COLORADO RIVER BASIN REGIONAL WATER QUALITY CONTROL BOARD

CLEAN WATER ACT SECTIONS 305(b) AND 303(d) 2018 INTEGRATED REPORT FOR THE COLORADO RIVER BASIN REGION

FINAL STAFF REPORT NOVEMBER 2019

COLORADO RIVER BASIN REGIONAL WATER QUALITY CONTROL BOARD

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CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Executive Summary

This Staff Report contains recommendations for updates to the California Integrated Report – Clean Water Act Section 303(d) List of Impaired Waters and Section 305(b) Surface Water Quality Assessment (Integrated Report) for surface waters in the Colorado River Basin Region. The recommendations are based on data and information collected from Colorado River Basin Regional Water Quality Control Board (Colorado River Basin Water Board) surface water bodies (e.g., rivers and lakes) and submitted prior to the end of the data solicitation period for the 2018 Integrated Report cycle. The report proposes changes to the Clean Water Act Section 303(d) List of Impaired Waters (303(d) List), and pursuant to Clean Water Act section 305(b), analyzes the extent to which all surface waters in the region are meeting beneficial uses and proposes changes to the categorization of those waters.

This Staff Report provides background on the assessment process and the methods used. Staff assessed a total of 56 waterbody segments containing 2,204 waterbody-pollutant combinations. Primary data sources include the California Environmental Data Exchange Network (CEDEN) (which includes data from the Surface Water Ambient Monitoring Program [SWAMP]), the National Water Information System (NWIS), and the STOrage and RETrieval (STORET) databases (please note, STORET was decommissioned by United States Environmental Protection Agency [USEPA] in June 2018). The assessments are summarized in waterbody Fact Sheets in Appendix A.

Attachment 1 has the USEPA-approved 2012 303(d) List, which contains 68 listings. Staff recommends that two listings in the approved 2012 303(d) List be placed as being addressed by an alternative to a Total Maximum Daily Load (TMDL), as explained in Section 3.2 of this Staff Report. Based on the data assessments, staff also recommends that 24 new listings for pollutant impairment. As a result, staff recommends that the 2018 303(d) List have a total of 92 listings, which includes 68 listings retained from the 2012 303(d) List and the 24 proposed new listings.

Following the public participation process, the Colorado River Basin Water Board will consider adopting staff recommendations and sending them to the State Water Resources Control Board (State Water Board) for review and inclusion in the 2018 California Integrated Report. The Integrated Report will then be submitted to USEPA for review and approval. USEPA has final approval of the Integrated Report.

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Acronym/Abbreviation	Definition
Basin Plan	Water Quality Control Plan for the Colorado River Basin Region
BPTCP	Bay Protection and Toxic Cleanup Program
BMI	Benthic Macro Invertebrates
CalWQA	California Water Quality Assessment (Database)
CCAMP	Central Coast Ambient Monitoring Program
CCC	Criteria Continuous Concentration
CDPH	California Department of Public Health
CEDEN	California Environmental Data Exchange Network
CFR	Code of Federal Regulations
CMC	Criteria Maximum Concentration
CTR	California Toxics Rule
CWA	Clean Water Act
ºC	Degrees Celsius
ºF	Degrees Fahrenheit
FED	Functional Equivalent Document
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DFW	California Department of Fish and Wildlife, formerly Department of Fish and Game (DFG)
DO	Dissolved Oxygen
Dw	Dry Weight
ERM	Effects Range Median
HCH	Hexachlorocyclohexane
HSA	Hydrologic Sub Area
HU	Hydrologic Unit
IBI	Index of Biological Integrity
ILRP	Irrigated Lands Regulatory Program
IR	Integrated Report
Kg	Kilogram(s)
Listing Policy	Water Quality Control Policy for Developing California's Section 303(d) List
LOE	Line of Evidence
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
mg/kg	Milligrams per Kilogram (parts per million)
mg/L	Milligrams per Liter (parts per million)
µg/g	Micrograms per Gram (parts per million)
µg/L	Micrograms per Liter (parts per billion)
MTBE	Methyl Tertiary-butyl Ether
MTRL	Maximum Tissue Residue Level
NAS	National Academy of Sciences
ng/g	Nanograms per Gram (parts per billion)

Acronym/Abbreviation	Definition
ng/L	Nanograms per Liter (parts per trillion)
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
NWIS	National Water Information System
OC	Organic Carbon
OEHHA	California Office of Environmental Health Hazard
PAH	Polycyclic Aromatic Hydrocarbon
PBDE	Polybrominated Diphenyl Ethers
PCB	Polychlorinated Biphenyl
PEL	Probable Effects Level
pg/L	Picograms per Liter
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RBI	Relative Benthic Index
Regional Water Board	Regional Water Quality Control Board
RDC	Regional Data Center
RL	Reporting Level
SQG	Sediment Quality Guideline
State Water Board	State Water Resources Control Board
STORET	STOrage and RETrieval Database
SWAMP	Surface Water Ambient Monitoring Program
TDS	Total Dissolved Solids
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TSMP	Toxic Substance Monitoring Program
TSS	Total Suspended Solids
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
WDR	Waste Discharge Requirement
WQO	Water Quality Objective
WQS	Water Quality Standard
Ww	Wet Weight

Introduction

The federal Clean Water Act gives states the primary responsibility for protecting and restoring surface water quality. The State Water Board is California's water pollution control agency for all federal purposes. (Wat. Code, § 13160.) The State Water Board, along with the nine Regional Water Quality Control Boards (Regional Water Boards) (collectively, the Water Boards) protect and enhance the quality of California's water resources through implementing the Clean Water Act, also known as the Federal Water Pollution Control Act Amendments of 1972, as amended (33 U.S.C. § 1251 et seq.; Clean Water Act, § 101 et seq.), and California's Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.).

States that administer the Clean Water Act must review, make necessary changes to, and submit the 303(d) List to the USEPA. Clean Water Act section 305(b) requires each state to report biennially to USEPA on the condition of its surface water quality. The USEPA guidance to the states recommends the two reports, the 303(d) List and 305(b) report, be integrated (USEPA, 2005). In California, the combined report is called the California Integrated Report and incorporates the State Water Board's section 303(d) and 305(b) reporting requirements. The Colorado River Basin Water Board is responsible for developing the portion of the Integrated Report for surface waters within the Colorado River Basin Region, subject to approval and incorporation by the State Water Board into the final California Integrated Report.

This Staff Report provides a water quality report for the surface waterbody segments assessed in the Colorado River Basin Region, as required by Clean Water Act section 305(b), as well as recommends additions, deletions, and other changes to the 303(d) List for the 2018 listing cycle. In short, the Staff Report provides updates for use in the 2018 California Integrated Report.

1. Water Quality Assessment

The water quality assessment process begins with the evaluation of data collected from surface water quality monitoring activities in the Colorado River Basin Region. The data collected is analyzed to determine if a waterbody is meeting or exceeding water quality standards. This analysis forms the basis of the Clean Water Act section 303(d) and 305(b) assessments. The attainment of water quality standards is determined by comparing data to objectives, criteria, and guidelines (protective limits). Whether these protective limits are exceeded determines a water segment's ability to support its assigned beneficial uses and whether to recommend listing the waterbody-pollutant combination on the 303(d) List.

1.1 The Listing Policy

Recommendations to place a waterbody segment on the 303(d) List are made in conformance with the State Water Board's Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List, commonly referred to as the Listing Policy (State Water Board, 2015). The Listing Policy establishes a standardized approach for developing California's 303(d) List.

The Listing Policy states that all readily available water quality data and information must be reviewed. Readily available data and information is defined as data and information that can be submitted to the California Environmental Data Exchange Network (CEDEN), unless the data type cannot be accepted by CEDEN. Data types that CEDEN cannot accept can be submitted directly to the State Water Board following a procedure established during the data solicitation process.

The Listing Policy also establishes requirements for data quality, data quantity, and administration of the listing process. Listing and delisting factors are provided for chemical-specific water quality standards; bacterial water quality standards; health advisories; bioaccumulation of chemicals in aquatic life tissues; nuisance such as trash, odor, and foam; nutrients; water and sediment toxicity; adverse biological response; degradation of aquatic life populations and communities; trends in water quality; and weight of evidence.

The Listing Policy requires the water quality assessments and listing decisions to be documented in waterbody Fact Sheets. Fact Sheets contain lines of evidence for each data type, which are used to make listing decisions for each waterbody-pollutant combination. The Fact Sheets supporting the 2018 Integrated Report for waterbodies in the Colorado River Basin Region are provided in Appendix A.

1.2 Integrated Report Cycles

The Integrated Report is released in "cycles" with each cycle occurring every two years, on even numbered years. Each Integrated Report cycle consists primarily of assessments from the three Regional Water Boards that are "on-cycle." The other six Regional Water Boards that are "off-cycle" may also assess new high-priority data and make new listing or delisting decisions. The Integrated Report schedule is as follows: North Coast (Region 1), Lahontan (Region 6), and Colorado River Basin (Region 7) Regional Water Boards are scheduled for the 2018 cycle; Central Coast (Region 3), Central Valley (Region 5), and San Diego (Region 9) Regional Water Boards are scheduled for the 2020 cycle; San Francisco Bay (Region 2), Los Angeles (Region 4), and Santa Ana (Region 8) Regional Water Boards are scheduled for the 2022 cycle.

