

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 00-109

NPDES PERMIT NOS. CA0037842, CA0037834, CA0037621

AMENDING WASTE DISCHARGE REQUIREMENTS FOR:

CITIES OF SAN JOSE AND SANTA CLARA
SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT
SAN JOSE
SANTA CLARA COUNTY

CITY OF SUNNYVALE
SUNNYVALE WATER POLLUTION CONTROL PLANT
SUNNYVALE
SANTA CLARA COUNTY

CITY OF PALO ALTO
PALO ALTO REGIONAL WATER QUALITY CONTROL PLANT
PALO ALTO
SANTA CLARA COUNTY

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

1. The Board issued the Cities of San Jose and Santa Clara, Sunnyvale, and Palo Alto (hereinafter the Dischargers) Waste Discharge Requirements, Order Nos. 98-052, 98-053, and 98-054 respectively, on June 17, 1998. Each of the Dischargers owns and operates a wastewater treatment plant which discharges into San Francisco Bay below the Dumbarton Bridge (the "Lower South Bay").
2. Provision 7 of Order No. 98-052 (for San Jose/Santa Clara) states:

Special Studies Supporting SSO and TMDL Development

The Discharger shall conduct the following technical work and special studies in support of the development of a TMDL for copper and nickel in the South San Francisco Bay. These special studies will assist the regulatory community to develop site-specific water quality criteria for copper and nickel in the South Bay. The Discharger will conduct the following technical investigations, as appropriate:

Assess Pollutant Levels and Levels of Impairment
Develop technical information to support a site-specific objective for copper and nickel
Assess ambient conditions and effluent levels. Evaluate whether discharge or ambient water exceeds proposed objectives; continue with remaining steps as necessary
Prepare a Conceptual Model of Pollutant Sources
Identify and Recommend Short and Long-term Studies and Implement Short-term Investigations
Evaluate Existing 2-D/3-D Models
Modify Selected Model (as appropriate)
Establish and Support a Stakeholder TMDL Group
Establish and Support a TMDL Technical Review Committee

The Discharger shall develop and submit a schedule and workplan to conduct the appropriate special studies in support of TMDL development that is acceptable to the Executive Officer within 60 days of adoption of this order. The Discharger shall report to the Executive Officer every six months, beginning January 31, 1999 as part of the watershed programs status update, describing its efforts for the prior six months.

3. Each of the Dischargers' orders contains a Provision (Provision 6 of Order No. 98-052, Provision 4 of Order No. 98-053, and Provision 5 of Order No. 98-054), which states:

Watershed Management Initiative Support

The Discharger shall participate with the Regional Board staff, other Dischargers in the Lower South Bay, representatives of the public and other concerned parties as described below in carrying out the Santa Clara Basin Watershed Management Initiative (WMI) tasks set forth in the Bay Monitoring and Modeling Workplan dated July 29, 1997 aimed at development of a TMDL. The Discharger shall participate in such a manner by attending through its representatives meetings of the Core Group of the WMI, as well as meetings of the Bay Modeling and Monitoring Subgroup and the Regulatory Subgroup. The Discharger shall review and comment upon all technical and other proposals developed by the foregoing groups of the WMI. The Discharger shall make technical information in its possession available to the appropriate groups of the WMI necessary to develop the watershed management reports. The Discharger shall report to the Executive Officer every six months, beginning January 31, 1999 as part of the watershed programs status update, describing its efforts for the prior six months in cooperating with the WMI¹.

¹ This sentence in the Palo Alto permit reads: "The Discharger shall report to the Executive Officer every six months, in the annual and semiannual Pretreatment Program Reports, as part of the watershed programs status update, describing its efforts for the prior six months in cooperating with the WMI.



4. The WMI established the TMDL Workgroup (TWG) as a stakeholder group to advise Discharger TMDL development efforts. The TWG included representatives from the Dischargers, Regional and State Board staff, Santa Clara Valley Urban Runoff Pollution Prevention Program, US EPA, San Francisco Estuary Institute, Department of Fish and Game, environmental groups (CLEAN South Bay and Silicon Valley Toxics Coalition), business groups (Chamber of Commerce, Silicon Valley Manufacturing Group, and the Copper Development Association), Silicon Valley Pollution Prevention Center, and others.

