

2025

Tijuana River Valley

Water Quality Monitoring Report



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Dear Reader,

Over the past year, our assessment has provided a comprehensive picture of water quality conditions within the Tijuana River Valley, highlighting the value of consistent, science-based monitoring to better understand pollution patterns and inform future action. In 2025, we identified three key takeaways:

- **The problem is persistent and complex.** Sewage contamination, chemical pollutants, and aquatic life threshold exceedances remain chronic and widespread throughout the lower watershed and estuary.
- **Industrial chemical detections indicate inadequate wastewater treatment at Tijuana's manufacturing "maquiladoras."** These pollutants are entering the sanitary sewer system or being discharged directly into surface waters.
- **Long-term monitoring is essential for protecting the watershed.** Consistent data collection helps document persistent pollution, identify emerging concerns, evaluate changes over time, and provide the foundation for informed action.

These insights would not be possible without the dedication of our staff, partners, and community members. Whether in the field or behind the scenes, their contributions generate the high-quality data needed to understand and protect local water quality.

This year is especially meaningful as we celebrate 30 years of protecting clean water. Long-term monitoring is essential for tracking pollution trends, identifying contamination sources, assessing risks to people and wildlife, and providing the science needed to guide investments into pollution reduction efforts and measure their success.

We hope this report provides a clearer understanding of water quality conditions in the Tijuana River Valley, the influencing factors, and our shared responsibility to protect this watershed for future generations.

**With gratitude,
Water Quality Monitoring Team**



ABOUT SAN DIEGO COASTKEEPER

Founded in 1995, San Diego Coastkeeper safeguards our region's coastal and inland waters through a strategic blend of community science, education, grassroots outreach, policy advocacy, and legal enforcement of environmental laws.

Fundamental Right to Clean Water

We are guided by the belief that humans and the environment share a fundamental right to clean water.

Inherent Value of Waterways and Ecosystems

We believe in the inherent value of San Diego's rivers, streams, canyons, and coastline, as well as the ecosystems and biodiversity they support.

Diverse Stakeholder Engagement

We are dedicated to engaging with diverse partners and stakeholders to protect and restore clean water for the communities and traditions that depend on it.

Fearless Advocacy

We are committed to addressing environmental threats directly, fearlessly, and on the basis of sound scientific and legal principles, even when doing so challenges popular opinion.

Strategic, Multifaceted Approach

We believe a strategic combination of science, advocacy, education, and community engagement is the most effective way to address existing and emerging water quality issues.

Mission:

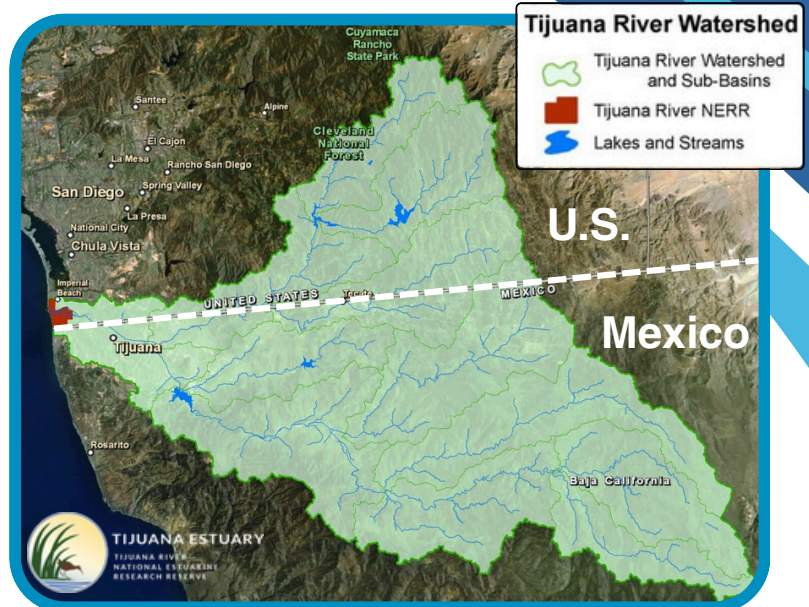
Protecting and restoring swimmable, drinkable, fishable waters in San Diego County.



THE TIJUANA RIVER WATERSHED

Crossing Borders

The Tijuana River Watershed covers approximately 1,750 sq mi (4,532 sq km), with **75% of the watershed in Mexico and 25% in the United States**. Its upper reaches feature steep, forested mountains, while the lower watershed includes diverse habitats such as chaparral, coastal sage scrub, riparian zones, and wetlands. Water flows across the Mexico / U.S. border, through the Tijuana Slough National Wildlife Refuge, and into the Pacific Ocean at the Tijuana River Mouth State Marine Conservation Area.



Credit: Tijuana River National Estuarine Research Reserve (TRNERR)

Rich in Biodiversity

The Tijuana Estuary (in red above) is **one of the largest coastal wetland systems in Southern California** and supports abundant native and migratory wildlife, including birds, fish, invertebrates, amphibians, reptiles, and mammals. Its wetlands, tidal channels, and shallow waters provide important feeding, nesting, resting, and nursery habitat. Rich biodiversity and home to rare flora and fauna, the estuary is protected under the [Ramsar Convention](#) as a wetland of international importance.

Why a Healthy Estuary Matters

When functioning under healthy conditions, the estuary can also contribute to coastal ecosystem resilience. Wetlands help buffer flooding, store and cycle nutrients and carbon, and naturally remove some contaminants through microbial degradation, plant uptake, sediment binding, and settling. **A healthy Tijuana River Estuary is important for protecting wildlife and the broader coastal environment.**



A TRANSBOUNDARY POLLUTION CRISIS

Sources of Pollution

The watershed has long been impacted by a transboundary pollution crisis driven by untreated sewage, urban runoff, industrial discharges, and stormwater flows crossing the Mexico / U.S. border. Pollution originates from:



Point Sources:

- Wastewater leaks and spills
- Industrial facilities including maquiladoras (export-oriented manufacturing plants along the border)



Nonpoint Sources:

- Stormwater runoff carrying contaminants, sediment, and trash from urbanized areas during rain events

As a result, a wide range of pollutants enter the watershed, including fecal bacteria, industrial chemicals, and emerging contaminants such as PFAS, or “forever chemicals.” Even when detected at relatively low concentrations, many of these pollutants are toxic and indicate significant human-driven impacts on water quality.

