

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT
FACT SHEET
June 2023

Permittee and Mailing Address: Commonwealth Utilities Corporation
P.O. Box 501220
Saipan, MP 96950

Permitted Facility and Address: Sadog Tasi Wastewater Treatment Plant
Sadog Tasi Rd.
Saipan, MP 96950

Contact Person: Kevin O. Watson
Manager, Division of Water and Wastewater
kevin.watson@cucgov.org, (670) 664-4292

NPDES Permit No.: MP0020010

I. STATUS OF PERMIT

Commonwealth Utilities Corporation (the “permittee” or “discharger”) has applied for the renewal of their National Pollutant Discharge Elimination System (NPDES) permit to authorize the discharge of treated effluent from the Sadog Tasi wastewater treatment plant (WWTP) to Saipan Lagoon within Tanapag Harbor located in Saipan, Commonwealth of Northern Marianas Islands (CNMI). A complete application was submitted on October 29, 2021, and supplemental information was provided on December 27, 2021. EPA Region 9 has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act (CWA), which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining a NPDES permit.

The permittee is currently discharging under NPDES permit MP0020010 issued on March 6, 2017. Pursuant to 40 CFR § 122.6, the terms of the existing permit are administratively extended until the issuance of a new permit.

This permittee has been classified as a major discharger.

II. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

Permit Condition	Previous Permit (2017 – 2022)	Re-issued permit (2023 – 2028)	Reason for change
Enterococcus Effluent Limitation	Maximum daily effluent limitation of 24,288 CFU/100mL	Compliance with revised Maximum daily effluent limitation of 11,440 MPN/100mL is required by May 1, 2024,	CNMI Water Quality Standards (approved 2014) and Saipan Coastal Bacteria TMDLs and wasteload allocations (approved 2018). EPA established a compliance schedule for this limit in the permit in accordance with 40 C.F.R. § 122.47. See IX.G.
Nitrate-nitrogen effluent limit	Included	Removed	Evaluation of monitoring results shows no reasonable potential for this parameter; thus, EPA is removing this effluent limit.
Asset Management Plan	Not required	Required. Plan to be submitted to EPA within two years of effective date.	The permit requires the permittee to develop a plan to address operations and maintenance of the treatment plant and collection system.
Units for Settleable Solids Effluent Limitation	Effluent limitations for Settleable Solids were 1 mg/L and 2 mg/L.	Effluent limitations for Settleable Solids are 1 mL/L and 2 mL/L	Effluent limitation was revised to include the appropriate units for Settleable Solids.
Outfall Inspection and Report	Not required	Special Condition – Outfall Inspection and Report	Evaluate condition of outfall pipe and diffusers for operation and maintenance. Also to visually assess benthic habitat near outfall to obtain environmental baseline.
Narrative effluent limits	Included	Updated	Consistent with CNMI Water Quality Standards (2018)
Receiving water monitoring special conditions	No option for permittee to submit receiving water monitoring plan, propose changes to locations, frequency, or parameters.	Permittee has the option of submitting a receiving water monitoring plan that may propose changes to locations, frequency, and parameters, subject to EPA approval.	EPA will consider alternative locations, frequency, and parameters that accurately and adequately assess receiving water quality.
Biosolids storage	Included	Updated	Updated to clarify requirements per 40 CFR § 503.20(b).

Permit Condition	Previous Permit (2017 – 2022)	Re-issued permit (2023 – 2028)	Reason for change
notification requirement			
BMPs for seagoing vessels	Not required.	Required.	Included to minimize water contamination and effects to habitat and listed species from receiving water monitoring activities.
General Reporting	Required	Updated	Electronic reporting required via EPA’s CDX system.

III. GENERAL DESCRIPTION OF FACILITY

The permittee operates the Sadog Tasi WWTP, which overlooks Tanapag Harbor near Charlie Dock on the island of Saipan. The Sadog Tasi WWTP serves a population of approximately 20,000 people and receives entirely domestic wastewaters from a network of wastewater collection and transmission facilities known as the Central System. The collection system includes the majority of the island’s tourism infrastructure, a large portion of commercial businesses, several schools, the majority of CNMI government offices, and Saipan’s largest public health care facility. The WWTP also receives dairy wastes from Coca-Cola factory two to 3 times a year, septage from privately-owned septic tanks, and fats, oil and grease from various sources such as restaurant grease traps.

Sadog Tasi WWTP was originally permitted under Section 301(h) of the CWA to discharge primary treated effluent based on a treatment capacity of 1.63 MGD. However, to achieve federal secondary treatment standards for POTWs and to accommodate population growth in the service area, the facility was upgraded and expanded in 1995. The treatment plant further underwent major renovations during 2010-2011 to replace bubble diffuser system with floating mechanical aerators as well as rehabilitation of all mechanical components of the treatment system. The WWTP is currently designed to achieve secondary treatment using both physical and biological treatment processes, including influent screening, grit removal, diffuser system, aerated treatment using activated sludge, clarifiers, dewatering by belt filter press. Dried sludge cake is stored on site and then hauled to nearby landfill. The facility design flow is 4.8 MGD; whereas the permittee has reported an average flow rate of 2.6 MGD. The permittee estimates the total average daily wastewater flow from all industrial sources in the service area to less than 0.2 million gallons per day (MGD) by different users.

