



SAN DIEGO REGIONAL  
WATER QUALITY  
CONTROL BOARD

2015 FEB 5 PM 4 44

February 5, 2015  
CMSD Serial Number: 035-15

Kristin K. Schwall, P.E.  
Water Resources Control Engineer  
California Regional Water Quality Control Board, San Diego Region (RWQCB)  
2375 Northside Drive, Suite 100  
San Diego, CA 92108

**SUBJECT: Comment – Tentative Order No. R9-2015-0009, 215572:kschwall**

Ms. Schwall,

Continental Maritime of San Diego (CMSD) hereby submits formal comments of concern and associated requests regarding Tentative Order No. R9-2015-009 as a follow up to our prior comments incorporated into the Working Draft - Order No. R9-2015-009.

To establish a foundation for this letter please remember our environmental stewardship history which includes only *one* storm water discharge to San Diego Bay in the last 15 years and no effluent discharges in over 10 years:

- 1997 – sealed storm water outfalls to the Bay, bermed the entire perimeter of all industrial areas to hold well over a 5 year storm event and began to divert storm water to storage tanks;
- 1998 – installed sumps, pumps, piping and internal segregation berms to separate different process areas; removed ~500,000 square feet of decades old legacy paint from concrete buildings that contained metals regulated in the bay; added more storm water diversion tanks to increase capacity and submitted our permit application, Best Management Practices (BMP) and Industrial Waste Water Management Plans for sewer discharge of storm water to the Municipal Waste Water District (MWWP);
- 1999 – BMPs approved, contracted a cleaning company to scrub all industrial areas to be free of historical oil spotting, eliminated irrigation water discharges to parking lots, and volunteered for a third party Level A inspection as a gap analysis of our efforts to date;
- 2000 – Hired an storm water specific engineering firm to design a 100% catchment system for industrial piers, installed the catchment system with lift pumps moving the water to storm water diversion tanks; purchased more diversion tanks and installed storm water drain screening and filtration systems at each drain;
- 2001 – Completed pier catchment systems to become a zero storm water discharge facility;
- 2004 – Re-engineered pier salt water fire suppression systems and eliminated the last source point discharge (recirculating water) in the facility to become the nation's first 'Zero Discharge Shipyard' (attachment 1). This was verified by a RWQCB Water Resource Control Engineer in a letter dated February 26<sup>th</sup>, 2004 (attachment 2); and
- Awards - 2004 State of California, Governor's Environmental and Economic Leadership Award, COR for becoming a Zero Discharge Facility; 2005 1<sup>st</sup> place, U.S. EPA National Clean Water Act Recognition Award for becoming the nation's first Zero Discharge Major Maritime Facility; and a multitude of industrial association awards for storm water and sediment management over the years.

A SUBSIDIARY OF HUNTINGTON INGALLS INDUSTRIES

1995 Bay Front Street • San Diego, CA 92113 • Telephone (619) 234-8851 • [www.continentalmaritime.com](http://www.continentalmaritime.com)

**Comment No. 1 RE: Permit change from acute toxicity to chronic toxicity monitoring for qualifying storm events/storm water discharges.**

The tentative order requires chronic toxicity monitoring of our storm water discharges. Our primary concern with the tentative order is firmly fixed on chronic toxicity being a proven inaccurate method of analyzing the extremely rare storm water discharges at our facility. For reference, we do not have industrial effluents at all, we do not have industrial area storm water, and all of our prior NPDES orders required acute monitoring following a San Diego County Superior Court 'Stay of Effectiveness' (Case No. 718025) and the State Water Resources Control Board's subsequent reconsideration and ruling in our favor in 1998 (attachment 3). The Court and Board found chronic toxicity testing was not an appropriate measure of our storm water discharges. They agreed chronic toxicity samples should be from a continuous effluent to support the renewable water requirement of the analytical method whereas acute toxicity accurately captures a snapshot of the storm event.

In 2001 the EPA defined 'acute toxicity test' as 'a test to determine the concentration of effluent or ambient waters that causes an adverse effect (usually death) on a group of test organisms *during a short-term exposure e.g., 24, 48, or 96 hours*' (EPA Final Report: Interlaboratory Variability Study of EPA short-term Chronic and Acute Whole Effluent Toxicity Test Methods, Vol 1). If we apply the EPA inclusion of the words 'short term exposure' to our aquatic life exposure potential of no storm water discharges in over a decade we actually have created no exposure since becoming an EPA and RWQCB zero discharge facility.

Acute tests are short-term exposure tests (hours or days) and generally use lethality as an endpoint. In acute exposures, organisms come into contact with higher doses of the toxicant *in a single event* or in multiple events over a short period of time and usually produce immediate effects, depending on absorption time of the toxicant. Acute tests would accurately measure our rare basically single events.

Chronic tests are long-term tests (weeks, months years), relative to the test organism's life span (>10% of life span), and generally use sub-lethal endpoints. In chronic exposures, organisms come into contact with *low, continuous doses of a toxicant*. Chronic exposures may induce effects to acute exposure, but can also result in effects that develop slowly. Chronic tests are generally considered full life cycle tests and cover an entire generation time or reproductive life cycle ("egg to egg"). If we had continuous effluents we would be creating continual dosing of aquatic life and chronic testing would then be indicated.

**Formal Request to Comment No. 1:** Continental Maritime of San Diego respectfully requests chronic toxicity testing requirements be removed from the Tentative Order as it was from Order 97-37. The previous deletion can be confirmed in the State Water Quality Control Board Meeting minutes dated September 17, 1998, Item 2, § V. ORDER, item No. 3. which reads "*Monitoring and Reporting Program No. 97-36 is amended to delete "Chronic Toxicity" requirements from Table 5, at page M-16*".

**Comment No. 2 RE: Addition of surface water monitoring to the tentative order.**

Unlike all previous NPDES permits, the proposed tentative order includes surface water monitoring. The EPA defines surface water samples as "*samples collected from a water body that can be used to establish an observed release to surface water, including aqueous samples, sediment samples, and tissue samples from essentially sessile benthic organisms*". Remembering an RWQCB Water Resource Control Engineer acknowledged CMSD had removed its final effluent (salt water fire main by-pass water) in 2004 we can clearly state we have no industrial or storm water, hence no "*observable releases*" to surface water. The rare exception to this statement would be if we had a qualifying storm event (QSE) with a storm water release.

We would also like to note that since we have no releases or effluents our water quality is impacted by our water front neighbors. If we answer question No. 1 in Attachment E, MRP, § V, we would be implicating Port tenants

up and down stream of us. If we answer question No. 2 we would be speculating since we do not know our neighbor's water quality results. It would be impossible to quantify an answer to question No. 3 due to not having a "relative contribution" (i.e. no releases) to our neighbor's "relative contributions" in the receiving waters that flow by us ~4 times a day with the tidal changes.

**Formal Request to Comment No. 2:**

Continental Maritime of San Diego respectfully requests a tiered plan for surface water monitoring be applied to the Tentative Order incorporating the following actions:

1. Remove the three questions following the first paragraph which imply compliance benchmarks in Attachment E, § IV, Receiving Water and Sediment Monitoring Requirements;
2. Change the annual receiving water monitoring frequency in Paragraph C. 3. A. of the same section to a requirement during one QSE with a storm water release per year; and
3. Remove the chronic toxicity requirement in Table E-3 yet specify acute toxicity testing to accurately capture aquatic life affects from our rare storm water releases.

**Comment No. 3 RE: Financial impact of additional monitoring.**

CMSD is committed to our ISO 14001 Environmental Management System, protection of the environment and compliance with the law. Compliance with our current NPDES permit and RWQCB Order cost a little over \$18,000 last year, a year in which we again had no storm water or effluent discharges of any type. This equates to a projected compliance cost over the life of an identical Order of at least \$90,000.00 not including price increases from the outside professional services we contract with.

