



## COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

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JAMES F. STAHL  
*Chief Engineer and General Manager*

*Via U.S. and Electronic Mail*

Mr. Craig J. Wilson  
Chief, TMDL Listing Unit  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-0100

Dear Mr. Wilson:

### **Response to Public Solicitation of Water Quality Data and Information - 2004 Clean Water Act Section 303(d) List**

In response to the public solicitation of water quality data and information by the State Water Resources Control Board (State Board), the County Sanitation Districts of Los Angeles County (Districts) are providing the enclosed data and information to be used by the State Board to assess the State's water bodies for possible inclusion on or removal from the existing Clean Water Act Section 303(d) List. The Districts previously submitted data to TetraTech, Inc. on March 18, 2004, in response to a preliminary solicitation for water quality data and information by the Los Angeles Regional Water Quality Control Board (Regional Board). A copy of that preliminary data submission is included for your reference as Attachment I.

At this time, the Districts are requesting reassessment of the following existing listings, and are providing data to support their removal from the 303(d) list: 1) Toxicity for the San Gabriel River, Reaches 1 and 3; 2) Nitrate + nitrite for the Santa Clara River, Reach 7; 3) Copper (dissolved), Lead (total) and Zinc (dissolved) for the San Gabriel River, Reach 2; 4) Copper (dissolved), Lead (dissolved), Zinc (dissolved) and Selenium (total) for Coyote Creek; and 5) Chlordane (sediment), PAHs (sediment) and Sediment Toxicity for the Santa Monica Bay Offshore/Nearshore Zone.

In addition, the Districts are requesting reassessment of the following existing listings due to the insufficient basis for the initial listings: 1) Algae for Coyote Creek, San Gabriel River Reach 1, and San Jose Creek Reaches 1 and 2; and 2) Abnormal Fish Histology for Coyote Creek, San Gabriel River Reach 1, and the San Gabriel River Estuary.

Also, the Districts are submitting chloride data for Piru Creek in the Santa Clara River watershed to assist the State Board in their assessment/evaluation efforts.

**REASSESSMENT OF EXISTING LISTINGS**

**LISTING: Toxicity, San Gabriel River, Reach 1 (Estuary to Firestone Blvd.) and Reach 3 (Whittier Narrows to Ramona Blvd.)**

**CA WATER BODY IDENTIFICATION NUMBER:** 40515010 (Reach 1), 40531000 (Reach 3)

**POLLUTANT OF CONCERN:** Unknown

**APPLICABLE WATER QUALITY OBJECTIVE OR CRITERION:** Narrative; The Water Quality Control Plan for the Los Angeles Region (Basin Plan) includes a narrative objective for toxicity which states “[a]ll waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life.”

**APPLICABLE DESIGNATED BENEFICIAL USE:** Aquatic Life

**DATA SOURCE(S):** LACSD, U.S. EPA

**QUALITY ASSURANCE/QUALITY CONTROL INFORMATION:** Included as Attachment A.1 and A.2 (LACSD) and Exhibit A.1 (U.S. EPA)

**REASON FOR DELISTING:** Current Data Appear to Show Attainment of Water Quality Objective

Tables A.1, A.2, and A.3 show toxicity results from the Districts’ routine NPDES water quality monitoring program for samples taken at Districts’ receiving water stations R-4, R-9W, and R-3-1, respectively, which are all located in Reach 1 of the San Gabriel River (please refer to Figure 1 for the location of these receiving water stations), and are spatially representative of the reach. Receiving water station R-3-1 is located towards the upstream end of Reach 1, upstream of the Los Coyotes Water Reclamation Plant (WRP). Receiving water station R-4 is located downstream of the discharge of the Los Coyotes WRP. Receiving water station R-9W is located at the lower end of Reach 1, just upstream of the San Gabriel River Estuary. The tables provide monthly toxicity results from June 2003 through May 2004. Since the toxicity samples were taken on a monthly basis, the data provided is temporally representative of conditions in the reach throughout the year. In June 2003, the Districts completed conversion of water reclamation plants in the San Gabriel River watershed to nitrification/denitrification (NDN) mode. The toxicity results presented in Tables A.1, A.2, and A.3 are therefore reflective of the current water quality conditions in Reach 1. Prior toxicity results are not representative of current conditions, due to the high levels of ammonia that were present, and therefore should not be included in the database used by the SWRCB for the 2004 Water Quality Assessment, and update of the 303(d) list.

Additional toxicity data from Reach 1 of the San Gabriel River is presented in Tables A.4, A.5, and A.6. Data presented in these tables is from a collaborative toxicity study conducted by the U.S. EPA and the Districts in August through October 2003. The purpose of this study was to attempt to characterize toxicity in the San Gabriel River watershed for the toxicity TMDL which was originally scheduled for completion according to the Los Angeles Region Consent Decree by March 2004, and has since been extended to March 2007.

Since the water reclamation plants have been operating in NDN mode, the Districts have analyzed 36 receiving water samples from Reach 1 as part of the Districts’ routine NPDES monitoring. As shown in Tables A.1, A.2 and A.3, out of the 36 samples analyzed from Reach 1 (12 monthly samples for each of the 3 receiving water stations in the reach), none of the samples showed evidence of toxicity. Seventeen (17) additional samples were taken for Reach 1 as part of the EPA/Districts collaborative study [6 samples in August 2003 (2 from R-3-1, 2 from R-4, and 2 from R-9W), 5 samples in September 2003 (2 from R-3-1, 2 from R-4, and 1 from R-9W) and 6 samples in October 2003 (2 from R-3-1, 2 from R-4, and 2 from R-9W)]. Reach 1 receiving water samples for August 2003 are being excluded from this

analysis however, due to a documented, short-term operational upset at the San Jose Creek WRP (please refer to Attachment A.3, San Jose Creek WRP Combined NPDES and Reuse Monitoring Report for August 2003, *Remarks on the Monitoring and Reporting Program*) during the time of sampling. Due to this short-term event, water quality conditions at the time of the August 2003 sampling event were not characteristic of typical water quality conditions in the reach. As stated in the December 2003 SWRCB Draft 303(d) Listing Policy, "Data and information collected during a known spill or violation of an effluent limit in a permit or waste discharge requirement (WDR) shall not be used in the assessment of objectives and beneficial use attainment as required by this policy." Draft 303(d) Listing Policy at Appendix-3). Excluding these samples, an additional 11 valid samples from Reach 1 showed no evidence of toxicity.