Secondary treated wastewater is discharged through the outfall, approximately 1,200 feet offshore into Saipan Lagoon. The outfall is a welded high-density polyethylene (HDPE) pipe anchored to the bottom with concrete blocks, with the diffuser system resting on the harbor bottom at a depth of about 49 feet. The permittee is not currently adding chlorine for disinfection as part of its treatment system.

As part of its permit application, the permittee also provided a workplan describing future upgrades to the Sadog Tasi facility. The first project, titled EPA Project 17-059, is to repair the

secondary clarifier and replace sludge dewatering equipment. Replacement of the secondary clarifier is scheduled to be completed by October 2023. The second project/workplan titled, *Wastewater System Improvements Northern Marianas Islands, Additional Supplemental Appropriations for Disaster Relief Act, 2019 (ASADRA)* include various design and construction projects for wastewater treatment equipment as well as the sewer collection system. The total ASADRA budget for Sadog Tasi WWTP upgrades is approximately \$6.5M. The proposed workplan goal is to improve operational levels by mid-2023, although the workplan schedule does acknowledge possible delays up to September 30, 2024.

IV. DESCRIPTION OF RECEIVING WATER

CNMI Bureau of Environment and Coastal Quality (“BECQ”) classifies Tanapag Harbor as a Class A marine receiving waterbody in the vicinity of Outfall 001, according to *CNMI Water Quality Standards, 2014 Revision* (Public Law 26-113, June 18, 2014). CNMI’s water quality standards state that “water in this category is intended for general, commercial and industrial use, while allowing for protection of aquatic life, aesthetic enjoyment and compatible recreation with limited body contact. Specific intended uses include the following: shipping, boating and berthing, industrial cooling water, and marinas.” Other uses are allowed as long as they are compatible with protection and propagation of fish, shellfish, and wildlife, and with compatible recreation with risk of water ingestion by humans.

Tanapag Harbor is the immediate receiving water for this discharge; Saipan Lagoon is within Tanapag Harbor. Approximately 1.5 mile away are nearby coral reefs within the Managaha Marine Conservation Area.

As described further below in Section VI. B.1, the CNMI 2022 Integrated Report and Clean Water Act Section 303(d) List of Impaired Waters identify the North West Takpochau segment (19A) as impaired for enterococcus, nitrate, orthophosphate in marine waters and lead in bivalves. Tanapag Harbor and Saipan Lagoon are within this segment.

BECQ performs monitoring of its surface waters via a probabilistic approach to assess water quality and determine if criteria and beneficial uses are being met. On August 9, 2022, BECQ provided EPA with surface water results collected from various randomly selected sampling sites within Tanapag Harbor. Site 27 is the closest site to the Sadog Tasi outfall (approximately 390 m. away). Results were collected once per year between 2016 to 2021 and all parameters (including enterococci, nitrate and orthophosphate) at Site 27 met the numeric receiving water quality standards.

V. DESCRIPTION OF DISCHARGE

The Sadog Tasi WWTP provides secondary treatment of domestic wastewater and discharges at an average flow rate of 2.6 MGD. The previous permit contained numeric effluent limitations for numerous parameters, including BOD₅, total suspended solids (TSS), pH, settleable solids, enterococcus, total nitrogen, nitrate-nitrogen, total phosphorus, and ortho-phosphate.

Table 1 shows data related to discharge from Outfall 001 based on the permittee's NPDES application and supplemental data as well as data reported on discharge monitoring reports. More information is available on Enforcement and Compliance History Online (ECHO) at <https://echo.epa.gov/detailed-facility-report> [search for FRS ID: 110024584163].

The effluent data show elevated concentrations of BOD₅ (mg/L), TSS (mg/L), settleable solids, enterococcus, total nitrogen, and total phosphorus. All exceedances are discussed further in Part VI.B.4. Pollutants believed to be absent or never detected in the effluent are not included.

Table 1. Effluent Data for Outfall 001 from May 2017 to December 2021. Data provided by permittee as part of NPDES permit application.

