Attachment A to Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order No. R9-2025-0053

Lake Hodges March 2023 Sanitary Sewer Overflow

Penalty Calculation Methodology

A. Enforcement Policy Background

The State Water Resources Control Board (State Water Board) developed a 2017 Water Quality Enforcement Policy (2017 Enforcement Policy)¹ with a goal to protect and enhance the quality of the waters of the State by defining an enforcement process that addresses water quality problems in a fair, efficient, effective, and consistent manner. According to the 2017 Enforcement Policy, enforcement is a critical component in creating the deterrence needed to encourage the regulated community to anticipate, identify, and correct violations. Formal enforcement should always result when a noncompliant member of the regulated public begins to realize a competitive economic advantage over compliant members of the regulated public. Formal enforcement should be used as a tool to maintain a level playing field for those who comply with their regulatory obligations by setting appropriate civil liabilities for those who do not.

On December 5, 2023 and August 20, 2024, the State Board adopted Resolution Nos. 2023-0043 and 2024-0027, which adopted the 2024 Water Quality Enforcement Policy (2024 Enforcement Policy).² The 2024 Enforcement Policy was approved by the Office of Administrative Law and become effective on November 7, 2024. The San Diego Regional Water Quality Control Board's (San Diego Water Board) Prosecution Team (Prosecution Team) developed the administrative civil liability based on the 2017 Enforcement Policy. However, the 2024 Enforcement Policy was used to the extent it provides clarifications or procedural changes to the 2017 Enforcement Policy. (*See* 2024 Enforcement Policy, Appendix D.)

² The 2024 Enforcement Policy is available at:

¹ The 2017 Enforcement Policy, which was in effect at the time of the alleged violation, is available at:

https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2017/040417_9_fi nal%20adopted%20policy.pdf.

https://waterboards.ca.gov/water_issues/programs/enforcement/docs/2024/2024-enforcementpolicy.pdf.

California Water Code (Water Code) section 13385(e) requires the San Diego Water Board to consider several factors in determining administrative civil liability, such as the potential for harm to the environment, and a Discharger's culpability and ability to pay. The 2017 and 2024 Enforcement Policies incorporate these factors in a methodology for determining administrative civil liability in instances of noncompliance. This document describes the methodology and factors used by the Prosecution Team to calculate the administrative civil liability for the alleged violation presented below.

B. Sanitary Sewer Overflow Background

The City of San Diego (City) provides wastewater conveyance and treatment services to its residents and 12 other cities and special districts. The City's sanitary sewer system serves over 2 million residents in San Diego County and includes over 3,000 miles of sewer pipeline and 82 pump stations.³

Pump Station 77A is located on W. Rancho Bernardo Road, about 0.5 mile southwest of Lake Hodges, a water of the state and United States. Pump Station 77A pumps sewage westward through a 20-inch force main to the South Force Main Vault located on the south side of Lake Hodges, where it splits into two 16-inch force mains about 2,000 feet in length that traverse the lake under water. The two force mains, shown in blue in Figure 1, traverse the lake in parallel then connect at the North Force Main Vault along the north shore of the lake.

³ City presentation to San Diego Water Board, November 8, 2023.



Figure 1. Pump Station 77 Conveyance System Map⁴

On March 24, 2023, a City contractor working at Lake Hodges noticed sewage spillage from the South Force Main Vault. The contractor notified the City Wastewater Collection crew, who identified the spillage as a sanitary sewer overflow (SSO) originating from a leak at the South Force Main Vault. This leak caused untreated sewage to flow downhill, and the City observed that some sewage infiltrated into the ground and some wastewater entered the lake. The City immediately initiated emergency repairs. The City halted the sewage discharge to the lake by using the overflow structure at Pump Station 77A.

The City discovered that the South Force Main Vault was full of sewage and had to use portable pumps to dewater the vault to gain access to the failure area. Heavy trucks and equipment could not access the vault due to muddy roads, so the City pumped the trapped sewage uphill, about 30-50 feet away from the vault, into a bermed containment area on bare soil away from the lakeshore, where it was allowed to infiltrate into the ground (see Figure 2). The City continued pumping sewage uphill to the containment area for two days because the overflow structure at Pump Station 77A had reached capacity. Finally, the City used boats and barges to access this area of Lake Hodges to remove sewage from the vault by transporting it in 250-gallon totes and returning it to the sanitary sewer system.

