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COMPLETE FORM AND FAX BACK TO: Marcia Volpe at (510) 784-1004
by Friday, November 3rd (Please print clearly—all information is required)

Company _____

From: Matt St. John
To: Connor, Valerie
Date: 8/2/01 1:32PM
Subject: Use of data rec'd after May 15?

4 BOXES OF SUBMITTALS
1 SUBMITTAL WAS 4 BOXES

Hello Val:

I have a general question with a specific example. We (Region 1) are considering listing portions of the Russian River for temperature based on data which we have in house, as well as data we received prior to the May 15 data solicitation deadline. We have learned of another temperature data set collected by the Sonoma County Water Agency, which we have not received yet. I believe this data set would help us in making our determination. However, we would be crossing a hazy line if we used this data which we received after the May 15 deadline. However, my argument would be that this is a data set which we specifically sought out from another agency. What are your thoughts on this issue?

Also, another question has come up for us regarding use of data for the 303(d) listing process. Our office has received temperature data in the past, not related to the 303(d) list update, from Dept. of Fish and Game. This data tells an important part of the Russian River temperature story and we are inclined to use it, and therefore make the data publically available, for making a listing recommendation. However, as you may know, DFG is very sensitive about using data that they have collected on private lands in a way that may affect regulations. I do not know all of the specifics, but it is my understanding that in this case they verbally told the land owners that the temperature data they collected on private lands would not be used in a regulatory fashion. So, the question is can we use the data? Obviously we need staff council's thoughts on this, but I thought I'd run the question by you as well.

BOB KLAMT—

Thanks so much,

Matt St. John
Water Resources Control Engineer

TMDL Unit
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(707) 523-0135 Fax
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North Coast Regional Water Quality Control Board
5550 Skylane Blvd. Ste. A
Santa Rosa, CA 95403

CC: Leland, David

From: Matt St. John
To: Beaulaurier, Diane; Wilson, Craig J.
Date: 12/14/01 3:57PM
Subject: Region 1 303d Meeting - January 23, 2002

Hello Diane and Craig:

As I explained to Diane over the phone, our Board has requested a second meeting addressing the 303(d) List. We had a workshop on December 6 in Eureka. Four new Board members were appointed to our Board the week before. At the Dec 6 workshop, staff's 303d update recommendations were presented as an informational item. The new Board members raised concerns about the process for the List update as well as specific concerns about some of staff's recommendations. The result was scheduling a second meeting on the issue, scheduled for January 23, 2002.

This is going to be a Board "Meeting", not a workshop or hearing. The intent of the meeting is to: (1) educate the new Board members about CWA Section 303(d); (2) describe the listing and de-listing criteria used for the update; (3) present the approach to evaluating information and assessing impairment; and (4) describing the rationale leading to the specific List update recommendations. A copy of the draft outline for the meeting is attached. Time will be alloted following staff's presentation for public comment. Then the Board will have the opportunity to direct our EO to draft a letter addressed to the State Board stating their opinion with respect to staff's recommendations.

We would greatly appreciate it if someone from your staff could attend the meeting and provide a 5-10 minute presentation on the State Boards process for the List update. Tom Howard is scheduled to attend as well, to provide comment on the TMDL program. It is our intent to invite Dave Smith to provide comment on EPA's role with respect to the 303d List update. We can surely discuss in greater detail what the content of your presentation would be.

If you have any questions, please feel free to call me. Thank you very much.

Matt St. John
Water Resources Control Engineer

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CC: Leland, David

303d List and TMDL Workshop Outline
North Coast RWQCB
January 23, 2002

I. Clean Water Act NPS regulatory structure [10 min]
- A. Water quality wheel or flow chart:303d>TMDL>Basin Plan>Implementation
- B. NPS State Board guidance
- C. Organization of RB1 office re this progression
- D. Legal issues: Case law - Pronsolino v EPA, Consent Decree and schedule
- E. EPA regs re 303d/TMDL – July 2000 EPA Rules and Regs

II. 303(d) listing process [1 hr 30 min]
- A. RB1 process leading to January 23 Workshop – chronology of events and Board direction [5 min]
- B. Flow chart showing list update process: RB1>SB>EPA [5 min]
  1. Timeline for submittals, drafts, workshops, etc.
- C. Available state and federal listing and de-listing guidance [10 min]
  1. 1998 SWRCB listing/de-listing guidance
  2. EPA's (Dave Smith) letter of May 15, 2001
  3. National Research Council (National Academy of Sciences) evaluation of listing process
  4. EPA. September 1997. Guidelines for preparation of 305b Reports.
  5. EPA. April 2001. Draft Consolidated Assessment and Listing Methodology
- D. Establishment of priority and schedule [5 min]
- E. Evaluation Approach [1 hr]
  1. General: weight of evidence. Hierarchy of application of criteria
     Standard of proof for listing.
  2. Overview of potential conclusions: i.e. list, de-list, watch list
     Discuss the intent and implications of watch list
  3. Sediment
     Review North Coast narrative and numeric sediment objectives, and discharge prohibitions. Include turbidity, suspended sediment, settleable material.
     Explain indicators and numeric targets based on various completed technical TMDLs. Add turbidity as a Basin Plan objective.
     Graphical presentation of targets
     Physical presentation of targets: 37 mm, 69mm particles, water of varying turbidities, bulk samples of sediment of varying characteristics, photos of locales that meet/don't meet targets

4. Temperature

North Coast narrative objective for temperature. Explain analysis of temperature data: MWAT MWMT, max temperature, cum temp plots.

Show other numeric objectives used in other states. Show other proposed thresholds: NMFS, EPA (Region 10, Brungs and Jones), ODEQ, WDE.

Graphical presentation of thresholds: leads to selection of critical life stage and associated temperature thresholds for different species. Acute and chronic. Sullivan et al, Hines and Ambrose, and Welsh et al results

Discussion of Sullivan paper key points, e.g., that results are not geographically specific even though work relied mostly on OR and WA field studies.

Factors that affect stream temperatures, e.g., air temp issue

5. Pathogens

Presentation of numeric objectives

Present public health standards for beach closures

III. 303d List Update Recommendations [1 hr 20 min]

A. Application of Evaluation Approaches to Specific Watersheds

1. Sediment: Jacoby, Greenwood, Redwood, Stemple. Present data vs. thresholds except Stemple [30 min]

2. Temperature: present watershed-specific data vs. thresholds: Russian, Gualala, Big, Ten Mile, Mad, Redwood [45 min]

Analyze listing data using different thresholds: Sullivan, OR, WA, NCWAP, EPA Region 10, NMFS

Discuss how temporal and spatial variability is handled with respect to listing process – include discussion of relationship of water temperature to drainage area.

Historic vs current distribution and population of salmonids.

B. TMDL priorities and schedules: 305b [5 min]

IV. We will offer to present TMDL case studies, and discuss implementation planning, if requested.

From: Matt St. John
To: Beaulaurier, Diane
Date: 8/14/01 1:38PM
Subject: Re: 303(d) Listing Considerations Draft memo

Region 1 has reviewed the Draft Memo on 303(d) Listing Considerations, and has the following comments. We do not agree with Delisting Factors 5 and 6. We believe that delisting should be based on attainment of water quality standards - i.e. water quality objectives are met and beneficial uses supported. If a waterbody is removed from the 303(d) list based on Delisting Factors 5 or 6, that is a TMDL has been developed and approved by U.S. EPA, or there are control measures in place which will result in protection of beneficial uses, then Listing Factor 3 would warrant that this same waterbody be added back to the list. This conflict between the listing and delisting criteria can be resolved by deleting delisting criteria 5 and 6.

Regarding our process for list update, Region 1 will distribute a Public Review Draft of the recommended changes to the 303(d) list in late August. We will send State Board a copy of this Draft report, which will not include the GeoWBS data files. The final Recommended Changes to the 303(d) List staff report, incorporating public review comments and the GeoWBS data files, will be transferred to State Board by the end of October. This staff report will be presented at a Workshop at our December 6 Board meeting in Santa Rosa. Our Board meetings are audio taped, but not videotaped nor transcribed.

Thank you.

Matt St. John
Water Resources Control Engineer

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>>> Diane Beaulaurier 08/07/01 01:48PM >>>
Attached is the Draft Memo on Listing Considerations that Val Connor prepared for review and comment by Regional Board staff. A conference call on this memo had been planned for this week. However, as of last Friday, Val is now busy being the proud mother of twin girls. So instead of the originally planned conference call, I would like you all to send me your comments on this draft via email, unless there are any strong objectiions to handling it this way. If so, let me know. In addition to comments, please let me know the planned date for any Regional Board workshops or meetings regarding your list, so that State Board staff can plan to attend. Finally, please let me know if there normally is someone who transcribes or videotapes these meetings. Please send your comments to me by August 15 or sooner, and give me a call if you have any questions.
Diane

Diane Beaulaurier
Environmental Specialist
State Water Resources Control Board
Division of Water Quality

From: Matt St. John
To: Sharpe, Laura
Date: Wed, Jan 30, 2002 2:25 PM
Subject: Sullivan reference

Laura:
Good talking with you. The Sullivan reference can be downloaded at:
http://www.sei.org/pub.html
The report has many graphs in color, so copying is difficult. I hope you can print it, if not, let me know and I'll copy it.

Thanks for your hard work.

Matt St. John
Water Resources Control Engineer

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From: Matt St. John
To: Beaulaurier, Diane; Wilson, Craig J.
Date: 1/3/02 5:47PM
Subject: Region 1 303d Workshop

Hello Diane and Craig,

The outline for our January 23 Board Workshop on the 303d list is getting clearer. The Notice for the Workshop was sent out yesterday, Jan 2; a copy of the Notice is attached. The latest version of the outline/agenda for the workshop is also attached. Note that we are hoping someone from your shop will participate in items II.C.2 and II.E.2. Please confirm with me that someone from your group will be able to attend and talk on these items. Please feel free to call me with any questions/comments/concerns. Thanks a lot.

Sincerely

Matt St. John
Water Resources Control Engineer

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CC: Leland, David

California Regional Water Quality Control Board

North Coast Region

William R. Massey, Chairman

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
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Internet Address: http://www.swrcb.ca.gov/~rwqcb1/
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403
Phone: 1 (877) 721-9203 (toll free) • Office: (707) 576-2220 • FAX: (707) 523-0135

January 2, 2002

To: Interested Parties

Subject: 2002 303(d) List Update – Board Meeting Notice

File: Water Quality – TMDL – 2002 303(d) Update

Regional Water Quality Control Board, North Coast Region (Regional Water Board) staff have developed final recommendations for the update to the federal Clean Water Act Section 303(d) List of Impaired Water Bodies for the North Coast region. A Regional Water Board Meeting on the Clean Water Act Section 303(d) List Update for 2002 will be held on Wednesday, **January 23, 2002** from 1:30 to 5:00 p.m. at the Regional Water Board office in Santa Rosa. The meeting will cover the 303(d) update process, the relationship of the 303(d) List to TMDLs, guidance used in the listing and de-listing process, the evaluation approach and evaluation criteria used in updating the List, and Regional Water Board staff's recommended changes to the List. Public comment will be accepted at the meeting. Following staff's presentation and public comment, the Regional Water Board may direct the Regional Water Board Executive Officer to prepare a letter of clarification to the State Water Board regarding the November 2001 staff report to the State Water Board that recommended changes to the Section 303(d) List.

Should you have any questions, please contact Matt St. John of my staff at (707) 570-3762 or stjom@rb1.swrcb.ca.gov.

Sincerely,

Susan A. Warner
Executive Officer

MSJ:clh/Jan23workshopnotice

303d List Workshop Outline
North Coast RWQCB
January 23, 2002

I. Clean Water Act NPS regulatory structure [30 min]
- A. Flow chart:303d>TMDL>Basin Plan>Implementation
  1. Intro to 303d – decision tree
- B. TMDL Program – State Board perspective (Tom Howard)
- C. NPS State Board guidance
- D. Legal issues: (Sheryl Freeman)
  1. Legal implications of listing
  2. Case Law -- Pronsolino v EPA
  3. Response to John Selvage questions
  4. Consent Decree and schedule

II. 303(d) listing process [1 hr 30 min]
- A. RB1 process leading to January 23 Workshop – chronology of events and Board direction [5 min]
- B. Available state and federal listing and de-listing guidance [10 min]
  1. "1998 CWA Section 303d Listing Guidelines" - SWRCB
  2. EPA's (Dave Smith's) letter of May 15, 2001
  5. Other EPA 303d guidance documents
- C. List update process: Flow chart with dates: RB1>SB>EPA [20 min]
  1. Timeline for submittals, drafts, workshops, hearings, etc.
  2. State Board process (Diane Beaulourier or Craig J. Wilson)
  3. EPA process and perspective (Dave Smith)
- D. Establishment of current list priority and schedule [5 min]
- E. Evaluation Approach [45 min]
  1. General: weight of evidence. Hierarchy of application of criteria
     Standard of proof for listing.
  2. Overview of potential conclusions: i.e. list, de-list, watch list
     Present summary of de-list recommendations statewide (SWRCB?)
     Discuss the intent and implications of watch list
  3. Sediment listings
     Review North Coast narrative and numeric sediment objectives, and discharge prohibitions. Include turbidity, suspended sediment, settleable material.
     Explain indicators and numeric targets based on various completed technical TMDLs. Add turbidity as a Basin Plan objective.
     Graphical presentation of targets
     Physical presentation of targets: 37 mm, 69mm particles, water of varying turbidities, bulk samples of sediment of varying characteristics, photos of locales that meet/don't meet targets

  4. Temperature

North Coast narrative objective for temperature. Explain analysis of temperature data: MWAT MWMT, max temperature, cum temp plots.
Show other numeric objectives used in other states. Show other proposed thresholds: NMFS, EPA (Region 10, Brungs and Jones), ODEQ, WDE.
Graphical presentation of thresholds: leads to selection of critical life stage and associated temperature thresholds for different species. Acute and chronic. Sullivan et al, Hines and Ambrose, and Welsh et al results
Discussion of Sullivan paper key points, e.g., that results are not geographically specific even though work relied mostly on OR and WA field studies.
Factors that affect stream temperatures, e.g., air temp issue

5. Pathogens
Presentation of numeric objectives
Present public health standards for beach closures

III. 303d List Update Recommendations [1 hr]

A. Application of Evaluation Approaches to Specific Watersheds

1. Sediment: Jacoby, Greenwood, Redwood, Stemple. Present data vs. thresholds except Stemple [20 min]

2. Temperature: present watershed-specific data vs. thresholds: Russian, Gualala, Big, Ten Mile, Mad, Redwood [40 min]
Analyze listing data using different thresholds: Sullivan, OR, WA, NCWAP, EPA Region 10, NMFS
Discuss how temporal and spatial variability is handled with respect to listing process – include discussion of relationship of water temperature to drainage area.
Historic vs current distribution and population of salmonids.

B. TMDL priorities and schedules: 305b [5 min]

DRAFT 2002 303d LISTING SCHEDULE

Date	Milestone	Staff	est. time to complete
Jan-Feb	-Develop Listing approach -Evaluate Regional Board 303d listing recommendations	CJW DB, TS, LS, ?	2 months
Feb-Mar	-Prepare Draft Staff Report/List	DB, TS, LS, ?	2 months
April-May	-Hold 2 workshops-(north/south) -Release Draft Staff Report/List for public review and comment	DWQ	45 days
May-June	-Prepare responses to comments -Prepare for hearing (Sac) -Hold hearing (June) -Report/list revisions as needed	CJW, DB, TS, LS, ?	2 months
July	-First SWRCB meeting to adopt list -Report/list revisions as needed	?	
August	-Second SWRCB meeting (if necessary)	?	
September	-Finalize staff report/list	DB, TS, LS	
October	-Submit report/list to USEPA	DWQ	

CJW = Craig J. Wilson
DB = Diane Beaulaurier
LS = Laura Sharpe
TS = Tim Stevens

From: Matt St. John
To: Sharpe, Laura
Date: Mon, Sep 16, 2002 2:09 PM
Subject: Re: questions

Nancy and I just got off the phone..

For consitancy with past listings, we'll have the pollutant for Redwood Creek and Mattole be "sedimentation/siltation". All of the new sediment listings (i.e. Jacoby Creek and the Monitoring Priorities List ones) should be "sediment".

Ten Mile temperature TMDL start date 2010.

Also, Monitoring Priority List - Klamath River sediment, it should apply to the entire Klamath River watershed.

Thanks for all your hard work, both of you.

Matt

Matt St. John
Water Resources Control Engineer

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stjom@rb1.swrcb.ca.gov

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Santa Rosa, CA 95403

>>> Laura Sharpe 09/16/02 11:37AM >>>
Good Morning Matt,
Couple of questions from Nancy... Did you want to leave Redwood Creek and Mattole River to remain listed as Sedimentation/siltation? For those listings that you made the fact sheets for it lists the pollutant as sediment.

Also she needs the Start Date of the Ten Mile River TMDL... I got the End date from your staff report as... 2012.

I will be out of the office for the day in about 2 seconds... If you get a chance you can give Nancy a call with your responses... 916-341-5546.

Thanks!
Respectfully,
Laura Sharpe

CC: Richard, Nancy

From: Matt St. John
To: Richard, Nancy
Date: Wed, Sep 18, 2002 2:20 PM
Subject: Re: East for Trinity

Hi Nancy:

I have use of my computer and phone again, yeah!

All three maps look good. On the East Fork Trinity - mercury one, it looks right, but I just want to confirm that it should cover Trinity Lake, Trinity River above Trinity Lake, and the East Fork Trinity River and tributaries. Ok?

Thanks, Matt

>>> Nancy Richard 09/16/02 03:26PM >>>
Hi Matt,

See the three maps in the attached word document.

For the Monitoring Priority List, I need to identify:

East For Trinity River for mercury
Schooner Gulch for sediment
Mallo Pass Creek for sediment

Thanks,

Nancy

>>> Matt St. John 09/16/02 02:09PM >>>
Nancy and I just got off the phone..

For consitancy with past listings, we'll have the pollutant for Redwood Creek and Mattole be "sedimentation/siltation". All of the new sediment listings (i.e. Jacoby Creek and the Monitoring Priorities List ones) should be "sediment".

Ten Mile temperature TMDL start date 2010.

Also, Monitoring Priority List - Klamath River sediment, it should apply to the entire Klamath River watershed.

Thanks for all your hard work, both of you.

Matt

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>>> Laura Sharpe 09/16/02 11:37AM >>>
Good Morning Matt,
Couple of questions from Nancy... Did you want to leave Redwood Creek and Mattole River to remain listed as Sedimentation/siltation? For those listings that you made the fact sheets for it lists the pollutant as sediment.

Also she needs the Start Date of the Ten Mile River TMDL... I got the End date from your staff report as... 2012.

I will be out of the office for the day in about 2 seconds... If you get a chance you can give Nancy a call with your responses... 916-341-5546.

Thanks!
Respectfully,
Laura Sharpe

CC: Sharpe, Laura

From: Matt St. John
To: Richard, Nancy; Sharpe, Laura
Date: 10/23/02 12:04PM
Subject: Region 1 303d issues

Hi,

Laura, thanks for your message this morning. We'll talk later today after your training or tomorrow. Here are the issues:

1. On the draft 2002 303(d) list the Laguna de Santa Rosa is not listed for Nutrients and low DO. The Fact Sheets (as well as the Final State Board Staff Report) recommend that the Laguna be listed for Nutrients and Low DO. I suspect it is just an error in Geo WBS that Nutrients and Low DO are not listed on the actual list.

2. On the 303(d) List, the Laguna de Santa Rosa and Santa Rosa Creek are listed for Sediment and Temperature. The Russian River is currently listed for Sediment, and is being recommended for Temperature. Our intent is that when a waterbody is listed, the tributary rule applies, and the entire watershed for that basin is listed for the pollutant and the TMDL analysis will be for the entire watershed. Based on this rationale, the Laguna de Santa Rosa and Santa Rosa Creek are listed for Sediment and Temperature. However, it has not been our practice to identify each tributary within a listed waterbody for listing on the 303(d) List.

I think we can deal with this "tributary rule" issue in two ways. As one alternative, we could have a statement at the beginning of the 303(d) list stating: "Unless otherwise specified, for each waterbody segment included on the 303(d) List, it is assumed that the beneficial uses are impaired throughout the portion of the watershed that is tributary to the listed waterbody segment, and the listing applies to those tributaries."

As another alternative, for those waterbodies that are on the 303(d) list for a specific pollutant (i.e. the Laguna for Nutrients and DO), we could make a statement that because the waterbody lies within the watershed of a waterbody listed for another pollutant, this waterbody is also listed for the other pollutant. The language for the Laguna de Santa Rosa could read "The Laguna de Santa Rosa is in the Russian River watershed, which is on the 303(d) List for Sediment and Temperature. The Russian River listing for Sediment and Temperature also applies to the Laguna de Santa Rosa."

There are only a few listed waterbodies that are tributary to another waterbody that is listed for another pollutant. These include: the Scott River for Nutrients (tributary to the Klamath which is listed for Nutrients), the Shasta River for Nutrients (tributary to the Klamath which is listed for Nutrients), Santa Rosa Creek and Laguna de Santa Rosa for Sediment and Temperature (tributaries to the Russian River which is listed for Sediment and Temperature).

3. On the 303(d) list, proposed TMDL completion dates are not shown for the majority of the waterbodies.

4. On the TMDL Completed List 2002, Stemple Creek can be included (pollutant/stressor is Nutrients and Sediment). On December 11, 1997 the North Coast Regional Water Board adopted Resolution No. 97-108 amending our Basin Plan to include the Stemple Creek TMDL and Attainment Strategy. It is our understanding that this action constitutes completion of the TMDL.

5. On the Russian River Temperature Fact Sheet, under RWQCB Recommendation it reads "Watch List: The RWQCB feels there is sufficient information and recommends to list the water body." It is in error for it to read "Watch List".

6. On the Santa Rosa Creek Diazinon Fact Sheet, under "Data used to assess water quality" it reads "Brush Creeks in November of 1999..." I believe "Brush Creeks" is a typographical error and should be deleted.

7. On the Water Bodies Proposed for the Monitoring List in Region 1, under Russian River Diazinon, it reads "Brush Creeks in November of 1999..." I believe "Brush Creeks" is a typographical error and should be deleted.

8. In the Response to Comments report, the letter from Region 1 EO, Susan Warner, dated January 31, 2002 is not summarized. Letter #1.6, dated May 13, 2002, is accurately summarized. Due to it's significant content, the letter dated January 31, 2002 should be summarized.

Thank you for bearing with me on these comments. I am confident we can get them resolved.

Matt St. John
Water Resources Control Engineer

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Santa Rosa, CA 95403

CC: Wilson, Craig J.

From: Matt St. John
To: Sharpe, Laura; Wilson, Craig J.
Date: Thu, Oct 31, 2002 4:02 PM
Subject: TMDL Completed List

Hello. Based on the definition of a completed TMDL presented in your final 303d staff report (i.e., technical TMDL, imp plan, Regional Board adoption, and approval by State Board, AOL, and USEPA) Stemple Creek as well as Laguna de Santa Rosa do not qualify as completed TMDLs. Let me know if you need more information.

Thanks, Matt

CC: Leland, David

From: Matt St. John
To: Sharpe, Laura
Date: Wed, Nov 20, 2002 1:31 PM
Subject: Lake Mendocino and Sonoma - mercury

Hi Laura:

I just got your message. I have a meeting in a few minutes, but will call you at around 2:30. Attached is a letter I sent to Craig in July providing responses to comments on the State Board draft 303d report. This includes comments on Lake Sonoma and Lake Mendocino. I call in about an hour.

Thanks, Matt

From: Matt St. John
To: Sharpe, Laura
Date: 11/26/02 11:32AM
Subject: Fwd: TSM Data

Hi Laura:

Here is the (preliminary) fish filet mercury data for Lakes Sonoma and Lake Mendocino from September 2001. There were seven of twelve samples that exceed the US EPA Tissue Residue Criterion for mercury in Lake Sonoma, and six of ten samples that excceeded the criterion in Lake Mendocino. I am not sure when Del Rasmussen will make this preliminary data final. However, the data corroborates the previously available data. Call me if you wish to discuss.

Thanks, Matt

CC: Leland, David

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 2001 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
114.24.15	Lake Sonoma/Dry Creek Arm	LMB	F	09/25/01	0.030	<0.002	NA	NA	NA	0.88	0.006	0.30	NA	NA
114.24.15	Lake Sonoma/Dry Creek Arm	RSF	F	09/25/01	0.090	<0.002	NA	NA	NA	0.14	<0.002	0.42	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	0.030	<0.002	NA	NA	NA	0.87	<0.002	0.20	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	0.050	<0.002	NA	NA	NA	1.24	<0.002	0.24	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	0.050	<0.002	NA	NA	NA	1.22	<0.002	0.22	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	NA	NA	NA	NA	NA	1.56	NA	NA	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	NA	NA	NA	NA	NA	1.59	NA	NA	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	BCR	F	09/25/01	0.100	<0.002	NA	NA	NA	0.26	<0.002	0.19	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	BCR	F	09/25/01	0.130	<0.002	NA	NA	NA	0.24	<0.002	0.25	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	RSF	F	09/25/01	0.070	<0.002	NA	NA	NA	0.16	<0.002	0.29	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	RSF	F	09/25/01	0.130	<0.002	NA	NA	NA	0.23	<0.002	0.48	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	RSF	F	09/25/01	NA	NA	NA	NA	NA	0.60	NA	NA	NA	NA
114.32.00	Lake Mendocino	CCF	F	09/27/01	NA	NA	NA	NA	NA	0.63	NA	NA	NA	NA
114.32.00	Lake Mendocino	CCF	F	09/27/01	NA	NA	NA	NA	NA	0.09	NA	NA	NA	NA
114.32.00	Lake Mendocino	CCF	F	09/27/01	NA	NA	NA	NA	NA	0.13	NA	NA	NA	NA
114.32.00	Lake Mendocino	CCF	F	09/27/01	NA	NA	NA	NA	NA	0.40	NA	NA	NA	NA
114.32.00	Lake Mendocino	LMB	F	09/27/01	0.060	<0.002	NA	NA	NA	0.47	<0.002	0.27	NA	NA
114.32.00	Lake Mendocino	LMB	F	09/27/01	0.030	<0.002	NA	NA	NA	0.70	<0.002	0.23	NA	NA
114.32.00	Lake Mendocino	LMB	F	09/27/01	<0.025	<0.002	NA	NA	NA	0.81	<0.002	0.20	NA	NA
114.32.00	Lake Mendocino	RBT	F	09/27/01	NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA
114.32.00	Lake Mendocino	RBT	F	09/27/01	NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA
114.32.00	Lake Mendocino	SB	F	09/27/01	0.090	<0.002	NA	NA	NA	0.75	<0.002	0.31	NA	NA
201.12.14	Soulajule	CCF	F	09/20/01	NA	NA	NA	NA	NA	0.23	NA	NA	NA	NA
201.12.14	Soulajule	CCF	F	09/20/01	NA	NA	NA	NA	NA	0.29	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.67	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.75	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.88	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.54	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	1.45	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	1.87	NA	NA	NA	NA

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Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
201.13.06	Nicasio Reservoir	BG	F	09/19/01	NA	NA	NA	NA	NA	0.21	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	BG	F	09/19/01	NA	NA	NA	NA	NA	0.16	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	BG	F	09/19/01	NA	NA	NA	NA	NA	0.13	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	LMB	F	09/19/01	NA	NA	NA	NA	NA	0.17	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	LMB	F	09/19/01	NA	NA	NA	NA	NA	0.37	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	LMB	F	09/19/01	NA	NA	NA	NA	NA	1.29	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	CP	F	09/19/01	NA	NA	NA	NA	NA	0.21	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	CP	F	09/19/01	NA	NA	NA	NA	NA	0.29	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	CP	F	09/19/01	NA	NA	NA	NA	NA	0.25	NA	NA	NA	NA
201.13.18	Bon Tempe Reservoir	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.90	NA	NA	NA	NA
201.13.18	Bon Tempe Reservoir	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.54	NA	NA	NA	NA
205.30.30	Anderson Reservoir	BCR	F	09/13/01	NA	NA	NA	NA	NA	0.09	NA	NA	NA	NA
205.30.30	Anderson Reservoir	BCR	F	09/13/01	NA	NA	NA	NA	NA	0.25	NA	NA	NA	NA
205.30.30	Anderson Reservoir	BCR	F	09/13/01	NA	NA	NA	NA	NA	0.38	NA	NA	NA	NA
205.30.30	Anderson Reservoir	LMB	F	09/13/01	NA	NA	NA	NA	NA	0.68	NA	NA	NA	NA
205.30.30	Anderson Reservoir	LMB	F	09/13/01	NA	NA	NA	NA	NA	1.17	NA	NA	NA	NA
205.30.30	Anderson Reservoir	LMB	F	09/13/01	NA	NA	NA	NA	NA	1.46	NA	NA	NA	NA
205.30.30	Anderson Reservoir	CP	F	09/13/01	NA	NA	NA	NA	NA	0.40	NA	NA	NA	NA
205.30.30	Anderson Reservoir	CP	F	09/13/01	NA	NA	NA	NA	NA	0.46	NA	NA	NA	NA
205.30.30	Anderson Reservoir	CP	F	09/13/01	NA	NA	NA	NA	NA	0.43	NA	NA	NA	NA
307.00.01	Carmel Lagoon	STB	W	08/23/01	0.290	0.058	0.14	3.88	0.018	0.09	<0.002	0.67	0.029	37.9
307.00.01	Carmel Lagoon	STB	W	08/23/01	0.280	0.059	0.11	3.66	0.017	0.10	<0.002	0.65	0.029	41.0
310.13.00	San Simeon Creek Lagoon	STB	W	08/22/01	0.210	0.018	0.17	2.94	0.010	0.22	<0.002	0.37	0.003	29.4
310.14.09	Santa Rosa Cr/Soto Ranch	STB	W	08/22/01	0.160	0.018	0.27	1.63	0.013	0.09	0.175	1.73	0.005	35.0
310.17.01	Whale Rock Res	SKR	F	08/21/01	0.190	<0.002	NA	NA	NA	0.10	<0.002	1.95	NA	NA
310.22.01	Chorro Cr/Lower	SPM	W	08/22/01	0.060	0.012	0.14	1.65	0.015	0.04	<0.002	0.83	0.002	27.0
310.24.00	San Luis Obispo Creek Lagoon	SSP	W	08/09/01	0.530	0.032	0.69	0.72	0.028	<0.003	0.195	0.40	0.006	17.0
310.26.01	Pismo Creek	PCP	W	08/09/01	0.210	0.018	0.24	1.22	0.026	0.05	0.026	2.28	<0.002	14.2
310.31.00	Arroyo Grande Creek Lagoon	LMB	W	08/08/01	0.080	0.021	0.13	0.49	0.005	0.04	<0.002	1.10	<0.002	19.9
310.31.10	Lake Lopez	LMB	F	08/21/01	0.240	<0.002	NA	NA	NA	0.06	<0.002	1.30	NA	NA

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Preliminary Summary of 2001 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

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310.31.10	Lake Lopez	LMB	L	08/21/01	NA	NA	0.15	4.98	<0.002	NA	NA	NA	<0.002	20.7
310.32.01	Oso Flaco Lake	HCH	F	08/09/01	0.110	<0.002	NA	NA	NA	0.04	0.020	0.61	NA	NA
402.10.05	Ventura R/d/s OVSD Discharge	AC	W	07/18/01	0.200	0.045	0.19	1.65	0.007	<0.003	<0.002	2.82	0.007	31.3
402.10.06	Ventura R/u/s OVSD Discharge	AC	W	07/18/01	0.200	0.157	0.21	1.47	0.028	<0.003	<0.002	2.84	0.006	32.7
403.11.00	Santa Clara River Estuary	AC	W	07/18/01	0.170	0.075	0.24	2.86	<0.002	0.04	<0.002	1.65	0.013	35.8
403.12.06	Calleguas Creek	AC	W	07/19/01	0.180	0.035	1.09	1.36	0.144	<0.003	0.515	0.97	0.018	31.9
403.12.06	Calleguas Creek	BLB	F	07/19/01	<0.025	0.002	NA	NA	NA	0.03	0.011	0.26	NA	NA
403.12.06	Calleguas Creek	BLB	L	07/19/01	NA	NA	0.29	13.80	0.018	NA	NA	NA	0.165	23.8
403.21.09	Santa Paula Cr/d/s Stekel Park	AC	W	07/17/01	0.090	0.301	0.27	1.94	0.013	0.05	<0.002	2.79	0.004	43.6
403.31.08	Sespe Overflow Channel	STB	W	07/17/01	0.220	0.102	0.19	1.34	0.025	<0.003	<0.002	2.58	0.004	40.5
403.41.03	Piru Creek	STB	W	07/17/01	0.210	0.099	0.31	1.67	0.025	0.04	<0.002	1.14	0.005	33.8
403.64.03	Arroyo Conejo/d/s Forks	GSF	F	07/19/01	0.060	<0.002	NA	NA	NA	0.05	0.004	0.95	NA	NA
403.64.03	Arroyo Conejo/d/s Forks	GSF	L	07/19/01	NA	NA	0.22	2.54	0.020	NA	NA	NA	<0.002	17.6
403.64.03	Arroyo Conejo/d/s Forks	BLB	F	07/19/01	<0.025	<0.002	NA	NA	NA	0.03	0.002	0.30	NA	NA
403.64.03	Arroyo Conejo/d/s Forks	BLB	L	07/19/01	NA	NA	0.31	21.40	0.013	NA	NA	NA	0.476	27.2
403.67.04	Arroyo Simi	AC	W	07/19/01	0.090	0.018	0.43	2.59	0.013	0.05	<0.002	2.33	0.102	38.9
405.12.09	Dominguez Channel/Avalon Blvd	GAM	W	08/07/01	0.140	0.011	0.34	1.65	0.408	<0.003	0.133	0.36	0.011	35.0
510.00.20	Prospect Sl/Liberty Island	LMB	F	11/18/01	NA	NA	NA	NA	NA	0.69	NA	NA	NA	NA
510.00.30	Sacramento R/Hood	SMB	F	11/15/01	NA	NA	NA	NA	NA	0.95	NA	NA	NA	NA
515.40.00	Feather R/u/s Yuba River	LMB	F	11/27/01	NA	NA	NA	NA	NA	0.18	NA	NA	NA	NA
545.20.90	San Joaquin R/HWY 99	LMB	F	11/13/01	0.030	<0.002	NA	NA	NA	0.06	0.007	0.13	NA	NA
545.20.90	San Joaquin R/HWY 99	LMB	L	11/13/01	NA	NA	0.15	1.89	0.002	NA	NA	NA	<0.002	17.5
551.20.00	Mendota Pool	LMB	F	11/07/01	NA	NA	NA	NA	NA	0.25	NA	0.80	NA	NA
551.90.10	Kings R/Jackson Ave	LMB	F	11/06/01	0.040	<0.002	NA	NA	NA	0.16	<0.002	0.15	NA	NA
551.90.10	Kings R/Jackson Ave	LMB	L	11/06/01	NA	NA	0.14	31.80	0.004	NA	NA	NA	0.122	28.4
552.33.13	Wishon Res/N.F./Kings River	RBT	F	08/29/01	0.260	<0.002	NA	NA	NA	<0.003	0.004	0.27	NA	NA
552.33.13	Wishon Res/N.F./Kings River	RBT	L	08/29/01	NA	NA	0.21	67.20	<0.002	NA	NA	NA	0.012	34.6
552.33.17	Courtright Res/Dusy Cr	RBT	F	08/29/01	0.260	<0.002	NA	NA	NA	<0.003	0.013	0.27	NA	NA
552.33.17	Courtright Res/Dusy Cr	RBT	L	08/29/01	NA	NA	0.19	70.60	<0.002	NA	NA	NA	0.020	27.1
553.44.01	Lake Kaweah	LMB	F	11/06/01	0.170	<0.002	NA	NA	NA	0.52	0.025	0.19	NA	NA