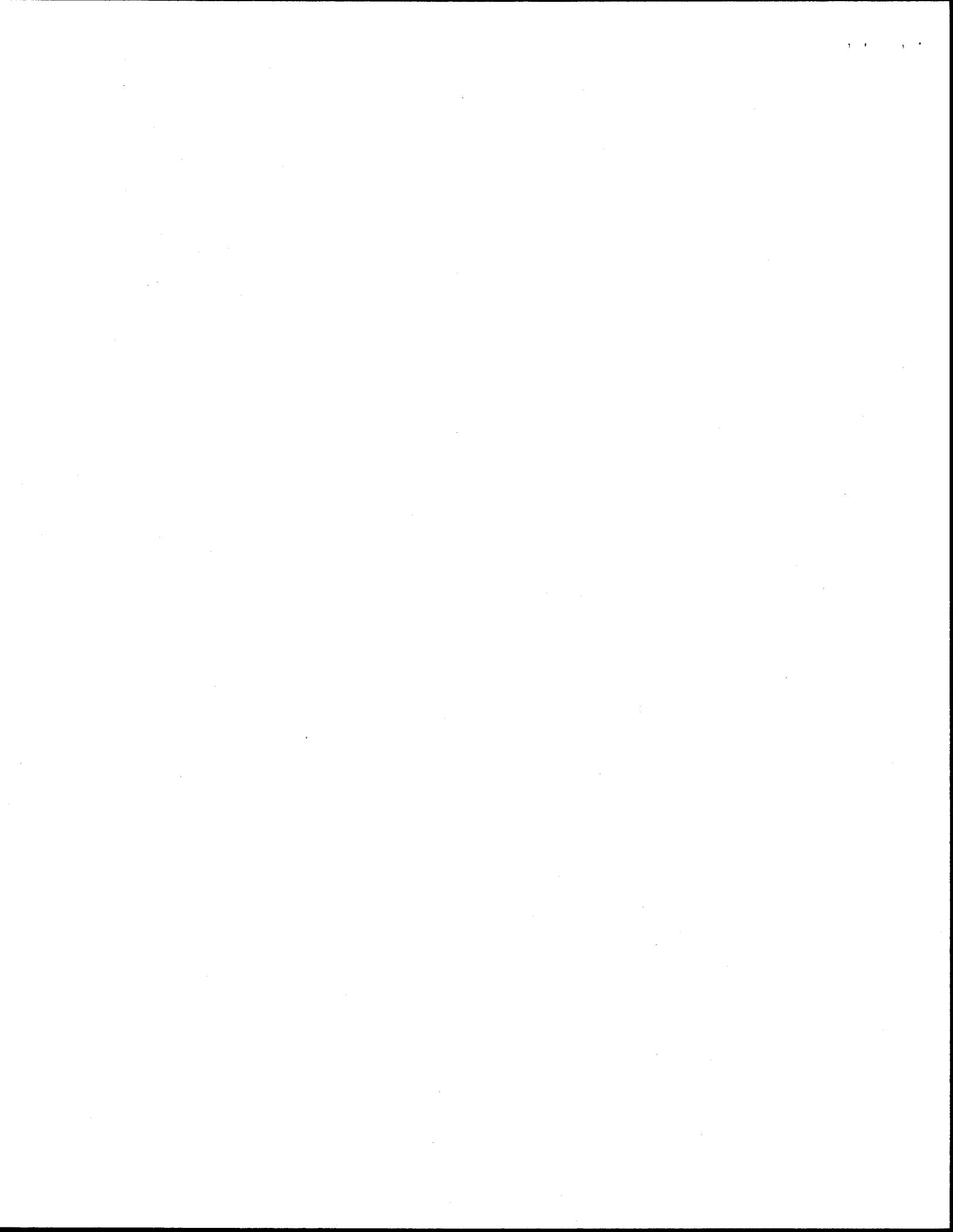
At its April 14, 2000 meeting the TWG approved the following reports and forwarded them to the WMI: Impairment Assessment Report and Copper Action Plan. The TWG also approved an outline of a Nickel Action Plan.