⁴ Figure 1 taken from *Pump Station No.* 77 *Force Main Condition Assessment Report*, March 22, 2017.



Figure 2. South Force Main Vault Pump-Out Area⁵

The City identified the cause of the leak as a fractured cast iron tee connection within the South Force Main Vault. The City experienced technical difficulties with the repair, most notably because the main access roads had been washed out from recent rain events. The City had to construct an emergency access road to reach the vault. The emergency repair, which involved the installation of a temporary spool, was completed on March 31, 2023, seven days after the SSO was identified. In total, the City estimates that 53,169 gallons of untreated sewage were discharged from the South Force Main Vault. Of the total, 32,719 gallons were discharged to land uphill of the lake, 13,000 gallons were recovered by barge and returned to the collection system without ever reaching surface waters, and 7,450 gallons were discharged by gravity on the day the leak was discovered, half of which infiltrated into the ground and half of which (3,725 gallons) discharged into Lake Hodges and was not recovered.

The City's emergency repair was successful at preventing sewage from leaking from the sanitary sewer system at the South Force Main Vault. Subsequently, the City completed a full replacement of the corroded tee joint in July 2023.

⁵ Figure 2 taken from the City's response to Investigative Order No. R9-2023-0107.

C. Violation: Unauthorized Discharge of 3,725 Gallons of Untreated Sewage to Waters of the State and United States.

The City is required to maintain and operate its sanitary sewer system in compliance with requirements contained in the following permits:

- State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (<u>Statewide</u> <u>General Order</u>)⁶, and
- San Diego Water Board Order No. R9-2007-0005, Waste Discharge Requirements for Sewage Sanitary Sewer Agencies in the San Diego Region (Regional General Order).⁷

Prohibition C.1 of the Statewide General Order states that "[a]ny SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited." Prohibition B.1 of the Regional General Order states that "[t]he discharge of sewage from a sanitary sewer system at any point upstream of a sewage treatment plant is prohibited."

The City's discharge of untreated sewage on March 24, 2023, was in violation of Statewide General Order Prohibition C.1, Regional General Order Prohibition B.1, Clean Water Act section 301, and Water Code section 13376, which prohibit the discharge of pollutants to surface waters except in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. The discharge was also in violation of Basin Plan Waste Discharge Prohibition No. 1 which states "[t]he discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in Water Code section 13050, is prohibited" and Prohibition No. 9 which states "[t]he unauthorized discharge of treated or untreated sewage to waters of the state or to a storm water conveyance system is prohibited." Finally, Provision D.8 of the Statewide General Order states that the Enrollee "shall properly manage, operate, and maintain all parts of the sanitary sewer system owned or operated by the Enrollee, and shall ensure that the system operators (including employees, contractors, or other agents) are adequately trained and possess adequate knowledge, skills, and abilities."

For the purposes of calculating the administrative civil liability, the Prosecution Team is using its discretion to calculate a single base liability amount for all violations since the violations are not independent of one another, are not substantially distinguishable, and

⁶ The Statewide General Order is available at:

https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2006/wqo/wqo2 006_0003.pdf.

⁷ The Regional General Order is available at:

https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/2007/R9-2007-0005_ADA.pdf.

are the result of a single act that violates similar requirements in different applicable permits and plans that are designed to address the same water quality issue.⁸

A discharger who violates Water Code section 13376 or Clean Water Act section 301 is subject to administrative civil liability pursuant to Water Code section 13385(a). Additionally, the unauthorized discharge of untreated sewage in violation of the Statewide General Order, Regional General Order, and Basin Plan Prohibitions is subject to administrative civil liability pursuant to Water Code section 13350. The San Diego Water Board Prosecution Team elected to pursue enforcement of the alleged violations pursuant to Water Code section 13385(c) authorizes the San Diego Water Board to impose administrative civil liability up to \$10,000 per day of violation, plus \$10 for each gallon exceeding 1,000 gallons discharged but not cleaned up.