Quotes from our outside professional services for compliance with the tentative order, assuming we can collect the minimum number of samples necessary to comply, and adding the new chronic toxicity analysis to all applicable categories, Triad reporting, Benthic Community study, Aquatic Dependant Wildlife and Health Assessment, Monitoring Plans, QA Plans, Conceptual Model, and SWPPP amendments and PE approval range from:

- In a year with no QSEs an increase of 363% to \$86,580.00 per year;
- If we had a QSE with no chronic toxicity failure an increase of 664% to \$142,930.00 per year; to
- If we had a QSE with chronic toxicity failure an increase of 696% to \$148,930 per year. (see attachment 4)

**Formal Request to Comment No.3:**

Continental Maritime of San Diego respectfully requests the Board to implement Formal Requests No.s 1 and 2. to minimize the magnitude of compliance cost increases.

**Comment No. 4 RE: Contact information.**

The contact information in Attachment F, Table F-1 Facility Information has changed since our last Order. A letter confirming this change was forwarded to your office last month to authorize another individual.

**Formal Request to Comment No. 4:**

Continental Maritime of San Diego respectfully requests the facility contact, title and phone and authorized person to sign and submit reports in Attachment F, Table F-1 be changed to Dewey Youngerman per the signature information below.

If you have any questions or comments please contact me at the number below, ext. 236, or by e-mail at [dyounger@continentalmaritime.com](mailto:dyounger@continentalmaritime.com).

Sincerely,

Continental Maritime of San Diego

A handwritten signature in black ink, appearing to read 'Dewey Youngerman', with a stylized flourish at the end.

Dewey Youngerman  
Manager, EH&S  
619-234-8851



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

SEP 12 2005

OFFICE OF  
WATER

Mr. Daniel L. Flood  
Vice-President/General Manager  
Continental Maritime of San Diego, Inc.  
1995 Bay Front Street  
San Diego, CA 92113-2122

Dear Mr. Flood:

I am pleased to announce that Northrop Grumman/Newport News/Continental Maritime of San Diego, Inc. has been selected as the first place winner of the U.S. Environmental Protection Agency's (EPA) 2005 National Clean Water Act Recognition Award for an outstanding stormwater pollution prevention program in the industrial category. EPA based this selection on the exceptional stormwater controls implemented by your facility and the dedication of your staff.

EPA will present your award at the National Clean Water Act Recognition Awards Ceremony on Monday, October 31, 2005, in Washington, DC. The ceremony will take place during the Water Environment Federation's 78<sup>th</sup> Annual Technical Exposition and Conference. My staff will contact you shortly to provide more information regarding the ceremony and conference, and to answer any questions you may have.

Congratulations and thank you for your commitment to excellence in storm water management.

*Thank  
so much!*

Sincerely,

A handwritten signature in black ink that reads "B.H. Grumbles".

Benjamin H. Grumbles  
Assistant Administrator

cc: Senator Barbara Boxer  
Senator Dianne Feinstein  
Representative Susan A. Davis  
Governor Arnold Schwarzenegger  
Russell A. McCarthy, Jr., Environmental, Health and Safety Manager  
Regional Administrator, EPA Region IX



# California Regional Water Quality Control Board

## San Diego Region



**Terry Tamminen**  
Secretary for  
Environmental  
Protection

9174 Sky Park Court, Suite 100, San Diego, California 92123-4340  
(858) 467-2952 • Fax (858) 571-6972  
<http://www.swrcb.ca.gov/rwqcb9>

**Arnold Schwarzenegger**  
Governor

**TO:** John R. Phillips, P.E.  
Senior Water Resource Control Engineer

Continental Maritime  
File: 03-0400.01

**FROM:** Paul J. Richter, P.E.  
Water Resource Control Engineer  
**SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD**

**DATE:** February 26, 2004

**SUBJECT:** INSPECTION OF CONTINENTAL MARITIME SHIPYARD ON FEBRUARY  
19, 2004

In response to an invitation from Mr. Russell McCarthy, Environmental Manager (619.234.8851, ext. 531), to view the new *Fire Protection Water* discharge elimination system, on February 19, 2004, Sabine Knedlik, WRCE, and I conducted a *Miscellaneous Inspection* of the Continental Maritime shipyard. The *Fire Protection Water* system has two components: located on Pier six are the primary supply pumps, and located along the quay wall at the base of Pier four are the larger booster pumps. The *Fire Protection Water* discharge was the only point source discharge at the facility. All other point source discharges had been eliminated during the past ten years.

The industrial storm water discharges have also been eliminated. The discharges at the shipyard and the best management measures used at the shipyard are regulated pursuant to National Pollutant Discharge Elimination (NPDES) Permit No. CA 0109142, Waste Discharge Requirements (WDR) Order No. R9-2002-0282.

Mr. McCarthy, Mr. Lee E. Wilson, Executive Vice President, Legal and Assistant Secretary (619.234.8851, ext. 203), and Mr. Bob Montreuil, Facilities Manager (619.234.8851, ext. 530), accompanied us on our inspection.

As shown in *Figure 1. Main Fire Pump on Pier Six*, the main *Fire Protection Water* system is located at the end of Pier six. The *Fire Protection Water* system supplies the Naval vessels or other ships berthed at the shipyard with pressurized water for various ship board systems, such as heat exchangers and water for fighting fires. The *Fire Protection Water* is discharged from the

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Continental Maritime Inspection

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ships at various discharge points. The discharges from ships are not regulated by the NPDES Permit for Continental Maritime or by any other NPDES permit.



Figure 1. Main Fire Pump on Pier Six.

Pursuant to 40 CFR 122.3 ship board discharges *incidental to the normal operation of a vessel* are excluded from NPDES permits and do not require an NPDES permit. However, pursuant to the *Uniform National Discharge Standards for Vessels of the Armed Services* (UNDS), the United States Environmental Protection Agency (USEPA) and the Department of Defense (DOD) are developing discharge standards for the various overboard discharges from military ships. The UNDS process will develop engineered and administrative discharge standards for the *Fire Protection Water* discharges from the ships.

With the elimination of the *Fire Protection Water* discharge at the Continental Maritime Shipyard, the facility has eliminated all point source waste discharges to San Diego Bay. Additionally, since 2001, Continental Maritime Shipyard has diverted its industrial storm water discharges to the sanitary sewer.

Continental Maritime was able to eliminate the discharges of *Fire Protection Water* at Pier six by installing an electronic logic system to engage various size pumps depending on the demand from the ships berthed at the facility. With the previous configuration, a large variable speed pump provided a continuous supply of water at 125 pounds per square inch (psi) at a flow range of 100 to 750 gallons per minute (gpm). With the old supply system any unneeded fire protection water was discharged from the pipe delivery system.

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As shown in *Figure 2. Small Variable Flow Pumps*, the new *Fire Protection Water* system at Pier six uses two low flow (approximately up to 100 gpm) variable flow pumps, a small recycling system, a pressure transducer, a high flow (approximately 100 to 750 gpm) variable flow pump, and a micro-processing logic system.