Parameter	Units ⁽¹⁾	2017-2022 Permit Effluent Limitations			Effluent Data			
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly	Highest Average Weekly	Highest Maximum Daily	Number of Samples
Flow Rate	MGD	(2)	--	(2)	1.59	--	3.03	
pH	Standard Units	6 to 9			7.1 – 7.8 (min-max)			
Biochemical Oxygen Demand; 5-day (BOD ₅)	mg/L	30	45	n/a		24	97	670
	lbs/day	1202	1803	n/a			--	
	Percent Removal	85 % (minimum) ⁽³⁾			__% (minimum)			
Total Suspended Solids (TSS)	mg/L	30	45	n/a		37	470	680
	lbs/day	1202	1803	n/a			--	
	Percent Removal	85 % (minimum) ⁽³⁾			__% (minimum)			
Settleable Solids	mg/L	1	1	2		0.3	30	1446
Oil & Grease	mg/L	n/a	n/a	15		3.9	9.1	17
Total Nitrogen	mg/L	33	n/a	67		19.3	33	17
Nitrate-nitrogen	mg/L	22	n/a	44		2.7	9.7	17
Total Phosphorus	mg/L	2.2	n/a	4.4		2.0	3.6	17
Ortho-Phosphate	mg/L	2.2	n/a	4.4		1.0	2.1	17
Enterococci	MPN/100mL	3080	n/a	24,288		25,251	>80,653	53
Toxicity	Pass or Fail	n/a	n/a	Pass ⁽⁴⁾	Pass			6

(1) Mass based limits calculated using 4.8 MGD design flow.

(2) Only monitoring and reporting were required. "n/a" means not applicable.

(3) Both the influent and the effluent were monitored. The arithmetic mean of the BOD₅ values or of the TSS values, by concentration, for effluent samples collected over a calendar month is not to exceed 15 percent of the arithmetic

mean, by concentration, for influent samples collected at approximately the same times during the same period (i.e., 85 percent BOD₅ removal; 85 percent TSS removal).

(4) All chronic WET tests must be “Pass,” and no test may be “Fail.” “Pass” constitutes a rejection of the null hypothesis. Testing was conducted concurrent with testing for all other parameters.

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA has developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (i.e., “technology-based effluent limits”) and the water quality standards applicable to the receiving water (i.e., “water quality-based effluent limits”). EPA has established the most stringent of applicable technology-based or water quality-based standards in the permit, as described below.

A. Applicable Technology-Based Effluent Limitations

Publicly Owned Wastewater Treatment Systems (POTWs)

EPA developed technology-based treatment standards for municipal wastewater treatment plants in accordance with Section 301(b)(1)(B) of the CWA. The minimum levels of effluent quality attainable by secondary treatment for Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), and pH, as defined in 40 CFR § 133.102, are listed below. Mass limits, as required by 40 CFR § 122.45(f), are included for BOD₅ and TSS.

BOD₅

Concentration-based Limits

30-day average – 30 mg/L

7-day average – 45 mg/L

Removal Efficiency – minimum of 85%

Mass-based Limits

30-day average – (30 mg/L)(4.8 MGD)(8.345 conversion factor) = 1202 lbs/day

7-day average – (45 mg/L)(4.8 MGD)(8.345 conversion factor) = 1803 lbs/day

TSS

Concentration-based Limits

30-day average – 30 mg/L

7-day average – 45 mg/L

Removal efficiency – Minimum of 85%

Mass-based Limits

30-day average – (30 mg/L)(4.8 MGD)(8.345 conversion factor) = 1202 lbs/day

7-day average – (45 mg/L)(4.8 MGD)(8.345 conversion factor) = 1803 lbs/day

pH

Instantaneous Measurement: 6.0 – 9.0 standard units (S.U.)

Technology-based treatment requirements may be imposed on a case-by-case basis under Section 402(a)(1) of the CWA, to the extent that EPA promulgated effluent limitations are inapplicable (i.e., the regulation allows the permit writer to consider the appropriate technology for the category or class of point sources and any unique factors relating to the applicant) (40 CFR § 125.3(c)(2)).

The minimum levels of effluent quality attainable by secondary treatment for Settleable Solids, as specified in the EPA Region 9 Policy memo dated May 14, 1979, are listed below:

Settleable Solids

30-day average – 1 mL/L

Daily maximum – 2 mL/L

Settleable solids effluent limits are also included here to provide quick and inexpensive quality control on facility operations.

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard (40 CFR § 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR § 122.44(d)(1)(ii)).

Effluent limitations were established using:

1. CNMI water quality standards, revised and approved by CNMI on June 18, 2002; amended September 2004, April 2014 and September 2018. Class A marine receiving water uses apply to Saipan Lagoon and Tanapag Harbor.
2. EPA National Recommended Water Quality Criteria, 2013, 2015 and 2016;
3. Best Professional Judgment

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control (TSD)* (Office of Water, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers' Manual* (Office of Water, U.S. EPA, September 2010). These factors include:

1. Applicable standards, designated uses and impairments of receiving water
2. Applicable Ocean Discharge Criteria
3. Dilution in the receiving water

4. Type of industry
5. History of compliance problems and toxic impacts
6. Existing data on toxic pollutants - Reasonable Potential Analysis

1. Applicable Standards, Designated Uses and Impairments of Receiving Water

The CNMI water quality standards and various amendments establish water quality criteria for marine waters which for the protection of designated beneficial uses. The CNMI water quality standards categorize Tanapag Harbor as Class A marine waterbody. Class A marine waters are protected for recreational and aesthetic enjoyment. Other uses are allowed as long as they are compatible with protection and propagation of fish, shellfish, and wildlife, and with compatible recreation with risk of water ingestion by humans.