Ten-Step Penalty Calculation Methodology

Step 1. Actual or Potential for Harm for Discharge Violations

For discharge violations, the 2017 Enforcement Policy uses a three-factor scoring system to quantify: (1) the degree of toxicity of the discharge; (2) the actual harm or potential harm to beneficial uses; and (3) the discharge's susceptibility to cleanup or abatement. Application of the three-factor scoring system to is set forth below.

Factor 1: Degree of Toxicity of the Discharge = Above Moderate (3)

The 2017 Enforcement Policy requires an evaluation, using a scale from zero to four (negligible to significant risk), of the degree of toxicity of the discharged material. The evaluation considers the physical, chemical, biological, and/or thermal characteristics of the discharge and the risk of damage the discharge could cause to the receptors or beneficial uses. A score of three or "above moderate" degree of toxicity is appropriate when the discharged material poses an above-moderate risk or a direct threat to potential receptors⁹ (i.e., the chemical and/or physical characteristics of the discharged material exceed known risk factors or there is substantial threat to potential receptors).

The unauthorized discharge of untreated sewage represents an "above moderate" risk level because untreated sewage contains high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease, and other pollutants known to exceed existing water quality standards. These pollutants exert varying levels of impacts to beneficial uses of the receiving waters. The

⁸ See 2017 Enforcement Policy, Section VI.A, Step 4 and 2024 Enforcement Policy, Section II.E, Multiple Violations Resulting from the Same Incident.

⁹ The 2024 Enforcement Policy provides clarification that examples of potential receptors include human health, aquatic life, habitat, etc.

high degree of toxicity in untreated sewage poses a direct threat to human and ecological receptors.

Factor 2: Actual Harm or Potential Harm to Beneficial Uses = Moderate (3)

The 2017 Enforcement Policy requires an evaluation, using a scale from zero to five (negligible to major harm), of the actual or potential harm to beneficial uses in the affected receiving waterbody. This risk may result from exposure to the pollutants or contaminants in the discharge, consistent with the statutory factors of the nature, circumstances, extent, and gravity of the violation(s). A score of three or "moderate" is typified by observed or reasonably expected potential impacts, but harm or potential harm to beneficial uses is moderate and likely to attenuate without appreciable medium or long term acute or chronic effects.

Lake Hodges is a drinking water reservoir and a water of the state and United States. In accordance with <u>Resolution No. R9-2017-0030</u>,¹⁰ Lake Hodges is a key area for the municipal beneficial use (MUN) and a priority for San Diego Water Board protection. In addition to the MUN beneficial use, Lake Hodges supports several other beneficial uses: agricultural supply (AGR), cold water habitat (COLD), industrial service supply (IND), process water supply (PROC), endangered species habitat (RARE), contact and non-contact recreation (REC-1, REC-2), warm freshwater habitat (WARM), and wildlife habitat (WILD).¹¹ Lake Hodges is listed on the <u>California 2020-2022 Integrated Report</u> as impaired for color, manganese, mercury, nitrogen, pH, phosphorus, and turbidity.¹²

In general, untreated sewage is known to contain solids and organic materials, ammonia, and excessive nutrients, all of which are potentially harmful to habitat-related beneficial uses due to solids deposition, oxygen depletion, and toxicity. Pathogenic organisms harmful to human health (such as Campylobacter, Salmonella, Shigella, Vibrio Cholera, and Yersinia) have the potential to impact other beneficial uses such as municipal and domestic supply (MUN), contact recreation (REC-1), and sport fishing (COMM) due to direct contact with or ingestion of impacted waters, or indirect contact via foodborne pathways such as fish and/or shellfish consumption (SHELL). Oil, grease, and floatable or suspended materials may harm non-contact water recreation (REC-2) due to aesthetic impacts.

In response to the SSO, the City suspended the use of water from Lake Hodges for domestic purposes for three days. The City then determined that levels of indicator bacteria caused no adverse effects to the drinking water supply and resumed normal

¹⁰ The Resolution is available at:

https://www.waterboards.ca.gov/rwqcb9/board_decisions/adopted_orders/2017/R9-2017-0030.pdf.