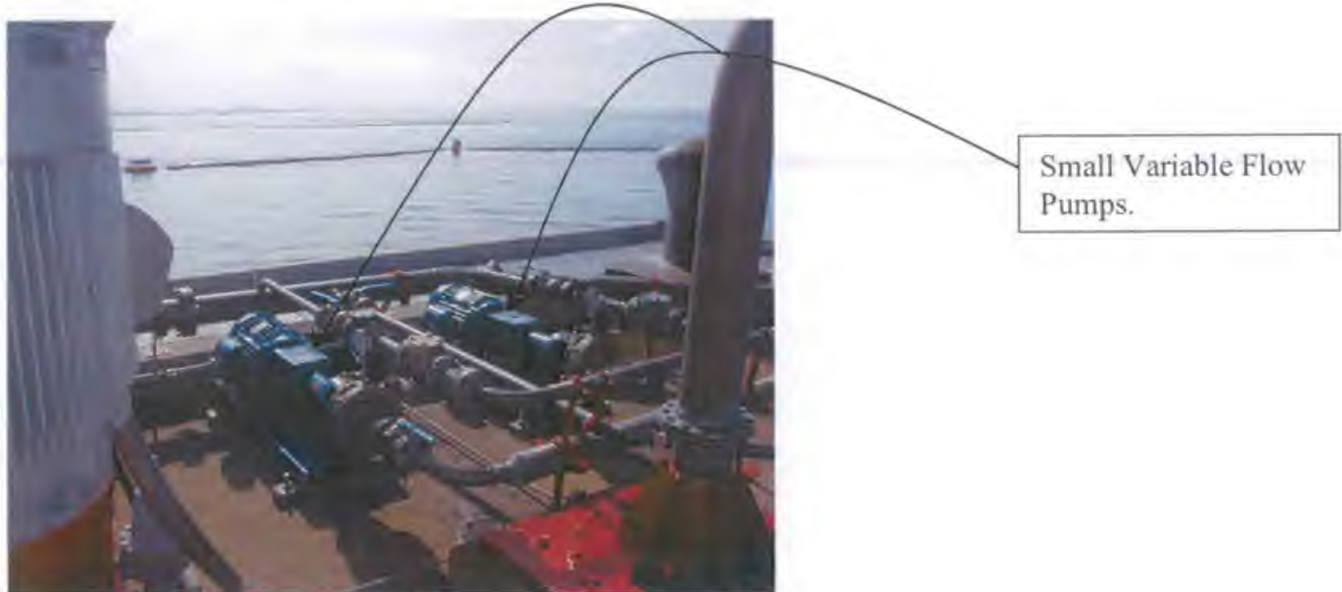


Figure 2. Small Variable Flow Pumps.

As shown in *Figure 3. Pump System*, the two small pumps supply the typical water demand from the berthed ships and uses a recycling system (a 3/16 inch orifice plate and cylinder storage tank), to keep the system pressurized. Once the system experience a pressure drop below 125 psi, the transducer signals the microprocessor to start the larger variable speed pump. The microprocessor and logic system controls the operating pumps according to a preset logic. The logic needs to be set according to the vessel demand.



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Recirculation Tank.

Figure 3. Pump System.

In addition to the *Fire Protection Water* pumps located on Pier six, the facility has two larger fire booster pumps (flow rates greater than 2,500 gpm) located along the quay wall at the base of Pier four. As shown in *Figure 4. Large Fire Protection Pumps*, a re-circulating plumbing system was installed. The pumps are operated manually approximately once per week to ensure they are operational. These pumps typically operate during a catastrophic fire event. There is no discharge from the weekly operation of these pumps.



Re-circulation Piping.

Figure 4. Large Fire Protection Pumps.

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During the past year, Continental Maritime has been researching and testing a storm water treatment system. While conducting our pre-inspection discussion, Russell provided me with six data sheets for the storm water treatment system Continental Maritime is testing. Four of the data sheets were for a *tabletop* pilot model that treated approximately 3 gpm of storm water. Two of the data sheets were for a larger *real time* system that treated approximately 103 gpm of storm water. The data sheets are attached in *Appendix A. Chemistry and Toxicity Reporting Data*.

As shown in *Table 1. Survival Rates, and Copper and Zinc Concentrations for Storm Water Treatment System*, the survival rates in effluent from the storm water treatment system were consistently greater than 90%. The concentrations of copper and zinc in the effluent were also reduced significantly when compared to the influent of

Table 1. Survival Rate, and Copper and Zinc Concentrations for the Storm Water Treatment System.

Date and flow rate	Acute Toxicity, Influent (% survival)	Acute Toxicity, Effluent (% survival)	Copper, Influent (mg/L)	Copper, Effluent (mg/L)	Zinc, Influent (mg/L)	Zinc, Effluent (mg/L)
1/29/03, 3 gpm	100	95	0.0327	ND	0.224	0.067
2/11/03 3 gpm	40	100	0.0463	0.00145	0.412	0.0399
4/16/03 3 gpm	100	100	0.0531	ND	0.528	0.107
11/13/03 3 gpm	0	100	2.75	ND	5.38	0.285
1/29/04 103 gpm	10	100	23.7	ND	149	ND
2/3/04 103 gpm	45	100	58.3	3.07	270	5.01
Average	49	99	14.1	0.512	71	0.92

ND: non detect, a value of zero was used for ND when calculating the average.

Shown in *Figure 5. Storm Water Collection System Pump*, is a storm water collection pump that is a part of Continental Maritime's a storm water collection system to collect industrial storm water runoff. The industrial storm water is typically stored in cylindrical storage tanks located at various sites throughout the facility.

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Figure 5. Storm Water Collection System Pump.

While at the shipyard, we viewed the real time storm water treatment system. As shown in *Figure 6. Storm Water Treatment System*, the storm water treatment system uses a pump, a pre-filter cartridge, two pressure tanks in series containing coconut charcoal, a final cartridge filter and then an ultraviolet light to clean and disinfect the storm water. The cylindrical storage tank for the industrial storm water runoff is also shown in Figure 6.

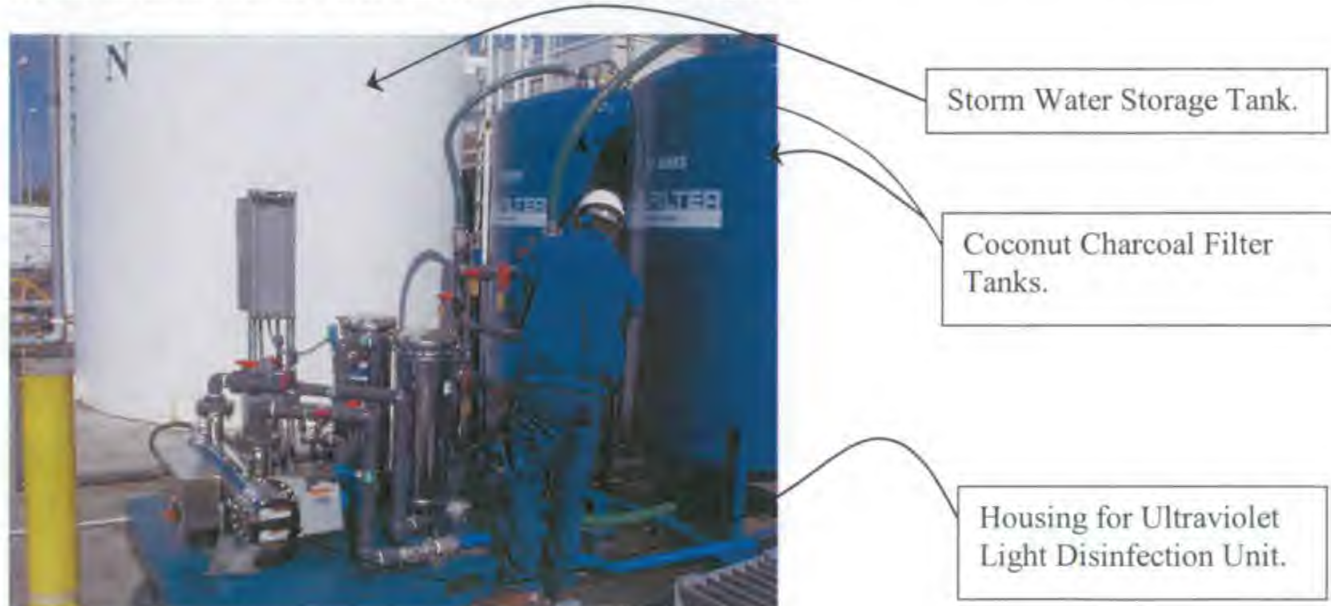


Figure 6. Storm Water Treatment System.