Combining the data from the Districts' routine NPDES monitoring program with the samples collected for the EPA/Districts' collaborative study, a total of 47 samples have been taken from Reach 1 of the San Gabriel River, taken since the implementation of NDN in June 2003. Out of the total 47 samples, none of the samples showed evidence of toxicity. Clearly, Reach 1 of the San Gabriel River is not impaired for toxicity, and should therefore be removed from the 303(d) list.

Tables A.7, A.8, and A.9 show toxicity results from the Districts' routine NPDES water quality monitoring program for samples taken at Districts' receiving water stations R-11 (for the Whittier Narrows WRP, using the *Pimephales promelas* test organism), R-11 (for the San Jose Creek WRP, using the *Ceriodaphnia dubia* test organism), and R-A, respectively, which are both located in Reach 3 of the San Gabriel River (please refer to Figure 1 for the location of these receiving water stations). The tables provide quarterly toxicity results for June 2003 through May 2004. Since the toxicity samples were taken on a quarterly basis, the data provided is temporally representative of conditions in the reach throughout the year. In June 2003, the Districts completed conversion of water reclamation plants in the San Gabriel River watershed to nitrification/denitrification (NDN) mode. The toxicity results presented in Tables 7, 8, and 9 are therefore reflective of the current water quality conditions in Reach 3.

Additional toxicity data from Reach 3 of the San Gabriel River is also presented in Tables A.4, A.5, and A.6. Data presented in these tables is from the collaborative toxicity study conducted by the U.S. EPA and the Districts in August through October 2003. The purpose of this study was to attempt to characterize toxicity in the San Gabriel River watershed for the toxicity TMDL which was originally scheduled for completion according to the Los Angeles Region Consent Decree by March 2004, and has since been extended to March 2007. In August 2003, additional samples were taken for this study at Districts' receiving water station R-11. Samples in September and October 2003 were taken at San Gabriel River at Peck Road, also located in Reach 3, downstream of station R-11.

Since the water reclamation plants have been operating in NDN mode, the Districts have analyzed 9 receiving water samples from Reach 3 as part of the Districts' routine NPDES monitoring. As shown in Tables A.7, A.8 and A.9, out of the 9 samples analyzed from Reach 3, only 1 sample showed evidence of significant toxicity (1st Quarter 2004, R-11 *Pimephales promelas* test). The toxicity in the 4th quarter 2003 *Ceriodaphnia* test was confined only to the reproduction endpoint resulting in a maximum effect relative to control of 27%, which constitutes a very small effect for this endpoint. Based on historical pMSD values obtained in *Ceriodaphnia* reproduction tests conducted over the previous year, an effect of 27% would have been identified as being non-toxic over ten percent of the time. Furthermore, this test utilized the older 1991 chronic toxicity testing protocol. If the most recent protocol (which is used for all tests conducted since January 2004) was used, the NOEC would have been calculated as 100% (TUC=1.0) after application of appropriate concentration response criteria, and therefore would have been considered non-toxic.

An additional 6 samples were taken from Reach 3 as part of the EPA/Districts collaborative study, and out of these samples, none showed evidence of ambient toxicity. Combining the data from the Districts' routine NPDES monitoring program with the samples collected for the EPA/Districts' collaborative study, a total of 15 samples have been taken for Reach 3 of the San Gabriel River since the implementation of NDN in June 2003. Out of the total 15 samples, only one of the samples showed evidence of significant toxicity. Clearly, Reach 3 of the San Gabriel River does not show evidence of persistent toxicity, and should therefore be removed from the 303(d) list.

**LISTING: Nitrate + Nitrite, Santa Clara River Reach 7 (LARWQCB Reach 5- Blue Cut to West Pier Hwy 99 Bridge)****CA WATER BODY IDENTIFICATION NUMBER:** 40351000**POLLUTANT OF CONCERN:** Nitrate+ Nitrite-Nitrogen**APPLICABLE WATER QUALITY OBJECTIVE OR CRITERION:** Numeric; 5 mg/L N**APPLICABLE DESIGNATED BENEFICIAL USE:** Unknown, Water Quality Objective of 5 mg/L N was based on background conditions**DATA SOURCE(S):** LACSD, United Water Conservation District (UWCD)**QUALITY ASSURANCE/QUALITY CONTROL INFORMATION:** : Included as Attachment A.1 and A.2 (LACSD) and Exhibit B.1 (FGL Laboratories, Contract Laboratory for UWCD)**TMDL COMPLETED:** 2003**REASON FOR DELISTING:** Current Data Appear to Show Attainment of Water Quality Objective

Nitrate, nitrite, and nitrate+nitrite data from Districts' receiving water stations in Reaches 7 and 8 (please refer to Figure 2 for reach segments) of the Santa Clara River are provided in Tables B.1 through B.5. Table B.6 presents nitrate and nitrite data obtained from the United Water Conservation District (UWCD) for their receiving water sampling station located near the Los Angeles/Ventura County Line, at the end of Reach 7 of the Santa Clara River.

