CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

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RESOLUTION NO. R24-XXX

LOS ANGELES COUNTY SANITATION DISTRICTS
APPROVAL OF PROPOSED SPECIAL STUDY FOR
A.K. WARREN WATER RESOURCE FACILITY

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter Los Angeles Water Board), finds:

1. The Los Angeles Water Board adopted the National Pollutant Discharge Elimination System (NPDES) permit for the Los Angeles County Sanitation Districts' (LACSD's) A.K. Warren Water Resource Facility (Facility, formerly known as the Joint Water Pollution Control Plant) on May 25, 2023 (Order No. R4-2023-0181).
2. The NPDES permit contains a requirement for LACSD to consult annually with the Los Angeles Water Board to determine the needs for special studies. Detailed scopes of work for proposals must be presented to obtain Los Angeles Water Board approval and to inform the public. Special studies are intended to focus on refined questions regarding specific effects or development of monitoring techniques. Questions regarding effluent or receiving water quality, discharge impacts, ocean processes around the discharge, or development of techniques for monitoring, arising out of the results of core or regional monitoring, may be pursued through these special studies.
3. On December 14, 2023, representatives from LACSD met with Los Angeles Water Board staff to discuss the proposed special study for 2024-2025: *Comparison of Microbiological Methods.*
4. The United States Environmental Protection Agency (EPA) has focused on culture-based methods to determine loads of fecal indicator bacteria (FIB) in ambient waters for decades. In coastal beaches, the enumeration of *Enterococcus spp.* has been used to evaluate human health risks and to assess the need for beach warnings and closures. Recent advancements in microbiological technologies have provided new, faster ways to enumerate FIB in ambient waters. This special study will compare a culture-based method to that of two alternative methods: 1) using a new automated analytical instrument[1] and 2) a molecular-based polymerase chain reaction method.

   4.1. The new automated analytical instrument functions as a compact incubator and data logging instrument, continuously monitoring the test cartridges for positive

[1] LACSD has procured a new automated analytical instrument from IDEXX called Tecta to perform the comparison to traditional culture-based methods. Over the study period, LACSD may obtain/test other instruments for similar comparisons.

samples. It uses a similar enzymatic protocol to the traditional culture-based method but uses an optical sensor to monitor the sample and quantify the culture when it reaches a designated threshold. This allows for positive samples to be determined at an earlier time, and if certain thresholds are exceeded (e.g., public beach single sample maximums), action can be taken quicker than traditional methods.

4.2. The molecular-based method quantifies genetic material of the FIB, but cannot differentiate between viable and inviable copies. This limitation requires a comparison of quantified amounts of culturable organisms (only viable organisms) and genetic copies (molecular enumeration). Once this comparison is verified, a threshold of genetic copies can be utilized as a comparable marker. This method is quicker than the two enzymatic methods, but is significantly more costly and labor intensive. A similar method has been utilized by the San Diego Department of Environmental Health and Quality for beaches in San Diego County and is currently being explored by the City of Los Angeles Environmental Monitoring Division.

5. The purpose of this proposed special study is to compare results of EPA-approved culture-based bacteriological methods to those using the new automated analytical instrument and to begin to assess a molecular-based bacteriological method. These alternative methods are being tested to determine if reliable analytical results can be obtained more expeditiously as compared to traditional culture-based methods. If the automated analytical instrument produces reliable results, LACSD may pursue an EPA Alternative Testing Protocol for the instrument to be used for bacteria monitoring along beach shorelines during sewer spill events to support NPDES permit requirements and provide support to Long Beach Public Health and Los Angeles County Public Health in response to sewer spill events.
6. The special study proposal can be found on the LACSD's website (www.lacsd.org/home/showdocument?id=12161).

THEREFORE, BE IT RESOLVED THAT:

1. LACSD’s proposed special study for 2024-2025, *Comparison of Microbiological Methods*, is hereby approved.

I, Susana Arredondo, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of the Resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region, on March 28, 2024.

Susana Arredondo
Executive Officer