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As shown in *Figure 7. Paint Booth and Sand Blast Area*, the storm water treatment system was located in the catchment basin for the paint booth and sand blast area. Because the paint and sand blasting activities generate a significant amount of paint chips and dust, this area may be considered the area expecting the highest concentrations of metals, particularly, copper and zinc in the industrial storm water runoff. During the testing of the storm water treatment system, the discharge from the storm water treatment system flows back to the storm drain in the *Paint Booth and Sand Blast Area*, which is a catchment basin area in the storm water collection system.

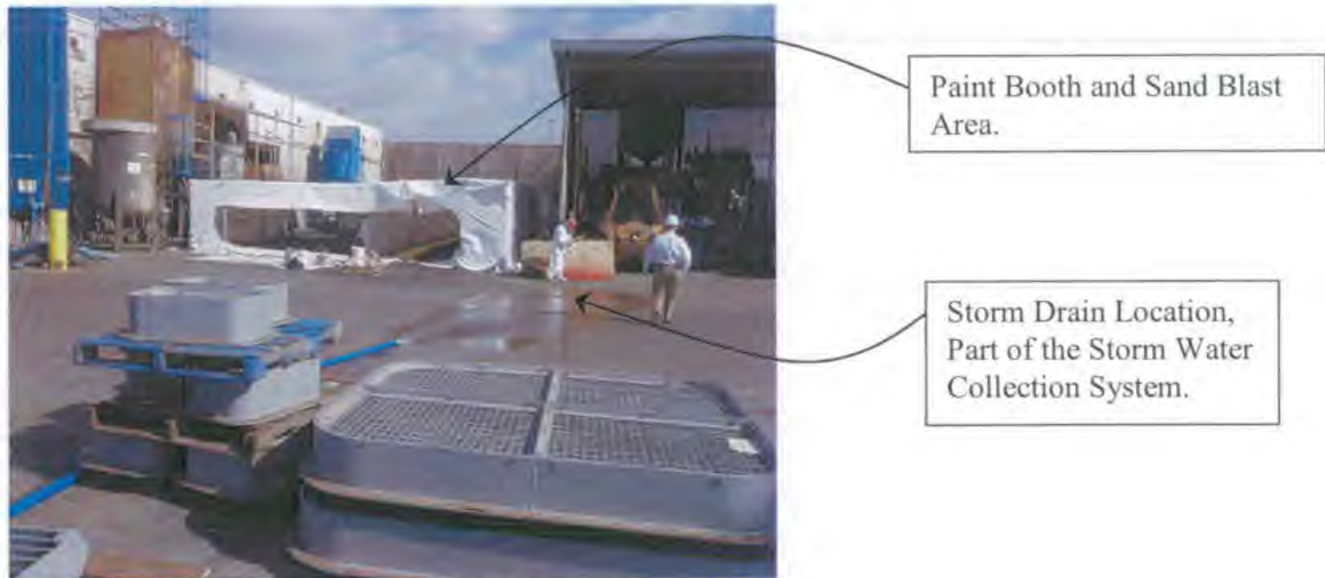


Figure 7. Paint Booth and Sand Blast Area.

The preliminary data indicates that the treatment system will remove a large percentage of the metals from the storm water. The toxicity survival rate for the treated storm water complies with the NPDES permit requirement of 90% survival 50% of the time. Since the metal concentrations are still detectable in the treatment systems effluent at greater than ambient water quality criteria, the preliminary data indicates that the toxicity response may be caused by bacteria or viruses.

Currently, Continental Maritime collects the industrial storm water runoff in holding tanks and discharges the storm water to the municipal sanitary sewer system. Continental Maritime expects the City of San Diego to begin restricting the volume of storm water discharged into the municipal sanitary sewer system. The City may also prohibit the discharges of industrial storm water into the municipal sanitary sewer collection system.

During the inspection, Russell and I discussed the NPDES permit requirements for the discharges of the treated storm water. Russell indicated that Continental Maritime would like to have the toxicity limitation removed from the NPDES permit and replaced with a permit goal. He thought a goal requirement would allow them to discharge the treated storm water while waiting for

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toxicity testing results. The toxicity testing take 96 hours and the results may take a bit longer to process because of scheduling and logistics. I explained that he should submit a written report and request to the Executive Officer. I also noted that more data needs to be collected from the storm water treatment system. Russell indicated that Continental Maritime will collect more storm water data this year and will submit a written request and data later this year.

The photographs taken during the inspection are attached in *Appendix B, Photographs Taken During the Inspection*. The photographs in *Appendix B* are not identified by titles or composition. Some of the photographs are different views of the Figures identified in this memorandum.

STATE WATER RESOURCES CONTROL BOARD  
BOARD MEETING--OFFICE OF CHIEF COUNSEL  
SEPTEMBER 17, 1998  
ITEM 12

SUBJECT

IN THE MATTER OF THE PETITIONS OF NATIONAL STEEL & SHIPBUILDING COMPANY AND CONTINENTAL MARITIME OF SAN DIEGO, INC., FOR REVIEW OF WASTE DISCHARGE REQUIREMENTS ORDERS 97-36 AND 97-37, ISSUED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN DIEGO REGION. SWRCB/OCC FILES A-1119 AND A-1120  
DISCUSSION

These consolidated petitions challenge general NPDES permits issued to shipyards in San Diego Bay. The permits regulate process wastewater and storm water discharges. The petitioners, two shipbuilding companies, contend that they were denied due process in adoption of the permits, that the permits impermissibly contain numeric effluent limitations, that the monitoring is unreasonable, and that the permits are too vague. The proposed draft order upholds the permits except that it revises the chronic toxicity monitoring and requirements.

POLICY ISSUE

Should the Board uphold general permits issued to shipyard facilities except for provisions regarding chronic toxicity?

FISCAL IMPACT

None.

RWQCB IMPACT

The proposed order would uphold permits adopted by the San Diego Bay Regional Water Board except for revising provisions on chronic toxicity.

STAFF RECOMMENDATION

Adopt the proposed order.

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DRAFT September 4, 1998

STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

ORDER: WQ 98-\_\_

In the Matter of the Petitions of NATIONAL STEEL AND SHIPBUILDING COMPANY AND CONTINENTAL MARITIME OF SAN DIEGO, INC. for Review of Waste Discharge Requirements Orders 97-36 and 97-37 of the California Regional Water Quality Control Board, San Diego Region

SWRCB/OCC Files A-1119 and A-1120

BY THE BOARD:

On October 15, 1997, the Regional Water Quality Control Board, San Diego Region (Regional Water Board), adopted Waste Discharge Requirements Order 97-36, General NPDES Permit CAG039001 and Waste Discharge Requirements Order 97-37, General NPDES Permit CAG039002 (permits), for shipyard facilities in San Diego Bay. The permits regulate process and storm water discharges from ship construction, modification, repair and maintenance facilities, and activities. The permits constitute general national pollutant discharge elimination system (NPDES) permits pursuant to section 402 of the federal Clean Water Act (CWA).

On November 14, 1997, the State Water Resources Control Board (State Water Board) received petitions from two facilities subject to the permits, National Steel and Shipbuilding Company and Continental Maritime of San Diego, Inc. (petitioners). The petitioners contested issuance of the permits and certain provisions thereof.

#### Footnote 1

The petitioners requested stays of the permits. Following the State Water Board's refusal to issue stays, court review was sought and a superior court commanded the State Water Board to set aside its dismissal of the stay requests and to reconsider the stay requests, and stayed the effectiveness of the permits in the interim. (NASSCO et al. v. California State Water Resources Control Board et al., San Diego County Superior Court No. 718025.) Because this order considers the merits of the petitions, the court's order to reconsider the stay requests is now moot. Following issuance of this order, the permits shall be effective, as modified herein.