6. The City of San Jose, working through the TWG, produced the following reports and studies in compliance with Provision 7 of Order No. 98-052:

Special Study/Technical Report (San Jose Provision E.7)	Project Status/Report Title	Date San Jose Report Submitted To RWQCB
Assess Pollutant Levels and Levels of Impairment	*"Task 2. Impairment Assessment Report for Copper and Nickel for South San Francisco Bay"	July 27, 2000
Develop technical information to support a site-specific objective for copper and nickel	"Development of a Site-Specific Water Quality Criterion for Copper in South San Francisco Bay" "Acute and Chronic Nickel Toxicity: Development of an Acute-to-Chronic Ratio for West Coast Marine Species"	Copper – June 10, 1998 Nickel – February 18, 1999
Assess ambient conditions and effluent levels. Evaluate whether discharge or ambient water exceeds proposed objectives; continue with remaining steps as necessary	*"Task 2. Impairment Assessment Report for Copper and Nickel for South San Francisco Bay" "Task 2.1 Source Characterization Report"	July 27, 2000 NA
Prepare a Conceptual Model of Pollutant Sources	*"Task 1: Conceptual Model Report for Copper and Nickel in Lower South San Francisco Bay"	June 12, 2000

Special Study/Technical Report (San Jose Provision E.7)	Project Status/Report Title	Date San Jose Report Submitted To RWQCB
Identify and Recommend Short and Long-term Studies and Implement Short-term Investigations	NA	NA
Evaluate Existing 2-D/3-D Models	**"Task 4: Evaluate Existing 2 and 3 Dimensional Models", dated February 8, 1999	NA
Establish and Support a Stakeholder TMDL Group (TWG)	TWG initiated work on June 23, 1998_ and completed work on _April 14, 2000	NA
Establish and Support a TMDL Technical Review Committee (TRC)	TRC process initiated on September 21, 1998_____ and completed on April 14, 2000	NA
Anti-degradation Measures for Copper and Nickel	**"Task 10: Copper Action Plan" **"Task 10: Nickel Action Plan"	NA

7. The Impairment Assessment Report (dated June, 2000) concludes that impairment of the Lower South Bay due to copper or nickel is unlikely. The report also recommends that copper and nickel be removed from the 303d list of impaired water bodies (approved by US EPA on May 12, 1999). Finally the report recommends the establishment of site specific objectives for copper and nickel. The report recommends a range of 5.5 to 11.6 ug/l for dissolved copper and 11.9 to 24.4 ug/l for dissolved nickel as site specific objectives.
8. The Copper Action Plan (dated June, 2000) proposes monitoring to determine if copper is increasing in the Lower South Bay and triggers pollution prevention actions to control copper. For monitoring, the report recommends that copper loading from point sources and urban runoff be monitored. It also recommends that dissolved copper be monitored in the Lower South Bay during the dry season. If the mean dissolved copper concentrations measured at stations specified in this order increases from its current level of 3.2 ug/l to 4.0 ug/l or higher, Phase 1 actions would be triggered to further control copper discharges. If the mean dissolved copper concentration increases to 4.4 ug/l, Phase 2 actions would be triggered. Such incremental increases in mean dissolved copper concentrations



shall be used solely for triggering the aforementioned actions. If the Dischargers demonstrate that the increases in copper concentrations are due to factors beyond the control of the Dischargers, the Board will consider and determine reasonable control actions required under Phase 1 or Phase 2 of the Copper Action Plan.