Downstream Effects

The insufficient treatment of sanitary and industrial wastewater, weak enforcement of environmental regulations, rapid development, and improper disposal of waste into drainage systems have compounded the crisis. As a result, **billions of gallons of raw sewage and contaminated water carrying industrial pollutants and trash flow** into the Tijuana River Estuary and the Pacific Ocean each year. These discharges have caused:

- Nearly four straight years of beach closures in Imperial Beach, and frequent advisories and closures north to Coronado
- Chronic public health impacts for South County residents near the Tijuana River Valley
- Ongoing degradation of coastal and marine ecosystems from sediment and contaminated flows



Staff at the Most Endangered Rivers Press Conference

INFRASTRUCTURE CHALLENGES

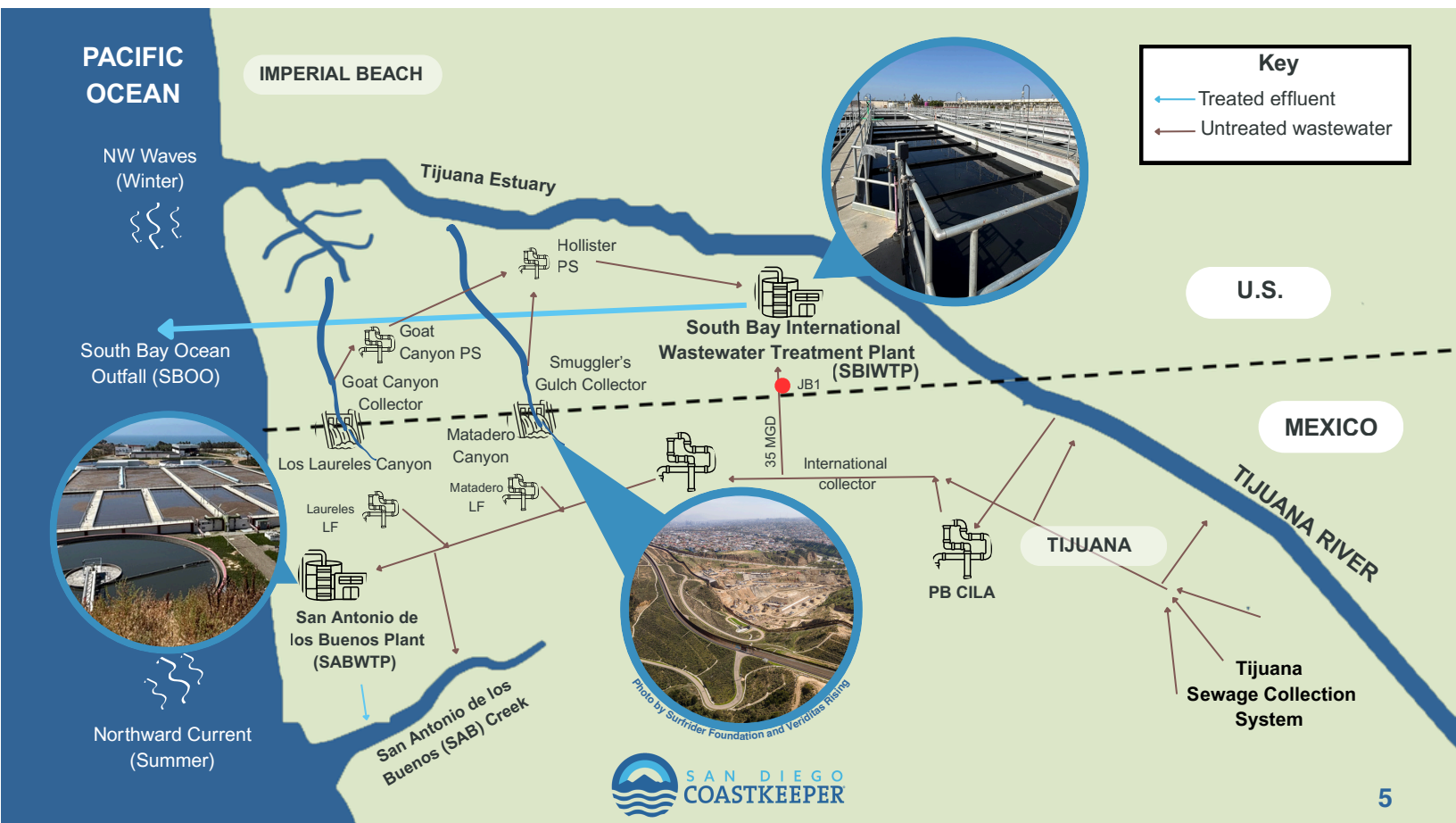
Century of Concern

Concerns over sewage contamination date back to the early 20th century. Understanding the infrastructure built since then, and where it has failed, helps explain how this crisis has persisted for nearly a century. Here is a snapshot of key milestones. For a more complete look at the history and for continuous developments on the Tijuana Sewage Crisis, visit our Tijuana River webpage: www.sdcoastkeeper.org/tijuana-river-sewage/.

Year	Milestone
1934	The International Boundary and Water Commission (IBWC) formalizes treaty agreements between the U.S. and Mexico to address pollution in the Tijuana River.
1997	Construction of the South Bay International Wastewater Treatment Plant (SBIWTP) in the U.S. is completed, treating up to 25 million gallons per day (MGD) of sewage from Tijuana and discharging treated effluent into the ocean via the 3-mile-long South Bay Ocean Outfall (SBOO).
2023	Rapid population growth in Tijuana, coupled with aging and neglected wastewater infrastructure on both sides of the border, has intensified the crisis. SBIWTP has had significant operational challenges and was nearly destroyed by severe weather.
2025	Mexico's San Antonio de los Buenos Wastewater Treatment Plant (SABWTP), south of Tijuana, comes back online after 10+ years of bypassing raw sewage directly into the ocean.

