

**California Regional Water Quality Control Board**

**San Diego Region**

**David Gibson, Executive Officer**



**Executive Officer’s Report**

**October 12, 2016**

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## Part A – San Diego Region Staff Activities

### 1. CalEnviroScreen 3.0 Workshop

*Staff Contacts: Barry Pulver and Hiram Sarabia-Ramirez*

[CalEnviroScreen](#) is an environmental health mapping and screening tool that helps identify California communities that are disproportionately burdened by multiple sources of pollution through an analysis of a wide range of risk factors (e.g., poverty, proximity to pollution sources). It provides decision makers with information on communities that will benefit most from outreach, enforcement, and remediation projects. Because CalEnviroScreen can be used to promote environmental justice consistent with the Practical Vision<sup>1</sup> and Resolution No. R9-2015-0020,<sup>2</sup> Water Board staff Barry Pulver (Source Control Regulation Unit) and Hiram Sarabia-Ramirez (Restoration and Protection Planning Unit) participated in a workshop on September 13, 2016 sponsored by the Office of Environmental Health Hazard Assessment (OEHHA) and the California Environmental Protection Agency (CalEPA) on the release of CalEnviroScreen Version 3.0 Draft.

CalEnviroScreen identifies communities that are most affected by sources of pollution (pollution burden) and that are especially vulnerable to the cumulative impacts of the pollution (population characteristics). Cumulative impacts take into account all sources of pollution and exposure routes in a geographic area and socioeconomic factors such as poverty, race, ethnicity, and education. A community's pollution burden and population characteristics could be used to help prioritize various Water Board activities, including planning, monitoring, permitting, compliance assurance, education, and restoration funding.

To provide the most convenient time and location for community members to participate, the workshop was conducted during the early evening at the San Diego Community College District César E. Chávez Campus, located in the Barrio Logan Community of the City of San Diego. CalEnviroScreen Version 3.0 Draft identifies Barrio Logan as having one of the highest combined pollution burden and population characteristics in the State. Approximately 20 community members and 10 individuals representing non-governmental organizations, local municipal government, and local businesses participated in the workshop.

Introductory comments were provided by Dr. Lauren Ziese, OEHHA Acting Director, and Mr. Arsenio Mataka, CalEPA Assistant Secretary for Environmental Justice and Tribal Affairs. A summary of the [proposed changes in CalEnviroScreen Version 3.0](#) was provided by Dr. John Faust, OEHHA, Chief of the Air, Community and Environmental Branch. These changes included:

- Using recent data for all indicators.
- Adding potential cross-border pollution from toxic emissions originating in Mexico as an exposure indicator.

<sup>1</sup> See Practical Vision Chapter 4: [Proactive Public Outreach and Communication](#)

<sup>2</sup> Resolution No. [R9-2015-0020](#), *In Support of Funding Projects that Further the Practical Vision Priorities with Consideration to Environmental Justice, Disadvantaged Communities and the Recovery of Streams, Wetlands, and Riparian Systems.*

- Revising how age is used as a sensitive population indicator.
- Adding cardiovascular disease/heart attack rate as a sensitive population indicator.
- Adding rent-adjusted income as a socioeconomic factor indicator.

The remainder of the workshop consisted of four breakout groups; California/Mexico Border issues, Exposure Indicators, Environmental Effect Indicators, and Sensitive Population Indicators. During the breakout sessions OEHHA staff provided detailed discussions of the major changes found in CalEnviroScreen Version 3.0 Draft, answered questions, and received comments from the participants. Participants were fully engaged and provided OEHHA staff with many thoughts on how to improve CalEnviroScreen Version 3.0 Draft, including adding:

- Food deserts and obesity rates for sensitive population indicators.
- Age of rental units, and lack of parks and recreational opportunities for socioeconomic indicators.
- Beach closures, sanitary sewer overflows, using the California Integrated Water Quality System Project (CIWQS), the California Environmental Data Exchange Network (CEDEN), and GeoTracker Irrigated Lands Regulatory Program module for environmental effect indicators.
- Pollutant Release and Transfer Report data to populate the layer showing industrial facilities emitting pollutants along the U.S.-Mexico border. Available: <http://www.cec.org/islandora/en/item/11581-taking-stock-vol-14>
- Climate change impacts.

Several community members asked how the results of CalEnviroScreen will be used. OEHHA commented that results will be used to identify communities eligible to receive [California Cap and Trade Program grant funding](#). Community members stressed communicating to the general public the importance of this tool, and what will be done with the information generated. Community members also suggested that CalEnviroScreen should be used by State and local municipal permitting and regulatory agencies to guide enforcement and permitting activities to promote environmental justice.

CalEnviroScreen Version 3.0 Draft was released on September 6, 2016. OEHHA is conducting an informational series of webinars and workshops for the public on CalEnviroScreen Version 3.0 Draft and to provide an opportunity for the public to comment. In addition to recording oral comments made during the workshops, OEHHA is accepting written comments until 5:00 pm October 21, 2016. Comments may be submitted to [CalEnviroScreen@oehha.ca.gov](mailto:CalEnviroScreen@oehha.ca.gov).

## **2. San Diego Water Board Staff Member Receives 2016 Industrial Environmental Association Regulator of the Year Award**

*Staff Contact: Laurie Walsh*

Ms. Whitney Ghoram, a Sanitary Engineering Associate in the San Diego Water Board's Storm Water Management Unit, was awarded the 2016 Regulator of the Year Award by the Industrial Environmental Association (IEA). Ms. Ghoram was presented the award at this year's IEA Conference on October 5-6, 2016 at the San Diego Convention Center.

The IEA is a non-profit association formed in 1983 to promote responsible, cost-effective environmental laws and regulations, facilitate environmental compliance among member companies and provide related education activities for the community at large. IEA membership includes some of the largest industrial organizations in the San Diego Region including BAE Systems, Solar Turbines, Poseidon Resources Corporation, Qualcomm, and Southern California Edison, just to name a few. The IEA also collaborates with federal and academic partners including Naval Facilities Engineering Command Southwest, University of California at San Diego, San Diego State University, Southwestern College, and Cuyamaca College.

Ms. Ghoram received the IEA Regulator of the Year Award for her work to assure compliance with the Statewide General Industrial Storm Water Permit requirements at some of the most recalcitrant industrial facilities in the San Diego Region. Ms. Ghoram's strong communication skills and collaborative approach were critical ingredients in encouraging the regulated industrial community to anticipate, identify, and correct violations and stay in compliance with storm water program regulatory requirements. Ms. Ghoram also facilitated communications between local and federal environmental agencies, non-governmental organizations and industrial dischargers with long histories of chronic noncompliance and disregard for water quality laws and regulations. Ms. Ghoram's efforts to protect water quality also took the extra step of notifying property owners of their tenant's poor pollutant control practices and prolonged delays in resolving violations. The property owner notifications significantly accelerated the efforts of the tenants to take corrective measures and eliminate noncompliance. After 30 years of service with the San Diego Water Board, Ms. Ghoram's commitment to protect water quality is exceptional and is well regarded by the industrial community.

This year's IEA Conference theme is Education – Collaboration – Compliance. IEA seeks to emphasize how sustainable compliance is achieved most effectively through education and collaboration, i.e., education of the regulated community about the goals and benefits behind new regulations; and collaboration between the regulated community and regulators to achieve understanding and awareness. The IEA Regulator of the Year award recognizes one regulator who most successfully uses a regulatory strategy with an emphasis on education, and collaboration with the regulated community to achieve sustained compliance among a challenging industry population.

## **Part B – Significant Regional Water Quality Issues**

### **1. Status of Claude “Bud” Lewis Carlsbad Desalination Plant NPDES Permit Reissuance**

*Staff Contact: Ben Neill*

This report provides a monthly status update on the San Diego Water Board's review of [Poseidon Resources \(Channelside\) LLC's \(Poseidon\) Report of Waste Discharge \(ROWD\)](#) application for reissuance of the National Pollutant Discharge Elimination System (NPDES) permit for the [Claude “Bud” Lewis Carlsbad Desalination Plant \(CDP\)](#) and the development of the draft NPDES permit.

Poseidon owns and operates the CDP subject to waste discharge requirements established by the San Diego Water Board in NPDES Permit No. CA0109223, Order No. R9-2006-0065.

Order No. R9-2006-0065 expired in 2011, but remains in effect under an administrative extension until such time as it is superseded by the reissued NPDES permit.

The CDP is located adjacent to the Encina Power Station (owned by [NRG Energy](#)) on the southern shore of the [Agua Hedionda Lagoon](#) in Carlsbad, California. The CDP is the nation's largest seawater desalination plant. On November 9, 2015, the CDP began potable water production providing up to 50 million gallons of drinking water per day to customers within the [San Diego County Water Authority's](#) (SDCWA) service area.