The petitioners also requested a hearing before the State Water Board. The comments that were excluded by the Regional Water Board, and were the basis for the hearing request have been entered into the record and considered in this order. The hearing request is hereby denied.

### **I. BACKGROUND**

The petitioners own and operate shipyards in San Diego Bay. The shipbuilding and repair industry is engaged in construction, conversion, alteration, repair, and maintenance of military and commercial ships and vessels. Their activities include formation and assembly of steel hulls and superstructures, application and repair of paint systems, installation and repair of mechanical, electrical and hydraulic systems, repair of damaged vessels, pipe fitting, boiler cleaning, and electroplating and metal finishing.

These activities can generate wastes including spent abrasives, paint, marine organisms, rust, bilge water, blast wastewater, oils, lubricants, grease, fuels, sludge, solvents, thinners, demolition waste, trash, asbestos, sewage, hydrocarbon or chlorinated solvents, electroplating and metal finishing wastes, acid wastes, caustic wastes, and aqueous wastes. Because the shipyards are located right on San Diego Bay, there is a potential for wastes to enter the Bay. Activities that can result in discharges to San Diego Bay include floating dry dock deballasting, submergence and emergence, graving dock floodwaters, gate leakage, hydrostatic relief flow, leaks from floodwaters and gates, and hydrostatic relief flows. Shipyard facilities sometimes directly discharge cooling water, fire protection system water, boiler and cogeneration feedwater, steam condensate water, saltbox water, integrity and hydrostatic testing water, and water from hosing down dry docks and hulls. Discharges may occur in a variety of ways including direct and indirect dischargers of wastewaters, and discharge of storm waters containing pollutants.

Prior to issuance of the general permits that are the subject of this order, the Regional Water Board had adopted individual permits for process wastewater discharges from each shipyard. The facilities were also subject to the statewide General Permit for Discharges of Storm Water Associated with Industrial Activities (Order 97-03-DWQ). The general permits issued by the Regional Water Board govern all discharges to San Diego Bay from the shipyards including process wastewater and storm water. They therefore take the place of the earlier individual NPDES permits and the facilities are no longer subject to the statewide General Permit. Footnote 2

The two permits issued by the Regional Water Board are virtually identical except that one applies to shipyards that are assigned a greater threat to water quality and complexity rating, and the other is for shipyards with a

lower rating. Both permits require the use of best management practices (BMPs) to limit discharges of both process wastewater and storm water to San Diego Bay.

The Regional Water Board staff worked on these permits for at least two years and circulated several early drafts to the petitioners. The Regional Water Board staff and the petitioners met on several occasions, and the petitioners submitted dozens of comments throughout this time including their own versions of draft permits and comments on various issues of the proposed permits. The Regional Water Board held a workshop on April 9, 1997, at which the petitioners were allowed to comment extensively. The Regional Water Board held a public status meeting on May 21, 1997. On July 14, 1997, the Regional Water Board held a public hearing on the draft permits that had been circulated to the public. There was extensive comment from the petitioners, other dischargers, and the public. The Regional Water Board also allowed further written comments until August 20, 1997. Again the petitioners submitted extensive comments. On October 2, 1997, the Regional Water Board distributed final draft permits and prepared a response to comments. The Regional Water Board did not allow comments on October 2, 1997 drafts and adopted them without further public comment on October 15, 1997.

## II. CONTENTIONS AND FINDINGS [Footnote3](#)

1. Contention: The petitioners contend that the Regional Water Board violated their due process rights by not allowing comments on the October 2, 1997 draft permits.

Finding: The petitioners and the Regional Water Board staff met numerous times from 1995 until the permits were adopted in October 1997. During that time, the petitioners reviewed and commented upon several draft permits and submitted their own versions of a permit. The Regional Water Board itself held a workshop, a status meeting, and a hearing. Extensive testimony was allowed on the draft permits at all of these meetings. At the hearing held August 13, 1997, the discussion centered on a July 14, 1997 draft permit. In addition to these public meetings, the petitioners were allowed to submit voluminous comments on the various draft permits including comments after the close of the hearing until August 20, 1997. Many other entities besides the petitioners also submitted comments including other dischargers, environmental groups, and resource agencies.

On October 2, 1997, the Regional Water Board staff distributed final draft permits. The staff also prepared an extensive document summarizing comments and responding to those comments, either by describing revisions to the permits, or by explaining why the permits were not revised as requested. The Regional Water Board adopted the draft permits at its October 15, 1997 meeting. At that meeting, the Regional Water Board did not allow further testimony. The petitioners claim that because they could not adequately comment on the October 2, 1997 draft permits, they were denied due process under the California and United States Constitutions.

The Regional Water Board complied with the federal procedural requirements for adopting NPDES permits (40 Code of Federal Regulations (C.F.R.) Part 124) and with Water Code section 13377. The Regional Water Board circulated the draft permits for at least 30 days, held a hearing on contested permits, made revisions to the draft permits in response to comments, and prepared a document containing response to comments. The revisions in the October 2, 1997 drafts, while extensive, were responsive to the various comments staff had received from the petitioners and other interested persons.

The petitioners argue that several permit conditions were changed significantly in the October 2, 1997 drafts. However, each of these terms was the subject of significant comment and discussion throughout the permit review period. For example, the petitioners themselves requested that the permits specifically authorize the discharge of ship launch grease. When the permits were revised to authorize such discharge, petitioners objected that an accompanying monitoring provision was added, ascertaining the new monitoring requirement to be a significant change for which they have a right to comment. The Regional Water Board appropriately required monitoring of an authorized discharge.

If the Regional Water Board had been unwilling to make revisions to the draft permits in response to comments,



it would not have met the requirements of the federal regulations and of section 13377, which commands the Regional Water Boards to follow the federal regulations in adopting NPDES permits. Thus, the petitioners' argument is in effect an attack on the constitutionality of section 13377. As we have stated in the past, the State Water Board will not review arguments that a statute which it implements is constitutionally infirm. (Cal. Const., art. III, § 3.5. See State Water Board Orders WQ 86-13, p. 4 and 85-10, p. 5.)

While petitioners may argue that the Regional Water Board could have simply allowed further comment on the October 2, 1997 drafts, and then adopted them on October 15, 1997, such a process would have then possibly necessitated further revisions to the drafts and, as required by the federal regulations, further responses to comments. The federal regulations clearly required no more than one public comment period and hearing and not the endless process the petitioners claim is required. The extensive process of negotiating privately with the petitioners and then allowing public comments at a workshop and a hearing, along with a lengthy public comment period, already resulted in delays in reissuance of permits that had expired five years before. It is clear from the record in this matter that the petitioners had more than ample opportunities to comment on the permit drafts and the major issues therein, and that they took full advantage of those opportunities.

The specific revisions to the October 2, 1997 drafts that the petitioners complain of include changing the toxicity limitation and testing to delete the dilution factor. The petitioners' August 20, 1997 comments included detailed criticisms of the toxicity limitation and monitoring. The petitioners asked for inclusion of a dilution allowance, and the final permits clarified that there would be no dilution credit allowed. This revision addressed a comment by the petitioners and is explained in the Regional Water Board's response to comments.

The petitioners had requested that the terms "high risk areas" and "industrial process water" be defined. The October 2, 1997 draft permits included definitions of these terms, and the response to comments detailed the rationale for the definitions including the use of a definition of "industrial process water" derived from State Water Board Order No. WQ-88-4.. Again, these were not new issues in the October 2, 1997 drafts.

The petitioners claim that the October 2, 1997 draft permits newly required submission of complete individual NPDES permit applications each year. First, the issue of a permit application was discussed throughout the permit process. The Regional Water Board staff considered whether to issue individual permits or general permits, and the environmental groups argued for individual permits. Their greatest concern was having current information on the shipyards which must be included in the application for individual permits. The Regional Water Board resolved this issue by issuing general permits, but by requiring the petitioners to submit the information that would have been required in individual applications. This was not a new issue raised for the first time in the October 2, 1997 drafts. Second, the general permits do not require the petitioners to submit entirely new applications each year. The permits require only that each year the shipyards update the information. This requirement is reasonably related to the earlier discussions and comments.

