# California Regional Water Quality Control Board
## Santa Ana Region

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Arnold Schwarzenegger
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303 (d) Deadline: 1/31/06


**TO:** Celeste Cantú
Executive Director
**STATE WATER RESOURCES CONTROL BOARD**

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**FROM:** Gerard J. Thibeault
Executive Officer
**SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD**

**DATE:** January 31, 2006

**SUBJECT:** **SANTA ANA REGION – PROPOSED 303(d) LIST OF IMPAIRED WATERBODIES**

Regional Board staff would like to commend State Board staff for the level of effort expended in preparing the proposed 303(d) list. Regional Board staff have reviewed the proposed additions, deletions and waterbody Fact Sheets supporting the listing, delisting and "do not list" recommendations and have a number of general comments and concerns related to specific waterbodies. These comments are presented and organized as follows:

A. General Comments
B. Regional Board Staff Agreement on Table 6 – Additions to the Section 303(d) List
C. Regional Board Staff Disagreement on Table 6 – Additions to the Section 303(d) List
D. Regional Board Staff Recommendation for Additional Waterbodies to Add to 303(d) List
E. Regional Board Staff Agreement on Table 7 – Deletions from the Section 303(d) List
F. Regional Board Staff Comments on Table 9 – Schedule for Completion of TMDLs
G. Comments and Clarifications on Waterbody Fact Sheets Supporting the Listing and Delisting Recommendations
H. Comments and Clarifications on Waterbody Fact Sheets Supporting Do Not List Recommendations
I. Data and Information Supporting Regional Board staff Recommendations for Adding Waterbodies to the 303(d) List

## A. General Comments

1. Pollutant Concentrations in Fish/Shellfish Tissue (Section 3.5 of the Policy).
A finding of impairment is made for any pollutant-water body combination for which tissue pollutant concentrations exceed an appropriate evaluation guideline and the minimum number of exceedances is met using a binomial distribution (SWRCB 2004). Consistent with the 303(d) Listing Policy, State Board staff compared fish fillet concentrations to OEHHA human health risk screening values (Table 2-3). In Region 8, this evaluation led to recommendations for the addition of certain water body-pollutant combinations to the 303(d) list (see B. below), However, Regional Board staff is not

convinced that this is appropriate. OEHHA screening values (SVs) are not meant to be regulatory criteria, but instead reveal the need for further investigation to determine if a fish advisory may be warranted. This is clearly stated in the OEHHA reference document (Brodberg and Pollock, Prevalence of Selected Target Chemical Contaminants in Sport Fish from Two California Lakes: Public Health Designed Screening Study, 1999). Board staff certainly understands that currently there are no better criteria or guidelines available for use in evaluating fish tissue levels and potential impacts to human health.

2. Accessibility of Recent and Historic 303(d) Lists/Date Waterbody Added to 303(d) List
Regional Board staff recommends that, in order to allow State and Regional Board staffs, as well as the general public, to track the specific date a waterbody was included on the 303(d) List, there should be another column added to the 303(d) List that indicates the date of the original impairment listing. Further, Regional Board staff recommends that access to previous years' 303(d) lists be made available to the public through the State Board website, and that the data used to support these lists be made available via the internet as well. Hopefully, this would minimize requests for Regional Board staff to provide relevant data and facilitate data review by interested parties.

3. Marine guidelines (NAS)
Regional Board staff believes that it should be clearly indicated if the State Board endorses the use of the NAS 1972 Guidelines for Marine Aquatic Life/Wildlife. While the 303(d) Listing Policy Functional Equivalent Document (FED) and Staff Report on the Revision of the Clean Water Act Section 303(d) List of Water Quality Limited Segments provide the NAS Guidelines for freshwater aquatic life, these reports do not appear to include the NAS Guidelines for marine aquatic life/wildlife. The marine guidelines require composited fish tissue, of a species eaten by birds or mammals, and of the size eaten by those predators. For example, for organochlorine pollutants, the guideline is meant to be protective of piscivorous birds and the marine guideline for DDT (50 ppb) is more stringent than the freshwater guideline (1000 ppb). Because Regional Board staff intend to use these guidelines in the development of an organochlorine TMDL, we would like clarification from State Board that the use of the marine NAS guidelines is appropriate and defensible.

4. Bay and Greenstein Reference
A number of proposed listings and delistings for waterbodies in the Newport Bay watershed relied upon the reference:

> Bay, S. and D. Greenstein. 2003. Newport Bay Sediment Toxicity Identification/Evaluation Study (including Seawater Samples). Report prepared for Santa Ana RWQCB by Southern California Coastal Water Research Project. Riverside, CA: Santa Ana Regional Water Quality Control Board.

Regional Board staff are aware of four other SCCWRP documents that each reported sediment and water column chemistry, water/sediment toxicity and TIE results (from the same study), in addition to the above reference. These are:

> Bay, Steve, and D. Greenstein. 2003. Newport Bay and San Diego Creek-Chemistry Results for Water, Sediment, Suspended Sediments. The sediment toxicity study was performed with funds obtained from the American Trader settlement. This 2003 report

includes monitoring data that were not reported in subsequent final versions of this report; these monitoring data were obtained under separate contract with USEPA.

Bay, S., D. Greenstein, and J. Brown. November 30, 2003. Newport Bay Sediment Toxicity Studies – Final Report. This is the first version of the final report for the study undertaken with American Trader settlement funds. This report should not be cited.

Bay, S., D. Greenstein, and J. Brown. June 2004. Newport Bay Sediment Toxicity Studies. SCCWRP Technical Report 433. The is the "final" Final Report for this study, and is the report that should generally be cited. Some sediment chemistry data were revised from the 2003 version. This report does not include the additional monitoring results obtained under separate contract with USEPA.

Bay, S., D. Greenstein, D. Vidal and D. Schlenk. 2003. Investigation of Metals Toxicity in San Diego Creek. Southern California Coastal Water Research Project, Westminster, CA.

Staff recommends that data reported in Bay et al. (2004) as well as the additional monitoring data reported in Bay and Greenstein (2003) be used in impairment assessments for waterbodies in the Newport Bay watershed.

5. Database of all Data

Since Regional Board staff will be responsible for future listings, Regional Board staff would like to know if a database to support the current listing process already exists that could also be used to accommodate the data that will need to be reviewed for the upcoming listing cycles. If one does not exist, Regional Board staff recommends that the development of a database along with data management procedures be considered in anticipation of the next listing cycle.