The reissuance of the NPDES permit for the CDP is a high priority for the San Diego Water Board and the State Water Board. Poseidon submitted an extensive addendum to their Report of Waste Discharge on August 18, 2016 providing additional information on a variety of issues including the hydrodynamic modeling report, the brine mixing zone, the proposed fish return system, the potential diversion of a portion of the CDP effluent to the Encina Ocean Outfall, marine life entrapment, and an evaluation of alternative intake and discharge technologies. Preparation of the draft NPDES permit is underway and portions of the draft have been completed where possible using available information. Following are updates on key activities since the September 8, 2016 Executive Officer Report update<sup>3</sup>:

1. On September 21, 2016, the San Diego Water Board Executive Officer and staff met to discuss the NPDES permit reissuance with the San Diego Bay Council, a broad-based coalition of environmental non-governmental organizations (NGOs) comprised of the San Diego Audubon Society, Coastal Environmental Rights Foundation, San Diego Coastkeeper, Environmental Health Coalition, Sierra Club San Diego, Surfrider San Diego, and the Environmental Center of San Diego. Staff provided an update on the status of ROWD review and tentative schedule for the NPDES permit reissuance process.
2. The San Diego Water Board and State Water Board staff have completed the review of the information in the ROWD Addendum to verify it's adequacy to complete the draft NPDES permit. On September 27, 2016, San Diego Water Board and the State Water Board staff met with representatives from the SDCWA and Poseidon, including their fisheries biologist expert, to discuss technical details of the ROWD addendum, potential water quality impacts and mitigation requirements, and additional information needed to complete the NPDES draft permit.

The San Diego Water Board has developed a dedicated website to inform the public about the NPDES permit reissuance for the CDP:

[http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/regulatory/carlsbad\\_desalination.shtml](http://www.waterboards.ca.gov/sandiego/water_issues/programs/regulatory/carlsbad_desalination.shtml).

In addition, an email list is available for interested persons to subscribe to at this website:

[http://www.waterboards.ca.gov/resources/email\\_subscriptions/reg9\\_subscribe.shtml](http://www.waterboards.ca.gov/resources/email_subscriptions/reg9_subscribe.shtml).

<sup>3</sup> Additional information regarding the CDP can be found in Executive Officer's Reports for [September 2016](#), [August 2016](#), [May 2016](#), [December 2015](#), [September 2015](#), and [June 2015](#).

## **2. UCSD Capstone Project on Clean Water Act Section 401 Water Quality Certification Program Mitigation Issues (*Attachment B-2*)**

*Staff Contact: Eric Becker*

As reported in the August 2016 Executive Officer Report, the Clean Water Act Section 401 Water Quality Certification Program (401 Certification Program) faces workload challenges in tracking compliance with monitoring and reporting requirements, compensatory mitigation implementation requirements, and attainment of measureable ecological and aquatic performance standards (success criteria) at mitigation sites. Earlier this year H. Lawrence Serra, a UCSD Masters Program student working on a capstone research project, began assisting San Diego Water Board staff in evaluating compliance issues and impediments to the success of compensatory mitigation projects in offsetting permitted impacts to aquatic resources. Mr. Serra also helped San Diego Water Board staff evaluate monitoring reporting issues and identify improvements needed to the existing compliance monitoring system. As part of this effort, Mr. Serra and other UCSD students reviewed Annual Mitigation Monitoring Reports and Habitat Mitigation and Monitoring Plans (HMMP) for select projects regulated under the 401 Certification Program from the 2014-2015 time period. The HMMP provides the design details and proposed success criteria used to assess whether a required compensatory mitigation project is achieving its objectives. The Annual Mitigation Monitoring Reports are essential in documenting progress towards meeting success criteria. Their work included preliminary review of post-completion mitigation reports, developing a report review worksheet, analyzing Google Earth photos, and reviewing California Rapid Assessment Method (CRAM) scores and other criteria from the Section 401 Certification applicant's HMMP. Projects with "red flags" on potentially failing mitigation projects identified by Mr. Serra and the students were referred to San Diego Water Board staff for further evaluation. Mr. Serra's report addressing various compensatory mitigation compliance assurance issues and recommendations is attached.

The San Diego Water Board efforts to address compliance issues in the 401 Certification Program have been underway for several years. In June 2013 the California State Auditor issued [Report 2012-120](#) summarizing the results of a statewide audit of the State Water Board's and the regional water board's administration of the water quality certification program. The report included a recommendation that the regional water boards work to more consistently monitor compliance with water quality certifications and use a State Water Board database to track monitoring efforts. In 2014 the San Diego Water Board received an additional staff position for the water quality certification program and since that time the Board has been able to allocate additional staff resources to address compliance issues through field inspections, increased report reviews, compliance audits and enforcement. While significant challenges remain, this effort has resulted in an increased San Diego Water Board field presence and a number of enforcement actions to create the deterrence needed to encourage the regulated community to comply with water quality certification reporting and mitigation requirements.

## **3. Developing Criteria for Direct Potable Reuse**

*Staff Contacts: Fisayo Osibodu and Alex Cali*

Can highly treated recycled water be sent straight from a wastewater treatment plant to a drinking water treatment plant to safely augment municipal supplies? To address that question, the State Water Board Division of Drinking Water (DDW) released its *Draft Report to the*

*Legislature on the Feasibility of Developing Uniform Water Recycling Criteria for Direct Potable Reuse* (Draft Report). The Draft Report provides information on:<sup>4</sup>

1. The availability and reliability of recycled water treatment technologies necessary to ensure the protection of public health.
2. Multiple barriers and sequential treatment processes that may be appropriate at wastewater and drinking water treatment facilities.
3. Available information on health effects.
4. Mechanisms that should be employed to protect public health if problems are found in recycled water that is being served to the public as a potable water supply, including the failure of treatment systems at the recycled water treatment facility.
5. Monitoring needed to ensure protection of public health, including the identification of appropriate indicator and surrogate constituents.
6. Any other scientific or technical issues that may be necessary, including the need for additional research.

The DDW convened two independent groups, an Expert Panel of scientists and engineers, and an Advisory Group of stakeholders, to advise it on issues related to the feasibility of developing criteria for Direct Potable Reuse of recycled water (DPR) in California. The recommendations of the Expert Panel and Advisory Group established the foundation of the DDW's investigation and findings. The Draft Report also discusses available research regarding unregulated pollutants as developed pursuant to the State Water Board's Recycled Water Policy; the regulations and guidelines in place for DPR projects in other states and countries; and water quality and health risk assessments associated with existing potable water supplies subject to the discharges from municipal wastewater, storm water, and agricultural runoff.

The Draft Report identifies key knowledge gaps and research recommendations that must be addressed before uniform water recycling criteria for DPR can be developed and adopted. Some of the key knowledge gaps and research recommendations are:

1. Developing monitoring requirements and improved methods for characterizing pathogen concentrations (i.e., Giardia cysts, Cryptosporidium oocysts, and human viruses) in raw wastewater.
2. Identifying suitable treatment options to provide attenuation of chemicals that have potential to persist through advanced water treatment.
3. Identifying more comprehensive analytical methods to identify low molecular weight compounds potentially in wastewater.
4. Investigating the feasibility of collecting raw wastewater pathogen concentration data associated with community outbreaks of disease.

<sup>4</sup> Report and elements required by Water Code sections 13563 and 13565.

While the DDW can move ahead and start the process of developing criteria for DPR, recommended research must be completed and key knowledge gaps filled to successfully develop and adopt uniform water recycling criteria for DPR that is protective of public health.

Written comments on the Draft Report are due by October 25, 2016. The DDW also held two public workshops on the Draft Report where the public was given the opportunity to present oral comments. More information regarding the Draft Report and procedure for submitting written comments is available at:

[http://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/rw\\_dpr\\_criteria.shtml](http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/rw_dpr_criteria.shtml)

As part of the public outreach on DPR, the San Diego Chapter of the WateReuse Association held a meeting on September 20, 2016, that featured DDW staff presentations on the findings and recommendations of the Draft Report. Representatives from the Advisory Group and the Expert Panel also presented information on recommendations of their group's report. San Diego Water Board staff, Fisayo Osibodu and Alex Cali attended the meeting.<sup>5</sup>

#### **4. Morena Boulevard Tanker Spill Cleanup Complete**

*Staff Contact: Kelly Dorsey*

Cleanup of diesel fuel spilled into the San Diego River and floodplain at Morena Boulevard was deemed complete by the San Diego County Department of Environmental Health on September 13, 2016. The spill occurred on May 13 when a fuel tanker truck overturned on the Morena Boulevard bridge over the San Diego River (Figure 1). The accident spilled 3,700 gallons of diesel fuel that traveled across the bridge and into the San Diego River via drainage ports and expansion joints in the bridge. This reach of San Diego River is an ecological oasis tidally connected to the San Diego River Estuary, which is an extremely productive coastal wetland supporting intensive recreation and wildlife beneficial uses.

Within minutes of the accident, the SOCO Group (the Responsible Party) activated its emergency response contractor to begin containment and cleanup of the spill. Sorbent booms were installed in the San Diego River both up-gradient and down-gradient of the spill. Within 72 hours of the spill, emergency response teams recovered a mixture of approximately 21,000 gallons of diesel fuel and fuel-contaminated water. The response teams estimated that 2,892 gallons of the 3,700 gallons spilled were recovered.

Following the initial recovery of fuel and fuel-contaminated water, the removal of contaminated and/or damaged vegetation and contaminated soil began (Figures 2, 3, and 4). An estimated 60 cubic-yards of contaminated vegetation and approximately 906 cubic-yards (1,406 tons) of contaminated soil were removed and disposed of at a licensed disposal facility.

The primary public agencies responding to and overseeing the emergency response action were the USEPA, California Department of Fish and Wildlife, Office of Spill Prevention and Response, U.S. Fish and Wildlife Service, California Highway Patrol, Caltrans, Army Corp of

<sup>5</sup> Additional information on the San Diego Chapter of the WateReuse Association is available at:

<https://watereuse.org/sections/watereuse-california/chapters/san-diego-chapter/>

Engineers, San Diego County Department of Environmental Health (DEH) Emergency Response Team and DEH Site Assessment and Mitigation Voluntary Assistance Program (DEH-VAP).