In summary, the "new" requirements and provisions that the petitioners complain of had been issues that were discussed extensively by all parties and interested persons, and were all the result of comments that the Regional Water Board was required to consider and to respond to. The Regional Water Board was not required to hold a second hearing to discuss the comments and outcome of the draft produced as a result of the hearing.

The petitioners have cited several cases but none of these support their contention that the Regional Water Board denied them due process. The California Supreme Court found that the State Bar denied due process when it did not explain to an applicant the reasons he was denied full reimbursement from a Bar-operated fund. (*Saleeby v. State Bar* (1985) 39 Cal.3d 547.) The Regional Water Board provided extensive responses to all of the petitioners' comments. [Footnote4](#)

In an Illinois case cited by the petitioners, the state issued an NPDES permit that included significant changes from the earlier draft permit. (*Village of Sauget v. Pollution Control Board* (1990) 207 Ill. App.3d 974.) The draft permit had been considered as uncontested during the public comment period, and any changes were due

to comments from U.S. EPA submitted long after the close of the public comment period. The permittee never saw any comments from U.S. EPA until months after they were submitted, and there was never a hearing on the permit. The Regional Water Board, on the other hand, allowed extensive comments which were made available to all persons, and held a lengthy public hearing and a workshop. The revisions to the July drafts were based on the comments, and the Regional Water Board responded to all comments. The Illinois case presented the permittee with unanticipated major revisions to what was an uncontested draft permit. That case is not analogous to the adoption of these permits.

The petitioners also assert that the Regional Water Board did not comply with the procedural regulations in place at the time of the August 13, 1997 hearing. A review of the transcript reveals, however, that the petitioners were allowed to make lengthy presentations by numerous speakers, that they were afforded the opportunity to present questions for the staff to answer, [Footnote5](#) and that they made no objection to the hearing process at the meeting. The record fails to support any contention that the Regional Water Board did not follow the regulations.

2. Contention: The petitioners contend that the permits are not supported by adequate findings or evidence. Specifically, the petitioners assert that the Regional Water Board improperly inserted numeric effluent limitations in the permits.

Finding: The petitioners argue that the Basin Plan for the San Diego Region specifies that permits for shipyards cannot contain numeric limitations, that the permits violate this provision, and that they do not contain findings to support the inclusion of numeric limitations. The Basin Plan, however, does not prohibit the use of numeric limitations in permits for shipyards. Instead, it states that control of waste discharges is accomplished by BMPs, and that "numerical effluent limitations are not practical." (Basin Plan, at 4-51.) In fact, a prohibition against numeric effluent limitations at any facilities subject to NPDES permits would contravene U.S. EPA regulations, which require such limitations in some instances. [Footnote6](#) Moreover, the permit findings extensively discuss the threat to water quality posed by shipyards and form the basis for numeric effluent limitations. [Footnote7](#)

The permits include numeric effluent limitations for oil and grease, settleable solids, turbidity, pH, and temperature. These limitations do not apply to storm water. The limitations are the same as those in the California Ocean Plan (1997). While the Ocean Plan is not applicable to enclosed bays and estuaries, such as San Diego Bay, the Water Quality Control Policy for the Enclosed Bays and Estuaries of California (1974; Bays and Estuaries Policy) is applicable. [Footnote8](#) The beneficial uses of bay waters are similar if not identical to those of the ocean. Bay waters are in hydrologic continuity to waters of the open ocean, but are generally subject to less dilution. It is appropriate to apply effluent limitations at least as stringent in San Diego Bay as in the ocean.

The numeric effluent limitations are also consistent with data presented in a U.S. EPA technical document, Development Document for Proposed Effluent Limitations Guidelines and Standards for Shipbuilding and Repair. The numeric limitations for these parameters are appropriate. The petitioners imply that the permits contain numeric effluent limitations for other parameters, including Receiving Water Limitations. These are not numeric effluent limitations, and the limitations are consistent with the State Water Board's prior decisions addressing receiving water limitations. [Footnote9](#)

The permits do include effluent limitations that provide that effluent shall not exceed a daily maximum chronic toxicity of 1 Toxic Unit Chronic. (TUC; Discharge Specifications B.7. and B.9.) This limitation would be appropriate for a treated industrial discharge, where volumes and types of effluent are relatively constant. But the discharges from the shipyard are intermittent and are controlled by BMPs rather than by treatment. Under these conditions, the use of a daily maximum is not an appropriate measure of chronic toxicity. Instead, the permit should require that a monthly median of chronic toxicity of process wastewater shall not exceed 1 TUC. Chronic toxicity for storm water is not a valid measurement of the impacts of storm water on receiving waters. The chronic toxicity limitation for storm water will be deleted.

The petitioners also contend that the requirement for chronic toxicity testing for intermittent discharges is inappropriate. Because of the intermittent nature of storm water discharges, and the fact that BMPs rather than treatment is employed, chronic toxicity testing of storm water discharges can be difficult and unreliable and can take longer than the storm event being measured. It is appropriate to measure only acute toxicity and not chronic toxicity for storm water discharges. As an alternative, the Regional Water Board could consider requiring further actions in the event that acute toxicity is identified. These could include a Toxicity Identification Evaluation, which would determine the cause of toxicity, and subsequent improvement of BMPs. While the chronic toxicity requirements and monitoring are not appropriate for storm water, the acute toxicity requirements and monitoring in the permits are appropriate.

The petitioners contend that the effluent limitations should have allowed for a mixing zone. The Regional Water Board could have considered a mixing zone, but because the discharges are intermittent and there are numerous potential discharge points, establishing a mixing zone is impractical and technically questionable. Establishing a mixing zone involves considering the conditions in the receiving water, the conditions of the discharge and the characteristics of the point of discharge. These factors are all quite variable in the case of shipyards. It was appropriate for the Regional Water Board not to include a mixing zone.

The petitioners also contend that the fact sheet is inadequate and does not cite to specific evidence. The fact sheet is extensive and does contain adequate explanations to support the permits. The petitioners argue that the Regional Water Board was required to have site-specific evidence for all assumptions in the permit, such as the assumption that hydrostatic relief may contain pollutants. Such evidence is not a requirement for NPDES permit provisions which can be based on general knowledge of industrial sites, including available documents and best professional judgment. Moreover, in the case of general permits, the basis of the permit is the type of discharge or facility, and the permit is not based solely on particular entities that will be regulated.

Provision E.7. of the permits requires that the shipyards take necessary measures to prevent storm water runoff associated with industrial activity from commingling with other storm water runoff. The petitioners claim that this requirement is not based on substantial evidence. But as pointed out by the petitioners, this provision is related to the "first flush" requirement, which prohibits discharge of the first flush of storm water runoff from "high risk areas." (Prohibition A.9.) As is demonstrated in the findings and the Fact Sheet, the "first flush" of storm water from shipyards may contain significant pollutants. As a practical matter, compliance with Prohibition A.9 will require segregation of industrial storm water from other storm water. Moreover, the segregation requirement does not specify the manner of compliance. (It only suggests the use of berms as an example.) This is a reasonable requirement in light of the threat to water quality posed by runoff from industrial activities at shipyards and the beneficial uses to be protected in San Diego Bay. While the "first flush" requirement applies to "high risk areas" and the segregation requirement applies more generally to areas associated with industrial activity, the dischargers can choose either to segregate two different waste streams or to apply the "first flush" requirements to all industrial storm waters.

3. Contention: The petitioners contend the monitoring and reporting requirements are too broad and burdensome and violate the provisions of Water Code section 13267(b)(1).