¹¹ Complete definitions of the beneficial uses are described in the Basin Plan.

¹² The California 2020-2022 Integrated Report is available at: <u>https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022</u> <u>integrated_report.html.</u>

functions on the fourth day. Additionally, the City stated that Lake Hodges had been closed for recreational activities for several months before the SSO occurred to facilitate the ongoing repair and maintenance of the dam. Therefore, MUN was compromised for at least three days, and REC-1 and REC-2 likely suffered minimal actual harm due to ongoing reservoir closure and maintenance.

In the week following the SSO, the City conducted environmental assessments to assess impacts to the wildlife. The City observed that sewage had reached the lakeshore but did not observe dead fish or wildlife. Some upland species of non-native grasses were impacted from the construction of emergency access roads needed to access the pump vault.

The City performed a second assessment approximately two months following the SSO, along the shoreline about 500 feet north of the discharge point and 200 feet south of the discharge point. The City observed debris racked against vegetation and some plant discoloration but did not observe aquatic mortality. The City's observations reported that vegetation within the discharge paths appeared healthy.

In summary, the information collected by the City following the SSO suggests that a score of three or moderate, is appropriate for this factor. There were impacts to the MUN beneficial use following the SSO and possibly the wildlife habitat beneficial uses such as COLD or RARE that may not have been observed. Although SSO impacts caused temporary restrictions on those beneficial uses, they likely attenuated without appreciable medium or long term effects.

Factor 3: Susceptibility to Cleanup or Abatement = 1

A score of one is assigned for this factor if less than 50 percent of the discharge is susceptible to cleanup or abatement, or if the discharger failed to cleanup 50 percent or more of the discharge within a reasonable amount of time. In this case, of the 3,725 gallons discharged to Lake Hodges by gravity on the day the leak was discovered, none was recovered. Therefore, a score of one is appropriate for this factor.

The Potential for Harm score is:

Potential for Harm score = 3 [Factor 1] + 3 [Factor 2] + 1 [Factor 3] = 7.

Step 2. Assessment for Discharge Violations

The initial liability amount is based on the potential for harm score from Step 1 and the extent of deviation from requirement. The deviation from requirement must be characterized as either minor, moderate, or major.

The deviation from requirement is **major**. According to the 2017 Enforcement Policy, a major deviation from requirement occurs when the requirement was rendered ineffective (e.g., the requirement was rendered ineffective in its essential functions). The discharge of 3,725 gallons of untreated sewage is a major deviation from the Discharge

Prohibitions in Statewide General Order, Regional General Order, and Basin Plan, as well as Clean Water Act section 301 and Water Code section 13376.

The per gallon liability assessment is the per gallon factor from Table 1 of the 2017 Enforcement Policy multiplied by the maximum per gallon amount allowed under the Water Code. Using a potential for harm score of 7 and a major deviation from requirement, the per gallon factor from Table 1 is 0.41.

Water Code section 13385(c)(2) states that the per gallon maximum administrative civil liability is \$10.00 per gallon multiplied by the number of gallons discharged to surface waters but not cleaned up over 1,000 gallons. For this violation, the per gallon amount is based on 3,725 gallons minus 1,000 gallons.

Using a maximum of \$10.00 per gallon, the initial liability assessment calculated on a per gallon basis is:

[\$10.00 (per gallon maximum) x 0.41 (per gallon factor) x (3,725 – 1,000 gallons)] = **\$11,173**

The per day liability assessment is the per day factor from Table 2 of the 2017 Enforcement Policy multiplied by the maximum per day amount allowed under the Water Code. Using a potential for harm score of 7, and a major deviation from requirement, the per day factor from Table 2 is 0.41. Water Code section 13385(c)(1) states the per day maximum administrative civil liability is \$10,000 for each day in which the violation occurs. The violation occurred on the day the SSO was discovered on March 24, 2023. The initial liability assessment calculated on a per day basis for this violation is:

[\$10,000 (per day statutory maximum) x 0.41 (per day factor) x 1 (day of violation)] = **\$4,100**

The Initial Liability Amount is \$11,173 + \$4,100 = **\$15,273.**

Step 3. Per Day Assessment for Non-Discharge Violations

This step is not applicable.