Following the emergency actions, DEH-VAP provided regulatory oversight of the cleanup of both soil and groundwater for the protection of both the public, including the homeless, and the ecological receptors within the San Diego River, the floodplain, and the estuary located downstream of the spill. DEH-VAP, in consultation with the San Diego Water Board, developed site specific cleanup levels for both soil and groundwater to ensure the public and wildlife would be protected. Impacted soil was excavated to a depth where diesel concentrations were below cleanup levels or to where groundwater was encountered (approximately three to four feet below ground surface). Once the soil verification sample results confirmed that the cleanup goal had been achieved, the excavations were backfilled with imported clean soil to restore the appropriate grade.

In June 2016, SOCO conducted a groundwater investigation of the spill area. The groundwater sample results indicated that the groundwater cleanup goal had also been achieved. As a result, DEH-VAP closed the cleanup case on September 13, 2016.



Figure 1: Ariel view of the spill site. Red dots indicate locations of drain ports on bridge.



**Figure 2: Emergency response team deploying to assess and address impacted vegetation along the San Diego River. Rainbow sheen caused by diesel fuel on the water surface.**



**Figure 3: Emergency response team removing and cleaning diesel impacted vegetation along the San Diego River.**



**Figure 4:** Excavation to remove diesel-impacted soil. Groundwater and diesel fuel are both present in the trench. Absorbent pads in the trench repel water and absorb only the diesel fuel for disposal.

## **5. Enforcement Actions for August 2016 (*Attachment B-5*)**

*Staff Contact: Chiara Clemente*

During the month of August, the San Diego Water Board issued 21 written enforcement actions as follows; 1 Administrative Civil Liability Order, 1 Notice of Violation, 1 Investigative Order and 18 Staff Enforcement Letters. A summary of each enforcement action taken is provided in the Table below. The State Water Board's [Enforcement Policy](#) contains a brief description of the kinds of enforcement actions the Water Boards can take.

Additional information on violations, enforcement actions, and mandatory minimum penalties is available to the public from the following on-line sources:

State Water Board Office of Enforcement webpage:  
[http://www.waterboards.ca.gov/water\\_issues/programs/enforcement/](http://www.waterboards.ca.gov/water_issues/programs/enforcement/).

California Integrated Water Quality System (CIWQS):  
[http://www.waterboards.ca.gov/water\\_issues/programs/ciwqs/publicreports.shtml](http://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.shtml).

State Water Board GeoTracker database: <https://geotracker.waterboards.ca.gov/>.

## 6. Sanitary Sewer Overflows and Transboundary Flows from Mexico in the San Diego Region – July 2016 (*Attachment B-6*)

*Staff Contacts: Dat Quach and Joann Lim*

Sanitary sewer overflow (SSO) discharges from sewage collection systems and private laterals, and transboundary flows from Mexico into the San Diego Region, can contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oil, and grease. SSO discharges and transboundary flows can pollute surface and ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters. Typical impacts of SSO discharges and transboundary flows include the closure of beaches and other recreational areas, inundated properties, and polluted rivers and streams.

The information below summarizes SSO spills and transboundary flows in the San Diego Region reported during **July 2016**:

Sewage Collection System SSO Spills	Private Lateral SSO Spills	Transboundary Flows from Mexico
9 spills reported, totaling 4,938 gallons (750 gallons reached surface waters or a tributary storm drain). These spills did not cause any closures of beaches or other recreational areas.	8 spills reported, totaling 1,434 gallons (100 gallons reached surface waters or a tributary storm drain). These spills did not cause any closures of beaches or other recreational areas.	2 dry weather transboundary flow events totaling 1,353,000 gallons were reported (1,353,000 gallons reached surface water). USIBWC did not report any closures of beaches or other recreational areas due to these flow events. <sup>6</sup>  No wet weather transboundary flow events were reported.

### Sanitary Sewage Overflows (SSOs)

State agencies, municipalities, counties, districts, and other entities (collectively referred to as public entities) that own or operate sewage collection systems report SSO spills through an on-line database system, the *California Integrated Water Quality System (CIWQS)*. These spill reports are required under the [Statewide General SSO Order](#)<sup>7</sup>, the [San Diego Region-wide SSO Order](#)<sup>8</sup>, and/or individual National Pollutant Discharge Elimination System (NPDES) permit requirements. Some federal entities<sup>9</sup>

<sup>6</sup> Mr. Steve Smullen of the USIBWC states that “it does not appear that flow reached the Dairymart Bridge.”

<sup>7</sup> State Water Board Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* as amended by Order No. WQ 2013-0058-EXEC, *Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*.

<sup>8</sup> San Diego Water Board Order No. R9-2007-0005, *Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region*.

<sup>9</sup> Marine Corp Base Camp Pendleton reports sewage spills through CIWQS in accordance with Order No. R9-2013-0112, NPDES Permit No. CA0109347, *Waste Discharge Requirements for the Marine Corps Base, Camp Pendleton, Southern Regional Tertiary Treatment Plant and Advanced Water Treatment Plant, Discharge to the Pacific Ocean via the Oceanside Ocean Outfall*. The Marine Corps Recruit Depot and the U.S. Navy voluntarily report sewage spills through CIWQS.

voluntarily report SSO spills through CIWQS. The SSO reports are available on a real-time basis at the following State Water Board webpage:  
[https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso\\_main](https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_main).

Details on the reported SSOs are provided in the following attached (Attachment B-6) tables titled:

- Table 1: July 2016 - Summary of Public and Federal Sanitary Sewer Overflows in the San Diego Region.
- Table 2: July 2016 - Summary of Private Lateral Sewage Discharges in the San Diego Region.

Additional information about the San Diego Water Board sewage overflow regulatory program is available at [http://www.waterboards.ca.gov/sandiego/water\\_issues/programs/sso/index.shtml](http://www.waterboards.ca.gov/sandiego/water_issues/programs/sso/index.shtml).

### Transboundary Flows

Water and wastewater in the Tijuana River and from a number of canyons located along the international border ultimately drain from Tijuana, Mexico into the U.S. The water and wastewater flows are collectively referred to as transboundary flows. The U.S. Section of the International Boundary and Water Commission (USIBWC) has built canyon collectors to capture dry weather transboundary flows from some of the canyons for treatment at the South Bay International Wastewater Treatment Plant (SBIWTP), an international wastewater treatment plant located in San Diego County at the U.S./Mexico border. Dry weather transboundary flows that are not captured by the canyon collectors for treatment at the SBIWTP, such as flows within the main channel of the Tijuana River, are reported by the USIBWC pursuant to [Order No. R9-2014-0009](#), the NPDES permit for the SBIWTP discharge. These uncaptured flows can enter waters of the U.S. and/or State, potentially polluting the Tijuana River Valley and Estuary, and south San Diego beach coastal waters.

Details on the reported transboundary flows are provided in the attached table (Attachment B-y) titled:

- Table 3: July 2016 - Summary of Transboundary Flows from Mexico into the San Diego Region.

According to the 1944 *Water Treaty for the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande* and stipulations established in [IBWC Minute No. 283](#), the USIBWC and the Comisión Internacional de Límites y Aguas (CILA)<sup>10</sup> share responsibility for addressing border sanitation problems, including transboundary flows. The USIBWC and/or CILA have constructed and are operating several pump stations and treatment plants to reduce the frequency, volume, and pollutant levels of transboundary flows. This infrastructure includes but is not limited to the following:

- The SBIWTP, located just north of the U.S./Mexico border, which provides secondary treatment for a portion of the sewage from Tijuana, Mexico and dry weather runoff collected from a series of canyon collectors located in Smuggler Gulch, Goat Canyon, Canyon del Sol, Stewart's Drain, and Silva Drain. The secondary-treated wastewater is discharged to the Pacific Ocean through the South Bay Ocean Outfall, in accordance with Order No. R9-2014-0009, NPDES No. CA0108928.
- Several pump stations and wastewater treatment plants in Tijuana, Mexico.

The River Diversion Structure and Pump Station CILA divert dry weather flows from the Tijuana River at a point just south of the international border to the Pacific Ocean, at a point approximately 5.6 miles south of the U.S./Mexico border. The River Diversion Structure is not designed to collect wet weather flows and any flows over 1000 liters per second (lps).

<sup>10</sup> The Mexican section of the IBWC.