Finding: The petitioners claim that the monitoring requirements are too expensive and, specifically, that the requirements for monitoring sediment are burdensome. Section 13267(b)(1) provides: "The burden, including costs, of [monitoring] reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports."

The storm water monitoring and reporting requirements in the permits are consistent with the monitoring and reporting requirements in the State Water Board's general industrial permit. The petitioners should have already been in compliance with the requirements and, therefore, they should not be encountering significant new costs. Moreover, in light of the size of shipyards, and the threat to water quality, the anticipated costs of compliance are reasonable.

Sediment testing was a requirement of the earlier shipyard permits, as amended in 1989. The testing requirements are reasonable.

4. Contention: The petitioners allege a variety of deficiencies in the permits, including that they do not clearly authorize specific discharges, exclude other discharges, and are generally too vague.

Finding: Given the voluminous record before the Regional Water Board, and the complexity of the regulated facilities, the Regional Water Board produced permits that are comprehensive, thorough, and responsive to comments from the petitioners and the public. While petitioners no doubt have real concerns over the cost of protecting San Diego Bay from pollutants associated with shipyard facilities, the time has come to move forward with regulation under the permits. The State Water Board finds that the permits are adequately clear and, in light of the complexity of the discharges, are as specific as possible.

#### IV. CONCLUSIONS

After review of the record and consideration of the contentions of the petitioners, and for the reasons discussed above, we conclude:

1. The Regional Water Quality Control Board complied with federal and state regulations in issuing the NPDES permits and accorded the petitioners due process of law.
2. The limitations in the permits are proper, except that the chronic toxicity limit for process wastewater should not be expressed as a daily maximum and there should be no chronic toxicity limit for storm water. The permits should not require chronic toxicity testing for storm water discharges.
3. The monitoring provisions are appropriate and proper.
4. The permits are not impermissibly vague.

#### V. ORDER

IT IS ORDERED THAT Orders 97-36 and 97-37 are amended as follows:

1. Discharge Specification B.7 is amended to replace "daily maximum" with "monthly median".
2. Discharge Specification B.9 is deleted.
3. Monitoring and Reporting Program No. 97-36 is amended to delete "Chronic Toxicity" requirements from Table 5, at page M-16.

IT IS FURTHER ORDERED THAT in all other respects, the petitions are denied.

#### CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 17, 1998

AYE:

NO:

ABSENT:

ABSTAIN:

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Maureen Marché

Administrative Assistant to the Board

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Footnote 1

National Steel and Shipbuilding Company is subject to Order 97-36 and Continental Maritime is subject to Order 97-37. Both the permits and the petitions are virtually identical. For purposes of this review, the State Water Board has consolidated the petitions and is reviewing both in this order. The order is based on the record before the Regional Water Board when it adopted the permits. In addition, the petitioners have submitted declarations that include comments on the permits that were not entered in the Regional Water Board's records. Various parties and interested persons have submitted further comments and evidence regarding the petitions and responses thereto. Many of these entities including the petitioners, the Environmental Health Coalition (EHC), the United States Navy, the Regional Water Board, and the U.S. Environmental Protection Agency (U.S. EPA) submitted comments after the deadline for comments established by the State Water Board. All of these documents, with one exception, have been made a part of the record. (Water Code § 13320(b).) The exception is evidence submitted by EHC on June 1, 1998. This evidence consists of affidavits prepared for litigation in a separate matter. In light of the lateness of the submittal, and the fact that the matters asserted in the affidavits were covered in thorough fashion before the Regional Water Board, these affidavits will not be considered as a part of the record.

Footnote 2

The statewide General Permit allows Regional Water Boards to adopt permits that apply in lieu of the statewide permit. These may be individual NPDES permits or general permits for specific industries or geographic areas.

Footnote 3

All other contentions raised in the petitions that are not discussed in this order are dismissed. (Cal. Code Regs., tit. 23, § 2052; *People v. Barry* (1987) 194 Cal.App.3d 158 [239 Cal.Rptr. 349].)

Footnote 4

It is obvious that the State Bar's failure to provide any sort of a hearing cannot be compared with the petitioners' inability to speak at the October meeting, which followed a public workshop and hearing.

Footnote 5

In opening the hearing, the Chairman stated: " 'At the conclusion of the dischargers' direct testimony, I will allow reasonable time for dischargers to ask questions pertaining to the staff presentation. All questions will be addressed to me as the Chairman of the Board.' " The petitioners chose not to ask any questions. In light of the great concerns petitioners voice in their petitions regarding the need to question staff, it is difficult to understand why they chose not to ask any questions at all. They raised no objection to the Chairman's statement that questions would be addressed to him, and we cannot see how that stricture would have affected their ability to

pursue their questions.

[Footnote6](#)

See, 40 C.F.R. § 122.44. The U.S. EPA in fact has commented that the Regional Water Board should have included numeric effluent limitations for copper and zinc, pursuant to this regulation. The petitioners mistakenly claim that the Regional Water Board complied with this recommendation and included numeric limitations for these constituents.

[Footnote7](#)

In light of the information available to the Regional Water Board in adopting the permits and its actions therein, the Board should reconsider this Basin Plan language at its next triennial review.

[Footnote8](#)

The petitioners appear to confuse the Bays and Estuaries Policy, which is still in effect, with the Bays and Estuaries Plan, which was vacated. To the extent that the petitioners argue that the Regional Water Board included concepts from the vacated Plan, it is appropriate to use any technical documents in developing permit terms, while not relying on the Plan as including regulatory standards.

[Footnote9](#)

See, e.g., State Water Board Orders 91-03 and 96-03.

Dewey's note: this is XXX' estimate of tentative order costs - analysis costs are accurate as of 4FEB15

**NO QSE NO CHRONIC TOX FAIL**

Line Items	Unit Cost	Price Unit	Potential Units	Extended Costs
<b>Receiving Water</b>				
Monitoring Plan	6500	1	1	6500
Conceptual Model	6000	1	1	6000
Field Collection	2500	Annual	1	2500
Chemistry	110	/sample	3	330
Chemistry (other pollutants)	1500	/sample	3	4500
Chronic Toxicity (all three test species)	4650	/sample	3	13950
Reporting	2000	/year	1	2000
<b>Receiving Water Sub-Totals</b>	<b>23260</b>			<b>35780</b>

<b>Storm Water</b>				
Approved SWPP	7000	1	1	7000
Field Collection 1	2150	/QSE	0	0
Field Collection 2	2150	/QSE	0	0
Field Collection 3	2150	/QSE	0	0
Field Collection 4	2150	/QSE	0	0
Chemistry 1	1500	/sample	0	0
Chemistry 2	1500	/sample	0	0
Chemistry 3	1500	/sample	0	0
Chemistry 4	1500	/sample	0	0
Toxicity 1 (all three test species)	4650	/sample	0	0
Toxicity 2 (only test on worst species performer)	1700	/sample	0	0
Toxicity 3 (only test on worst species performer)	1700	/sample	0	0
Toxicity 4 (only test on worst species performer)	1700	/sample	0	0
TRE Work Plan	6000	/Tox Fail	0	0
Accelerated Toxicology	Unknown Cost			
Report	1000	Annual	1	1000
<b>Storm Water Sub-Totals</b>	<b>38350</b>			<b>8000</b>

<b>Triad</b>				
Field Collection	3300	/day	2	6600
Chemistry	614	/sample	14	8600
Toxicity	1900	/sample	assume 1 composite	1900
Benthic Community	1100	/sample	14	15400
Aquatic Dependent Wildlife & Health Assessment	2800	/triad	1	2800
Report	7500	/triad	1	7500
<b>Triad Sub-Totals</b>	<b>17214</b>			<b>42800</b>

<b>Total Cost: No QSE hence No chronic tox fail</b>	<b>\$86,580.00</b>
Cost of current order in 2014	\$18,717.00
Tentative order cost increase	<b>\$67,863.00</b>
Tentative order % increase	<b>363%</b>

Assumptions: 1) Monthly non-storm water discharge assessment performed by CNM; 2) (dewey's assumption) unknown accelerated toxicology costs would roughly equal the 1 time costs in column C above.