The 2014 amendment to CNMI's water quality standards included an Implementation Guidance Manual that provides information relevant to monitoring microbiology (bacteria) in receiving waters for NPDES permits:

For NPDES permittees, permit compliance for marine receiving waters shall be determined utilizing the geometric mean of all discrete measurements (all depths, all stations, as required in the permit) over a 30-day period.

It is recommended that the permittee consider multiple sampling events in any 30-day period in order to obtain a representative geometric mean.

The use of water quality based effluent limitations for bacteria with end-of-pipe limits which are calculated based on critical initial dilution is permissible for NPDES permits.

The 2018 amendment to CNMI's water quality standards included numeric criteria for microbiology parameters. See Part 400, Section 65-130-401. This amendment included additional information about potential exceedances of these microbiology numeric criteria:

(b) Enterococci and E. coli may originate from environmental sources as well as from human and animal fecal contamination. Where these microbiological standards are exceeded, a determination of the impact on public health and the environment may be based upon additional sampling, a sanitary survey of the drainage area contributing runoff to the contaminated water, or special studies of the environmental sources of Enterococci and E. coli in the waters of the CNMI.

CNMI BECQ's 2022 Integrated Report and Clean Water Act Section 303(d) List of Impaired Waters include the West Takpochau (north) segment as impaired due to enterococcus, nitrate, orthophosphate in surface waters and lead (in sediments). Tanapag Harbor is within the West Takpochau (north) segment of coastal waters.

BECQ adopted the Saipan Coastal Bacteria TMDLs in 2017 and EPA approved the TMDLs in 2018. These enterococcus TMDLs apply to Class A waters in Tanapag Harbor. The TMDL

lists the following sources of bacteria into the West Takpochau (north) segment: sanitary sewer overflows, wastewater treatment plant, marine and recreational boating, runoff from roads, and coastal zone erosion.

These TMDLs contain wasteload allocations for all point sources including wastewater treatment plants. The effluent limits in this permit are based on the wasteload allocations included in the TMDL, specifically the geometric mean value (35 MPN/100mL) and statistical threshold value (130 MPN/100mL). Pursuant to federal regulations at 40 CFR § 122.44(d)(1)(B)(vii), the effluent limits included in this permit are consistent with the assumptions and rationale for the wasteload allocation(s) for this facility provided in the TMDL. Those enterococcus specific wasteload allocations have been included in determining the effluent limitations in this permit; applicable dilution has also been included.

The TMDL included an implicit margin of safety based on the “conservative assumption, primarily, the application of WQS without accounting for mixing in the receiving water which would lead to dilution of [enterococcus] concentrations”.

2. Applicable Ocean Discharge Criteria

EPA’s Ocean Discharge Criteria establish guidelines for the issuance of NPDES permits for discharges into territorial seas, the contiguous zone, and the ocean (40 CFR § 125.120). Territorial seas are defined as the waters between the shore and 12 nautical miles offshore. Ocean Discharge Criteria are applicable because the permit authorizes discharge into a territorial sea. Ocean Discharge Criteria establish that point source discharges into territorial seas may not cause unreasonable degradation to the marine environment (40 CFR § 125.123). Discharges that are in compliance with section 301(g), 301(h), or 316(a) variance requirements or State water quality standards are presumed to be in compliance with Ocean Discharge Criteria (40 CFR § 125.122(b)). This permit requires compliance with State water quality standards, so the permit requires the discharge to be in compliance with Ocean Discharge Criteria.

3. Dilution in the Receiving Water

Part 500 of the *CNMI Water Quality Standards* allows BECQ to authorize mixing zones in receiving waters if certain conditions are met. A mixing zone is generally expressed as a limited area or volume of water where initial dilution of a discharge takes place and where certain water quality criteria may be exceeded. Per the CNMI water quality standards, a mixing zone means an area of specified dimensions where a discharge undergoes initial dilution within a specified sub-area of the mixing zone in the immediate vicinity of the discharge point (zone of initial dilution, or ZID), then undergoes secondary mixing to the limit of the mixing zone boundary. A mixing zone is an allocated impact zone where water quality criteria can be exceeded but where acutely toxic conditions are prevented (except as defined within the ZID) and where public health and welfare are not endangered.