## **Part C – Statewide Issues of Importance to the San Diego Region**

### **No Reports**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION

**Significant NPDES Permits,  
WDRs, and Actions of the  
San Diego Water Board**

October 12, 2016

APPENDED TO EXECUTIVE OFFICER'S REPORT

TENTATIVE SCHEDULE  
SIGNIFICANT NPDES PERMITS, WDRS, AND ACTIONS  
OF THE SAN DIEGO WATER BOARD

Action Agenda Item	Action Type	Draft Complete	Written Comments Due	Consent Item
<b>November 9, 2016</b> <i>San Diego Water Board</i>				
An Order Rescinding Waste Discharge Requirements, Order No. 94-127, Waste Discharge Requirements for Mr. William Vander Woude, Valley View Dairy, San Diego County ( <i>Mitchell</i> )	WDR Rescission	100%	29-Sep-2016	Yes
Tentative Resolution Endorsing the San Diego Water Board's 2016 Public Outreach Strategy: Proactive Public Outreach and Communication. ( <i>Jayne</i> )	Tentative Resolution			Maybe
Consideration of Resolution Certifying Negative Declaration for General Waste Discharge Requirements for Commercial Agricultural Operations ( <i>Pulver</i> )	Resolution	99%	29-Jul-2016	No
General Waste Discharge Requirements for Discharges from Commercial Agricultural Operations for Dischargers not Participating in a Third Party Group ( <i>Pulver</i> )	New WDR	99%	29-Jul-2016	No
General Waste Discharge Requirements for Discharges from Commercial Agricultural Operations for Third Party Groups and Members ( <i>Pulver</i> )	New WDR	99%	29-Jul-2016	No
Approval of 2017 Meeting Schedule. ( <i>Gibson</i> )		100%	NA	NA
<b>December 14, 2016</b> <i>San Diego Water Board</i>				
City of Carlsbad Tertiary Wastewater Treatment Facility, San Diego County ( <i>Osibodu</i> )	Master Recycling Permit Reissuance	85%	TBD	Yes
Tentative Resolution Adopting a List of Supplemental Environmental Projects ( <i>Clemente</i> )	Tentative Resolution	10%	TBD	Maybe
Update on Restoration of Lake San Marcos ( <i>Mearon</i> )	Information Item	NA	NA	NA
NPDES Permit Renewal for NASSCO ( <i>Schwall</i> )	NPDES Permit Reissuance	95%	TBD	No
Closure and Post-Closure Maintenance and Monitoring at Forester Canyon Landfill, San Juan Capistrano, Orange County ( <i>Grove</i> )	New WDRs	100%	9-Nov-2016	Maybe
NPDES Permit Reissuance for the Point Loma Waste Water Treatment Plant ( <i>Lim</i> )	NPDES Permit Reissuance	95%	TBD	No
New Water Effects Ratio for Copper and Zinc in Chollas Creek ( <i>Valdovinos</i> )	Basin Plan Amendment	70%	TBD	?
<b>January 11, 2017</b> <i>No Meeting Scheduled</i>				

### Agenda Items Requested by Board Members

Requested Agenda Item	Board Member	Status
Workshop on low dissolved oxygen conditions in the San Diego River	Strawn	
Information Item regarding high levels of naturally occurring elements in groundwater when they interact with other issues.	Olson	
<b>August 12, 2015</b>		
Information item regarding data supporting Basin Plan Water Quality Objectives	Olson	
<b>September 9, 2015</b>		
Tour of USN laboratory	Olson	Rescheduling
<b>December 16, 2015</b>		
San Diego River restoration and land acquisition workshop	Strawn	
Environmental Justice Outreach Update	Morales	10/12/2016 Board Meeting
<b>August 10, 2016</b>		
SCCWRP Flow Recovery Project Update	Strawn	

# Whither California's Wetlands? – Probable Net Loss of Wetland Functions Due to Water Board Staff Inattention, and a Modest Solution

H. Lawrence Serra<sup>\*</sup>  
Capstone Project Submitted in Partial Fulfillment of Requirements for  
Master of Advanced Studies Degree  
Scripps Institution of Oceanography  
May 31, 2016

## EXECUTIVE SUMMARY

According to the IPCC, anthropogenic greenhouse CO<sub>2</sub> is most likely responsible for recent global warming.

California's coastal and sea grass wetlands sequester large amounts of CO<sub>2</sub>—between 9 and 35 metric tons/acre/year over 2.9million acres of salt marsh, riverine and upland wetlands, for totals of 26.1million to 101.5 million tons sequestered CO<sub>2</sub>.

The 1972 Federal Clean Water Act required the implementation of federal and state regulations to ensure that there would be "no net loss of wetlands."

Under the Federal Clean Water Act and the California Porter-Cologne Act, the State Water Resources Control Board and its Regional Boards have the duty to review proposed development or discharge projects which require Section 401 Certifications (permits) to insure that there is "no net loss of wetlands." If a jurisdictional wetland is affected or impacted by the proposed development, the Water Board is required to compel the developer to provide a "compensatory mitigation wetland," either onsite or at an agreed offsite location.

The Water Board enforces the "no net loss of wetlands" requirement by simply ensuring that the acreage of the compensatory wetland equals or marginally exceeds the acreage of the impacted wetland, while largely ignoring the post-construction health of mitigation wetland functions.

Professor Richard Ambrose of UCLA performed two studies of California compensatory wetlands in the 2000s, including one report commissioned by the State Water Resources Control Board. His first survey in Orange County found that 75-86% of as-built compensatory wetlands failed in at least one important function category, and that 25-33% of wetlands in the second statewide study fell below par for wetlands standards. In a 2015 summary report based on his studies of California's compensatory mitigation wetlands, Ambrose concluded that 81% of the files studied displayed "Sub-Optimal, Marginal or Poor" conditions, while only 19% displayed "Optimal" conditions compared to Reference Site wetlands data.<sup>1</sup>

This Capstone project began in an effort to standardize permit conditions and to objectify evaluation standards for post-construction mitigation wetlands. Recent permit conditions employed by the Region 9 Water Quality Assurance Board ("Water Board") do address performance standards and California Rapid Assessment Method (CRAM) baseline and as-built scores to evaluate wetland performance functions.

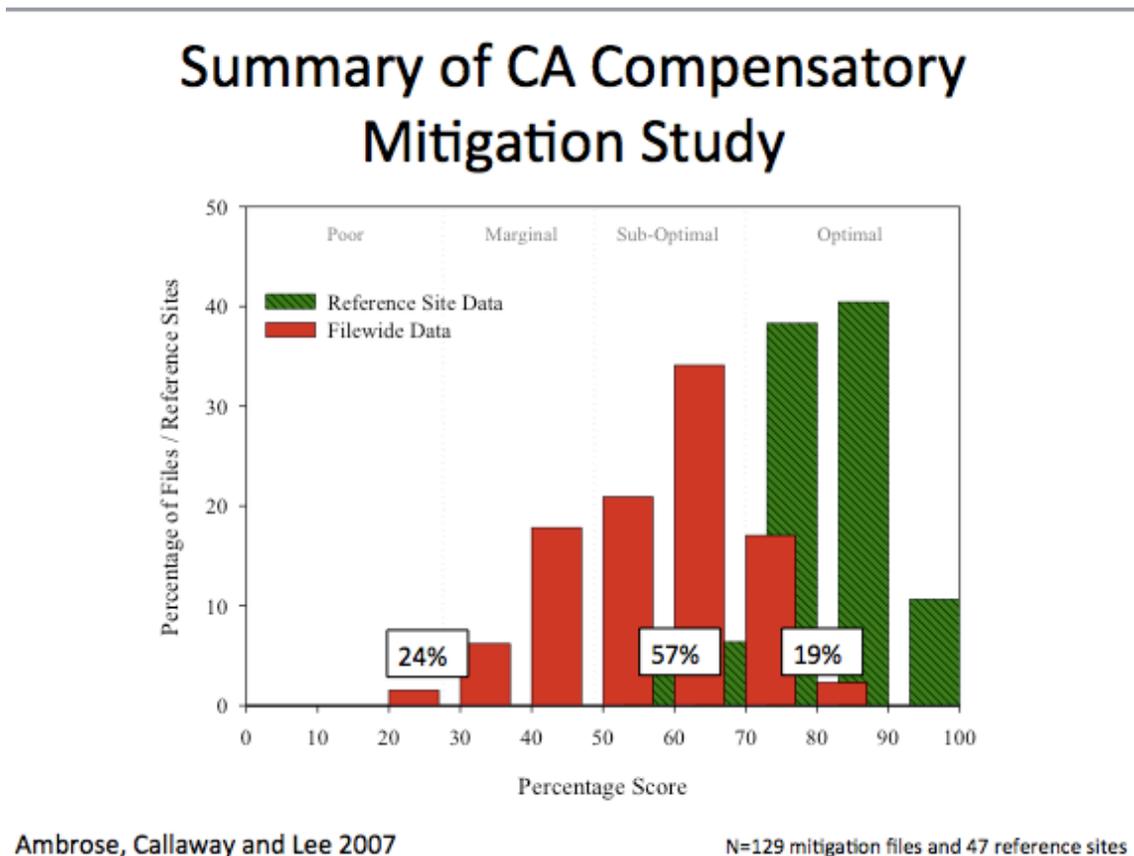
However, because of "workload", Region 9 Water Board staff has largely failed to review post-construction evaluation reports for mitigation wetlands.

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1

Applying the Ambrose failure percentage to un-reviewed post completion reports since 2014 (when the Water Board required electronic submission of reports), shows that California has effectively experienced a net loss of wetlands due to the percentage failure of the mitigation wetlands functions discovered in the Ambrose studies.

This Capstone project morphed to provide both a tickler system to alert Water Board staff when Annual Reports are due, to send reminder letters to project developers that the reports are due, then to send enforcement letters if the Annual Reports are simply not filed by project developers.



Additionally, this Capstone project created a "Top Sheet" to guide Water Board student interns in a preliminary review of any post-completion mitigation wetland reports, in order to red flag failing wetlands for more detailed review by professional staff.

Finally, the time records kept by the Capstone project students in reviewing the Annual Reports and post-completion reports will offer evidence for the Region 9 Water Board to request additional personnel and resources from the State Board to accomplish a timely review of the compensatory wetland evaluation reports.