Table B.1 shows nitrogen data from Districts' receiving water station RB, located in Reach 8 of the Santa Clara River collected over the period from September 2003 to May 2004. Figure B.1 summarizes this data. The data presented are reflective of water quality conditions since the conversion to NDN mode of Districts' water reclamation plants discharging to the Santa Clara River. The Saugus Water Reclamation Plant, which is located in Reach 8, was fully converted to NDN mode on September 11, 2003. The data contained in Table B.1 show nitrate+nitrite concentrations at station RB ranged from 2.1 mg/L N to 9.0 mg/L N. The Basin Plan's nitrate+nitrite water quality objective for Reach 8 (Regional Board Reach 6) is 10 mg/L, and therefore the data appear to show attainment of the water quality objective. Reach 8 of the Santa Clara River was de-listed by the SWRCB for nitrate+nitrite during the 2002 Update, due to attainment of the water quality objective. These nitrate+nitrite data are being submitted to demonstrate continued attainment of the water quality objective.

Nitrite concentrations at station RB ranged from 0.77 mg/L to less than 0.02 mg/L for this period. None of the samples exceeded the Basin Plan water quality objective for nitrite (1.0 mg/L), and therefore the nitrite data also appear to show attainment of the Basin Plan's water quality objective of 1 mg/L for Reach 8. Reach 8 of the Santa Clara River is currently listed on the 2002 Enforceable Programs List for nitrite.

Tables B.2 through B.6 show nitrogen data for Reach 7 of the Santa Clara River collected over the period from September 2003 to May 2004. Data in these tables is comprised of Districts' receiving water stations RC, RD, RE and RB01, and UWCD's receiving water station located near the Los Angeles/Ventura County Line (04N17W29SW1). Combined, these receiving water locations represent the length of Reach 7, with station RB01 at the upstream point of the reach, and RE and 04N17W29SW1 towards the downstream end of the reach. Therefore, data from these stations are spatially representative of Reach 7 of the Santa Clara River. The combined data from the Reach 7 sampling locations demonstrate likely attainment of the applicable water quality objective for nitrate+nitrite (5 mg/L N) for the reach. The nitrogen data for Reach 7 (Regional Board Reach 5) are summarized in Figure B.2. Out

of 32 samples taken throughout the reach, none of the measurements exceeded the water quality objective of 5 mg/L<sup>1</sup>.

Once again, the data presented are reflective of conditions in the reach since the implementation of NDN at the Districts' water reclamation plants which discharge to the Santa Clara River, and therefore characterize current water quality. The Districts' Valencia Water Reclamation Plant, which is located in Reach 7, was partially converted to NDN mode starting May 12, 2003, and was fully converted to NDN mode on June 18, 2003. The implementation of NDN at these WRP's represents a significant change in water quality nitrogen conditions in Reach 7 of the Santa Clara River.

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<sup>1</sup> For the purpose of determining compliance with the applicable water quality objective, the Districts evaluates data based on the significant digits of the water quality objective, and on the appropriate use of significant figures (e.g., per Standard Methods for the Examination of Water and Wastewater, 20th edition, 1998, Section 1050B.) Therefore, the measured values of 5.4 and 5.3 mg/L are not considered exceedances of the 5 mg/L water quality objective for nitrate. This practice has been accepted for compliance purposes by the Los Angeles Regional Water Quality Control Board.

**LISTING: Metals Listings (see below), San Gabriel River, Reach 2 (Firestone Blvd. To Whittier Narrows Dam)**

**CA WATER BODY IDENTIFICATION NUMBER: 40515010**

**POLLUTANT OF CONCERN:** Copper (dissolved), Lead (total) and Zinc (dissolved)

**APPLICABLE WATER QUALITY OBJECTIVE OR CRITERION:** Criteria for these three metals are contained within the California Toxics Rule (CTR).

**APPLICABLE DESIGNATED BENEFICIAL USE:** *Aquatic Life*

**DATA SOURCE(S):** Los Angeles County Department of Public Works

**QUALITY ASSURANCE/QUALITY CONTROL INFORMATION:** Included as Exhibit C.1 (Woodward-Clyde Consultants, Contract Laboratory for LADPW).

**REASON FOR DELISTING:** Current Data Show Attainment of Water Quality Objectives

Table C.1 shows the total and dissolved concentrations of copper, lead and zinc measured at the Los Angeles County Department of Public Work's (LADPW) mass emission station located downstream of the crossing of the San Gabriel River Parkway within Reach 2 of the San Gabriel River. Reach 2 was listed for lead in 1998, and in 2002, the reach was also listed for dissolved copper and dissolved zinc. Table C.1 shows water quality data from 1997 to present. Older information was included so that the listings can be evaluated with the relevant record of data (however data were not available for the winter period of 1996-1997 from LADPW.) For the most part, these samples were taken during wet-weather events, but the few dry-weather sampling events are marked on Table C.1.