Because the Sadog Tasi WWTP discharge flows through a submerged outfall and diffuser system, initial dilution of the discharge with receiving waters is primarily controlled by the

momentum and buoyancy of the freshwater effluent plume (i.e., discharge-induced mixing). In the discharger's 2022 application, CUC submitted a request to BECQ for an updated mixing zone approval representing a dilution value of 88:1. This permit acknowledges BECQ's Mixing Zone approval (dated January 17, 2023) and has incorporated the 88:1 dilution credit values for enterococcus, nutrients, salinity, temperature, turbidity, dissolved oxygen and toxics. Therefore, dilution of the effluent has been considered in the reasonable potential analysis and the development of water quality-based effluent limits applicable to the discharge of enterococcus and nutrients. Dilution does not apply to Whole Effluent Toxicity testing.

4. Type of Industry

For POTWs, the typical pollutants of concern in untreated and treated domestic wastewater include ammonia, nitrogen, phosphorus, oxygen demand, pathogens/bacteria, temperature, pH, oil and grease, and suspended solids. The SIC code for this facility is 4952.

5. History of Compliance Problems and Toxic Impacts

The effluent data from 2017 to 2021 show elevated levels of BOD, TSS, settleable solids, total nitrogen, total phosphorus and enterococcus. The facility had operational disruptions after Typhoon Yutu in October 2018 which created power outages and equipment failures. Starting in August 2020, the effluent results for these parameters are lower and generally below the effluent limitations. The priority pollutant results were all below method detection levels.

EPA reviewed the permittee's receiving water results from 2017 to 2021 in Saipan Lagoon and found only one exceedance of receiving water standards for total nitrogen and total phosphorus. EPA also evaluated these receiving water results for enterococcus in Saipan Lagoon. Between May 2017 and June 2020, measurements at receiving water stations ZID-1 and ZID-2 showed many exceedances of the 2018 WQS for the enterococcus statistical threshold value (i.e., 16 out of 54 individual results were above 130 MPN/100mL) and numerous exceedances of the geomean value (i.e., 34 out of 54 geomean results were above 35 MPN/100mL). Further assessment of these enterococcus results revealed the majority of the exceedance occurred between May 2017 and July 2020, a timeframe associated with 'normal' flows thru the wastewater treatment plant. After July 2020, the enterococcus results in the receiving waters were lower and only a few exceedances were observed above the threshold value and the geomean value; this timeframe is associated with lower effluent flows, presumably due to lower tourism associated with COVID-19.

6. Existing Data on Toxic Pollutants

For pollutants with effluent data available, EPA has conducted a reasonable potential analysis based on statistical procedures outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control* herein after referred to as EPA's TSD (EPA 1991). These statistical procedures result in the calculation of the projected maximum effluent concentration based on monitoring data to account for effluent variability and a limited data set. The projected maximum effluent concentrations were estimated using a coefficient of variation and the 99 percent confidence interval of the 99th percentile based on an assumed lognormal distribution of

daily effluent values (sections 3.3.2 and 5.5.2 of EPA's TSD). EPA calculated the projected maximum effluent concentration for each pollutant using the following equation:

$$\text{Projected maximum concentration} = C_e \times \text{reasonable potential multiplier factor.}$$

Where, “C_e” is the reported maximum effluent value and the multiplier factor is obtained from Table 3-1 of the TSD. The projected maximum effluent concentration is compared directly to the applicable water quality criterion to determine the reasonable potential for effluent concentration to exceed the receiving water criterion.

Table 2. Summary of Reasonable Potential Statistical Analysis:

Parameter ⁽¹⁾	Maximum Observed Effluent Concentration	n	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion ⁽²⁾	Statistical Reasonable Potential?
Settleable Solids	30 mg/L	1446	0.8	24	0.5 mg/L	Y
Enterococcus (geomean)	80,653 MPN/100mL	53	1.69	136,300 MPN/100mL	3080 MPN/100mL	Y
Nitrogen-total	33 mg/L	17	2.44	80 mg/L	66 mg/L	Y
Nitrate-Nitrogen	9.7 mg/L	17	2.44	24 mg/L	44 mg/L	N
Ammonia	19 mg/L	13	2.71	52 mg/L	71 mg/L ⁽³⁾	N
Phosphorus-total	3.6 mg/L	17	2.44	8.8 mg/L	4.4 mg/L	Y
Ortho-phosphate	2.1 mg/L	17	2.44	5.1 mg/L	4.4 mg/L	Y
Oil & Grease	9.1 mg/L	17	2.44	22 mg/L	n/a	n/a

(1) For purposes of RP analysis, parameters measured as non-detect are considered to be zeroes. Only pollutants detected are included in this analysis.

(2) Water Quality criterion has been adjusted consistent with applicable dilution credit (88:1)

(3) Converted from the un-ionized ammonia criterion in the CNMI Water Quality Standards, per the *Ambient Water Quality Criteria for Ammonia (Saltwater)-1989*. See Part VI.C of this fact sheet for further discussion.

C. Rationale for Numeric Effluent Limits and Monitoring

EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based limitations or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary.

Appendix A provides example calculations for determining the numeric water quality-based effluent limits.

Flow

No limits established for flow, but flow rates must be monitored and reported. Monitoring is required continuously. As stated in the application, the design flow for Sadog Tasi is 4.8 MGD.