## B. Regional Board Staff Agreement on Table 6 – Additions to the Section 303(d) List

Table 6 – Additions to the Section 303(d) List – With the caveat noted in Section A, above for proposed additions reliant on OEHHA screening values (indicated with an asterisk), Board staff agree with the following proposed additions:

| Waterbody | Pollutant(s) |
|---|---|
| Anaheim Bay | PCBs*<br>Toxicity |
| Balboa Beach | DDT*<br>Dieldrin*<br>PCBs* |
| Big Bear Lake | PCBs* |
| Lake Elsinore | PCBs* |
| Huntington Beach State Park | PCBs* |
| Huntington Harbour | Chlordane<br>Lead<br>Toxicity |
| Newport Bay, Lower | Copper<br>DDT*<br>Fecal coliform<br>Nutrients<br>PCBs*<br>Sedimentation/siltation |
| Newport Bay, Upper (Ecological Reserve) | Chlorpyrifos<br>Copper<br>DDT*<br>Fecal coliform<br>Nutrients<br>PCBs*<br>Sedimentation/siltation |
| Peters Canyon Channel | Toxaphene |
| Rhine Channel | Copper<br>Lead<br>Mercury<br>PCBs* |
| San Diego Creek, Reach 1 | Nutrients<br>Sedimentation siltation<br>Selenium |
| San Diego Creek, Reach 2 | Diazinon<br>Nutrients<br>Sedimentation siltation<br>Unknown toxicity |
| Seal Beach | PCBs* |

## C. Regional Board Staff Disagreement on Table 6 – Additions to the Section 303(d) List

Board staff does not agree with the following proposed additions for the reasons indicated. Where noted, additional rationale and data to support Board staff's position are contained in Section G. below.

| Waterbody | Pollutant(s) | Rationale |
|---|---|---|
| Big Bear Lake | Mercury | Waterbody is already on 303(d) list for mercury (see Section G.) |
| Newport Bay, Lower | Chlorpyrifos<br>Diazinon | No TMDL; pollutants not exceeding standards (see Section G.) |
| Newport Bay, Upper | Diazinon | No TMDL; pollutant not exceeding standards (see Section G.) |
| Peters Canyon Channel | DDT | SWRCB recommendation was based on TSMP data from 1992-2002. DDT is no longer used and fish tissue concentrations have declined dramatically since its use was discontinued. USEPA promulgated technical TMDLs based on data no older than 1995, and staff believes this is reasonable. Data from 1995 forward do not support a finding of impairment (see Section G.). |
| San Diego Creek, Reach 1 | Fecal coliform | Waterbody is already on 303(d) list for fecal coliform (see Section G.) |
| | Zinc | No exceedances of CTR (see Section G.) |
| San Diego Creek, Reach 2 | Unknown Toxicity | Waterbody is already on 303(d) list for unknown toxicity (see Section G.) |
| Santa Ana Delhi Channel | Toxaphene | Sample location representative of tidal influence, not inputs from discharges to Channel. At least 1 exceedance was observed in a marine fish (see Section G.) |

## D. Regional Board Staff Recommendation for Additional Waterbodies to be Added to the Section 303(d) List

Based on an assessment of data, it is Board staff's opinion that the following waterbodies/pollutants should be added to the 303(d) List. The rationale and data to support Board staff's position are summarized in Section I. below and/or provided on the attached Fact Sheets.

| Waterbody | Pollutant(s) |
|---|---|
| Newport Bay, Lower | Chlordane<br>Sediment toxicity |
| Newport Bay, Upper (Ecological Reserve) | Chlordane<br>Sediment toxicity |
| Peters Canyon Channel downstream of Bryan Ave. | Selenium |
| Rhine Channel | Chlordane<br>Zinc<br>Sediment toxicity |
| San Diego Creek, Reach 1 | Chlorpyrifos<br>Diazinon<br>Toxaphene<br>Selenium |
| San Diego Creek, Reach 2 | Chlorpyrifos |
| El Modena-Irvine Channel | Selenium |
| Como Channel | Selenium |
| Central Irvine Channel | Selenium |
| Lane Channel | Selenium |
| Santa Ana/Santa Fe Channel | Selenium |

## E. Regional Board Staff Agreement on Table 7– Deletions to the Section 303(d) List

Board staff agree with the proposed deletion of Lake Elsinore for sediment/siltation.

## F. Regional Board Staff Comments on Table 9 – Schedule for Completion of TMDLs

As discussed in the Impaired Waters Guidance (June 2005), TMDLs are not the only option for addressing waterbodies on the 303(d) List. As an example, for Knickerbocker Creek, which is currently on the Region's 303(d) List, the Regional Board has addressed the impairment by relying on provisions contained the stormwater MS4 permit and there is no need to develop a TMDL. Therefore, staff recommends that the title of this table be revised as follows:

Table 9 – Schedules For Completion of TMDL/Other Appropriate Regulatory Action

Regulatory completion dates as listed in Table 9 for the following waterbodies should be revised as follows:

| Waterbody | Pollutant(s) | TMDL/Regulatory Action Completion date |
|---|---|---|
| Canyon Lake | Pathogens | 2006 |
| Newport Bay, Lower | Copper | 2007 |
| Newport Bay, Upper | Copper | 2007 |
| San Diego Creek, Reach 2 | Metals | 2007 |

All other waterbodies proposed for addition to the 303(d) List as listed in Table 6 and in Section D, above, should have TMDL/Regulatory Action Completion Dates as follows:

| Waterbody | Pollutant(s) | TMDL/Regulatory Action Completion date |
|---|---|---|
| Anaheim Bay | PCBs | 2016 |
| | Toxicity | 2016 |
| Balboa Beach | DDT | 2016 |
| | Dieldrin | 2016 |
| | PCBs | 2016 |
| Big Bear Lake | PCBs | 2016 |

| Waterbody | Pollutant(s) | TMDL/Regulatory Action Completion date |
|---|---|---|
| Lake Elsinore | PCBs | 2016 |
| Huntington Beach State Park | PCBs | 2016 |
| Huntington Harbour | Chlordane | 2016 |
| | Lead | 2016 |
| | Toxicity | 2016 |
| Newport Bay, Lower | Chlordane** | 2006 |
| | Copper | 2007 |
| | DDT | 2006 |
| | Fecal coliform | 1999 |
| | Nutrients | 1998 |
| | PCBs | 2006 |
| | Sedimentation/siltation | 1998 |
| | Sediment toxicity** | 2012 |
| Newport Bay, Upper (Ecological Reserve) | Chlordane** | 2006 |
| | Chlorpyrifos | 2003 |
| | Copper | 2007 |
| | DDT | 2006 |
| | Fecal coliform | 1999 |
| | Nutrients | 1998 |
| | PCBs | 2006 |
| | Sedimentation/siltation | 1998 |
| | Sediment toxicity** | 2012 |
| Peters Canyon Channel | Toxaphene | 2006 |
| | Selenium** | 2007 |
| Rhine Channel | Chlordane** | 2006 |
| | Copper | 2006 |
| | Lead | 2006 |
| | Mercury | 2006 |
| | PCBs | 2006 |
| | Sediment toxicity** | 2012 |
| | Zinc** | 2006 |

| Waterbody | Pollutant(s) | TMDL/Regulatory Action Completion date |
|---|---|---|
| San Diego Creek, Reach 1 | Chlorpyrifos** | 2003 |
| | Diazinon** | 2003 |
| | Nutrients | 1998 |
| | Sedimentation siltation | 1998 |
| | Toxaphene** | 2006 |
| | Selenium** | 2007 |
| San Diego Creek, Reach 2 | Chlorpyrifos** | 2003 |
| | Diazinon | 2003 |
| | Nutrients | 1998 |
| | Sedimentation siltation | 1998 |
| | Unknown toxicity | 2003 |
| Seal Beach | PCBs | 2016 |
| El Modena-Irvine Channel | Selenium** | 2007 |
| Como Channel | Selenium** | 2007 |
| Central Irvine Channel | Selenium** | 2007 |
| Lane Channel | Selenium** | 2007 |
| Santa Fe Channel | Selenium** | 2007 |