Table C.1 includes the events when the CTR criteria was exceeded and highlights these instances in gray. For each of the three metals, a graph of the measured concentration as a function of the sample's hardness is also included. For copper, lead and zinc, the CTR criteria are for the dissolved portion of each metal; therefore, while the total metal concentrations are included on the graphs, they should not be compared to the dissolved criteria to evaluate impairment. As can be seen in Table C.1 and Figure C.1, the dissolved copper criteria was exceeded in only 4 out of 62 measurements. Furthermore, all of the 4 exceedances occurred during the El Niño rainy season in the winter of 1997 - 1998. Therefore, out of the 7 last rainy seasons, there were exceedances of the dissolved criteria in only one year. The December 2003 Draft Listing Policy states that waters should be placed in the "Water Quality Segments Limited Category" if the waterbody is not in attainment for a certain pollutant, and if a TMDL is required for that pollutant for the waterbody to attain the water quality objectives. There does not appear to be a problem attaining the dissolved copper criteria in non-El Niño seasons, and in addition, a TMDL is unlikely to be the right tool for ensuring compliance during uncharacteristically heavy and infrequent storms such as El Niño. The Draft Listing Policy also contains provisions related to the temporal representation of samples used to assess the water body. The Draft Listing Policy states, "Samples shall be collected to be representative of temporal characteristics of the water body. Samples used in the assessment must be temporally independent. If the majority of samples were collected on a single day or during a single short-term natural event (e.g., a storm, flood, or wildfire), the data shall not be used as the primary data set supporting the listing. In general, samples should be available from two or more seasons or from two or more events when effects or water quality objectives exceedances would be expected to be clearly manifested." (Draft Listing Policy, pg. Appendix-21). Not only are there a minimal number of copper exceedances, in addition those exceedances occurred during a single, short-term natural event.

Table C.1 and Figure C.2 illustrate a similar situation with regards to the lead impairment for Reach 2. Out of 63 measurements, there were only 4 exceedances of the CTR criteria. Likewise, all these occurrences were during the 1997-1998 El Niño event. Once again, the current listing does not

provide temporal representation of conditions in the reach (the basis for listing being the effects of heavy storms in 1 out of the last 7 rainy seasons). Once again, it is unlikely that a TMDL would be an effective regulatory tool to address exceedances of the CTR chronic criteria for lead during El Niño rains.

Table C.1 and Figure C.3 illustrate the same situation with regards to the zinc impairment for Reach 2. The dissolved criteria was exceeded in only 3 out of the 63 measurements and again, all of these measurements occurred during the El Niño rainy season.

For all three of these listings, in light of the new data available, impairments are no longer valid based on the minimal number of exceedances of the water quality objectives. For that reason alone, these listings should be removed from the 303(d) list before a time-intensive and costly TMDL is required. Further, since all the exceedances occurred during a non-controllable natural event, the exceedances should not be considered as being representative of the waterbody and should certainly not be used as the sole basis upon which to support a determination of impairment. Again, the current copper, lead and zinc 303(d) listings are not valid for San Gabriel River Reach 2 and should be delisted.



**LISTING: Metals Listings (see below), Coyote Creek****CA WATER BODY IDENTIFICATION NUMBER:** 40515010**POLLUTANT OF CONCERN:** Copper (dissolved), Lead (dissolved), Selenium (total) and Zinc (dissolved)**APPLICABLE WATER QUALITY OBJECTIVE OR CRITERION:** Criteria for these four metals are contained within the California Toxics Rule (CTR).**APPLICABLE DESIGNATED BENEFICIAL USE:** Aquatic Life**DATA SOURCE(S):** LACSD, Los Angeles County Department of Public Works**QUALITY ASSURANCE/QUALITY CONTROL INFORMATION:** Included as Attachment A.1 and A.2 (LACSD) and Exhibit C.1 (Woodward-Clyde Consultants, Contract Laboratory for LADPW).**REASON FOR DELISTING:** Current Data Show Attainment of Water Quality Objectives

Table D.1 shows the total and dissolved concentrations of copper, lead, selenium and zinc measured by the Los Angeles County Department of Public Work's (LADPW) mass emission station located at Spring Street on Coyote Creek. In 2002, the reach was listed for dissolved lead, total selenium and dissolved zinc based solely upon LADPW data. The majority of their data are collected during storm events. Therefore, these listings are representative of wet-weather conditions and do not necessarily reflect the dry-weather conditions that are typical of waterbodies in this region. The Districts routinely monitor three receiving water stations in Coyote Creek as part of the NPDES water quality monitoring program for the Long Beach Water Reclamation Plant. The Districts only collect these samples in dry weather, thus, when combined with the data from LADPW, the data provide a more complete picture of water quality conditions in the reach. The Districts' data for the three Coyote Creek receiving water stations for copper, lead, selenium and zinc are given in Table D.2. Even though the SWRCB specifically requested data from May 2001 to present, Tables D.1 and D.2 show a longer period of record so that the listings can be re-evaluated with the relevant record of data.

Tables D.1 and D.2 include the dates when samples exceeded the CTR criteria and highlights these instances in gray. For each of the four metals, a graph of the measured concentration as a function of the sample's hardness is also included. In the case of copper, lead and zinc, the CTR criteria are for the dissolved portion of each metal; therefore, while the total metal concentrations were included on the graphs, they should not be compared to the dissolved criteria to evaluate impairment (However, LACSD only analyzes for total metals concentration, so the LACSD total metals concentrations are compared to the criteria because no dissolved measurements are available. This is a very conservative approach since often the dissolved portion of a metal is much less than the total concentration.). The criteria for selenium should be applied to the total selenium concentration.

As can be seen in Table D.1 and D.2 and Figure D.1, the dissolved lead criteria was exceeded in only 7 out of 147 measurements. Furthermore, 6 of these 7 exceedances were taken during wet-weather conditions and 4 out of the 6 wet-weather exceedances occurred during the El Niño rainy season in the winter of 1997 – 1998. The Draft Policy states that if “standards exceedances reflect physical alteration of the waterbody that cannot be controlled ..., then the water segment shall not be placed on the 303(d) list.” (Draft Listing Policy, pg. Appendix-3). El Niño-magnitude rains definitely cause a physical alteration of the waterbody that cannot be controlled. As mentioned above, the Draft Listing Policy also cautions against listing based upon samples that are not temporally representative. Four of the 7 exceedances of the lead criteria occurred in the El Niño season and these exceedances should not be considered as representative of the waterbody and should certainly not be used to support an impairment determination.