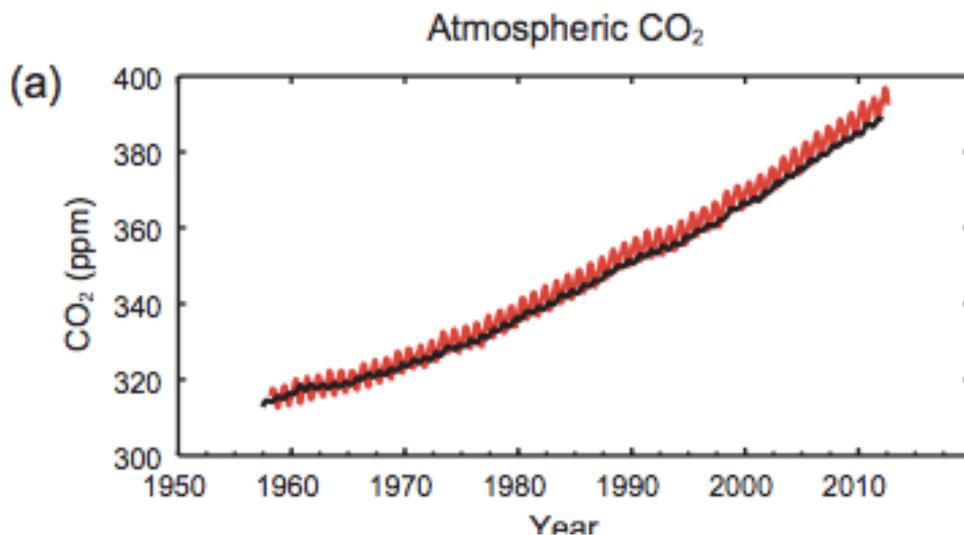
## SCIENCE

The Intergovernmental Panel on Climate Change (IPCC) recently concluded that it is 95% certain that the increased global warming in the last 30 years is most likely due to the increase of anthropogenic greenhouse gas CO<sub>2</sub> in our atmosphere<sup>2</sup>. According to the late Scripps Institution of Oceanography scientist David Keeling, the Keeling Curve shows atmospheric CO<sub>2</sub> has increased sharply since 1955.<sup>3</sup> Climate scientists suggest immediate measures should be taken by human populations to reduce anthropogenic GHGs, especially carbon dioxide.<sup>4</sup>

Coastal wetlands serve many functional purposes for our environment<sup>5</sup>, including sequestration of large amounts of CO<sub>2</sub><sup>6</sup>. Coastal wetlands and sea grass in California sequester between 9 to 35 metric tons of CO<sub>2</sub> per acre per year.<sup>7</sup> NOAA studies claim that nationwide, coastal wetlands and sea grasses sequester approximately 547 metric

<sup>2</sup> Total radiative forcing is positive, and has led to an uptake of energy by the climate system. The largest contribution to total radiative forcing is caused by the increase in the atmospheric concentration of CO<sub>2</sub> since 1750 (see Figure SPM.5). {3.2, Box 3.1, 8.3, 8.5}, [https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5\\_SummaryVolume\\_FINAL.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SummaryVolume_FINAL.pdf) p.13.

<sup>3</sup> See Keeling CO<sub>2</sub> curve: [https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5\\_SummaryVolume\\_FINAL.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_SummaryVolume_FINAL.pdf) p. 12.:



<sup>4</sup> “Stabilizing greenhouse gas concentrations in the atmosphere requires emissions reductions from energy production and use, transport, buildings, industry, land use, and human settlements. Land is a key component for the 2°C goal. Slowing deforestation and planting forests have stopped or even reversed the increase in emissions from land use. Through afforestation, land could be used to draw carbon dioxide from the atmosphere.” IPCC 2014- Synthesis Report: <<http://www.un.org/climatechange/the-science/>>

<sup>5</sup> <http://water.usgs.gov/nwsum/WSP2425/hydrology.html>

<sup>6</sup> <http://www.habitat.noaa.gov/coastalbluecarbon.html>

<sup>7</sup> Miller, Robin L., 2011 carbon gas fluxes in Re – Established Wetlands on Organic Soils differ relative to plant community and hydrology, Wetlands DOI 10.1007/s13157-011-0215-2.

tons of CO<sub>2</sub> equivalent per acre per year.<sup>8</sup> California has already lost approximately 91 percent of its wetlands due to conversion to agricultural land, and to coastal and riverine development for the state's increased population.<sup>9</sup> In 2010, California had 2.9million acres of functional salt marsh, riverine and upland wetlands, according to a California Coast Keeper study.<sup>10</sup>

Besides the CO<sub>2</sub> sequestration and runoff water filtration functions of wetlands described above, in low-lying coastal areas of the states bordering the Gulf of Mexico and along the east coast of the United States, wetlands provide a buffer against global warming's increased storm surges, such as those encountered in Hurricane Katrina in New Orleans and Superstorm Sandy in the New York/New Jersey/Connecticut tri-state area.

### **LAW AND ADMINISTRATIVE POLICIES ON WETLANDS IN CALIFORNIA**

In 1972 President Nixon signed into law the Clean Water Act.<sup>11</sup> Besides section 401's requirement that the country and its states limit the discharge into the "waters of the United States" TMDLs (total maximum daily loads) of specific substances listed in the administrative regulations, the second object of the law's policy, was that there be "no net loss, or if possible gain" of wetlands.<sup>12</sup> This rule applies to the administration of section 404 Army Corps of Engineers jurisdictional decisions, and to section 401 Certifications (permits) issued by California's State Water Resources Control Board and its Regional Water Quality Assurance Boards, which are empowered by the state to administer the Clean Water Act.<sup>13</sup>

California's State Water Resources Control Board was created by the legislature in 1967. In 1970 the Porter-Cologne Act combined the State Water Rights Board with the State Water Resources Control Board, and created its subordinate nine Regional Water Quality Assurance Boards for the various regions of this large state<sup>14</sup>.

The way the implemented Clean Water Act system works in California is that the federal Army Corps of Engineers (ACOE) delineates areas it determines are jurisdictional "waters of the United States" (which means any flowing or ephemeral tributaries that

<sup>8</sup> [www.habitat.noaa.gov/coastalbluecarbon.html](http://www.habitat.noaa.gov/coastalbluecarbon.html)

<sup>9</sup> <http://geochange.er.usgs.gov/sw/impacts/hydrology/wetlands/>

<sup>10</sup> <http://d3n8a8pro7vhmx.cloudfront.net/coastkeeper/pages/170/attachments/original/1401223161/state-of-wetlands.pdf?1401223161> at p.6.

<sup>11</sup> 33 U.S.C. §1251 et seq. (1972)

<sup>12</sup> [https://en.wikipedia.org/wiki/No\\_net\\_loss\\_wetlands\\_policy](https://en.wikipedia.org/wiki/No_net_loss_wetlands_policy). (This policy was first announced by the George H.W. Bush administration, and reinforced during the Clinton administration in 1998. By his 1993 Executive Order W-59-92, the Governor of California adopted for the State a "no net loss and net gain" policy, and ordered that CA's government programs and policies which affect wetlands be coordinated to ensure no overall net loss and long term net gain in the quantity, quality, and permanence of wetland acreage and values in a manner that fosters creativity, stewardship, and respect for private property. See, <[http://www.waterboards.ca.gov/water\\_issues/programs/cwa401/docs/wrapp2008/executive\\_order\\_w59\\_93.pdf](http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wrapp2008/executive_order_w59_93.pdf)>)

<sup>13</sup> Ibid.

<sup>14</sup> [http://www.waterboards.ca.gov/publications\\_forms/publications/factsheets/docs/region\\_brds.pdf](http://www.waterboards.ca.gov/publications_forms/publications/factsheets/docs/region_brds.pdf)

eventually drain into United States bays, rivers or ocean waters). When a developer seeks to develop a property that encompasses an area designated by ACOE as affecting the jurisdictional waters of the United States, the Regional or State Water Boards must evaluate the developer's plan to assure: first, that there are no point source discharges that exceed the listed TMDLs (total maximum daily loads) of various elements, compounds, materials or biotics specified in administrative regulations; and second, that the development will not impact or affect any wetland within those jurisdictional boundaries. If a jurisdictional wetland is encompassed within the proposed development project, the Water Board in issuing its Section 401 Certification (permit), must determine whether that wetland will be affected, and if so, the developer is required in the 401 Certification (permit) to reestablish a "compensatory mitigation wetland." In practice, the developer must either create or rehabilitate a wetland within the boundaries of his project, make an agreement with the Water Board to create a compensatory mitigation wetland at some offsite location, or pay a huge in-lieu cash mitigation fee.

Generally the Region 9 Water Board attempts to insure that the mitigation wetland is at least as large in acreage, or marginally larger than the wetland acreage affected by the development project. The Region 9 Water Board apparently views this practice as meeting its responsibility to enforce the "no net loss of wetlands" requirement of the Clean Water Act. In fact, acreage size is of little import if the wetland's functions are impaired or fail.

The Water Board requires the developer to submit a "Mitigation Plan" prepared by professional consultants which explain the proposed physical parameters and functions of the compensatory mitigation wetland-- how it will be built, how its hydrology, biology and plant and animal habitat will work, and how its other functions are projected to behave. The Mitigation Plan often contains "performance standard" goals in each of the relevant wetlands function categories that the Mitigation Plan suggests the compensatory mitigation wetland will implement. So despite the Water Board's mere calculation of compensatory wetland acreage as compliance with the "no net loss of wetlands" doctrine, the Regional Boards' 401 Certification (permit) requirements acknowledge the necessity of the mitigation wetland's functional performance.