A Complex System

This map traces wastewater infrastructure on both sides of the border, from treatment plants to outfalls, showing where treated effluent and untreated flows ultimately go.



PROJECT PURPOSE

San Diego Coastkeeper (SDCK) monitors water quality in the Tijuana River watershed to track the impacts of the transboundary pollution crisis and generate data that drives binational advocacy for wastewater infrastructure improvements.

Due to hazardous conditions at monitoring sites, this program is led by trained SDCK staff rather than volunteers. Staff collect targeted water samples to track conditions in the lower watershed.

The data is shared with the public through our [interactive data map](#). It also supports policy and legal advocacy before local, state, and federal agencies and elected officials, helping to secure expanded treatment capacity, greater transparency, and long-term operations and maintenance funding for binational wastewater infrastructure. Data is also uploaded to the California State Water Resources Control Board's California Environmental Data Exchange Network (CEDEN), where it helps inform future regulatory action.

Program goals include:

Environmental Stewardship

Use consistent water quality monitoring to support the protection and long-term ecological health of the Tijuana River watershed and estuary.

Community Partnerships

Work alongside binational and regional partners, including Tijuana Waterkeeper/PFEA, our partner in Mexico, through the [One Coastal Community](#) initiative and the Tijuana River Coalition, to advance shared understanding and collective action on watershed protection.

Community Engagement

Connect the public to the Tijuana River watershed and the crisis affecting it through events, campaigns, and accessible, bilingual outreach.

Active Monitoring

Maintain a visible, ongoing watchdog presence in a watershed where hazardous conditions make regular public oversight difficult.

Policy & Legal Advocacy

Advance binational infrastructure solutions by briefing legislators, engaging public agencies, and advocating for expanded treatment capacity and long-term funding in both the U.S. and Mexico.



METHODS

Monitoring is conducted in teams of two to three staff members who are trained in water quality science and field safety, including the proper use of necessary personal protective equipment (PPE). This includes half-face respirators equipped with 60926 Multi Gas/Vapor Cartridges/P100 filters to reduce exposure to hazardous gases, such as hydrogen sulfide, and aerosolized pathogens. Staff utilize standardized sampling methods following a Quality Assurance Project Plan (QAPP).

Routine Measurements:



In-Field

Temperature, pH, Dissolved Oxygen, Salinity, & Turbidity



Bacteria

E. coli



Metals

Arsenic, Cadmium, Copper, Lead, Selenium, Zinc, as well as Cyanide



Semi-Volatile & Volatile Organic Compounds



Polychlorinated Biphenyls (Not Detected)



Pesticides

Organochlorines (Dec - Jun)
Pyrethroids (Jul - Present)

See [Appendix 1: Analyte List](#)

Special Projects:



Per- and polyfluoroalkyl substances (PFAS)

See [Appendix 1](#)



Pathogens

Norovirus,
Human Adenovirus,
Hepatitis A

Sampling Process:

1

Sites - Two to four sites, depending on flow, are monitored monthly.

2

In-Field Measurements - Staff take in-situ measurements of temperature, pH, dissolved oxygen, salinity, and turbidity, as well as visual observations of water condition, trash presence, weather, and wildlife activity. Equipment is calibrated before sampling events and disinfected between sites to prevent cross-contamination.

3

Sample Collection - Water samples for laboratory analysis include *E. coli* bacteria, metals, cyanide, semi-volatile and volatile organic compounds (SVOCs and VOCs), polychlorinated biphenyls (PCBs), and pyrethroid pesticides. Sampling gear is disinfected between sites.

4

Preserve and Transport - Samples are placed on ice, logged using Chain-of-Custody forms, and delivered to a certified laboratory.

5

Certified Laboratory Analysis - Samples are analyzed using EPA-approved methods at a California ELAP-certified laboratory to ensure accuracy and comparability.

6

Data Management - The data goes through quality assurance checks and is shared publicly on our website, as well as uploaded to the California State Water Resources Control Board's California Environmental Data Exchange Network (CEDEN).



SITE DESCRIPTION

San Diego Coastkeeper monitors water quality throughout the lower Tijuana River watershed, the final stretch after the river crosses into the U.S. and before it reaches the Pacific Ocean. The four monitoring sites capture conditions in the river and surrounding areas that drain into it, documenting water and pollution moving toward the estuary.