Tables D.1 and D.2 and Figure D.2 illustrate a similar situation with regards to the selenium impairment for Coyote Creek. There were only 6 exceedances of the CTR criteria in 102 measurements. Five of the 6 measurements occurred during the LADPW's wet-weather monitoring and 3 of those 5 occurred in a two-week period in November and December 1998. Once again, the current listing does not provide temporal representation of conditions in the waterbody (the majority of the basis for listing being 3 measurements taken in a two-week period during one wet season). Once again, the selenium measurements in the waterbody exceeded the CTR criteria less than 10% of the time (less than 6%); thus, selenium should be considered for removal from the 303(d) list.

Tables D.1 and D.2 and Figure D.3 illustrate the same situation as lead with regards to the zinc impairment for Coyote Creek. The dissolved criteria was exceeded in only 6 of 147 measurements. Five of the 6 exceedances occurred in wet weather, and they were all during the El Niño year. Thus, the current zinc listing does not provide temporal representation of conditions in the reach (the basis for listing being the effects of heavy storms in one out of the 7 last rainy seasons). Furthermore, a TMDL would probably not be the best regulatory tool to address the high zinc levels during El Niño rains. The zinc listing is also based on only ~4% of the data exceeding the standard. Clearly, under the provisions of the Draft Listing Policy, zinc should be delisted from the 303(d) list for Coyote Creek.

Tables D.1 and D.2 and Figure D.4 illustrate a somewhat different situation with regards to the listing for copper. Of the wet-weather results, 14 of the 63 measurements exceeded the dissolved criteria. However, in LACSD's receiving water monitoring, there were zero exceedances in 83 measurements. Focusing on Figure D.4, it is apparent that copper concentrations are only a concern in wet-weather conditions. Is it appropriate to list a waterbody for an impairment that only occurs during wet-weather and not in dry conditions? The Draft Listing Policy suggests that data from at least two seasons be used to support an impairment (Draft Listing Policy, pg. Appendix-21); however, the copper data that was used consisted solely of wet-weather data. Therefore, the temporal representation of the data is highly questionable and should not be used as the basis for an impairment if the copper exceedances are only experienced in storm events. We recommend that the copper listing for Coyote Creek be removed from the 303(d) list.

**LISTING: Chlordane (sediment), PAHs (sediment), and Sediment Toxicity, Santa Monica Bay Offshore/Nearshore Zone**

**CA WATER BODY IDENTIFICATION NUMBER:** 40513000

**POLLUTANT OF CONCERN:** Chlordane (sediment), PAHs (sediment), Unknown for Sediment Toxicity listing

**APPLICABLE WATER QUALITY OBJECTIVE OR CRITERION:** Unknown; It is assumed that narrative criteria related to toxicity are being applied. The Water Quality Control Plan for the Los Angeles Region (Basin Plan) includes a narrative objective for toxicity which states “[a]ll waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life.”

5 mg/L N **APPLICABLE DESIGNATED BENEFICIAL USE:** Aquatic Life

**DATA SOURCE(S):** Southern California Coastal Water Research Project (SCCWRP)

**QUALITY ASSURANCE/QUALITY CONTROL INFORMATION:** Included within Appendix E as Exhibit E.1

**REASON FOR DELISTING:** Current Data Appear to Show Attainment of Water Quality Objective

In a letter responding to the Districts’ request for supporting information for the draft 1996 303(d) list, dated January 16, 1996 (Exhibit E.2), the Regional Board indicated that the basis for the Santa Monica Bay sediment listings was the State of the Bay 1993: Characterization Study of the Santa Monica Bay Restoration Plan, by the Santa Monica Bay Restoration Project, 1994 (see Table 1, pg. 6 of Exhibit E.3). No other specific information or data was cited or supplied by the RWQCB in support of the Santa Monica Bay listings.

It is not clear how an impairment determination was originally made for PAHs in sediments. PAH concentrations are compared to background levels in a narrative section of the report (see pg. 9-14 of Exhibit E.3), but no comparison of PAHs to specific sediment quality guidelines were provided in the report. In addition, it is also unclear how the impairment determination for chlordane in sediments was initially made for Santa Monica Bay. The State of the Bay report addresses levels of chlordane in Marina del Rey (see pg. 9-16 of Exhibit E.3), but does not discuss any information related to chlordane levels in the Santa Monica Bay Offshore/Nearshore Zone. Also, no specific pollutants have been identified related to the “Sediment Toxicity” listing for Santa Monica Bay.

Notwithstanding the uncertain basis for these listings, recent data and information made available in February 2003 from the SCCWRP Southern California Bight 1998 Regional Monitoring Program (Bight ’98 Study, Exhibits E.4- Vol. IV Sediment Toxicity, Exhibit E.5- Vol. VI Sediment Chemistry, and Exhibit E.6- Vol. VII Benthic Macrofauna) indicates the Santa Monica Bay is not impaired for either chlordanes or PAHs. In addition, sediment toxicity studies and results of benthic macrofauna monitoring did not find evidence of sediment toxicity or altered benthic condition for Santa Monica Bay sites in the offshore/nearshore zones.