The 401 Certification (permit) contains mandatory conditions required of the project developer. One is that the developer must submit to the Water Board an "Annual Report" describing the stage of completion of the project and the stage of completion of the compensatory mitigation wetland. As the project progresses, the Annual Reports should reflect the progress of both the development project and the mitigation wetland. Upon completion of the mitigation wetland, the project applicant is required to provide a report to the Water Board every year for 5 years after completion to show the wetlands health with respect to its primary functions and performance standards.

Traditionally these post-completion wetland reports have been subjective reports prepared by the developer's consultant, but in recent years the employment of the "California Rapid Assessment Method" (CRAM<sup>15</sup>) of wetland health has added to the objectivity of this assessment. The requirement in the 401 Certification process that a CRAM baseline study be done before the project is begun, and that CRAM scores be reported to the Water Board in each of the five annual post-completion reports, is designed to take the pulse of the mitigation wetland to assure that it continues to function properly. By comparing wetland CRAM scores and performance functions before and after project completion to those proposed by the developer in his Mitigation Plan, the Water Board judges whether the constructed mitigation wetland is in fact behaving as a wetland should in terms of its multiple functions toward clean water. If the wetland is failing in wetland functions, the Water Board under its 401 Certification powers can compel the developer to correct the wetland's shortcomings.

Of course, this process assumes that the Water Board actually reviews the post-completion reports on wetlands health to assure that the wetlands are performing the functions they are expected to perform as a contribution to clean water. The assurance of wetland performance is one of the elements the Water Quality Assurance Boards are supposed to monitor on behalf of the public in their compliance with the Clean Water Act's "no net loss of wetlands" requirement. So if the post-construction mitigation wetlands are not performing as proposed, California has in fact had a "net loss" of wetlands due to the failing functions of the compensatory wetlands.

### **THE AMBROSE REPORTS**

In the decade of the 2000s, UCLA Professor Richard Ambrose, a PhD in environmental studies, undertook two field research projects to evaluate the functions of post-construction mitigation wetlands. The first study in 2002 focused on as-built mitigation wetland sites in Orange County, California<sup>16</sup>. The second study in 2007, on commission from the State Water Resources Control Board, was undertaken within the jurisdictions of all nine Regional Water Quality Assurance Boards in California<sup>17</sup>. The Orange County/southern California study showed in sum, that between 75 and 85 percent of the constructed compensatory mitigation wetlands at time periods between 3 and 10 years after construction, failed in one or more of the major categories of wetland functions. The 2007 Statewide study concluded: "We found that permittees are largely following their permit conditions (although one-quarter to one third of the time these are not met), but the resulting compensatory mitigation projects seldom result in wetlands with optimal condition."<sup>18</sup> In a 2015 summary report based on his studies of California's compensatory mitigation wetlands, Ambrose concluded that 81% of the files studied

<sup>15</sup> <http://www.cramwetlands.org/>; [http://www.cramwetlands.org/sites/default/files/2008-11\\_Calif%20CRAM%20Factsheet%20Nov10%20HiRes.pdf](http://www.cramwetlands.org/sites/default/files/2008-11_Calif%20CRAM%20Factsheet%20Nov10%20HiRes.pdf)

<sup>16</sup> Sudol, M. F. Ambrose, R. F. The US Clean Water Act and habitat replacement: Evaluation of mitigation sites in Orange County, California, USA. Environmental Management. 2002; 30(5): 727-734.

<sup>17</sup> [http://www.waterboards.ca.gov/water\\_issues/programs/cwa401/docs/mitigation\\_finalreport\\_wo\\_app081307.pdf](http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/mitigation_finalreport_wo_app081307.pdf)

<sup>18</sup> [http://www.waterboards.ca.gov/water\\_issues/programs/cwa401/docs/mitigation\\_finalreport\\_wo\\_app081307.pdf](http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/mitigation_finalreport_wo_app081307.pdf)

displayed “Sub-Optimal, Marginal or Poor” conditions, while only 19% displayed “Optimal” conditions compared to Reference Site wetlands data.<sup>19</sup>

Ambrose's major conclusions were that the failures were due to inconsistent permit conditions as between individual permitting agencies (individual Regional Water Boards and the municipalities within their jurisdiction), and the lack of any uniform objective standards by which to evaluate post-construction mitigation wetlands. In both studies, Professor Ambrose discovered that many of the records necessary to evaluate a post-construction wetland-- including the Mitigation Plan, and the post-completion evaluation reports-- could not be located in the Water Boards' archives.

### **THIS CAPSTONE PROJECT AND INVESTIGATION**

I was provided access to the Region 9 Water Board's executive director and various staff personnel in office meetings, under the auspices of Professor Henry Abarbanel, a senior physics professor at University of California San Diego and Scripps Institution of Oceanography, who happens at present to serve as the appointed Chairman of the Region 9 Water Quality Control Board<sup>20</sup>.

The original goal of this Capstone project was to attempt to provide the Region 9 Water Board (San Diego watershed region) with procedures to effect uniform permit conditions and a uniform system of evaluation for post-construction mitigation wetlands. The Region 9 Water Board has already installed procedures to insure 401 Certifications (permits) contain requirements for baseline and post-construction wetland CRAM studies and performance standards for comparative evaluations of wetlands health<sup>21</sup>--if those reports are actually reviewed by staff.

My early meetings with staff suggested that everything was fine at the Water Board and all its bases were covered for issuance of Section 401 Certifications (permits), and to evaluate Annual Reports and post-completion reports for mitigation wetlands.

Eventually staff suggested that they had a problem staying on top of the post-construction mitigation wetland reports, and Annual Reports in general. The staff suggested that they really had no way to know if a required Annual report or post-construction wetland report had even been filed by the developer, even though filing those reports are mandatory permit conditions of 401 Certifications.

In response to that revelation I suggested that by utilizing computer science and engineering students at UCSD, we could construct for the Water Board a tickler system that would notify them every week which project Annual Reports were due so the staff could send a courtesy letter reminding the developer that the report would be due in 60 days. We constructed that tickler system, I drafted a reminder form letter to be sent to project applicants 60 days before their Annual Reports are due. Then I prepared an

<sup>19</sup> See footnote 1 above; Ambrose, Calloway and Lee (2007).

<sup>20</sup> All meetings with Region 9 Water Board staff discussed herein were conducted by the author from DEC 2015 through May 2016.

<sup>21</sup> Author interviews with Region 9 Water Board staff DEC 2015-MAY 2016.

enforcement letter to be sent 30 days after the developer fails to file his Annual Report. The enforcement letter contains a formal Notice of Violation and asserts the potential penalty powers of the Water Board including daily fines of up to \$10,000.00<sup>22</sup>.

Staff initially objected to the implementation of this system on the basis that they already had a state computer system theoretically capable of providing tickler reminders (although not used by staff), so it would be unnecessary to have a separate tickler system. This was after I and my student employees had already created the Excel spread sheet tickler system for the Water Board.

Next, our liaison to the Water Board put us in touch with their state computer system ("CIWQS") on-site expert to show us how the state system could be used to provide these tickler functions for the mandatory reports. That meeting showed us that the state computer system was "klugey"-- unwieldy and difficult to navigate if one were not already familiar with the dropdown menus and the organization of the program.

After we crossed that hurdle we discovered that since 2014 all Annual Reports for the Region 9 Board were arbitrarily designated to be due on March 1 of every year, and that Water Board intake personnel received and sorted incoming electronic documents including Annual Reports, then diverted them to the responsible staff individual for each particular project. It also came to our attention that often the post-completion mitigation wetland reports were not necessarily so identified, but might arrive designated as an "Annual Report."

It became obvious to us that the sorters of these electronic documents received by the Water Board could easily copy and direct any submitted Annual Report to a FTP folder for me and my students to review. We requested that the Water Board do this and the Water Board staff quickly agreed to create an FTP folder outside the state system in which to deposit Annual Reports for our review.

We discovered there was a substantial backlog of Annual Reports that had not been reviewed by Water Board staff because there was not enough staff time, or staff personnel, or money from the State Water Board for the Region 9 staff to perform those reviews.<sup>23</sup> Since these Annual Reports would be available to us on an FTP site for review, we offered the students' services to review the entire substantial backlog of Annual Reports of the Region 9 Water Board to cull out post-completion mitigation wetlands reports. The students would perform a "preliminary review" in accordance with a "Top Sheet"<sup>24</sup> that provided guidance what to quickly look for in the post-completion

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<sup>22</sup> The Excel spreadsheet "tickler" program, and draft form reminder and enforcement letters designed for Water Board staff are attached hereto as Appendices E (available from author), F and G.

<sup>23</sup> Professor Ambrose, who has been dealing with the Water Boards since the early 1990s, observed that while in fact the Boards are understaffed, the Water Boards' civil service staff had been voicing the same excuses for 25 years. [Email to HLS from Prof. Ambrose to HLS 5/1/16.]

<sup>24</sup> The Top Sheet form was designed by the author based on discussions with and input from Prof. Richard Ambrose, and focuses on easy to locate information in the post-completion reports. A Top Sheet form is attached hereto as Appendix H.

reports. This preliminary review would enable the Water Board's regular student interns to "red flag" reports of failing or potentially failing mitigation wetlands.