BOD₅ and TSS

Limits for BOD₅ and TSS are established for POTWs as described in section A above and are incorporated into the permit. Under 40 CFR § 122.45(f), mass limits are also required for BOD₅ and TSS. Based on the design flow, the mass-based limits are included in the permit.

pH

Technology-based standards for POTWs require pH limits between 6.0 and 9.0 Standard Units. CNMI water quality standards for the receiving waters all pH range from 7.6 to 8.6. Considering the applicable dilution, the water quality criterion is less stringent than the technology-based effluent limit of 6.0 – 9.0 SU. EPA retains an effluent limit for pH of 6.0 – 9.0 SU. Monitoring is required three days per week.

Oil & Grease

EPA considers Oil & Grease as a conventional pollutant pursuant to 304(a)(4) of the CWA and 40 CFR 401.16. The CNMI narrative water quality standards indicates that waters shall not contain detectable as a visible film, or sheen of oil or petroleum. Effluent data was collected for Oil & Grease in the previous permit term. Monitoring is retained for quarterly sampling and analysis of oil & grease in effluent.

Nitrogen – total

Data shows that the discharger has the ability to exceed applicable total nitrogen standards.

The CNMI water quality standards include a Criteria Maximum Concentration (“CMC”) and a Criteria Chronic Concentration (“CCC”). Since both are necessary to protect beneficial uses and the CCC is more stringent, effluent limitations have been set using CCC criteria.

Monitoring is required quarterly for maximum daily and average monthly nitrogen-total concentrations.

Ammonia

Ammonia is considered a typical pollutant of concern for wastewater treatment plants. CNMI water quality standards contain a criterion of 0.02 mg/l for ammonia (un-ionized) in Class A marine waters. The discharger reported total ammonia (un-ionized-NH₃ and ionized-NH₄⁺, as N) in their permit application. EPA used critical pH, temperature, and salinity values measured in the receiving water to convert the CNMI un-ionized ammonia (UIA) criterion to a total ammonia criterion using the *Ambient Water Quality Criteria for Ammonia (Saltwater)-1989* (EPA, 1989). The document provides guidance on ammonia speciation and the conversion between total ammonia and un-ionized ammonia for saltwater systems.

EPA used the highest effluent pH (7.8 standard units), highest receiving water temperature (31°C), and lowest receiving water salinity (31 parts per thousand) measured in the previous permit term (May 2017- December 2021) at the nearest CNMI Division of Environmental Quality monitoring station to calculate the most protective water quality criterion for total ammonia applicable to the receiving water, 0.81 mg/L. The discharge does not show reasonable potential for ammonia, so no effluent limits are established in this permit for ammonia.

Nitrate-nitrogen

Data shows the discharger is not likely to exceed applicable nitrate-nitrogen standards. This permit removes the effluent limitation for nitrate-nitrogen.

Phosphorus – total and Orthophosphate

Data shows that the discharger has the ability to exceed applicable total phosphorus and ortho-phosphate standards.

The CNMI water quality standards include a Criteria Maximum Concentration (“CMC”) and a Criteria Chronic Concentration (“CCC”). Since both are necessary to protect beneficial uses and the CCC is more stringent, effluent limitations have been set using CCC criteria.

Monitoring is required quarterly for the maximum daily and average monthly phosphorus-total and ortho-phosphate concentrations.

Enterococcus

The CNMI water quality standards establish criteria for marine waters for enterococcus. The reasonable potential analysis demonstrated a potential to exceed water quality standards for enterococcus. Therefore, limitations have been established consistent with the applicable water quality standards for enterococcus as the representative indicator pathogen.

The 2018 Saipan Coastal Bacteria TMDLs contain wasteload allocations for this wastewater treatment plant. The effluent limits in this permit are based on the wasteload allocations included in the TMDL, specifically the geomean value (35 MPN/100mL) and statistical threshold value (130 MPN/100mL). Pursuant to federal regulations at 40 CFR § 122.44(d)(1)(B)(vii), the effluent limits included in this permit are consistent with the assumptions and rationale for the wasteload allocation(s) for this facility provided in the TMDL. Those enterococcus specific wasteload allocations have been included in determining the effluent limitations for this permit; applicable dilution has also been included.

The maximum daily effluent limitation for enterococcus in the 2017 permit was 24,288 MPN/100mL and the average monthly effluent limit was 10,080 MPN/100 mL. These limits were revised for this permit due to a 2018 change in the applicable WQS. Therefore, this permit establishes a maximum daily effluent limitation of 11,400 MPN/100mL and average monthly effluent limitation of 3080 MPN/100mL. These effluent limits for enterococci are more protective than the 2017 permit. Monitoring is required for weekly analyses of effluent and to report maximum daily and average monthly enterococcus concentrations.