Table E.1 is a summary of chlordane (sediment), total PAHs (sediment), amphipod toxicity, and Benthic Response Index (BRI) data from Santa Monica Bay sites sampled as part of the Bight ’98 study (these sites are shown on Figure E.1). Out of 23 sediment samples taken throughout Santa Monica Bay, none of the samples exceeded the Effects Range Median (ERM) sediment quality guideline for chlordane (6.0 ng/g) or total PAHs (44,792 ng/g). Although sediment quality guidelines such as ERMs are based solely on coincidental occurrence between observed adverse biological effects and potentially toxic substances in aquatic sediments, and no cause-and-effect relationship should be implied, these sediment quality guidelines are often used to evaluate marine sediments for potential toxicity to benthic organisms

(Exhibit E.5, Vol. VI, pg. 95). Concentrations above the ERM value fall into a probable effects range, within which effects would be expected to occur frequently.

Sediment quality guidelines such as ERMs are more meaningful when used as part of a weight-of-evidence approach, combined with measures of sediment toxicity and benthic alteration. Table E.1 also shows the amphipod survival and overall amphipod toxicity ranking for the Bight '98 Santa Monica Bay offshore/nearshore sites. None of the Santa Monica Bay sites sampled showed evidence of toxicity using the amphipod toxicity test. In the Bight '98 study, amphipod toxicity was the most highly weighted toxicity measure used in the study because the amphipod test used test conditions that were most similar to the habitat of interest (benthic species, direct sediment exposure) and a response with high biological significance (survival) (Exhibit E.4, Vol. IV, pg. 39). In general, the amphipod toxicity test data in the Bight '98 study were of high quality and the results were comparable among all the participating laboratories (Exhibit E.4, Vol. IV, pg. 45).

Assessment of the benthic communities during the Bight '98 study provides further evidence that the Santa Monica Bay is not impaired for sediment toxicity, or sediment contamination due to chlordanes or PAHs. The summary table shows the BRI status for each of the Santa Monica Bay sites analyzed for benthic condition. The BRI is the abundance-weighted pollution tolerance of the species present at a site, and ranges from Response Levels (RL) 1 through 4. RL1 indicates marginal deviation from reference condition (REF), while RLs 2 through 4 are considered to be clear evidence of disturbed benthic communities (Exhibit E.6, Vol. VII, pg. 27). As shown in Table E.1, the majority of the Santa Monica Bay sites were found to be in reference condition, and 5 of the 23 sites were found to have only marginal deviation from reference condition. No evidence of sediment impairment was found based on the assessment of the benthic macrofauna. None of the single lines of evidence (sediment chemistry, sediment toxicity, and benthic condition) indicates the Santa Monica Bay Offshore/Nearshore zone is impaired due to chlordane, PAHs, or sediment chemistry, and further, when these 3 measures are combined in a weight of evidence approach, there is clearly no indication of sediment contamination or toxicity.

**LISTING: Algae, Coyote Creek, San Gabriel River Reach 1 (Estuary to Firestone Blvd.), San Jose Creek Reach 1 (SGR Confluence to Temple St.) and Reach 2 (Temple St. to I-10 at White Ave.)**

**CA WATER BODY IDENTIFICATION NUMBER:** 40515010 (Coyote Creek); 40515010 (San Gabriel River Reach 1); 40531000 (San Jose Creek Reach 1); 40531000 (San Jose Creek Reach 2)

**POLLUTANT OF CONCERN:** Unknown, pollutant has not been identified; Listings are based upon condition of the water bodies rather than a specific pollutant.

**APPLICABLE WATER QUALITY OBJECTIVE OR CRITERION:** Unknown; It is assumed that narrative criteria are being applied. The Basin Plan includes narrative criteria related to aesthetics (taste and odor) which states "*Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible aquatic resources, cause nuisance, or adversely affect beneficial uses.*" In addition, in the past the Regional Board has linked *a priori* the algae listings to excess nutrients, and therefore the Regional Board may be applying Basin Plan narrative criteria for biostimulatory substances. The Basin Plan states, "*Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.*"

**APPLICABLE DESIGNATED BENEFICIAL USE:** According to the Los Angeles Regional Water Quality Control Board 1996 Water Quality Assessment (Exhibit F.1), algae listings were based on an assessment of the REC-1 (Water Contact Recreation) and REC-2 (Non-contact Water Recreation) beneficial uses.

**DATA SOURCE(S):** LARWQCB

**QUALITY ASSURANCE/QUALITY CONTROL INFORMATION:** None

**REASON FOR DELISTING:** Insufficient Basis for Listing in the Original Assessment

The Districts request that the algae listings for Coyote Creek, San Gabriel River Reach 1, and San Jose Creek Reaches 1 and 2, be re-assessed because the initial listing of these water bodies was inappropriate.

The Districts believe there was insufficient information to determine impairment in the original assessment. According to the Regional Board 1996 Water Quality Assessment (WQA), algae listings were based on an assessment of the REC-1 (Water Contact Recreation) and REC-2 (Non-contact Water Recreation) beneficial uses. The original impairment determinations were derived from the Regional Board's WQA Aesthetic Stressors worksheet (Exhibit F.2). As stated on the first page of the aesthetic stressor worksheet, the rankings related to presence of algae were entirely subjective, and were "assigned to all waterbodies by one person for consistency". According to the aesthetic stressor sheet, subjective algae observations were conducted for the above reaches over 10 years ago (from 1990-1993).

The total number of observations (#) used to determine "impairment" for each reach was as follows: Coyote Creek- (5), San Gabriel River Reach 1- (4), San Jose Creek Reach 1- (4), San Jose Creek Reach 2- (0). Based on the information contained in the aesthetic stressor worksheet, it appears that San Jose Creek Reach 2 (defined in the 2002 303(d) List as being the section from Temple Street to I-10 at White Ave.) was not assessed. At the time of listing, San Jose Creek was defined as a single reach, but was later sub-divided into 2 segments. Even though no assessment had occurred within the boundary of Reach 2, the algae listing was carried over, and applied to both reaches.