1.3 Data Solicitation

On November 3, 2016, the State Water Board solicited data from the public with the Notice of Public Solicitation of Water Quality Data and Information for the California Integrated Report sent to interested parties subscribed to the Integrated Report e-mail list. This Notice listed the types of data that would be accepted and described the

procedure for submitting data for consideration for the Integrated Report. For the 2018 Integrated Report cycle, data was required to be submitted via CEDEN, unless as otherwise noted in the solicitation. Data submitted prior to May 3, 2017, was considered for the 2018 cycle.

During the data solicitation period, data and information collected from Colorado River Basin Region surface waters were received from monitoring programs including:

a. Surface Water Ambient Monitoring Program (SWAMP),

b. California Department of Pesticide Regulation (DPR) Surface Water Study,

c. Total Maximum Daily Load (TMDL) Monitoring Programs,

d. USEPA National Lakes and Streams Assessment data from the STOrage and RETrieval Database (STORET),

e. Water quality data collected by the Unites States Geological Survey (USGS) from the National Water Information System (NWIS), and

f. Other existing and readily available water quality data and information reported by local, state, and federal agencies (including receiving water monitoring data from discharger monitoring reports), citizen monitoring groups, academic institutions, and the public.

1.4 Data Processing

Staff from the Colorado River Basin Water Board worked collaboratively with staff from the State Water Board to process and evaluate data and information as required by the Listing Policy.

All readily available data and information were considered; however, only high-quality data supported by a Quality Assurance Project Plan were used as primary lines of evidence to make determinations of water quality standards attainment. In the absence of quality assurance documentation, data was used only as supporting evidence and not the basis of a listing decision.

Data was aggregated by waterbody segments, and assessments were performed for each pollutant on each waterbody segment. Waterbodies were segmented to account for hydrologic features or as described in the Water Quality Control Plan for the Colorado River Basin Region (Basin Plan). No waterbodies have been re-segmented, split into additional segments, or changed names since the 2012 303(d) List was approved.

Temporal representation of data was assessed using the requirements and guidance of the Listing Policy. The available data was used to represent concentrations during the averaging period associated with the particular pollutant and water quality objective, as required by Section 6.1.5.6 of the Listing Policy. For example, if only one data point was available during a 4-day period, it was used to represent the 4-day average concentration for that period.

1.5 Water Quality Standards Used in Assessments

Water quality standards consist of the beneficial uses of a waterbody and the water quality objectives (or "criteria" under federal terminology) designated to protect those beneficial uses. Water quality standards also include the federal and state antidegradation policies.

Beneficial uses of Colorado River Basin Region surface waterbodies are identified in Table 2-2 through Table 2-4 of the Basin Plan.

Staff assessed data using regulatory limits when available. The most common regulatory limits used include water quality objectives in the Basin Plan or any statewide Water Quality Control Plans applicable to the waterbody, and criteria for toxic pollutants promulgated by the USEPA under the California Toxics Rule (40 C.F.R § 131.38). When numeric regulatory limits were not available, evaluation guidelines were used to interpret narrative water quality objectives.

Evaluation guidelines were selected in conformance with Section 6.1.3 of the Listing Policy. Staff selected appropriate, scientifically-defensible objectives or criteria. All guidelines used are identified in the Table of Water Quality Objectives/Criteria or Guidelines in Attachment 3 of this Staff Report and in the waterbody Fact Sheets in Appendix A. The following Listing Policy considerations were used in the selection of evaluation guidelines:

1. Evaluation Guidelines for Sediment Quality for Marine, Estuarine, and Freshwater Sediments: Sediment quality guidelines published in peer-reviewed literature or developed by state or federal agencies were used when applicable. Acceptable guidelines included selected values (e.g., effects range-median, probable effects level, probable effects concentration), and other sediment quality guidelines. Only those sediment guidelines that are predictive of sediment toxicity were used (i.e., those guidelines that have been shown in published studies to be predictive of sediment toxicity in 50 percent or more of the samples analyzed).

2. Evaluation Guidelines for Protection from the Consumption of Fish and Shellfish: Staff selected evaluation guidelines published by USEPA or OEHHA. Maximum Tissue Residue Levels (MTRLs) and Elevated Data Levels (EDLs) were not used to evaluate fish or shellfish tissue data.

3. Evaluation Guidelines for Protection of Aquatic Life from Bioaccumulation of Toxic Substances: Staff selected evaluation guidelines for the protection of aquatic life published by a variety of sources, including the National Academy of Science, OEHHA, USEPA, and in some cases, academic studies published in scientific journals.

4. Other Parameters: In some instances, staff selected the California Secondary Maximum Contaminant Levels (MCLs) found in California Code of Regulations, title 22, section 64449 to protect the Municipal and Domestic Supply (MUN) beneficial use and to interpret narrative water quality objectives in the Basin Plan for Aesthetic Qualities and Chemical Constituents.

1.6 Waterbody Fact Sheets

A waterbody Fact Sheet is comprised of lines of evidence (LOEs) and beneficial use support decisions based on available water quality data and information collected within the waterbody. An LOE was developed for each unique combination of a waterbody, pollutant, matrix, and fraction. The term “matrix” refers to the sample medium used in an LOE. The “fraction” is the analyzed portion of the sample medium. For example, if the matrix of a sample is water, then the fraction can be either the total constituent or the dissolved ratio of the constituent.

A beneficial use support decision was made for each pollutant based on the available LOEs for that pollutant. Each decision is given a rating of supporting, not supporting, or insufficient information based on assessment of beneficial use support. If the number of samples exceeding regulatory limits was greater than the allowable exceedance count, the pollutant combination is rated as not supporting (impaired) and recommended for a 303(d) listing. In each waterbody, data for multiple pollutants may be assessed, resulting in more than one decision.

A Fact Sheet is prepared for each waterbody summarizing the decisions and supporting LOEs for each waterbody. The LOEs for each pollutant in a waterbody are combined to make a decision. Detailed Fact Sheets for all waterbodies assessed for the 2018 Integrated Report are available in Appendix A.

Potential sources are generally only identified in Fact Sheets when a specific source analysis has been performed as part of a TMDL or other regulatory process, or through project work undertaken by Colorado River Basin Water Board staff. Otherwise, the potential source was marked “Source Unknown.”

2. Recommended Updates to the Integrated Report

2.1 Recommended Updates to the 303(d) List of Impaired Waterbodies

Under Clean Water Act section 303(d), states are required to review, make changes as necessary, and submit to USEPA a list identifying waterbodies failing to meet water quality standards and the water quality parameter(s) (i.e., pollutant) causing the failure. This is referred to as the 303(d) List. The 303(d) List must include a description of the

pollutants causing lack of attainment of water quality standards and a priority ranking of the water quality limited segments, taking into account the severity of the pollution and the uses to be made of the waters. (40 C.F.R. § 130.7(b)(iii)(4).) Federal regulations define a "water quality limited segment" as "[a]ny segment 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 sections 301(b) and 306 of the [Clean Water] Act." (40 C.F.R. § 130.2(j).) To restore water quality, a TMDL or other planning tool must be developed for water quality limited segments on the 303(d) List.

The 303(d) List includes all waterbody-pollutant combinations that are recommended for listing or delisting based on assessments conducted by Colorado River Basin Water Board staff. The 303(d) List decisions are made at the pollutant level, and there may be multiple listing decisions within one waterbody. The 2012 303(d) List contains 68 listings (see Attachment 1). Twenty-four (24) new listings are recommended for the 2018 listing cycle. As a result, the 2018 303(d) List would have a total of 92 listings. The following waterbodies have the proposed new listings:

1. Alamo River: Lambda Cyhalothrin, Cypermethrin
2. All American Canal: DDT (Dichlorodiphenyltrichloroethane)
3. Coachella Valley Storm Water Channel: Disulfoton and Dissolved Oxygen
4. Colorado River (Imperial Reservoir to California-Mexico Border): Manganese
5. Colorado River (Lake Havasu Dam to Imperial Dam): Turbidity
6. Deep Creek: Iron and Turbidity
7. Ferguson Lake: Selenium
8. Hathaway Creek: Iron and Turbidity
9. Imperial Valley Drains: Chlorpyrifos, Imidacloprid, and Toxicity
10. New River (Imperial County): Lambda Cyhalothrin, Disulfoton, Imidacloprid, DDD (Dichlorodiphenyldichloroethane), and Malathion
11. Palo Verde Outfall Drain and Lagoon: Dieldrin and Toxicity
12. Potrero Creek: Turbidity
13. West Branch Millard Canyon Creek: Turbidity

Additionally, high priority datasets (datasets that could result in a listing) are undergoing review by Colorado River Basin Water Board staff for the following waterbody/pollutant combinations:

1. Alamo River: Ammonia, DDD (Dichlorodiphenyldichloroethane), DDE (Dichlorodiphenyldichloroethylene), and Pyrethroids.

2. All American Canal: Chlordane and PCBs (Polychlorinated biphenyls)

3. Colorado River (Imperial Reservoir to California-Mexico Border): Turbidity

4. Colorado River (Lake Havasu Dam to Imperial Dam): DDT (Dichlorodiphenyltrichloroethane)

5. Imperial Valley Drains: Ammonia and DDE

6. New River (Imperial County): DDE and Pyrethroids

7. Salton Sea: DDE

Additional information, including a detailed rationale for each listing, is documented in the Fact Sheets in Appendix A. Data to support each listing decision is included in Attachment 2. Water quality objectives and guidelines for each listing decision are included in Attachment 3.