9. The Copper Action Plan contains specific actions to be done by various entities as appropriate. Those actions applicable to the Dischargers include:

Baseline Actions: City of Palo Alto efforts to control corrosion of copper pipes (CB-9)²; POTW pretreatment programs (CB-13); POTW water recycling programs (CB-14); and Industrial water efficiency efforts (CB-19). In addition, the Dischargers will work with other entities to accomplish other Baseline actions: Industrial runoff reduction (CB-3); Track and encourage investigations of uncertainties in the Lower South Bay impairment decision (CB-17); Track and encourage investigations on factors influencing copper fate and transport (CB-18); and Copper Conceptual Model update (CB-20).

Phase 1 Actions: Identify copper source increases (CI-3)³; Evaluate corrosion controls (CI-4); Expand water recycling (CI-7); Evaluate industrial water efficiency efforts and develop additional actions (CI-10); Develop Phase 2 plan for POTW treatment optimization (CI-11); and Develop plan to re-evaluate actions (CI-12). In addition, the Dischargers will work with other entities to accomplish other Phase I actions: Evaluate and investigate uncertainties in Lower South Bay impairment decision (CI-8); and Evaluate and investigate copper fate (CI-9).

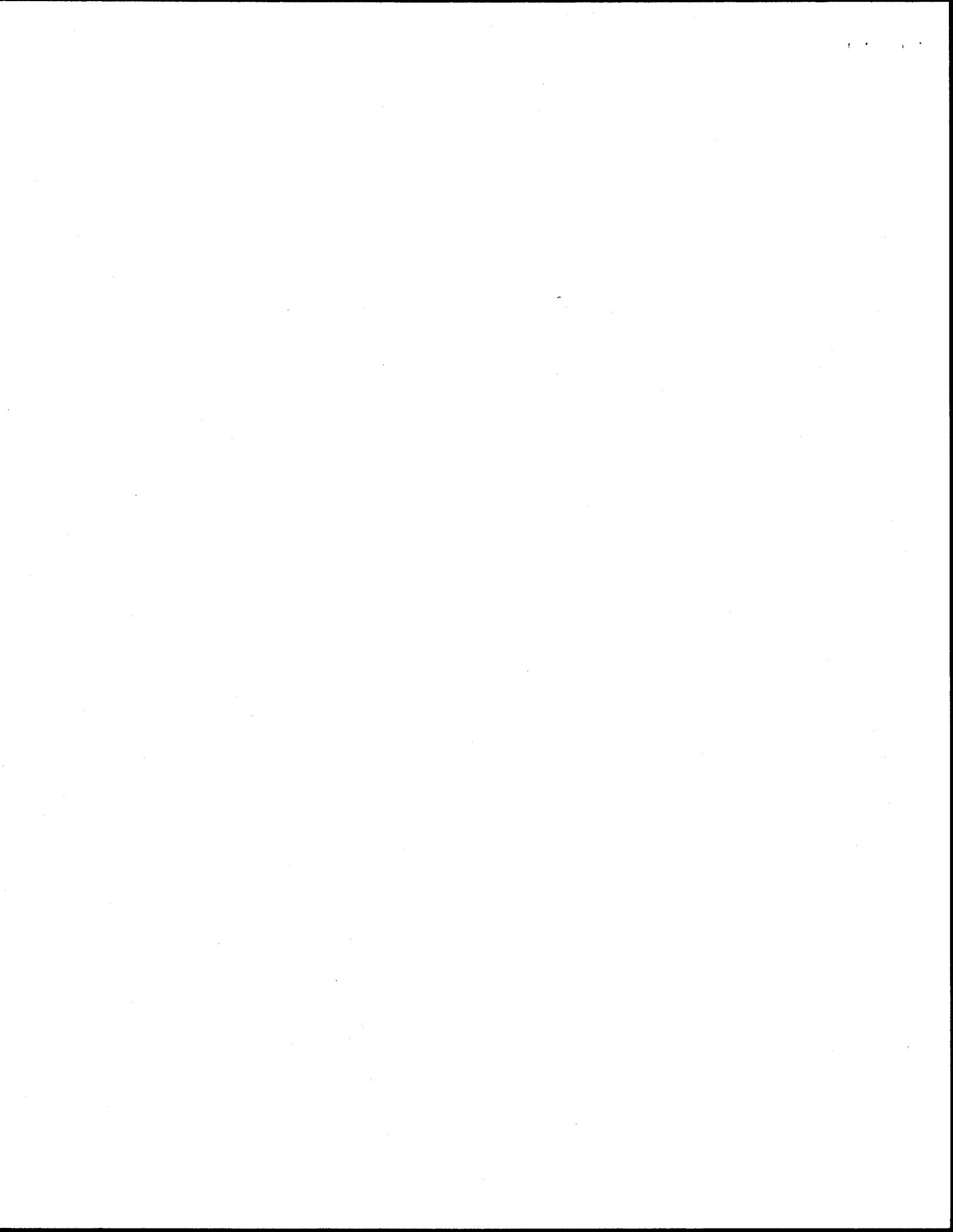
Phase 2 actions: Reconsider managing stormwater in POTWs (CII-1)⁴; Implement additional corrosion control measures (CII-3); Implement POTW process optimization (CII-6); and Expand water recycling programs (CII-7).