Chlorine

The permittee does not currently disinfect the discharge; therefore, there is no reasonable potential to exceed applicable water quality standards for chlorine. However, if the facility does begin to disinfect using chlorination, the permit will be re-opened to monitor for chlorine, and if needed, establish effluent limitations for residual chlorine to meet applicable chlorine criteria.

D. Anti-Backsliding

Section 402(o) and 303(d)(4) of the CWA and 40 CFR § 122.44(l)(1) prohibits the renewal or reissuance of an NPDES permit that contains effluent limits and permit conditions less stringent than those established in the previous permit, except as provided in the statute and regulation.

The permit removes the effluent limit for nitrate-nitrogen; all other effluent limits are retained from the prior permit to this permit.

The permit establishes less stringent mass-based technology-based effluent limitations for nitrate-nitrogen. This is based on new information (effluent monitoring results) gathered over the course of the prior permit timeframe and analysis shows there is no reasonable potential for nitrate-nitrogen; this is consistent with CWA Section 303(d)(4) so there is no backsliding. The permit retains the total nitrogen limitation and measurement of this parameter includes all forms of nitrogen including nitrate-nitrogen.

E. Antidegradation Policy

EPA's antidegradation policy under CWA Section 303(d)(4) and 40 CFR § 131.12 and CNMI WQS Section 5101.B require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.

As described in this document, the permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The permit retains an approved mixing zone, therefore these limits include dilution values applied at the end of pipe. A priority pollutant scan has been conducted of the effluent, demonstrating that most pollutants are discharged below detection levels.

This permit does not allow increased discharge flows or increased pollutant levels (either conc. or mass-based); therefore, due to the secondary treatment level being obtained, low levels of toxic pollutants present in the effluent, and water quality-based effluent limitations, the discharge is not expected to adversely affect receiving water bodies or result in any degradation of water quality. This also applies to nitrate in the discharge, whereby no degradation is anticipated since the permit still requires this facility to meet applicable water quality standards for nitrate in the receiving waters.

As described in Section C, this permit contains effluent limitations for enterococcus that are consistent with the wasteload allocations within the approved 2018 Saipan Coastal Bacteria TMDL, these limits are more stringent than the enterococcus limits in the prior permit. Sadog Tasi treated discharges into the impaired water body are not expected to adversely affect recreational uses or other beneficial uses.

VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS

CNMI Water Quality Standards (2018) contain narrative water quality standards applicable to the receiving water. Therefore, the permit incorporates applicable narrative water quality standards. See Permit section I.A. (3-12).

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data are insufficient to determine reasonable potential, monitoring is required for certain pollutants or parameters where effluent limits have not been established.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR § 136, unless otherwise specified in the permit. All monitoring data shall be reported on monthly DMRs and submitted quarterly as specified in the permit. All DMRs are to be submitted electronically to EPA using NetDMR.

B. Priority Toxic Pollutants Scan

A Priority Toxic Pollutants scan shall be conducted no later than the end of the second year of the five-year permit term to ensure that the discharge does not contain toxic pollutants in concentrations that may cause or contribute to a violation of water quality standards. The permittee shall conduct the priority pollutants scan concurrent with an annual whole effluent toxicity test. Permit Attachment D provides a complete list of Priority Toxic Pollutants, including identifying the volatile compounds that should be collected via grab sample procedures. The permittee shall perform all effluent sampling and analyses for the priority pollutants scan in accordance with the methods described in the most recent edition of 40 CFR § 136, unless otherwise specified in the permit or by EPA. This monitoring is consistent with Priority pollutants listed in 40 CFR § 131.36.

C. Whole Effluent Toxicity (toxicity) Requirements

Aquatic life is a public resource protected in surface waters covered by the CWA. To protect aquatic life from the toxic effects of pollutants or combinations of pollutants, this permit includes toxicity effluent limits. Toxicity effluent limits are important because chemical-specific environmentally protective levels for toxicity to aquatic life have not been developed for most individual chemicals and compounds. These chemicals and compounds can eventually make their way into effluent. To determine compliance with toxicity effluent limits, this NPDES

permits requires the discharger to sample effluent and test it for toxicity in a laboratory using EPA's Whole Effluent Toxicity (WET) test methods. WET tests demonstrate toxicity due to present, but unknown, toxicants (including possible synergistic and additive effects), signaling whether there may be a toxic effect on aquatic life from the discharge.

EPA's WET methods are systematically designed to expose sensitive life stages of a test species (e.g., fish, invertebrate, algae) to an NPDES effluent sample and a control sample. During the toxicity test, the test organisms may show a difference in biological response such as early life stages that grow too slowly or abnormally, or death. At the end of a toxicity test, the different biological responses of the organisms in the effluent group and the organisms in the control group are summarized using common descriptive statistics (e.g., means, standard deviations, coefficients of variation). The effluent and control groups are then compared using an applicable inferential statistical approach (i.e., hypothesis testing or point estimate model) chosen by the permitting authority and specified in the NPDES permit. The chosen statistical approach is compatible with both the experimental design of the WET method and the applicable toxicity water quality standard. Based on this statistical comparison, a toxicity test will demonstrate that the effluent is either toxic or not toxic, in relation to the permit's toxicity limit for the effluent. EPA's WET methods are specified under 40 CFR § 136 and/or in applicable water quality standards. The permittee shall conduct a whole effluent toxicity test once per permit term.