2.2 Recommended Updates to the 305(b) Report

To meet Clean Water Act section 305(b) requirements of reporting on water quality conditions, the Integrated Report places each waterbody into one of five categories based on the assessment of all available data collected for that waterbody. The waterbody's overall category is determined based on the outcomes of all beneficial use support decisions in the waterbody, as described below.

If a waterbody segment has no existing or proposed 303(d) listings, and staff has concluded that at least one beneficial use is fully supported, it is placed into Category 1. If staff could not determine use support for at least one beneficial use, the waterbody segment is placed into Category 2 or Category 3 depending on the likelihood of impairment. This approach is used to prevent waterbodies with insufficient data from being classified as fully attaining standards, thus providing a more accurate baseline for future assessments.

If there are one or more 303(d) listing decisions for pollutants in the waterbody, it is placed into Category 5. The waterbody remains in Category 5 until all 303(d) listings are addressed by USEPA-approved TMDLs or by another regulatory program that is expected to result in the reasonable attainment of the water quality standards. If all 303(d)-listed impairments are being addressed, and at least one is being addressed by USEPA-approved TMDL, the waterbody is placed in Category 4a. If all 303(d)-listed impairments are being addressed by actions other than TMDLs, the waterbody is placed into Category 4b. Waterbodies are placed in Category 4c if the impairment is not caused by a pollutant but rather caused by pollution, such as flow alteration or habitat alteration. Waterbodies placed in Category 4c do not require the development of a TMDL.

In the 2018 cycle, a total of 56 waterbody segments containing 2,204 waterbody-pollutant

combinations were evaluated by the Colorado River Basin Water Board staff. Table 1 below describes each category and summarizes the number and extent of waterbody segments in each category. The information in Table 1 is based on a count of the waterbodies in each category. Appendix B through Appendix E provide more information by category on the proposed changes to the 303(d) List for the 2018 assessment cycle. Additional information, including the rationale for each listing and delisting decision, are documented in the Fact Sheets in Appendix A.

Table 1: Recommended Updates to 305(b) Integrated Report Categories

Category	Description	Current	2018 Proposed Changes	2018 Proposed Totals	Total 2018 Stream Miles	Total 2018 Lake / Reservoir Acres
1	All assessed beneficial uses supported and no beneficial uses known to be impaired.	**2**	**10**	**12**	**83.3**	**0**
2	There is insufficient information to determine beneficial use support.	**11**	**7**	**18**	**184.7**	**1215.0**
3	There is insufficient data and/or information to make a beneficial use support determination, but information and/or data indicates beneficial uses may be potentially threatened.	**0**	**4**	**4**	**111.3**	**0**
4	At least one beneficial use is not supported but a Total Maximum Daily Load (TMDL) is not needed.	**0**	**0**	**0**	**0**	**0**
4a	A TMDL has been developed and approved by USEPA for any waterbody-pollutant combination and the approved implementation plan is expected to result in full attainment of the water quality standard within a reasonable, specified time frame.	**0**	**0**	**0**	**0**	**0**
4b	Another regulatory program is reasonably expected to result in attainment of the water quality standard within a reasonable, specified time frame.	**0**	**0**	**0**	**0**	**0**

Category	Description	Current	2018 Proposed Changes	2018 Proposed Totals	Total 2018 Stream Miles	Total 2018 Lake / Reservoir Acres
4c	The non-attainment of any applicable water quality standard for the waterbody segment is the result of pollution and is not caused by a pollutant.	**0**	**0**	**0**	**0**	**0**
5	At least one beneficial use is not supported and a TMDL is needed.	**9**	**9**	**18**	**1689.2**	**242,486**
	TOTAL	**22**	**30**	**52**	**2068.5**	**243,701**

3. TMDL Completion Schedule

3.1 Updated TMDL Completion Dates

When one or more beneficial uses of a waterbody is impaired by a pollutant and the waterbody is added to the 303(d) List, staff must also identify a date in the future by which time a TMDL will be adopted for the waterbody to address the beneficial use impairment. A TMDL is a pollutant and surface waterbody specific control plan that must account for all sources of the pollutant that caused the waterbody to be listed. The expected TMDL completion date is saved with the waterbody/pollutant combination decision to list the waterbody. USEPA suggests that states complete TMDLs for listed waterbodies within 13 years of the listing decision.

In the Colorado River Basin Region, the large volume of 303(d)-listed waters coupled with limited staff resources may prevent the development of TMDLs from being written for every 303(d)-listed waterbody within the USEPA-recommended, 13-year period. For the 2018 listing cycle, Colorado River Basin Water Board staff have updated TMDL completion dates to reflect regional priorities and the available staff resources to address specific impairments.

Expected TMDL completion dates proposed by Colorado River Basin Water Board staff are summarized below in Table 2 and also contained in the Fact Sheets (Appendix A).

Table 2: Updated TMDL Completion Dates

Waterbody	Pollutant	TMDL 2012 Cycle Completion Date	TMDL 2018 Cycle Completion Date
Alamo River	Selenium	2019	2025
Alamo River	PCBs (Polychlorinated biphenyls)	2019	2021
Alamo River	Chlordane	2019	2021

Waterbody	Pollutant	TMDL 2012 Cycle Completion Date	TMDL 2018 Cycle Completion Date
Alamo River	Chlorpyrifos	2019	2021
Alamo River	DDT (Dichlorodiphenyltrichloroethane)	2019	2021
Alamo River	Diazinon	2019	2021
Alamo River	Dieldrin	2019	2021
Alamo River	Toxaphene	2019	2021
Coachella Valley Storm Water Channel	Toxaphene	2019	2021
Imperial Valley Drains	Selenium	2019	2025
Imperial Valley Drains	PCBs (Polychlorinated biphenyls)	2019	2021
Imperial Valley Drains	Dieldrin	2019	2021
Imperial Valley Drains	Toxaphene	2019	2021
New River (Imperial County)	Mercury	2019	2025
New River (Imperial County)	Selenium	2019	2025
New River (Imperial County)	Nutrients	2019	2025
New River (Imperial County)	PCBs (Polychlorinated biphenyls)	2019	2021
New River (Imperial County)	Chlorpyrifos	2019	2021
New River (Imperial County)	DDT (Dichlorodiphenyltrichloroethane)	2019	2021
New River (Imperial County)	Diazinon	2019	2021
New River (Imperial County)	Dieldrin	2019	2021
New River (Imperial County)	Hexachlorobenzene/ HCB	2021	2025
New River (Imperial County)	Toxaphene	2019	2021
New River (Imperial County)	Toxicity	2019	2025
Salton Sea	Enterococcus	2021	2030
Salton Sea	Arsenic	2021	2030
Salton Sea	Low Dissolved Oxygen	2021	2030
Salton Sea	Ammonia (formerly Nitrogen, ammonia (Total Ammonia))	2025	2030
Salton Sea	Nutrients	2019	2030
Salton Sea	Chlorpyrifos	2021	2030
Salton Sea	DDT (Dichlorodiphenyltrichloroethane)	2021	2030
Salton Sea	Chloride	2025	2030
Salton Sea	Salinity	2025	2030
Salton Sea	Toxicity	2025	2030

3.2 Colorado River Basin Region TMDL Alternative

In lieu of adopting a TMDL, Regional Water Boards may also address impaired waters through existing regulatory tools and mechanisms, known as “TMDL alternatives,” such as individual or general waste discharge requirements (WDRs), enforcement actions, and interagency agreements. Federal regulations specifically recognize that “other

required control measures" may obviate the need for a TMDL when such requirements are expected to result in the attainment of the applicable water quality standard in a reasonable period of time. (40 C.F.R. § 130.7, subd. (b)(1)(iii).)