10. The Nickel Action Plan (dated August, 2000) proposes monitoring to determine if nickel is increasing in the Lower South Bay and triggers pollution prevention actions to control nickel. For monitoring, the report recommends that nickel loading from point sources and urban runoff be monitored. It also recommends that dissolved nickel be monitored in the Lower South Bay during the dry season. If the mean dissolved nickel concentrations measured at stations specified in this order increases from its current level of 3.8 ug/l to 6.0 ug/l or higher, Phase 1 actions would be triggered to further control nickel discharges. If the mean dissolved nickel concentration increases to 8.0 ug/l, Phase 2 actions would be triggered. Such incremental increases in mean dissolved nickel concentrations

² Numbers reference Actions described in Table 4-1 (dated August 23, 2000) of the Copper Action Plan, and included in Appendix A to this Order.

³ Numbers reference Actions described in Table 4-2 (dated August 23, 2000) of the Copper Action Plan and included in Appendix A to this Order.

⁴ Numbers reference Actions described in Table 4-3 (dated August 23, 2000) of the Copper Action Plan and included in Appendix A to this Order.



shall be used solely for triggering the aforementioned actions. If the Dischargers demonstrate that the increases in nickel concentrations are due to factors beyond the control of the Dischargers, the Board will consider and determine reasonable control actions required under Phase 1 or Phase 2 of the Nickel Action Plan.

11. The Nickel Action Plan contains specific actions to be done by various entities as appropriate. Those actions applicable to the Dischargers include:

Baseline Actions: POTW pretreatment programs (NB-3)⁵; POTW water recycling programs (NB-4); Industrial water efficiency efforts (NB-6); and Track and encourage a watershed model linked to a process oriented Bay model (NB-7).