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553.44.01	Lake Kaweah	LMB	L	11/06/01	NA	NA	0.12	6.36	0.018	NA	NA	NA	0.013	20.2
601.00.07	Rush Creek	BN	F	10/08/01	0.130	<0.002	NA	NA	NA	0.04	<0.002	1.14	NA	NA
601.00.07	Rush Creek	BN	L	10/08/01	NA	NA	0.16	162.00	0.008	NA	NA	NA	1.970	32.3
601.00.92	June Lake	RBT	F	10/09/01	0.840	<0.002	NA	NA	NA	0.06	<0.002	0.58	NA	NA
601.00.92	June Lake	RBT	L	10/09/01	NA	NA	0.12	32.50	0.004	NA	NA	NA	0.045	24.4
601.00.92	June Lake	SKR	F	10/09/01	0.170	<0.002	NA	NA	NA	0.09	<0.002	0.78	NA	NA
603.10.06	Crowley Lake	RBT	F	10/10/01	0.140	<0.002	NA	NA	NA	0.41	<0.002	0.49	NA	NA
603.10.06	Crowley Lake	RBT	L	10/10/01	NA	NA	0.20	69.70	<0.002	NA	NA	NA	0.766	44.5
603.20.42	Horton Creek	BN	F	10/09/01	0.120	<0.002	NA	NA	NA	0.06	<0.002	0.62	NA	NA
603.20.42	Horton Creek	BN	L	10/09/01	NA	NA	0.32	111.00	<0.002	NA	NA	NA	1.560	28.5
603.20.43	Pine Cr/Bishop	BN	F	10/09/01	0.060	0.007	NA	NA	NA	<0.003	<0.002	0.56	NA	NA
603.20.43	Pine Cr/Bishop	BN	L	10/09/01	NA	NA	0.19	41.60	<0.002	NA	NA	NA	0.257	31.0
628.20.02	Silverwood Lake	LMB	F	10/24/01	0.290	<0.002	NA	NA	NA	0.24	<0.002	0.67	NA	NA
628.20.02	Silverwood Lake	LMB	L	10/24/01	NA	NA	0.11	11.50	<0.002	NA	NA	NA	<0.002	23.6
628.20.29	Deep Cr/u/s Mojave River	GSF	F	10/24/01	0.070	<0.002	NA	NA	NA	0.26	0.081	0.16	NA	NA
628.20.29	Deep Cr/u/s Mojave River	GSF	L	10/24/01	NA	NA	0.17	1.90	<0.002	NA	NA	NA	<0.002	16.0
628.20.41	Lake Gregory	BLB	F	10/23/01	0.100	<0.002	NA	NA	NA	0.03	<0.002	0.40	NA	NA
628.20.41	Lake Gregory	BLB	L	10/23/01	NA	NA	0.16	5.95	0.029	NA	NA	NA	<0.002	17.5
632.10.14	Heenan Lake	LCT	F	11/05/01	<0.025	<0.002	NA	NA	NA	0.04	<0.002	0.11	NA	NA
632.10.14	Heenan Lake	LCT	L	11/05/01	NA	NA	0.13	63.90	<0.002	NA	NA	NA	0.189	19.0
632.10.15	Silver Creek	RBT	F	10/04/01	0.060	<0.002	NA	NA	NA	0.05	<0.002	0.23	NA	NA
632.10.15	Silver Creek	RBT	L	10/04/01	NA	NA	0.23	23.50	<0.002	NA	NA	NA	0.206	26.4
632.10.33	Wolf Creek	BN	F	10/04/01	<0.025	<0.002	NA	NA	NA	0.10	<0.002	0.03	NA	NA
632.10.33	Wolf Creek	BN	L	10/04/01	NA	NA	0.18	57.10	<0.002	NA	NA	NA	0.292	19.9
634.10.95	Taylor Creek	BN	F	10/17/01	0.120	<0.002	NA	NA	NA	0.04	<0.002	0.56	NA	NA
634.10.95	Taylor Creek	BN	L	10/17/01	NA	NA	0.19	101.00	<0.002	NA	NA	NA	0.203	27.6
634.20.01	Ward Creek	RBT	F	10/17/01	0.100	<0.002	NA	NA	NA	0.05	<0.002	0.45	NA	NA
634.20.01	Ward Creek	RBT	L	10/17/01	NA	NA	0.19	4.14	<0.002	NA	NA	NA	0.024	21.8
637.20.25	Susan R/d/s Piute Creek	BN	F	10/15/01	<0.025	<0.002	NA	NA	NA	0.19	<0.002	0.02	NA	NA
637.20.25	Susan R/d/s Piute Creek	BN	L	10/15/01	NA	NA	0.14	38.70	<0.002	NA	NA	NA	0.103	22.6

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637.20.27	Piute Creek	BN	F	10/15/01	<0.025	0.002	NA	NA	NA	0.10	<0.002	0.10	NA	NA
637.20.27	Piute Creek	BN	L	10/15/01	NA	NA	0.190	132.00	<0.002	NA	NA	NA	0.525	30.0
637.32.09	Eagle Lake	ELT	F	11/08/01	<0.025	<0.002	NA	NA	NA	0.07	<0.002	0.10	NA	NA
637.32.09	Eagle Lake	ELT	L	11/08/01	NA	NA	0.140	60.80	<0.002	NA	NA	NA	0.201	29.6
715.40.08	Palo Verde Outfall Drain	LMB	F	11/23/01	0.070	<0.002	NA	NA	NA	0.03	<0.002	0.51	NA	NA
715.40.08	Palo Verde Outfall Drain	LMB	L	11/23/01	NA	NA	0.150	3.06	0.005	NA	NA	NA	0.002	17.4
715.50.90	Colorado R/u/s Imperial Dam	LMB	F	11/22/01	0.060	<0.002	NA	NA	NA	0.04	<0.002	2.14	NA	NA
715.50.90	Colorado R/u/s Imperial Dam	LMB	L	11/22/01	NA	NA	0.120	6.08	0.009	NA	NA	NA	<0.002	20.1
719.47.00	Coachella Valley Stormwater Ch	PRS	W	11/19/01	0.090	0.005	0.220	0.74	0.025	0.07	<0.002	0.99	<0.002	57.6
723.10.02	New R/Westmorland	CCF	F	11/21/01	0.040	<0.002	NA	NA	NA	0.11	<0.002	0.50	NA	NA
723.10.02	New R/Westmorland	CCF	L	11/21/02	NA	NA	0.110	1.87	0.114	NA	NA	NA	<0.002	18.2
723.10.30	Central Drain	MOL	W	11/21/01	0.540	0.033	1.550	5.68	0.700	<0.003	0.648	1.43	0.088	16.1
723.10.32	Barbara Worth Drain	MOL	W	11/19/01	0.440	0.068	1.590	10.80	0.623	<0.003	0.653	1.26	0.063	15.0
723.10.38	Rice Drain	GAM	W	11/21/01	0.300	0.008	0.260	1.56	0.092	0.05	<0.002	2.92	0.033	37.1
723.10.47	Alamo R/Inter Boundary	MOL	W	11/19/01	0.510	0.012	1.230	3.74	0.620	<0.003	0.511	1.84	0.035	22.5
723.10.48	Greeson Drain	MOL	W	11/20/01	0.380	0.012	0.840	4.39	0.471	<0.003	0.236	1.36	0.055	18.2
723.10.91	Fig Drain	MOL	W	11/20/01	0.440	0.036	1.800	4.96	0.622	<0.003	0.784	0.87	0.041	16.2
801.11.05	Delhi Channel	FHM	W	07/12/01	0.270	0.015	0.230	2.18	0.178	0.02	0.023	2.50	0.009	33.5
801.11.07	San Diego Cr/Michelson Dr	PRS	W	07/12/01	0.230	0.049	0.250	1.90	0.015	0.03	<0.002	2.57	0.008	42.2
801.11.09	San Diego Cr/Barranca Pkwy	FHM	W	07/12/01	0.540	0.044	0.400	1.00	0.086	<0.003	0.056	2.13	0.010	28.8
801.11.09	San Diego Cr/Barranca Pkwy	FHM	W	07/12/01	0.600	0.050	0.510	1.12	0.108	<0.003	0.059	2.28	0.012	34.1
801.11.88	Upper Newport Bay/Ecolog Reserve	RSR	F	08/07/01	3.190	0.005	NA	NA	NA	0.09	0.083	0.81	NA	NA
801.11.88	Upper Newport Bay/Ecolog Reserve	RSR	L	08/07/01	NA	NA	0.690	4.15	0.006	NA	NA	NA	0.023	10.8
801.11.96	Peters Canyon Channel	FHM	W	07/12/01	0.140	0.017	0.290	1.95	0.055	0.05	<0.002	1.37	0.002	43.0
801.71.07	Big Bear Lk/Dam	LMB	F	07/10/01	0.080	<0.002	NA	NA	NA	0.60	0.028	0.12	NA	NA
801.71.07	Big Bear Lk/Dam	LMB	L	07/10/01	NA	NA	0.440	10.70	<0.002	NA	NA	NA	0.004	20.7
801.71.10	Big Bear Lake	LMB	F	07/10/01	0.050	<0.002	NA	NA	NA	0.09	0.012	0.11	NA	NA
801.71.10	Big Bear Lake	LMB	L	07/10/01	NA	NA	0.270	3.02	<0.002	NA	NA	NA	<0.002	26.1
801.71.12	Big Bear Lk/Rathbone Creek	CP	F	07/10/01	0.100	<0.002	NA	NA	NA	0.15	0.008	0.15	NA	NA
802.31.00	Lake Elsinore	CP	F	07/11/01	0.170	<0.002	NA	NA	NA	0.04	0.005	0.22	NA	NA

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Table 2.

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 2001 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
904.10.06	Loma Alta Cr/College Blvd	PROI	F	06/21/01	0.310	0.005	0.190	6.94	0.005	0.03	0.034	0.28	0.033	13.7
904.51.03	San Marcos Cr	LMB	F	06/21/01	<0.025	<0.002	NA	NA	NA	0.46	0.058	0.56	NA	NA
904.51.03	San Marcos Cr	LMB	L	06/21/01	NA	NA	0.200	5.18	0.009	NA	NA	NA	0.006	19.7
904.61.02	Escondido Cr	CP	W	06/20/01	0.230	0.013	0.220	0.82	0.043	<0.003	<0.002	0.61	0.008	36.6
904.62.04	Escondido Cr/Country Club Dr	PROI	F	06/20/01	0.190	0.007	0.280	9.47	0.158	<0.003	0.145	0.39	0.029	14.9
906.10.01	*Penasquitos Lagoon*	STG	W	06/20/01	0.500	0.022	0.280	1.35	0.034	<0.003	<0.002	0.57	0.006	13.3
906.40.01	Rose Cr/d/s Mission Bay Dr	GAM	W	06/19/01	0.210	0.005	0.200	2.52	0.098	0.04	<0.002	0.42	0.018	35.6
906.40.04	San Clemente Canyon Cr/Regents	GAM	W	06/19/01	0.230	0.006	0.220	1.71	0.030	0.02	<0.002	0.32	0.014	30.0
906.50.00	Tecolote Creek Estuary	CKF	W	06/19/01	0.960	<0.002	0.330	2.30	0.182	<0.003	<0.002	0.82	0.018	35.3

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Table 2.

TABLE 2

Toxic Substances Monitoring Program
2001 Species Code List for Trace Elements

Freshwater Fish *

Species Code	Common Name	Species Name	Family Name
AC	Arroyo Chub	*Gila orcutti*	Cyprinidae
BCR	Black Crappie	*Pomoxis nigromaculatus*	Centrarchidae
BG	Bluegill	*Lepomis macrochirus*	Centrarchidae
BLB	Black Bullhead	*Ameiurus melas*	Ictaluridae
BN	Brown Trout	*Salmo trutta*	Salmonidae
CCF	Channel Catfish	*Ictalurus punctatus*	Ictaluridae
CP	Carp	*Cyprinus carpio*	Cyprinidae
ELT	Eagle Lake Trout	*Oncorhynchus mykiss aquilarum*	Salmonidae
FHM	Fathead Minnow	*Pimephales promelas*	Cyprinidae
HCH	Hitch	*Lavinia exilicauda*	Cyprinidae
GAM	Mosquitofish	*Gambusia affinis*	Poeciliidae
GSF	Green Sunfish	*Lepomis cyanellus*	Centrarchidae
LCT	Lahontan Cutthroat Trout	*Oncorhynchus clarki henshawi*	Salmonidae
LMB	Largemouth Bass	*Micropterus salmoides*	Centrarchidae
MOL	Sailfin Molly	*Poecilia latipinna*	Poeciliidae
PCP	Prickly Sculpin	*Cottus asper*	Cottidae
PRS	Red Shiner	*Cyprinella lutrensis*	Cyprinidae
RBT	Rainbow Trout	*Oncorhynchus mykiss*	Salmonidae
RSF	Redear Sunfish	*Lepomis microlophus*	Centrarchidae
SB	Striped Bass	*Morone saxatilis*	Percichthyidae
SKR	Sucker	*Catostomus sp.*	Catostomidae
SMB	Smallmouth Bass	*Micropterus dolomieu*	Centrarchidae
SPM	Sacramento Pike Minnow	*Ptychocheilus grandis*	Cyprinidae
SSP	Shiner Perch	*Cymatogaster aggregata*	Embiotocidae
STB	Threespine Stickleback	*Gasterosteus aculeatus*	Gasterosteidae

Marine Fish *

Species Code	Common Name	Species Name	Family Name
CKF	California Killifish	*Fundulus parvipinnis*	Cyprindontidae
RSR	Round Stingray	*Urolophus halleri*	Urolophidae
STG	Pacific Staghorn Sculpin	*Leptocottus armatus*	Cottidae

Non-Fish

Species Code	Common Name	Species Name	Family Name
PROI	Red Swamp Crayfish	*Procambarus clarki*	Astacidae

* Common and scientific fish names were obtained from Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1991. Common and Scientific Names of Fishes from the United States and Canada. American Fisheries Society Special Publication 20, Bethesda, Maryland.

Summary of 1997 - 2000 State Mussel Watch Program TCM* Data for North Coast Region

* TCM = Transported California Mussel

Humboldt Bay sites - Dieldrin

Date	Dieldrin	MTRL	NAS-Shellfish[1]	FDA Action[2]	EDL-85	EDL-95	OEHHA[3]	NAS-Wildlife[1]
04/97	0.8 ppb	0.7 ppb	---	300 ppb	5.7	18.2	2.0 ppb	100 ppb
04/97	0.7							
03/00	0.9							
03/00	0.5							
03/00	0.7							

Mad River Slough sites - Dieldrin

Date	Dieldrin
03/00	0.7

Humboldt Bay sites - Total PCBs

Date	Total PCBs	MTRL	NAS-Shellfish	FDA Action	EDL-85	EDL-95	OEHHA	NAS-Wildlife
04/97	<5.3	5.3 ppb	500 ppb	2,000 ppb	171.3	420	20 ppb	500 ppb
04/97	5.5							
03/00	14.3							
03/00	45.0							
03/00	6.5							

Mad River Slough sites - Total PCBs

Date	Total PCBs
03/00	18.6

[1] NAS-National Academy of Engineering. 1973. Water Quality Criteria, 1972. USEPA, Ecological Research Series. EPA-R3-033.

[2] FDA Action Level for Freshwater and Marine Shellfish. US FDA. 1984. Shellfish Sanitation Interpretation: Action Levels for Chemical and Poisonous Substances, June 21, 1984. USFDA, Shellfish Sanitation Branch, Washington, D.C.

[3] Brodberg, B. and G. Pollock, 1999. Prevalence of selected target chemical contaminants in sport fish from two California Lakes: public health designed screening study, CalEPA, OEHHA, EPA Assistance Agreement No. CX 825856-01-0.

Summary of 1996 - 1997* State Mussel Watch Program Resident Organism Data for North Coast Region
* 2000 data for Humboldt Bay only included Transported California Mussels

Site	Date	Organism	Dieldrin	Total PCBs
AB/Jolly Giant Slough	04/96	PAC	0.8	
HB - J St	04/96	RBM		9.0
HB - H St	04/96	GLY		84.8
HB - H St	04/96	PAC		63.3
HB - H St	04/96	RBM-S		73.0

PAC = Shore Crab
RBM = Resident California Mussel
GLY = Sand Worm

From: Peter Otis
To: St. John, Matt
Date: Tue, Nov 26, 2002 9:06 AM
Subject: TSM Data

Hi Matt - Here is the 2001 TSM data for Lakes Sonoma and Mendocino...Peter

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 2001 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
114.24.15	Lake Sonoma/Dry Creek Arm	LMB	F	09/25/01	0.030	<0.002	NA	NA	NA	0.88	0.006	0.30	NA	NA
114.24.15	Lake Sonoma/Dry Creek Arm	RSF	F	09/25/01	0.090	<0.002	NA	NA	NA	0.14	<0.002	0.42	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	0.030	<0.002	NA	NA	NA	0.87	<0.002	0.20	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	0.050	<0.002	NA	NA	NA	1.24	<0.002	0.24	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	0.050	<0.002	NA	NA	NA	1.22	<0.002	0.22	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	NA	NA	NA	NA	NA	1.56	NA	NA	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	LMB	F	09/25/01	NA	NA	NA	NA	NA	1.59	NA	NA	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	BCR	F	09/25/01	0.100	<0.002	NA	NA	NA	0.26	<0.002	0.19	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	BCR	F	09/25/01	0.130	<0.002	NA	NA	NA	0.24	<0.002	0.25	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	RSF	F	09/25/01	0.070	<0.002	NA	NA	NA	0.16	<0.002	0.29	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	RSF	F	09/25/01	0.130	<0.002	NA	NA	NA	0.23	<0.002	0.48	NA	NA
114.24.17	Lake Sonoma/Upper Warm Spr Arm	RSF	F	09/25/01	NA	NA	NA	NA	NA	0.60	NA	NA	NA	NA
114.32.00	Lake Mendocino	CCF	F	09/27/01	NA	NA	NA	NA	NA	0.63	NA	NA	NA	NA
114.32.00	Lake Mendocino	CCF	F	09/27/01	NA	NA	NA	NA	NA	0.09	NA	NA	NA	NA
114.32.00	Lake Mendocino	CCF	F	09/27/01	NA	NA	NA	NA	NA	0.13	NA	NA	NA	NA
114.32.00	Lake Mendocino	CCF	F	09/27/01	NA	NA	NA	NA	NA	0.40	NA	NA	NA	NA
114.32.00	Lake Mendocino	LMB	F	09/27/01	0.060	<0.002	NA	NA	NA	0.47	<0.002	0.27	NA	NA
114.32.00	Lake Mendocino	LMB	F	09/27/01	0.030	<0.002	NA	NA	NA	0.70	<0.002	0.23	NA	NA
114.32.00	Lake Mendocino	LMB	F	09/27/01	<0.025	<0.002	NA	NA	NA	0.81	<0.002	0.20	NA	NA
114.32.00	Lake Mendocino	RBT	F	09/27/01	NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA
114.32.00	Lake Mendocino	RBT	F	09/27/01	NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA
114.32.00	Lake Mendocino	SB	F	09/27/01	0.090	<0.002	NA	NA	NA	0.75	<0.002	0.31	NA	NA
201.12.14	Soulajule	CCF	F	09/20/01	NA	NA	NA	NA	NA	0.23	NA	NA	NA	NA
201.12.14	Soulajule	CCF	F	09/20/01	NA	NA	NA	NA	NA	0.29	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.67	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.75	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.88	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.54	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	1.45	NA	NA	NA	NA
201.12.14	Soulajule	LMB	F	09/20/01	NA	NA	NA	NA	NA	1.87	NA	NA	NA	NA

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Table 2.

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 2001 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
201.13.06	Nicasio Reservoir	BG	F	09/19/01	NA	NA	NA	NA	NA	0.21	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	BG	F	09/19/01	NA	NA	NA	NA	NA	0.16	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	BG	F	09/19/01	NA	NA	NA	NA	NA	0.13	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	LMB	F	09/19/01	NA	NA	NA	NA	NA	0.17	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	LMB	F	09/19/01	NA	NA	NA	NA	NA	0.37	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	LMB	F	09/19/01	NA	NA	NA	NA	NA	1.29	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	CP	F	09/19/01	NA	NA	NA	NA	NA	0.21	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	CP	F	09/19/01	NA	NA	NA	NA	NA	0.29	NA	NA	NA	NA
201.13.06	Nicasio Reservoir	CP	F	09/19/01	NA	NA	NA	NA	NA	0.25	NA	NA	NA	NA
201.13.18	Bon Tempe Reservoir	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.50	NA	NA	NA	NA
201.13.18	Bon Tempe Reservoir	LMB	F	09/20/01	NA	NA	NA	NA	NA	0.54	NA	NA	NA	NA
205.30.30	Anderson Reservoir	BCR	F	09/13/01	NA	NA	NA	NA	NA	0.09	NA	NA	NA	NA
205.30.30	Anderson Reservoir	BCR	F	09/13/01	NA	NA	NA	NA	NA	0.25	NA	NA	NA	NA
205.30.30	Anderson Reservoir	BCR	F	09/13/01	NA	NA	NA	NA	NA	0.36	NA	NA	NA	NA
205.30.30	Anderson Reservoir	LMB	F	09/13/01	NA	NA	NA	NA	NA	0.68	NA	NA	NA	NA
205.30.30	Anderson Reservoir	LMB	F	09/13/01	NA	NA	NA	NA	NA	1.17	NA	NA	NA	NA
205.30.30	Anderson Reservoir	LMB	F	09/13/01	NA	NA	NA	NA	NA	1.46	NA	NA	NA	NA
205.30.30	Anderson Reservoir	CP	F	09/13/01	NA	NA	NA	NA	NA	0.40	NA	NA	NA	NA
205.30.30	Anderson Reservoir	CP	F	09/13/01	NA	NA	NA	NA	NA	0.46	NA	NA	NA	NA
205.30.30	Anderson Reservoir	CP	F	09/13/01	NA	NA	NA	NA	NA	0.43	NA	NA	NA	NA
307.00.01	Carmel Lagoon	STB	W	08/23/01	0.290	0.058	0.14	3.88	0.018	0.09	<0.002	0.67	0.029	37.9
307.00.01	Carmel Lagoon	STB	W	08/23/01	0.280	0.059	0.11	3.66	0.017	0.10	<0.002	0.65	0.029	41.0
310.13.00	San Simeon Creek Lagoon	STB	W	08/22/01	0.210	0.018	0.17	2.94	0.010	0.22	<0.002	0.37	0.003	29.4
310.14.09	Santa Rosa Cr/Soto Ranch	STB	W	08/22/01	0.160	0.018	0.27	1.63	0.013	0.09	0.175	1.73	0.005	35.0
310.17.01	Whale Rock Res	SKR	F	08/21/01	0.190	<0.002	NA	NA	NA	0.10	<0.002	1.95	NA	NA
310.22.01	Chorro Cr/Lower	SPM	W	08/22/01	0.060	0.012	0.14	1.65	0.015	0.04	<0.002	0.83	0.002	27.0
310.24.00	San Luis Obispo Creek Lagoon	SSP	W	08/09/01	0.530	0.032	0.69	0.72	0.028	<0.003	0.195	0.40	0.006	17.0
310.26.01	Pismo Creek	PCP	W	08/09/01	0.210	0.018	0.24	1.22	0.026	0.05	0.026	2.28	<0.002	14.2
310.31.00	Arroyo Grande Creek Lagoon	LMB	W	08/08/01	0.080	0.021	0.13	0.49	0.005	0.04	<0.002	1.10	<0.002	19.9
310.31.10	Lake Lopez	LMB	F	08/21/01	0.240	<0.002	NA	NA	NA	0.06	<0.002	1.30	NA	NA

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

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Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 2001 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
310.31.10	Lake Lopez	LMB	L	08/21/01	NA	NA	0.15	4.98	<0.002	NA	NA	NA	<0.002	20.7
310.32.01	Oso Flaco Lake	HCH	F	08/09/01	0.110	<0.002	NA	NA	NA	0.04	0.020	0.61	NA	NA
402.10.05	Ventura R/d/s OVSD Discharge	AC	W	07/18/01	0.200	0.045	0.19	1.65	0.007	<0.003	<0.002	2.82	0.007	31.3
402.10.06	Ventura R/d/s OVSD Discharge	AC	W	07/18/01	0.200	0.157	0.21	1.47	0.028	<0.003	<0.002	2.84	0.006	32.7
403.11.00	Santa Clara River Estuary	AC	W	07/18/01	0.170	0.075	0.24	2.86	<0.002	0.04	<0.002	1.65	0.013	35.8
403.12.06	Calleguas Creek	AC	W	07/19/01	0.180	0.035	1.09	1.36	0.144	<0.003	0.515	0.97	0.018	31.9
403.12.06	Calleguas Creek	BLB	F	07/19/01	<0.025	0.002	NA	NA	NA	0.03	0.011	0.26	NA	NA
403.12.06	Calleguas Creek	BLB	L	07/19/01	NA	NA	0.29	13.80	0.018	NA	NA	NA	0.165	23.8
403.21.09	Santa Paula Cr/d/s Stekel Park	AC	W	07/17/01	0.090	0.301	0.27	1.94	0.013	0.05	<0.002	2.79	0.004	43.6
403.31.08	Sespe Overflow Channel	STB	W	07/17/01	0.220	0.102	0.19	1.34	0.025	<0.003	<0.002	2.58	0.004	40.5
403.41.03	Piru Creek	STB	W	07/17/01	0.210	0.099	0.31	1.67	0.025	0.04	<0.002	1.14	0.005	33.8
403.64.03	Arroyo Conejo/d/s Forks	GSF	F	07/19/01	0.060	<0.002	NA	NA	NA	0.05	0.004	0.95	NA	NA
403.64.03	Arroyo Conejo/d/s Forks	GSF	L	07/19/01	NA	NA	0.22	2.54	0.020	NA	NA	NA	<0.002	17.6
403.64.03	Arroyo Conejo/d/s Forks	BLB	F	07/19/01	<0.025	<0.002	NA	NA	NA	0.03	0.002	0.30	NA	NA
403.64.03	Arroyo Conejo/d/s Forks	BLB	L	07/19/01	NA	NA	0.31	21.40	0.013	NA	NA	NA	0.476	27.2
403.67.04	Arroyo Simi	AC	W	07/19/01	0.090	0.018	0.43	2.59	0.013	0.05	<0.002	2.33	0.102	38.9
405.12.09	Dominguez Channel/Avalon Blvd	GAM	W	08/07/01	0.140	0.011	0.34	1.65	0.408	<0.003	0.133	0.36	0.011	35.0
510.00.20	*Prospect Sl/Liberty Island*	LMB	F	11/18/01	NA	NA	NA	NA	NA	0.69	NA	NA	NA	NA
510.00.30	Sacramento R/Hood	SMB	F	11/15/01	NA	NA	NA	NA	NA	0.95	NA	NA	NA	NA
515.40.00	Feather R/u/s Yuba River	LMB	F	11/27/01	NA	NA	NA	NA	NA	0.18	NA	NA	NA	NA
545.20.90	San Joaquin R/HWY 99	LMB	F	11/13/01	0.030	<0.002	NA	NA	NA	0.06	0.007	0.13	NA	NA
545.20.90	San Joaquin R/HWY 99	LMB	L	11/13/01	NA	NA	0.15	1.89	0.002	NA	NA	NA	<0.002	17.5
551.20.00	Mendota Pool	LMB	F	11/07/01	NA	NA	NA	NA	NA	0.25	NA	0.80	NA	NA
551.90.10	Kings R/Jackson Ave	LMB	F	11/06/01	0.040	<0.002	NA	NA	NA	0.16	<0.002	0.15	NA	NA
551.90.10	Kings R/Jackson Ave	LMB	L	11/06/01	NA	NA	0.14	31.80	0.004	NA	NA	NA	0.122	28.4
552.33.13	Wishon Res/N.F./Kings River	RBT	F	08/29/01	0.260	<0.002	NA	NA	NA	<0.003	0.004	0.27	NA	NA
552.33.13	Wishon Res/N.F./Kings River	RBT	L	08/29/01	NA	NA	0.21	67.20	<0.002	NA	NA	NA	0.012	34.6
552.33.17	Courtright Res/Dusy Cr	RBT	F	08/29/01	0.260	<0.002	NA	NA	NA	<0.003	0.013	0.27	NA	NA
552.33.17	Courtright Res/Dusy Cr	RBT	L	08/29/01	NA	NA	0.19	70.60	<0.002	NA	NA	NA	0.020	27.1
552.41.01	Lake Kaweah	LMB	F	11/06/01	0.170	<0.002	NA	NA	NA	0.52	0.025	0.19	NA	NA

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Table 2.

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 2001 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
553.44.01	Lake Kawean	LMB	L	11/06/01	NA	NA	0.12	6.36	0.018	NA	NA	NA	0.013	20.2
601.00.07	Rush Creek	BN	F	10/08/01	0.130	<0.002	NA	NA	NA	0.04	<0.002	1.14	NA	NA
601.00.07	Rush Creek	BN	L	10/08/01	NA	NA	0.16	162.00	0.008	NA	NA	NA	1.970	32.3
601.00.92	June Lake	RBT	F	10/09/01	0.840	<0.002	NA	NA	NA	0.06	<0.002	0.58	NA	NA
601.00.92	June Lake	RBT	L	10/09/01	NA	NA	0.12	32.50	0.004	NA	NA	NA	0.045	24.4
601.00.92	June Lake	SKR	F	10/09/01	0.170	<0.002	NA	NA	NA	0.09	<0.002	0.78	NA	NA
603.10.06	Crowley Lake	RBT	F	10/10/01	0.140	<0.002	NA	NA	NA	0.41	<0.002	0.49	NA	NA
603.10.06	Crowley Lake	RBT	L	10/10/01	NA	NA	0.20	69.70	<0.002	NA	NA	NA	0.766	44.5
603.20.42	Horton Creek	BN	F	10/09/01	0.120	<0.002	NA	NA	NA	0.06	<0.002	0.62	NA	NA
603.20.42	Horton Creek	BN	L	10/09/01	NA	NA	0.32	111.00	<0.002	NA	NA	NA	1.560	28.5
603.20.43	Pine Cr/Bishop	BN	F	10/09/01	0.060	0.007	NA	NA	NA	<0.003	<0.002	0.56	NA	NA
603.20.43	Pine Cr/Bishop	BN	L	10/09/01	NA	NA	0.19	41.60	<0.002	NA	NA	NA	0.257	31.0
628.20.02	Silverwood Lake	LMB	F	10/24/01	0.290	<0.002	NA	NA	NA	0.24	<0.002	0.67	NA	NA
628.20.02	Silverwood Lake	LMB	L	10/24/01	NA	NA	0.11	11.50	<0.002	NA	NA	NA	<0.002	23.6
628.20.29	Deep Cr/u/s Mojave River	GSF	F	10/24/01	0.070	<0.002	NA	NA	NA	0.26	0.081	0.16	NA	NA
628.20.29	Deep Cr/u/s Mojave River	GSF	L	10/24/01	NA	NA	0.17	1.90	<0.002	NA	NA	NA	<0.002	16.0
628.20.41	Lake Gregory	BLB	F	10/23/01	0.100	<0.002	NA	NA	NA	0.03	<0.002	0.40	NA	NA
628.20.41	Lake Gregory	BLB	L	10/23/01	NA	NA	0.16	5.95	0.029	NA	NA	NA	<0.002	17.5
632.10.14	Heenan Lake	LCT	F	11/05/01	<0.025	<0.002	NA	NA	NA	0.04	<0.002	0.11	NA	NA
632.10.14	Heenan Lake	LCT	L	11/05/01	NA	NA	0.13	63.90	<0.002	NA	NA	NA	0.189	19.0
632.10.15	Silver Creek	RBT	F	10/04/01	0.060	<0.002	NA	NA	NA	0.05	<0.002	0.23	NA	NA
632.10.15	Silver Creek	RBT	L	10/04/01	NA	NA	0.23	25.50	<0.002	NA	NA	NA	0.206	26.4
632.10.33	Wolf Creek	BN	F	10/04/01	<0.025	<0.002	NA	NA	NA	0.10	<0.002	0.03	NA	NA
632.10.33	Wolf Creek	BN	L	10/04/01	NA	NA	0.18	57.10	<0.002	NA	NA	NA	0.292	19.9
634.10.95	Taylor Creek	BN	F	10/17/01	0.120	<0.002	NA	NA	NA	0.04	<0.002	0.56	NA	NA
634.10.95	Taylor Creek	BN	L	10/17/01	NA	NA	0.19	101.00	<0.002	NA	NA	NA	0.203	27.6
634.20.01	Ward Creek	RBT	F	10/17/01	0.100	<0.002	NA	NA	NA	0.05	<0.002	0.45	NA	NA
634.20.01	Ward Creek	RBT	L	10/17/01	NA	NA	0.15	4.14	<0.002	NA	NA	NA	0.024	21.8
637.20.25	Susan R/d/s Piute Creek	BN	F	10/15/01	<0.025	<0.002	NA	NA	NA	0.19	<0.002	0.02	NA	NA
637.20.25	Susan R/d/s Piute Creek	BN	L	10/15/01	NA	NA	0.14	38.70	<0.002	NA	NA	NA	0.103	22.6

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Table 2.