Palo Verde Outfall Drain and Palo Verde Lagoon are listed on the 303(d) List as impaired by pesticides dichlorodiphenyltrichloroethane (DDT) and toxaphene, because concentrations of these pollutants in those waterbodies violate water quality standards. In lieu of developing a TMDL, the Colorado River Basin Water Board adopted Order R7-2019-0030, *General Waste Discharge Requirements for Discharges of Waste from Irrigated Agricultural Lands for Dischargers that are Members of a Coalition Group in the Palo Verde Valley and Palo Verde Mesa*, on May 15, 2019. The General WDRs incorporate impairment control requirements for DDT and toxaphene and should serve as a TMDL alternative, the rationale for which is explained in Attachment B of the General WDRs, *Palo Verde Outfall Drain and Lagoon DDT and Toxaphene Impairment Control Plan*. Staff recommends that the State Water Board and USEPA credit the General WDRs as a TMDL alternative for these two waterbody/pollutant combinations.[1]

4. Public Review and Approval

4.1 Regional and State Board Approval Process

Pursuant to Section 6.2 of the Listing Policy, proposals for 303(d) listing require public review and a hearing before adoption by the Colorado River Basin Water Board via resolution. They are then submitted to the State Water Board for compiling into the statewide 303(d) List. Once compiled, the California Integrated Report is noticed for additional public review and approval by the State Water Board's Executive Director or the State Water Board, as outlined in Section 6.3 of the Listing Policy.

4.2 Timely Requests for State Board Review

If any person or entity seeks to have the State Water Board review a listing recommendation made by the Colorado River Basin Water Board with respect to one or more waterbodies, the individual or entity must submit a request to the State Water Board to review the specific listing recommendation no later than 30 days after the date of the Colorado River Basin Water Board's approval of the resolution. The State Water Board may refuse to receive public comments concerning listing recommendations not requested for review in a timely manner. A request for review must include the identification of the waterbody/pollutant combination of concern and an explanation of why the requestor believes that the Colorado River Basin Water Board's corresponding recommendation is unsupported or inadequate.

Email requests for review to WQAssessment@waterboards.ca.gov (must be no more

[1] Although these two waterbody/pollutant combinations in will remain in Category 5 of the Integrated Report (since there are other impairments in the waterbodies not addressed by the TMDL alternative), staff recommends that they be assigned a TMDL requirement status of 5c by the State Water Board and of Category 4b by USEPA.

than 15 megabytes); or mail or hand deliver at:

Surface Water Quality Assessment Unit
State Water Resources Control Board, Division of Water Quality
P.O. Box 100, Sacramento, CA 95812-2000 (mail)
1001 I Street, 15th Floor, Sacramento, CA 95814 (hand delivery)

Please also indicate in the subject line, “Request for Review of Colorado River Basin Water Board Listing Recommendation – 303(d) List Portions of the 2018 California Integrated Report.”

4.3 USEPA Review

Upon approval by the State Water Board, the statewide 2018 List is submitted to USEPA for approval as required by the Clean Water Act. The 303(d) List of impaired waters requires final approval by the USEPA. If USEPA determines that changes are needed to the submitted report, USEPA will initiate further public review before finalizing and publishing the report.

References

For a complete list of references (data, QAPPs, evaluation guidelines, etc.) used in all the waterbody Fact Sheets, see Appendix G.

State Water Resources Control Board (State Water Board). 2015. Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. State Water Board. Sacramento, CA.

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United States Environmental Protection Agency (USEPA). 1997. Memorandum from Robert Perciasepe, Assistant Administrator, to Regional Administrators and Regional Water Division Directors Regarding New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs).

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Attachment 1: 2012 303(d) Listings and Status

Colorado River Basin Regional Water Quality Control Board
USEPA-Approved 2012 Integrated Report Cycle Listings and Status

Waterbody	Pollutant	Latest Action Approved by USEPA
Alamo River	Chlordane	
Alamo River	Chloride	
Alamo River	Chlorpyrifos	
Alamo River	DDT (Dichlorodiphenyltrichloroethane)	
Alamo River	Diazinon	
Alamo River	Dieldrin	
Alamo River	Enterococcus	
Alamo River	Escherichia coli (E. coli)	
Alamo River	Malathion	
Alamo River	PCBs (Polychlorinated biphenyls)	
Alamo River	Sedimentation/Siltation	TMDL in 2002
Alamo River	Selenium	
Alamo River	Toxaphene	
Alamo River	Toxicity	
Coachella Valley Storm Water Channel	DDT (Dichlorodiphenyltrichloroethane)	
Coachella Valley Storm Water Channel	Dieldrin	
Coachella Valley Storm Water Channel	Indicator Bacteria	TMDL in 2012
Coachella Valley Storm Water Channel	Nitrogen, ammonia (Total Ammonia)	
Coachella Valley Storm Water Channel	PCBs (Polychlorinated biphenyls)	
Coachella Valley Storm Water Channel	Toxaphene	
Coachella Valley Storm Water Channel	Toxicity	
Colorado River (California-Nevada to Lake Havasu)	Toxicity	
Colorado River (Lake Havasu Dam to Imperial Dam)	Toxicity	
Imperial Valley Drains	Chlordane	
Imperial Valley Drains	DDT (Dichlorodiphenyltrichloroethane)	
Imperial Valley Drains	Dieldrin	
Imperial Valley Drains	PCBs (Polychlorinated biphenyls)	
Imperial Valley Drains	Sedimentation/Siltation	TMDL in 2005
Imperial Valley Drains	Selenium	
Imperial Valley Drains	Toxaphene	
New River (Imperial County)	Bifenthrin	
New River (Imperial County)	Chlordane	
New River (Imperial County)	Chloride	
New River (Imperial County)	Chlorpyrifos	
New River (Imperial County)	Cypermethrin	
New River (Imperial County)	DDT (Dichlorodiphenyltrichloroethane)	
New River (Imperial County)	Diazinon	
New River (Imperial County)	Dieldrin	
New River (Imperial County)	Hexachlorobenzene/HCB	
New River (Imperial County)	Indicator Bacteria	TMDL in 2002
New River (Imperial County)	Mercury	
New River (Imperial County)	Naphthalene	

Waterbody	Pollutant	Latest Action Approved by USEPA
New River (Imperial County)	Nitrogen, ammonia (Total Ammonia)	
New River (Imperial County)	Nutrients	
New River (Imperial County)	Organic Enrichment/Low Dissolved Oxygen	TMDL in 2012
New River (Imperial County)	PCBs (Polychlorinated biphenyls)	
New River (Imperial County)	Sediment	TMDL in 2003
New River (Imperial County)	Selenium	
New River (Imperial County)	Toxaphene	
New River (Imperial County)	Toxicity	
New River (Imperial County)	Trash	TMDL in 2007
Palo Verde Outfall Drain and Lagoon	Chloride	
Palo Verde Outfall Drain and Lagoon	DDT (Dichlorodiphenyltrichloroethane)	
Palo Verde Outfall Drain and Lagoon	Indicator Bacteria	
Palo Verde Outfall Drain and Lagoon	Toxaphene	
Salton Sea	Arsenic	
Salton Sea	Chloride	
Salton Sea	Chlorpyrifos	
Salton Sea	DDT (Dichlorodiphenyltrichloroethane)	
Salton Sea	Enterococcus	
Salton Sea	Low Dissolved Oxygen	
Salton Sea	Nitrogen, ammonia (Total Ammonia)	
Salton Sea	Nutrients	
Salton Sea	Salinity	
Salton Sea	Toxicity	
Wiest Lake	DDT (Dichlorodiphenyltrichloroethane)	
Wiest Lake	Dieldrin	
Wiest Lake	PCBs (Polychlorinated biphenyls)	

Attachment 2: Data Tables for Proposed New Listings

Alamo River Cyhalothrin, Lambda in Water

The Warm Freshwater Habitat water quality objective/guideline is 0.0005 ug/L. Eleven (11) samples out of eleven (11) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
10/6/2010	723ARDP3A	Alamo River Above Drop 3	0.003	Yes
10/6/2010	723ARDP10	Alamo River at Drop 10 Central Drain	0.002	Yes
10/6/2010	723ARDP06	Alamo River at Drop 6 Rose Drain	0.005	Yes
10/6/2010	723ARDP6A	Alamo River at Drop 6A Holtville Drain	0.005	Yes
10/6/2010	723ARGRB1	Alamo River Outlet	0.003	Yes
5/10/2011	723ARINTL	Alamo River at International Boundary	0.006	Yes
10/21/2013	723ARGRB1	Alamo River Outlet	0.004	Yes
10/22/2013	723ARDP03	Alamo River at Drop 3	0.002	Yes
10/22/2013	723ARDP06	Alamo River at Drop 6 Rose Drain	0.009	Yes
10/23/2013	723ARDP6A	Alamo River at Drop 6A Holtville Drain	0.004	Yes
10/23/2013	723ARDP08	Alamo River at Drop 8	0.004	Yes

Alamo River Cypermethrin in Water

The Warm Freshwater Habitat water quality objectives/guidelines are 0.0002 ug/L (4-day average) and 0.001 ug/L (1-hour average). Nine (9) samples out of nine (9) samples exceeded the objectives/guidelines.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
10/26/2005	723ARGRB1	Alamo River Outlet	0.072	Yes
10/6/2010	723ARDP3A	Alamo River Above Drop 3	0.006	Yes
10/6/2010	723ARDP06	Alamo River at Drop 6 Rose Drain	0.011	Yes
10/21/2013	723ARGRB1	Alamo River Outlet	0.006	Yes
10/22/2013	723ARDP03	Alamo River at Drop 3	0.007	Yes
10/22/2013	723ARDP06	Alamo River at Drop 6 Rose Drain	0.006	Yes
10/23/2013	723ARDP10	Alamo River at Drop 10 Central Drain	0.005	Yes
10/23/2013	723ARDP6A	Alamo River at Drop 6A Holtville Drain	0.009	Yes
10/23/2013	723ARDP08	Alamo River at Drop 8	0.009	Yes

All American Canal Total DDT in Tissue

The Commercial or Recreational Collection of Fish, Shellfish, or Organisms water quality objective/guideline is 15 ppb. Five (5) samples out of thirteen (13) samples exceeded the objective/guideline.