** waterbodies Regional Board staff recommends for addition to the 303(d) List (see D. above).

## G. Comments and Clarifications on Waterbody Fact Sheets Supporting the Listing and Delisting Recommendations (Volume III)

Board staff have reviewed the waterbody Fact Sheets and have comments and clarifications on the following Fact Sheets:

### Fact Sheets Supporting Listing Recommendations

| | |
|---|---|
| Fact Sheet Page No: | 7 |
| Waterbody: | Anaheim Bay |
| Pollutant: | Toxicity |
| Correction(s): | 1. To be consistent with protocol utilized by SCCWRP as part of the S.CA Bight studies, the impairment threshold should be 85% and not 90%. Regional Board staff notes that use of 85% threshold does not change the proposed listing. The Fact Sheet, however, should be revised to indicate the correct number of samples that exhibit toxicity in the sediment (2 out of 29 samples in the dry season and 17 out of 30 samples in the wet season).<br>2. Water column toxicity data collected as part of the same Regional Board study does not appear to have been assessed. Please clarify. |

| | |
|---|---|
| Fact Sheet Page No: | 9 |
| Waterbody: | Balboa Beach |
| Pollutant: | DDT |
| Correction(s): | Evaluation guideline reference should not include reference to the Newport Pier Health Advisory. The OEHHA screening value as specified in the FED, is the correct evaluation guideline reference. The fact sheet could note that there is a Fish Advisory for DDT and PCBs. |

| | |
|---|---|
| Fact Sheet Page No: | 11 |
| Waterbody: | Balboa Beach |
| Pollutant: | Dieldrin |
| Correction(s): | Evaluation guideline reference should not include reference to the Newport Pier Health Advisory. The OEHHA screening value as specified in the FED, is the correct evaluation guideline reference. There is no Fish Advisory for Dieldrin. |

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|---|---|
| Fact Sheet Page No: | 13 |
| Waterbody: | Balboa Beach |
| Pollutant: | PCBs |
| Correction(s): | Evaluation guideline reference should not include reference to the Newport Pier Health Advisory. The OEHHA screening value as |

specified in the FED, is the correct evaluation guideline reference. The fact sheet could note that there is a Fish Advisory for DDT and PCBs.

Fact Sheet Page No: 15
Waterbody: Big Bear Lake
Pollutant: Mercury
Correction(s):

1. As noted above, Big Bear Lake is already on the 303(d) list for mercury and therefore, this listing and Fact Sheet are not needed. Nonetheless, there are additional data not in the record or in the references used in this 2004 303(d) listing process that lend further support to appropriateness of the existing mercury listing. These data will be submitted upon request by State Board staff.
2. MI (fish migration), CM (commercial and sport fishing) and SP (fish spawning) are not designated beneficial uses of Big Bear Lake.
3. WILD beneficial use should be added to the list
4. There are references for Big Bear Lake and its tributaries listed in Appendix 2; however, it is unclear how those references were used for the mercury listing (e.g., Santa Ana RWQCB. 1995b, 2000b, 2001h, 2002k, 2002m and 2005b).
5. Data reference refers to TSMP data from 1992-2002 (TSMP, 2002), but the temporal representation shown in the Fact Sheet is for samples collected between May 1984 and July 2000. If samples collected prior to 1992 were not evaluated, then the data used to assess water quality, as shown on the Fact Sheet, are incorrect. For example, only 2 out of 23 composite samples would exceed the OEHHA screening values. Please clarify whether data collected prior to 1992 were included in this analysis and if not, why.

| | |
|---|---|
| Fact Sheet Page No: | 17 |
| Waterbody: | Big Bear Lake |
| Pollutant: | PCBs |
| Correction(s): | 1. CM (commercial and sport fishing) is not a designated beneficial use of Big Bear Lake.<br>2. WILD, COLD, WARM, RARE and WILD beneficial uses should be added to the list.<br>3. There are references for Big Bear Lake and its tributaries listed in Appendix 2; however, it is unclear how those references were used for the PCB listing (e.g., Santa Ana RWQCB. 1995b, 2000b, 2001h, 2002k, 2002m and 2005b). |

| | |
|---|---|
| Fact Sheet Page No: | 29 |
| Waterbody: | Huntington Harbour |
| Pollutant: | Toxicity |
| Correction(s): | 1. To be consistent with protocol utilized by SCCWRP as part of the S.CA Bight studies, the impairment threshold should be 85% and not 90%. Regional Board staff notes that use of 85% threshold does not change the proposed listing. The Fact Sheet, however, should be revised to indicate the correct number of samples that exhibit toxicity in the sediment (20 out of 30 samples in the dry season and 27 out of 30 samples in the wet season). |

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| Fact Sheet Page No: | 31 |
| Waterbody: | Newport Bay, Lower |
| Pollutant: | Chlorpyrifos |
| Correction(s): | 1. No TMDL established for chlorpyrifos and no remedial program is needed. No evidence of impairment due to chlorpyrifos<br>2. Fact Sheet not needed. |

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|---|---|
| Fact Sheet Page No: | 35 |
| Waterbody: | Newport Bay, Lower |
| Pollutant: | DDT |
| Correction(s): | Use of Bay and Greenstein (2003). This report summarized data obtained in the SCCWRP sediment toxicity study performed under the American Trader Settlement. The report includes additional data obtained under separate contract with USEPA. The appropriate reference for the Newport Bay sediment toxicity study is Bay, et al. (2004); note that some data were revised in the 2004 final report and, therefore, differ from data reported in Bay and Greenstein (2003). Furthermore, the May 2002 data mentioned in the fact sheet are not included in Bay, et al. (2004). |

Tissue exceedances (16 of 51 samples) are referenced as TSMP (2002). The correct reference is Allen, et al. (2004).

Toxicity results are referenced as Bay and Greenstein (2003), but the temporal representation and data quality information appear to pertain to the BPTCP. Need to ensure data results and references match. This comment also applies to the population/community degradation line of evidence for Lower Newport Bay. See staff's impairment assessment for Lower Newport Bay for more comprehensive evaluation

Fact Sheet Page No: 52
Waterbody: Newport Bay, Upper
Pollutant: DDT
Correction(s): The same issue that was described above for use of the Bay and Greenstein (2003) vs. BPTCP reference applies in this section. Temporal representation does not match with the Bay and Greenstein reference. Also tissue data were referenced to Bay and Greenstein (2003), and the correct reference is Allen et al. (2004).

Fact Sheet Page No: 57
Waterbody: Newport Bay, Upper
Pollutant: diazinon
Correction(s):
1. No TMDL established for diazinon and no remedial program is needed.
2. Fact Sheet not needed.

Fact Sheet Page No: 65
Waterbody: Peters Canyon Channel
Pollutant: DDT
Correction(s):
1. As noted above, Regional Board staff does not support the proposed listing of Peters Canyon Channel for DDT.
2. Board staff believe only data collected during the past 10 years should be used in performing the impairment assessment, since DDT is no longer used and concentrations have declined dramatically in the environment since its use was restricted in the 1970s.
3. TSMP data collected from 1995-2002 (n=11) showed one exceedance of the NAS guideline (1000 ppb ww). That number does not meet the minimum number of exceedances required for listing under the State's policy.
4. CM (Commercial and Sport Fishing) is not a designated beneficial use for Peters Canyon Wash.