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 2001 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
637.20.27	Piute Creek	BN	F	10/15/01	<0.025	0.002	NA	NA	NA	0.10	<0.002	0.10	NA	NA
637.20.27	Piute Creek	BN	L	10/15/01	NA	NA	0.190	132.00	<0.002	NA	NA	NA	0.525	30.0
637.32.09	Eagle Lake	ELT	F	11/08/01	<0.025	<0.002	NA	NA	NA	0.07	<0.002	0.10	NA	NA
637.32.09	Eagle Lake	ELT	L	11/08/01	NA	NA	0.140	60.80	<0.002	NA	NA	NA	0.201	29.6
715.40.08	Palo Verde Outfall Drain	LMB	F	11/23/01	0.070	<0.002	NA	NA	NA	0.03	<0.002	0.51	NA	NA
715.40.08	Palo Verde Outfall Drain	LMB	L	11/23/01	NA	NA	0.150	3.06	0.005	NA	NA	NA	0.002	17.4
715.50.90	Colorado R/u/s Imperial Dam	LMB	F	11/22/01	0.060	<0.002	NA	NA	NA	0.04	<0.002	2.14	NA	NA
715.50.90	Colorado R/u/s Imperial Dam	LMB	L	11/22/01	NA	NA	0.120	6.08	0.009	NA	NA	NA	<0.002	20.1
719.47.00	Coachella Valley Stormwater Ch	PRS	W	11/19/01	0.090	0.005	0.220	0.74	0.025	0.07	<0.002	0.99	<0.002	57.6
723.10.02	New R/Westmorland	CCF	F	11/21/01	0.040	<0.002	NA	NA	NA	0.11	<0.002	0.50	NA	NA
723.10.02	New R/Westmorland	CCF	L	11/21/02	NA	NA	0.110	1.87	0.114	NA	NA	NA	<0.002	18.2
723.10.30	Central Drain	MOL	W	11/21/01	0.540	0.033	1.550	5.68	0.700	<0.003	0.648	1.43	0.088	16.1
723.10.32	Barbara Worth Drain	MOL	W	11/19/01	0.440	0.068	1.590	10.80	0.623	<0.003	0.653	1.26	0.063	15.0
723.10.38	Rice Drain	GAM	W	11/21/01	0.300	0.008	0.260	1.56	0.092	0.05	<0.002	2.92	0.033	37.1
723.10.47	Alamo R/Inter Boundary	MOL	W	11/19/01	0.510	0.012	1.230	5.74	0.620	<0.003	0.511	1.84	0.035	22.5
723.10.48	Greeson Drain	MOL	W	11/20/01	0.380	0.012	0.840	4.39	0.471	<0.003	0.236	1.36	0.055	18.2
723.10.91	Fig Drain	MOL	W	11/20/01	0.440	0.036	1.800	4.96	0.622	<0.003	0.784	0.87	0.041	16.2
801.11.05	Delhi Channel	FHM	W	07/12/01	0.270	0.015	0.230	2.18	0.178	0.02	0.023	2.50	0.009	33.5
801.11.07	San Diego Cr/Michelson Dr	PRS	W	07/12/01	0.230	0.049	0.250	1.90	0.015	0.03	<0.002	2.57	0.008	42.2
801.11.09	San Diego Cr/Barranca Pkwy	FHM	W	07/12/01	0.540	0.044	0.400	1.00	0.086	<0.003	0.056	2.13	0.010	28.8
801.11.09	San Diego Cr/Barranca Pkwy	FHM	W	07/12/01	0.600	0.050	0.510	1.12	0.105	<0.003	0.059	2.28	0.012	34.1
801.11.88	Upper Newport Bay/Ecolog Reserve	RSR	F	08/07/01	3.190	0.005	NA	NA	NA	0.09	0.083	0.81	NA	NA
801.11.88	Upper Newport Bay/Ecolog Reserve	RSR	L	08/07/01	NA	NA	0.690	4.15	0.006	NA	NA	NA	0.023	10.8
801.11.96	Peters Canyon Channel	FHM	W	07/12/01	0.140	0.017	0.290	1.95	0.055	0.05	<0.002	1.37	0.002	43.0
801.71.07	Big Bear Lk/Dam	LMB	F	07/10/01	0.080	<0.002	NA	NA	NA	0.60	0.028	0.12	NA	NA
801.71.07	Big Bear Lk/Dam	LMB	L	07/10/01	NA	NA	0.440	10.70	<0.002	NA	NA	NA	0.004	20.7
801.71.10	Big Bear Lake	LMB	F	07/10/01	0.050	<0.002	NA	NA	NA	0.09	0.012	0.11	NA	NA
801.71.10	Big Bear Lake	LMB	L	07/10/01	NA	NA	0.270	3.02	<0.002	NA	NA	NA	<0.002	26.1
801.71.12	Big Bear Lk/Rathbone Creek	CP	F	07/10/01	0.100	<0.002	NA	NA	NA	0.15	0.008	0.15	NA	NA
802.31.00	Lake Elsinore	CP	F	07/11/01	0.170	<0.002	NA	NA	NA	0.04	0.005	0.22	NA	NA

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Species codes are listed in Table 2.

Table 1

Toxic Substances Monitoring Program

Preliminary Summary of 2001 Data: Trace Elements in Fish and Crayfish (ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
904.11.06	Loma Alta Cr/College Blvd	PROI	F	06/21/01	0.310	0.005	0.190	6.94	0.005	0.03	0.034	0.28	0.033	13.7
904.51.03	San Marcos Cr	LMB	F	06/21/01	<0.025	<0.002	NA	NA	NA	0.46	0.058	0.56	NA	NA
904.51.03	San Marcos Cr	LMB	L	06/21/01	NA	NA	0.200	5.18	0.00[illegible]	NA	NA	NA	0.006	19.7
904.61.02	Escondido Cr	CP	W	06/20/01	0.230	0.013	0.220	0.82	0.043	<0.003	<0.002	0.61	0.008	36.6
904.62.04	Escondido Cr/Country Club Dr	PROI	F	06/20/01	0.190	0.007	0.280	9.47	0.155	<0.003	0.145	0.39	0.029	14.9
906.10.01	Penasquitos Lagoon	STG	W	06/20/01	0.500	0.022	0.280	1.35	0.034	<0.003	<0.002	0.57	0.006	13.3
906.40.01	Rose Cr/d/s Mission Bay Dr	GAM	W	06/19/01	0.210	0.005	0.200	2.52	0.098	0.04	<0.002	0.42	0.018	35.6
906.40.04	San Clemente Canyon Cr/Regents	GAM	W	06/19/01	0.230	0.006	0.220	1.71	0.030	0.02	<0.002	0.32	0.014	30.0
906.50.00	Tecolote Creek Estuary	CKF	W	06/19/01	0.960	<0.002	0.330	2.30	0.182	<0.003	<0.002	0.82	0.018	35.3

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Table 2.

TABLE 2

Toxic Substances Monitoring Program
2001 Species Code List for Trace Elements

Freshwater Fish *

Species Code	Common Name	Species Name	Family Name
AC	Arroyo Chub	*Gila orcutti*	Cyprinidae
BCR	Black Crappie	*Pomoxis nigromaculatus*	Centrarchidae
BG	Bluegill	*Lepomis macrochirus*	Centrarchidae
BLB	Black Bullhead	*Ameiurus melas*	Ictaluridae
BN	Brown Trout	*Salmo trutta*	Salmonidae
CCF	Channel Catfish	*Ictalurus punctatus*	Ictaluridae
CP	Carp	*Cyprinus carpio*	Cyprinidae
ELT	Eagle Lake Trout	*Oncorhynchus mykiss aquilarum*	Salmonidae
FHM	Fathead Minnow	*Pimephales promelas*	Cyprinidae
HCH	Hitch	*Lavinia exilicauda*	Cyprinidae
GAM	Mosquitofish	*Gambusia affinis*	Poeciliidae
GSF	Green Sunfish	*Lepomis cyanellus*	Centrarchidae
LCT	Lahontan Cutthroat Trout	*Oncorhynchus clarki henshawi*	Salmonidae
LMB	Largemouth Bass	*Micropterus salmoides*	Centrarchidae
MOL	Sailfin Molly	*Poecilia latipinna*	Poeciliidae
PCP	Prickly Sculpin	*Cottus asper*	Cottidae
PRS	Red Shiner	*Cyprinella lutrensis*	Cyprinidae
RBT	Rainbow Trout	*Oncorhynchus mykiss*	Salmonidae
RSF	Redear Sunfish	*Lepomis microlophus*	Centrarchidae
SB	Striped Bass	*Morone saxatilis*	Percichthyidae
SKR	Sucker	*Catostomus sp.*	Catostomidae
SMB	Smallmouth Bass	*Micropterus dolomieu*	Centrarchidae
SPM	Sacramento Pike Minnow	*Ptychocheilus grandis*	Cyprinidae
SSP	Shiner Perch	*Cymatogaster aggregata*	Embiotocidae
STB	Threespine Stickleback	*Gasterosteus aculeatus*	Gasterosteidae

Marine Fish *

Species Code	Common Name	Species Name	Family Name
CKF	California Killifish	*Fundulus parvipinnis*	Cyprindontidae
RSR	Round Stingray	*Urolophus halleri*	Urolophidae
STG	Pacific Staghorn Sculpin	*Leptocottus armatus*	Cottidae

Non-Fish

Species Code	Common Name	Species Name	Family Name
PROI	Red Swamp Crayfish	*Procambarus clarki*	Astacidae

* Common and scientific fish names were obtained from Robins, C.R., R.M. Bailey, C.E. Bond, J.R. Brooker, E.A. Lachner, R.N. Lea, and W.B. Scott. 1991. Common and Scientific Names of Fishes from the United States and Canada. American Fisheries Society Special Publication 20, Bethesda, Maryland.

From: Matt St. John
To: Sharpe, Laura
Date: Wed, Dec 18, 2002 4:20 PM
Subject: Scott and Shasta nutrient listings

Laura:

I left you a message that I need to speak with you about this...

To cut to the chase, we now suggest that the Scott and the Shasta NOT be listed separately for nutrients. in the 2002 303(d) list. Based on our latest interpretation, in 1993 Dave Smith's intent was to list the Klamath River (not watershed) for nutrients and temperature, and to list the Shasta River for dissolved oxygen and the Scott River for sediment. This is what the 1992 list reflects. In 1996 the Scott and the Shasta River were listed for temperature. If the interpretation is that the 1992 Klamath River listings applied to the Scott and the Shasta, then the uncertainty is why the Scott and Shasta were specifically listed for temperature in 1996. Based on this, the current interpretation is that the 1992 Klamath listings did not apply to the Scott and the Shasta. In 1998 our Region included the language for the Klamath nutrient and temperature listings that "Nutrient [and temperature] TMDLs will be developed for the area tributary to and including: ...Iron Gate Dam to Scott River..." This language was included to clarify that the TMDLs would address sources from the tributary areas. However, the intent of this language was not that the listings themselves applied to these tributary areas. So, based on this information, it is not appropriate to have the Shasta and the Scott listed for nutrients on the 2002 303(d) list.

I apologize for the confusion. Please call to discuss.

Matt

Matt St. John
Water Resources Control Engineer

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North Coast Regional Water Quality Control Board
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CC: Richard, Nancy; Wilson, Craig J.

From DB 2/02

Summary of Regional Board/State Board 303d Process

1. SWRCB and RWQCBs solicit data/information from public (Letter dated March 14, 2001)
2. RWQCBs receive submittals up until May 15, 2001.
3. RWQCBs assemble and evaluate submittals and other available information.
4. RWQCBs prepare draft staff report, factsheets, additions, deletions and changes to 303d list.
5. Three RWQCBs prepare Watch Lists.
6. RWQCB documents available for public comment (generally 30 days).
7. RWQCBs hold public workshops and/or Board meetings for either 1) submitting informal list recommendation to SWRCB, or 2) formal resolution to adopt list and transmittal to SWRCB.
8. RWQCBs receive public comments.
9. RWQCBs revise reports/lists based on new information, public comments, including comments from USEPA.
10. RWQCBs submit staff reports and lists to SWRCB, along with copy of public submittals. Some RWQCBs submit information in GeoWBS.

11. Begin SWRCB process:
    - Evaluate data/information and basis for listings, delistings and changes
    - Review RWQCB recommendations and make SWRCB recommendations
    - Prepare draft report/list
    - Hold public workshops and release draft staff report for public comment
    - Respond to comments
    - Finalize report and list
    - Hold Board meeting(s) for list adoption
    - Submit adopted list to USEPA
    - USEPA acts on list

PROCESS SUMMARY

Craig

From LS 1/'02

Regional Watch Lists 2002

Each region submitted their 303(d) list in similar, yet different formats. One of these similarities was that three of the nine submitted "watch lists". For each region the consideration to put water bodies on their watch lists varied, but for the most part they were similar.

WATCH LIST SUMMARY

Region 1 Watch List:
Reasons that they gave for water bodies being put on their Watch List...

- Mixed findings in detection of pollutants in samples.
- Staff recommends conducting additional screening/monitoring in order to determine if beneficial uses are impaired.
- The level of water quality impairment cannot be determined without further analysis of the data.
- Staff recommends continuing review of sites for clearer chemical concentration results.
- Staff recommends deferring the action of listing a water body until further investigation is completed.
- Given the anecdotal accounts of citizens, staff recommends putting water bodies on the watch lists and conducting baseline monitoring for pollutants to assess whether beneficial uses are threatened or impaired.
- Staff recommends conducting additional assessments to determine whether spawning and rearing habitat of cold water fisheries and other beneficial uses are impaired.
- At this time staff is unable to determine the contributing factors causing the impairment, it is unclear based on the available information.
- Based on complicated circumstances regarding the drinking supply, and mixed information supplied to them, staff recommends putting certain creeks on the Watch List.
- Staff recommends conducting more assessments to determine whether beneficial uses are threatened or impaired.
- Staff recommends additional research to characterize historic conditions necessary for making a beneficial use impairment determination.
- It is not clear based on the available data and information whether water quality objectives are being exceeded and beneficial uses impaired.
- Given that State Mussel Watch Program (SMWP) results are considered preliminary and there is little information, staff recommends conducting additional monitoring at sites through the SMWP. Additional studies may be conducted through Surface Water Ambient Monitoring Program (SWAMP).
- Staff recommends focused study of the instream waters to assess beneficial impairment of the mainstem and the tributaries.
- Staff recommends assessing the results of ongoing studies when they are available to determine whether beneficial uses are impaired, (i.e. USGS monitoring programs). In the interim the water bodies should go onto the watch list, until the results from those studies are available to be used in determining whether there is impairment.
- There are not sufficient amounts of data to list some surface waters, in which case they should be put on the watch list.

Below is a summary table of how many water bodies were listed in Region 2, including what pollutants or concern they were listed for and how many of those water bodies on the list were listed for them respectively.

	"WATCH LISTS"	
	Region 1	
Total # of Water		
Bodies Listed	**37**	
	# Water	
	Bodies	Pollutant
	3	Diazinon
	2	Copper
	2	Chromium
	2	Zinc
	2	Mercury
	2	PCBs
		Concern
	17	Sediment
	3	Tissue Residue
	2	Temperature
	8	Habitat
	1	Nutrients
	1	Dissolved O2
	1	Ammonia Toxicity
	3	Pathogens

Region 2 Watch List:
Reasons that they gave for water bodies being put on their Watch List...

- Anecdotal information suggests that the water bodies may be impaired, but either...

1) The available data or information are inadequate to draw a conclusion, or
2) A regulatory program is in place to control the pollutant but the data are not available to demonstrate that the program is successful.

- Placement on the Watch List would result in increased assessment activity, other actions to determine whether or not a water body and pollutant should be added to the list in the subsequent listing cycle.
- For TMDL development, the Bay Protection and Toxic Cleanup Program sites will receive a low priority because of the RB's current application of other regulatory authorities and effects-based nature of the listing (i.e., not pollutants whose loads would be allocated in a TMDL). These hotspot sites will be put on the Watch List.
- In many cases the data or information is not of adequate quality to support a listing and subsequent TMDL regulatory process. However, a finding is warranted that the water quality appears

threatened and more information must be collected to resolve the question of impairment, therefore the water body goes onto the Watch List.

Below is a summary table of how many water bodies were listed in Region 2, including what pollutants or concern they were listed for and how many of those water bodies on the list were listed for them respectively...

	"WATCH LISTS"	
	Region 2	
Total # of Water		
Bodies Listed	12	
	# Water	
	Bodies	Pollutant
	(All Counties)	Copper
	(All Counties)	Nickel
	12	PAHs
	12	PDBEs
		Concern
	1	Dissolved O2
	1	Organics
	1	pH
	2	Sediment/Silt
	4	Sediment Toxicity
	(All Counties)	Trash
	1	Coliforms

Region 6 Watch List:

Reasons that they gave for water bodies being put on their Watch List...

- A number of water body/ pollutant combinations clearly qualify for listing, many waters fall into the category where: "based on the available data and information, standards attainment cannot be determined".
- The purpose of listing water bodies on the watch list is to highlight the need for additional monitoring and assessment for these waters to determine the need for TMDLs or for action under some other Regional Board program.
- The Watch List includes waters form California's 1998 Section 305(b) report which were then identified as "threatened", but were not on the 303(d) list.
- Water bodies on the Watch List will be recommended for classification as "threatened" in the 2002 Section 305(b) assessment.

Below is a summary table of how many water bodies were listed in Region 2, including what pollutants or concern they were listed for and how many of those water bodies on the list were listed for them respectively…

	"WATCH LISTS"	
	Region 6	
Total # of Water		
Bodies Listed	**115**	
	# Water	
	Bodies	**Pollutant**
	9	Mercury
	7	Nickel
	1	PCBs
	1	Chlordane
	2	Chloride
	1	Copper
	1	Lindane
	2	Iron
	1	Lead
	1	Toxaphene
	1	Boron
	8	Sulfate, Mine Drainage
	10	Phosphorus
		Concern
	23	Sediment
	17	Nutrients
	7	Pesticides
	1	Pathogens
	1	Petroleum Products
	5	Boat Fuel
	49	Nitrogen
	2	Metals
	10	Dissolved solids
	3	Road Salt

What do they have in common?
The Regional Boards for Regions 1, 2 and 6 are all in favor of "Preliminary Lists" also referred to as "Watch Lists." Though the number of water bodies that these regions listed varied greatly, the reasoning behind the water bodies that got placed onto the Watch Lists were quite similar. Some of these similarities are listed below.

- *ANCEDOTAL*: There exists a reasonable amount of anecdotal information out there from citizens, monitoring groups, and the general public. However, the issue is not the quantity of data but the quality of the data received via anecdotal information. The accounts and stories and the information that is given to the Regional Boards suggests that the water bodies may be impaired. The available data is either lacking or too weak to support a decision as to whether or not it gets placed on the 303(d) list. There is enough information though, to call for a need for further monitoring and investigation though, hence the placement onto the "Watch List."

- *AVALIBILITY:* In many cases the Regional Board staff has a number of water body/pollutant combinations that should be listed, but for whatever the reason, the data (when available), isn't sufficient. A number of water bodies were listed onto the Watch List because the available data wasn't of adequate quality. The data that is available needs to be supportive enough to list the water body on the 303(d) list and subsequent TMDL regulatory process, if it isn't than the water body should be placed onto the Watch List. High quality data is needed for the water bodies on the Watch Lists, in order to correctly determine whether impairment really exists.

- *PURPOSE*: The purpose of the Regional Boards having a Watch List for water bodies to reside on is another common thread. The Regional Boards agree that the purpose for listing water bodies on the Watch Lists is to highlight the need for additional monitoring, data gathering and assessment in areas of concern before they are considered to be listed on the 303(d) list. If the water quality and/or beneficial uses appear threatened and there is some suggestion of impairment the Watch List provides an opportunity to increase the amount of information that is gathered, by giving more time, to make the appropriate assessments on a given water body. More information must be gathered to resolve the question of impairment, the Watch List provides that time.

- *TIME:* The Regional Boards seem to agree with the concept that the Watch List gives more time and should result in increased assessment activities, and/ or other actions to determine impairment while a water body resides on the list. The Regional Boards also seem to be in agreement that the length of time for a water body to remain on a Watch List is one rotating basin cycle. At the end of a cycle the water body will be re-considered for the 303(d) list, provided enough new information and data has been collecting on the water body in question. The water bodies on the Watch List may be added to the subsequent 303(d)-recommendation list.

From DB for TH 1/02

Summary of Regional Board Delisting Rationales

(NOTE: ALL DELISTINGS SHOWN ARE REGIONAL BOARD RECOMMMENDATIONS ONLY, AND ARE SUBJECT TO REVIEW AND POSSIBLE CHANGE BY SWRCB AND/OR USEPA DURING THE FINAL 303D LISTING PROCESS)

DELISTING SUMMARY

Region 1 - No delistings

Region 2 – Delistings for the following:

Water body/Pollutant	Rationale
Arroyo Honda/diazinon	Previously listed as urban creek for diazinon. Delisted because it is not an urban creek.
North SF Bay/Copper	More recent data indicates problem is confined to Petaluma River mouth, not entire north bay.
North Bay Nickel	1986 Basin plan standard was 7.1 ug/L **total**. All North Bay segments had numerous exceedences (over 100). Standard changed in CTR to 8.2 ug/L **dissolved.** Using this standard, all exceedences occurred at the Petaluma River mouth, not in other North Bay segments.
South Bay Copper	New proposed site-specific standards are expected to be adopted in Feb-Mar 2002. Using these standards, compliance with 1 exceedence in 3 years would be attained.
South Bay Nickel	New proposed site-specific standards are expected to be adopted in Feb-Mar 2002. Using these standards, compliance with 1 exceedence in 3 years would be attained.

Region 3-

Chorro Creek/metals	1.Earlier data entered in error, not collected in creek 2. Newer aquatic habitat data indicates narrative objective is being achieved. Ongoing WQ data will be used to verify aq. habitat data. 3. New sediment TMDL for Chorro Creek will improve metals loading. Will be presented to Board in Feb 2002.
Los Osos Creek/Priority Organics	Used delisting factors 4 and 6. Factor 4 is that Monitored Assessment shows objectives are being met. Monitored assessments conducted in March and June 2001 showed objectives were met. Factor 6 is that there are control measures in place that will result in protection of beneficial uses. Control measures are 1) CAO issued to Los Osos Landfill, and 2) Siltation TMDL for Chorro Creek. Also additional monitoring will be conducted during 2002.

San Lorenzo River Lagoon/Siltation	Siltation is a problem in River and tribs, but not lagoon. Information on turbidity in watershed is anecdotal, but monitoring will be conducted to evaluate its potential as a WQ problem.
Region 4 –	
86 waterbody/pollutant delistings	8 delistings related to water chemistry, water column toxicity, and bacterial indicators. 78 are related to removal of tissue, sediment or benthic community impairment listings. The majority of tissue delistings are proposed because the original listing was based on tissue concentrations exceeding Elevated Data levels (EDLS), a guideline that was determined to be insufficient for determining impairment.
Region 5 –	
American River/Group A pesticides	New data indicates that objectives are being attained.
Region 6 -	
29 waterbody/pollutant delistings	Many delistings proposed because of natural impairments (i.e.hotsprings). (SWRCB comment: Per USEPA, Region 6 will need to develop site-specific objectives before delisting for natural causes.)
Region 7 –	
New River/nutrients	No evidence that nutrients are impairing the river itself, although nutrients are in the river and end up in the Salton Sea, causing impairment there.
All bacterial impairment listings	Change "bacteria" to "pathogens", because only pathogenic organisms are of concern.

Region 8 –

Waterbody	Pollutant	Justification
San Diego Creek, Reach 1	Nutrients[1]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
	Siltation[2]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
San Diego Creek, Reach 2	Nutrients[1]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
	Siltation[2]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
Upper Newport Bay	Nutrients[1]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
	Siltation[2]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
	Fecal coliform[3]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
Lower Newport Bay	Nutrients[1]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
	Siltation[2]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
	Fecal coliform[3]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
Santa Ana River, Reach 3	Total Dissolved Solids[4]	Data demonstrate objective being met
	Nitrogen[5]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA Data demonstrate objective being met

[1] Resolution No. 98-100
[2] Resolution No. 98-101
[3] Resolution No. 99-10
[4] See Attachment B for Worksheet
[5] Resolution No. 91-125

Region 9 –

No delistings

Summary of Regional Board Delisting Rationales

(NOTE: ALL DELISTINGS SHOWN ARE REGIONAL BOARD RECOMMMENDATIONS ONLY, AND ARE SUBJECT TO REVIEW AND POSSIBLE CHANGE BY SWRCB AND/OR USEPA DURING THE FINAL 303D LISTING PROCESS)

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	Siltation[2]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
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	Siltation[2]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
	Fecal coliform[3]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
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	Siltation[2]	TMDL incorporated into the Basin Plan; TMDL approved by USEPA
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[1] Resolution No. 98-100
[2] Resolution No. 98-101
[3] Resolution No. 99-10
[4] See Attachment B for Worksheet
[5] Resolution No. 91-125

Region 9 –

No delistings

From DB 1/02

Listing Factors provided to Regions by DWQ, followed by Regions use or changes

Water bodies and associated pollutants should be recommended for addition to the 303(d) list if **any one of these factors** is met:

1. **Effluent limitations or other pollution control requirements [e.g., Best Management Practices (BMPs)] are not stringent enough to assure protection of beneficial uses and attainment of SWRCB and RWQCB objectives, including those implementing SWRCB Resolution Number 68-16 "Statement of Policy with Respect to Maintaining High Quality of Waters in California" [see also 40 CFR 130.7(b)(1)]. This does not apply to non-attainment related solely to discharge in violation of existing WDR's or NPDES permit.**

Region 1 - only change was removal of last sentence ("This does not apply to……".)

Region 2 – no change

Region 3 - only change was removal of last sentence ("This does not apply to…….")

Region 4 – clarified ""SWRCB and RWQCB objectives" to "water quality objectives outlined in the Basin Plan and in statewide water quality control plans". Removed last sentence ("This does not apply to…….")

Region 5 – no change

Region 6 – inserted USEPA promulgated standards in the California Toxics Rule and National Toxics Rule.

- Also later state that, "Table 1 includes recommendations for delisting a number of naturally impaired waters. No Lahontan Region waters impaired only by natural sources are recommended for addition to the Section 303(d) list."
- Also later state that, " Staff's recommendation is that waters should not be listd for violations of the nondegradation objective unless a pollutant is present in a concentration which violates another water quality objective or adversely affects a beneficial use, and unless sample numbers are large enough to provide some confidence that they are representative."
- Also later state that, "Listing and tentative schedules for TMDL development are recommended for certain water bodies with violations of standards which may need revision. However the Regional Board may pursue changes in standards, rather than TMDLs, for these waters."

Region 7 – put all listing factors into one sentence: " Staff considered various factors, including non-attainment of water quality standards, public health advisories, previous 303(d) lists, and bioaccumulation of pollutants in fish tissue at concentrations that exceed applicable fish tissue criteria or guidelines."

Region 8 – Did not explicitly state listing or delisting criteria. Instead stated that, "staff generally utilized an approach that consisted of evaluating available data and determining if the data were adequate to support a listing decision."

Region 9 - only change was removal of last sentence ("This does not apply to……".)

2. **Fishing, drinking water, or swimming advisory currently in effect. This does not apply to advisories related to discharge in violation of existing WDR's or NPDES permit.**

Region 1 – no change

Region 2 –no change

Region 3 – no change

Region 4 - Removed last sentence ("This does not apply to.....")

Region 5 – no change

Region 6 – added "issued by local or state public health or environmental health authorities."

Region 7 – put all listing factors into one sentence: " Staff considered various factors, including non-attainment of water quality standards, public health advisories, previous 303(d) lists, and bioaccumulation of pollutants in fish tissue at concentrations that exceed applicable fish tissue criteria or guidelines."

Region 8 – Did not explicitly state listing or delisting criteria. Instead stated that, "staff generally utilized an approach that consisted of evaluating available data and determining if the data were adequate to support a listing decision."

Region 9 – Added, "In general, adding a water body to the Section 303(d) list focuses on impairment of water quality and not on violations of discharge permits. If enforcement actions are currently underway that would eliminate the impairment, the affected water body was not placed on the 303(d) list."

3. **Beneficial uses are impaired or are expected to be impaired within the listing cycle (i.e. in next four- should be two-years). Impairment is based upon evaluation of chemical, physical, or biological integrity. Impairment will be determined by "qualitative assessment", physical/ chemical monitoring, bioassay tests, and/or other biological monitoring. Applicable Federal criteria and the Regional Board's Basin Plan water quality objectives determine the basis for impairment status.**

Region 1 – no change

Region 2 – no change

Region 3 – no change

Region 4 – Changed last sentence to " Impairment was determined based upon physical/chemical monitoring, bacteriological monitoring, toxicity tests, bioassessment and/or habitat monitoring, and other monitoring data such as fish tissue data, sediment chemistry and sediment toxicity. Applicable Basin Plan water quality objectives, Federal water quality criteria (e. g. CTR Criteria), USEPA recommended water quality criteria, or criteria or guidelines developed by other states or federal agencies to determine the basis for impairment status."

Region 5 – no change

Region 6 – added " A qualitative assessment is an assessment based on factors other than ambient monitoring data (for example, predictive modeling, professional judgement, or public comments)."

Region 7 – put all listing factors into one sentence: " Staff considered various factors, including non-attainment of water quality standards, public health advisories, previous 303(d) lists, and bioaccumulation of pollutants in fish tissue at concentrations that exceed applicable fish tissue criteria or guidelines."

Region 8 – Did not explicitly state listing or delisting criteria. Instead stated that, "staff generally utilized an approach that consisted of evaluating available data and determining if the data were adequate to support a listing decision."

Region 9 – no change

4. **The water body is on the previous 303(d) list and either: (a) monitoring continues to demonstrate a violation of objective(s) or (b) monitoring has not been performed.**

Region 1 – no change

Region 2 – added to end " or is not of adequate quality or quantity to demonstrate that the impairment has be removed."

Region 3 – changed "monitoring" to "monitored assessment"

Region 4 – no change

Region 5 – no change

Region 6 – added " (c) none of the delisting considerations discussed below apply.

Region 7 – put all listing factors into one sentence: " Staff considered various factors, including non-attainment of water quality standards, public health advisories, previous 303(d) lists, and bioaccumulation of pollutants in fish tissue at concentrations that exceed applicable fish tissue criteria or guidelines."

Region 8 – Did not explicitly state listing or delisting criteria. Instead stated that, "staff generally utilized an approach that consisted of evaluating available data and determining if the data were adequate to support a listing decision."

Region 9 - changed "monitoring" to "monitored assessment"

5. **Data indicate tissue concentrations in consumable body parts of fish or shellfish exceed applicable tissue criteria or guidelines. Criteria or guidelines related to protection of human and wildlife consumption include, but are not limited to, U.S. Food and Drug Administration Action Levels, National Academy of Sciences Guidelines, U.S. Environmental Protection Agency tissue criteria.**

Region 1 – added SWRCB Maximum Tissue Residue Level (MTRL) values to #5. Added #6. The water quality is of such concern that the Regional Water Board determines the water body needs to be afforded a level of protection offered by a 303(d) Listing.

Region 2- no change.

Region 3 - added SWRCB Maximum Tissue Residue Level (MTRL) values to #5. Added #6. The water quality is of such concern that the Regional Water Board determines the water body needs to be afforded a level of protection offered by a 303(d) Listing.

Region 4 – last sentence changed to "Criteria used to assess tissue impairments were Maximum Tissue Residual Levels."

Region 5 – no change

Region 6 – added " and California Office of Health Hazard Assessment "Maximum Tissue Residue Levels (MTRLs)". However later stated that " During the 2001-2002 list update, Lahontan Region waters **will not be recommended for listing based on TSMP results alone** without additional, statistically representative tissue data, ambient water and sediment data, and/or a fish advisory issued by state or local authorities. Additional monitoring will be recommended for waters where TSMP results indicate a possible fish consumption problem."

Added #6. The water quality is of such concern that the Regional Water Board determines the water body needs to be afforded a level of protection offered by a 303(d) Listing.

Added comment on intermittent waters: "Staff's current approach is to recommend that intermittent streams be assessed for listing only on the basis of data collected from water flowing on the surface".(as opposed to streams flowing underground in defined channels that may be affected by subsurface pollutants).

Region 7 – put all listing factors into one sentence: " Staff considered various factors, including non-attainment of water quality standards, public health advisories, previous 303(d) lists, and bioaccumulation of pollutants in fish tissue at concentrations that exceed applicable fish tissue criteria or guidelines."

Region 8 – Did not explicitly state listing or delisting criteria. Instead stated that, "staff generally utilized an approach that consisted of evaluating available data and determining if the data were adequate to support a listing decision."

Region 9 - added SWRCB Maximum Tissue Residue Level (MTRL) values, and added phrase, "for the protection of wildlife" after USEPA tissue criteria.

Delisting Factors provided to Regions by DWQ, followed by Regions use or changes

Water bodies may be removed from the list for specific pollutants or stressors if any one of these factors is met:

1. **Objectives are revised (for example, Site Specific Objectives), and the exceedence is thereby eliminated.**

Region 1 - no change

Region 2 – no change

Region 3 – no change

Region 4 – did not use

Region 5 – no change

Region 6 – reworded with no change in meaning

Region 7 – no delisting criteria presented, although current New River nutrients listing was delisting based on lack of data in River itself.

Region 8 – "To recommend delisting a waterbody from the 303(d) list, staff relied on the 1998 Listing/Delisting Guidance criteria that state that waterbodies may be removed from the 303(d) list if data (10 sample minimum) demonstrate that objectives are being met or if a TMDL has been developed and approved by USEPA."

Region 9 –no change

2. **A beneficial use is de-designated after U.S. EPA approval of a Use Attainability Analysis, and the non-support issue is thereby eliminated.**

Region 1 –no change

Region 2 –no change

Region 3 – no change

Region 4 – did not use

Region 5 – did not use

Region 6 – reworded as " The Basin plan is revised to remove a designated beneficial use in accordance with the circumstances set forth in federal water quality standards, regulations and USEPA guidance, and the non-support issue is thereby eliminated. (USEPA regulations prohibit the removal of designated uses under certain circumstances.)"

Region 7 – no delisting criteria presented, although current New River nutrients listing was delisting based on lack of data in River itself.

Region 8 – "To recommend delisting a waterbody from the 303(d) list, staff relied on the 1998 Listing/Delisting Guidance criteria that state that waterbodies may be removed from the 303(d) list if data (10 sample minimum) demonstrate that objectives are being met or if a TMDL has been developed and approved by USEPA."

Region 9 – added "A beneficial use, which is not an existing use, has been removed or....." to the beginning of this factor.

3. **Faulty data led to the initial listing. Faulty data include, but are not limited to, typographical errors, improper quality assurance/quality control (QA/QC) procedures, or limitations related to the analytical methods that would lead to an improper conclusions regarding the water quality status of the water body.**

Region 1 – changed "or limitations related to the analytical methods ...." to "or Toxic Substances Monitoring/State Mussel Watch Elevated Data Levels which are not confirmed by risk assessments for human consumption".

Region 2 –no change

Region 3 - changed "or limitations related to the analytical methods ...." to "or Toxic Substances Monitoring/State Mussel Watch Elevated Data Levels which are not confirmed by risk assessments for human consumption".

Region 4 – changed to " The original listing was based on exceeding EDLs (Elevated Data levels) or other assessment guidelines not considered appropriate or outdated."

Region 5 – no change

Region 6 – no change

Region 7 – no delisting criteria presented, although current New River nutrients listing was delisting based on lack of data in River itself.

Region 8 – "To recommend delisting a waterbody from the 303(d) list, staff relied on the 1998 Listing/Delisting Guidance criteria that state that waterbodies may be removed from the 303(d) list if data (10 sample minimum) demonstrate that objectives are being met or if a TMDL has been developed and approved by USEPA."

Region 9 – no change

4. **It has been documented that the objectives are being met and beneficial uses are not impaired based upon an evaluation of available monitoring data. This evaluation should discuss foreseeable changes in hydrology, land use, or product use and describe why such changes should not lead to future exceedance.**

Region 1 – changed "based upon an evaluation.....future exceedence" to "based upon Monitored Assessment criteria.

Region 2- no change

Region 3 - changed "based upon an evaluation.....future exceedence" to "based upon Monitored Assessment criteria.

Region 4 – eliminated last sentence.

Region 5 – no change

Region 6 – no change

Region 7 – no delisting criteria presented, although current New River nutrients listing was delisting based on lack of data in River itself.

Region 8 – "To recommend delisting a waterbody from the 303(d) list, staff relied on the 1998 Listing/Delisting Guidance criteria that state that waterbodies may be removed from the 303(d) list if data (10 sample minimum) demonstrate that objectives are being met or if a TMDL has been developed and approved by USEPA."

Region 9 –no change

5. A TMDL has been approved by the U.S. Environmental Protection Agency for that specific water body and pollutant (see 40 CFR 130.7(b)(4)).

Region 1 –removed from "for that specific.....to end.

Region 2 – did not use this factor.