Step 4. Adjustment Factors

The San Diego Water Board must consider three additional factors for potential modification of the administrative civil liability amount: the discharger's degree of culpability, the discharger's prior violation history, and the discharger's voluntary efforts to clean up and cooperate with regulatory authorities after the violation.

Degree of Culpability = 1.2

The 2017 Enforcement Policy allows a multiplier between 0.75 and 1.5 to be used, with a higher multiplier for intentional or negligent behavior, and a lower multiplier for accidental or non-negligent behavior.

The City reported that the cause of the SSO at Lake Hodges was a fractured cast iron tee connection located in the South Force Main Vault, estimated to be about 46 years old at the time of the SSO. The City performed a condition assessment of the two force mains conveying sewage beneath Lake Hodges in 2017. During that effort, the City discovered a cracked flange inside the South Force Main Vault and repaired it immediately. The City did not observe corrosion on the tee connection, albeit inspection of the parts within the vault was outside the scope of the condition assessment. In response to Investigative Order No. R9-2023-0107, the City reported that there were no maintenance records for the South Force Main Vault in the 12 months preceding the SSO. Provision D.8 of the Statewide General Order requires the City to properly manage, operate, and maintain all parts of the sanitary sewer system. In this limited circumstance, especially given the proximity of the aging parts near a drinking water reservoir, a value of 1.2 is appropriate for this factor.

History of Violations = 1.1

The 2017 Enforcement Policy states that where a discharger has prior violations within the last five years, the Water Boards should use a multiplier of greater than 1.0. Within the last five years, on April 10-11, 2020, the City experienced an 11.23-million-gallon SSO into the Sweetwater River and San Diego Bay, which was addressed through <u>Cease and Desist Order No. R9-2023-0016</u> and <u>Stipulated Order No. R9-2023-0017</u>.¹³ That SSO was the result of a sanitary sewer system failure including failures at Pump Station 1 and the Sweetwater River siphons during a high-intensity storm, that took several days to identify. Therefore, a score of 1.1 is appropriate for this factor.

Cleanup and Cooperation = 1.0

The 2017 Enforcement Policy allows a multiplier between 0.75 and 1.5 to be used to adjust the penalty to account for voluntary efforts to cleanup and/or cooperate with regulatory authorities in returning to compliance after the violation. Adjustments below or above 1.0 should be applied where the discharger's response to a violation or order is above and beyond, or falls below, the normally expected response, respectively.

Following the SSO, the City took the necessary steps to minimize the additional discharge of sewage to Lake Hodges. This included using the overflow area at Pump Station 77A, pumping the sewage trapped in the vault uphill to a bermed area so that City crews could access the failure area, and using barges to transport sewage and return it to the sanitary sewer system. Additionally, the City constructed an emergency access road so that heavy equipment could reach the vault, as existing dirt roads were unpassable. These steps were necessary to minimize impacts to the lake, and therefore a neutral score of 1.0 is appropriate for this factor.

¹³ The Orders associated with the Sweetwater SSO are available at: <u>https://www.waterboards.ca.gov/sandiego/board_decisions/adopted_orders/orders2023.html.</u>

Step 5. Determination of Total Base Liability Amount

The Total Base Liability Amount is determined by multiplying the Initial Liability Amount by the Adjustment Factors in Step 4:

Total Base Liability Amount = [\$15,273 (initial liability amount) x 1.2 (degree of culpability) x 1.1 (history of violations) x 1.0 (cleanup and cooperation)] = **\$20,160**.

Step 6. Economic Benefit¹⁴

The 2017 Enforcement Policy states that the economic benefit of noncompliance should be calculated using the United States Environmental Protection Agency's (USEPA's) Economic Benefit Model (BEN Model) liability and financial modeling program. For this case, economic benefit was calculated using BEN Model Version 2023.0.1. Using standard economic principles such as the time-value of money and tax deductibility of compliance costs, the BEN Model calculates a discharger's economic benefit derived from delaying or avoiding compliance with environmental statutes.