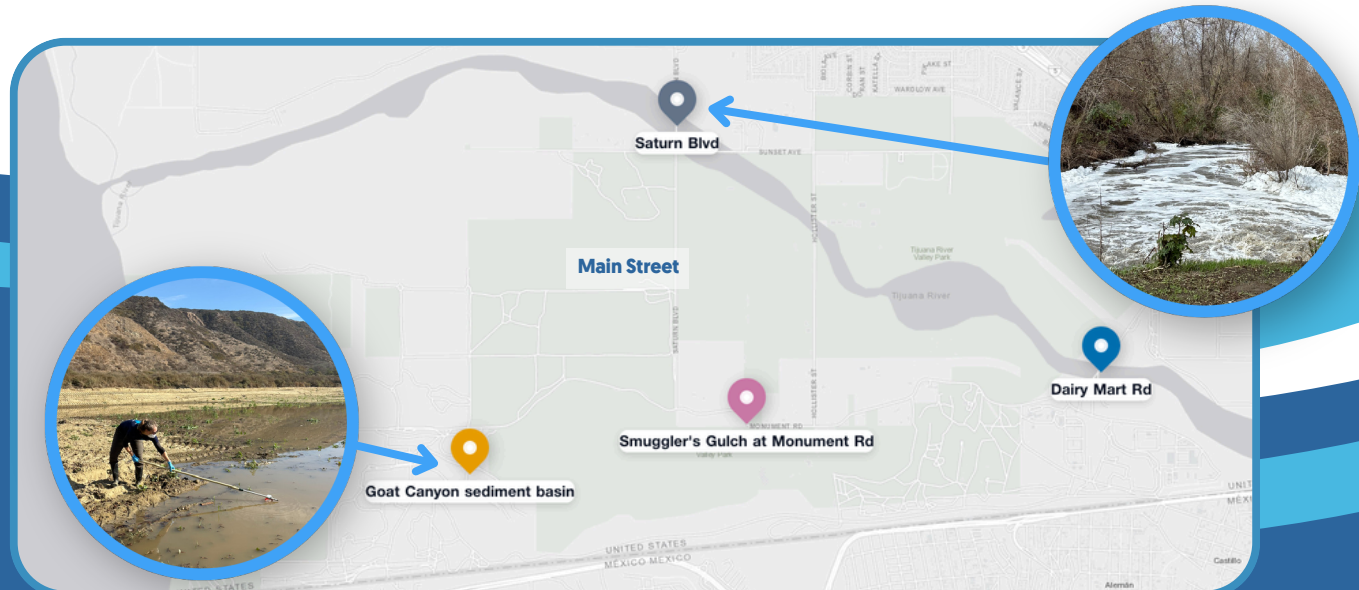


Our Monitoring Network

We collect monthly water samples at two to four sites within the lower watershed, falling into two categories: mainstem river locations and canyon collectors. Canyon collector sites are checked at each monitoring event and sampled only when actively flowing or overflowing, the conditions under which untreated sewage and pollution are most likely to enter the river and estuary.

Site Types

2	Mainstem River	• Dairy Mart Road (0.3 mi, 0.48 km, from the border) • Saturn Boulevard ("Hotspot" where pollutants like hydrogen sulfide gas are released into the air)
2	Canyon Collectors	• Smuggler's Gulch at Monument Road (when flowing) • Goat Canyon Sediment Control Basin (when overflowing)



Meet The Gray Whale

Graciously donated by the Page Family Foundation, this van was unofficially nicknamed "*E. robustus*," or "The Gray Whale," by our Science Director and has earned legendary status at Coastkeeper. Equal parts mobile laboratory, gear hauler, and volunteer shuttle, *E. robustus* spends its days roaming the watersheds of San Diego County with a belly full of sampling gear and a mission to protect clean water. It may not collect samples itself, but it's a critical member of our team.



FIELD OBSERVATIONS & MEASUREMENTS

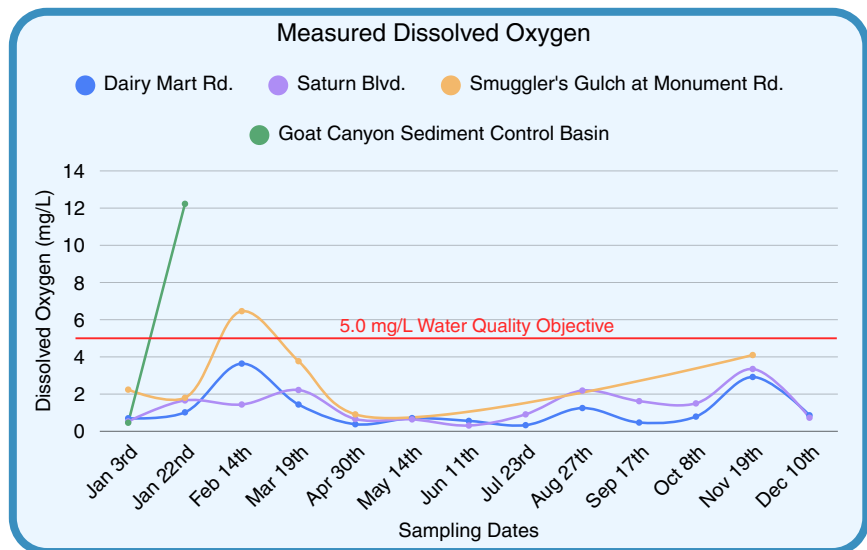
Routine field observations and measurements provide a snapshot of water quality conditions in the Tijuana River Valley at each monitoring event.

Visual & Olfactory Observations

Field observations documented **visible and olfactory indicators of poor water quality**. Water in the Tijuana River was frequently brown, gray, or green in color and often had a strong hydrogen sulfide odor, consistent with sewage-impacted conditions. Additionally, large amounts of foam were frequently observed at Saturn Blvd. On one occasion, black water was documented flowing from Smuggler's Gulch, and approximately one hour later, the flow had changed to gray. These observations illustrate the highly variable and visibly impaired conditions that can occur in the river valley.

Dissolved Oxygen

Dissolved oxygen is essential for aquatic life. Low concentrations can stress organisms, reduce habitat suitability, and, at severe levels, cause organisms to avoid or die in affected areas. Chronic oxygen depletion can also shift aquatic communities toward species more tolerant of low-oxygen conditions.



Results:

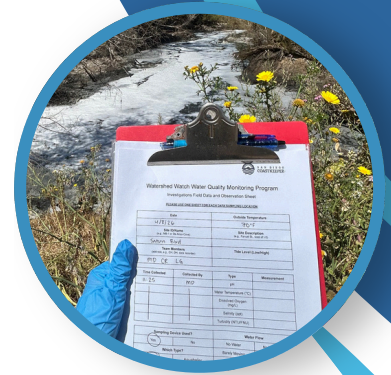
Dissolved oxygen was chronically low throughout the Tijuana River Valley, frequently falling below the 5.0 mg/L minimum water quality objective established in the California Regional Water Quality Control Board's Basin Plan for the San Diego Region. At sites with sufficient data, annual mean concentrations were approximately 1 – 3 mg/L, well below the Basin Plan's 7.0 mg/L annual mean criterion. The Goat Canyon sediment control basin had only two measurements and was excluded from the annual mean analysis.

Turbidity

High turbidity reduces light penetration, limiting photosynthesis by aquatic plants and algae. Suspended sediment can smother aquatic habitat, interfere with feeding and reproduction, and transport pollutants and pathogens attached to sediment particles.

Results:

Turbidity was frequently elevated, ranging from 14.9 to over 1,000 NTU, with many measurements in the hundreds, well above the Basin Plan's 20 NTU water quality objective.



BACTERIA

E. coli is used as an indicator of potential pathogen presence in inland waters, as established in the California Regional Water Quality Control Board’s Basin Plan for the San Diego Region. Monitoring *E. coli* helps assess public health risk and water quality conditions.