Region 3 - removed from "for that specific.....to end

Region 4 – no change

Region 5 – no change

Region 6 – no change

Region 7 – no delisting criteria presented, although current New River nutrients listing was delisting based on lack of data in River itself.

Region 8 –"To recommend delisting a waterbody from the 303(d) list, staff relied on the 1998 Listing/Delisting Guidance criteria that state that waterbodies may be removed from the 303(d) list if data (10 sample minimum) demonstrate that objectives are being met or if a TMDL has been developed and approved by USEPA."

Region 9 – no change

6. **There are control measures in place, which will result in protection of beneficial uses. Control measures include permits, clean up and abatement orders, and Basin Plan requirements which are enforceable and include a time schedule (see 40 CFR 130.7(b)(1)(iii).**

Region 1- changed "Basin Plan Requirements" to "watershed management plans", and omitted CFR ref.)

Region 2 –did not use this factor

Region 3 - changed "Basin Plan Requirements" to "watershed management plans", and omitted CFR ref.)

Region 4 – no change

Region 5 – no change

Region 6 - no change

Region 7 – no delisting criteria presented, although current New River nutrients listing was delisting based on lack of data in River itself.

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Region 9 – no change

1/02

Evaluation Criteria	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	
Beneficial Uses	√	√		*		√	√	*	*	4
qualitative assessment of monitoring data			*							
WQ Objectives			√				√			2
narrative	√	√		√	*			*		3
numeric	√	√		√	*	√		√	*	5
site-specific objectives		√								1
antidegradation policy						*				1
MTRL Criteria	√		*	√		√		√	*	3
CTR	√	√		√	*	*		√	*	4
NTR	√	√			*	*		√	*	3
USEPA Criteria	√	√	*		*				*	2
DFG Criteria		*			*					
Threshold Effects Level			√							1
DFG Data	√	√								2
DHS Criteria	√	*			*					1
fishing, drinking, swimming advisory			*	*		*	*		*	
FDA Guidelines	√		*		√			√	*	3
NAS Guidelines			*		√			√	*	
Effects Range Median (ERM) criteria			√	√						4
ATSDR Guidelines**					√					1
Other Local Standards	*									
County Health Advisories (fish)		√		*		*				1
beach closures/postings				√				√		2
EBE averages								√		1
										4

Evaluation Criteria	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6	Region 7	Region 8	Region 9	
Other State Standards	*								*	
Office of Health Hazard Assessment fish consumption criteria						*				
bacteriological standards MCLs				*					√	
other MCLs				*				√	*	2
shellfish advisories				*						
Other Federal Standards	*								*	
NOAA sediment screening levels		√								1
International Standards	√									
international treaty							√			2
"Weight of evidence"	√	√	√			√			√	5
Temperature Guidelines	√									1
Scientific Literature	√	√								2
BPTCP Criteria										
relative benthic index (RBI)				√						
effects-based advisories		√								4
probable effects levels (PELs)			√	√						
Other?										
Title 22 standards				√						1
Best Professional Judement	√			√				*		2
Cumulative Review of All Available Information	√									1
fishing advisories		√								1
consensus of professional scientists		√								1

* More general reference only (from 7/01 guidance)

** Agency for Toxic Substances and Disease Registry (U.S. Department of Health and Human Services)

2/9/02
First Draft

Staff Report

DRAFT REPORT

Preface

Table of Contents

- Data and Information Used

- Region 8
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  - Data and Information Used
- Region 9
  - Water Body Listing Fact Sheets (for each decision)
  - Data and Information Used

Priorities (Only 2-year)
- Rationale
- Factors:
  - Water body significance
  - Degree standards are not met
  - Conformity with related activities in the watershed
  - Potential for beneficial use protection or recovery
  - Degree of public concern

References
- RWQCB staff reports
- Reports cited by SWRCB staff

303(d) List (Strikeout and Underline Version)

Format for the Fact Sheets:

Water Body Fact Sheet
Region _

1. **Watershed/Water Body**:
2. **Stressor/Beneficial Use**:
3. **Assessment of data quality**:
4. **Linkage between measurements and beneficial use or standard**:
5. **Correlation of stressor to response**:
6. **Utility of measure for judging if standards or uses are not attained**:
7. **Water Body-specific Information**:
8. **Sensitivity of the measurement for detecting response**:
9. **Spatial representativeness**:
10. **Temporal representativeness**:
11. **Quantitativeness**:
12. **Use of standard method**:
13. **Source of pollutant**:
14. **Availability of an alternative enforceable program**:
15. **RWQCB Recommendation**:
16. **SWRCB Staff Recommendation**:

From: Ken Harris
To: RB TMDL Contacts
Date: 3/20/02 2:26PM
Subject: 303(d) list 2-year completion schedule

We're are almost finished with the staff report proposing a revised section 303(d) list for 2002. On April 2 the draft report will be made public in preparation for public hearings on May 23, 24 (Sacramento) and May 30 (Ontario). During briefings our Executive Office decided that we will propose with the 303(d) listing a 2-year schedule for completion of TMDLs as required by federal law. Attached is a list that the TMDL Listing Unit put together based on the 5-year projection you gave us as part of the Budget Act-required Report to the Legislature. In the Budget Act Report the 5 year schedule is contingent on the Boards getting additional resources.

The question for you is: Can you live with the completion dates in the attached table with your current level of resources?

Please provide any revisions to the list to Craig J. Wilson by Friday 3/22. Otherwise, these TMDLs and completion dates will be proposed.

Ken Harris, Chief
TMDL Section
SWRCB
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CC: AEO; Craig J. Wilson

REGION	TMDL PROJECTS	WATER BODY	POLLUTANT ONL	TECHNICAL 1	TMDL COMPLETION DATE
1	Albion River Sediment TMDL Proje	Albion River	Sedimentation/S	2001	2003
1	Big River Sediment TMDL Project	Big River	Sedimentation/S	2001	2003
1	Garcia River Sediment TMDL Proje	Garcia River	Sedimentation/S	1997	2002
1	Gualala River Sediment TMDL Pro	Gualala River	Sedimentation/S	2001	2004
1	Mattole River Sediment TMDL Pro	Mattole River	Sedimentation/S	2002	2004
1	Mattole River Temperature TMDL	Mattole River	Temperature	2002	2004
1	Navarro River Sediment TMDL Pro	Navarro River	Sedimentation/S	2000	2004
1	Navarro River Sediment TMDL Pro	Navarro River De	Sedimentation/S	2000	2004
1	Navarro River Temperature TMDL	Navarro River	Temperature	2000	2004
1	Noyo River Sediment TMDL Projec	Noyo River	Sedimentation/S	1999	2003
1	Ten Mile River Sediment TMDL Pro	Ten Mile River	Sedimentation/S	2000	2003
2	San Francisco Bay Mercury	Richardson Bay	Mercury	2000	2002
2	San Francisco Bay Mercury	SF Bay Central	Mercury	2000	2002
2	San Francisco Bay Mercury	SF Bay Lower	Mercury	2000	2002
2	San Francisco Bay Mercury	SF Bay South	Mercury	2000	2002
2	San Francisco Bay Mercury	San Pablo Bay	Mercury	2000	2002
2	San Francisco Bay Mercury	Carquinez Strait	Mercury	2000	2002
2	San Francisco Bay Mercury	Sacramento Sar	Mercury	2000	2002
2	San Francisco Bay Mercury	Suisun Bay	Mercury	2000	2002
2	San Francisco Bay PCBs	Richardson Bay	PCBs/PCBs (dio	2002	2004
2	San Francisco Bay PCBs	SF Bay Central	PCBs/PCBs (dio	2002	2004
2	San Francisco Bay PCBs	SF Bay Lower	PCBs/PCBs (dio	2002	2004
2	San Francisco Bay PCBs	SF Bay South	PCBs/PCBs (dio	2002	2004
2	San Francisco Bay PCBs	San Pablo Bay	PCBs/PCBs (dio	2002	2004
2	San Francisco Bay PCBs	Carquinez Strait	PCBs/PCBs (dio	2002	2004
2	San Francisco Bay PCBs	Sacramento Sar	PCBs/PCBs (dio	2002	2004
2	San Francisco Bay PCBs	Suisun Bay	PCBs/PCBs (dio	2002	2004
2	South San Francisco Bay Copper	South San Franci	Copper		2003
2	South San Francisco Bay Nickel	South San Franci	Nickel		2003
2	San Francisco Bay Urban Creeks	Alameda Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Arroyo Corte Mc	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Arroyo De La La	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Arroyo Del Valle	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Arroyo Hondo	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Calabazas Cree	Diazinon	2002	2004

2	San Francisco Bay Urban Creeks	Corte Madera C	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Coyote Creek (N	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Coyote Creek (S	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Gallinas Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Guadalupe Rive	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Laurel Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Ledgewood Cre	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Los Gatos Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Matadero Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Miller Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Mt. Diablo Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Novato Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Permanente Cre	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Pine Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Pinole Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Rodeo Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	San Antonio Cre	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	San Felipe Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	San Francisquito	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	San Leandro Cre	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	San Leandro Cre	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	San Lorenzo Cre	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	San Mateo Cree	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	San Pablo Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	San Rafael Cree	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Saratoga Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Stevens Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Suisun Slough	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Walnut Creek	Diazinon	2002	2004
2	San Francisco Bay Urban Creeks	Wildcat Creek	Diazinon	2002	2004
2	Tomales Bay Pathogens	Tomales Bay	Pathogens	2002	2004
2	San Francisco Bay Copper	SF Bay Central	Copper	2002	2004
2	San Francisco Bay Copper	SF Bay Lower	Copper	2002	2004
2	San Francisco Bay Copper	San Pablo Bay	Copper	2002	2004
2	San Francisco Bay Copper	Carquinez Strait	Copper	2002	2004
2	San Francisco Bay Copper	Sacramento Sar	Copper	2002	2004

2	San Francisco Bay Copper	Suisun Bay	Copper	2002	2004
2	San Francisco Bay Nickel	SF Bay Lower	Nickel	2002	2004
2	San Francisco Bay Nickel	San Pablo Bay	Nickel	2002	2004
2	San Francisco Bay Nickel	Carquinez Strait	Nickel	2002	2004
2	San Francisco Bay Nickel	Sacramento Sar	Nickel	2002	2004
2	San Francisco Bay Nickel	Suisun Bay	Nickel	2002	2004
3	San Lorenzo Siltation	Carbonera Cree	Sedimentation/S	2001	2003
3	San Lorenzo Siltation	Lompico Creek	Sedimentation/S	2001	2003
3	San Lorenzo Siltation	San Lorenzo Rive	Sedimentation/S	2001	2003
3	San Lorenzo Siltation	San Lorenzo Rive	Sedimentation/S	2001	2003
3	San Lorenzo Siltation	Shingle Mill Cree	Sedimentation/S	2001	2003
3	San Luis Obispo Creek Nutients	San Luis Obispo (	Nutrients	2002	2004
3	San Luis Obispo Creek Pathogens	San Luis Obispo (	Pathogens	2003	2004
3	San Luis Obispo Creek Priority Poll	San Luis Obispo (	Priority Organics	2001	2002
3	Chorro Creek Metals	Chorro Creek	Metals	2001	2002
3	Chorro Creek Metals	Chorro Creek	Metals	2001	2002
3	Las Tablas Creek/Nacimiento Res	Las Tablas Creek	Metals	2001	2003
3	Las Tablas Creek/Nacimiento Res	Las Tablas Creek	Metals	2001	2003
3	Las Tablas Creek/Nacimiento Res	Las Tablas Creek	Metals	2001	2003
3	Las Tablas Creek/Nacimiento Res	Nacimiento Rese	Metals	2001	2003
3	Las Tablas Creek/Nacimiento Res	Nacimiento Rese	Metals	2001	2003
3	Morro Bay Nutrients	Chorro Creek	Nutrients	2001	2003
3	Morro Bay Nutrients	Los Osos Creek	Nutrients	2001	2003
3	Morro Bay Pathogens	Morro Bay	Pathogens	2002	2004
3	Morro Bay Priority Pollutants	Los Osos Creek	Priority Organics	2001	2002
3	Morro Bay Siltation	Chorro Creek	Sedimentation/S	2001	2003
3	Morro Bay Siltation	Los Osos Creek	Sedimentation/S	2001	2003
3	Morro Bay Siltation	Morro Bay	Sedimentation/S	2001	2003
4	Calleguas Creek Nutrient TMDL	Mugu Lagoon	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMDL	Arroyo Las Posas	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMDL	Arroyo Las Posas	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMDL	Arroyo Las Posas	Nitrate and Nitri	2002	2002
4	Calleguas Creek Nutrient TMDL	Arroyo Simi Reac	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMDL	Beardsley Chanr	Algae	2002	2002
4	Calleguas Creek Nutrient TMDL	Beardsley Chanr	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMDL	Calleguas Creek	Ammonia	2002	2002

4	Calleguas Creek Nutrient TMDL	Calleguas Creek	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMDL	Calleguas Creek	Nitrate and Nitri	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Algae	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Org. enrichmen	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Algae	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Org. enrichmen	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Algae	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Org. enrichmen	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Algae	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek Re	Org. enrichmen	2002	2002
4	Calleguas Creek Nutrient TMDL	Conejo Creek/A	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMDL	Duck Pond Agric	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMDL	Fox Barranca	Nitrate and Nitri	2002	2002
4	Calleguas Creek Nutrient TMDL	Revolon Slough I	Algae	2002	2002
4	Calleguas Creek Nutrient TMDL	Revolon Slough I	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMDL	Rio De Santa Clc	Nitrogen	2002	2002
4	Calleguas Creek Toxicity TMDL	Beardsley Chanr	Chlorpyrifos	2003	2003
4	Calleguas Creek Toxicity TMDL	Beardsley Chanr	Toxicity	2003	2003
4	Calleguas Creek Toxicity TMDL	Calleguas Creek	Toxicity	2003	2003
4	Calleguas Creek Toxicity TMDL	Conejo Creek Re	Toxicity	2003	2003
4	Calleguas Creek Toxicity TMDL	Conejo Creek Re	Toxicity	2003	2003
4	Calleguas Creek Toxicity TMDL	Conejo Creek Re	Toxicity	2003	2003
4	Calleguas Creek Toxicity TMDL	Conejo Creek Re	Toxicity	2003	2003
4	Calleguas Creek Toxicity TMDL	Duck Pond Agric	Toxicity	2003	2003
4	Calleguas Creek Toxicity TMDL	Revolon Slough I	Chlorpyrifos	2003	2003
4	Calleguas Creek Toxicity TMDL	Revolon Slough I	Toxicity	2003	2003
4	Calleguas Creek Chloride	Arroyo Las Posas	Chloride	2002	2002
4	Calleguas Creek Chloride	Arroyo Las Posas	Chloride	2002	2002
4	Calleguas Creek Chloride	Arroyo Simi Reac	Chloride	2002	2002
4	Calleguas Creek Chloride	Calleguas Creek	Chloride	2002	2002
4	Calleguas Creek Chloride	Conejo Creek Re	Chloride	2002	2002
4	Calleguas Creek Chloride	Conejo Creek Re	Chloride	2002	2002

4	Calleguas Creek Chloride	Tapo Canyon Re	Chloride	2002	2002
4	Calleguas Creek Salinity	Arroyo Las Posas	Sulfates	2003	2003
4	Calleguas Creek Salinity		Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Arroyo Las Posas	Sulfates	2003	2003
4	Calleguas Creek Salinity		Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Arroyo Simi Reac	Boron	2003	2003
4	Calleguas Creek Salinity	Arroyo Simi Reac	Sulfates	2003	2003
4	Calleguas Creek Salinity	Arroyo Simi Reac	Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Calleguas Creek	Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Conejo Creek Re	Sulfates	2003	2003
4	Calleguas Creek Salinity	Conejo Creek Re	Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Conejo Creek Re	Sulfates	2003	2003
4	Calleguas Creek Salinity	Conejo Creek Re	Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Conejo Creek Re	Sulfates	2003	2003
4	Calleguas Creek Salinity	Conejo Creek Re	Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Conejo Creek Re	Sulfates	2003	2003
4	Calleguas Creek Salinity	Conejo Creek Re	Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Conejo Creek/A	Sulfates	2003	2003
4	Calleguas Creek Salinity	Conejo Creek/A	Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Fox Barranca	Boron	2003	2003
4	Calleguas Creek Salinity	Fox Barranca	Sulfates	2003	2003
4	Calleguas Creek Salinity	Fox Barranca	Total Dissolved S	2003	2003
4	Calleguas Creek Salinity	Tapo Canyon Re	Boron	2003	2003
4	Calleguas Creek Salinity	Tapo Canyon Re	Sulfates	2003	2003
4	Calleguas Creek Salinity	Tapo Canyon Re	Total Dissolved S	2003	2003
4	Legacy Chlorinated Pesticides, S	Mugu Lagoon	Chlordane	2004	2004
4	Legacy Chlorinated Pesticides, S	Mugu Lagoon	Dacthal	2004	2004
4	Legacy Chlorinated Pesticides, S	Mugu Lagoon	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Mugu Lagoon	Endosulfan	2004	2004
4	Legacy Chlorinated Pesticides, S	Mugu Lagoon	Sediment Toxicit	2004	2004
4	Legacy Chlorinated Pesticides, S	Mugu Lagoon	Sedimentation/S	2004	2004
4	Legacy Chlorinated Pesticides, S	Arroyo Las Posas	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Arroyo Las Posas	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Beardsley Chanr	ChemA	2004	2004
4	Legacy Chlorinated Pesticides, S	Beardsley Chanr	Chlordane	2004	2004
4	Legacy Chlorinated Pesticides, S	Beardsley Chanr	Dacthal	2004	2004

4	Legacy Chlorinated Pesticides, S	Beardsley Chanr	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Beardsley Chanr	Dieldrin	2004	2004
4	Legacy Chlorinated Pesticides, S	Beardsley Chanr	Endosulfan	2004	2004
4	Legacy Chlorinated Pesticides, S	Beardsley Chanr	Toxaphene	2004	2004
4	Legacy Chlorinated Pesticides, S	Calleguas Creek	ChemA	2004	2004
4	Legacy Chlorinated Pesticides, S	Calleguas Creek	Chlordane	2004	2004
4	Legacy Chlorinated Pesticides, S	Calleguas Creek	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Calleguas Creek	Endosulfan	2004	2004
4	Legacy Chlorinated Pesticides, S	Calleguas Creek	Sediment Toxicit	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	Toxaphene	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	ChemA	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	Dacthal	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	Endosulfan	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	Toxaphene	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	ChemA	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	Dacthal	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	Endosulfan	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek R	Toxaphene	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek/A	Chlordane	2004	2004
4	Legacy Chlorinated Pesticides, S	Conejo Creek/A	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Duck Pond Agric	ChemA	2004	2004
4	Legacy Chlorinated Pesticides, S	Duck Pond Agric	Chlordane	2004	2004
4	Legacy Chlorinated Pesticides, S	Duck Pond Agric	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Duck Pond Agric	Sediment Toxicit	2004	2004
4	Legacy Chlorinated Pesticides, S	Duck Pond Agric	Toxaphene	2004	2004
4	Legacy Chlorinated Pesticides, S	Revolon Slough I	ChemA	2004	2004
4	Legacy Chlorinated Pesticides, S	Revolon Slough I	Chlordane	2004	2004
4	Legacy Chlorinated Pesticides, S	Revolon Slough I	Dacthal	2004	2004
4	Legacy Chlorinated Pesticides, S	Revolon Slough I	DDT	2004	2004
4	Legacy Chlorinated Pesticides, S	Revolon Slough I	Dieldrin	2004	2004
4	Legacy Chlorinated Pesticides, S	Revolon Slough I	Endosulfan	2004	2004
4	Legacy Chlorinated Pesticides, S	Revolon Slough I	Toxaphene	2004	2004
4	Calleguas Creek PCBs	Mugu Lagoon	PCBs	2004	2004
4	Calleguas Creek PCBs	Beardsley Chanr	PCBs	2004	2004

4 Calleguas Creek PCBs	Calleguas Creek PCBs	2004	2004
4 Calleguas Creek PCBs	Revolon Slough I PCBs	2004	2004
4 Los Angeles River Nutrient	Arroyo Seco Rec Algae	2002	2002
4 Los Angeles River Nutrient	Arroyo Seco Rec Algae	2002	2002
4 Los Angeles River Nutrient	Burbank Westerr Algae	2002	2002
4 Los Angeles River Nutrient	Burbank Westerr Ammonia	2002	2002
4 Los Angeles River Nutrient	Burbank Westerr Odors	2002	2002
4 Los Angeles River Nutrient	Burbank Westerr Scum/Foam-unr	2002	2002
4 Los Angeles River Nutrient	Compton Creek pH	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Ammonia	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Nutrients (Algae	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive pH	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Scum/Foam-unr	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Ammonia	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Nutrients (Algae	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Odors	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Scum/Foam-unr	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Ammonia	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Nutrients (Algae	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Odors	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Scum/Foam-unr	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Ammonia	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Nutrients (Algae	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Odors	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Scum/Foam-unr	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Ammonia	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Nutrients (Algae	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Odors	2002	2002
4 Los Angeles River Nutrient	Los Angeles Rive Scum/Foam-unr	2002	2002
4 Los Angeles River Nutrient	Rio Hondo Reac Ammonia	2002	2002
4 Los Angeles River Nutrient	Rio Hondo Reac pH	2002	2002
4 Los Angeles River Nutrient	Rio Hondo Reac Ammonia	2002	2002
4 Los Angeles River Nutrient	Tujunga Wash (L Ammonia	2002	2002
4 Los Angeles River Nutrient	Tujunga Wash (L Odors	2002	2002
4 Los Angeles River Nutrient	Tujunga Wash (L Scum/Foam-unr	2002	2002
4 Los Angeles River Nutrient	Verdugo Wash F Algae	2002	2002

4 Los Angeles River Nutrient	Verdugo Wash R	Algae	2002	2002
4 Los Angeles River Metals	Aliso Canyon Wc	Selenium	2003	2003
4 Los Angeles River Metals	Burbank Westerr	Cadmium	2003	2003
4 Los Angeles River Metals	Compton Creek	Copper	2003	2003
4 Los Angeles River Metals	Compton Creek	Lead	2003	2003
4 Los Angeles River Metals	Los Angeles Rive	Lead	2003	2003
4 Los Angeles River Metals	Los Angeles Rive	Lead	2003	2003
4 Los Angeles River Metals	Los Angeles Rive	Lead	2003	2003
4 Los Angeles River Metals	Monrovia Canyc	Lead	2003	2003
4 Los Angeles River Metals	Rio Hondo Reac	Copper	2003	2003
4 Los Angeles River Metals	Rio Hondo Reac	Lead	2003	2003
4 Los Angeles River Metals	Rio Hondo Reac	Zinc	2003	2003
4 Los Angeles River Metals	Tujunga Wash (L	Copper	2003	2003
4 Los Angeles River Pathogen	Arroyo Seco Rec	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Arroyo Seco Rec	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Bell Creek	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Compton Creek	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Los Angeles Rive	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Los Angeles Rive	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Los Angeles Rive	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Los Angeles Rive	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Rio Hondo Reac	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Rio Hondo Reac	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Tujunga Wash (L	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Verdugo Wash R	High Coliform C	2002	2002
4 Los Angeles River Pathogen	Verdugo Wash R	High Coliform C	2002	2002
4 Ventura Beaches Pathogen	Mandalay Beac	Beach Closures	2002	2002
4 Ventura Beaches Pathogen	McGrath Beach	Beach Closures	2002	2002
4 Ventura Beaches Pathogen	McGrath Beach	High Coliform C	2002	2002
4 Ventura Beaches Pathogen	Santa Clara Rive	High Coliform C	2002	2002
4 Santa Clara River Chloride	Santa Clara Rive	Chloride	2002	2002
4 Santa Clara River Chloride	Santa Clara Rive	Chloride	2002	2002
4 Santa Clara River Chloride	Santa Clara Rive	Chloride	2002	2002
4 Santa Clara River Nutrients	Brown Barranca,	Nitrate and Nitri	2002	2002
4 Santa Clara River Nutrients	Mint Canyon Cre	Nitrate and Nitri	2002	2002
4 Santa Clara River Nutrients	Santa Clara Rive	Ammonia	2002	2002

4 Santa Clara River Nutrients	Santa Clara Rive	Ammonia	2002	2002
4 Santa Clara River Nutrients	Santa Clara Rive	Ammonia	2002	2002
4 Santa Clara River Nutrients	Santa Clara Rive	Nitrate and Nitri	2002	2002
4 Santa Clara River Nutrients	Santa Clara Rive	Org. enrichmen	2002	2002
4 Santa Clara River Nutrients	Torrey Canyon C	Nitrate and Nitri	2002	2002
4 Santa Clara River Nutrients	Wheeler Canyor	Nitrate and Nitri	2002	2002
4 Santa Clar River Lakes Pathogen	Elizabeth Lake	Eutrophic	2004	2004
4 Santa Clar River Lakes Pathogen	Elizabeth Lake	Org. enrichmen	2004	2004
4 Santa Clar River Lakes Pathogen	Elizabeth Lake	pH	2004	2004
4 Santa Clar River Lakes Pathogen	Lake Hughes	Algae	2004	2004
4 Santa Clar River Lakes Pathogen	Lake Hughes	Eutrophic	2004	2004
4 Santa Clar River Lakes Pathogen	Lake Hughes	Fish Kills	2004	2004
4 Santa Clar River Lakes Pathogen	Lake Hughes	Odors	2004	2004
4 Santa Clar River Lakes Pathogen	Munz Lake	Eutrophic	2004	2004
4 Santa Clara River Lakes Trash	Elizabeth Lake	Trash	2004	2004
4 Santa Clara River Lakes Trash	Lake Hughes	Trash	2004	2004
4 Santa Clara River Lakes Trash	Munz Lake	Trash	2004	2004
4 San Gabriel River Nutrients	Coyote Creek	Algae	2004	2004
4 San Gabriel River Nutrients	Coyote Creek	Ammonia	2004	2004
4 San Gabriel River Nutrients	San Gabriel Rive	Algae	2004	2004
4 San Gabriel River Nutrients	San Gabriel Rive	Ammonia	2004	2004
4 San Gabriel River Nutrients	San Gabriel Rive	Toxicity	2004	2004
4 San Gabriel River Nutrients	San Gabriel Rive	Ammonia	2004	2004
4 San Gabriel River Nutrients	San Gabriel Rive	Toxicity	2004	2004
4 San Gabriel River Nutrients	San Gabriel Rive	Algae	2004	2004
4 San Gabriel River Nutrients	San Gabriel Rive	Ammonia	2004	2004
4 San Gabriel River Nutrients	San Jose Creek I	Algae	2004	2004
4 San Gabriel River Nutrients	San Jose Creek I	Ammonia	2004	2004
4 San Gabriel River Nutrients	Walnut Creek W	pH	2004	2004
4 San Gabriel River Nutrients	Walnut Creek W	Toxicity	2004	2004
4 San Gabriel River Metals	Coyote Creek	Silver	2004	2004
4 San Gabriel River Metals	San Gabriel Rive	Arsenic	2004	2004
4 San Gabriel River Metals	San Gabriel Rive	Lead	2004	2004
4 San Gabriel River Lakes Nutrients	Crystal Lake	Org. enrichmen	2003	2003
4 San Gabriel River Lakes Nutrients	El Dorado Lakes	Algae	2003	2003
4 San Gabriel River Lakes Nutrients	El Dorado Lakes	Ammonia	2003	2003

4	San Gabriel River Lakes Nutrients	El Dorado Lakes	Eutrophic	2003	2003
4	San Gabriel River Lakes Nutrients	El Dorado Lakes	pH	2003	2003
4	San Gabriel River Lakes Nutrients	Legg Lake	Ammonia	2003	2003
4	San Gabriel River Lakes Nutrients	Legg Lake	Odors	2003	2003
4	San Gabriel River Lakes Nutrients	Legg Lake	pH	2003	2003
4	San Gabriel River Lakes Nutrients	Fmoorpark Fwy	Org. enrichmen	2003	2003
4	San Gabriel River Lakes Nutrients	Santa Fe Dam P	pH	2003	2003
4	San Gabriel River Pathogen	Coyote Creek	High Coliform C	2002	2002
4	San Gabriel River Pathogen	San Gabriel Rive	High Coliform C	2002	2002
4	San Gabriel River Pathogen	San Gabriel Rive	High Coliform C	2002	2002
4	San Gabriel River Pathogen	San Gabriel Rive	High Coliform C	2002	2002
4	San Gabriel River Pathogen	San Jose Creek I	High Coliform C	2002	2002
4	Marina del Rey Pathogens	Marina del Rey H	High Coliform C	2003	2003
4	Marina del Rey Pathogens	Marina del Rey H	Beach Closures	2003	2003
4	Marina del Rey Pathogens	Marina del Rey H	High Coliform C	2003	2003
4	Malibu Creek Pahtogens	Malibu Lagoon	Enteric Viruses	2002	2002
4	Malibu Creek Pahtogens	Malibu Lagoon	High Coliform C	2002	2002
4	Malibu Creek Pahtogens	Malibu Lagoon	Shellfish Harvesti	2002	2002
4	Malibu Creek Pahtogens	Malibu Lagoon	Swimming Restri	2002	2002
4	Malibu Creek Pahtogens	Las Virgenes Cre	High Coliform C	2002	2002
4	Malibu Creek Pahtogens	Lindero Creek Re	High Coliform C	2002	2002
4	Malibu Creek Pahtogens	Lindero Creek Re	High Coliform C	2002	2002
4	Malibu Creek Pahtogens	Malibu Creek	High Coliform C	2002	2002
4	Malibu Creek Pahtogens	Medea Creek Re	High Coliform C	2002	2002
4	Malibu Creek Pahtogens	Medea Creek Re	High Coliform C	2002	2002
4	Malibu Creek Pahtogens	Palo Comado C	High Coliform C	2002	2002
4	Malibu Creek Pahtogens	Stokes Creek	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	ASHLAND AVENU	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	PICO KENTER DR	Enteric Viruses	2002	2002
4	Santa Monica Bay Beaches Path	PICO KENTER DR	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Santa Monica C	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Sepulveda Cany	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Abalone Cove B	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Big Rock Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Big Rock Beach	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Bluff Cove Beacl	Beach Closures	2002	2002

4	Santa Monica Bay Beaches	Path	Cabrillo Beach ((	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Cabrillo Beach ((	High Coliform C	2002	2002
4	Santa Monica Bay Beaches	Path	Carbon Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Castlerock Beac	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Dan Blocker Mer	High Coliform C	2002	2002
4	Santa Monica Bay Beaches	Path	Dockweiler Beac	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Dockweiler Beac	High Coliform C	2002	2002
4	Santa Monica Bay Beaches	Path	Escondido Beac	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Flat Rock Point B	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Hermosa Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Inspiration Point	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	La Costa Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Las Flores Beach	High Coliform C	2002	2002
4	Santa Monica Bay Beaches	Path	Las Tunas Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Leo Carillo Beac	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Leo Carillo Beac	High Coliform C	2002	2002
4	Santa Monica Bay Beaches	Path	Long Point Beac	High Coliform C	2002	2002
4	Santa Monica Bay Beaches	Path	Long Point Beac	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Malaga Cove Be	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Malibu Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Malibu Lagoon E	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Malibu Lagoon E	High Coliform C	2002	2002
4	Santa Monica Bay Beaches	Path	Manhattan Beac	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Nicholas Canyor	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Palo Verde Shor	Pathogens	2002	2002
4	Santa Monica Bay Beaches	Path	Paradise Cove B	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Paradise Cove B	High Coliform C	2002	2002
4	Santa Monica Bay Beaches	Path	Point Dume Bea	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Point Fermin Parl	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Point Vicente Be	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Portugese Bend	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Puerco Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Redondo Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Redondo Beach	High Coliform C	2002	2002
4	Santa Monica Bay Beaches	Path	Resort Point Bea	Beach Closures	2002	2002
4	Santa Monica Bay Beaches	Path	Robert H. Meyer	Beach Closures	2002	2002

4	Santa Monica Bay Beaches Path	Rocky Point Bea	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Royal Palms Bea	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Santa Monica Be	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Santa Monica Be	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Sea Level Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Topanga Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Topanga Beach	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Torrance Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Torrance Beach	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Trancas Beach (	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Trancas Beach (	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Venice Beach	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Venice Beach	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Whites Point Bea	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Will Rogers Beac	Beach Closures	2002	2002
4	Santa Monica Bay Beaches Path	Will Rogers Beac	High Coliform C	2002	2002
4	Santa Monica Bay Beaches Path	Zuma Beach (W	Beach Closures	2002	2002
4	Ballona Creek Pathogen	Ballona Creek	Enteric Viruses	2003	2003
4	Ballona Creek Pathogen	Ballona Creek	High Coliform C	2003	2003
4	Ballona Creek Pathogen	Ballona Creek Es	High Coliform C	2003	2003
4	Ballona Creek Pathogen	Ballona Creek Es	Shellfish Harvesti	2003	2003
4	Malibu Creek Nutrients	Malibu Lagoon	Eutrophic	2002	2002
4	Malibu Creek Nutrients	Lake Lindero	Algae	2002	2002
4	Malibu Creek Nutrients	Lake Lindero	Eutrophic	2002	2002
4	Malibu Creek Nutrients	Lake Lindero	Odors	2002	2002
4	Malibu Creek Nutrients	Lake Sherwood	Algae	2002	2002
4	Malibu Creek Nutrients	Lake Sherwood	Ammonia	2002	2002
4	Malibu Creek Nutrients	Lake Sherwood	Eutrophic	2002	2002
4	Malibu Creek Nutrients	Lake Sherwood	Org. enrichmen	2002	2002
4	Malibu Creek Nutrients	Malibu Lake	Algae	2002	2002
4	Malibu Creek Nutrients	Malibu Lake	Eutrophic	2002	2002
4	Malibu Creek Nutrients	Malibu Lake	Org. enrichmen	2002	2002
4	Malibu Creek Nutrients	Westlake Lake	Algae	2002	2002
4	Malibu Creek Nutrients	Westlake Lake	Ammonia	2002	2002
4	Malibu Creek Nutrients	Westlake Lake	Eutrophic	2002	2002
4	Malibu Creek Nutrients	Westlake Lake	Org. enrichmen	2002	2002