It was agreed with Water Board that as a pilot project we would evaluate all the Annual Reports from 2014 forward to clear the Water Board's backlog of un-reviewed reports. The Region 9 Water Board has 82 active 401 Certification (permit) projects, so for the three, one year periods from 2014 to 2016 there should have been at least 246 Annual Reports in the FTP folder. After the first upload of Annual Reports to the FTP folder, only 13 Annual Reports were found by the Region 9 Water Board. That means there are 233 Annual Reports which are missing or misplaced. Water Board liaison has directed staff to contact each of the 82 active permittees to determine whether they sent in their Annual Reports, whether the reports were misplaced, or whether the permittees simply did not file their mandatory Annual Reports

### **WHERE THE CAPSTONE PROJECT STANDS NOW**

Assuming the Water Board is able to find the missing 233 reports, my students and I should be able to eliminate the backlog of un-reviewed Annual Reports, and more specifically to identify and review the post-construction mitigation wetlands evaluation reports in order to red flag any wetlands that may be failing or on the verge of failing. I have made arrangements with UCSD and the engineering and computer science students to fund the project till September 18, 2016-- assuming more Annual Reports are found—in order to complete the parsing of the backlog of Annual Reports and to review the post-completion mitigation wetland evaluation reports. I am also seeking funding from the San Diego Foundation and others for the \$5000-\$8400 to extend the preliminary review program through the 2016-2017 academic year.

### **CONCLUSIONS AND DELIVERABLES**

1. The startling aspect of these discoveries is that the Water Board staff had reported to us they typically receive 110 applications for 401 Certifications (permits) every calendar year. But even assuming only 82 active 401 Certifications per year, applying that number to Ambrose's Orange County report of 75 to 85 percent of post-construction wetlands failing in some major function category, or his statewide report of 25-33% permit conditions not being met by 401 Certification permittees, or 81% of the studied wetlands being "Sub-Optimal, Marginal or Poor," California has effectively lost wetlands functions over the last 25 years. This loss contradicts the Clean Water Act's and California's executive order imperatives of "no net loss of wetlands."
2. If the Region 9 Water Board is able to locate or compel filing of the missing Annual Reports, and we are able to review the backlog to red flag potentially failing wetlands, in the future the Water Board could employ our spreadsheet tickler system and preliminary review Top Sheets to tell them when Annual Reports are due, prepare a reminder form letter to

developers 60 days before the report is due, then follow up with a strong enforcement letter 30 days after the due date if the Annual Report is not filed. Our system should be self-tending with student intern manpower, which the Water Board had regularly available each year. The student interns could manage the tickler system and form letters, perform preliminary reviews, and a Work Sheet evaluation<sup>25</sup> of any post-construction wetlands mitigation reports that are filed on their watch. Our system, if allowed to be implemented, should take care of the problem of post-construction wetlands reports being ignored by the Region 9 Water Board, and possibly serve as a template for the other Regional Water Boards that are likely experiencing the same problem.

WETLANDS POST-COMPLETION REPORT WORKSHEET      YEAR 2

Project ID: <u>R9-2013-0057</u> PIN: <u>792699</u> WB Reviewer: <u>Leighton Chen</u> WB Staffer: <u>clradford</u>	Full Project Name: <u>Skyridge Development Project</u>																												
Date of Wetland Completion: <u>    </u> / <u>    </u> / <u>    </u> Date of Assessment Report: <u>3</u> / <u>1</u> / <u>16</u>	Project Physical Street Address (or closest streets): <u>near Trabuco Canyon Rd. &amp; Joplin Rd.</u> (lat/long: <u>33°39'36.05"N, 117°34'50.68"W</u> )																												
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Initial Pre-Construction CRAM Score:</td> <td style="text-align: center;"><u>72.4</u></td> <td style="text-align: center;"><u>73.8</u></td> <td style="text-align: center;"><u>67.0</u></td> <td style="text-align: right;">Average: <u>71.0</u></td> </tr> <tr> <td style="text-align: right;">This Report CRAM Score:</td> <td style="text-align: center;"><u>77</u></td> <td style="text-align: center;"><u>78</u></td> <td style="text-align: center;"><u>77</u></td> <td style="text-align: center;"><u>69</u></td> <td style="text-align: right;">Average: <u>75.25</u></td> </tr> </table>		Initial Pre-Construction CRAM Score:	<u>72.4</u>	<u>73.8</u>	<u>67.0</u>	Average: <u>71.0</u>	This Report CRAM Score:	<u>77</u>	<u>78</u>	<u>77</u>	<u>69</u>	Average: <u>75.25</u>																	
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This Report CRAM Score:	<u>77</u>	<u>78</u>	<u>77</u>	<u>69</u>	Average: <u>75.25</u>																								
List Individual Category CRAM Scores Below 63% in this Report: <ol style="list-style-type: none"> <li>1. <u>AA#1: Physical Structure Score [50]</u></li> <li>2. <u>AA#2: Physical Structure Score [62.5]</u></li> <li>3. <u>AA#3: Physical Structure Score [50]</u></li> <li>4. <u>AA#4: Physical Structure Score [37.5]</u></li> <li>5. _____</li> <li>6. _____</li> </ol>																													
List Performance Standards in this Report, and Their Statuses: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%;">Met</th> <th style="width: 10%;">Not Met</th> <th style="width: 20%;">Unassessed</th> </tr> </thead> <tbody> <tr> <td>1. <u>Flora-1: Survivorship 80%</u></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>2. <u>Flora-2: Dominance of natives 50%</u></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>3. <u>Flora-3: Dominance of exotics &lt;5%</u></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>4. _____</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>5. _____</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>6. _____</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table>			Met	Not Met	Unassessed	1. <u>Flora-1: Survivorship 80%</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. <u>Flora-2: Dominance of natives 50%</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. <u>Flora-3: Dominance of exotics &lt;5%</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Date of Most Recent Google Earth Photo: <u>2</u> / <u>9</u> / <u>16</u> Attach most recent Google Earth photo, outline wetlands on photo from Project Mitigation Plan Map, and comment on the following: <ol style="list-style-type: none"> <li>1. Plant Material: Healthy, Stressed, or Dead</li> <li>2. If Water Course was altered due to erosion or siltation</li> <li>3. If projected should be reviewed by Water Board Professional Staff</li> </ol> Comments: <u>Google Earth photo attached to topsheet; however, the photographs taken of each of the four Assessment Areas provide a much better outlook to the plant life, which seems to be thriving</u>																													

<sup>25</sup> The Top Sheet works! Our top sheet evaluation of the Skyridge project report (below), one of the 13 project reports produced by the WB, shows that our top sheet preliminary review works. It shows four of the project's Physical Structure CRAM scores falling below 63% in all four Assessment Areas, and "Not Met" and "Unassessed" check marks for the Flora 1 and Flora 3 performance standards. That means an intern would red flag this project for referral to a professional Water Board staff member for further inquiry and review.

3. In the unlikely event that it takes an excessive amount of time to parse out, then preliminarily review the post-completion wetland reports, the time records kept by my student employees to perform the reviews will serve as support for the Region 9 Water Board to request additional personnel to accomplish these important reviews and to assure “no net loss” of wetland functions in California.

### Enforcement Actions for August 2016

Enforcement Date	Enforcement Action	Entity/ Facility/ Location	Summary of Violations and Enforcement	Applicable Permit/Order Violated
08/17/2016	<a href="#">Administrative Civil Liability Order (ACLO) Order No. R9-2016-0064</a>	San Altos-Lemon Grove LLC, Valencia Hills Construction Project, Lemon Grove	ACLO in the amount of \$595,367 for deficient best management practices (BMPs) and unauthorized discharges of sediment laden storm water	National Pollutant Discharge Elimination System (NPDES) Construction General Permit Order No. 2009-0009-DWQ
08/26/2016	<a href="#">Notice of Violation (NOV) No. R9-2016-0187</a>	San Diego Unified School District, O Farrell Charter School, San Diego	Deficient BMP implementation	NPDES Construction General Permit Order No. 2009-0009-DWQ
08/19/2016	<a href="#">Investigative Order</a>	San Diego Unified Port, San Diego	Failure to report average daily population for determining compliance with payment of annual fees	NPDES Municipal Storm Water Permit Order No. R9-2013-0001
08/02/2016	Staff Enforcement Letter	California Metals, California Metals DBA Miller Metals, El Cajon	Deficient BMP implementation	NPDES Industrial General Permit Order No. 2015-0057-DWQ
08/11/2016	<a href="#">Staff Enforcement Letter</a>	BAE Systems San Diego Ship Repair Inc., San Diego	Several unauthorized discharges and failure to report exceedances of the toxicity limit	NPDES Order No. R9-2015-0034

### Enforcement Actions for August 2016

Enforcement Date	Enforcement Action	Entity/ Facility/ Location	Summary of Violations and Enforcement	Applicable Permit/Order Violated
08/11/2016	<a href="#">Staff Enforcement Letter</a>	Bosa Development California II Inc., Bosa Lot 5 Ash & Kettner, San Diego	Failure to submit discharge monitoring reports from November 2015 to June 2016	NPDES Ground Water Extraction General Order No. R9-2015-0013
08/11/2016	<a href="#">Staff Enforcement Letter</a>	Encina Wastewater Authority, Buena Sanitation District, Carlsbad Water Reclamation Facility, Shadowridge Water Reclamation Plant, Vista and Carlsbad	Failure to use appropriate Minimum Levels (MLs) in discharge monitoring reports for the Encina Ocean Outfall	NPDES Order No. R9-2011-0019
08/11/2016	<a href="#">Staff Enforcement Letter</a>	ABP 850 Coast Blvd., LLC, Encinitas	Failure to submit discharge monitoring reports for April 2016 and June 2016	NPDES Ground Water Extraction General Order No. R9-2015-0013
08/11/2016	<a href="#">Staff Enforcement Letter</a>	The City of San Diego, Fire Station No. 2 (Bayside), San Diego	Failure to submit discharge monitoring reports for May 2016- June 2016	NPDES Ground Water Extraction General Order No. R9-2015-0013