Sample Date	Station Name	Station Code	Common Name	Result (ppb)	Exceedance
11/18/2014	American Canal at Bridge South of Quechan Casino	727ACBSQC	Common Carp	112.38	Yes
11/18/2014	American Canal at Bridge South of Quechan Casino	727ACBSQC	Flathead Catfish	1.85	No
11/18/2014	American Canal at Bridge South of Quechan Casino	727ACBSQC	Largemouth Bass	2.04	No
11/18/2014	American Canal at Bridge South of Quechan Casino	727ACBSQC	Largemouth Bass	3.7	No
11/19/2014	All American Canal, Borderline	723AACBRD	Common Carp	139.14	Yes
11/19/2014	All American Canal, Borderline	723AACBRD	Flathead Catfish	10.3	No
11/19/2014	All American Canal, Borderline	723AACBRD	Largemouth Bass	2.87	No
11/19/2014	All American Canal, Borderline	723AACBRD	Channel Catfish	174.8	Yes
12/3/2014	All American Canal at Mesa 2	723ACMSA2	Common Carp	48.75	Yes
12/3/2014	All American Canal at Mesa 2	723ACMSA2	Channel Catfish	29.9	Yes
12/3/2014	All American Canal at Mesa 2	723ACMSA2	Flathead Catfish	3.17	No
12/3/2014	All American Canal at Mesa 2	723ACMSA2	Largemouth Bass	1.03	No
12/3/2014	All American Canal at Mesa 2	723ACMSA2	Largemouth Bass	5.13	No

Coachella Valley Storm Water Channel Disulfoton in Water

The Warm Freshwater Habitat water quality objective/guideline is 0.01 ug/L for an invertebrate (chronic). Four (4) samples out of four (4) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
10/7/2010	719CVSC52	Coachella Valley Stormchannel (Ave 52)	0.314	Yes
10/7/2010	719CVSCOT	Coachella Valley Stormwater Channel Outlet	0.202	Yes
10/11/2011	719CVSCOT	Coachella Valley Stormwater Channel Outlet	0.103	Yes
10/12/2011	719CVSC52	Coachella Valley Stormchannel (Ave 52)	0.183	Yes

Coachella Valley Storm Water Channel Dissolved Oxygen in Water

The Warm Freshwater Habitat water quality objective/guideline states the dissolved oxygen concentration for cold water habitats shall not be reduced below 5.0 mg/L at any time. Five (5) samples out of thirteen (13) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (mg/L)	Exceedance
10/7/2010	719CVSC52	Coachella Valley Stormchannel (Ave 52)	5.18	No
10/7/2010	719CVSCOT	Coachella Valley Stormwater Channel Outlet	10.27	No
5/11/2011	719CVSC52	Coachella Valley Stormchannel (Ave 52)	5.8	No
5/11/2011	719CVSCOT	Coachella Valley Stormwater Channel Outlet	8.75	No
10/11/2011	719CVSCOT	Coachella Valley Stormwater Channel Outlet	5.52	No
10/12/2011	719CVSC52	Coachella Valley Stormchannel (Ave 52)	3.88	Yes
4/22/2013	719CVSC52	Coachella Valley Stormchannel (Ave 52)	2.44	Yes
4/22/2013	719CVSCOT	Coachella Valley Stormwater Channel Outlet	6.63	No
4/24/2013	719CVSCDR	Coachella Valley Stormwater Channel at Dillon Rd	2.88	Yes
10/21/2013	719CVSC52	Coachella Valley Stormchannel (Ave 52)	3.72	Yes
10/21/2013	719CVSCOT	Coachella Valley Stormwater Channel Outlet	6.19	No
10/23/2013	719CVSCDR	Coachella Valley Stormwater Channel at Dillon Rd	2.91	Yes
10/22/2014	719CVSCOT	Coachella Valley Stormwater Channel Outlet	6.29	No

Colorado River (Imperial Reservoir to California-Mexico Border) Manganese in Water

The Municipal & Domestic Supply water quality objective/guideline is 50 ug/L. Six (6) samples out of six (6) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
8/27/2014	USGS-09521100	COLORADO R BLW YUMA MAIN CANAL WW AT YUMA, AZ	116	Yes
11/18/2014	USGS-09521100	COLORADO R BLW YUMA MAIN CANAL WW AT YUMA, AZ	109	Yes
2/12/2015	USGS-09521100	COLORADO R BLW YUMA MAIN CANAL WW AT YUMA, AZ	104	Yes
5/21/2015	USGS-09521100	COLORADO R BLW YUMA MAIN CANAL WW AT YUMA, AZ	122	Yes
8/22/2016	USGS-09521100	COLORADO R BLW YUMA MAIN CANAL WW AT YUMA, AZ	96.4	Yes
12/20/2016	USGS-09521100	COLORADO R BLW YUMA MAIN CANAL WW AT YUMA, AZ	58.7	Yes

Colorado River (Lake Havasu Dam to Imperial Dam) Turbidity in Water

The Municipal & Domestic Supply water quality objective/guideline is 5 NTU. Ten (10) samples out of thirty-one (31) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (NTU)	Exceedance
10/5/2010	715CRIDG1	Colorado River at Imperial Dam Grates	3.46	No
11/29/2010	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	2.1	No
2/17/2011	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	2.3	No
5/10/2011	715CRIDG1	Colorado River at Imperial Dam Grates	7.05	Yes
5/12/2011	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	4.2	No
8/25/2011	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	3	No
10/11/2011	715CRIDG1	Colorado River at Imperial Dam Grates	4.3	No
2/16/2012	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	3.6	No
5/7/2012	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	3.6	No
8/22/2012	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	6	Yes
2/13/2013	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	4.2	No
4/15/2013	715CRPDDM	Colorado River at Parker Dam	1.97	No
4/17/2013	715CRIDG1	Colorado River at Imperial Dam Grates	5.71	Yes
4/17/2013	715CRIDU1	Colorado River u/s Imperial Dam	4.1	No
4/17/2013	715CRSQLK	Squaw Lake	4.68	No
5/29/2013	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	3.9	No
8/12/2013	USGS-09427520	COLORADO RIVER BELOW PARKER DAM, AZ-CA–	8.8	Yes
8/14/2013	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	19	Yes
11/5/2013	715CRPDDM	Colorado River at Parker Dam	1.04	No
11/19/2013	715CRIDG1	Colorado River at Imperial Dam Grates	3.48	No
11/19/2013	715CRIDU1	Colorado River u/s Imperial Dam	4.19	No
11/19/2013	715CRSQLK	Squaw Lake	6.14	Yes
11/21/2013	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	2.9	No
2/25/2014	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	3	No
5/14/2014	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	3.4	No
8/27/2015	USGS-09427520	COLORADO RIVER BELOW PARKER DAM, AZ-CA	5.6	Yes
9/3/2015	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	3.7	No
12/14/2015	USGS-09427520	COLORADO RIVER BELOW PARKER DAM, AZ-CA	2.1	No
12/17/2015	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	9.5	Yes
3/30/2016	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	5.2	Yes

Sample Date	Station Code	Station Name	Result (NTU)	Exceedance
6/22/2016	USGS-09429490	COLORADO RIVER ABOVE IMPERIAL DAM, AZ-CA	14	Yes

Deep Creek Iron in Water

The Municipal & Domestic Supply water quality objective/guideline is 300 ug/L. Two (2) samples out of two (2) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
4/20/2011	MORONGO1_WQX-DC1	Deep Canyon	1200	Yes
4/25/2012	MORONGO1_WQX-DC1	Deep Canyon	750	Yes

Deep Creek Turbidity in Water

The Municipal & Domestic Supply water quality objective/guideline is 5 NTU. Six (6) samples out of eight (8) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (NTU)	Exceedance
10/15/2010	MORONGO1_WQX-DC1	Deep Canyon	5.4	Yes
1/12/2011	MORONGO1_WQX-DC1	Deep Canyon	6.6	Yes
4/20/2011	MORONGO1_WQX-DC1	Deep Canyon	6.3	Yes
7/19/2011	MORONGO1_WQX-DC1	Deep Canyon	15.8	Yes
10/13/2011	MORONGO1_WQX-DC1	Deep Canyon	2	No
1/25/2012	MORONGO1_WQX-DC1	Deep Canyon	0.7	No
4/25/2012	MORONGO1_WQX-DC1	Deep Canyon	442.1	Yes
7/10/2012	MORONGO1_WQX-DC1	Deep Canyon	180.6	Yes