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| Fact Sheet Page No: | 82 |
| Waterbody: | San Diego Creek, Reach 1 |
| Pollutant: | Fecal coliform |
| Correction(s): | 1. As noted above, San Diego Creek, Reach 2 is already on the 303(d) list for fecal coliform.<br>2. No TMDL established for fecal coliform and no remedial program is in place. |

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|---|---|
| Fact Sheet Page No: | 85 |
| Waterbody: | San Diego Creek Reach 1 |
| Pollutant: | Selenium |
| Correction(s): | 1. Weight of evidence data does not match references. Data from USEPA's Toxic TMDLs (June 2002) added as well as new data from the County of Orange Storm Water Program and a report on Sources of Se, As and Nutrients in the Newport Bay Watershed completed by UC Riverside and Cal State Los Angeles under contract to the SWRCB (Meixner et al., 2004).<br>2. See attached Fact Sheet with suggested revisions and addition of new data. |

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|---|---|
| Factsheet Page No: | 87 |
| Waterbody: | San Diego Creek, Reach 1 |
| Pollutant: | Zinc |
| Correction(s): | 1. Remove from "LIST" recommendations. Listing is incorrect – based on data, 4 of 4 water samples DO NOT exceed CTR criteria (Table 6, Bay et al. 2003. Investigation of Metals Toxicity in San Diego Creek)<br>2. Should be listed under "DO NOT LIST". |

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|---|---|
| Fact Sheet Page No: | 92 |
| Waterbody: | San Diego Creek, Reach 2 |
| Pollutant: | unknown toxicity |
| Correction(s): | 1. As noted above, San Diego Creek, Reach 2 is already on the 303(d) for unknown toxicity and therefore, this listing and Fact Sheet are not needed<br>2. No TMDL established for unknown toxicity and no remedial program is in place |

| | |
|---|---|
| Fact Sheet Page No: | 93 |
| Waterbody: | Santa Ana Delhi Channel |
| Pollutant: | Toxaphene |
| Correction(s): | The SWRCB listing recommendation is based on two exceedances in seven fish sampled by the TSMP during 1997-1998. Staff does not believe fish sampled at this location are necessarily representative of conditions in Santa Ana Delhi Channel, and that |

fish may have migrated into the channel after accumulating toxaphene from another location. Therefore, staff does not believe that Santa Ana Delhi Channel should be listed for toxaphene. Staff's views are based on the following:

1. The TSMP sampling location is near the mouth of Santa Ana Delhi Channel where the channel discharges to Upper Newport Bay and is likely subject to tidal influence. Upstream of the sampling point, Santa Ana Delhi is a fully improved, concrete trapezoidal channel, and cannot support a healthy, diverse fish population. Low flows average about 2 cfs in the channel, and storm flows are as high as 375 cfs (2004 data obtained at the Irvine Avenue gauging station).
2. Toxaphene is a hydrophobic compound and strongly sorbs to sediment. The potential for toxaphene-contaminated sediment to occur in this channel to an extent that would bioaccumulate in fish is very limited, as the subwatershed draining to this channel is completely urbanized and sediment transport is minimal. For example, in 2003-2004, less than 500 tons of sediment discharged to Upper Newport Bay from Santa Ana Delhi Channel; by comparison, there were over 30,000 tons of sediment discharged to Upper Newport Bay from San Diego Creek, as measured at the Campus Drive station (Sediment TMDL Annual Report for 2003-2004).

**Fact Sheets Supporting "Do Not List"**

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| Fact Sheet Page No: | 818 |
| Waterbody: | Newport Bay, Lower |
| Pollutant: | Chlordane |
| Correction(s): | The State Board recommendation is based solely on the lack of measurable chlordane in fish tissue (SCCWRP Bioaccumulation of Contaminants in Recreational and Forage Fish in Newport Bay, California, in 2000-2002). There are other relevant data that apply to this assessment that evidently were not part of the State Board record. Because there is significant toxicity, coupled with 13 of 30 sediment samples that exceed the chlordane SQG, SARWQCB staff recommends that Lower Newport Bay be listed for chlordane. |

Relevant data are summarized below.

- Sediment Chemistry reported in BPTCB (1994) – Eight of 11 samples exceeded the SQG for chlordane (6 ppb dw).
- Sediment Chemistry reported in BIGHT '98 – Two of 11 samples exceeded the SQG for chlordane.

- Sediment Chemistry reported in the SCCWRP Sediment Toxicity Study (2004) – None of the 5 samples measured had detectable concentrations of chlordane.
- Sediment Chemistry reported in Orange County NPDES Monitoring Reports (2000-Present) – Three of 3 samples exceeded the SQG for chlordane (6 ppb dw).
- Toxicity – BPTCP (1994-1997). Five of 11 sediment samples were toxic to amphipods. Ten of 11 samples showed porewater toxicity to purple urchin larval development. Spearman Rank Correlation showed significant correlation between toxicity and chemistry for chlordane. Four of 11 sites showed degraded benthic communities.
- Toxicity - BIGHT '98 – Five of 11 sites were highly toxic to amphipods, 4 of 11 sites were moderately toxic, and only two were nontoxic.
- Toxicity - BIGHT '03 – Five of 8 samples were highly toxic to amphipods, two of 8 samples were moderately toxic, and 1 was nontoxic.
- Toxicity – SCCWRP Sediment Toxicity Study (2004) – In September 2000, three of 4 stations showed toxicity to amphipod survival, 1 of 3 stations had water column toxicity to sea urchin fertilization and development; no stations showed sediment-water interface toxicity. In May 2001, 3 of 4 stations showed toxicity to amphipods.

Fact Sheet Page No: 842
Waterbody: Newport Bay, Upper
Pollutant: Chlordane
Correction(s): The State Board recommendation is based on the lack of exceedances of chlordane in the water column or exceedances of sediment quality guidelines. However, there are other relevant data that apply to this assessment that evidently were not part of the State Board record. Because there is significant toxicity, coupled with 27 of 36 sediment samples that exceed the chlordane SQG, SARWQCB staff recommends that Upper Newport Bay be listed for chlordane.