Results:

At all four sites, bacteria levels exceeded the laboratory’s measurable range for most of the year. Alarmingly high *E. coli* concentrations in the Tijuana River Valley result from untreated and partially treated sewage in the system due to infrastructure failures, overflows, and treatment plant disruptions on both sides of the Mexico / U.S. border. These sewage flows contribute to elevated fecal bacteria and airborne contaminants that **pose significant public health risks to nearby communities.**

Site	Jan 3rd	Jan 22nd	Feb 14th	Mar 19th	Apr 30th	May 14th	Jun 11th	Jul 23rd	Aug 27th	Sep 17th	Oct 8th	Nov 19th	Dec 10th
A													
B													
C													
D													

At the Saturn Blvd. location, turbulent water flowing from pipes over boulders and rock riprap can further increase the release of hydrogen sulfide and other harmful gases into the surrounding air, affecting nearby residents and public schools.

Storm-driven runoff and re-suspension of contaminated sediments can further elevate concentrations during and following high-flow events. Smuggler’s Gulch and the Goat Canyon sediment control basin were sampled only during flow conditions.

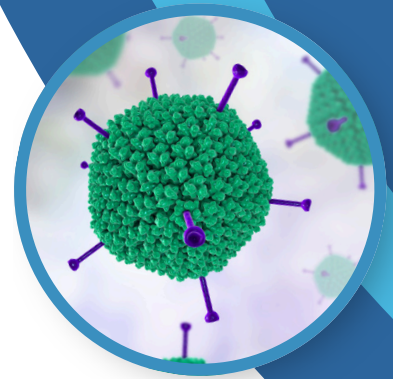
KEY

- A = Dairy Mart Rd.
- B = Saturn Blvd.
- C = Smuggler’s Gulch at Monument Rd.
- D = Goat Canyon Sediment Control Basin
- ≥ 10,000 MPN/100 mL
- ≥ 100,000 MPN/100 mL
- ≥ 1,000,000 MPN/100 mL
- Beyond Laboratory’s Measurable Range
- Not Sampled / No Flow



PATHOGENS

In partnership with San Diego State University's [SafeWaTER Lab](#), water samples collected throughout the Tijuana River Valley from March 2025 through January 2026 were analyzed for viral pathogens, including norovirus (genogroup II), human adenovirus (types 40 and 41), and hepatitis A virus, to better understand public health risks associated with sewage contamination.



Results:

The following findings indicate **persistent, year-round human viral contamination in the Tijuana River Valley**, with somewhat seasonal variation among viruses. Saturn Blvd. and Dairy Mart Rd. were sampled more frequently than other sites due to limited flow elsewhere, and generally showed the highest viral concentrations.

Norovirus

Detected in all samples, with the highest concentrations observed April through September.

Site	Mar 19th	Apr 30th	May 14th	Jun 11th	Jul 23rd	Aug 27th	Sep 17th	Oct 8th	Nov 19th	Dec 10th	Jan 28th
A	Red	Dark Red	Dark Red	Dark Red	Dark Red	Dark Red	Dark Red	Red	Red	Red	Yellow
B	Red	Dark Red	Dark Red	Dark Red	Dark Red	Red	Dark Red	Red	Red	Red	Red
C	Red	Dark Red	Grey	Grey	Grey	Grey	Grey	Grey	Red	Grey	Grey
D	Grey	Dark Red	Red	Red	Grey	Grey	Grey	Grey	Red	Grey	Grey

KEY

A = Dairy Mart Rd.
B = Saturn Blvd.
C = Smuggler's Gulch at Monument Rd.
D = Goat Canyon Canyon Collector at Border

Yellow = ≥ 1 copies/mL
Orange = ≥ 10 copies/mL
Red = ≥ 100 copies/mL
Dark Red = $\geq 1,000$ copies/mL
Grey = Not detected
Light Grey = Not Sampled / No Flow

Adenovirus

Detected in all but one sample throughout the monitoring period.

Site	Mar 19th	Apr 30th	May 14th	Jun 11th	Jul 23rd	Aug 27th	Sep 17th	Oct 8th	Nov 19th	Dec 10th	Jan 28th
A	Red	Red	Dark Red	Dark Red	Grey	Dark Red	Red	Red	Red	Dark Red	Dark Red
B	Red	Red	Red	Red	Orange	Red	Red	Red	Orange	Dark Red	Dark Red
C	Red	Red	Grey	Grey	Grey	Grey	Grey	Grey	Orange	Grey	Grey
D	Grey	Red	Red	Orange	Grey	Grey	Grey	Grey	Red	Grey	Grey

Hepatitis A

Detected less frequently than norovirus and adenovirus, and not detected after October.

Site	Mar 19th	Apr 30th	May 14th	Jun 11th	Jul 23rd	Aug 27th	Sep 17th	Oct 8th	Nov 19th	Dec 10th	Jan 28th
A	Orange	Orange	Failed Field Blank	Red	Orange	Red	Orange	Orange	Grey	Grey	Grey
B	Red	Orange	Failed Field Blank	Orange	Orange	Orange	Red	Orange	Grey	Grey	Grey
C	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
D	Grey	Orange	Failed Field Blank	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey



METALS



Water samples were analyzed for a suite of metals, including arsenic, cadmium, copper, lead, selenium, and zinc; as well as cyanide. While naturally occurring in the environment, elevated concentrations can result from industrial and wastewater discharges, and urban runoff. Routine monitoring can help assess potential risks to aquatic ecosystems and human health.

Acute toxicity threshold exceedances indicate concentrations high enough to potentially cause severe effects or mortality in sensitive aquatic organisms over a relatively short timeframe, while chronic exceedances indicate concentrations that may cause harm with longer-term exposure.

Results:

Copper exceeded acute thresholds for toxicity to aquatic life in 41% of samples and chronic thresholds in 68%, while zinc exceeded both acute and chronic thresholds in 21% of samples.

Copper

All Sites

Acute Toxicity:
41% Fail



Pass
Fail

Chronic Toxicity:
68% Fail



Pass
Fail

Zinc

All Sites

Acute Toxicity:
21% Fail



Pass
Fail

Chronic Toxicity:
21% Fail



Pass
Fail

Lead exceeded chronic thresholds in 12% of samples, selenium exceeded acute threshold objectives in 3% of samples, and cyanide exceeded acute and chronic thresholds in 3% and 18% of samples, respectively.