4	Malibu Creek Nutrients	Las Virgenes Cre	Nutrients (Algae	2002	2002
4	Malibu Creek Nutrients	Las Virgenes Cre	Org. enrichmen	2002	2002
4	Malibu Creek Nutrients	Las Virgenes Cre	Scum/Foam-unr	2002	2002
4	Malibu Creek Nutrients	Lindero Creek Re	Algae	2002	2002
4	Malibu Creek Nutrients	Lindero Creek Re	Scum/Foam-unr	2002	2002
4	Malibu Creek Nutrients	Lindero Creek Re	Algae	2002	2002
4	Malibu Creek Nutrients	Lindero Creek Re	Scum/Foam-unr	2002	2002
4	Malibu Creek Nutrients	Malibu Creek	Nutrients (Algae	2002	2002
4	Malibu Creek Nutrients	Malibu Creek	Scum/Foam-unr	2002	2002
4	Malibu Creek Nutrients	Medea Creek Re	Algae	2002	2002
4	Malibu Creek Nutrients	Medea Creek Re	Algae	2002	2002
4	Santa Monica Bay Metals	Santa Monica Bc	Cadmium	2004	2004
4	Santa Monica Bay Metals	Santa Monica Bc	Copper	2004	2004
4	Santa Monica Bay Metals	Santa Monica Bc	Lead	2004	2004
4	Santa Monica Bay Metals	Santa Monica Bc	Mercury	2004	2004
4	Santa Monica Bay Metals	Santa Monica Bc	Nickel	2004	2004
4	Santa Monica Bay Metals	Santa Monica Bc	Silver	2004	2004
4	Santa Monica Bay Metals	Santa Monica Bc	Zinc	2004	2004
4	Marina del Rey Legacy Chlorinat	Marina del Rey H	Benthic Comm.	2003	2003
4	Marina del Rey Legacy Chlorinat	Marina del Rey H	Chlordane	2003	2003
4	Marina del Rey Legacy Chlorinat	Marina del Rey H	DDT	2003	2003
4	Marina del Rey Legacy Chlorinat	Marina del Rey H	Dieldrin	2003	2003
4	Marina del Rey Legacy Chlorinat	Marina del Rey H	Fish Consumptic	2003	2003
4	Marina del Rey Legacy Chlorinat	Marina del Rey H	PCBs	2003	2003
4	Marina del Rey Legacy Chlorinat	Marina del Rey H	Sediment Toxicit	2003	2003
4	Ballona Creek Legacy Chlorinate	Ballona Creek	ChemA	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek	Chlordane	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek	DDT	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek	Dieldrin	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek	PCBs	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek	Sediment Toxicit	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek Es	Arochlor	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek Es	Chlordane	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek Es	DDT	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek Es	PCBs	2004	2004
4	Ballona Creek Legacy Chlorinate	Ballona Creek Es	Sediment Toxicit	2004	2004

4	Marina del Rey Metals	Marina del Rey H	Copper	2004	2004
4	Marina del Rey Metals	Marina del Rey H	Lead	2004	2004
4	Marina del Rey Metals	Marina del Rey H	Zinc	2004	2004
4	Ballona Creek Metals			2003	2003
4	Ballona Creek Metals	Ballona Creek	Arsenic	2003	2003
4	Ballona Creek Metals	Ballona Creek	Cadmium	2003	2003
4	Ballona Creek Metals	Ballona Creek	Copper	2003	2003
4	Ballona Creek Metals	Ballona Creek	Lead	2003	2003
4	Ballona Creek Metals	Ballona Creek	Silver	2003	2003
4	Ballona Creek Metals	Ballona Creek	Toxicity	2003	2003
4	Ballona Creek Metals	Ballona Creek Es	Lead	2003	2003
4	Ballona Creek Metals	Ballona Creek Es	Zinc	2003	2003
4	Ballona Creek Metals	Ballona Creek W	Arsenic	2003	2003
4	Los Angeles Harbor Pathogens	LA Harbor Main (	Beach Closures	2002	2002
4	Los Angeles Harbor Pathogens	Cabrillo Beach (I	Beach Closures	2002	2002
4	Dominguez Channel Pathogens	Dominguez Cha	High Coliform C	2002	2002
4	Dominguez Channel Pathogens	Dominguez Cha	High Coliform C	2002	2002
4	Dominguez Channel Pathogens	Torrance Carson	High Coliform C	2002	2002
4	Dominguez Channel Pathogens	WILMINGTON DR	High Coliform C	2002	2002
4	Colorado Lagoon Legachy Chlo	Colorado Lagoo	Chlordane	2004	2004
4	Colorado Lagoon Legachy Chlo	Colorado Lagoo	DDT	2004	2004
4	Colorado Lagoon Legachy Chlo	Colorado Lagoo	Dieldrin	2004	2004
4	Colorado Lagoon Legachy Chlo	Colorado Lagoo	PCBs	2004	2004
4	Colorado Lagoon Legachy Chlo	Colorado Lagoo	Sediment Toxicit	2004	2004
4	Colorado Lagoon Lead PAHs an	Colorado Lagoo	Lead	2004	2004
4	Colorado Lagoon Lead PAHs an	Colorado Lagoo	PAHs	2004	2004
4	Colorado Lagoon Lead PAHs an	Colorado Lagoo	Zinc	2004	2004
4	Los Cerritos Channel Metals	Los Cerritos Cha	Copper	2004	2004
4	Los Cerritos Channel Metals	Los Cerritos Cha	Lead	2004	2004
4	Los Cerritos Channel Metals	Los Cerritos Cha	Zinc	2004	2004
4	Los Cerritos Channel Ammonia	Los Cerritos Cha	Ammonia	2004	2004
4	Los Cerritos Channel Ammonia	Los Cerritos Cha	High Coliform C	2004	2004
5	San Joaquin River - Salts	San Joaquin Rive	Boron	2002	2003
5	San Joaquin River - Salts	San Joaquin Rive	Electrical Condu	2002	2003
6	Haiwee Reservoir Copper TMDL P	Haiwee Reservoi	Copper	2002	2003
6	Indian Creek Reservoir Nutrients T	Indian Creek Res	Nutrients	2000	2002

6	Tinemaha Reservoir Metals TMDL	Tinemaha Resen	Metals		2003	2004
6	Tinemaha Reservoir Metals TMDL	Tinemaha Resen	Arsenic		2003	2004
6	Bodie Creek Metals TMDL Project	Bodie Creek	Metals		2003	2004
6	Gray Creek Sedimentation/Siltati	Gray Creek	Sedimentation/S		2003	2004
6	Squaw Creek Sedimentation/Siltc	Squaw Creek	Sedimentation/S		2002	2003
7	Imperial Valley Drains Sedimenta	Imperial Valley D	Sedimentation/S		2003	2004
7	New River Silt TMDL Project	New River	Silt		2001	2002
7	Salton Sea Nutrients TMDL Project	Salton Sea	Nutrients		2003	2004
8	Lake Elsinore/San Jacinto River N	Lake Elsinore	nutrients		2003	2004
8	Lake Elsinore/San Jacinto River N	Canyon Lake	org. enrichment		2003	2004
8	Lake Elsinore/San Jacinto River Tc	Lake Elsinore	unknown toxicit		2003	2004
8	Lake Elsinore/San Jacinto River P	Canyon Lake	Pathogens		2003	2004
8	Lake Elsinore/San Jacinto River Se	Lake Elsinore	sediment/siltatic		2003	2004
8	Upper Newport Bay Watershed P	Upper Newport E	chlorpyrifos/diaz		2002	2002
8	Upper Newport Bay Watershed P	San Diego Creek	chlorpyrifos/diaz		2002	2002
8	Upper Newport Bay Watershed P	San Diego Creek	chlorpyrifos/diaz		2002	2002
8	Newport Bay Watershed Seleniur	Upper Newport E	selenium		2002	2003
8	Newport Bay Watershed Seleniur	Lower Newport E	selenium		2002	2003
8	Newport Bay Watershed Seleniur	San Diego Creek	selenium		2002	2003
8	Newport Bay Watershed Seleniur	San Diego Creek	selenium		2002	2003
9	Chollas Creek Diazinon	Chollas Creek 9(	Toxicity (Diazino		2001	2002
9	Rainbow Creek Eutrophication	Rainbow Creek	Eutrophic (Nutrie		2001	2002
9	Chollas Creek Metals	Chollas Creek 9(	Metals (Cd, Cu,		2002	2003
9	San Diego Bay, Shelter Island Co	San Diego Bay; S	Metals (dissolve		2001	2002

From: Lisa McCann
To: Bishop, Jonathan ; Bruns, Jerry; Carlisle, Craig; Curtis, Chuck; Grober, Les; Harris, Ken; Jayne, Deborah; Leland, David; Mumley, Thomas; Newkirk, Teresa; Smythe, Hope
Date: 3/20/02 2:53PM
Subject: Re: 303(d) list 2-year completion schedule

looks ok for Region 3.

Lisa Horowitz McCann
Senior Environmental Scientist
Supervisor, Watershed Assessment Unit
Central Coast Regional Water Quality Control Board
81 S. Higuera Street, Suite 200
San Luis Obispo, CA 93401

lmccann@rb3.swrcb.ca.gov
(805) 549-3132

>>> Ken Harris 03/20/02 02:25PM >>>

We're are almost finished with the staff report proposing a revised section 303(d) list for 2002. On April 2 the draft report will be made public in preparation for public hearings on May 23, 24 (Sacramento) and May 30 (Ontario). During briefings our Executive Office decided that we will propose with the 303(d) listing a 2-year schedule for completion of TMDLs as required by federal law. Attached is a list that the TMDL Listing Unit put together based on the 5-year projection you gave us as part of the Budget Act-required Report to the Legislature. In the Budget Act Report the 5 year schedule is contingent on the Boards getting additional resources.

The question for you is: Can you live with the completion dates in the attached table with your current level of resources?

Please provide any revisions to the list to Craig J. Wilson by Friday 3/22. Otherwise, these TMDLs and completion dates will be proposed.

Ken Harris, Chief
TMDL Section
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Sacramento, CA 95814

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Fax: 916.341.5470
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CC: AEO; Wilson, Craig J.

From: Thomas Mumley
To: Bishop, Jonathan ; Bruns, Jerry; Carlisle, Craig; Curtis, Chuck; Grober, Les; Harris, Ken; Jayne, Deborah; Leland, David; McCann, Lisa; Newkirk, Teresa; Smythe, Hope
Date: 3/20/02 4:14PM
Subject: Re: 303(d) list 2-year completion schedule

Region 2 has no problem.

>>> Ken Harris 03/20/02 02:25PM >>>

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"The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at www.calepa.ca.gov."

CC: Wilson, Craig J.

From: Joe Karkoski
To: Ken Harris
Date: 3/21/02 11:52AM
Subject: Re: 303(d) list 2-year completion schedule

Ken,
Jerry is not in the office today and may not be in tomorrow, so I have attached the modified list for Region 5.

Also, I wanted to make a couple of comments. 1) Can we get a copy of the draft going out to the public before it goes out to the public (i.e. early next week)? We would like to check for errors and also determine whether there are differences in how you prepared the list and how we prepared the recommendations. We may be asked questions by the public and it would be nice to be prepared. If it is possible to send the draft, please send it to Jerry Bruns and Gene Davis, as I will be out. 2) Your current request states that a 2-year schedule for TMDL completion is required by federal law. Current federal regulations (40 CFR 130.7(b)(4) state that "... The priority ranking shall specifically include the identification of waters targeted for TMDL development in the next two years." As we stated in our recommendations, all of our "High" priority waters are targeted for TMDL development. As I understand it, EPA guidance suggests the submission of a schedule, but a schedule is not a legal requirement.

Joe

>>> Ken Harris 03/20/02 02:25PM >>>

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CC: Craig J. Wilson; Dennis Westcot; Gene Davis; Jerry Bruns; Ken Landau; Les Grober; Patrick Morris

REGION	TMDL PROJECTS	WATER BODY	POLLUTANT ONL	TECHNICAL 1	TMDL COMPLE
5	San Joaquin River - Salts	San Joaquin Rive	Boron	2002	2003
5	San Joaquin River - Salts	San Joaquin Rive	Electrical Condu	2002	2003
5	Sacramento Area Urban Creeks -	Arcade Creek	Diazinon	2002	2003
5	Sacramento Area Urban Creeks -	Arcade Creek	Chlorpyrifos	2002	2003
5	Sacramento Area Urban Creeks -	Chicken Ranch S	Chlorpyrifos	2002	2003
5	Sacramento Area Urban Creeks -	Chicken Ranch S	Diazinon	2002	2003
5	Sacramento Area Urban Creeks -	Elder Creek	Chlorpyrifos	2002	2003
5	Sacramento Area Urban Creeks -	Elder Creek	Diazinon	2002	2003
5	Sacramento Area Urban Creeks -	Elk Grove Creek	Diazinon	2002	2003
5	Sacramento Area Urban Creeks -	Morrison Creek	Diazinon	2002	2003
5	Sacramento Area Urban Creeks -	Natomas East M	Diazinon	2002	2003
5	Sacramento Area Urban Creeks -	Strong Ranch Slc	Chlorpyrifos	2002	2003
5	Sacramento Area Urban Creeks -	Strong Ranch Slc	Diazinon	2002	2003
5	San Joaquin River - OP Pesticides	San Joaquin Rive	Chlorpyrifos	2002	2003
5	San Joaquin River - OP Pesticides	San Joaquin Rive	Diazinon	2002	2003
5	Sacramento/Feather - Diazinon	Feather River, Lo	Diazinon	2002	2003
5	Sacramento/Feather - Diazinon	Sacramento Rive	Diazinon	2002	2003
5	Clear Lake - Mercury	Clear Lake	Mercury	2002	2003
5	Cache Creek - Mercury	Cache Creek	Mercury	2003	2004
5	Sacramento Delta Waterways - M	Sacramento Del	Mercury	2003	2004
5	Sacramento Delta Waterways - M	Sacramento Del	Org. enrichmen	2003	2004
5	Sacramento River - Metals	Sacramento Rive	Cadmium	2001	2002
5	Sacramento River - Metals	Sacramento Rive	Copper	2001	2002
5	Sacramento River - Metals	Sacramento Rive	Zinc	2001	2002
5	Sulphur Creek - Mercury	Sulphur Creek	Mercury	2003	2004

From: Deborah Jayne
To: Craig J. Wilson
Date: 3/22/02 7:04PM
Subject: Re: 303(d) list 2-year completion schedule

Two modifications are needed for Region 9:
Completion for Shelter Island Yacht Basin - - Dissolved Copper should be 2003
Completion for Chollas Creek - - Metals should be 2004

>>> Ken Harris 03/20/02 02:25PM >>>

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CC: Craig Carlisle; James Smith; Ken Harris

From: Chuck Curtis
To: Wilson, Craig J.
Date: 3/22/02 9:27AM
Subject: changes to tmdl priorities schedule

Craig,
Attached is a modified Excel spreadsheet with changed dates and TMDLs for Region 6. I've deleted Timemaha arsenic because we proposed to delist it as natural sources. I've deleted Bodie and Gray Creeks because the schedule on them has slipped due to resources, and we won't get a technical or completed TMDL for those in the next 2 years. I changed the Haiwee Reservoir Tech TMDL date from 2002 to 2001, because that's when we completed and submitted the Tech TMDL to EPA. I changed the Timemaha metals dates by 1 year due to resources. I changed the Squaw Creek dates by 2 years due to resources.
Chuck

CC: Harris, Ken; Mumley, Thomas

REGION	TMDL PROJECTS	WATER BODY	POLLUTANT ONL	TECHNICAL T
6	Haiwee Reservoir Copper TMDL P	Haiwee Reservoi	Copper	2001
6	Indian Creek Reservoir Nutrients T	Indian Creek Re:	Nutrients	2000
6	Tinemaha Reservoir Metals TMDL	Tinemaha Resen	Metals	2004
6	Squaw Creek Sedimentation/Siltc	Squaw Creek	Sedimentation/S	2004

TMDL COMPLETION DATE
2003
2002
2005
2005

From C Jurk
3/02
possible
priority list

Section 4
TOTAL MAXIMUM DAILY LOADS (TMDLS)
ESTABLISHED/COMPLETED or CURRENTLY BEING DEVELOPED
March 2002

North Coast Region – R1

Waterbody	Pollutant(s)	Status
Albion River	Sediment	Established
Big River	Sediment	Established
Eel River, South Fork	Sediment, Temperature	Established
Garcia River	Sediment	Established
Gualala River	Sediment	Established
Navarro River, Delta	Sediment	Established
Navarro River	Sediment, Temperature	Established
Noyo River	Sediment	Established
South Fork Trinity River	Sediment	Established
Redwood Creek	Sediment	Established
South Fork Eel River	Sediment, Temperature	Established
Ten Mile River	Sediment	Established
Van Duzen River	Sediment	Established
Eel River, Delta	Sediment	Currently Being Developed
Eel River, Middle Fork	Sediment, Temperature	Currently Being Developed
Eel River, North Fork	Sediment, Temperature	Currently Being Developed
Eel River, Upper Mainstem	Sediment	Currently Being Developed
Klamath River	Nutrients, Temperature	Currently Being Developed
Klamath River, Mainstem	Dissolved Oxygen	Currently Being Developed
Lost River, Clear Lake Area	Nutrients, Temperature	Currently Being Developed
Lost River, Tulelake Area	Nutrients, Temperature	Currently Being Developed
Mad River	Turbidity	Currently Being Developed
Mattole River	Sediment, Temperature	Currently Being Developed
Russian River	Sediment	Currently Being Developed
Salmon River	Nutrients, Temperature	Currently Being Developed
Scott River	Sediment, Temperature	Currently Being Developed
Shasta River	Dissolved Oxygen, Temperature	Currently Being Developed
Ten Mile River	Sediment	Currently Being Developed
Trinity River, Middle Fork	Sediment	Currently Being Developed

San Francisco Bay Region – R2

Waterbody	Pollutant(s)	Status
Napa River	Sediment	Currently Being Developed
Pescadero/Butano Creeks	Sediment	Currently Being Developed
San Francisco Bay	Copper, Mercury, Nickel, PCBs	Currently Being Developed
San Francisquito Creek	Sediment	Currently Being Developed
Sonoma Creek	Sediment	Currently Being Developed
Tomales Bay	Pathogens	Currently Being Developed
Urban Creeks	Diazinon	Currently Being Developed
Walker Creek	Mercury	Currently Being Developed

Central Coast Region – R3

Waterbody	Pollutant(s)	Status
Clear Creek-Hernandez Reservoir	Metals	Currently Being Developed
Las Tablas Creek-Nacimiento Resorvoir	Mercury	Currently Being Developed
Monterey Harbor	Metals	Currently Being Developed
Morro Bay	Metals, Nutrients, Pathogens, Siltation	Currently Being Developed
Pajaro River	Nutrients, Siltation	Currently Being Developed
Salinas River	Nutrients, Pesticides, Salinity, Siltation	Currently Being Developed
San Lorenzo River	Nutrients, Pathogens, Siltation	Currently Being Developed
San Luis Obispo Creek	Nutrients, Pathogens	Currently Being Developed
Schwan Lake	Pathogens	Currently Being Developed
Soquel Lagoon	Pathogens	Currently Being Developed
Valencia Creek and Aptos Creek	Pathogens, Siltation	Currently Being Developed
Waddell Creek	Nutrients	Currently Being Developed
Watsonville Slough	Metals, Oil and Grease, Pathogens, Pesticides, Siltation	Currently Being Developed

Los Angeles Region – R4

Waterbody	Pollutant(s)	Status
Ballona Creek	Trash	Established
Ballona Creek wetland	Trash	Established
Calleguas Creek	Chloride	Established
East Fork San Gabriel River	Trash	Completed
Los Angeles River	Trash	Established
Ballona Creek	Historic Pesticides, Metals,	Currently Being Developed
Calleguas Creek	Nutrients, Salts	Currently Being Developed
Dominguez Channel	Coliform	Currently Being Developed
Los Angeles Harbor	Coliform	Currently Being Developed
Los Angeles River	Coliform, Metals, Nutrients	Currently Being Developed
Malibu Creek	Coliform, Metals, Nutrients	Currently Being Developed
Marina del Rey	Metals	Currently Being Developed
Marina del Rey Harbor	Coliform, Historic Pesticides	Currently Being Developed
McGrath Beach	Coliform	Currently Being Developed
San Gabriel River	Coliform, Nutrients	Currently Being Developed
Santa Clara River	Chloride, Nutrients	Currently Being Developed
Santa Monica Bay	Coliform	Currently Being Developed
Santa Monica Bay, Nearshore and Offshore	Metals	Currently Being Developed

Central Valley Region – R5

Waterbody	Pollutant(s)	Status
Salt Slough	Selenium	Completed
Grassland Marshes	Selenium	Completed
San Joaquin River	Selenium	Completed
Bear Creek	Mercury	Currently Being Developed
Cache Creek	Mercury	Currently Being Developed
Clear Lake	Mercury	Currently Being Developed
Delta	Diazinon and Chlorpyrifos, Dissolved Oxygen, Mercury	Currently Being Developed
Harley Gulch	Mercury	Currently Being Developed
Merced, Tuolumne and Stanislaus	Diazinon and Chlorpyrifos	Currently Being Developed
Sacramento and Feather Rivers	Diazinon	Currently Being Developed
Sacramento Area Urban Creeks	Diazinon and Chlorpyrifos	Currently Being Developed
Sacramento River	Mercury	Currently Being Developed
San Joaquin River	Diazinon and Chlorpyrifos, Electrical Conductivity & Boron, Organochlorine Pesticides	Currently Being Developed
Sulfer Creek	Mercury	Currently Being Developed

Lahontan Region – R6

Waterbody	Pollutant(s)	Status
Bear Creek	Sedimentation/Siltation	Currently Being Developed
Blackwood Creek	Sedimentation/Siltation	Currently Being Developed
Bodie Creek	Metals	Currently Being Developed
Bridgeport Reservoir	Nutrients	Currently Being Developed
Bronco Creek	Sedimentation/Siltation	Currently Being Developed
Clearwater Creek	Sedimentation/Siltation	Currently Being Developed
Crowley Lake	Nutrients	Currently Being Developed
Gray Creek	Sedimentation/Siltation	Currently Being Developed
Haiwee Reservoir	Copper	Currently Being Developed
Heavenly Valley Creek	Sedimentation/Siltation	Currently Being Developed
Hot Springs Canyon Creek	Sedimentation/Siltation	Currently Being Developed
Indian Creek Reservoir	Nutrients	Currently Being Developed
Lake Tahoe	Nutrients	Currently Being Developed
Squaw Creek	Sedimentation/Siltation	Currently Being Developed
Tinemaha Reservoir	Metals	Currently Being Developed
Truckee River	Sedimentation/Siltation	Currently Being Developed
Ward Creek	Sedimentation/Siltation	Currently Being Developed

Colorado River Basin Region – R7

Waterbody	Pollutant(s)	Status
Alamo River	Pesticides, Sediment	Currently Being Developed
Coachella Valley Stormwater Channel	Pathogens	Currently Being Developed
Imperial Valley Drains	Sediment, Selenium	Currently Being Developed
New River	Pathogens, Sediment	Currently Being Developed
Palo Verde Outfall Drain	Pathogens	Currently Being Developed
Salton Sea (transboundary watershed)	Nutrients	Currently Being Developed

Santa Ana Region – R8

Waterbody	Pollutant(s)	Status
Newport Bay	Nutrients, Sediment, Pathogens	Completed
San Diego Creek Reach 1	Nutrients, Sediment, Pathogens	Completed
San Diego Creek Reach 2	Nutrients, Sediment	Completed
Big Bear Lake	Metals, Nutrients, Sediment	Currently Being Developed
Crayon Lake	Nutrients, Pathogens	Currently Being Developed
Knickerbocker Creek	Pathogens	Currently Being Developed
Lake Elsinore	Nutrients, Toxicity	Currently Being Developed
Newport Bay	Diazinon and Chorpyrifos, Pathogens, Selenium, Metals, Pesticides, Organics Toxicity	Currently Being Developed
Prado Area Streams	Nutrients, Pathogens	Currently Being Developed

San Diego Region – R9

Waterbody	Pollutant(s)	Status
Chollas Creek	Diazinon, Metals	Currently Being Developed
Mission Bay	Coliform	Currently Being Developed
Rainbow Creek	Nutrients	Currently Being Developed
San Diego Bay – Downtown Piers	Toxicity, Benthic Communities	Currently Being Developed
San Diego Bay – Grape Street	Toxicity, Benthic Communities	Currently Being Developed
San Diego Bay – Near Chollas Creek	Toxicity, Benthic Communities	Currently Being Developed
San Diego Bay – San Diego Naval Station	Toxicity, Benthic Communities	Currently Being Developed
San Diego Bay – Seventh Street Channel	Toxicity, Benthic Communities	Currently Being Developed
San Diego Bay – Shelter Island Yacht Basin	Dissolved Oxygen	Currently Being Developed
San Diego Bay- Switzer Creek	Toxicity, Benthic Communities	Currently Being Developed

FROM: SWRCB DECISION 1631

The order amends the licenses to set quantified instream flow requirements for the protection of fish in each of the four streams
from which Los Angeles diverts water. The order also establishes water diversion criteria to protect wildlife and other
environmental resources in the Mono Basin. The water diversion criteria: (1) prohibit the export of water from the Mono Basin
until the water level of Mono Lake reaches 6,377 feet above mean sea level; and (2) restrict Mono Basin water exports in a
manner that is intended to result in the water level of Mono Lake rising to an elevation of 6,391 feet in approximately 20 years.

The higher water level will protect nesting habitat for California gulls and other birds using the islands in Mono lake, maintain the
long-term productivity of the Mono Lake brine shrimp and brine fly populations, enhance the scenic quality of the Mono Basin,
meet applicable water quality standards, and reduce blowing dust from presently exposed lakebed areas in order to protect
health and comply with federal air quality standards. The order also requires Los Angeles to prepare restoration plans to
restore the four streams from which it diverts water and to restore a portion of the waterfowl habitat which was lost due to the
decline of Mono Lake. Once the water level of 6,391 feet is reached, it is expected that Los Angeles will be able to export
approximately 30.8 thousand acre-feet of water per year from the Mono Basin.

For Mono Lake
3/02

3/20/02

Levy
Latest Version
3/20/02

Preface

The State Water Resources Control Board (SWRCB) is required to review, make changes as necessary, and submit the Clean Water Act Section 303(d) list to the U.S. Environmental Protection Agency (EPA) by October 1, 2002.

This document presents the proposals for additions, deletions, and changes to the 1998 California 303(d) List as well as recommendations for changing priorities, development of a Watch List, and development of a TMDLs Completed List. The report provides a summary of the recommended list changes and the SWRCB staff analysis of the data and information as well as the Regional Water Quality Control Board (RWQCB) recommendations.

This Staff Report has three parts: (1) Volume I which contains the listing methodology and a summary of the proposed additions, deletions, changes, and priorities; (2) Volume II which contains summaries of the proposals for the North Coast, San Francisco Bay, Central Coast, and Los Angeles Regional Water Quality Control Boards (RWQCBs); and (3) Volume III which contains summaries of the proposals for the Central Valley, Lahontan, Colorado River Basin, Santa Ana, and San Diego RWQCBs. Each proposal is presented in a water body fact sheet.

The SWRCB will accept testimony at northern and southern California hearings on the proposed additions, deletions, changes, and priorities to the 1998 Section 303(d) list. After responses to comments are developed, the SWRCB will consider approval of the 2002 Section 303(d) list submittal. Once approved by the SWRCB, the list and supporting information will be submitted to EPA.

CJ:

I'm working on the matter we discussed this morning re: Background, etc., & will get back to you soon (hopefully by Friday)

MJL

Table of Contents

Staff Report by the
Division of Water Quality
State Water Resources Control Board

REVISION OF THE CLEAN WATER ACT SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS

Volume I

Introduction

The State of California is required under Clean Water Act (CWA) section 303(d) and federal regulations (40 CFR 130) to prepare a list of and set priorities for water quality limited segments still requiring Total Maximum Daily Loads (TMDLs). This section 303(d) list was last ~~prepared~~ in 1998. The ~~CWA~~ requires the section 303(d) list to be ~~completed~~ every two years. The U.S. Environmental Protection Agency (EPA) has extended the date for submission of the updated section 303(d) list to October 1, 2002.

The purpose of this Staff Report is to present proposals for revision the State's Section 303(d) list and to present recommendations for changing priorities, development of a Watch List, and development of a TMDLs Completed List. The State Water Resources Control Board (SWRCB) staff proposes several additions, deletions, and changes to the existing 1998 section 303(d) list (Appendix).

Background

CWA section 303(d) requires states to identify waters that do not meet applicable water quality standards with technology-based controls alone. In terms of the CWA, water quality standards are the designated uses of a water body, the adopted water quality criteria, and the State's antidegradation policy. In a similar way under the Porter-Cologne Water Quality Control Act, water quality standards are beneficial uses to be made of a water body, the established water quality objectives (both narrative and numeric), and the State's nondegradation policy (SWRCB Resolution No. 68-16).

The section 303(d) list must include a description of the pollutants causing the violation of water quality standards (40 CFR 130.7(b)(iii)(4)) and a priority ranking of the water quality limited segments for the purpose of development of TMDLs. A TMDL is the sum of the individual wasteload allocations for point sources and load allocations for nonpoint sources and natural background, tributaries, or adjacent segments. A water quality limited segment is "any segment [of a water

body] where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after application of technology-based effluent limitations required by CWA Sections 301(b) or 306."

The states are required to review in even-numbered years the Section 303(d) list, make changes as necessary, and submit the list to EPA for approval. Federal regulation exempted the requirement for the list to be submitted in 2000, and extended the date for submission of the next section 303(d) list to October 1, 2002.

The SWRCB is in the process of developing a Water Quality Control Policy for guidance on the development of the CWA section 303(d) list of water quality limited segments. The Policy will address the solicitation of all readily available data and information, evaluation of the data and information, an approach for considering the weight of evidence for identifying water quality limited segments, listing and de-listing factors for determining attainment of standards or beneficial uses, priority setting, and other topics. This policy, once developed, will be used to develop all future lists.

Methodology Used to Develop the List

The SWRCB is required to provide EPA a description of the methodology used to develop the section 303(d) list (40 CFR 130.7(b)(6)(i)). This section presents the SWRCB methodology for developing the 2002 section 303(d) list.

The SWRCB and RWQCB staff have evaluated each addition, deletion, and change to the section 303(d) based on all the data and information available for each water body and pollutant. These recommendations are based upon "all existing and readily available data and information" (40 CFR 130.7(b)(5)). In developing the recommendations, the SWRCB staff has used the recommendations and analysis of the RWQCBs. Each recommendation to the SWRCB is an individual and independent assessment of each water body and pollutant, giving consideration to its particular merits. SWRCB staff took into account both general considerations (e.g., what the SWRCB should consider) and facts relating to individual water bodies and pollutants (e.g., how the RWQCBs looked at certain data or the significance of a particular water in the region).

Assumptions

In developing the SWRCB staff recommendations it was assumed that:

1. The 1998 section 303(d) list (Appendix) forms the basis for the 2002 list submittal.

2. All waters listed on the 1998 list will be included in the 2002 list submittal unless it was recommended by a RWQCB to change the listing status of a water body.

3. If there is insufficient available data and information to list, water bodies will be placed on a "Watch List". The Watch List is not a recognized part of the section 303(d) list but it will be sent to EPA.

Solicitation

The RWQCBs solicited the public for all readily available data and information. Letters from the SWRCB and RWQCBs staffs requesting data and information from public (Letters dated March 14, 2001) initiated the solicitation. The solicitation by the RWQCBs was closed on May 15, 2001. In general the RWQCBs solicited government agencies and the public for any new monitoring data and information.

RWQCB Analysis and Recommendations

The RWQCBs assembled and evaluated all existing and readily available water quality-related data and information to develop the list (40 CFR 130.7(b)(5)) and provided and assessment and documentation to list or not to list a state's waters (40 CFR 130.7(b)(6)). RWQCB staff prepared draft staff reports, fact sheets (in many cases), and summaries of the additions, deletions and changes to section 303(d) list. Three RWQCBs prepared Watch Lists; one RWQCB described constituents/water bodies of potential concern.

RWQCB documents were made available for public comment (generally 30 days). Each RWQCB held public workshops and/or Board meetings for either (1) submitting informal list recommendations to SWRCB, or (2) formal resolution to adopt the list and transmit it to the SWRCB. Many of the RWQCBs received substantial pubic comments (including comments from EPA); responded to the comments; and revised their reports/lists based on public comments or submitted data.

The RWQCBs assigned priorities of high, medium, or low for completion of TMDLs for the pollutants or stressors identified in their proposals for the Section 303(d) list. Dates for completing the TMDLs were assigned.

Each of the RWQCBs submitted staff reports and lists to SWRCB, along with copies of public submittals, data and information, and documents referenced in the submittal. The information about the section 303(d) list was also entered into the Geographical Water Body System (GeoWBS) by RWQCB and SWRCB staff.

SWRCB Review of RWQCB Recommendations

The SWRCB staff reviewed the RWQCB recommendations and either concurred with the recommendation or identified the reasons for not

concurring. SWRCB staff developed fact sheets for each proposal to add water bodies, delete water bodies, and change the section 303(d) list. Fact sheets not prepared for the waters that were recommended by the RWQCBs to be placed on a watch list. Fact sheets were also prepared for many of the waters where data and information was reviewed but no action was taken or where the listing was not changed even though pertinent data and information were submitted.

The record and fact sheets contain the rationale for decisions to use or not to use any existing and readily available data and information (40 CFR 130.7(b)(6)(iii)). The SWRCB staff also identified and set priorities for the listed water quality limited segments still requiring TMDLs (40 CFR 130.7(b)).

SWRCB staff has reviewed each RWQCB proposal on a case-by-case basis. Staff made an assessment of several factors for each water body-pollutant combination as follows:

1. Watershed/Water Body
2. Stressor (pollutant)/Medium (Water, sediment, or tissue data)/Beneficial Use
3. Assessment of data quality. Extent to which data quality requirements are met.
4. Linkage between measurements and beneficial use or standard.
5. Utility of measure for judging if standards or uses are not attained.
6. Water Body-specific Information.
7. Data used to assess water quality.
8. Spatial representation.
9. Temporal representation.
10. Data type.
11. Use of standard method.
12. Source of pollutant.
13. Availability of an alternative enforceable program.
14. other data + info

For each of these factors, SWRCB staff prepared a written description of how the RWQCBs addressed the water body. Each recommendation to the SWRCB was developed based on strength, value, and believability of

all the data and information available. Staff has considered all existing readily available data and information in making recommendations. SWRCB management has reviewed the recommendations for additions to the list, deletions from the list, waters excluded from the list, and waters to be placed on the watch list.

In Volumes II and III of the Staff Report, the SWRCB staff have presented for each RWQCB: (1) a summary of the section 303(d) recommendations, (2) water body fact sheets (for each decision) outlining the SWRCB evaluation of the available data and information, and (3) a reference listing of all the data and information used.

The SWRCB is required by the CWA and federal regulations to provide EPA the following information as part of the section 303(d) list:

- Water quality limited segments (40 CFR 130.7(b)(1))
- Pollutants (40 CFR 130.7(b)(4))
- Priority ranking (40 CFR 130.7(b)(4))
- Identification of waters targeted for TMDL development in the next two years (40 CFR 130.7(b)(4))

The SWRCB shall, in addition, provide:

- Region
- Type of water body
- Hydrologic unit
- Source of pollutant, if known
- A preliminary estimate of the size (area or length) of water body affected

Please note: For the 1998 303(d) list, the "size affected" was an estimated value. Since 1998 there has been an ongoing effort by SWRCB and RWQCBs to more clearly represent all 303(d)-listed waters spatially. The "size affected" values for the 2002 303(d) list submittal shall be changed to reflect more precise measurements obtained from the GIS database (Geo WBS). Therefore, many of the size affected values on the 2002 303(d) list will ultimately differ from those shown on the 1998 303(d) list. In addition, due to our lack of understanding of the full impact of a pollutant until TMDLs are developed, the values for "size affected" may not reflect the true area of impact.

Setting Priorities and Schedules for Completing TMDLs

A priority ranking is required for listed waters to guide TMDL planning for the next two years (40 CFR 130.7(b)(4)). The schedule for TMDL development is based on the budgeted staff and contract resources available to the SWRCB and RWQCBs. TMDLs were ranked into high, medium, and low priority categories based on:

- Water body significance (such as importance and extent of beneficial uses, threatened and endangered species concerns and size of water body)

- Degree that water quality standards are not met or beneficial uses are not attained or threatened (such as the severity of the pollution or number of pollutants/stressors of concern) (40 CFR 130.7(b)(4)).