1. Sediment Chemistry – SCCWRP Newport Bay Sediment Toxicity Studies (2004). Note that SWRCB used the older, 2003 version of the SCCWRP study; data for chlordane were revised in the 2004 final report. The evaluation guideline for total chlordane in marine and estuarine sediments that is recommended in the State's Listing Policy s (6 ppb dw, Long et al., 1995) commonly is applied to the sum of one or more of the following chlordane species: alpha- and gamma-chlordane, cis- and trans-chlordene, cis- and trans-nonachlor, and

oxychlordane. According to the Toxicological Profile for Chlordane (US Department of Health and Human Services, 1994), chlordane is not a single chemical but consists of a mixture of about 140 components, including trans-chlordane, cis-chlordane, beta-chlordene, heptachlor, and trans-nonachlor (cis-chlordane is also known as alpha-chlordane, and trans-chlordane is commonly known as gamma-chlordane). Contrary to what was stated in the SWRCB fact sheet, staff believes that if gamma-chlordane is the only species measured and/or observed to exceed the Long et al. guideline, then that exceedance is valid even in the absence of a separate guideline that is specific for gamma-chlordane. The SCCWRP study measured chlordane in 8 samples (not 5 as stated in the fact sheet) on May 2001 and March 2002, at the following stations in Upper Newport Bay: NB6, NB7, NB8, NB9, NB10, NB10b, NB10c. There were 3 exceedances of the SQG (6 ppb dw) out of 8 samples. The SCCWRP analyses did not include calibration standards, so results are considered to be estimates only and should perhaps not be used in the impairment assessment. Also note the SWRCB fact sheet appears to have been listed twice.

2. Water Chemistry – The SCCWRP Newport Bay Sediment Toxicity Studies measured chlordane in one sample (n=1) just below the Pacific Coast Highway bridge that was meant to represent Upper Newport Bay (the sample was not taken at NB10 as stated in the fact sheet). The sample was nondetect for chlordane. Note the SWRCB fact sheet listed these data twice.
3. Toxicity – Based on the SCCWRP Newport Bay Sediment Toxicity Studies (2004) – Significant sediment toxicity was noted.
4. There are other relevant data that apply to this assessment that evidently were not part of the SWRCB record. Based on these additional data that show a total of 27 exceedances of SQGs out of 36 samples, and additional sediment toxicity data that linked sediment toxicity to chlordane, Regional Board staff recommends that Upper Newport Bay be listed for chlordane. Those data are summarized below.
    - Sediment Chemistry reported in *Masters, P.M. and Inman, D.L. 2000. Transport and Fate of Organochlorines Discharged to the Salt Marsh at Upper Newport Bay, California, USA, Environ. Toxicol. Chem. 19(8): 2076-2084.* Ten out of 10 samples exceeded the SQG (6 ppb dw) for chlordane.
    - Sediment Chemistry reported in the Bay Protection and Toxic Cleanup Program (BPTCP) 1994, 1996. Three of 7 samples exceeded the SQG (6 ppb dw) for chlordane.
    - Sediment Chemistry reported in County of Orange NPDES

Monitoring Report (2000-Present). Eleven out of 11 samples exceeded the SQG for chlordane (6 ppb dw).

- Toxicity – BPTCP (1994-1997). Two of 8 samples were toxic to amphipods; 6 out of 6 sites sampled showed porewater toxicity to purple urchin larval development. Spearman Rank Correlation testing showed significant correlation between amphipod toxicity, urchin development toxicity, and chemistry for total chlordane. Three of 8 sites showed transitional benthic communities (intermediate between degraded and un-degraded).

## H. Comments and Clarifications on Fact Sheets Supporting "Do Not Delist"

Regional Board staff note that Fact Sheets supporting the "do not delist" decisions for San Diego Creek, Reach 1 for diazinon and chlorpyrifos are included here. Regional Board staff agree with these recommendations.

As reflected in the comments above, Fact Sheets for Big Bear Lake (mercury) and San Diego Creek (fecal coliform) should be included here and deleted from the category of "Fact Sheets Supporting the Listing. These waterbodies/pollutants are already on the 303(d) List and should not be deleted from the 303(d) list.

## I. Data and Information Supporting Regional Board Staff Recommendations for Adding Waterbodies the 303(d) List

As noted in Section D above, Regional Board staff believe that data are available to support the listing of additional waterbodies. These recommended listings and the data to support staff's recommendation are summarized below or on the attached Waterbody Fact Sheets.

| | |
|---|---|
| Waterbody: | Newport Bay, Lower |
| Pollutant: | Chlordane |
| Comment(s): | See Section G above for data summary |

| | |
|---|---|
| Waterbody: | Newport Bay, Lower |
| Pollutant: | Sediment toxicity |
| Comment(s): | Sediments in Lower Newport Bay have been found to be highly toxic. Because TIEs have not unequivocally identified the toxicant(s), Regional Board staff recommends listing Lower Newport Bay for "unknown toxicity." Evidence in support of listing:<br>1. Bay Protection and Toxic Cleanup Program (BPTCP) (1994-1997). Eleven sites sampled in Lower Newport Bay. 5/11 sediment samples were toxic to amphipods (*Rhepoxynius*). 10/11 samples showed porewater (100%) toxicity to purple urchin larval development. Spearman Rank Correlation testing |

showed significant correlation between amphipod toxicity and urchin development toxicity, and chemistry, for total chlordane, total PCB, and DDTs. 4 out of 11 sites showed degraded benthic communities (benthic index of 0-0.3); 4 out of 11 sites were transitional (benthic index = 0.31-0.6); and 3 out of 11 sites were undegraded (benthic index = 0.61-1). The benthic indices for Newport Bay were significantly correlated with DDE.

2. BIGHT '98 – Toxicity to amphipods was measured at 11 stations: 5 were highly toxic, 4 were moderately toxic, 2 were nontoxic. During BIGHT '98, the highest number of highly toxic samples observed in the Bight came from Newport Bay.
3. BIGHT '03 – Toxicity to amphipods was measured at 8 stations: 5 were highly toxic, 2 were moderately toxic, and 1 was nontoxic to amphipod survival.
4. SCCWRP Sediment Toxicity Study (2004) – In September 2000, 3 out of 4 stations showed sediment toxicity to amphipod survival; 1 out of 3 stations had water column toxicity to sea urchin fertilization and development; no stations showed sediment-water interface toxicity. In May 2001, 3 out of 4 stations had sediment toxicity to amphipods. No TIE was performed on Lower Bay sediments.

Waterbody: Newport Bay, Upper
Pollutant: Chlordane
Comment(s): See Section G above for data summary

Waterbody: Newport Bay, Upper
Pollutant: Sediment toxicity
Comment(s): Toxicity and benthic community degradation – Upper Newport Bay

1. Bay Protection and Toxic Cleanup Program (BPTCP) (1994-1997). Six sites sampled in Upper Newport Bay (total of 8 samples; n=8). 2/8 sediment samples were toxic to amphipods (*Rhepoxynius*). 6/6 sites sampled showed porewater (100%) toxicity to purple urchin larval development. Spearman Rank Correlation testing showed significant correlation between amphipod toxicity and urchin development toxicity, and chemistry, for total chlordane, total PCB, and DDTs. 3/8 sites showed transitional benthic communities (benthic index of 0.31-0.6), intermediate between degraded and undegraded communities. The benthic indices for Upper Newport Bay were significantly correlated with DDE.
2. SCCWRP Sediment Toxicity Study (2004) - In September 2000, reduced amphipod survival was measured in sediments at 3 out of 5 of the sites sampled. One site had 99% mortality. Sediment-water interface was not toxic to sea urchin fertilization, and was toxic to sea urchin development at 1 site. In May 2001, 3 out of 5 sites showed sediment toxicity to amphipods, and the

sediment-water interface was toxic to sea urchin fertilization at 2 sites. The TIE concluded that the primary toxicant was likely nonpolar organic pollutants. The authors speculate that toxicity may have been caused by pyrethroids and the source of toxicity was not unequivocally identified. While concentrations of DDTs, chlordane and PCBs were not likely to be high enough to independently result in toxicity according to the authors, there was no evidence to conclude that these pollutants did not contribute to the toxicity that was observed. There was a statistically significant relationship between concentration of total DDT and amphipod survival.