Potential Sources:

Elevated copper and zinc are likely the result of inputs from urban runoff, wastewater, and upstream industrial activities. Exceedances generally increased following rainfall, though not consistently, suggesting contributions from both storm-driven and persistent dry-weather sources.

Copper Sources



Brake Pads



Building Materials



Industrial Materials



Wastewater Discharge

Zinc Sources



Tire wear



Galvanized surfaces



Industrial Materials



Wastewater Discharge

SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs)

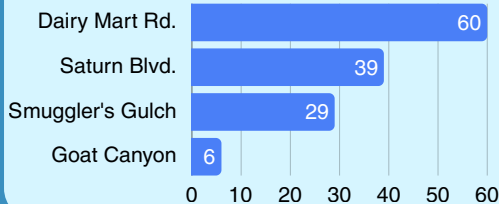


SVOCs are carbon-based chemicals that can persist in water and sediment, and can harm aquatic life and pose human health risks, including cancer and endocrine disruption. Samples are analyzed for 68 SVOCs, which should be removed through treatment processes before industrial and municipal discharges enter the Tijuana River Valley. A complete analyte list is provided in [Appendix 1](#).

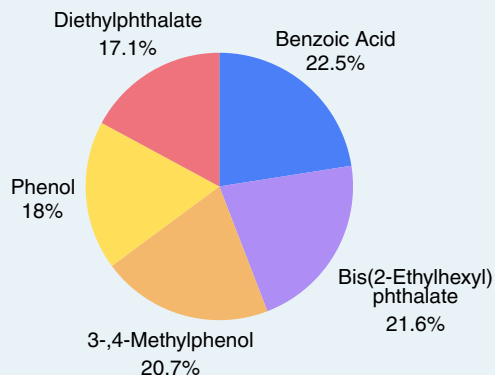
Results:

Benzoic acid was detected in 74% of the 2025 samples, and in one instance at a concentration approaching 500 µg/L. **This highlights substantial inputs from sources such as sewage treatment plants and industrial wastewater discharges.** While some detected SVOCs have established water quality thresholds that were generally not exceeded, many, such as benzoic acid, lack surface water criteria. Continued monitoring is needed to track pollution trends, identify sources, and support watershed management. Smuggler's Gulch and the Goat Canyon sediment control basin were sampled only during flow conditions and were evaluated using a smaller dataset.

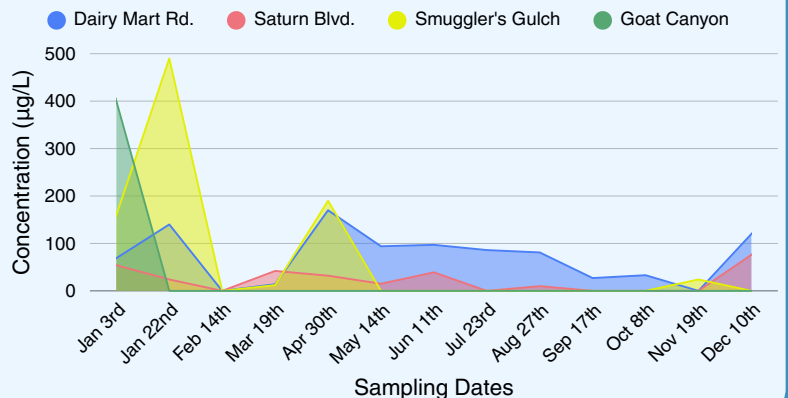
Total Number of SVOC Detections



Top 5 Most Commonly Detected SVOCs



Benzoic Acid: The Most Detected SVOC



Common Sources:



Urban Runoff: asphalt runoff, brake and tire wear, motor oil, pesticides



Industrial Discharge: chemical manufacturing, plastics production, petroleum and asphalt production, pesticide production



Wastewater: personal care products, food and beverage preservatives, pharmaceutical residues, cleaners and detergents

VOLATILE ORGANIC COMPOUNDS (VOCs)

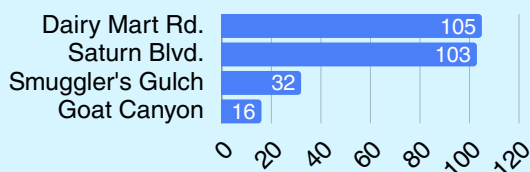


VOCs are carbon-based chemicals that readily evaporate into the air, although some are partially soluble in water. Continuous industrial and urban inputs, as well as atmospheric deposition, can maintain their presence in aquatic environments. Certain VOCs can harm aquatic life and pose human health risks, including respiratory irritation, nervous system effects, and cancer. Samples are analyzed for 68 VOCs. A complete analyte list is provided in [Appendix 1](#).

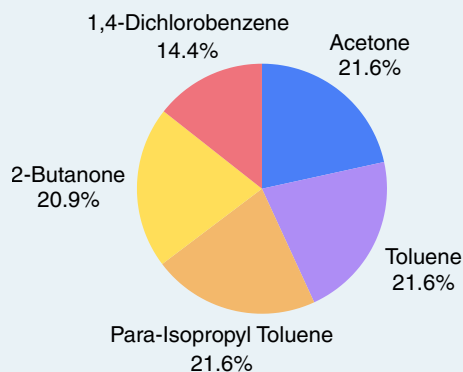
Results:

More VOCs were detected than SVOCs in 2025. Of the five most frequently detected VOCs, three were tied for the highest number of detections, while acetone reached the highest concentration (2,000 µg/L). These detections are notable because many VOCs readily evaporate from surface water, suggesting ongoing inputs from wastewater, industrial sources, and urban runoff. No federal or California surface water quality criteria exist for acetone or many other VOCs, in part because limited information is available to establish criteria for chemicals not typically expected to persist in surface water. Continued monitoring is important for tracking pollution trends, identifying potential sources, and informing watershed management. Smuggler's Gulch and the Goat Canyon sediment control basin were sampled only during flow conditions and evaluated using a smaller dataset.