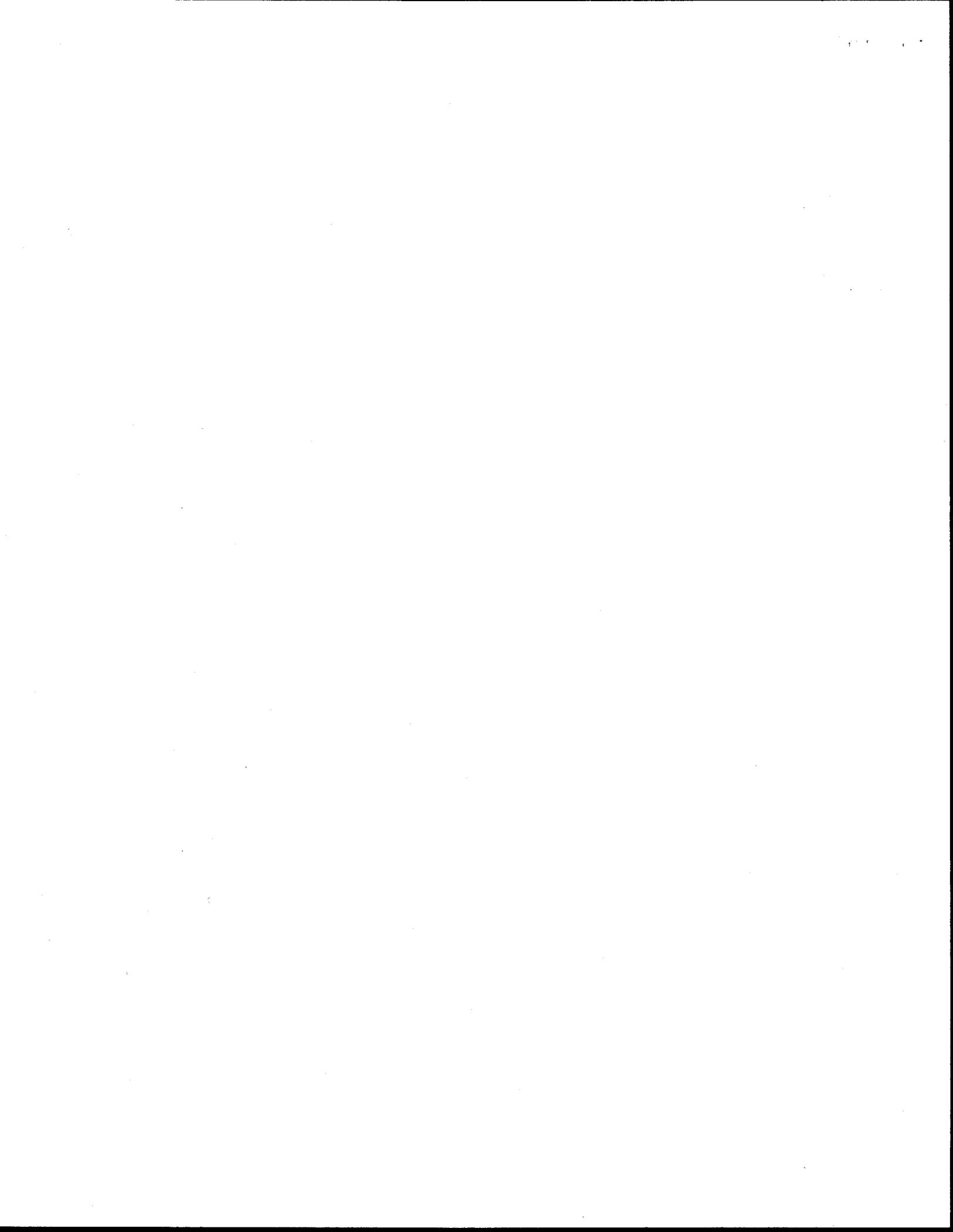
Phase 1 Actions: Expand water recycling (I-7)⁶; Evaluate industrial water efficiency efforts and develop additional actions (I-10); Develop Phase 2 plan for POTW treatment optimization (I-11); and Develop Phase I Plan (NI-3).

Phase 2 Actions: Implement actions developed during Phase 1.

12. Some Phase 1 and Phase 2 actions in the Copper Action Plan and Nickel Action Plan may require the assistance of the Board to co-ordinate and assist in the efforts of the Dischargers and other entities to limit or reduce copper and nickel levels in the Lower South Bay. It is the intent of the Board that Board staff will, to the extent practicable, co-ordinate and assist Phase 1 and Phase 2 actions as identified in the Copper Action Plan and Nickel Action Plan
13. Based upon the information contained in the Impairment Assessment Report, the Board hereby concludes that the Lower South Bay is not an impaired water body for copper or nickel within the meaning of Section 303(d) of the federal Clean Water Act. Therefore, it is the intent of the Board to remove copper and nickel for the Lower South Bay from the 303d list of impaired water bodies the next time the list is updated (April 2002). The Board's conclusion is based on data collected in the Lower South Bay from 1997 to 1999 which show that the mean dissolved copper concentration was 2.7 ug/l (range 0.8 to 4.9 ug/l) and that the mean dissolved nickel concentration was 3.8 ug/l (range 1.5 to 10.1 ug/l). Data from the Lower South Bay are below the lowest end of the suggested range for site specific objectives in the Impairment Assessment Report of 5.5 to 11.6 ug/l for dissolved copper and 11.9 to 24.4 ug/l for dissolved nickel as site specific objectives.