Waterbody: Peters Canyon Channel downstream of Bryan Ave.
Pollutant: Selenium
Comment(s): See attached Fact Sheet with new data (Meixner et al., 2004)

Waterbody: Rhine Channel
Pollutant: Chlordane
Comment(s): Data from studies below indicate 2 of 20 sediment samples exceeded the chlordane SQG, and significant toxicity is also present (although specific toxicants could not be identified), SARWQCB staff recommends listing Rhine Channel for chlordane.

1. Fish Tissue Chemistry – Toxic Substances Monitoring Program (TSMP) showed two of two samples collected in 1997 and 1999 did not exceed the OEHHA screening value for chlordane (30 ppp ww)
2. Sediment Chemistry – BPTCP showed one of two samples exceeded the chlordane SQG (6 ppb dw).
3. Sediment Chemistry – Orange County Monitoring Reports for MS4 Permit showed 1 of 1 sample exceeded chlordane SQG.
4. Sediment Chemistry – SCCWRP Chemistry and Toxicity in Rhine Channel Sediments (2003) – 0 of 15 samples exceeded the chlordane SQG.
5. Sediment Chemistry – SCCWRP Sediment Toxicity Study (2004) – 0 of 2 samples exceeded the chlordane SQG.
6. Toxicity – BPTCP (1994-1997). One of 1 site in Rhine Channel had sediment toxicity to amphipods, porewater toxicity to purple urchin larval development, and a transitional benthic community status.
7. Toxicity – SCCWRP Sediment Toxicity Study (2004) – Sediment toxicity to amphipod survival was observed in September 2000 and May 2001, sediment-water interface toxicity to sea urchin development or fertilization was also observed. TIEs were not successful in accurately identifying toxicants.
8. Toxicity – SCCWRP Chemistry and Toxicity in Rhine Channel Sediments (2003) – 11 of 15 sites had toxicity to amphipods. Ten of 15 samples had sediment-water interface toxicity. No

association between sediment contamination and toxicity could be established.

Waterbody: Rhine Channel
Pollutant: Zinc
Comment(s):

1. Bay Protection Toxic Cleanup Plan (BPTCP) (1994 - 1997). 2 out of the 2 samples exceeded the California's Toxic Rule (CTR of 81µg/L).
2. Chemistry & Toxicity in Rhine Channel Sediments - Bay/Brown (SCCWRP) Tech. Rpt. 391 (May 2003). 3 out of 20 sediment samples exceed the Sediment Quality Guideline (SQG of 410 µg/g dw)
3. Southern California Coastal Water Research Project (SCCWRP): Newport Bay Sediment Toxicity Studies - Bay/Brown Tech. Rpt. 391 (May 2003). 7 out of 15 sediment samples were toxic (< 50%) to sea urchins during development, and 7 out of 15 sediment samples exhibited less than 50% survival to amphipods. Note that TIEs were not successful in accurately identifying toxicants.

Waterbody: Rhine Channel
Pollutant: Sediment toxicity
Comment(s):

1. Toxicity – BPTCP (1994-1997). 1 of 1 site in Rhine Channel had sediment toxicity to amphipods, porewater toxicity to purple urchin larval development, and a transitional benthic community status.
2. Southern California Coastal Water Research Project (SCCWRP): Newport Bay Sediment Toxicity Studies - Bay/Greenstein Tech. Rpt. 433 (June 2004) found NB3 (Rhine Channel) sediment was toxic to amphipods and sea urchins during development.
3. Southern California Coastal Water Research Project (SCCWRP): Newport Bay Sediment Toxicity Studies - Bay/Brown Tech. Rpt. 391 (May 2003). 7 out of 15 sediment samples were toxic (< 50%) to sea urchins during development, and 7 out of 15 sediment samples exhibited less than 50% survival to amphipods. Note that TIEs were not successful in accurately identifying toxicants.

Waterbody: San Diego Creek, Reach 1
Pollutant: Chlorpyrifos
Comment(s): Waterbody should be placed in the Water Quality Limited Segments Being Addressed category of the section 303(d) List because a TMDL has been approved by USEPA and an implementation plan has been approved.

| | |
|---|---|
| Waterbody: | San Diego Creek, Reach 1 |
| Pollutant: | Diazinon |
| Comment(s): | Waterbody should be placed in the Water Quality Limited Segments Being Addressed category of the section 303(d) List because a TMDL has been approved by USEPA and an implementation plan has been approved. |

| | |
|---|---|
| Waterbody: | San Diego Creek, Reach 1 |
| Pollutant: | Toxaphene |
| Comment(s): | SARWQCB staff recommends that San Diego Creek Reach 1 be listed for Toxaphene based on the following evidence:<br>• The TSMP measured pollutant concentrations in red shiner whole fish tissue composites at two stations in San Diego Creek Reach 1 between 1995-2003. During that time, fish tissue toxaphene concentrations exceeded the NAS guideline (100 ppb ww) in 4 out of 13 samples obtained. |

| | |
|---|---|
| Waterbody: | San Diego Creek, Reach 1 |
| Pollutant: | Selenium |
| Comment(s): | See attached Fact Sheet with new data (Meixner et al., 2004) |

| | |
|---|---|
| Waterbody: | San Diego Creek, Reach 2 |
| Pollutant: | Chlorpyrifos |
| Comment(s): | Waterbody should be placed in the Water Quality Limited Segments Being Addressed category of the section 303(d) List because a TMDL has been approved by USEPA and an implementation plan has been approved. |

| | |
|---|---|
| Waterbody: | El Modena-Irvine Channel |
| Pollutant: | Selenium |
| Comment(s): | See attached Fact Sheet with new data (Meixner et al., 2004) |

| | |
|---|---|
| Waterbody: | Como Channel |
| Pollutant: | Selenium |
| Comment(s): | See attached Fact Sheet with new data (Meixner et al., 2004) |

| | |
|---|---|
| Waterbody: | Central Irvine Channel |
| Pollutant: | Selenium |
| Comment(s): | See attached Fact Sheet with new data (Meixner et al., 2004) |

| | |
|---|---|
| Waterbody: | Lane Channel |
| Pollutant: | Selenium |
| Comment(s): | See attached Fact Sheet with new data (Meixner et al., 2004) |

| | |
|---|---|
| Waterbody: | Santa Fe Channel |
| Pollutant: | Selenium |
| Comment(s): | See attached Fact Sheet with new data (Meixner et al., 2004) |

Should you have any questions about these comments, please feel free to contact me at (951)782-3284, or you may contact Joanne Schneider at (951)782-3287 or Hope Smythe at (951)782-4493.

attachments

cc: w/ attached Waterbody Fact Sheets and Data CD
Craig J. Wilson, SWRCB, DWQ

cc: w/ attached Waterbody Fact Sheets
Regional Board
Jason Uhley, Riverside County Flood Control and Water Conservation District
Larry McKenney, Orange County Resources and Development Management Department
Sat Tamaribuchi, The Irvine Company
Tim Moore, Risk Sciences
Regional Board TMDL Program Managers

File: HAS/WQA/CANTU-2006LIST.DOC

# Waterbody Fact Sheets
# for Selected Waterbodies
# to Support Regional Board Staff's Listing Recommendations

(note that the Regional Board recommendation is cited as "SWRCB" recommendation. This was done to be consistent with the formatting of the fact sheets as prepared by SWRCB staff).