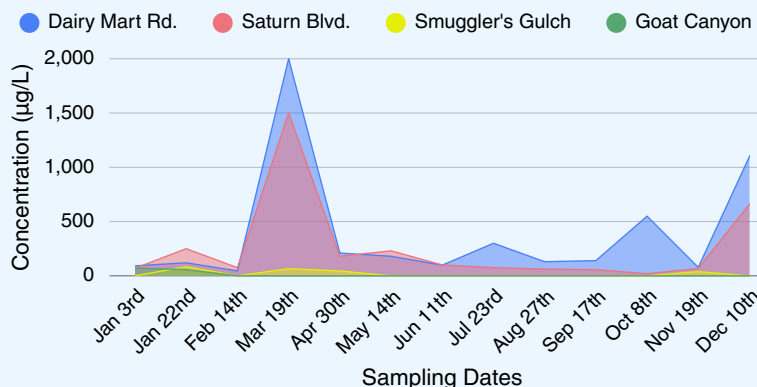
Total Number of VOC Detections



Top 5 Most Commonly Detected VOCs



Acetone: Highest Observed Concentrations of the Commonly Detected VOCs



Common Sources:



Urban Runoff: oil residues, fuel spills, vehicle emissions



Industrial Discharge: solvents, degreasers, paints and coatings, adhesives, fuel refining, chemical manufacturing



Wastewater: cleaners and solvents, disinfectants, fragrances, household chemicals

PESTICIDES

Pesticides enter surface water through runoff from agricultural and urban areas. They can have detrimental effects on aquatic communities, particularly when organisms with varying sensitivities are exposed to mixtures of contaminants with different levels of bioavailability and toxicity. Monitoring pesticide occurrence is an important tool for tracking pollution and informing watershed management.



Acute toxicity threshold exceedances indicate concentrations high enough to potentially cause severe effects or mortality in sensitive aquatic organisms over a relatively short timeframe, while chronic exceedances indicate concentrations that may cause harm with longer-term exposure.

Results:

Pesticide monitoring initially focused on legacy organochlorine pesticides due to their historical use, environmental persistence, and strong tendency to bind to sediments.

However, no organochlorine pesticides were detected in surface water samples, even following storm events when sediment was assumed to be resuspended in the water column. In July, efforts shifted to pyrethroid pesticides, which are currently more widely used in agricultural and urban settings.

Cypermethrin

All Sites

Acute Toxicity:
79% Fail



Pass
Fail

Chronic Toxicity:
79% Fail



Pass
Fail

cis / trans Permethrin

All Sites

Acute Toxicity:
43% Fail



Pass
Fail

Chronic Toxicity:
43% Fail



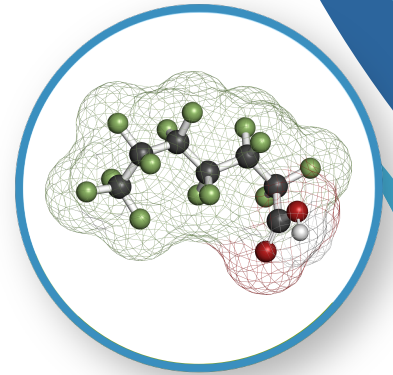
Pass
Fail

Cis- and trans-permethrin detections occurred July through September, whereas cypermethrin was detected relatively consistently throughout the monitoring period. **When detected, concentrations of both compounds exceeded their respective acute and chronic toxicity thresholds for aquatic life.**



PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

PFAS are a large group of human-made chemicals that have been used in a wide variety of manufacturing and consumer products since the 1950's. Many of these compounds are used for heat resistance, repelling water and oil, creating durable coatings, and adhesiveness.



Why Do We Care?

PFAS are often referred to as “forever chemicals” because of their resistance to fully break down and can persist in the environment for years or even decades. As a result, they are also difficult to treat or remove, which affects ecological health and can lead to toxicity to aquatic life.

Some PFAS chemicals can accumulate in our bodies over time. Because PFAS are found in many everyday products and are persistent in the environment, exposure is widespread. Certain PFAS have been linked to cancer and reproductive, immune, and developmental effects.

Their persistence and widespread use make PFAS a growing concern for both environmental and human health.



How Do They Enter The Environment?

PFAS-containing products used in our everyday lives can lead to these chemicals entering landfills and wastewater systems, which eventually drain into our waterways.

This can lead to PFAS in the soil, surface and groundwater, and air. We can then be further exposed through food consumption, drinking water, or inhaling PFAS-contaminated dust particles.



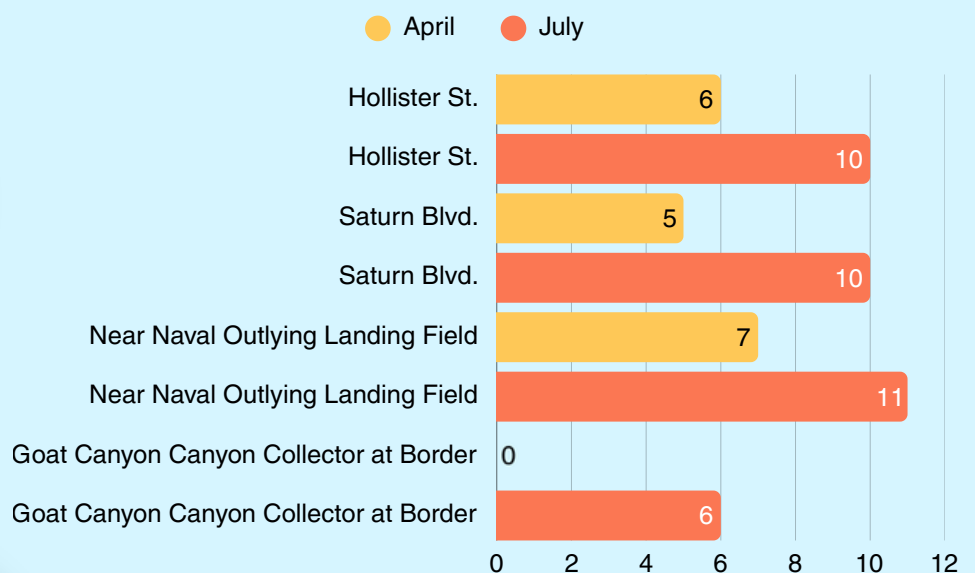
PFAS RESULTS

We conducted two rounds of PFAS sampling at four locations throughout the Tijuana River Valley, once in spring and once in summer. Sampling locations included both regularly visited sites and targeted sites to provide a broader watershed coverage. A complete list of the 49 compounds analyzed is provided in [Appendix 1](#).