⁵ Numbers reference Actions described in Table 4-1 (dated August 23, 2000) of the Nickel Action Plan and included in Appendix A to this Order.

⁶ Numbers reference Actions described in Table 4-2 (dated August 23, 2000) of the Nickel Action Plan and included in Appendix A to this Order.



14. It is the intent of the Board to amend the Basin Plan to establish site-specific objectives for copper and nickel for the Lower South Bay. Information contained in the Impairment Assessment Report, along with other information, including information to be developed by the Dischargers for review and consideration by the Regional Board, will be used to establish the objectives. It is the intent of the Regional Board to establish appropriate site specific objectives using available state and/or federal water quality guidance and procedures. It is also the intent of the Board to use the site specific objectives, and all information generated in the process of establishing the site specific objectives, to develop new effluent limits, if needed, for copper and nickel concentration and mass when the dischargers' permits are next revised.

On March 2, 2000 The State Water Resources Control Board (State Board) adopted the "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (State Implementation Plan - SIP). This Policy establishes procedures for implementing the US EPA's California Toxics Rule. In part, the SIP establishes procedures for Regional Boards to adopt site specific objectives. The following conditions need to be met for a Regional Board to initiate the development of site specific objectives: 1. A written request for a study, including funding commitments and workplans are filed with the Regional Board; 2. Either a. the receiving waters do not meet water quality objectives contained in the California Toxics Rule, or b. a discharger's effluent limits based on water quality objectives contained in the California Toxics Rule cannot be met; and 3. The discharger has demonstrated that effluent limits based on water quality objectives contained in the California Toxics Rule cannot be met by reasonable treatment, source control, and pollution prevention measures.

The Board finds that the conditions noted in the SIP have been met and therefore a site specific objective study can be initiated. Specifically: 1. The Impairment Assessment Report meets and goes beyond the first condition; 2. The second condition is met since the California Toxics Rule water quality objectives for dissolved copper (3.1 ug/l) and dissolved nickel (8.2 ug/l) are not achieved in the Lower South Bay at all times; and 3. The dischargers have previously implemented reasonable treatment, source control, and pollution prevention measures, without being able to meet potential effluent limits based on water quality objectives contained in the California Toxics Rule.

15. Pollution prevention and minimization are a significant part of the Dischargers' efforts to limit the discharges of copper and nickel.
- a. The dischargers have approved Pretreatment Programs and have established Pollution Prevention Programs under the requirements specified by the Regional Board.



- b. The dischargers' Pretreatment and Pollution Prevention Programs have resulted in a significant reduction of toxic pollutants discharged to the treatment plant and to the receiving waters.
 - c. This reduction is reflected in influent and effluent data.
16. The Board staff has developed the following guidance for a pollution prevention program:
- a. The discharger will continue to implement and improve its existing Pollution Prevention Program in order to reduce pollutant loadings to the treatment plant and therefore to the receiving waters. These guidelines are not intended to fulfill the requirements in The Clean Water Enforcement and Pollution Prevention Act of 1999 (Senate Bill 709).
 - b. The discharger will submit an annual report that includes the following information:
 - (i) *A brief description of its treatment plant, treatment plant processes and service area.*
 - (ii) *A discussion of current pollutant issues.* 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 pollutants identified in (ii).* 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 potable water supply and air deposition.
 - (iv) *Identification of tasks to reduce the sources of pollutants of identified in (ii).* This discussion shall identify and prioritize tasks to address the discharger's pollutant issues. Tasks can target its industrial, commercial, or residential sectors. The discharger may implement tasks themselves or participate in group, regional, or national tasks that will address these issues. 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) *Implementation and continuation of outreach tasks for City employees.* The discharger shall implement outreach tasks for City employees. The overall goal of this task is to inform employees about the pollutant issues, potential sources, and how they might be able to help reduce the discharge of these pollutants into the treatment plant. The discharger may provide a forum for employees to provide input to the Program.