All data and QAPP information for the waterbodies below is provided on the attached CD

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**Water Segment:** San Diego Creek Reach 1

**Pollutant:** Selenium

**Decision:** List

**Weight of Evidence:** This pollutant is being considered for placement on the section 303(d) list under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status.

One line of evidence is available to assess this pollutant: a large number of samples exceed the California Toxic Rule (CTR, USEPA 2000) freshwater chronic criteria for selenium. This evidence is found in USEPA, 2002, Total Maximum Daily Loads for Toxic Pollutants, San Diego and Newport Bay, California, Orange County Resources & Development Management Department (OCRDMD), 2001-2004, Annual (NPDES) Progress Reports and Program Effectiveness Assessment Reports, and Meixner et al., 2004, Sources of Selenium, Arsenic and Nutrients in the Newport Bay Watershed (SWRCB Agreement No. 00-200-180-1).

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:

1. The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2. The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. One hundred-forty of 160 samples (30 of 31 from USEPA, 2002; 61 of 69 from OCRDMD, 2001-2004; and 49 of 60 from Meixner et al., 2004) exceeded the CTR chronic freshwater criteria (USEPA, 2000) and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.1 of the Listing Policy, no additional data and information are necessary to indicate that standards are not being met.

**SWRCB Staff Recommendation:** After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

**Lines of Evidence:**

---

***Numeric Line of Evidence*** Pollutant-Water

| | |
|---|---|
| *Beneficial Use:* | R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WA - Warm Freshwater Habitat, WI - Wildlife Habitat |
| *Matrix:* | Water |
| *Water Quality Objective/ Water Quality Criterion* | From the CTR, the freshwater chronic standard for selenium is 5 ug/L (ppb) (USEPA, 2000).<br><br>The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses. (SARWQCB, 1995). |
| *Data Used to Assess Water Quality:* | One hundred-forty of 160 samples (30 of 31 from USEPA, 2002; 61 of 69 from OCRDMD, 2001-2004; and 49 of 60 from Meixner et al., 2004) exceeded the CTR criteria. As required by the listing policy, multiple samples collected at a single location during a 24-hour period were treated as one sample. |
| *Spatial Representation:* | Samples were collected in SDC R1 at Campus (129 samples), at Harvard Avenue (12 samples), at Alton Parkway (5 samples), at Michelson Avenue (4 samples), at Coronado south of Main St. (3 samples), upstream of PCW (3 samples), at Culver Avenue (2 samples), 300 meters downstream Culver Avenue (1 sample), and at the IRWD treatment wetlands inlet in SDC Basin No. 2 (1 sample). |
| *Temporal Representation:* | Samples were collected from 1995 – 2000 (USEPA 2002), from December 2001 – April 2004 (OCRDMD database) and from June 2002 – September 2004 (Meixner et al., 2004). |
| *Environmental Conditions:* | Samples were collected during both dry and wet weather seasons. |
| *Data Quality Assessment:* | USEPA data quality assessment protocols (2002), OCRDMD Sampling and Analysis Protocols, and Meixner et al. (2004) QAPP were used. |

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**Water Segment:** Central Irvine Channel

**Pollutant:** Selenium

**Decision:** List

**Weight of Evidence:** This pollutant is being considered for placement on the section 303(d) list under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status.

One line of evidence is available in Meixner et al., 2004, Sources of Selenium, Arsenic and Nutrients in the Newport Bay Watershed (SWRCB Agreement No. 00-200-180-1), to assess this pollutant. A large number of samples exceed the California Toxic Rule (CTR) freshwater chronic criteria for selenium.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:

1.The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2.The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Ten of 15 samples exceeded the CTR chronic freshwater criteria (USEPA) and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.1 of the Listing Policy, no additional data and information are necessary to indicate that standards are not being met.

**SWRCB Staff Recommendation:** After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

**Lines of Evidence:**

---

***Numeric Line of Evidence*** Pollutant-Water

*Beneficial Use:* R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

*Matrix:* Water

*Water Quality Objective/ Water Quality Criterion* From the CTR, the freshwater chronic standard for selenium is 5 ug/L (ppb) (USEPA, 2000).

| | |
|---|---|
| | The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses. (SARWQCB, 1995). |
| *Data Used to Assess Water Quality:* | Ten of 15 samples exceeded the CTR criteria (Meixner et al., 2004). As required by the listing policy, multiple samples collected at a single location during a 24-hour period were treated as one sample. |
| *Spatial Representation:* | Samples were collected in the Central Irvine Channel just above its intersection with Peters Canyon Wash (11 samples) and near the Northwood Plaza on Trabuco (4 samples). |
| *Temporal Representation:* | Samples were collected from July 2002 through September 2004. |
| *Environmental Conditions:* | Samples were collected during both dry and wet weather seasons. |
| *Data Quality Assessment:* | Meixner et al. (2004) QAPP was used. |

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**Water Segment:** Como Channel

**Pollutant:** Selenium

**Decision:** List

**Weight of Evidence:** This pollutant is being considered for placement on the section 303(d) list under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status.

One line of evidence is available in Meixner et al., 2004, Sources of Selenium, Arsenic and Nutrients in the Newport Bay Watershed (SWRCB Agreement No. 00-200-180-1), to assess this pollutant. A large number of samples exceed the California Toxic Rule (CTR) freshwater chronic criteria for selenium.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:

1.The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2.The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Nineteen of 21 samples exceeded the CTR chronic freshwater criteria (USEPA) and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.1 of the Listing Policy, no additional data and information are necessary to indicate that standards are not being met.

**SWRCB Staff Recommendation:** After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

**Lines of Evidence:**

---

***Numeric Line of Evidence*** Pollutant-Water

*Beneficial Use:* R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

*Matrix:* Water

*Water Quality Objective/ Water Quality Criterion* From the CTR, the freshwater chronic standard for selenium is 5 ug/L (ppb) (USEPA, 2000).

| | |
|---|---|
| | The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses. (SARWQCB, 1995). |
| *Data Used to Assess Water Quality:* | Nineteen of 21 samples exceeded the CTR criteria (Meixner et al., 2004). As required by the listing policy, multiple samples collected at a single location during a 24-hour period were treated as one sample. |
| *Spatial Representation:* | Samples were collected in Como Channel just above its intersection with Peters Canyon Wash (19 samples) and at Yale (2 samples). |
| *Temporal Representation:* | Samples were collected from June 2002 through September 2004. |
| *Environmental Conditions:* | Samples were collected during both dry and wet weather seasons. |
| *Data Quality Assessment:* | Meixner et al. (2004) QAPP was used. |

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**Water Segment:** El Modena - Irvine Channel

**Pollutant:** Selenium

**Decision:** List

**Weight of Evidence:** This pollutant is being considered for placement on the section 303(d) list under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status.