The City of San Diego gained an economic benefit by not replacing the corroded tee joint before it failed. In its response to Investigative Order No. R9-2023-0107, the City reported that the estimated total cost to repair the failed joint was about \$1,399,150. The City later reported that the repair was completed in July of 2023. Using USEPA's BEN Model, the City experienced an economic benefit of approximately \$4,207 from the delayed cost of replacing the corroded tee joint.

Step 7. Other Factors As Justice May Require

The 2017 Enforcement Policy allows an adjustment to the administrative civil liability in consideration of the costs of investigating and enforcing the matter. As of February 29, 2024, San Diego Water Board staff expended over 72 staff hours and accrued \$14,885 in staff costs associated with the investigation and preparation of this penalty methodology. It is appropriate to increase the Total Base Liability Amount by \$14,885 for the violation given the totality of the circumstances and is intended to serve as a sufficient general and specific deterrent against future violations.

Additionally, to provide context related to the City's collection system, the Prosecution Team evaluated the City's SSOs during the previous five years. According to the California Integrated Water Quality System (<u>CIWQS</u>) database, the City experienced 212 Category 1, 2, and 3 SSOs from March 24, 2018 to March 24, 2023.¹⁵ The total volume of untreated sewage spilled from the City's sanitary sewer system was 21.6 million gallons. This volume includes the January 16, 2023 9.8 million gallon SSO to the

¹⁴ The Order of Steps 6-8 is consistent with procedural changes in the 2024 Enforcement Policy.

¹⁵ The CIWQS database, and definitions of Category 1, 2, and 3 SSOs, can be found here: <u>https://www.waterboards.ca.gov/water_issues/programs/sso/</u>. Data is entered into the database by the enrollee (City).

San Diego Bay and San Diego River, which is the subject of a separate enforcement action, and the 11.23 million gallon SSO into the Sweetwater River and San Diego Bay addressed through <u>Cease and Desist Order No. R9-2023-0016</u> and <u>Stipulated Order No. R9-2023-0017</u>. The remaining SSOs were relatively small and have not been adjudicated. No adjustment to the administrative civil liability is warranted based on this information.

Step 8. Ability to Pay and Ability to Continue in Business

The City of San Diego is a public entity with the ability to leverage fees or taxes. The San Diego Water Board is not aware of, and the City of San Diego has not provided, any evidence of inability to pay.

Step 9. Maximum and Minimum Liability Amounts

<u>Maximum Liability</u> – The alleged violation subjects the City to administrative civil liability pursuant to Water Code section 13385(c), which authorize the San Diego Water Board to impose administrative civil liability up to \$10,000 per violation per day, plus \$10 for each gallon exceeding 1,000 gallons discharged but not cleaned up.

The Maximum Liability Amount that could be assessed for the violation is:

[3,725 gallons -1,000 gallons)] x (\$10/gallon)] + [(1 day of violation) x (\$10,000/day)] = **\$37,250**.

<u>Minimum Liability</u> – Water Code section 13385 requires recovery of economic benefit. The 2017 Enforcement Policy states that the minimum liability should be at least ten percent higher than the economic benefit amount.

The Minimum Liability Amount that could be assessed for the violation is:

\$4,207 + (\$4,207 x 10%) = **\$4,627**.

Step 10. Final Liability Amount

The Final Liability Amount is \$20,160 (Total Base Liability Amount) + \$14,885 (investigation and enforcement costs) = **\$35,045**, which is between the maximum and minimum liability amounts.

Documents Relied Upon

Exhibit No.	ECM Document Handle No.	Item	Date
1	10259870	Pump Station No. 77 Force Main Condition Assessment Report	3/22/2017
2	9941728	Notice of Violation No. R9- 2023-0106	5/2/2023
3	9941729	Investigative Order No. R9-2023-0107	5/2/2023
4	9991094	City's Response to Investigative Order No. R9-2023-0107	6/20/2023
5	10266182	Staff Costs as of February 29, 2024	2/29/2024
6	10419493	Economic Benefit Analysis	5/8/2024
7	11272667	City of San Diego SSO Data from CIWQS (March 2018-March 2023)	1/21/2025