- Availability of funding and information to address the water quality problem

- Overall need for an adequate pace of TMDL development for all listed waters over the next two years.
- Source of pollutants (e.g. Background?)

NO!

Those waters given a high priority are scheduled for TMDL completion in the next two years (by 2004). Medium and low priorities will be completed after 2004.

Public Participation Conducted by the SWRCB

The SWRCB has scheduled two public hearings to receive comment on the proposed section 303(d) list. One hearing will be held in northern California (on May 23 and 24, 2002) and the second hearing will be held in southern California (May 30, 2002). The SWRCB staff will respond in writing to all comments received.

Additions, Deletions, and Changes to the Section 303(d) List

The basis for the 2002 Section 303(d) list is the 1998 list (Appendix). The SWRCB staff proposes to add 186 water quality limited segments with 288 pollutants or stressors to the Section 303(d) list (Table 1). SWRCB staff also proposes that 69 water bodies with 101 pollutants or stressors be removed from the Section 303(d) list (Table 2). Several changes to the listings are proposed (Table 3).

Watch List

Not sure EPA will Buy This

Many of the RWQCBs identified waters where minimal, contradictory, or anecdotal information suggests standards are not met but either (1) the available data or information are inadequate to draw a conclusion, or (2) a regulatory program is in place to control the pollutant but data are not available to demonstrate that the program is successful. In many cases, the data or information is not of adequate quality and quantity to support a listing and subsequent TMDL regulatory process. In these cases, a finding is warranted that water quality appears impacted and more information must be collected to resolve whether standards and beneficial uses are attained. Consequently, SWRCB staff proposes a Watch List that contains 190 water bodies (Table 4).

You did not give me page 7.

ML: NEED TODAY, SORRY. CAN

Levy, P.7
3/20/02

Consider: don't say this. It's asking for an argument from ENVIROS

The Watch List should not be considered part of the section 303(d) list. In addition, the Watch List ~~has no regulatory force but~~ will be submitted to EPA.

Priorities and Schedules

In developing the 2002 section 303(d) submittal, the SWRCB staff reassessed the priorities established in the 1998 list. Based on the budgeted resources currently available to the SWRCB, it is proposed that the TMDL completion schedule in 2002 submittal be change to the priorities and schedules presented in Table 5. Only waters with a priority of high or medium are presented in Table 5; other waters, not listed, will be assigned a low priority. TMDLs are scheduled to be completed for high priority waters by 2004.

TMDLs Completed List

A number of TMDLs have been completed. A complete TMDL includes a technical TMDL report, implementation plan, adoption by the relevant RWQCBs, and approval by SWRCB, the Office of Administrative Law (OAL) and EPA. Several TMDLs are in various stages of the approval process.

To show progress in developing TMDLs, the SWRCB staff proposes to create a list of TMDLs completed. At present, it is assumed that even though the TMDL has been completed, that water quality standards or beneficial uses are not yet attained. Once it has been shown that standards are achieved and/or beneficial uses are attained the water bodies will be removed from this list.

The TMDLs Completed List should not be considered part of the section 303(d) list. In addition, the TMDLs Completed List has no regulatory force but will be submitted to EPA.

Administrative Record

Copies of the SWRCB and RWQCB documents supporting the 2002 list submittal are posted on the SWRCB web site at:

http://www.swrcb.ca.gov/303d_lists.html

The administrative record supporting the proposed 2002 Section 303(d) list is housed in the Division of Water Quality, State Water Resources Control Board, 1001 I Street, 15th Floor, Sacramento, California. To make an appointment to review the record, please call (916) 341-5566.

meeting w/ Tom Howard 8/02

PROPOSED 5-yr TMDL Completion Schedule.

Table 5: Proposed Priorities for the 2002 Section 303(d) List

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
1			
	Albion River	Sedimentation/Siltation	2003
	Big River	Sedimentation/Siltation	2003
	Garcia River	Sedimentation/Siltation	2002
	Gualala River	Sedimentation/Siltation	2004
	Mattole River	Sedimentation/Siltation	2004
		Temperature	2004
	Navarro River	Sedimentation/Siltation	2004
		Temperature	2004
	Navarro River Delta	Sedimentation/Siltation	2004
	Noyo River	Sedimentation/Siltation	2003
	Ten Mile River	Sedimentation/Siltation	2003
2			
	Alameda Creek	Diazinon	2004
	Arroyo Corte Madera Del Presidio	Diazinon	2004
	Arroyo De La Laguna	Diazinon	2004

What will be complete in 2 yrs? (Dates)

medium - 5 yr (no dates)

Low - others (no dates)

are 4 and ... completed ... 2 yrs with existing resources

5 yr - medium

everything else

this order want to complete

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Arroyo Del Valle		
		Diazinon	2004
	Arroyo Hondo		
		Diazinon	2004
	Calabazas Creek		
		Diazinon	2004
	Carquinez Strait		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	Corte Madera Creek		
		Diazinon	2004
	Coyote Creek (Marin County)		
		Diazinon	2004
	Coyote Creek (Santa Clara Co.)		
		Diazinon	2004
	Gallinas Creek		
		Diazinon	2004
	Guadalupe River		
		Diazinon	2004
	Laurel Creek		
		Diazinon	2004
	Ledgewood Creek		
		Diazinon	2004
	Los Gatos Creek (R2)		
		Diazinon	2004
	Matadero Creek		
		Diazinon	2004
	Miller Creek		
		Diazinon	2004
	Mt. Diablo Creek		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Diazinon	2004
	Novato Creek		
		Diazinon	2004
	Permanente Creek		
		Diazinon	2004
	Pine Creek		
		Diazinon	2004
	Pinole Creek		
		Diazinon	2004
	Richardson Bay		
		Mercury	2002
		PCBs/PCBs (dioxin-like)	2004
	Rodeo Creek		
		Diazinon	2004
	Sacramento San Joaquin Delta		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	San Antonio Creek		
		Diazinon	2004
	San Felipe Creek		
		Diazinon	2004
	San Francisquito Creek		
		Diazinon	2004
	San Leandro Creek		
		Diazinon	2004
	San Leandro Creek, Lower		
		Diazinon	2004
	San Lorenzo Creek		
		Diazinon	2004
	San Mateo Creek		
		Diazinon	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	San Pablo Bay		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	San Pablo Creek		
		Diazinon	2004
	San Rafael Creek		
		Diazinon	2004
	Saratoga Creek		
		Diazinon	2004
	SF Bay Central		
		Copper	2004
		Mercury	2002
		PCBs/PCBs (dioxin-like)	2004
	SF Bay Lower		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	SF Bay South		
		Mercury	2002
		PCBs/PCBs (dioxin-like)	2004
	South San Francisco Bay		
		Copper	2003
		Nickel	2003
	Stevens Creek		
		Diazinon	2004
	Suisun Bay		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	Suisun Slough		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Diazinon	2004
	Tomales Bay		
		Pathogens	2004
	Walnut Creek		
		Diazinon	2004
	Wildcat Creek		
		Diazinon	2004
3			
	Carbonera Creek		
		Sedimentation/Siltation	2003
	Chorro Creek		
		Metals	2002
		Metals	2002
		Nutrients	2003
		Sedimentation/Siltation	2003
	Las Tablas Creek		
		Metals	2003
	Las Tablas Creek, North Fork		
		Metals	2003
	Las Tablas Creek, South Fork		
		Metals	2003
	Lompico Creek		
		Sedimentation/Siltation	2003
	Los Osos Creek		
		Nutrients	2003
		Priority Organics	2002
		Sedimentation/Siltation	2003
	Morro Bay		
		Pathogens	2004
		Sedimentation/Siltation	2003
	Nacimiento Reservoir		
		Metals	2003

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Metals	2003
	San Lorenzo River		
		Sedimentation/Siltation	2003
	San Lorenzo River Estuary		
		Sedimentation/Siltation	2003
	San Luis Obispo Creek (Below W. Marsh Street)		
		Nutrients	2004
		Pathogens	2004
		Priority Organics	2002
	Shingle Mill Creek		
		Sedimentation/Siltation	2003
4			
			2003
		Total Dissolved Solids	2003
		Total Dissolved Solids	2003
	Abalone Cove Beach		
		Beach Closures	2002
	Aliso Canyon Wash		
		Selenium	2003
	Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca)		
		Ammonia	2002
		Chloride	2002
		DDT	2004
		Sulfates	2003
	Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (23))		
		Ammonia	2002
		Chloride	2002
		DDT	2004
		Nitrate and Nitrite	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Sulfates	2003
	Arroyo Seco Reach 1 (LA River to West Holly Ave.)		
		Algae	2002
		High Coliform Count	2002
	Arroyo Seco Reach 2 (Figueroa St. to Riverside Dr.)		
		Algae	2002
		High Coliform Count	2002
	Arroyo Simi Reach 1 (Moorpark Frwy (23) to Brea Cyn) and 2		
		Ammonia	2002
		Boron	2003
		Sulfates	2003
		Total Dissolved Solids	2003
	Arroyo Simi Reach 1 (Moorpark Frwy (23) to Brea Cyn) and 2 (		
		Chloride	2002
	ASHLAND AVENUE DRAIN		
		High Coliform Count	2002
	Ballona Creek		
		Arsenic	2003
		Cadmium	2003
		ChemA	2004
		Chlordane	2004
		Copper	2003
		DDT	2004
		Dieldrin	2004
		Enteric Viruses	2003
		High Coliform Count	2003
		Lead	2003
		PCBs	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Sediment Toxicity	2004
		Silver	2003
		Toxicity	2003
	Ballona Creek Estuary		
		Arochlor	2004
		Chlordane	2004
		DDT	2004
		High Coliform Count	2003
		Lead	2003
		PCBs	2004
		Sediment Toxicity	2004
		Shellfish Harvesting Adv.	2003
		Zinc	2003
	Ballona Creek Wetlands		
		Arsenic	2003
	Beardsley Channel (Above Central Avenue)		
		Algae	2002
		ChemA	2004
		Chlordane	2004
		Chlorpyrifos	2003
		Dacthal	2004
		DDT	2004
		Dieldrin	2004
		Endosulfan	2004
		Nitrogen	2002
		PCBs	2004
		Toxaphene	2004
		Toxicity	2003
	Bell Creek		
		High Coliform Count	2002
	Big Rock Beach		
		Beach Closures	2002
		High Coliform Count	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Bluff Cove Beach		
		Beach Closures	2002
	Brown Barranca/Long Canyon		
		Nitrate and Nitrite	2002
	Burbank Western Channel		
		Algae	2002
		Ammonia	2002
		Cadmium	2003
		Odors	2002
		Scum/Foam-unnatural	2002
	Cabrillo Beach (Inner) LA Harbor Area		
		Beach Closures (Coliform)	2002
	Cabrillo Beach (Outer)		
		Beach Closures	2002
		High Coliform Count	2002
	Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.)		
		Ammonia	2002
		ChemA	2004
		Chlordane	2004
		DDT	2004
		Endosulfan	2004
		Nitrogen	2002
		PCBs	2004
		Sediment Toxicity	2004
		Toxicity	2003
	Calleguas Creek Reach 3 (Potrero to Somis Rd.)		
		Chloride	2002
		Nitrate and Nitrite	2002
		Total Dissolved Solids	2003
	Carbon Beach		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Beach Closures	2002
	Castlerock Beach		
		Beach Closures	2002
	Colorado Lagoon		
		Chlordane	2004
		DDT	2004
		Dieldrin	2004
		Lead	2004
		PAHs	2004
		PCBs	2004
		Sediment Toxicity	2004
		Zinc	2004
	Compton Creek		
		Copper	2003
		High Coliform Count	2002
		Lead	2003
		pH	2002
	Conejo Creek Reach 1 (Confl Call to Santa Rosa Rd.)		
		Algae	2002
		Ammonia	2002
		Org. enrichment/Low D.O.	2002
		Sulfates	2003
		Total Dissolved Solids	2003
		Toxicity	2003
	Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit		
		Algae	2002
		Ammonia	2002
		Chloride	2002
		Org. enrichment/Low D.O.	2002
		Sulfates	2003
		Total Dissolved Solids	2003

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Toxaphene	2004
		Toxicity	2003
	Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.)		
		Algae	2002
		Ammonia	2002
		ChemA	2004
		Dacthal	2004
		DDT	2004
		Endosulfan	2004
		Org. enrichment/Low D.O.	2002
		Sulfates	2003
		Total Dissolved Solids	2003
		Toxaphene	2004
		Toxicity	2003
	Conejo Creek Reach 4 (Above Lynn Rd.)		
		Algae	2002
		Ammonia	2002
		ChemA	2004
		Chloride	2002
		Dacthal	2004
		DDT	2004
		Endosulfan	2004
		Org. enrichment/Low D.O.	2002
		Sulfates	2003
		Total Dissolved Solids	2003
		Toxaphene	2004
		Toxicity	2003
	Conejo Creek/Arroyo Conejo North Fork		
		Ammonia	2002
		Chlordane	2004
		DDT	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Sulfates	2003
		Total Dissolved Solids	2003
	Coyote Creek		
		Algae	2004
		Ammonia	2004
		High Coliform Count	2002
		Silver	2004
	Crystal Lake		
		Org. enrichment/Low D.O.	2003
	Dan Blocker Memorial (Coral) Beach		
		High Coliform Count	2002
	Dockweiler Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Dominguez Channel (above Vermont)		
		High Coliform Count	2002
	Dominguez Channel (Estuary to Vermont)		
		High Coliform Count	2002
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 2		
		ChemA	2004
		Nitrogen	2002
		Toxicity	2003
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 3		
		Chlordane	2004
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 4		
		DDT	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 5		
		Sediment Toxicity	2004
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 6		
		Toxaphene	2004
	El Dorado Lakes		
		Algae	2003
		Ammonia	2003
		Eutrophic	2003
		pH	2003
	Elizabeth Lake		
		Eutrophic	2004
		Org. enrichment/Low D.O.	2004
		pH	2004
		Trash	2004
	Escondido Beach		
		Beach Closures	2002
	Flat Rock Point Beach Area		
		Beach Closures	2002
	Fmoorpark Fwy		
		Org. enrichment/Low D.O.	2003
	Fox Barranca		
		Boron	2003
		Nitrate and Nitrite	2002
		Sulfates	2003
		Total Dissolved Solids	2003
	Hermosa Beach		
		Beach Closures	2002
	Inspiration Point Beach		
		Beach Closures	2002
	La Costa Beach		
		Beach Closures	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	LA Harbor Main Channel		
		Beach Closures	2002
	Lake Hughes		
		Algae	2004
		Eutrophic	2004
		Fish Kills	2004
		Odors	2004
		Trash	2004
	Lake Lindero		
		Algae	2002
		Eutrophic	2002
		Odors	2002
	Lake Sherwood		
		Algae	2002
		Ammonia	2002
		Eutrophic	2002
		Org. enrichment/Low D.O.	2002
	Las Flores Beach		
		High Coliform Count	2002
	Las Tunas Beach		
		Beach Closures	2002
	Las Virgenes Creek		
		High Coliform Count	2002
		Nutrients (Algae)	2002
		Org. enrichment/Low D.O.	2002
		Scum/Foam-unnatural	2002
	Legg Lake		
		Ammonia	2003
		Odors	2003
		pH	2003
	Leo Carillo Beach (South of County Line)		
		Beach Closures	2002
		High Coliform Count	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Lindero Creek Reach 1		
		Algae	2002
		High Coliform Count	2002
	Lindero Creek Reach 2		
		Scum/Foam-unnatural	2002
	Lindero Creek Reach 2 (Above Lake)		
		Algae	2002
		High Coliform Count	2002
		Scum/Foam-unnatural	2002
	Long Point Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Los Angeles River Reach 1 (Estuary to Carson Street)		
		Ammonia	2002
		High Coliform Count	2002
		Lead	2003
		Nutrients (Algae)	2002
		pH	2002
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 2 (Carson to Figueroa Street)		
		Ammonia	2002
		High Coliform Count	2002
		Lead	2003
		Nutrients (Algae)	2002
		Odors	2002
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 3 (Figueroa St. to Riverside Dr.)		
		Ammonia	2002
		Nutrients (Algae)	2002
		Odors	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 4 (Sepulveda Dr. to Sepulveda Dam)		
		Ammonia	2002
		High Coliform Count	2002
		Lead	2003
		Nutrients (Algae)	2002
		Odors	2002
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 5 (at Sepulveda Basin)		
		Ammonia	2002
		Nutrients (Algae)	2002
		Odors	2002
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 6 (Above Sepulveda Fld Cntrl Basin)		
		High Coliform Count	2002
	Los Cerritos Channel		
		Ammonia	2004
		Copper	2004
		High Coliform Count	2004
		Lead	2004
		Zinc	2004
	Malaga Cove Beach		
		Beach Closures	2002
	Malibu Beach		
		Beach Closures	2002
	Malibu Creek		
		High Coliform Count	2002
		Nutrients (Algae)	2002
		Scum/Foam-unnatural	2002
	Malibu Lagoon		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Enteric Viruses	2002
		Eutrophic	2002
		High Coliform Count	2002
		Shellfish Harvesting Adv.	2002
		Swimming Restrictions	2002
	Malibu Lagoon Beach (Surfrider)		
		Beach Closures	2002
		High Coliform Count	2002
	Malibu Lake		
		Algae	2002
		Eutrophic	2002
		Org. enrichment/Low D.O.	2002
	Mandalay Beach		
		Beach Closures	2002
	Manhattan Beach		
		Beach Closures	2002
	Marina del Rey Harbor - Back Basins		
		Benthic Comm. Effects	2003
		Chlordane	2003
		Copper	2004
		DDT	2003
		Dieldrin	2003
		Fish Consumption Advisory	2003
		High Coliform Count	2003
		Lead	2004
		PCBs	2003
		Sediment Toxicity	2003
		Zinc	2004
	Marina del Rey Harbor Beach		
		Beach Closures	2003
		High Coliform Count	2003
	McGrath Beach		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Beach Closures	2002
		High Coliform Count	2002
	Medea Creek Reach 1 (Lake to Confl. with Lindero)		
		Algae	2002
		High Coliform Count	2002
	Medea Creek Reach 2 (Abv Confl. with Lindero)		
		Algae	2002
		High Coliform Count	2002
	Mint Canyon Creek Reach 1 (Confl to Rowler Cyn)		
		Nitrate and Nitrite	2002
	Monrovia Canyon Creek		
		Lead	2003
	Mugu Lagoon		
		Chlordane	2004
		Dacthal	2004
		DDT	2004
		Endosulfan	2004
		Nitrogen	2002
		PCBs	2004
		Sediment Toxicity	2004
		Sedimentation/Siltation	2004
	Munz Lake		
		Eutrophic	2004
		Trash	2004
	Nicholas Canyon Beach		
		Beach Closures	2002
	Palo Comado Creek		
		High Coliform Count	2002
	Palo Verde Shoreline Park Beach		
		Pathogens	2002
	Paradise Cove Beach		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Beach Closures	2002
		High Coliform Count	2002
	PICO KENTER DRAIN		
		Enteric Viruses	2002
		High Coliform Count	2002
	Point Dume Beach		
		Beach Closures	2002
	Point Fermin Park Beach		
		Beach Closures	2002
	Point Vicente Beach		
		Beach Closures	2002
	Portugese Bend Beach		
		Beach Closures	2002
	Puerco Beach		
		Beach Closures	2002
	Redondo Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Resort Point Beach		
		Beach Closures	2002
	Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)		
		Algae	2002
		ChemA	2004
		Chlordane	2004
		Chlorpyrifos	2003
		Dacthal	2004
		DDT	2004
		Dieldrin	2004
		Endosulfan	2004
		Nitrogen	2002
		PCBs	2004
		Toxaphene	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Toxicity	2003
	Rio De Santa Clara/Oxnard Drain No. 3		
		Nitrogen	2002
	Rio Hondo Reach 1 (Confl. LA River to Snt Ana Fwy)		
		Ammonia	2002
		Copper	2003
		High Coliform Count	2002
		Lead	2003
		pH	2002
		Zinc	2003
	Rio Hondo Reach 2 (At Spreading Grounds)		
		Ammonia	2002
		High Coliform Count	2002
	Robert H. Meyer Memorial Beach		
		Beach Closures	2002
	Rocky Point Beach		
		Beach Closures	2002
	Royal Palms Beach		
		Beach Closures	2002
	San Gabriel River Estuary		
		Arsenic	2004
	San Gabriel River Reach 1 (Estuary to Firestone)		
		Algae	2004
		Ammonia	2004
		High Coliform Count	2002
		Toxicity	2004
	San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam		
		Ammonia	2004
		High Coliform Count	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Lead	2004
	San Gabriel River Reach 3 (Whittier Narrows to Ramona)		
		Toxicity	2004
	San Gabriel River, East Fork		
		Algae	2004
		Ammonia	2004
		High Coliform Count	2002
	San Jose Creek Reach 2 (Temple to I-10 at White Ave.)		
		Algae	2004
		Ammonia	2004
		High Coliform Count	2002
	Santa Clara River Estuary Beach-Surfers Knoll		
		High Coliform Count	2002
	Santa Clara River Reach 3 (Dam to Abv Sp Crk/Blw Timber Cyn)		
		Ammonia	2002
		Chloride	2002
	Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99)		
		Ammonia	2002
		Chloride	2002
	Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn Rd.)		
		Ammonia	2002
		Chloride	2002
		Nitrate and Nitrite	2002
		Org. enrichment/Low D.O.	2002
	Santa Fe Dam Park Lake		
		pH	2003

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Santa Monica Bay Offshore/Nearshore		
		Cadmium	2004
		Copper	2004
		Lead	2004
		Mercury	2004
		Nickel	2004
		Silver	2004
		Zinc	2004
	Santa Monica Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Santa Monica Canyon		
		High Coliform Count	2002
	Sea Level Beach		
		Beach Closures	2002
	Sepulveda Canyon		
		High Coliform Count	2002
	Stokes Creek		
		High Coliform Count	2002
	Tapo Canyon Reach 1		
		Boron	2003
		Chloride	2002
	Tapo Canyon Reach 2		
		Sulfates	2003
	Tapo Canyon Reach 3		
		Total Dissolved Solids	2003
	Topanga Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Torrance Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Torrance Carson Channel		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		High Coliform Count	2002
	Torrey Canyon Creek		
		Nitrate and Nitrite	2002
	Trancas Beach (Broad Beach)		
		Beach Closures	2002
		High Coliform Count	2002
	Tujunga Wash (LA River to Hansen Dam)		
		Ammonia	2002
		Copper	2003
		High Coliform Count	2002
		Odors	2002
		Scum/Foam-unnatural	2002
	Venice Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Verdugo Wash Reach 1 (LA River to Verdugo Rd.)		
		Algae	2002
		High Coliform Count	2002
	Verdugo Wash Reach 2 (Above Verdugo Road)		
		Algae	2002
		High Coliform Count	2002
	Walnut Creek Wash (Drains from Puddingstone Res)		
		pH	2004
		Toxicity	2004
	Westlake Lake		
		Algae	2002
		Ammonia	2002
		Eutrophic	2002
		Org. enrichment/Low D.O.	2002
	Wheeler Canyon/Todd Barranca		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Nitrate and Nitrite	2002
	Whites Point Beach		
		Beach Closures	2002
	Will Rogers Beach		
		Beach Closures	2002
		High Coliform Count	2002
	WILMINGTON DRAIN		
		High Coliform Count	2002
	Zuma Beach (Westward Beach)		
		Beach Closures	2002
5			
	San Joaquin River		
		Boron	2003
		Electrical Conductivity	2003
6			
	Bodie Creek		
		Metals	2004
	Gray Creek		
		Sedimentation/Siltation	2004
	Haiwee Reservoir		
		Copper	2003
	Indian Creek Reservoir		
		Nutrients	2002
	Squaw Creek		
		Sedimentation/Siltation	2003
	Tinemaha Reservoir		
		Arsenic	2004
		Metals	2004
7			
	Imperial Valley Drains		
		Sedimentation/Siltation	2004
	New River		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Silt	2002
	Salton Sea		
		Nutrients	2004
8			
	Canyon Lake		
		org. enrichment/low D.O.	2004
		Pathogens	2004
	Lake Elsinore		
		nutrients	2004
		sediment/siltation	2004
		unknown toxicity	2004
	Lower Newport Bay -- Rhine Channel		
		selenium	2003
	San Diego Creek, Reach 1		
		chlorpyrifos/diazinon	2002
		selenium	2003
	San Diego Creek, Reach 2		
		chlorpyrifos/diazinon	2002
		selenium	2003
	Upper Newport Bay		
		chlorpyrifos/diazinon	2002
		selenium	2003
9			
	Chollas Creek 908.22		
		Toxicity (Diazinon)	2002
	Chollas Creek 908.22*		
		Metals (Cd, Cu, PBS, Zn)	2003
	Rainbow Creek		
		Eutrophic (Nutrients)	2002
	San Diego Bay; Shelter Island Yacht Basin		
		Metals (dissolved Cu)	2002

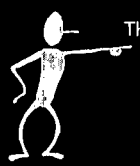
Region	Water Body	Pollutant/Stressor	TMDL Completion Date

Error Type, Power, Assumptions

- Parametric vs. Nonparametric tests
- Type-I & -II Error
- Power Revisited
- Meeting the Normality Assumption
  - Outliers, Winsorizing, Trimming
  - Data Transformation

Parametric Tests

Parametric tests assume that the variable in question has a known underlying mathematical distribution that can be described (normal, binomial, poisson, etc.).



This underlying distribution is the fundamental basis for all of sample-to-population inference.

Parametric vs. Nonparametric Tests

Nonparametric tests are considered distribution-free methods because they do not rely on any underlying mathematical distribution.

Q. So why even worry about what the distribution is or is not? Why not just use nonparametric tests all the time?

A. Nonparametric tests usually result in loss of efficiency (the ability to detect a false hypothesis). Efficiency is tied to error type.

Error Type
- Truth Table -

Ho	Accepted	Rejected
True	Correct	Type-I
False	Type-II	Correct

Type-I Error

Before you apply a statistical test, you must specify an acceptable level of Type-I error.

Usually, one accepts that there will always be some deviant observations by chance alone and that 5% error is acceptable.

Type-I Error is expressed as a probability and is symbolized by α.

Thus, a Type-I Error of $\alpha = 0.05$ corresponds to a 5% error level and specifies the rejection region or critical region of a statistical test.

Error Type

Q. So why not specify a very small error rate such as 0.01 or 0.001?

A. Because as your Type-I Error rate diminishes, Type-II Error increases!

Unfortunately, while Type-II Error is important, it is difficult to evaluate in many biological applications.

Type-II Error

Recall, Type-II Error is the probability of accepting a false H_0.

Type-II Error is also referred to as a probability and symbolized as β.

β is harder to specify because it requires knowledge of the alternate hypothesis (which is unknown in most circumstances).

β is not fixed, but may increase to a maximum of $1-\alpha$.

Power

Important Concept:

☆ ☆

Power = $1 - \beta$

Power and β are complements.

Thus, for any given test,
we would like power to be as high as possible
and β to be as low as possible.

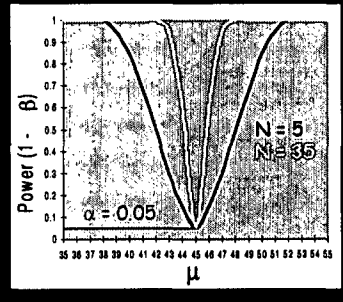
Power

Since we can not generally provide an alternative hypothesis, we must describe β or $1 - \beta$ as a continuum of alternative values.

This is known as a Power Curve.

To improve the power of a test
(i.e., decrease β)
while keeping α fixed,
we vary N.

Power Curve



Power Curves for testing:

Ho: $\mu = 45$
and
Ha: $\mu \neq 45$

at $\alpha = 0.05$
and N = 5, 35

Nonparametric Tests

Q. Well then, doesn't this mean nonparametric tests are undesirable or inferior?

A. No ! They just have less efficiency. They are the *appropriate test to use when the conditions warrant.*

Parametric vs. Nonparametric Tests

In general,

Parametric tests are more "conservative"
(i.e., less likely to make a Type-I Error).

Nonparametric tests are more "liberal"
(i.e., more likely to make a Type-I Error).

Thus, in most biological applications, one should always attempt to use a parametric test <u>first</u>.

Meeting the Normality Assumption

Q. What if you are unable to meet the assumption of normality? You can not continue to do parametric statistics if this has not been meet, correct?

A. The best strategy is to first try a simple manipulation or re-arrangement of the data. This may allow you to meet the normality assumption and continue with parametric statistics.

Data Manipulations

Options for Data Manipulation:

- Delete outliers
- Winsorize data
- Trim data

These procedures are "legal" as long as:

(1) they are exercised judiciously
(2) never used to adjust a p-value

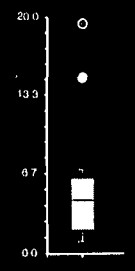
Outliers

Handling outliers is tricky business.

Do these values represent natural biological variability, or are they fluke values, or are they a mistake in data collection or recording?

During EDA, use box-plots to help identify outliers. Carefully examine outliers.

- ● Mild outliers are usually biologically possible.
- o Severe outliers are often mistakes.



Outliers

Data can be normalized if there are mild outliers usually by winsorization, trimming, or transformation.

Usually, severe outliers must be deleted from the data to achieve normality.

CAUTION:
Do not ever delete more than 5% of your data.
Severe outliers can legitimately fall within this range.
However, if there are more than 5% severe outliers, usually something else is going on.

Winsorizing Data

Usually, but not necessarily, performed in a symmetrical fashion.

Rank data, then give extremes the same value as adjacent rank.

Recompute stats & test of normality.

Example:

1, 2, 3, 4, 5, 7, 18
Mean = 5.7
M-I Normality: reject

2, 2, 3, 4, 5, 7, 7
Mean = 4.3
M-I Normality: accept

Trimming Data

Alternatively, data can be trimmed from the tails.

Usually, drop X_{min} & X_{max}

This reduces N, but may affect Power.

Example:

1, 2, 3, 4, 5, 7, 18
Mean = 5.7
M-I Normality: reject

2, 3, 4, 5, 7
Mean = 4.2
M-I Normality: accept

Winsorization vs. Trimming

Note that, in our example, there was very little difference in the effect of trimming vs. winsorization.

There are no hard and fast rules as to when to apply one and not the other.

Winsorization is probably more appropriate when sample sizes are small and you need to protect your power.

Data Transformations

The necessity to transform data may arise under the conditions of non-independence or non-normality.

Data transformation seems like a lot of manipulation at first glance, but it just involves placing your data on another scale.

Data from a linear scale can be transformed on to a $\log_{10}$ scale (or any other). This often corrects a variety of problems.

Data Transformations

Typical Transformations:

Logarithmic
Square Root
Angular
Box-Cox
Reciprocal
Power

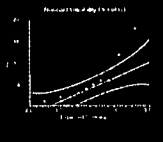
Logarithmic Transformations

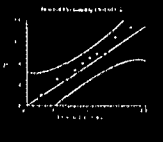
Logarithmic transformations are useful starting points when:
(1) mean is correlated with variance
(2) data are skewed to the right

Can take a variety of forms:
$Y' = \log_{10}(Y)$
$Y' = \log_{10}(Y+1)$
$Y' = \ln(Y)$
$Y' = \ln(Y+1)$

Transformation Example

Y		$Y' = \log_{10}(Y)$	
1		0	
2	K^2 Omnibus:	0.301	K^2 Omnibus:
2	Reject Normality	0.301	Accept Normality
3		0.477	
4		0.602	
5		0.699	
6		0.778	
6		0.778	
12		1.079	
18		1.255	



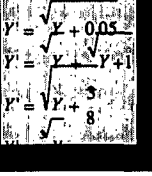


Square Root Transformations

Most appropriate when data are counts (e.g., number of leaves, number of flowers, etc.).

Count data tend to more closely follow a Poisson distribution. A square root transformation brings closer to normal.

Variety of forms:



Angular Transformations

Whenever the data are proportions or percentages, you should consider an angular transformation.

Percentages tend to usually follow a binomial distribution.

Typical transforms:

$$\theta = \arcsin\sqrt{p} \quad (\text{where } p \text{ ranges } 0-1)$$

$$\theta = \arcsin\sqrt{\frac{Y+\frac{1}{4}}{N+\frac{1}{2}}}$$

Box-Cox Transformation

When there is no a priori reason for choosing one transformation over another, the Box-Cox transformation might be an appropriate place to start.

Iterate through a series of power functions until normality is maximized:

$$Y' = (Y^{\lambda} - 1)/\lambda \quad (\text{for } \lambda \neq 0)$$

Reciprocal Transformation

Reciprocal transforms often prove useful when the standard deviations of the groups of data are proportional to the square of the means of the groups.

Iterate through a series of λ until normality is maximized:

$$Y' = \frac{1}{Y^{\lambda}}$$

Power Transformation

A power transformation is often effective in dealing with two situations:
(1) if S decreases with increasing $\bar{Y}$
(2) if the distribution is skewed to the left

Iterate through a series of λ until normality is maximized:

$$Y' = Y^{\lambda}$$

PROPOSED 5-YR TMDL Completion Schedule.