One line of evidence is available in Meixner et al., 2004, Sources of Selenium, Arsenic and Nutrients in the Newport Bay Watershed (SWRCB Agreement No. 00-200-180-1), to assess this pollutant. A large number of samples exceed the California Toxic Rule (CTR) freshwater chronic criteria for selenium.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:

1.The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2.The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Six of 26 samples exceeded the CTR chronic freshwater criteria (USEPA, 2000) and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.1 of the Listing Policy, no additional data and information are necessary to indicate that standards are not being met.

**SWRCB Staff Recommendation:** After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

**Lines of Evidence:**

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***Numeric Line of Evidence*** Pollutant-Water

*Beneficial Use:* R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

*Matrix:* Water

*Water Quality Objective/ Water Quality Criterion* From the CTR, the freshwater chronic standard for selenium is 5 ug/L (ppb) (USEPA, 2000).

| | |
|---|---|
| | The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses. (SARWQCB, 1995). |
| *Data Used to Assess Water Quality:* | Six of 26 samples exceeded the CTR criteria (Meixner et al., 2004). As required by the listing policy, multiple samples collected at a single location during a 24-hour period were treated as one sample. |
| *Spatial Representation:* | Samples were collected in the El Modena - Irvine Channel just above its intersection with Peters Canyon Wash (21 samples), at 17th Street (2 samples), at El Camino Real (2 samples), and at Newport Ave (1 sample). |
| *Temporal Representation:* | Samples were collected from July 2002 through September 2004. |
| *Environmental Conditions:* | Samples were collected during both dry and wet weather seasons. |
| *Data Quality Assessment:* | Meixner et al. (2004) QAPP was used. |

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**Water Segment:** Peters Canyon Wash downstream of Bryan Street

**Pollutant:** Selenium

**Decision:** List

**Weight of Evidence:** This pollutant is being considered for placement on the section 303(d) list under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status.

One line of evidence is available in Meixner et al., 2004, Sources of Selenium, Arsenic and Nutrients in the Newport Bay Watershed (SWRCB Agreement No. 00-200-180-1), to assess this pollutant. A large number of samples exceed the California Toxic Rule (CTR) freshwater chronic criteria for selenium.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:

1.The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2.The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Fifty-two of 52 samples exceeded the CTR chronic freshwater criteria (USEPA) and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.1 of the Listing Policy, no additional data and information are necessary to indicate that standards are not being met.

**SWRCB Staff Recommendation:** After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

**Lines of Evidence:**

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***Numeric Line of Evidence*** Pollutant-Water

*Beneficial Use:* R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

*Matrix:* Water

*Water Quality Objective/ Water Quality Criterion* From the CTR, the freshwater chronic standard for selenium is 5 ug/L (ppb) (USEPA, 2000).

| | |
|---|---|
| | The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses. (SARWQCB, 1995). |
| *Data Used to Assess Water Quality:* | Fifty-two of 52 samples exceeded the CTR criteria (Meixner et al., 2004). As required by the listing policy, multiple samples collected at a single location during a 24-hour period were treated as one sample. |
| *Spatial Representation:* | Samples were collected in PCW at Barranca (12 samples), downstream of the Santa Ana/Santa Fe Channel (6 samples), at or below the intersection with Como Channel (4 samples), at the intersection of the El Modena – Irvine Channel (16 samples), at Moffett (9 samples), at Walnut (3 samples), at the intersection with Central Irvine Channel (1 sample), and 350 meters downstream of the Warner Drain (1 sample). |
| *Temporal Representation:* | Samples were collected from June 2002 through September 2004. |
| *Environmental Conditions:* | Samples were collected during both dry and wet weather seasons. |
| *Data Quality Assessment:* | Meixner et al. (2004) QAPP was used. |

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**Water Segment:** Santa Ana/ Santa Fe Channel

**Pollutant:** Selenium

**Decision:** List

**Weight of Evidence:** This pollutant is being considered for placement on the section 303(d) list under section 3.1 of the Listing Policy. Under section 3.1 a single line of evidence is necessary to assess listing status.

One line of evidence is available in Meixner et al., 2004, Sources of Selenium, Arsenic and Nutrients in the Newport Bay Watershed (SWRCB Agreement No. 00-200-180-1), to assess this pollutant. A large number of samples exceed the California Toxic Rule (CTR) freshwater chronic criteria for selenium.

Based on the readily available data and information, the weight of evidence indicates that there is sufficient justification in favor of placing this water segment-pollutant combination on the section 303(d) list in the Water Quality Limited Segments category.

This conclusion is based on the staff findings that:

1.The data used satisfies the data quality requirements of section 6.1.4 of the Policy.
2.The data used satisfies the data quantity requirements of section 6.1.5 of the Policy.
3. Eighteen of 24 samples exceeded the CTR chronic freshwater criteria (USEPA, 2000) and this exceeds the allowable frequency listed in Table 3.1 of the Listing Policy.
4. Pursuant to section 3.1 of the Listing Policy, no additional data and information are necessary to indicate that standards are not being met.

**SWRCB Staff Recommendation:** After review of the available data and information, SWRCB staff concludes that the water body-pollutant combination should be placed on the section 303(d) list because applicable water quality standards are exceeded and a pollutant contributes to or causes the problem.

**Lines of Evidence:**

---

***Numeric Line of Evidence*** Pollutant-Water

*Beneficial Use:* R1 - Water Contact Recreation, R2 - Non-Contact Recreation, WA - Warm Freshwater Habitat, WI - Wildlife Habitat

*Matrix:* Water

*Water Quality Objective/ Water Quality Criterion* From the CTR, the freshwater chronic standard for selenium is 5 ug/L (ppb) (USEPA, 2000).

| | |
|---|---|
| | The concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses. (SARWQCB, 1995). |
| *Data Used to Assess Water Quality:* | Eighteen of 24 samples exceeded the CTR criteria (Meixner et al., 2004). As required by the listing policy, multiple samples collected at a single location during a 24-hour period were treated as one sample. |
| *Spatial Representation:* | Samples were collected in the Santa Ana/ Santa Fe Channel just above its intersection with Peters Canyon Wash (16 samples), at Redhill Boulevard (3 samples), and at the railroad crossing (5 samples). |
| *Temporal Representation:* | Samples were collected from July 2002 through March 2004. |
| *Environmental Conditions:* | Samples were collected during both dry and wet weather seasons. |
| *Data Quality Assessment:* | Meixner et al. (2004) QAPP was used. |

**From:** Craig J. Wilson
**To:** Carmencita Sannebeck; Yates, Randal
**Date:** 2/1/2006 7:47:16 AM
**Subject:** Fwd: Region 8 Comments on Draft 303d List

For the record and distribution to the Board. CJW

>>> Hope Smythe Tuesday, January 31, 2006 >>>
Craig,
Attached, please find Santa Ana Regional Board staff's comments on the draft 303(d) List. A hard copy of our letter and the data CD is also being sent to you.

Thanks to you and your staff for your hard work in preparing the draft 303(d) List. Please let me know if you have any questions about our comments, or wish to discuss further. We look forward to working with you to finalize our region's list.

Hope