Ferguson Lake Selenium in Tissue

The Commercial or Recreational Collection of Fish, Shellfish, or Organisms water quality objective/guideline is 7.4 ug/g. Three (3) samples out of nine (9) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Common Name	Result (ug/g)	Exceedance
8/29/2007	715TF0091	Ferguson Lake_BOG	Common Carp	1.87	No
10/7/2014	715TF0091	Ferguson Lake	Common Carp	1.39	No
10/7/2014	715TF0091	Ferguson Lake	Largemouth Bass	7.98	Yes
10/7/2014	715TF0091	Ferguson Lake	Redear Sunfish	8.26	Yes
10/29/2014	715TF0091	Ferguson Lake	Bluegill	7.27	No
10/29/2014	715TF0091	Ferguson Lake	Channel Catfish	0.695	No
10/29/2014	715TF0091	Ferguson Lake	Striped Bass	1.601	No
11/5/2014	715TF0091	Ferguson Lake	Bluegill	7.27	No

Sample Date	Station Code	Station Name	Common Name	Result (ug/g)	Exceedance
11/5/2014	715TF0091	Ferguson Lake	Largemouth Bass	7.98	Yes

Hathaway Creek Iron in Water

The Municipal & Domestic Supply water quality objective/guideline is 300 ug/L. Two (2) samples out of four (4) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
4/19/2011	MORONGO1_WQX-HE1	Hathaway East	370	Yes
4/19/2011	MORONGO1_WQX-HW1	Hathaway West	88	No
4/24/2012	MORONGO1_WQX-HE1	Hathaway East	410	Yes
4/24/2012	MORONGO1_WQX-HW1	Hathaway West	61	No

Hathaway Creek Turbidity in Water

The Municipal & Domestic Supply water quality objective/guideline is 5 NTU. Sixteen (16) samples out of twenty-four (24) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (NTU)	Exceedance
10/14/2010	MORONGO1_WQX-H000	Hathaway 000	3.6	No
10/14/2010	MORONGO1_WQX-HE1	Hathaway East	5.8	Yes
10/14/2010	MORONGO1_WQX-HW1	Hathaway West	0.9	No
2/24/2011	MORONGO1_WQX-H000	Hathaway 000	113	Yes
2/24/2011	MORONGO1_WQX-HW1	Hathaway East	3.7	No
2/24/2011	MORONGO1_WQX-HE1	Hathaway West	8.1	Yes
4/19/2011	MORONGO1_WQX-H000	Hathaway 000	2.4	No
4/19/2011	MORONGO1_WQX-HW1	Hathaway East	2.8	No
4/19/2011	MORONGO1_WQX-HE1	Hathaway West	5.9	Yes
7/18/2011	MORONGO1_WQX-H000	Hathaway 000	6.2	Yes
7/18/2011	MORONGO1_WQX-HE1	Hathaway East	14.8	Yes
7/18/2011	MORONGO1_WQX-HW1	Hathaway West	9.4	Yes
10/12/2011	MORONGO1_WQX-H000	Hathaway 000	9.9	Yes
10/12/2011	MORONGO1_WQX-HE1	Hathaway East	5.1	Yes
10/12/2011	MORONGO1_WQX-HW1	Hathaway West	3.5	No
1/24/2012	MORONGO1_WQX-H000	Hathaway 000	2	No
1/24/2012	MORONGO1_WQX-HW1	Hathaway East	2.5	No
1/24/2012	MORONGO1_WQX-HE1	Hathaway West	30.6	Yes
4/24/2012	MORONGO1_WQX-H000	Hathaway 000	8.7	Yes
4/24/2012	MORONGO1_WQX-HW1	Hathaway East	8	Yes
4/24/2012	MORONGO1_WQX-HE1	Hathaway West	14.6	Yes
7/9/2012	MORONGO1_WQX-H000	Hathaway 000	181.7	Yes
7/9/2012	MORONGO1_WQX-HE1	Hathaway East	197.6	Yes

Sample Date	Station Code	Station Name	Result (NTU)	Exceedance
7/9/2012	MORONGO1_WQX-HW1	Hathaway West	182.1	Yes

Imperial Valley Drains Chlorpyrifos in Water

The Warm Freshwater Habitat water quality objective/guideline is 0.014 ug/L. Twelve (12) samples out of twelve (12) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
5/7/2012	723ARCDRN	C Drain	0.043	Yes
5/8/2012	723CNTDRN	Central Drain	0.055	Yes
5/8/2012	723HLVLDR	Holtville Drain	0.045	Yes
5/8/2012	723MAGDRN	Magnolia Drain	0.162	Yes
5/8/2012	723NETDRN	Nettle Drain	0.047	Yes
5/8/2012	723SCNTDR	South Central Drain RWB7	0.04	Yes
10/15/2012	723ARCDRN	C Drain	0.106	Yes
10/16/2012	723HLVLDR	Holtville Drain	0.119	Yes
10/16/2012	723ROSDRN	Rose Drain RWB7	0.108	Yes
10/17/2012	723SCNTDR	South Central Drain RWB7	0.598	Yes
10/20/2015	723CENTD3	Central Drain Three	1.06	Yes
10/21/2015	723MARIGD	Marigold Drain	0.42	Yes

Imperial Valley Drains Imidacloprid in Water

The Warm Freshwater Habitat water quality objective/guideline is 0.01 ug/L. Sixteen (16) samples out of sixteen (16) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
10/19/2015	723TRI12D	Trifolium Twelve Drain	0.412	Yes
10/19/2015	723VAL2AD	Vail Two-A Drain	0.03	Yes
10/20/2015	723CENTD3	Central Drain Three	0.151	Yes
10/20/2015	723SPRUCD	Spruce Drain 0.5 miles from Frdericks Rd. and Kalin Rd. and Brandt Rd.	0.06	Yes
10/20/2015	723THIS5D	Thistle Five Drain	0.052	Yes
10/20/2015	723UADCMC	Unnamed Agriculture Drain near Central Main Canal	0.196	Yes
10/21/2015	723BDRAIN	B Drain	1.16	Yes
10/21/2015	723EDRAIN	E Drain	0.045	Yes
10/21/2015	723MARIGD	Marigold Drain	0.047	Yes
11/3/2015	723CENTD2	Central Drain Two	0.295	Yes
11/3/2015	723OASISD	Oasis Drain	0.022	Yes
11/3/2015	723PMLEOD	Pomelo Drain	0.048	Yes
11/3/2015	723SCENTD	South Central Drain	0.361	Yes

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
11/3/2015	723VERDED	Verde Drain	0.043	Yes
11/4/2015	723OLANDR	Oleander Drain	0.049	Yes
11/4/2015	723OSAGED	Osage Drain	0.064	Yes

Imperial Valley Drains Toxicity in Water

The Warm Freshwater Habitat water quality objective/guideline is to be below toxic levels.* Eight (8) samples out of thirty-one (31) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result*	Exceedance
10/15/2014	723IPHV10	Holtville Main Drain at 115	NSG	No
10/15/2014	723IPMV61	Malva Drain near Park Rd	SL	Yes
10/15/2014	723IPRC99	Rice Drain III at Weinert	NSG	No
10/15/2014	723IPVD69	Verde Drain at Bonds Corner Rd	NSG	No
10/19/2015	723TRI12D	Trifolium Twelve Drain	SL	Yes
10/19/2015	723VAIL7D	Vail Seven Drain	NSG	No
10/19/2015	723VAL2AD	Vail Two-A Drain	SL	Yes
10/20/2015	723CENTD3	Central Drain Three	SL	Yes
10/20/2015	723ELML6D	Elm Lateral Six Drain	NSG	No
10/20/2015	723MCALD1	McCall Drain One	NSG	No
10/20/2015	723SPRUCD	Spruce Drain 0.5 miles from Fredricks Rd. and Kalin Rd. and Brandt Rd.	NSG	No
10/20/2015	723THIS5D	Thistle Five Drain	NSG	No
10/20/2015	723UADCMC	Unnamed Agriculture Drain near Central Main Canal	NSG	No
10/20/2015	723UADSPC	Unnamed Agriculture Drain near New Spruce Canal	NSG	No
10/20/2015	723WILDCD	Wildcat Drain	NSG	No
10/21/2015	723BDRAIN	B Drain	NSG	No
10/21/2015	723EDRAIN	E Drain	SL	Yes
10/21/2015	723KDRAIN	K Drain	NSG	No
10/21/2015	723MARIGD	Marigold Drain	SL	Yes
10/21/2015	723QLATDR	Q Lateral Drain	NSG	No
11/3/2015	723CTD3MA	Central Drain Three at Meloland Rd. and Abatti Rd.	NSG	No
11/3/2015	723CENTD2	Central Drain Two	NSG	No
11/3/2015	723OASISD	Oasis Drain	NSG	No
11/3/2015	723PAMPAD	Pampas Drain	NSG	No
11/3/2015	723PAM115	Pampas Drain near 115	NSG	No
11/3/2015	723PMLEOD	Pomelo Drain	NSG	No
11/3/2015	723SCENTD	South Central Drain	SL	Yes
11/3/2015	723UADGUN	Unnamed Agriculture Drain at the intersection of Gunterman Rd. and Hwy 98	NSG	No

Sample Date	Station Code	Station Name	Result*	Exceedance
11/3/2015	723VERDED	Verde Drain	SL	Yes
11/4/2015	723OLANDR	Oleander Drain	NSG	No
11/4/2015	723OSAGED	Osage Drain	NSG	No

*Toxicity is defined as a statistically significant effect in the sample exposure compared to the control using EPA-recommended hypothesis testing. Surface Water Ambient Monitoring Program data exceedances are counted with the significant effect code SL

SL – Significant Less Similarity

Significant compared to control sample based on statistical test at alpha level, CalculatedValue less than CriticalValue. Has less similarity to control sample, PercentEffect value larger than EvalThreshold. (Both criteria met.)