Results:

Both legacy and newer replacement PFAS compounds were detected in the water samples, suggesting contributions from multiple historical and ongoing sources throughout the watershed. Most detections occurred at concentrations between 10 and 50 ng/L, with approximately 25% occurring between 1 and 10 ng/L. While PFAS concentrations varied among compounds, these levels are generally considered elevated relative to typical background concentrations in surface water and are consistent with continued inputs from human activities such as wastewater discharges, urban runoff, and industrial sources.

Number of Detected Compounds



A greater number of detections were observed during the drier sampling period, highlighting non-stormwater sources that may contribute PFAS to the watershed under varying flow conditions.

PROGRAM ACHIEVEMENTS

This program has been successful in advancing both policy change and public awareness around the Tijuana River sewage crisis, drawing on consistent water quality data to inform advocacy and engage the community in protecting the watershed.



ADVOCACY

Settled our Clean Water Act lawsuit against the International Boundary and Water Commission (IBWC) following the South Bay International Wastewater Treatment Plant's (SBIWTP) full rehabilitation, which ended polluted discharges into the ocean from this facility.

Two new binational agreements accelerated infrastructure timelines: a July 2025 Memorandum of Understanding (MOU) speeding up remaining Minute 328 projects, and December 2025's Minute 333, adding new operations and maintenance (O&M) funding, a Tijuana infrastructure master plan, and a feasibility study to expand the San Antonio de los Buenos (SAB) plant to 43 million gallons per day (MGD).

Filed a petition under the U.S.-Mexico-Canada Agreement (USMCA) with the Commission for Environmental Cooperation (CEC), highlighting Mexico's failure to implement and enforce its own clean water laws in Tijuana.

Secured funding from the County of San Diego to fix the Saturn Blvd. river crossing in 2027; this hotspot is where harmful hydrogen sulfide gas is aerosolized and impacts local residents and schools.

As a Tijuana River Coalition member, helped secure nearly \$800 million to double the South Bay plant's capacity to 50 MGD by 2031.

COMMUNITY ENGAGEMENT

Tijuana River Action Month (TRAM) & Latino Conservation Week (LCW)

— Joined both binational and Latino-community-focused campaigns, co-leading a watershed walk and co-hosting a film screening and panel

Tijuana River Coalition — Active member alongside YMCA Camp Surf, Surfrider's Clean Border Water Now, Outdoor Outreach, and Un Mar de Colores

San Diego Climate Week

— Served as Community Partner, co-leading the South Bay Anchor Event at the Tijuana Estuary

Field Trips — Hosted site visits for community groups and officials, including the California Natural Resources Agency's (CNRA) 2025 30x30 Summit

Binational Resilience Initiative (BRI) — Ongoing data-sharing partnership with Tijuana Waterkeeper/Proyecto Fronterizo through OneCoastalCommunity.org



FUTURE ACTIONS & RECOMMENDATIONS

Coastkeeper is committed to monitoring the Tijuana River through 2026 with current resources and is seeking funding to continue through 2027. At least two years of data would provide a robust dataset to assess the efficacy of recent infrastructure repairs and inform future advocacy to compel the additional action still needed in the U.S. and Mexico to resolve this ongoing environmental and public health crisis.



Photo by Surfrider Foundation and Veriditas Rising

Recommendations:

Mexico must identify and take enforcement action against industrial facilities discharging toxic industrial wastewater into the Tijuana River.

Mexico must commit funding and resources to meet its obligations under Minutes 328 and 333 of the USMCA Treaty to repair its sewage infrastructure.

U.S. state and federal authorities must identify American companies operating maquiladoras in Tijuana, share that information publicly, and hold those companies accountable for their contribution to industrial pollution of the river.

Additional federal funding is needed to expedite the expansion and long-term operation and maintenance of the SBIWTP. The current timeline to reach 50 MGD by 2031 must be accelerated to protect public health and reduce river flows that continue to cause beach closures in Imperial Beach and Coronado.

The U.S. and Mexico should coordinate to fund and implement wastewater recycling for potable use, reducing polluted river flows, avoiding reliance on costly and environmentally harmful desalination, and easing Tijuana's dependence on the shrinking Colorado River supply.

Mexico must implement better trash and sediment controls. The Tijuana River Trash Boom captured over 1,500 tons of trash in the 2025–2026 wet season alone, and heavily impacted sections of the river have seen sediment levels rise by as much as 10 feet, dramatically affecting the estuary.



Photo Credit: John McCauley

ACKNOWLEDGEMENTS

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Program Funders

- Page Family Foundation
- San Diego Foundation

Community Partners

We are grateful to collaborate with a wide range of groups and organizations to protect and restore the Tijuana River watershed in this transboundary region. Partners include those we've worked with on events, coalition meetings, advocacy, workshops, sampling, and grants:

- [Tijuana River Coalition](#) and member organizations
- [Clean Border Water Now](#) (CBWN) with Surfrider San Diego
- [San Diego Bird Alliance](#)
- [The Natural History Museum](#) (The Nat)
- [U.S. Fish and Wildlife](#) (USFW)
- [CA State Parks](#)
- [Tijuana River National Estuarine Research Reserve](#) (TRNERR)
- [County of San Diego Department of Public Works](#)
- [San Diego County Parks and Recreation](#)
- [San Diego State University SafeWaTER Lab](#)
- Binational Resilience Initiative (BRI) Partners
 - [Tijuana Waterkeeper/Proyecto Fronterizo de Educación Ambiental](#) (PFEA)
 - [Dr. Mladenov from San Diego State University](#)
 - Doctora Mercedes Oropeza - Instituto Tecnológico de Tijuana

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Get Involved

Create an account on
our volunteer platform:



<https://sdcoastkeeper.galaxydigital.com>

Get monthly volunteer
opportunities sent to
your inbox:



<https://bit.ly/4mEq7ve>