Dewey's note: this is XXX' estimate of tentative order costs - analysis costs are accurate as of 4/1/14

**1 QSE NO CHRONIC TOX FAIL**

Line Items	Unit Cost	Price Unit	Potential Units	Extended Costs
<b>Receiving Water</b>				
Monitoring Plan	6500	1	1	6500
Conceptual Model	6000	1	1	6000
Field Collection	2500	Annual	1	2500
Chemistry	110	/sample	3	330
Chemistry (other pollutants)	1500	/sample	3	4500
Chronic Toxicity	4650	/sample	3	13950
Reporting	2000	/year	1	2000
<b>Receiving Water Sub-Totals</b>	<b>23260</b>			<b>35780</b>

<b>Storm Water</b>				
Approved SWPP	7000	1	1	7000
Field Collection 1	2150	/QSE	1	2150
Field Collection 2	2150	/QSE	0	0
Field Collection 3	2150	/QSE	0	0
Field Collection 4	2150	/QSE	0	0
Chemistry 1	1500	/sample	8	12000
Chemistry 2	1500	/sample	0	0
Chemistry 3	1500	/sample	0	0
Chemistry 4	1500	/sample	0	0
Toxicity 1	4650	/sample	8	37200
Toxicity 2	1700	/sample	0	0
Toxicity 3	1700	/sample	0	0
Toxicity 4	1700	/sample	0	0
TRE Work Plan	6000	/Tox Fail	0	0
Accelerated Toxicology	Unknown Cost			0
Report	6000	Annual	1	6000
<b>Storm Water Sub-Totals</b>	<b>43350</b>			<b>64350</b>

<b>Triad</b>				
Field Collection	3300	/day	2	6600
Chemistry	614	/sample	14	8600
Toxicity	1900	/sample	assume 1 composite	1900
Benthic Community	1100	/sample	14	15400
Aquatic Dependent Wildlife & Health Assessment	2800	/triad	1	2800
Report	7500	/triad	1	7500
<b>Triad Sub-Totals</b>	<b>17214</b>			<b>42800</b>

<b>Total Cost: 1 QSE w/no chronic tox fail</b>	<b>\$142,930.00</b>
Cost of current order in 2014	\$18,717.00
Tentative order cost increase	<b>\$124,213.00</b>
Tentative order % increase	<b>664%</b>

Assumptions: 1) Monthly non-storm water discharge assessment performed by CNM; 2) (dewey's assumption) unknown accelerated toxicology costs would roughly equal the 1 time costs in column C above.



Dewey's note: this is XXX' estimate of tentative order costs - analysis costs are accurate as of 4/1/2015

**1 QSE W CHRONIC TOX FAIL**

<u>Line Items</u>	<u>Unit Cost</u>	<u>Price Unit</u>	<u>Potential Units</u>	<u>Extended Costs</u>
<b>Receiving Water</b>				
Monitoring Plan	6500	1	1	6500
Conceptual Model	6000	1	1	6000
Field Collection	2500	Annual	1	2500
Chemistry	110	/sample	3	330
Chemistry (other pollutants)	1500	/sample	3	4500
Chronic Toxicity	4650	/sample	3	13950
Reporting	2000	/year	1	2000
<b>Receiving Water Sub-Totals</b>	<b>23260</b>			<b>35780</b>

<b>Storm Water</b>				
Approved SWPP	7000	1	1	7000
Field Collection 1	2150	/QSE	1	2150
Field Collection 2	2150	/QSE	0	0
Field Collection 3	2150	/QSE	0	0
Field Collection 4	2150	/QSE	0	0
Chemistry 1	1500	/sample	8	12000
Chemistry 2	1500	/sample	0	0
Chemistry 3	1500	/sample	0	0
Chemistry 4	1500	/sample	0	0
Toxicity 1	4650	/sample	8	37200
Toxicity 2	1700	/sample	0	0
Toxicity 3	1700	/sample	0	0
Toxicity 4	1700	/sample	0	0
TRE Work Plan	6000	/Tox Fail	1	6000
Accelerated Toxicology Report	6000	Annual	1	6000
<b>Storm Water Sub-Totals</b>	<b>43350</b>			<b>70350</b>

<b>Triad</b>				
Field Collection	3300	/day	2	6600
Chemistry	614	/sample	14	8600
Toxicity	1900	/sample	assume 1 composite	1900
Benthic Community	1100	/sample	14	15400
Aquatic Dependent Wildlife & Health Assessment Report	2800	/triad	1	2800
	7500	/triad	1	7500
<b>Triad Sub-Totals</b>	<b>17214</b>			<b>42800</b>

<b>Total cost: 1 QSE w chronic tox fail</b>	<b>\$148,930.00</b>
Cost of current order in 2014	\$18,717.00
Tentative order cost increase	<b>\$130,213.00</b>
Tentative order % increase	<b>696%</b>

Assumptions: 1) Monthly non-storm water discharge assessment performed by CNM; 2) (dewey's assumption) unknown accelerated toxicology costs would roughly equal the 1 time costs in column C above.

Dewey's note: this is XXX' estimate of tentative order costs - analysis costs are accurate as of 4/1/15

**4 QSE W CHRONIC TOX FAIL**

Line Items	Unit Cost	Price Unit	Potential Units	Extended Costs
<b>Receiving Water</b>				
Monitoring Plan	6500	1	1	6500
Conceptual Model	6000	1	1	6000
Field Collection	2500	Annual	1	2500
Chemistry	110	/sample	3	330
Chemistry (other pollutants)	1500	/sample	3	4500
Chronic Toxicity	4650	/sample	3	13950
Reporting	2000	/year	1	2000
<b>Receiving Water Sub-Totals</b>	<b>23260</b>			<b>35780</b>

<b>Storm Water</b>				
Approved SWPP	7000	1	1	7000
Field Collection 1	2150	/QSE	1	2150
Field Collection 2	2150	/QSE	1	2150
Field Collection 3	2150	/QSE	1	2150
Field Collection 4	2150	/QSE	1	2150
Chemistry 1	1500	/sample	8	12000
Chemistry 2	1500	/sample	8	12000
Chemistry 3	1500	/sample	8	12000
Chemistry 4	1500	/sample	8	12000
Toxicity 1	4650	/sample	8	37200
Toxicity 2	1700	/sample	8	13600
Toxicity 3	1700	/sample	8	13600
Toxicity 4	1700	/sample	8	13600
TRE Work Plan	6000	/Tox Fail	1	0
Accelerated Toxicology Report	Unknown Cost			0
	6000	Annual	1	6000
<b>Storm Water Sub-Totals</b>	<b>43350</b>			<b>147600</b>

<b>Triad</b>				
Field Collection	3300	/day	2	6600
Chemistry	614	/sample	14	8600
			assume 1	
Toxicity	1900	/sample	composite	1900
Benthic Community	1100	/sample	14	15400
Aquatic Dependent Wildlife & Health Assessment	2800	/triad	1	2800
Report	7500	/triad	1	7500
<b>Triad Sub-Totals</b>	<b>17214</b>			<b>42800</b>

<b>Total Cost: 4 QSEs w/no chronic tox fail</b>	<b>\$226,180.00</b>
Cost of current order in 2014	\$18,717.00
Tentative order cost increase	<b>\$207,463.00</b>
Tentative order % increase	<b>1108%</b>

Assumptions: 1) Monthly non-storm water discharge assessment performed by CNM; 2) (dewey's assumption) unkown accelerated toxicology costs would roughly equal the 1 time costs in column C above.