Table 5: Proposed Priorities for the 2002 Section 303(d) List

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
1			
	Albion River		
		Sedimentation/Siltation	2003
	Big River		
		Sedimentation/Siltation	2003
	Garcia River		
		Sedimentation/Siltation	2002
	Gualala River		
		Sedimentation/Siltation	2004
	Mattole River		
		Sedimentation/Siltation	2004
		Temperature	2004
	Navarro River		
		Sedimentation/Siltation	2004
		Temperature	2004
	Navarro River Delta		
		Sedimentation/Siltation	2004
	Noyo River		
		Sedimentation/Siltation	2003
	Ten Mile River		
		Sedimentation/Siltation	2003
2			
	Alameda Creek		
		Diazinon	2004
	Arroyo Corte Madera Del Presidio		
		Diazinon	2004
	Arroyo De La Laguna		
		Diazinon	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Arroyo Del Valle		
		Diazinon	2004
	Arroyo Hondo		
		Diazinon	2004
	Calabazas Creek		
		Diazinon	2004
	Carquinez Strait		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	Corte Madera Creek		
		Diazinon	2004
	Coyote Creek (Marin County)		
		Diazinon	2004
	Coyote Creek (Santa Clara Co.)		
		Diazinon	2004
	Gallinas Creek		
		Diazinon	2004
	Guadalupe River		
		Diazinon	2004
	Laurel Creek		
		Diazinon	2004
	Ledgewood Creek		
		Diazinon	2004
	Los Gatos Creek (R2)		
		Diazinon	2004
	Matadero Creek		
		Diazinon	2004
	Miller Creek		
		Diazinon	2004
	Mt. Diablo Creek		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Diazinon	2004
	Novato Creek		
		Diazinon	2004
	Permanente Creek		
		Diazinon	2004
	Pine Creek		
		Diazinon	2004
	Pinole Creek		
		Diazinon	2004
	Richardson Bay		
		Mercury	2002
		PCBs/PCBs (dioxin-like)	2004
	Rodeo Creek		
		Diazinon	2004
	Sacramento San Joaquin Delta		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	San Antonio Creek		
		Diazinon	2004
	San Felipe Creek		
		Diazinon	2004
	San Francisquito Creek		
		Diazinon	2004
	San Leandro Creek		
		Diazinon	2004
	San Leandro Creek, Lower		
		Diazinon	2004
	San Lorenzo Creek		
		Diazinon	2004
	San Mateo Creek		
		Diazinon	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	San Pablo Bay		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	San Pablo Creek		
		Diazinon	2004
	San Rafael Creek		
		Diazinon	2004
	Saratoga Creek		
		Diazinon	2004
	SF Bay Central		
		Copper	2004
		Mercury	2002
		PCBs/PCBs (dioxin-like)	2004
	SF Bay Lower		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	SF Bay South		
		Mercury	2002
		PCBs/PCBs (dioxin-like)	2004
	South San Francisco Bay		
		Copper	2003
		Nickel	2003
	Stevens Creek		
		Diazinon	2004
	Suisun Bay		
		Copper	2004
		Mercury	2002
		Nickel	2004
		PCBs/PCBs (dioxin-like)	2004
	Suisun Slough		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Diazinon	2004
	Tomales Bay		
		Pathogens	2004
	Walnut Creek		
		Diazinon	2004
	Wildcat Creek		
		Diazinon	2004
3			
	Carbonera Creek		
		Sedimentation/Siltation	2003
	Chorro Creek		
		Metals	2002
		Metals	2002
		Nutrients	2003
		Sedimentation/Siltation	2003
	Las Tablas Creek		
		Metals	2003
	Las Tablas Creek, North Fork		
		Metals	2003
	Las Tablas Creek, South Fork		
		Metals	2003
	Lompico Creek		
		Sedimentation/Siltation	2003
	Los Osos Creek		
		Nutrients	2003
		Priority Organics	2002
		Sedimentation/Siltation	2003
	Morro Bay		
		Pathogens	2004
		Sedimentation/Siltation	2003
	Nacimiento Reservoir		
		Metals	2003

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Metals	2003
	San Lorenzo River		
		Sedimentation/Siltation	2003
	San Lorenzo River Estuary		
		Sedimentation/Siltation	2003
	San Luis Obispo Creek (Below W. Marsh Street)		
		Nutrients	2004
		Pathogens	2004
		Priority Organics	2002
	Shingle Mill Creek		
		Sedimentation/Siltation	2003
4			
			2003
		Total Dissolved Solids	2003
		Total Dissolved Solids	2003
	Abalone Cove Beach		
		Beach Closures	2002
	Aliso Canyon Wash		
		Selenium	2003
	Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca)		
		Ammonia	2002
		Chloride	2002
		DDT	2004
		Sulfates	2003
	Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (23))		
		Ammonia	2002
		Chloride	2002
		DDT	2004
		Nitrate and Nitrite	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Sulfates	2003
	Arroyo Seco Reach 1 (LA River to West Holly Ave.)		
		Algae	2002
		High Coliform Count	2002
	Arroyo Seco Reach 2 (Figueroa St. to Riverside Dr.)		
		Algae	2002
		High Coliform Count	2002
	Arroyo Simi Reach 1 (Moorpark Frwy (23) to Brea Cyn) and 2		
		Ammonia	2002
		Boron	2003
		Sulfates	2003
		Total Dissolved Solids	2003
	Arroyo Simi Reach 1 (Moorpark Frwy (23) to Brea Cyn) and 2 (		
		Chloride	2002
	ASHLAND AVENUE DRAIN		
		High Coliform Count	2002
	Ballona Creek		
		Arsenic	2003
		Cadmium	2003
		ChemA	2004
		Chlordane	2004
		Copper	2003
		DDT	2004
		Dieldrin	2004
		Enteric Viruses	2003
		High Coliform Count	2003
		Lead	2003
		PCBs	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Sediment Toxicity	2004
		Silver	2003
		Toxicity	2003
	Ballona Creek Estuary		
		Arochlor	2004
		Chlordane	2004
		DDT	2004
		High Coliform Count	2003
		Lead	2003
		PCBs	2004
		Sediment Toxicity	2004
		Shellfish Harvesting Adv.	2003
		Zinc	2003
	Ballona Creek Wetlands		
		Arsenic	2003
	Beardsley Channel (Above Central Avenue)		
		Algae	2002
		ChemA	2004
		Chlordane	2004
		Chlorpyrifos	2003
		Dacthal	2004
		DDT	2004
		Dieldrin	2004
		Endosulfan	2004
		Nitrogen	2002
		PCBs	2004
		Toxaphene	2004
		Toxicity	2003
	Bell Creek		
		High Coliform Count	2002
	Big Rock Beach		
		Beach Closures	2002
		High Coliform Count	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Bluff Cove Beach		
		Beach Closures	2002
	Brown Barranca/Long Canyon		
		Nitrate and Nitrite	2002
	Burbank Western Channel		
		Algae	2002
		Ammonia	2002
		Cadmium	2003
		Odors	2002
		Scum/Foam-unnatural	2002
	Cabrillo Beach (Inner) LA Harbor Area		
		Beach Closures (Coliform)	2002
	Cabrillo Beach (Outer)		
		Beach Closures	2002
		High Coliform Count	2002
	Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.)		
		Ammonia	2002
		ChemA	2004
		Chlordane	2004
		DDT	2004
		Endosulfan	2004
		Nitrogen	2002
		PCBs	2004
		Sediment Toxicity	2004
		Toxicity	2003
	Calleguas Creek Reach 3 (Potrero to Somis Rd.)		
		Chloride	2002
		Nitrate and Nitrite	2002
		Total Dissolved Solids	2003
	Carbon Beach		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Beach Closures	2002
	Castlerock Beach		
		Beach Closures	2002
	Colorado Lagoon		
		Chlordane	2004
		DDT	2004
		Dieldrin	2004
		Lead	2004
		PAHs	2004
		PCBs	2004
		Sediment Toxicity	2004
		Zinc	2004
	Compton Creek		
		Copper	2003
		High Coliform Count	2002
		Lead	2003
		pH	2002
	Conejo Creek Reach 1 (Confl Call to Santa Rosa Rd.)		
		Algae	2002
		Ammonia	2002
		Org. enrichment/Low D.O.	2002
		Sulfates	2003
		Total Dissolved Solids	2003
		Toxicity	2003
	Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit		
		Algae	2002
		Ammonia	2002
		Chloride	2002
		Org. enrichment/Low D.O.	2002
		Sulfates	2003
		Total Dissolved Solids	2003

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Toxaphene	2004
		Toxicity	2003
	Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.)		
		Algae	2002
		Ammonia	2002
		ChemA	2004
		Dacthal	2004
		DDT	2004
		Endosulfan	2004
		Org. enrichment/Low D.O.	2002
		Sulfates	2003
		Total Dissolved Solids	2003
		Toxaphene	2004
		Toxicity	2003
	Conejo Creek Reach 4 (Above Lynn Rd.)		
		Algae	2002
		Ammonia	2002
		ChemA	2004
		Chloride	2002
		Dacthal	2004
		DDT	2004
		Endosulfan	2004
		Org. enrichment/Low D.O.	2002
		Sulfates	2003
		Total Dissolved Solids	2003
		Toxaphene	2004
		Toxicity	2003
	Conejo Creek/Arroyo Conejo North Fork		
		Ammonia	2002
		Chlordane	2004
		DDT	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Sulfates	2003
		Total Dissolved Solids	2003
	Coyote Creek		
		Algae	2004
		Ammonia	2004
		High Coliform Count	2002
		Silver	2004
	Crystal Lake		
		Org. enrichment/Low D.O.	2003
	Dan Blocker Memorial (Coral) Beach		
		High Coliform Count	2002
	Dockweiler Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Dominguez Channel (above Vermont)		
		High Coliform Count	2002
	Dominguez Channel (Estuary to Vermont)		
		High Coliform Count	2002
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 2		
		ChemA	2004
		Nitrogen	2002
		Toxicity	2003
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 3		
		Chlordane	2004
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 4		
		DDT	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 5		
		Sediment Toxicity	2004
	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 6		
		Toxaphene	2004
	El Dorado Lakes		
		Algae	2003
		Ammonia	2003
		Eutrophic	2003
		pH	2003
	Elizabeth Lake		
		Eutrophic	2004
		Org. enrichment/Low D.O.	2004
		pH	2004
		Trash	2004
	Escondido Beach		
		Beach Closures	2002
	Flat Rock Point Beach Area		
		Beach Closures	2002
	Fmoorpark Fwy		
		Org. enrichment/Low D.O.	2003
	Fox Barranca		
		Boron	2003
		Nitrate and Nitrite	2002
		Sulfates	2003
		Total Dissolved Solids	2003
	Hermosa Beach		
		Beach Closures	2002
	Inspiration Point Beach		
		Beach Closures	2002
	La Costa Beach		
		Beach Closures	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	LA Harbor Main Channel		
		Beach Closures	2002
	Lake Hughes		
		Algae	2004
		Eutrophic	2004
		Fish Kills	2004
		Odors	2004
		Trash	2004
	Lake Lindero		
		Algae	2002
		Eutrophic	2002
		Odors	2002
	Lake Sherwood		
		Algae	2002
		Ammonia	2002
		Eutrophic	2002
		Org. enrichment/Low D.O.	2002
	Las Flores Beach		
		High Coliform Count	2002
	Las Tunas Beach		
		Beach Closures	2002
	Las Virgenes Creek		
		High Coliform Count	2002
		Nutrients (Algae)	2002
		Org. enrichment/Low D.O.	2002
		Scum/Foam-unnatural	2002
	Legg Lake		
		Ammonia	2003
		Odors	2003
		pH	2003
	Leo Carillo Beach (South of County Line)		
		Beach Closures	2002
		High Coliform Count	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Lindero Creek Reach 1		
		Algae	2002
		High Coliform Count	2002
	Lindero Creek Reach 2		
		Scum/Foam-unnatural	2002
	Lindero Creek Reach 2 (Above Lake)		
		Algae	2002
		High Coliform Count	2002
		Scum/Foam-unnatural	2002
	Long Point Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Los Angeles River Reach 1 (Estuary to Carson Street)		
		Ammonia	2002
		High Coliform Count	2002
		Lead	2003
		Nutrients (Algae)	2002
		pH	2002
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 2 (Carson to Figueroa Street)		
		Ammonia	2002
		High Coliform Count	2002
		Lead	2003
		Nutrients (Algae)	2002
		Odors	2002
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 3 (Figueroa St. to Riverside Dr.)		
		Ammonia	2002
		Nutrients (Algae)	2002
		Odors	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 4 (Sepulveda Dr. to Sepulveda Dam)		
		Ammonia	2002
		High Coliform Count	2002
		Lead	2003
		Nutrients (Algae)	2002
		Odors	2002
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 5 (at Sepulveda Basin)		
		Ammonia	2002
		Nutrients (Algae)	2002
		Odors	2002
		Scum/Foam-unnatural	2002
	Los Angeles River Reach 6 (Above Sepulveda Fld Cntrl Basin)		
		High Coliform Count	2002
	Los Cerritos Channel		
		Ammonia	2004
		Copper	2004
		High Coliform Count	2004
		Lead	2004
		Zinc	2004
	Malaga Cove Beach		
		Beach Closures	2002
	Malibu Beach		
		Beach Closures	2002
	Malibu Creek		
		High Coliform Count	2002
		Nutrients (Algae)	2002
		Scum/Foam-unnatural	2002
	Malibu Lagoon		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Enteric Viruses	2002
		Eutrophic	2002
		High Coliform Count	2002
		Shellfish Harvesting Adv.	2002
		Swimming Restrictions	2002
	Malibu Lagoon Beach (Surfrider)		
		Beach Closures	2002
		High Coliform Count	2002
	Malibu Lake		
		Algae	2002
		Eutrophic	2002
		Org. enrichment/Low D.O.	2002
	Mandalay Beach		
		Beach Closures	2002
	Manhattan Beach		
		Beach Closures	2002
	Marina del Rey Harbor - Back Basins		
		Benthic Comm. Effects	2003
		Chlordane	2003
		Copper	2004
		DDT	2003
		Dieldrin	2003
		Fish Consumption Advisory	2003
		High Coliform Count	2003
		Lead	2004
		PCBs	2003
		Sediment Toxicity	2003
		Zinc	2004
	Marina del Rey Harbor Beach		
		Beach Closures	2003
		High Coliform Count	2003
	McGrath Beach		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Beach Closures	2002
		High Coliform Count	2002
	Medea Creek Reach 1 (Lake to Confl. with Lindero)		
		Algae	2002
		High Coliform Count	2002
	Medea Creek Reach 2 (Abv Confl. with Lindero)		
		Algae	2002
		High Coliform Count	2002
	Mint Canyon Creek Reach 1 (Confl to Rowler Cyn)		
		Nitrate and Nitrite	2002
	Monrovia Canyon Creek		
		Lead	2003
	Mugu Lagoon		
		Chlordane	2004
		Dacthal	2004
		DDT	2004
		Endosulfan	2004
		Nitrogen	2002
		PCBs	2004
		Sediment Toxicity	2004
		Sedimentation/Siltation	2004
	Munz Lake		
		Eutrophic	2004
		Trash	2004
	Nicholas Canyon Beach		
		Beach Closures	2002
	Palo Comado Creek		
		High Coliform Count	2002
	Palo Verde Shoreline Park Beach		
		Pathogens	2002
	Paradise Cove Beach		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Beach Closures	2002
		High Coliform Count	2002
	PICO KENTER DRAIN		
		Enteric Viruses	2002
		High Coliform Count	2002
	Point Dume Beach		
		Beach Closures	2002
	Point Fermin Park Beach		
		Beach Closures	2002
	Point Vicente Beach		
		Beach Closures	2002
	Portugese Bend Beach		
		Beach Closures	2002
	Puerco Beach		
		Beach Closures	2002
	Redondo Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Resort Point Beach		
		Beach Closures	2002
	Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)		
		Algae	2002
		ChemA	2004
		Chlordane	2004
		Chlorpyrifos	2003
		Dacthal	2004
		DDT	2004
		Dieldrin	2004
		Endosulfan	2004
		Nitrogen	2002
		PCBs	2004
		Toxaphene	2004

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Toxicity	2003
	Rio De Santa Clara/Oxnard Drain No. 3		
		Nitrogen	2002
	Rio Hondo Reach 1 (Confl. LA River to Snt Ana Fwy)		
		Ammonia	2002
		Copper	2003
		High Coliform Count	2002
		Lead	2003
		pH	2002
		Zinc	2003
	Rio Hondo Reach 2 (At Spreading Grounds)		
		Ammonia	2002
		High Coliform Count	2002
	Robert H. Meyer Memorial Beach		
		Beach Closures	2002
	Rocky Point Beach		
		Beach Closures	2002
	Royal Palms Beach		
		Beach Closures	2002
	San Gabriel River Estuary		
		Arsenic	2004
	San Gabriel River Reach 1 (Estuary to Firestone)		
		Algae	2004
		Ammonia	2004
		High Coliform Count	2002
		Toxicity	2004
	San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam		
		Ammonia	2004
		High Coliform Count	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Lead	2004
	San Gabriel River Reach 3 (Whittier Narrows to Ramona)		
		Toxicity	2004
	San Gabriel River, East Fork		
		Algae	2004
		Ammonia	2004
		High Coliform Count	2002
	San Jose Creek Reach 2 (Temple to I-10 at White Ave.)		
		Algae	2004
		Ammonia	2004
		High Coliform Count	2002
	Santa Clara River Estuary Beach-Surfers Knoll		
		High Coliform Count	2002
	Santa Clara River Reach 3 (Dam to Abv Sp Crk/Blw Timber Cyn)		
		Ammonia	2002
		Chloride	2002
	Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99)		
		Ammonia	2002
		Chloride	2002
	Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn Rd.)		
		Ammonia	2002
		Chloride	2002
		Nitrate and Nitrite	2002
		Org. enrichment/Low D.O.	2002
	Santa Fe Dam Park Lake		
		pH	2003

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
	Santa Monica Bay Offshore/Nearshore		
		Cadmium	2004
		Copper	2004
		Lead	2004
		Mercury	2004
		Nickel	2004
		Silver	2004
		Zinc	2004
	Santa Monica Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Santa Monica Canyon		
		High Coliform Count	2002
	Sea Level Beach		
		Beach Closures	2002
	Sepulveda Canyon		
		High Coliform Count	2002
	Stokes Creek		
		High Coliform Count	2002
	Tapo Canyon Reach 1		
		Boron	2003
		Chloride	2002
	Tapo Canyon Reach 2		
		Sulfates	2003
	Tapo Canyon Reach 3		
		Total Dissolved Solids	2003
	Topanga Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Torrance Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Torrance Carson Channel		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		High Coliform Count	2002
	Torrey Canyon Creek		
		Nitrate and Nitrite	2002
	Trancas Beach (Broad Beach)		
		Beach Closures	2002
		High Coliform Count	2002
	Tujunga Wash (LA River to Hansen Dam)		
		Ammonia	2002
		Copper	2003
		High Coliform Count	2002
		Odors	2002
		Scum/Foam-unnatural	2002
	Venice Beach		
		Beach Closures	2002
		High Coliform Count	2002
	Verdugo Wash Reach 1 (LA River to Verdugo Rd.)		
		Algae	2002
		High Coliform Count	2002
	Verdugo Wash Reach 2 (Above Verdugo Road)		
		Algae	2002
		High Coliform Count	2002
	Walnut Creek Wash (Drains from Puddingstone Res)		
		pH	2004
		Toxicity	2004
	Westlake Lake		
		Algae	2002
		Ammonia	2002
		Eutrophic	2002
		Org. enrichment/Low D.O.	2002
	Wheeler Canyon/Todd Barranca		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Nitrate and Nitrite	2002
	Whites Point Beach		
		Beach Closures	2002
	Will Rogers Beach		
		Beach Closures	2002
		High Coliform Count	2002
	WILMINGTON DRAIN		
		High Coliform Count	2002
	Zuma Beach (Westward Beach)		
		Beach Closures	2002
5			
	San Joaquin River		
		Boron	2003
		Electrical Conductivity	2003
6			
	Bodie Creek		
		Metals	2004
	Gray Creek		
		Sedimentation/Siltation	2004
	Haiwee Reservoir		
		Copper	2003
	Indian Creek Reservoir		
		Nutrients	2002
	Squaw Creek		
		Sedimentation/Siltation	2003
	Tinemaha Reservoir		
		Arsenic	2004
		Metals	2004
7			
	Imperial Valley Drains		
		Sedimentation/Siltation	2004
	New River		

Region	Water Body	Pollutant/Stressor	TMDL Completion Date
		Silt	2002
	Salton Sea		
		Nutrients	2004
8			
	Canyon Lake		
		org. enrichment/low D.O.	2004
		Pathogens	2004
	Lake Elsinore		
		nutrients	2004
		sediment/siltation	2004
		unknown toxicity	2004
	Lower Newport Bay -- Rhine Channel		
		selenium	2003
	San Diego Creek, Reach 1		
		chlorpyrifos/diazinon	2002
		selenium	2003
	San Diego Creek, Reach 2		
		chlorpyrifos/diazinon	2002
		selenium	2003
	Upper Newport Bay		
		chlorpyrifos/diazinon	2002
		selenium	2003
9			
	Chollas Creek 908.22		
		Toxicity (Diazinon)	2002
	Chollas Creek 908.22*		
		Metals (Cd, Cu, PBS, Zn)	2003
	Rainbow Creek		
		Eutrophic (Nutrients)	2002
	San Diego Bay; Shelter Island Yacht Basin		
		Metals (dissolved Cu)	2002

Region	Water Body	Pollutant/Stressor	TMDL Completion Date

3/'02

WATER QUALITY CONTROL PLAN FOR THE LAHONTAN REGION

NORTH AND SOUTH BASINS

R6 Anti-Degrad. for Natural Source

See highlights

STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
Lahontan Region

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Chapter 3
WATER QUALITY OBJECTIVES

The Porter-Cologne Water Quality Control Act defines "water quality objectives" as the allowable "limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." Thus, water quality objectives are intended to protect the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. The objectives, when compared to future water quality data, will also provide the basis for detecting any future trend toward degradation or enhancement of basin waters.

The water quality objectives in this Basin Plan supersede and replace those contained in:

The 1975 *Water Quality Control Plan for the North Lahontan Basin,* as amended through 1990, and

The 1975 *Water Quality Control Plan for the South Lahontan Basin,* as amended through 1990.

Upon approval by the State Board and the California Office of Administrative Law (OAL), the proposed revisions in objectives for waters of the Lake Tahoe Basin will supersede and replace the corresponding objectives in the *Lake Tahoe Basin Water Quality Plan,* as amended through 1989. When considering approval of these, and other provisions of the revised Lahontan Basin Plan affecting the Lake Tahoe Basin, the State Board may consider rescission of the separate Lake Tahoe Basin Plan.

Water quality objectives apply to "waters of the State" and "waters of the United States." Some of the waters of the Lahontan Region are interstate waters, flowing into either Nevada or Oregon. The Lahontan Regional Board has a responsibility to ensure that waters leaving the state meet the water quality standards of the receiving state (see the discussion of "Interstate Issues" in the Introduction to Chapter 4).

Water Quality Standards

The federal Clean Water Act defines "water quality standards" to include both "designated uses" (i.e., beneficial uses) and "water quality criteria" (i.e., water quality objectives). Thus, the beneficial uses designated in Chapter Two of this Basin Plan and the water quality objectives of this Chapter are this Region's water quality standards for purposes of the Clean Water Act.

Water Quality Objectives and Effluent Limits

It is important to recognize the distinction between ambient water quality objectives and "effluent limitations" or "discharge standards" which are conditions in state and federal waste discharge permits. Effluent limitations are established in permits both to protect water for beneficial uses within the area of the discharge, and to meet or achieve water quality objectives.

Methodology For Establishing Water Quality Objectives

Water quality objectives are numerical or narrative. Narrative and numerical water quality objectives define the upper concentration or other limits that the Regional Board considers protective of beneficial uses.

The general methodology used in establishing water quality objectives involves, first, designating beneficial water uses; and second, selecting and quantifying the water quality parameters necessary to protect the most vulnerable (sensitive) beneficial uses. To comply with the Nondegradation Objective (see below), water quality objectives may be established at levels better than that necessary to protect the most vulnerable beneficial use.

In establishing water quality objectives, factors in addition to designated beneficial uses and the Nondegradation Objective are considered. These factors include environmental and economic considerations specific to each hydrologic unit, the need to develop and use recycled water, as well as the level of water quality which could be achieved

through coordinated control of all factors which affect water quality in an area. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, and that may be reasonably controlled.

Water quality objectives can be reviewed and, if appropriate, revised by the Lahontan Regional Board. Revised water quality objectives would then be adopted as part of this Basin Plan by amendment. Opportunities for formal public review of water quality objectives will be available at a minimum of once every three years following the adoption of this Basin Plan to determine the need for further review and revision.

As a component of the State's continuing planning process, data may be collected and numerical water quality objectives may be developed for additional water bodies and/or constituents where sufficient information is presently not available for the establishment of such objectives. If appropriate, these objectives may be adopted by the Regional Board and amended to this Basin Plan.

Establishment of Numerical Objectives for Specific Water Bodies

Where available data were sufficient to define existing ambient levels of constituents, these levels were used in developing the numerical objectives for specific water bodies. By utilizing annual mean, 90th percentile values and flow-weighted values, the objectives are intended to be realistic within the variable conditions imposed by nature. This approach provides an opportunity to detect changes in water quality as a function of time through comparison of annual means, while still accommodating variations in the measured constituents.

Prohibited Discharges

Discharges which cause violation of the Nondegradation Objective (see below), or any narrative or numerical water quality objective are prohibited. (See also Section 4.1, "Waste Discharge Prohibitions.")

After application of reasonable control measures, ambient water quality shall conform to the narrative and numerical water quality objectives included in this Basin Plan. When other factors result in the degradation of water quality beyond the limits established by these water quality objectives, controllable human activities shall not cause further degradation of water quality in either surface or ground waters.

Compliance with Water Quality Objectives

The purpose of text, in italics, following certain water quality objectives is to provide specific direction on compliance with the objective. General direction on compliance with objectives is described in the last section of this Chapter. It is not feasible to cover all circumstances and conditions which could be created by all discharges. Therefore, it is within the discretion of the Regional Board to establish other, or additional, direction on compliance with objectives of this Basin Plan. The purpose of the italic text is to provide direction only, and **not** to specify method of compliance.

Nondegradation Objective

This objective applies to **all** waters of the Lahontan Region (including surface waters, wetlands, and ground waters.)

On October 28, 1968, the State Water Resources Control Board adopted Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," establishing a nondegradation policy for the protection of water quality. This policy, referred to in this Basin Plan as the Nondegradation Objective, requires continued maintenance of existing high quality waters. Whenever the existing quality of water is better that the quality of water established in this Basin Plan as objectives (both narrative and numerical), such existing quality shall be maintained unless appropriate findings are made under the policy. The U.S. Environmental Protection Agency, Region IX, has also issued detailed guidelines for implementation of federal antidegradation regulations for surface waters (40 CFR § 131.12). For more information, see the discussion on "General Direction Regarding Compliance With Objectives" at the end of this Chapter.

As required by the federal Clean Water Act, no degradation is allowed in Lake Tahoe, designated as an Outstanding National Resource Water. Section

Nondegradation Objective

To implement State Board Resolution No. 68-16, the "Statement of Policy with Respect to Maintaining High Quality Waters in California," the Regional Board follows guidance such as that in the USEPA's 1993 *Water Quality Standards Handbook* and the State Board's October 7, 1987 legal memorandum titled "Federal Antidegradation Policy" (Attwater 1987). The State Board has interpreted the Resolution No. 68-16 to incorporate the federal antidegradation policy in order to ensure consistency with federal Clean Water Act requirements (see State Board Order No. WQ 86-17, pages 16-24). For detailed information on the federal antidegradation policy, see USEPA Region IX's *Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12* and USEPA's *Questions and Answers on Antidegradation*. The Regional Board's procedures for implementation of State and federal antidegradation policies are summarized below. It is important to note that the federal policy applies only to surface waters, while the State policy applies to both surface and ground waters.

Under the State Nondegradation Objective, whenever the existing quality of water is better than that needed to protect all existing and probable future beneficial uses, the existing high quality shall be maintained until or unless it has been demonstrated to the State that any change in water quality will be consistent with the maximum benefit of the people of the State, and will not unreasonably affect present and probable future beneficial uses of such water. Therefore, unless these conditions are met, background water quality concentrations (the concentrations of substances in natural waters which are unaffected by waste management practices or contamination incidents) are appropriate water quality goals to be maintained. If it is determined that some degradation is in the best interest of the people of California, some increase in pollutant level may be appropriate. However, in no case may such increases cause adverse impacts to existing or probable future beneficial uses of waters of the State.

Where the federal antidegradation policy applies, it does not absolutely prohibit any changes in water quality. The policy requires that any reductions in water quality be consistent with the three-part test established by the policy, as described below.

Part One—Instream Uses
[40 CFR § 131.12(a)(1)]
The first part of the test establishes that "existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." Reductions in water quality should not be permitted if the change in water quality would seriously harm any species found in the water (other than an aberrational species). Waters of this type are generally referred to as "Tier I" waters.

Part Two—Public Interest Balancing
[40 CFR § 131.12(a)(2)]
The second part of the test applies where water quality is higher than necessary to protect existing instream beneficial uses. This part of the test allows reductions in water quality if the state finds "that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located" **and** existing beneficial uses are protected. Waters of this type are generally referred to as "Tier II" waters.

Part Three—Outstanding National Resource Waters (ONRWs) [40 CFR § 131.12(a)(3)]
The third part of the test established by the federal policy requires that the water quality of the waters which constitute an outstanding national resource be maintained and protected. No permanent or long-term reduction in water quality is allowable in areas given special protection as Outstanding National Resource Waters (48 Fed. Reg. 51402). Waters which potentially could qualify for ONRW designation are generally classified as "Tier III" waters.

Examples of such waters include, but are not limited to, waters of National and State Parks and wildlife refuges, waters of exceptional recreational or ecological significance, and state and federally designated wild and scenic rivers. To date, the only California water designated as an ONRW is Lake Tahoe. However, other California waters would certainly qualify.

ONRWs may be designated as part of adoption or amendment of water quality control plans. It is important to note that even if no formal designation has been made, lowering of water quality should not be allowed for waters which, because of their

WATER QUALITY CONTROL PLAN
FOR THE
NORTH COAST REGION

Adopted by the
North Coast Regional Water Quality Control Board on December 9, 1993

Approved by the
State Water Resources Control Board on March 21, 1994,
and the
Office of Administrative Law on August 18, 1994

(Includes amendment adopted on March 24, 1994)

NORTH COAST REGIONAL WATER QUALITY CONTROL BOARD
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Telephone: (707) 576-2220

3. WATER QUALITY OBJECTIVES

The California Water Code, Division 7, Chapter 4, Section 13241 specifies that each Regional Water Quality Control Board (Regional Water Board) shall establish water quality objectives which, in the Regional Water Board's judgment, are necessary for the reasonable protection of the beneficial uses and for the prevention of nuisance.

The federal Clean Water Act (33 U.S.C. § 303) requires the State to submit to the Administrator of the U.S. Environmental Protection Agency for approval all new or revised water quality standards which are established for surface and ocean waters. Under federal terminology, water quality standards consist of the beneficial uses enumerated in Table 2-1 and the water quality objectives contained in this section. The water quality objectives contained herein are designed to satisfy all state and federal requirements.

As new information becomes available, the Regional Water Board will review the appropriateness of the objectives contained herein. These objectives will be subject to public hearing at least once during each three-year period following adoption of this Basin Plan to determine the need for review and modification as appropriate.

The water quality objectives contained herein are a compilation of objectives adopted by the State Water Board, the Regional Water Board, and other state and federal agencies. Other water quality objectives and policies may apply that may be more stringent. Whenever several different objectives exist for the same water quality parameter, the strictest objective applies. In addition, the State Water Board "Policy With Respect to Maintaining High Quality Waters in California" also applies.

Controllable water quality factors shall conform to the water quality objectives contained herein. When other factors result in the degradation of water quality beyond the levels or limits established herein as water quality objectives, then controllable factors shall not cause further degradation of water quality. Controllable water quality factors are those actions, conditions, or circumstances resulting from man's activities that may influence the quality of the waters of the State and that may be reasonably controlled.

Water quality objectives form the basis for establishment of waste discharge requirements, waste discharge prohibitions, or maximum acceptable cleanup standards for all individuals and dischargers. These water quality objectives are considered to be necessary to protect those present and probable future beneficial uses enumerated in Table 2-1 and to protect existing high quality waters of the State. These objectives will be achieved primarily through the establishment of waste discharge requirements and through the implementation of this Basin Plan. The appropriate numeric water quality standards will be established in waste discharge orders.

The Regional Water Board, in setting waste discharge requirements, will consider, among other things, the potential impact on beneficial uses within the area of influence of the discharge, the existing quality of receiving waters, and the appropriate water quality objectives. The Regional Water Board will make a finding as to the beneficial uses to be protected within the area of influence of the discharge and establish waste discharge requirements to protect those uses and to meet water quality objectives. Resolution Nos. 87-113, 89-131, and 92-135 describe the policy of the Regional Water Board regarding the specific types of waste discharge for which it will waive issuance of waste discharge requirements. These resolutions are included in the Appendix Section of this Plan.

The water quality objectives for the Region refer to several classes of waters. Ocean waters are waters of the Pacific Ocean outside of enclosed bays, estuaries, and coastal lagoons, and within the territorial (3 mile) limit. Bays are indentations along the coast which include oceanic waters within distinct headlands or harbor works whose narrowest opening is less than 75 percent of the greatest dimension of the enclosed portion of the bay; this definition includes only Crescent City Harbor in the Klamath River Basin, and Humboldt Bay and Bodega Bay in the North Coastal Basin. Estuaries are waters at the mouths of streams which serve as mixing zones for freshwater and seawater; they generally extend from the upstream limit of tidal action to a bay or open ocean. The principal estuarine areas of the Region are at the mouths of the Smith and Klamath Rivers and Lakes Earl and Talawa, and at the mouths of the Eel, Noyo, and Russian Rivers. Inland waters include all surface

STATE WATER RESOURCES CONTROL BOARD

RESOLUTION NO. 68-16

STATEMENT OF POLICY WITH RESPECT TO

MAINTAINING HIGH QUALITY OF WATERS IN CALIFORNIA

WHEREAS the California Legislature has declared that it is the policy of the State that the granting of permits and licenses for unappropriated water and the disposal of wastes into the waters of the State shall be so regulated as to achieve highest water quality consistent with maximum benefit to the people of the State and shall be controlled so as to promote the peace, health, safety and welfare of the people of the State; and

WHEREAS water quality control policies have been and are being adopted for waters of the State; and

WHEREAS the quality of some waters of the State is higher than that established by the adopted policies and it is the intent and purpose of this Board that such higher quality shall be maintained to the maximum extent possible consistent with the declaration of the Legislature;

NOW, THEREFORE, BE IT RESOLVED:

1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until It has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of

the State will be maintained.

3. In implementing this policy, the Secretary of the Interior will be kept advised and will be provided with such information as he will need to discharge his responsibilities under the Federal Water Pollution Control Act.

BE IT FURTHER RESOLVED that a copy of this resolution be forwarded to the Secretary of the Interior as part of California's water quality control policy submission.

CERTIFICATION

The undersigned, Executive Officer of the State Water Resources Control Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on October 24, 1968.