- (vi) *Implementation and continuation of a public outreach program.* The discharger shall implement a public outreach program to communicate pollution prevention to its service area. Outreach may include participation in existing community events such as county fairs, initiating new community events such as displays and contests during Pollution Prevention Week, implementation of a school outreach program, conducting plant tours, and providing public information in newspaper articles or advertisements, radio, television stories or spots, newsletters, utility bill inserts, and web site. Information shall be specific to the target audiences. The discharger should coordinate with other agencies as appropriate.
- (vii) *Discussion of criteria used to measure Program and tasks' effectiveness.* The discharger shall establish criteria to evaluate the effectiveness of its Pollution Prevention Program. This shall also include a discussion of the specific criteria used to measure the effectiveness of each of the tasks in item b. (iv), b. (v), and b. (vi).
- (viii) *Documentation of efforts and progress.* This discussion shall detail all of the discharger's activities in the Pollution Prevention Program during the reporting year.
- (ix) *Evaluation of Program and tasks' effectiveness.* This discharger shall utilize the criteria established in b. (vii) to evaluate the Program and tasks' effectiveness.
- (x) *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 to the treatment plant, and subsequently in its effluent.

- 17. This Order serves to amend NPDES permits, reissuance of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code (CEQA) pursuant to Section 13389 of the California Code.
- 18. The Dischargers and interested agencies and persons have been notified of the Regional Board's intent to reissue the NPDES permit for this discharge and have been provided an opportunity to submit their written comments and appear at the public hearing.



19. The Board, at a properly noticed public meeting, heard and considered comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Dischargers, in Order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder, shall comply with the following provisions:

Orders Nos. 98-052, 98-053, and 98-054 are amended to add the following provisions:

1. Baseline Actions to control copper and nickel, as described in Findings 9 and 11 and the Copper and Nickel Action Plans, shall be implemented immediately. The Dischargers shall submit annual reports to the Bay Monitoring and Modeling Subgroup of the Santa Clara Basin Watershed Management Initiative and the Board, either included in, or at the same time as, the annual pretreatment report, on the status of these actions. The reports shall be acceptable to the Executive Officer, who will consider comments from the Bay Monitoring and Modeling Subgroup and other interested parties.
2. Ten stations described in the Copper Action Plan shall be monitored monthly during the dry season (May through October) for dissolved copper and nickel. The results of this monitoring shall be reported in the monthly Self Monitoring Reports and in the annual Self Monitoring Report to the Board and to the Bay Monitoring and Modeling (BMM) Subgroup of the Santa Clara Basin Watershed Management Initiative. A Discharger may reference the monthly or annual Self Monitoring Report of another Lower South Bay Discharger to comply with this Provision.
3. If the results of the monitoring required in Provision 2 above for Stations SB03, SB04, SB05, SB07, SB08, and SB09 show that mean dissolved copper concentrations have risen to 4.0 ug/l, the Dischargers shall implement Phase 1 actions described in Finding 9 and report on the Phase 1 actions in the annual report required by Provision 1.
4. If the results of the monitoring required in Provision 2 above for Stations SB03, SB06, SB07, SB08, SB09, and SB10 show that mean dissolved nickel concentrations have risen to 6.0 ug/l, the Dischargers shall implement Phase 1 actions described in Finding 11 and report on the Phase 1 actions in the annual report required by Provision 1.
5. If the results of the monitoring required in Provision 2 above for Stations SB03, SB04, SB05, SB07, SB08, and SB09 show that mean dissolved copper concentrations have risen to 4.4 ug/l, the Dischargers shall implement Phase 2 actions described in Finding 9 and report on the Phase 2 actions in the annual report required by Provision 1.