### Enforcement Actions for August 2016

Enforcement Date	Enforcement Action	Entity/ Facility/ Location	Summary of Violations and Enforcement	Applicable Permit/Order Violated
08/11/2016	<a href="#">Staff Enforcement Letter</a>	LMC East Village I Holdings, LLC, Little Italy, 460 16 <sup>th</sup> St., San Diego	Failure to submit discharge monitoring reports for May 2016- June 2016	NPDES Ground Water Extraction General Order No. R9-2015- 0013
08/11/2016	<a href="#">Staff Enforcement Letter</a>	Pinnacle Bayside Development US L.P., 15 <sup>th</sup> & Island, San Diego	Failure to submit discharge monitoring reports for June 2016	NPDES Ground Water Extraction General Order No. R9-2015- 0013
08/11/2016	<a href="#">Staff Enforcement Letter</a>	City of Escondido, HARRF discharge to San Elijo Ocean Outfall, Escondido	On April 4, 2016, the settleable solids instantaneous maximum was reported as 3.5 ml/L, exceeding the limit of 3.0 ml/L	NPDS Order No. R9- 2010-0086
08/11/2016	<a href="#">Staff Enforcement Letter</a>	City of Oceanside, Mission Basin Desalting Facility, Oceanside	On April 1 , 2016, the total suspended solids monthly mean was reported as 85.6 mg/L, exceeding the average monthly effluent limitation of 60.0 mg	NPDES Order No. R9-2011- 0016

### Enforcement Actions for August 2016

Enforcement Date	Enforcement Action	Entity/ Facility/ Location	Summary of Violations and Enforcement	Applicable Permit/Order Violated
08/11/2016	<a href="#">Staff Enforcement Letter</a>	General Dynamics, National Steel & Shipbuilding Co (NASSCO), San Diego	Unauthorized discharges of dust from portable vacuum, blast dust, and 40-50 gallons of waste water	NPDES Order No. R9-2009-0099, NPDES
08/11/2016	<a href="#">Staff Enforcement Letter</a>	San Diego Gas and Electric, Palomar Energy Center, Escondido	Failure to use appropriate MLs in discharge monitoring reports	NPDES Order No. R9-2012-0015
08/11/2016	<a href="#">Staff Enforcement Letter</a>	UC San Diego, Scripps Institution Of Oceanography, San Diego	Exceedances of chronic and acute effluent toxicity limitations	NPDES Order No. R9-2005-0008
08/12/2016	<a href="#">Staff Enforcement Letter</a>	Hubbs SeaWorld Research Institute, Agua Hedionda, Carlsbad	Unauthorized discharge of plastic biofilters to ocean and failure to enroll in general permit	California Water Code section 13260

### Enforcement Actions for August 2016

Enforcement Date	Enforcement Action	Entity/ Facility/ Location	Summary of Violations and Enforcement	Applicable Permit/Order Violated
08/15/2016	<a href="#">Staff Enforcement Letter</a>	T Brooks LLC, GW Extraction, iFly, Oceanside	Failure to submit discharge monitoring reports for May 2016 and June 2016	NPDES Ground Water Extraction General Order No. R9-2015-0013
08/15/2016	<a href="#">Staff Enforcement Letter</a>	SOCWA-San Juan Creek Ocean Outfall, City of San Clemente Segunda Deshecha, WRP, San Juan Capistrano GWTP Runoff Plant and Latham WWP, San Clemente, San Juan Capistrano and Dana Point	On March 12, 2016, there was a line break at the SOCWA 3A Reclamation Plant resulting in a spill of approximately 500 gallons of secondary effluent. It is noted that the spill was contained and did not leave the facility's boundary	NPDES Order No. R9-2012-0012
08/18/2016	Staff Enforcement Letter	Advanced Metal Forming Inc, San Diego	Deficient BMP implementation	NPDES Industrial General Permit Order No. 2015-0057-DWQ

**Enforcement Actions for August 2016**

<b>Enforcement Date</b>	<b>Enforcement Action</b>	<b>Entity/ Facility/ Location</b>	<b>Summary of Violations and Enforcement</b>	<b>Applicable Permit/Order Violated</b>
<b>08/31/2016</b>	Staff Enforcement Letter	Cal Pac Recycling, San Diego	Deficient BMP implementation	NPDES Industrial General Permit Order No. 2015- 0057-DWQ

Table 1: July 2016 - Summary of Public and Federal Sanitary Sewer Overflows in the San Diego Region

Responsible Agency	Collection System	Total Volume*	Total Recovered* (Gallons)	Total Reaching Surface Waters*	Percent Recovered (%)	Percent Reaching Surface Waters	Additional Details	Miles of Pressure Sewer	Miles of Gravity Sewer	Population in Service Area
Carlsbad MWD	Carlsbad MWD CS	255	255	0	100%	0%		4.5	282.0	69,420
		60	60	0	100%	0%		0.0	155.0	58,244
La Mesa City	City of La Mesa CS	90	90	0	100%	0%				
San Clemente City	City of San Clemente CS	13	10	0	77%	0%	1*	3.7	174.6	65,399
San Diego City	San Diego City CS (Wastewater Collection System)	450	450	450	100%	100%	2*			
		890	0	0	0%	0%	3*			
		2,900	2,600	300	90%	10%		145.0	3,002.0	2,186,810
		180	0	0	0%	0%	4*			
San Diego County Dept of Public Works	County of San Diego CS	100	20	0	20%	0%	5*	10.0	408.0	151,500
	Totals for Public Spills	4,938	3,485	750						
	Totals for Federal Spills	0	0	0						

\*Total Recovered plus Total Reaching Surface Waters does not always equal Total Volume for one or more of the following reasons: 1) a portion of the spill may have been discharged to land and not recovered, 2) a portion of the spill may have been discharged to a drainage channel and recovered (all of the volume discharged to a drainage channel whether recovered or not is considered reaching surface waters), and/or 3) a portion of the spill may have been discharged directly to surface waters and recovered (all of the volume discharged directly to surface waters whether recovered or not is considered reaching surface waters).

1\* 13 gallons were discharged to land. 10 gallons were recovered, and 3 gallons seeped into the ground and/or evaporated.

2\* 450 gallons were discharged to surface water and all 450 gallons were recovered.

3\* All 890 gallons seeped into the ground and/or evaporated.

4\* All 180 gallons seeped into the ground and/or evaporated.

5\* 100 gallons were discharged to land. 20 gallons were recovered, and 80 gallons seeped into the ground and/or evaporated.

Table 2: July 2016 - Summary of Private Lateral Sewage Discharges in the San Diego Region

Responsible Agency	Collection System	Total Volume*	Total Recovered*	Total Reaching Surface Waters*	Percent Recovered	Percent Reaching Surface Waters	Additional Details	Population in Service Area	Lateral Connections
		(Gallons)	(Gallons)	(Gallons)	(%)	(%)			
National City	City Of National City CS	100	100	0	100%	0%		58,967	8,000
		250	150	100	60%	40%			
		300	300	0	100%	0%			
San Diego City	San Diego City CS (Wastewater Collection System)	300	300	0	100%	0%		2,186,810	267,237
		138	72	0	52%	0%	1*		
		74	74	0	100%	0%			
		252	252	0	100%	0%			
San Diego County Dept of Public Works	County of San Diego CS	20	0	0	0%	0%	2*	151,500	33,600
Totals		1,434	1,248	100					

\*Total Recovered plus Total Reaching Surface Waters does not always equal Total Volume for one or more of the following reasons: 1) a portion of the spill may have been to land and not recovered, 2) a portion of the spill may have been to a drainage channel and recovered (all of the volume discharged to a drainage channel whether recovered or not is considered reaching surface waters), and/or 3) a portion of the spill may have been discharged directly to surface waters and recovered (all of the volume discharged directly to surface waters whether recovered or not is considered reaching surface waters).

1\* 138 gallons were discharged to land. 72 gallons were recovered, and 66 gallons seeped into the ground and/or evaporated.

2\* All 20 gallons seeped into the ground and/or evaporated.

Table 3: July 2016 - Summary of Transboundary Flows from Mexico into the San Diego Region

Location	Start Date	Total Volume	Total Recovered (Gallons)	Total Reaching Surface Waters	Percent Recovered	Percent Reaching Surface Waters (%)	Additional Details
Tijuana River	7/2/2016	1,320,000	0	1,320,000	0	100	Pump Station CILA's operation was partially affected on Saturday, July 2 and Monday, July 4, 2016 due to damage caused to its electrical wiring by construction equipment working on the City of Tijuana's mass transit system (Ruta Troncal). Pump Station CILA never ceased pumping. It is estimated that 380 liters per second overwhelmed the system during this time and spilled into the Tijuana River.
Tijuana River	7/4/2016	33,000	0	33,000	0	100	
Total Dry Weather		1,353,000	0	1,353,000	0	100	
Wet Weather <sup>2</sup>							
Tijuana River	n/a	n/a	n/a	n/a	n/a	n/a	No Transboundary Flows in July 2016 due to wet weather.
Total Wet Weather		n/a					

1 - Order No. R9-2014-0009 requires monthly reporting of all dry weather transboundary flows.

2 - Order No. R9-2014-0009 does not require monthly reporting of wet weather transboundary flows. Any information provided regarding these flows is voluntary.