In the aesthetic stressor worksheet, there is no quantification of the amount of algae observed. Subjective observations resulted in rankings of slight, moderate, and high amounts of algae growth, with moderate and high rankings resulting in an exceedance. It should be emphasized that these listings utilized visual

assessments as the sole line of evidence to support the 303(d) listings. No exceedance of approved nutrient-related water quality objectives or adopted evaluation guidelines was used in the impairment determination. This approach to listing is in direct conflict with the provisions proposed in the SWRCB's Draft Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List (Draft Listing Policy), which states "Visual assessments or other semi-quantitative assessments may not be used as the sole line of evidence to support a section 303(d) listing." (Draft Listing Policy, pg. Appendix-3). The Draft Listing Policy requires the use of multiple lines of evidence to evaluate such listing factors as Nuisance (which is assumed to be the listing factor that would be applicable for these water bodies). For the Nuisance listing factor, the Draft Listing Policy specifies that "Nuisance water odor, taste, excessive algae growth, foam, turbidity, oil, litter or trash, and color, shall be placed on the section 303(d) list if qualitative visual assessments or other semi-quantitative assessments of the water segment and associated numerical water quality data meets any one of the following:

### *3.1.7.1 Nutrient-related*

For excessive algae growth, unnatural foam, odor, and taste, acceptable nutrient-related evaluation guidelines are exceeded as described in section 3.1.1." (emphasis added, Draft Listing Policy, pg. Appendix 5).

The aesthetic stressor worksheets raise several important questions, including what amount of algae constitutes impairment,<sup>2</sup> what beneficial use is impaired, and how the amounts of algae growth were estimated. It is important to note that many of these reaches are fully concrete-lined channels and this factor also does not appear to have been taken into account when assessing algae.

The Regional Board has indicated (through their past assignment of the algae listings to the "Nitrogen and Its Effects" TMDL for the San Gabriel River Watershed) that they believe the cause of the algae growth is nitrogen. The Regional Board has also included NPDES permit limits for nitrate + nitrite for the Long Beach and Los Coyotes WRPs based on these algae listings (see Exhibit F.3, Waste Discharge Requirements and NPDES Permit, Long Beach Water Reclamation Plant, NPDES No. CA00054119, CI No. 5662, Section IX. A.2.i.1., Fact Sheet, pg. 28, and Exhibit F.4, Waste Discharge Requirements and NPDES Permit, Los Coyotes Water Reclamation Plant, NPDES No. CA00054011, CI No. 5059, Section IX. A.2.i.1, Fact Sheet, pg. 29), notwithstanding the fact that the TMDL is scheduled for completion in 2008, and there is no applicable nitrate + nitrite water quality objective for Coyote Creek or San Gabriel River Reach 1. To our knowledge, studies to determine the causes of algal growth, as well as the level at which algal growth might be considered problematic, have not yet been conducted.<sup>3</sup> Since the causes of the algae impairment have not been determined, and since the original listings were determined using a

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<sup>2</sup> The Districts do not believe it is appropriate or legally valid for the Regional or State Boards to list waterbodies based on informal criteria (if the aesthetic stressor worksheets can even be considered "criteria") that have not been adopted as water quality standards pursuant to state and federal law. See 33 U.S.C. §1313(c); Cal. Water Code §13241 et seq. Additionally, we are unaware of water quality objective is being evaluated. To the extent it is argued that the algae levels violate the "biostimulatory substances" narrative objective contained in the Los Angeles Basin Plan, it is necessary for the Regional Board to identify how that objective will be implemented. Cal Water Code §13242. To the extent that algae is considered an aesthetic issue that impedes attainment of the REC-1 use (i.e. swimming), the fact that swimming is illegal in these water bodies ought to be taken into account in the Plan of Implementation.

<sup>3</sup> It is possible that decreasing nitrogen and/or phosphorus levels will not reduce the algae in these concrete-lined channels, as the smooth substrate and high amount of sunlight allow periphyton to grow at extremely low nutrient concentrations. The high amount of sunlight is due to two factors; the trapezoidal shape of the concrete channels reflecting light into the channel bottom, and the shallow water depth for most of the year. Remedying the high sunlight exposure with tree cover or other measures would probably be much more effective at reducing algae levels than lowering nutrient concentrations.

limited number of highly subjective visual assessments as the sole line of evidence to support the listing, the Districts request that Coyote Creek, San Gabriel River Reaches 1, and San Jose Creek Reaches 1 and 2, be removed from the 303(d) list as being impaired due to algae.

**LISTING: Abnormal Fish Histology, Coyote Creek, San Gabriel River Estuary, and San Gabriel River Reach 1 (Estuary to Firestone Blvd.)**

**CA WATER BODY IDENTIFICATION NUMBER:** 40515010 (Coyote Creek); 40516000 (San Gabriel River Estuary); 40515010 (San Gabriel River Reach 1)

**POLLUTANT OF CONCERN:** Unknown, pollutant has not been identified; Listings are based upon a response, rather than the pollutant causing the response.

**APPLICABLE WATER QUALITY OBJECTIVE OR CRITERION:** Unknown; It is assumed that narrative criteria related to toxicity are being applied. The Basin Plan includes a narrative objective for toxicity which states, "*All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration or other appropriate methods as specified by the State or Regional Board.*"

**APPLICABLE DESIGNATED BENEFICIAL USE:** According to the Los Angeles Regional Water Quality Control Board 1996 Water Quality Assessment, the abnormal fish histology listings were based on an assessment of the "aquatic life" uses.