NSG – Not Significant Greater Similarity

Not significant compared to control sample based on statistical test at alpha level, CalculatedValue equal to or greater than CriticalValue. Has greater similarity to control sample, PercentEffect equal to or smaller than EvalThreshold. (No criteria met)

New River Cyhalothrin, Lambda in Water

The Warm Freshwater Habitat water quality objective/guideline is 0.0005 ug/L (4-day average). Six (6) samples out of six (6) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
5/1/2006	723NRBDRY	New River at Boundary	0.004	Yes
10/6/2010	723NREVHU	New River at Evan Hughes Hwy	0.003	Yes
10/11/2011	723NROTWM	New River Outlet	0.011	Yes
10/22/2013	723NRDP02	New River at Drop 2	0.007	Yes
10/22/2013	723NREVHU	New River at Evan Hughes Hwy	0.023	Yes
10/22/2013	723NROTWM	New River Outlet	0.004	Yes

New River Disulfoton in Water

The Warm Freshwater Habitat water quality objective/guideline is 0.01 ug/L for an invertebrate (chronic). Eight (8) samples out of eight (8) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
10/5/2010	723NRBDRY	New River at Boundary	0.184	Yes
10/6/2010	723NREVHU	New River at Evan Hughes Hwy	0.13	Yes
10/6/2010	723NROTWM	New River Outlet	0.058	Yes
10/11/2011	723NRBDRY	New River at Boundary	0.095	Yes
5/7/2012	723NROTWM	New River Outlet	0.173	Yes

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
5/8/2012	723NRBDRY	New River at Boundary	0.197	Yes
5/9/2012	723NRGNDN	New River at Greeson Drain	0.198	Yes
10/16/2012	723NRBDRY	New River at Boundary	0.11	Yes

New River (Imperial County) Imidacloprid in Water

The Warm Freshwater Habitat water quality objective/guideline is 0.01 ug/L. Two (2) samples out of two (2) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
3/5/2013	USGS-10255550	NEW R NR WESTMORLAND CA	0.082	Yes
10/19/2015	723TRIF3D	Trifolium Three Drain	0.02	Yes

New River (Imperial County) p,p'-DDD (Dichlorodiphenyldichloroethane) in Water

The Commercial or Recreational Collection of Fish, Shellfish, or Organisms water quality objective/guideline is 0.00084 ug/L. Sixty-seven (67) samples out of sixty-seven (67) samples exceeded the objective/guideline.

Sample Date and Time	Station Code	Station Name	Result (ug/L)	Exceedance
1969-08-13 12:50	USGS 10255550	NEW R NR WESTMORLAND CA	0.04	Yes
1969-09-16 07:55	USGS 10255550	NEW R NR WESTMORLAND CA	0.09	Yes
1969-10-22 08:25	USGS 10255550	NEW R NR WESTMORLAND CA	0.04	Yes
1969-11-19 08:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.06	Yes
1970-01-19 14:15	USGS 10255550	NEW R NR WESTMORLAND CA	0.03	Yes
1970-02-17 14:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.03	Yes
1970-05-18 13:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.04	Yes
1970-06-15 12:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.04	Yes
1970-07-14 12:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1970-08-18 14:15	USGS 10255550	NEW R NR WESTMORLAND CA	0.03	Yes
1970-09-22 13:45	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1970-10-15 09:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1970-11-17 13:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1970-12-28 15:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.03	Yes
1971-01-18 15:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.03	Yes
1971-02-17 11:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1971-04-20 11:15	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1971-05-18 09:16	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1971-06-15 08:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1975-08-26 15:15	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.08	Yes
1975-08-26 15:30	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1975-09-18 08:30	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes

Sample Date and Time	Station Code	Station Name	Result (ug/L)	Exceedance
1975-09-18 10:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.1	Yes
1975-10-07 10:00	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.02	Yes
1975-10-07 11:15	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1975-11-19 09:00	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.03	Yes
1975-11-19 11:45	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1975-12-09 09:00	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.03	Yes
1976-01-28 09:00	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.02	Yes
1976-01-28 11:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1976-02-18 08:30	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.02	Yes
1976-02-18 11:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1976-03-17 09:00	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1976-04-21 08:45	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1976-04-21 10:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1976-05-12 09:00	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.02	Yes
1976-05-12 10:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1976-06-02 09:15	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1976-07-28 08:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1976-09-22 13:30	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1976-11-10 09:30	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1976-11-10 11:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1977-01-11 09:30	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1977-01-11 11:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1977-03-22 08:45	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1977-03-22 12:50	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1977-04-19 09:00	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1977-04-19 11:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1977-05-17 10:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1977-06-07 09:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1977-07-12 06:00	USGS 10255502	NEW R A DROP 4 AT BRAWLEY CA	0.01	Yes
1977-07-12 08:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1977-08-23 08:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.03	Yes
1977-09-13 08:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1978-01-25 15:20	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1978-02-27 15:25	USGS 10255550	NEW R NR WESTMORLAND CA	0.1	Yes
1978-03-22 15:20	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1978-04-26 12:15	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1978-05-23 08:45	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1978-06-20 09:45	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1978-07-18 09:00	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1978-09-27 12:15	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1978-11-28 16:35	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1979-03-26 14:20	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes

Sample Date and Time	Station Code	Station Name	Result (ug/L)	Exceedance
1979-03-28 13:45	USGS 10255550	NEW R NR WESTMORLAND CA	0.01	Yes
1979-05-30 08:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.02	Yes
1992-04-02 08:30	USGS 10255550	NEW R NR WESTMORLAND CA	0.002	Yes

New River Malathion in Water

The Warm Freshwater Habitat water quality objective/guideline is 0.028 ug/L (4-day average). Four (4) samples out of four (4) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (ug/L)	Exceedance
10/28/2008	723NROTWM	New River at Boundary	0.034	Yes
10/28/2008	723NRBDRY	New River Outlet	0.112	Yes
10/6/2010	723NROTWM	New River Outlet	0.085	Yes
10/22/2013	723NREVHU	New River at Evan Hughes Hwy	0.1	Yes

Palo Verde Outfall Drain and Lagoon Dieldrin in Tissue

The Commercial or Recreational Collection of Fish, Shellfish, or Organisms water quality objective/guideline is 0.32 ppb. Two (2) samples out of two (2) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Common Name	Result (ppb)	Exceedance
4/19/2011	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	Channel Catfish	1.52	Yes
11/15/2011	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	Channel Catfish	0.785	Yes

Palo Verde Outfall Drain and Lagoon Toxicity in Water

The Warm Freshwater Habitat water quality objective/guideline is to be below toxic levels.* Four (4) samples out of twenty (20) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result*	Exceedance
10/25/2005	715CPVLG1	Palo Verde Lagoon (LG1)	SL	Yes
10/25/2005	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	SL	Yes
5/2/2006	715CPVLG1	Palo Verde Lagoon (LG1)	NSG	No
5/2/2006	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	NSG	No
5/8/2007	715CPVLG1	Palo Verde Lagoon (LG1)	NSG	No
5/8/2007	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	NSG	No
10/23/2007	715CPVLG1	Palo Verde Lagoon (LG1)	NSG	No
10/23/2007	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	NSG	No
4/22/2008	715CPVLG1	Palo Verde Lagoon (LG1)	NSG	No
4/22/2008	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	NSG	No

Sample Date	Station Code	Station Name	Result*	Exceedance
10/29/2008	715CPVLG1	Palo Verde Lagoon (LG1)	NSG	No
10/29/2008	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	NSG	No
5/9/2011	715CPVLG1	Palo Verde Lagoon (LG1)	NSG	No
5/9/2011	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	NSL	No
10/10/2011	715CPVLG1	Palo Verde Lagoon (LG1)	NSG	No
10/10/2011	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	SG	No
4/16/2013	715CPVLG1	Palo Verde Lagoon (LG1)	SL	Yes
4/16/2013	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	SL	Yes
11/18/2013	715CPVLG1	Palo Verde Lagoon (LG1)	NSL	No
11/18/2013	715CPVOD2	Palo Verde Outfall Drain (PVOD2)	NSG	No

*Toxicity is defined as a statistically significant effect in the sample exposure compared to the control using EPA-recommended hypothesis testing. Surface Water Ambient Monitoring Program data exceedances are counted with the significant effect code SL

SL – Significant Less Similarity

Significant compared to control sample based on statistical test at alpha level, CalculatedValue less than CriticalValue. Has less similarity to control sample, PercentEffect value larger than EvalThreshold. (Both criteria met.