Dated: October 28, 1968

Kerry W. Mulligan

Executive Officer

State Water Resources

Control Board

4	Colorado Lagoon Legachy Chlo	Colorado Lagoo	PCBs	2004	2004
4	Colorado Lagoon Legachy Chlo	Colorado Lagoo	Sediment Toxicit	2004	2004
4	Colorado Lagoon Lead PAHs an	Colorado Lagoo	Lead	2004	2004
4	Colorado Lagoon Lead PAHs an	Colorado Lagoo	PAHs	2004	2004
4	Colorado Lagoon Lead PAHs an	Colorado Lagoo	Zinc	2004	2004
4	Los Cerritos Channel Metals	Los Cerritos Cha	Copper	2004	2004
4	Los Cerritos Channel Metals	Los Cerritos Cha	Lead	2004	2004
4	Los Cerritos Channel Metals	Los Cerritos Cha	Zinc	2004	2004
4	Los Cerritos Channel Ammonia	Los Cerritos Cha	Ammonia	2004	2004
4	Los Cerritos Channel Ammonia	Los Cerritos Cha	High Coliform C	2004	2004
5	San Joaquin River - Salts	San Joaquin Rive	Boron	2002	2003
5	San Joaquin River - Salts	San Joaquin Rive	Electrical Condu	2002	2003
6	Haiwee Reservoir Copper TMDL P	Haiwee Reservoi	Copper	2002	2003
6	Indian Creek Reservoir Nutrients T	Indian Creek Re	Nutrients	2000	2002
6	Tinemaha Reservoir Metals TMDL	Tinemaha Resen	Metals	2003	2004
6	Tinemaha Reservoir Metals TMDL	Tinemaha Resen	Arsenic	2003	2004
6	Bodie Creek Metals TMDL Project	Bodie Creek	Metals	2003	2004
6	Gray Creek Sedimentation/Siltati	Gray Creek	Sedimentation/S	2003	2004
6	Squaw Creek Sedimentation/Siltc	Squaw Creek	Sedimentation/S	2002	2003
7	Imperial Valley Drains Sedimenta	Imperial Valley D	Sedimentation/S	2003	2004
7	New River Silt TMDL Project	New River	Silt	2001	2002
7	Salton Sea Nutrients TMDL Project	Salton Sea	Nutrients	2003	2004
8	Lake Elsinore/San Jacinto River Ni	Lake Elsinore	nutrients	2003	2004
8	Lake Elsinore/San Jacinto River Ni	Canyon Lake	org. enrichment	2003	2004
8	Lake Elsinore/San Jacinto River Tc	Lake Elsinore	unknown toxicit	2003	2004
8	Lake Elsinore/San Jacinto River Pc	Canyon Lake	Pathogens	2003	2004
8	Lake Elsinore/San Jacinto River Se	Lake Elsinore	sediment/siltatic	2003	2004
8	Upper Newport Bay Watershed P	Upper Newport E	chlorpyrifos/diaz	2002	2003
8	Upper Newport Bay Watershed P	San Diego Creek	chlorpyrifos/diaz	2002	2003
8	Upper Newport Bay Watershed P	San Diego Creek	chlorpyrifos/diaz	2002	2003
8	Newport Bay Watershed Seleniur	Upper Newport E	selenium	2002	2003
8	Newport Bay Watershed Seleniur	Lower Newport E	selenium	2002	2004
8	Newport Bay Watershed Seleniur	San Diego Creek	selenium	2002	2004
8	Newport Bay Watershed Seleniur	San Diego Creek	selenium	2002	2004
9	Chollas Creek Diazinon	Chollas Creek 9(	Toxicity (Diazino	2001	2002
9	Rainbow Creek Eutrophication	Rainbow Creek	Eutrophic (Nutrie	2001	2002
9	Chollas Creek Metals	Chollas Creek 9(	Metals (Cd, Cu,	2002	2003
9	San Diego Bay, Shelter Island Co	San Diego Bay; S	Metals (dissolve	2001	2002

REGION	TMDL PROJECTS	WATER BODY	POLLUTANT C	TECHNICA	TMDL COMPLETION DATE
4	Calleguas Creek Nutrient TMI	Mugu Lagoon	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMI	Arroyo Las Posas Reach 1 (Lewis	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMI	Arroyo Las Posas Reach 2 (Fox B	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMI	Arroyo Las Posas Reach 2 (Fox B	Nitrate and I	2002	2002
4	Calleguas Creek Nutrient TMI	Arroyo Simi Reach 1 (Moorpark	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMI	Beardsley Channel (Above Cen	Algae	2002	2002
4	Calleguas Creek Nutrient TMI	Beardsley Channel (Above Cen	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMI	Calleguas Creek Reach 1 and 2	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMI	Calleguas Creek Reach 1 and 2	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMI	Calleguas Creek Reach 3 (Potre	Nitrate and I	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 1 (Confl C	Algae	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 1 (Confl C	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 1 (Confl C	Org. enrichm	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 2 (Santa R	Algae	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 2 (Santa R	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 2 (Santa R	Org. enrichm	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 3 (Thousar	Algae	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 3 (Thousar	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 3 (Thousar	Org. enrichm	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 4 (Above	Algae	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 4 (Above	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek Reach 4 (Above	Org. enrichm	2002	2002
4	Calleguas Creek Nutrient TMI	Conejo Creek/Arroyo Conejo N	Ammonia	2002	2002
4	Calleguas Creek Nutrient TMI	Duck Pond Agricultural Drains/M	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMI	Fox Barranca	Nitrate and I	2002	2002
4	Calleguas Creek Nutrient TMI	Revolon Slough Main Branch (M	Algae	2002	2002
4	Calleguas Creek Nutrient TMI	Revolon Slough Main Branch (M	Nitrogen	2002	2002
4	Calleguas Creek Nutrient TMI	Rio De Santa Clara/Oxnard Dra	Nitrogen	2002	2002
4	Calleguas Creek Toxicity TMD	Beardsley Channel (Above Cen	Chlorpyrifos	2003	2004
4	Calleguas Creek Toxicity TMD	Beardsley Channel (Above Cen	Toxicity	2003	2004
4	Calleguas Creek Toxicity TMD	Calleguas Creek Reach 1 and 2	Toxicity	2003	2004
4	Calleguas Creek Toxicity TMD	Conejo Creek Reach 1 (Confl C	Toxicity	2003	2004
4	Calleguas Creek Toxicity TMD	Conejo Creek Reach 2 (Santa R	Toxicity	2003	2004
4	Calleguas Creek Toxicity TMD	Conejo Creek Reach 3 (Thousar	Toxicity	2003	2004
4	Calleguas Creek Toxicity TMD	Conejo Creek Reach 4 (Above	Toxicity	2003	2004
4	Calleguas Creek Toxicity TMD	Duck Pond Agricultural Drains/M	Toxicity	2003	2004
4	Calleguas Creek Toxicity TMD	Revolon Slough Main Branch (M	Chlorpyrifos	2003	2004
4	Calleguas Creek Toxicity TMD	Revolon Slough Main Branch (M	Toxicity	2003	2004
4	Calleguas Creek Chloride	Arroyo Las Posas Reach 1 (Lewis	Chloride	2002	2002
4	Calleguas Creek Chloride	Arroyo Las Posas Reach 2 (Fox B	Chloride	2002	2002
4	Calleguas Creek Chloride	Arroyo Simi Reach 1 (Moorpark	Chloride	2002	2002
4	Calleguas Creek Chloride	Calleguas Creek Reach 3 (Potre	Chloride	2002	2002
4	Calleguas Creek Chloride	Conejo Creek Reach 2 (Santa R	Chloride	2002	2002
4	Calleguas Creek Chloride	Conejo Creek Reach 4 (Above	Chloride	2002	2002
4	Calleguas Creek Chloride	Tapo Canyon Reach 1	Chloride	2002	2002
4	Calleguas Creek Salinity	Arroyo Las Posas Reach 1 (Lewis	Sulfates	2003	2003
4	Calleguas Creek Salinity	Arroyo Las Posas Reach 1 (Lewis	Total Dissolve	2003	2003
4	Calleguas Creek Salinity	Arroyo Las Posas Reach 2 (Fox B	Sulfates	2003	2003

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New Priorities from Jon Bishop 3/22/02

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4 Calleguas Creek Salinity	Arroyo Las Posas Reach 2 (Fox E	Total Dissolve	2003	2003
4 Calleguas Creek Salinity	Arroyo Simi Reach 1 (Moorpark	Boron	2003	2003
4 Calleguas Creek Salinity	Arroyo Simi Reach 1 (Moorpark	Sulfates	2003	2003
4 Calleguas Creek Salinity	Arroyo Simi Reach 1 (Moorpark	Total Dissolve	2003	2003
4 Calleguas Creek Salinity	Calleguas Creek Reach 3 (Potre	Total Dissolve	2003	2003
4 Calleguas Creek Salinity	Conejo Creek Reach 1 (Confl C	Sulfates	2003	2003
4 Calleguas Creek Salinity	Conejo Creek Reach 1 (Confl C	Total Dissolve	2003	2003
4 Calleguas Creek Salinity	Conejo Creek Reach 2 (Santa R	Sulfates	2003	2003
4 Calleguas Creek Salinity	Conejo Creek Reach 2 (Santa R	Total Dissolve	2003	2003
4 Calleguas Creek Salinity	Conejo Creek Reach 3 (Thousar	Sulfates	2003	2003
4 Calleguas Creek Salinity	Conejo Creek Reach 3 (Thousar	Total Dissolve	2003	2003
4 Calleguas Creek Salinity	Conejo Creek Reach 4 (Above	Sulfates	2003	2003
4 Calleguas Creek Salinity	Conejo Creek Reach 4 (Above	Total Dissolve	2003	2003
4 Calleguas Creek Salinity	Conejo Creek/Arroyo Conejo N	Sulfates	2003	2003
4 Calleguas Creek Salinity	Conejo Creek/Arroyo Conejo N	Total Dissolve	2003	2003
4 Calleguas Creek Salinity	Fox Barranca	Boron	2003	2003
4 Calleguas Creek Salinity	Fox Barranca	Sulfates	2003	2003
4 Calleguas Creek Salinity	Fox Barranca	Total Dissolve	2003	2003
4 Calleguas Creek Salinity	Tapo Canyon Reach 1	Boron	2003	2003
4 Calleguas Creek Salinity	Tapo Canyon Reach 2	Sulfates	2003	2003
4 Calleguas Creek Salinity	Tapo Canyon Reach 3	Total Dissolve	2003	2003
4 Legacy Chlorinated Pesticide	Mugu Lagoon	Chlordane	2004	2005
4 Legacy Chlorinated Pesticide	Mugu Lagoon	Dacthal	2004	2005
4 Legacy Chlorinated Pesticide	Mugu Lagoon	DDT	2004	2005
4 Legacy Chlorinated Pesticide	Mugu Lagoon	Endosulfan	2004	2005
4 Legacy Chlorinated Pesticide	Mugu Lagoon	Sediment To:	2004	2005
4 Legacy Chlorinated Pesticide	Mugu Lagoon	Sedimentatic	2004	2005
4 Legacy Chlorinated Pesticide	Arroyo Las Posas Reach 1 (Lewis	DDT	2004	2005
4 Legacy Chlorinated Pesticide	Arroyo Las Posas Reach 2 (Fox E	DDT	2004	2005
4 Legacy Chlorinated Pesticide	Beardsley Channel (Above Cen	ChemA	2004	2005
4 Legacy Chlorinated Pesticide	Beardsley Channel (Above Cen	Chlordane	2004	2005
4 Legacy Chlorinated Pesticide	Beardsley Channel (Above Cen	Dacthal	2004	2005
4 Legacy Chlorinated Pesticide	Beardsley Channel (Above Cen	DDT	2004	2005
4 Legacy Chlorinated Pesticide	Beardsley Channel (Above Cen	Dieldrin	2004	2005
4 Legacy Chlorinated Pesticide	Beardsley Channel (Above Cen	Endosulfan	2004	2005
4 Legacy Chlorinated Pesticide	Beardsley Channel (Above Cen	Toxaphene	2004	2005
4 Legacy Chlorinated Pesticide	Calleguas Creek Reach 1 and 2	ChemA	2004	2005
4 Legacy Chlorinated Pesticide	Calleguas Creek Reach 1 and 2	Chlordane	2004	2005
4 Legacy Chlorinated Pesticide	Calleguas Creek Reach 1 and 2	DDT	2004	2005
4 Legacy Chlorinated Pesticide	Calleguas Creek Reach 1 and 2	Endosulfan	2004	2005
4 Legacy Chlorinated Pesticide	Calleguas Creek Reach 1 and 2	Sediment To:	2004	2005
4 Legacy Chlorinated Pesticide	Conejo Creek Reach 2 (Santa R	Toxaphene	2004	2005
4 Legacy Chlorinated Pesticide	Conejo Creek Reach 3 (Thousar	ChemA	2004	2005
4 Legacy Chlorinated Pesticide	Conejo Creek Reach 3 (Thousar	Dacthal	2004	2005
4 Legacy Chlorinated Pesticide	Conejo Creek Reach 3 (Thousar	DDT	2004	2005
4 Legacy Chlorinated Pesticide	Conejo Creek Reach 3 (Thousar	Endosulfan	2004	2005
4 Legacy Chlorinated Pesticide	Conejo Creek Reach 3 (Thousar	Toxaphene	2004	2005
4 Legacy Chlorinated Pesticide	Conejo Creek Reach 4 (Above	ChemA	2004	2005
4 Legacy Chlorinated Pesticide	Conejo Creek Reach 4 (Above	Dacthal	2004	2005

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4	Legacy Chlorinated Pesticide	Conejo Creek Reach 4 (Above	DDT	2004	2005
4	Legacy Chlorinated Pesticide	Conejo Creek Reach 4 (Above	Endosulfan	2004	2005
4	Legacy Chlorinated Pesticide	Conejo Creek Reach 4 (Above	Toxaphene	2004	2005
4	Legacy Chlorinated Pesticide	Conejo Creek/Arroyo Conejo N	Chlordane	2004	2005
4	Legacy Chlorinated Pesticide	Conejo Creek/Arroyo Conejo N	DDT	2004	2005
4	Legacy Chlorinated Pesticide	Duck Pond Agricultural Drains/N	ChemA	2004	2005
4	Legacy Chlorinated Pesticide	Duck Pond Agricultural Drains/N	Chlordane	2004	2005
4	Legacy Chlorinated Pesticide	Duck Pond Agricultural Drains/N	DDT	2004	2005
4	Legacy Chlorinated Pesticide	Duck Pond Agricultural Drains/N	Sediment To:	2004	2005
4	Legacy Chlorinated Pesticide	Duck Pond Agricultural Drains/N	Toxaphene	2004	2005
4	Legacy Chlorinated Pesticide	Revolon Slough Main Branch (M	ChemA	2004	2005
4	Legacy Chlorinated Pesticide	Revolon Slough Main Branch (M	Chlordane	2004	2005
4	Legacy Chlorinated Pesticide	Revolon Slough Main Branch (M	Dacthal	2004	2005
4	Legacy Chlorinated Pesticide	Revolon Slough Main Branch (M	DDT	2004	2005
4	Legacy Chlorinated Pesticide	Revolon Slough Main Branch (M	Dieldrin	2004	2005
4	Legacy Chlorinated Pesticide	Revolon Slough Main Branch (M	Endosulfan	2004	2005
4	Legacy Chlorinated Pesticide	Revolon Slough Main Branch (M	Toxaphene	2004	2005
4	Calleguas Creek PCBs	Mugu Lagoon	PCBs	2004	2005
4	Calleguas Creek PCBs	Beardsley Channel (Above Cen	PCBs	2004	2005
4	Calleguas Creek PCBs	Calleguas Creek Reach 1 and 2	PCBs	2004	2005
4	Calleguas Creek PCBs	Revolon Slough Main Branch (M	PCBs	2004	2005
4	Los Angeles River Nutrient	Arroyo Seco Reach 1 (LA River t	Algae	2002	2002
4	Los Angeles River Nutrient	Arroyo Seco Reach 2 (Figueroa	Algae	2002	2002
4	Los Angeles River Nutrient	Burbank Western Channel	Algae	2002	2002
4	Los Angeles River Nutrient	Burbank Western Channel	Ammonia	2002	2002
4	Los Angeles River Nutrient	Burbank Western Channel	Odors	2002	2002
4	Los Angeles River Nutrient	Burbank Western Channel	Scum/Foam	2002	2002
4	Los Angeles River Nutrient	Compton Creek	pH	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 1 (Estu	Ammonia	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 1 (Estu	Nutrients (Alg	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 1 (Estu	pH	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 1 (Estu	Scum/Foam	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 2 (Cars	Ammonia	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 2 (Cars	Nutrients (Alg	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 2 (Cars	Odors	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 2 (Cars	Scum/Foam	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 3 (Figu	Ammonia	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 3 (Figu	Nutrients (Alg	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 3 (Figu	Odors	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 3 (Figu	Scum/Foam	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 4 (Sepu	Ammonia	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 4 (Sepu	Nutrients (Alg	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 4 (Sepu	Odors	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 4 (Sepu	Scum/Foam	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 5 (at S	Ammonia	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 5 (at S	Nutrients (Alg	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 5 (at S	Odors	2002	2002
4	Los Angeles River Nutrient	Los Angeles River Reach 5 (at S	Scum/Foam	2002	2002
4	Los Angeles River Nutrient	Rio Hondo Reach 1 (Confl. LA R	Ammonia	2002	2002

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4	Los Angeles River Nutrient	Rio Hondo Reach 1 (Confl. LA R	pH	2002	2002
4	Los Angeles River Nutrient	Rio Hondo Reach 2 (At Spreadir	Ammonia	2002	2002
4	Los Angeles River Nutrient	Tujunga Wash (LA River to Hans	Ammonia	2002	2002
4	Los Angeles River Nutrient	Tujunga Wash (LA River to Hans	Odors	2002	2002
4	Los Angeles River Nutrient	Tujunga Wash (LA River to Hans	Scum/Foam	2002	2002
4	Los Angeles River Nutrient	Verdugo Wash Reach 1 (LA Rive	Algae	2002	2002
4	Los Angeles River Nutrient	Verdugo Wash Reach 2 (Above	Algae	2002	2002
4	Los Angeles River Metals	Aliso Canyon Wash	Selenium	2003	2003
4	Los Angeles River Metals	Burbank Western Channel	Cadmium	2003	2003
4	Los Angeles River Metals	Compton Creek	Copper	2003	2003
4	Los Angeles River Metals	Compton Creek	Lead	2003	2003
4	Los Angeles River Metals	Los Angeles River Reach 1 (Estu	Lead	2003	2003
4	Los Angeles River Metals	Los Angeles River Reach 2 (Cars	Lead	2003	2003
4	Los Angeles River Metals	Los Angeles River Reach 4 (Sepu	Lead	2003	2003
4	Los Angeles River Metals	Monrovia Canyon Creek	Lead	2003	2003
4	Los Angeles River Metals	Rio Hondo Reach 1 (Confl. LA R	Copper	2003	2003
4	Los Angeles River Metals	Rio Hondo Reach 1 (Confl. LA R	Lead	2003	2003
4	Los Angeles River Metals	Rio Hondo Reach 1 (Confl. LA R	Zinc	2003	2003
4	Los Angeles River Metals	Tujunga Wash (LA River to Hans	Copper	2003	2003
4	Los Angeles River Pathogen	Arroyo Seco Reach 1 (LA River t	High Coliform	2002	2002
4	Los Angeles River Pathogen	Arroyo Seco Reach 2 (Figueroa	High Coliform	2002	2002
4	Los Angeles River Pathogen	Bell Creek	High Coliform	2002	2002
4	Los Angeles River Pathogen	Compton Creek	High Coliform	2002	2002
4	Los Angeles River Pathogen	Los Angeles River Reach 1 (Estu	High Coliform	2002	2002
4	Los Angeles River Pathogen	Los Angeles River Reach 2 (Cars	High Coliform	2002	2002
4	Los Angeles River Pathogen	Los Angeles River Reach 4 (Sepu	High Coliform	2002	2002
4	Los Angeles River Pathogen	Los Angeles River Reach 6 (Abo	High Coliform	2002	2002
4	Los Angeles River Pathogen	Rio Hondo Reach 1 (Confl. LA R	High Coliform	2002	2002
4	Los Angeles River Pathogen	Rio Hondo Reach 2 (At Spreadir	High Coliform	2002	2002
4	Los Angeles River Pathogen	Tujunga Wash (LA River to Hans	High Coliform	2002	2002
4	Los Angeles River Pathogen	Verdugo Wash Reach 1 (LA Rive	High Coliform	2002	2002
4	Los Angeles River Pathogen	Verdugo Wash Reach 2 (Above	High Coliform	2002	2002
4	Ventura Beaches Pathogen	Mandalay Beach	Beach Closu	2002	2002
4	Ventura Beaches Pathogen	McGrath Beach	Beach Closu	2002	2002
4	Ventura Beaches Pathogen	McGrath Beach	High Coliform	2002	2002
4	Ventura Beaches Pathogen	Santa Clara River Estuary Beach	High Coliform	2002	2002
4	Santa Clara River Chloride	Santa Clara River Reach 3 (Dan	Chloride	2002	2002
4	Santa Clara River Chloride	Santa Clara River Reach 7 (Blue	Chloride	2002	2002
4	Santa Clara River Chloride	Santa Clara River Reach 8 (W Pi	Chloride	2002	2002
4	Santa Clara River Nutrients	Mint Canyon Creek Reach 1 (C	Nitrate and I	2002	2003
4	Santa Clara River Nutrients	Santa Clara River Reach 3 (Dan	Ammonia	2002	2003
4	Santa Clara River Nutrients	Santa Clara River Reach 7 (Blue	Ammonia	2002	2003
4	Santa Clara River Nutrients	Santa Clara River Reach 8 (W Pi	Ammonia	2002	2003
4	Santa Clara River Nutrients	Santa Clara River Reach 8 (W Pi	Nitrate and I	2002	2003
4	Santa Clara River Nutrients	Santa Clara River Reach 8 (W Pi	Org. enrichm	2002	2003
4	Santa Clara River Nutrients	Torrey Canyon Creek	Nitrate and I	2002	2003
4	Santa Clara River Nutrients	Wheeler Canyon/Todd Barranc	Nitrate and I	2002	2003
4	Santa Clara River Lakes Nutri	Elizabeth Lake	Eutrophic		
4	Santa Clara River Lakes Path	Elizabeth Lake	Org. enrichment/Low D		).O.

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4 Santa Clara River Lakes Path	Elizabeth Lake	pH		
4 Santa Clara River Lakes Path	Lake Hughes	Algae		
4 Santa Clara River Lakes Path	Lake Hughes	Eutrophic		
4 Santa Clara River Lakes Path	Lake Hughes	Fish Kills		
4 Santa Clara River Lakes Path	Lake Hughes	Odors		
4 Santa Clara River Lakes Path	Munz Lake	Eutrophic		
4 San Gabriel River Nutrients	Coyote Creek	Ammonia	2003	2003
4 San Gabriel River Nutrients	San Gabriel River Reach 1 (Estu	Algae	2003	2003
4 San Gabriel River Nutrients	San Gabriel River Reach 1 (Estu	Ammonia	2003	2003
4 San Gabriel River Nutrients	San Gabriel River Reach 1 (Estu	Toxicity	2003	2003
4 San Gabriel River Nutrients	San Gabriel River Reach 2 (Fires	Ammonia	2003	2003
4 San Gabriel River Nutrients	San Gabriel River Reach 3 (Whit	Toxicity	2003	2003
4 San Gabriel River Nutrients	San Gabriel River, East Fork	Algae	2003	2003
4 San Gabriel River Nutrients	San Gabriel River, East Fork	Ammonia	2003	2003
4 San Gabriel River Nutrients	San Jose Creek Reach 2 (Templ	Algae	2003	2003
4 San Gabriel River Nutrients	San Jose Creek Reach 2 (Templ	Ammonia	2003	2003
4 San Gabriel River Nutrients	Walnut Creek Wash (Drains from	pH	2003	2003
4 San Gabriel River Nutrients	Walnut Creek Wash (Drains from	Toxicity	2003	2003
4 San Gabriel River Metals	Coyote Creek	Silver	2004	2005
4 San Gabriel River Metals	San Gabriel River Estuary	Arsenic	2004	2005
4 San Gabriel River Metals	San Gabriel River Reach 2 (Fires	Lead	2004	2005
4 San Gabriel River Lakes Nutrie	Crystal Lake	Org. enrichm	2005	2006
4 San Gabriel River Lakes Nutrie	El Dorado Lakes	Algae	2005	2006
4 San Gabriel River Lakes Nutrie	El Dorado Lakes	Ammonia	2005	2006
4 San Gabriel River Lakes Nutrie	El Dorado Lakes	Eutrophic	2005	2006
4 San Gabriel River Lakes Nutrie	El Dorado Lakes	pH	2005	2006
4 San Gabriel River Lakes Nutrie	El Dorado Lakes	Eutrophic	2005	2006
4 San Gabriel River Lakes Nutrie	El Dorado Lakes	pH	2005	2006
4 San Gabriel River Lakes Nutrie	Legg Lake	Ammonia	2005	2006
4 San Gabriel River Lakes Nutrie	Legg Lake	Odors	2005	2006
4 San Gabriel River Lakes Nutrie	Legg Lake	pH	2005	2006
4 San Gabriel River Lakes Nutrie	Moorpark Fwy	Org. enrichm	2005	2006
4 San Gabriel River Lakes Nutrie	Santa Fe Dam Park Lake	pH	2005	2006
4 San Gabriel River Pathogen	Coyote Creek	High Coliform	2003	2003
4 San Gabriel River Pathogen	San Gabriel River Reach 1 (Estu	High Coliform	2003	2003
4 San Gabriel River Pathogen	San Gabriel River Reach 2 (Fires	High Coliform	2003	2003
4 San Gabriel River Pathogen	San Gabriel River, East Fork	High Coliform	2003	2003
4 San Gabriel River Pathogen	San Jose Creek Reach 2 (Templ	High Coliform	2003	2003
4 Marina del Rey Pathogens	Marina del Rey Harbor - Back Be	High Coliform	2003	2003
4 Marina del Rey Pathogens	Marina del Rey Harbor Beach	Beach Closu	2003	2003
4 Marina del Rey Pathogens	Marina del Rey Harbor Beach	High Coliform	2003	2003
4 Malibu Creek Pathogens	Malibu Lagoon	Enteric Virus	2002	2002
4 Malibu Creek Pathogens	Malibu Lagoon	High Coliform	2002	2002
4 Malibu Creek Pathogens	Malibu Lagoon	Shellfish Harv	2002	2002
4 Malibu Creek Pathogens	Malibu Lagoon	Swimming Re	2002	2002
4 Malibu Creek Pathogens	Las Virgenes Creek	High Coliform	2002	2002
4 Malibu Creek Pathogens	Lindero Creek Reach 1	High Coliform	2002	2002
4 Malibu Creek Pathogens	Lindero Creek Reach 2 (Above	High Coliform	2002	2002
4 Malibu Creek Pathogens	Malibu Creek	High Coliform	2002	2002
4 Malibu Creek Pathogens	Medea Creek Reach 1 (Lake to	High Coliform	2002	2002
4 Malibu Creek Pathogens	Medea Creek Reach 2 (Above	High Coliform	2002	2002

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4	Malibu Creek Pathogens	Palo Comado Creek	High Coliform	2002	2002
4	Malibu Creek Pathogens	Stokes Creek	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F ASHLAND AVENUE DRAIN	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F PICO KENTER DRAIN	Enteric Virus	2002	2002
4	Santa Monica Bay Beaches	F PICO KENTER DRAIN	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Santa Monica Canyon	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Sepulveda Canyon	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Abalone Cove Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Big Rock Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Big Rock Beach	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Bluff Cove Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Cabrillo Beach (Outer)	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Cabrillo Beach (Outer)	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Carbon Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Castlerock Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Dan Blocker Memorial (Coral) B	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Dockweiler Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Dockweiler Beach	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Escondido Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Flat Rock Point Beach Area	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Hermosa Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Inspiration Point Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F La Costa Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Las Flores Beach	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Las Tunas Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Leo Carillo Beach (South of Cou	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Leo Carillo Beach (South of Cou	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Long Point Beach	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Long Point Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Malaga Cove Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Malibu Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Malibu Lagoon Beach (Surfrider	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Malibu Lagoon Beach (Surfrider	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Manhattan Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Nicholas Canyon Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Palo Verde Shoreline Park Beac	Pathogens	2002	2002
4	Santa Monica Bay Beaches	F Paradise Cove Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Paradise Cove Beach	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Point Dume Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Point Fermin Park Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Point Vicente Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Portuguese Bend Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Puerco Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Redondo Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Redondo Beach	High Coliform	2002	2002
4	Santa Monica Bay Beaches	F Resort Point Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Robert H. Meyer Memorial Beac	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Rocky Point Beach	Beach Closu	2002	2002
4	Santa Monica Bay Beaches	F Royal Palms Beach	Beach Closu	2002	2002

4 Santa Monica Bay Beaches F	Santa Monica Beach	Beach Closu	2002	2002
4 Santa Monica Bay Beaches F	Santa Monica Beach	High Coliforn	2002	2002
4 Santa Monica Bay Beaches F	Sea Level Beach	Beach Closu	2002	2002
4 Santa Monica Bay Beaches F	Topanga Beach	Beach Closu	2002	2002
4 Santa Monica Bay Beaches F	Topanga Beach	High Coliforn	2002	2002
4 Santa Monica Bay Beaches F	Torrance Beach	Beach Closu	2002	2002
4 Santa Monica Bay Beaches F	Torrance Beach	High Coliforn	2002	2002
4 Santa Monica Bay Beaches F	Trancas Beach (Broad Beach)	Beach Closu	2002	2002
4 Santa Monica Bay Beaches F	Trancas Beach (Broad Beach)	High Coliforn	2002	2002
4 Santa Monica Bay Beaches F	Venice Beach	Beach Closu	2002	2002
4 Santa Monica Bay Beaches F	Venice Beach	High Coliforn	2002	2002
4 Santa Monica Bay Beaches F	Whites Point Beach	Beach Closu	2002	2002
4 Santa Monica Bay Beaches F	Will Rogers Beach	Beach Closu	2002	2002
4 Santa Monica Bay Beaches F	Will Rogers Beach	High Coliforn	2002	2002
4 Santa Monica Bay Beaches F	Zuma Beach (Westward Beach)	Beach Closu	2002	2002
4 Ballona Creek Pathogen	Ballona Creek	Enteric Virus	2003	2003
4 Ballona Creek Pathogen	Ballona Creek	High Coliforn	2003	2003
4 Ballona Creek Pathogen	Ballona Creek Estuary	High Coliforn	2003	2003
4 Ballona Creek Pathogen	Ballona Creek Estuary	Shellfish Harv	2003	2003
4 Malibu Creek Nutrients	Malibu Lagoon	Eutrophic	2002	2002
4 Malibu Creek Nutrients	Lake Lindero	Algae	2002	2002
4 Malibu Creek Nutrients	Lake Lindero	Eutrophic	2002	2002
4 Malibu Creek Nutrients	Lake Lindero	Odors	2002	2002
4 Malibu Creek Nutrients	Lake Sherwood	Algae	2002	2002
4 Malibu Creek Nutrients	Lake Sherwood	Ammonia	2002	2002
4 Malibu Creek Nutrients	Lake Sherwood	Eutrophic	2002	2002
4 Malibu Creek Nutrients	Lake Sherwood	Org. enrichm	2002	2002
4 Malibu Creek Nutrients	Malibu Lake	Algae	2002	2002
4 Malibu Creek Nutrients	Malibu Lake	Eutrophic	2002	2002
4 Malibu Creek Nutrients	Malibu Lake	Org. enrichm	2002	2002
4 Malibu Creek Nutrients	Westlake Lake	Algae	2002	2002
4 Malibu Creek Nutrients	Westlake Lake	Ammonia	2002	2002
4 Malibu Creek Nutrients	Westlake Lake	Eutrophic	2002	2002
4 Malibu Creek Nutrients	Westlake Lake	Org. enrichm	2002	2002
4 Malibu Creek Nutrients	Las Virgenes Creek	Nutrients (Alg	2002	2002
4 Malibu Creek Nutrients	Las Virgenes Creek	Org. enrichm	2002	2002
4 Malibu Creek Nutrients	Las Virgenes Creek	Scum/Foam	2002	2002
4 Malibu Creek Nutrients	Lindero Creek Reach 1	Algae	2002	2002
4 Malibu Creek Nutrients	Lindero Creek Reach 2	Scum/Foam	2002	2002
4 Malibu Creek Nutrients	Lindero Creek Reach 2 (Above	Algae	2002	2002
4 Malibu Creek Nutrients	Lindero Creek Reach 2 (Above	Scum/Foam	2002	2002
4 Malibu Creek Nutrients	Malibu Creek	Nutrients (Alg	2002	2002
4 Malibu Creek Nutrients	Malibu Creek	Scum/Foam	2002	2002
4 Malibu Creek Nutrients	Medea Creek Reach 1 (Lake to	Algae	2002	2002
4 Malibu Creek Nutrients	Medea Creek Reach 2 (Above	Algae	2002	2002
4 Santa Monica Bay Metals	Santa Monica Bay Offshore/Nea	Cadmium	2004	2004
4 Santa Monica Bay Metals	Santa Monica Bay Offshore/Nea	Copper	2004	2004
4 Santa Monica Bay Metals	Santa Monica Bay Offshore/Nea	Lead	2004	2004
4 Santa Monica Bay Metals	Santa Monica Bay Offshore/Nea	Mercury	2004	2004

Priorities_2_years_Query

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4	Santa Monica Bay Metals	Santa Monica Bay Offshore/Ne	Nickel	2004	2004
4	Santa Monica Bay Metals	Santa Monica Bay Offshore/Ne	Silver	2004	2004
4	Santa Monica Bay Metals	Santa Monica Bay Offshore/Ne	Zinc	2004	2004
4	Marina del Rey Legacy Chlor	Marina del Rey Harbor - Back B	Benthic Corr	2003	2004
4	Marina del Rey Legacy Chlor	Marina del Rey Harbor - Back B	Chlordane	2003	2004
4	Marina del Rey Legacy Chlor	Marina del Rey Harbor - Back B	DDT	2003	2004
4	Marina del Rey Legacy Chlor	Marina del Rey Harbor - Back B	Dieldrin	2003	2004
4	Marina del Rey Legacy Chlor	Marina del Rey Harbor - Back B	Fish Consum	2003	2004
4	Marina del Rey Legacy Chlor	Marina del Rey Harbor - Back B	PCBs	2003	2004
4	Marina del Rey Legacy Chlor	Marina del Rey Harbor - Back B	Sediment To:	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek	ChemA	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek	Chlordane	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek	DDT	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek	Dieldrin	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek	PCBs	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek	Sediment To:	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek Estuary	Arochlor	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek Estuary	Chlordane	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek Estuary	DDT	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek Estuary	PCBs	2004	2004
4	Ballona Creek Legacy Chlori	Ballona Creek Estuary	Sediment To:	2004	2004
4	Marina del Rey Metals	Marina del Rey Harbor - Back B	Copper	2004	2004
4	Marina del Rey Metals	Marina del Rey Harbor - Back B	Lead	2004	2004
4	Marina del Rey Metals	Marina del Rey Harbor - Back B	Zinc	2004	2004
4	Ballona Creek Metals	Ballona Creek	Arsenic	2003	2003
4	Ballona Creek Metals	Ballona Creek	Cadmium	2003	2003
4	Ballona Creek Metals	Ballona Creek	Copper	2003	2003
4	Ballona Creek Metals	Ballona Creek	Lead	2003	2003
4	Ballona Creek Metals	Ballona Creek	Silver	2003	2003
4	Ballona Creek Metals	Ballona Creek	Toxicity	2003	2003
4	Ballona Creek Metals	Ballona Creek Estuary	Lead	2003	2003
4	Ballona Creek Metals	Ballona Creek Estuary	Zinc	2003	2003
4	Ballona Creek Metals	Ballona Creek Wetlands	Arsenic	2003	2003
4	Los Angeles Harbor Pathoger	LA Harbor Main Channel	Beach Closu	2002	2004
4	Los Angeles Harbor Pathoger	Cabrillo Beach (Inner) LA Harbo	Beach Closu	2002	2004
4	Dominguez Channel Pathoge	Dominguez Channel (above Ve	High Coliform	2002	2002
4	Dominguez Channel Pathoge	Dominguez Channel (Estuary to	High Coliform	2002	2002
4	Dominguez Channel Pathoge	Torrance Carson Channel	High Coliform	2002	2002
4	Dominguez Channel Pathoge	WILMINGTON DRAIN	High Coliform	2002	2002
4	Colorado Lagoon Legacy Cl	Colorado Lagoon	Chlordane	2004	2005
4	Colorado Lagoon Legacy C	Colorado Lagoon	DDT	2004	2005
4	Colorado Lagoon Legacy C	Colorado Lagoon	Dieldrin	2004	2005
4	Colorado Lagoon Legacy C	Colorado Lagoon	PCBs	2004	2005
4	Colorado Lagoon Legacy C	Colorado Lagoon	Sediment To:	2004	2005
4	Colorado Lagoon Lead PAH	Colorado Lagoon	Lead	2004	2005
4	Colorado Lagoon Lead PAH	Colorado Lagoon	PAHs	2004	2005
4	Colorado Lagoon Lead PAH	Colorado Lagoon	Zinc	2004	2005
4	Los Cerritos Channel Metals	Los Cerritos Channel	Copper	2004	2005
4	Los Cerritos Channel Metals	Los Cerritos Channel	Lead	2004	2005

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4	Los Cerritos Channel Metals	Los Cerritos Channel	Zinc	2004	2005
4	Los Cerritos Channel Ammon	Los Cerritos Channel	Ammonia	2004	2005
4	Los Cerritos Channel Ammon	Los Cerritos Channel	High Coliform	2004	2005