**DATA SOURCE(S):** Final Report "Toxicity Study of the Santa Clara River, San Gabriel River, and Calleguas Creek", by Bailey et al, University of California, Davis, 1996 (Exhibit G.1). Prepared for the LARWQCB.

**QUALITY ASSURANCE/QUALITY CONTROL INFORMATION:** None

**REASON FOR DELISTING:** Insufficient Basis for Listing in the Original Assessment

The listings for Abnormal Fish Histology are based on a single study conducted by the UC Davis Aquatic Toxicology Laboratory over 10 years ago (1992-1993). The final report "Toxicity Study of the Santa Clara River, San Gabriel River and Calleguas Creek" was completed in December of 1996 (see Exhibit G.1).

No rationale has been provided for how the study's findings resulted in an impairment determination. To our knowledge, the RWQCB has not identified precisely which beneficial uses or water quality objectives are not being attained, both of which must be identified to comply with the requirements of Section 303(d) of the Clean Water Act.<sup>4</sup> 33 U.S.C. §1313(d). To the extent that the RWQCB is basing these impairment determinations on either the narrative toxicity objective or the bioaccumulation narrative objective, they have not complied with the express requirements of the Basin Plan for the toxicity objective or the federal requirements to provide translator mechanisms for the bioaccumulation narrative. 40 CFR §131.11(a)(2). Specifically, EPA has been unable to identify how the State intends to regulate point source discharges of priority toxic pollutants using the bioaccumulation narrative criterion, and until this information is provided, this criterion may not be used to regulate point source discharges of toxic pollutants on water quality limited segments. *See* Letter from Alexis Strauss, U.S. EPA Region IX to Celeste Cantu, February 15, 2002 (Exhibit G.2). As for the narrative toxicity objective, the 1994 Basin Plan sets forth the specific process required for making a determination that the narrative toxicity objective has been violated or is impaired. *Ibid*. For abnormal fish histology, this process has not been

<sup>4</sup> Section 303(d) of the CWA specifies that "each State shall identify those waters for which effluent limitations . . . are not stringent enough to implement any *water quality standard* applicable to such waters." (emphasis added) 33 U.S.C. §1313(d). The immediate preceding subsection, Section 303(c), defines a water quality standard as consisting of "the designated uses of the navigable water involved *and* the water quality criteria for such waters based upon such uses." (emphasis added) 33 U.S.C. §1313(c). Therefore, it follows that the reference in Section 303(d) to water quality standards means that both the use and the criterion to protect that use must be identified in making impairment determinations.



followed. Not only is there no translation between narrative results of the histology investigations and the listing of certain reaches, there is no benchmark for determining when the waterbodies may be de-listed either. In fact, a methodology to develop a TMDL to address these listings has not been determined, and currently the TMDL is noted as “dependent on cause, further assessment needed, cause of abnormalities unknown.” (See Exhibit G.3). In addition, a search of U.S. EPA’s 303(d) list database indicated that there are no other fish histology listings anywhere in the country. The UC Davis study attempts to relate the histopathological findings to toxicity, however only limited Toxicant Identification Evaluation (TIE) work was conducted, and the cause of the observed toxicity was never determined. The study speculated that the observed toxicity may have been caused by diazinon, chlorpyrifos, or ammonia. During the course of the study, no final determination was ever made as to the source of the toxicity. The study did not provide any evidence relating the histopathological findings to a specific toxicant.

The Draft Listing Policy requires multiple lines of evidence when evaluating listings for adverse biological response. The Draft Listing Policy requires, “A water segment exhibits adverse biological response as compared to reference conditions measured in resident individuals and these impacts are with associated water or sediment concentrations of pollutants as described in section 3.1.6.” (emphasis added, Draft Listing Policy, pg. Appendix 5). For the abnormal fish histology listings, this provision of the Draft Listing Policy has not been met.

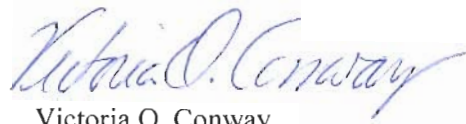
**WATER BODY NAME: Piru Creek (Tributary to Santa Clara River Reach 4)****CA WATER BODY IDENTIFICATION NUMBER:** 40342000**POLLUTANT OF CONCERN:** Chloride**APPLICABLE WATER QUALITY OBJECTIVE OR CRITERION:** Numeric; 60 mg/L**APPLICABLE DESIGNATED BENEFICIAL USE:** Agriculture (Historic Basin Plan documents indicate that the objective is based on background conditions.)**DATA SOURCE(S):** United Water Conservation District (UWCD)**QUALITY ASSURANCE/QUALITY CONTROL INFORMATION:** Included as Exhibit B.1 (FGL Laboratories, Contract Laboratory for UWCD)

Figure H.1 and Table H.1 show chloride data for Piru Creek, taken from below the Santa Felicia Dam, from July 2001 through April 2004. Chloride samples are taken on a quarterly basis throughout the year, and are therefore temporally representative of water quality conditions in the reach. Chloride levels in Piru Creek for this time period ranged from 43 mg/L to 77 mg/L, with 8 out of 12 samples, or 67% of the measurements, exceeding the chloride water quality objective for Piru Creek (60 mg/L). These data were obtained from UWCD ([www.unitedwater.org](http://www.unitedwater.org)).

The Districts appreciate the opportunity to provide water quality data and information to the SWRCB, to assist the SWRCB in the 2004 update of the Clean Water Act Section 303(d) List. If you have any questions regarding this submittal, please contact Heather Lamberson, extension 2828, or Sharon Green at extension 2503, at (562) 699-7411.

Very truly yours,

James F. Stahl



Victoria O. Conway  
Head, Monitoring Section  
Technical Services Department

VOC:HL:drs  
Enclosures