NSG – Not Significant Greater Similarity

Not significant compared to control sample based on statistical test at alpha level, CalculatedValue equal to or greater than CriticalValue. Has greater similarity to control sample, PercentEffect equal to or smaller than EvalThreshold. (No criteria met)

NSL – Not Significant Less Similarity

Not significant compared to control sample based on statistical test at alpha level, CalculatedValue equal to or greater than CriticalValue. Has less similarity to control sample, PercentEffect value larger than EvalThreshold. (Only second criterion met).

Potrero Creek Turbidity in Water

The Municipal & Domestic Supply water quality objective/guideline is 5 NTU. Five (5) samples out of eight (8) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (NTU)	Exceedance
10/13/2010	MORONGO1_WQX-WC000	Wood Canyon 000	3.1	No
1/14/2011	MORONGO1_WQX-WC000	Wood Canyon 000	22	Yes
4/19/2011	MORONGO1_WQX-WC000	Wood Canyon 000	2.2	No
7/19/2011	MORONGO1_WQX-WC000	Wood Canyon 000	13.3	Yes
10/12/2011	MORONGO1_WQX-WC000	Wood Canyon 000	15.2	Yes
1/24/2012	MORONGO1_WQX-WC000	Wood Canyon 000	1.3	No
4/24/2012	MORONGO1_WQX-WC000	Wood Canyon 000	16.2	Yes
7/10/2012	MORONGO1_WQX-WC000	Wood Canyon 000	180.2	Yes

West Branch Millard Canyon Creek Turbidity in Water

The Municipal & Domestic Supply water quality objective/guideline is 5 NTU. Nine (9) samples out of fifteen (15) samples exceeded the objective/guideline.

Sample Date	Station Code	Station Name	Result (NTU)	Exceedance
10/14/2010	MORONGO1_WQX-M003	Millard 003	3.8	No
10/15/2010	MORONGO1_WQX-SPS	SP Springs	2.1	No
1/12/2011	MORONGO1_WQX-SPS	SP Springs	2.6	No
1/13/2011	MORONGO1_WQX-M001	Millard 001	5.7	Yes
4/20/2011	MORONGO1_WQX-M003	Millard 003	72.3	Yes
4/20/2011	MORONGO1_WQX-SPS	SP Springs	156	Yes
7/19/2011	MORONGO1_WQX-M003	Millard 003	22.1	Yes
10/13/2011	MORONGO1_WQX-M003	Millard 003	36	Yes
10/13/2011	MORONGO1_WQX-SPS	SP Springs	30.3	Yes
1/25/2012	MORONGO1_WQX-M003	Millard 003	4.5	No
1/25/2012	MORONGO1_WQX-SPS	SP Springs	1.3	No
4/25/2012	MORONGO1_WQX-M003	Millard 003	9.1	Yes
4/25/2012	MORONGO1_WQX-SPS	SP Springs	3.4	No
7/10/2012	MORONGO1_WQX-Millard 002	Millard 002	179	Yes
7/10/2012	MORONGO1_WQX-SPS	SP Springs	202.2	Yes

Attachment 3: Table of Water Quality Objectives/Criteria or Guidelines

Pollutant	Beneficial Use	Matrix	Water Quality Objective/ Guideline	Type	Reference	Publication Date
Chlorpyrifos	Warm Freshwater Habitat	Water	0.014 ug/L	Freshwater Criterion	Siepmann, S., and B. Finlayson. *Water quality criteria for diazinon and chlorpyrifos*. Administrative Report 00-3. Office of Spills and Response, Pesticide Investigations Unit. California Department of Fish and Wildlife (DFW).	04/26/2002
Cyhalothrin, Lambda	Warm Freshwater Habitat	Water	0.0005 ug/L	University of California (U.C.) Davis Aquatic Life Criteria	Fojut, T.L., A.J. Palumbo, and R.S. Tjeerdema. *Aquatic life water quality criteria derived via the U.C. Davis method: II. Pyrethroid insecticides*. Reviews of Environmental Contamination and Toxicology. 216:51-103.	2012
Cypermethrin	Warm Freshwater Habitat	Water	0.0002 ug/L (4-day avg.) 0.001 ug/L (1-hr avg.)	U.C. Davis Aquatic Life Criteria	Fojut, T.L., A.J. Palumbo, and R.S. Tjeerdema. *Aquatic life water quality criteria derived via the U.C. Davis method: II. Pyrethroid insecticides*. Reviews of Environmental Contamination and Toxicology. 216:51-103.	2012

Pollutant	Beneficial Use	Matrix	Water Quality Objective/ Guideline	Type	Reference	Publication Date
Dieldrin	Commercial or Recreational Collection of Fish, Shellfish, or Organisms	Tissue	0.32 ppb	OEHHA Fish Contaminant Goal	Klasing, S., and R. Brodberg. *Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene*. Pesticide and Environmental Toxicology Branch. OEHHA.	06/25/2008
Disulfoton	Warm Freshwater Habitat	Water	0.01 ug/L for invertebrate (chronic)	USEPA Aquatic Life Benchmark	*Aquatic Life Benchmarks and Ecological Risk Assessments for Registered Pesticides*. Office of Pesticide Programs. USEPA.	11/07/2017
Imidacloprid	Warm Freshwater Habitat	Water	0.01 ug/L	USEPA Aquatic Life Benchmark	*Aquatic Life Benchmarks and Ecological Risk Assessments for Registered Pesticides*. Office of Pesticide Programs. USEPA.	11/07/2017
Iron	Municipal & Domestic Supply	Water	300 ug/L	California Secondary Maximum Contaminant Levels (MCLs)	Cal. Code Regs., tit. 22, § 64449	2015
Malathion	Warm Freshwater Habitat	Water	0.028 ug/L (4-day avg.)	U.C. Davis Aquatic Life Criteria	Palumbo, A.J., P.L. TenBrook, T.L. Fojut, I.R. Faria and R.S. Tjeerdema. *Aquatic life water quality criteria derived via the U.C. Davis method: I. Organophosphate insecticides*. Reviews of Environmental Contamination and Toxicology. 216:1-48.	2012
Manganese	Municipal & Domestic Supply	Water	50 ug/L	California Secondary MCLs	Cal. Code Regs., tit. 22, § 64449	2015

Pollutant	Beneficial Use	Matrix	Water Quality Objective/ Guideline	Type	Reference	Publication Date
Mercury	Commercial or Recreational Collection of Fish, Shellfish, or Organisms	Water	0.051 ug/L	California Toxics Rule Criterion	40 C.F.R § 131.38, 65 Federal Register 31682	05/18/2000
Oxygen, Dissolved	Warm Freshwater Habitat	Water	Greater than 5.0 mg/L	WARM Water Habitat Objective	Water Quality Control Plan for the Colorado River Basin Region	01/18/2019
p,p'-DDD (Dichlorodip-henyldichlor-oethane)	Commercial or Recreational Collection of Fish, Shellfish, or Organisms	Water	0.0084 ug/L	California Toxics Rule Criterion	40 C.F.R § 131.38, 65 Federal Register 31682	05/18/2000
Selenium	Commercial or Recreational Collection of Fish, Shellfish, or Organisms	Tissue	7.4 ug/g	OEHHA Fish Contaminant Goal	Klasing, S., and R. Brodberg. *Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene.* Pesticide and Environmental Toxicology Branch. OEHHA.	06/25/2008
Total DDT	Commercial or Recreational Collection of Fish, Shellfish, or Organisms	Tissue	0.32 ppb	OEHHA Fish Contaminant Goal	Klasing, S., and R. Brodberg. *Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene.* Pesticide and Environmental Toxicology Branch. OEHHA.	06/25/2008
Toxicity	Warm Freshwater Habitat	Water	Below toxic levels*	Colorado River Basin Plan	Water Quality Control Plan for the Colorado River Basin Region	01/18/2019

Pollutant	Beneficial Use	Matrix	Water Quality Objective/ Guideline	Type	Reference	Publication Date
Turbidity	Municipal & Domestic Supply	Water	5 NTU	California Secondary MCLs	Cal. Code Regs., tit. 22, § 64449	2015

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SL – Significant Less Similarity

Significant compared to control sample based on statistical test at alpha level, CalculatedValue less than CriticalValue. Has less similarity to control sample, PercentEffect value larger than EvalThreshold. (Both criteria met).