stating its intention to prohibit once-through cooling discharge at Potrero unless Mirant demonstrates that its discharge has no significant adverse effects on the Bay. (Transcript at 203-204, Para. 22.) It added this finding to the section of the permit titled "Clean Water Act section 316(b)—Entrainment and Impingement Impacts" where it also added a finding of significant entrainment impacts. (Para. 21.) It then adopted these findings along with provisions for further study of intake *and* pollutant impacts, *and* of alternative cooling technologies.

Compliance with dilution requirements cannot be an inordinate burden if the discharge is to be eliminated anyway because of these cooling system impacts. Costs incurred to meet 316(b) and the Thermal Plan cannot properly be double-counted by assuming that all costs of replacing once-through cooling apply only to compliance with Basin Plan Prohibition 1. Further, the Regional Board clearly stated that its final assessment is not yet complete pending further study of these issues. The conclusion that an exception applies because of an inordinate burden is based on this house of cards, which collapses readily before 316(b) analysis and before the text of the exception itself. Therefore, the finding of inordinate burden is arbitrary, inappropriate and premature.

2. The finding of equivalent protection is contrary to evidence in the Regional Board record showing pollutant discharge impacts.

To grant an exception to Basin Plan Prohibition 1, the Regional Board must find that the discharger is achieving "an equivalent level of protection . . . by alternate means, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability." (Basin Plan, p. 4-5). There is no basis for concluding that this shoreline discharge is as good for the Bay as if it was not there at all, and indeed, the

## AMENDED PROOF OF SERVICE

I, Angelina Martinez, declare that I am at least 18 years of age and not a party to the above entitled action. My business address is 1440 Broadway, Suite 701, Oakland, CA 94162. On June 8, 2006, I served the **PETITION FOR REVIEW OF ACTION BY A REGIONAL BOARD** to which the proof of service hereby amended was attached, by Federal Express overnight mail delivery, addressed to the following:

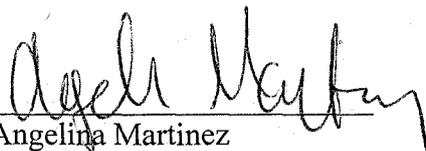
Attn: Ted Cobb, Assistant Chief Counsel  
Tam M. Doduc, Chair  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812

On the same date, I also served copies of the above document to the following persons by U.S. Mail in Oakland Post Office:

Dave Hansell, Plant Manager  
Mirant California, LLC  
1201-A Illinois St.  
San Francisco, CA 94107

Bruce Wolfe, Executive Director  
San Francisco Bay Regional Water Quality Control Board  
1515 Clay St. Suite 1400  
Oakland, CA 94612

I declare under penalty of perjury that the foregoing is true and correct, and that this declaration was executed on June 9, 2006, at Oakland, California.

  
Angelina Martinez