In this permit, EPA requires the permittee analyze WET test data using the Test of Significant Toxicity (TST) statistical approach. This statistical approach is described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document* (EPA 833-R-10-003, 2010; TST Technical Document). This statistical approach supports important choices made within a toxicity laboratory which favor quality data and EPA's intended levels for statistical power when true toxicity is statistically determined to be unacceptably high (≥ 25 percent effect (PE)), or acceptably low (< 10 PE). Example choices are practices supporting healthy test organisms, increasing the minimum recommended replication component of the WET method's experimental design (if needed), technician training, etc. TST results do not often differ from other EPA-recommended statistical approaches using hypothesis testing (Diamond D, Denton D, Roberts J, Zheng L. 2013. Evaluation of the Test of Significant Toxicity for determining the toxicity of effluents and ambient water samples. *Environ Toxicol Chem* 32:1101-1108.). The TST maintains EPA's desired low false positive rate for WET methods—the probability of declaring toxicity when true toxicity is acceptably low $\leq 5\%$ —when quality toxicity laboratories conduct toxicity tests (TST Technical Document; Fox JF, Denton DL, Diamond J, and Stuber R. 2019. Comparison of false-positive rates of 2 hypothesis-test approaches in relation to laboratory toxicity test performance. *Environ Toxicol Chem* 38:511-523.). Note: The false positive rate is a long-run property for the toxicity laboratory conducting a WET method. A low false positive rate is indicted by a low long-run toxicity laboratory control coefficient of variation for the test species/WET method, using a minimum of 30 to 50 toxicity tests.

For ocean discharges governed by CWA § 403(c) and implementing regulations, the choice of TST is also based on EPA's recommendation to apply statistical considerations linking NPDES monitoring data, performance, and decision-making prior to data collection. See *CWA § 403: Procedural and Monitoring Guidance* (EPA 842-B-94-003, 1994), pages 37, 38, 209.

Examples of such statistical considerations include defining acceptable type I (α) and type II (β) errors¹; applying power analysis to evaluate the appropriate number of replicates (n) based on a prior knowledge of variation observed in historical data; etc.). Accordingly, statistical rigor (trustworthiness) is considered by EPA under 40 CFR § 125.122(a) in choosing the TST statistical approach for this permit because such components are explicitly considered.

The following chronic toxicity test results are DMR submissions representative of the effluent discharge monitored during the previous permit term. Results are analyzed using the TST statistical approach described in Appendix B of the TST Technical Document.

Table 3. Chronic Toxicity Data Summary and Reasonable Potential Determination.

Toxicity test initiation & completion dates	Test species/WET method	Chronic toxicity test did not reject (Fail “1”), or rejected (Pass “0”), TST null hypothesis	Associated Percent Effect	Number of replicates (n)	Control coefficient of variation (cK)	Reasonable potential if Fail (1) and/or associated PE \geq 10
09/19/2018	Sea urchin/chronic	0	-2.8%	8	2%	No
05/19/2019	Sea urchin/chronic	0	0.3%	8	2%	No
08/28/2019	Sea urchin/chronic	0	0.13%	8	2%	No
03/18/2020	Sea urchin/chronic	n/a	n/a	n/a	n/a	No Sample result*
09/1/2020	Sea urchin/chronic	n/a	n/a	n/a	n/a	No Sample result*
02/15/2021	Sea urchin/chronic	0	-1.8%	8	1%	No
08/15/2021	Sea urchin/chronic	0	-3.7%	8	2%	No

*No sample submitted due to COVID conditions at facility

EPA analyzed the above data and determined that the discharge does not have reasonable potential for chronic toxicity. This is because chronic toxicity test results Pass (1) indicating no toxicity is present in the effluent and/or no associated PE (Percent (%) Effect) value is \geq 10 indicating toxicity at a level higher than acceptable is not present in the effluent (see Table 3 and section 1.4 in TST Technical Document). Thus, no chronic toxicity WQBELs are required for the permitted discharge (40 CFR § 122.44(d)(1)). However, EPA has retained the requirement

¹ Type I error (α) is the error of rejecting the null hypothesis that should have been accepted. Type II (β) error is the error of accepting the null hypothesis that should have been rejected. For toxicity tests, the true population mean (μ) refers to the mean for a theoretical statistical population of results from indefinite repetition of toxicity tests on the same control water and sample (e.g., a 24-hour composite sample of effluent). For an individual toxicity test, there must be a statistical analysis to determine if the null hypothesis is rejected in favor of the alternative hypothesis—in other words, that the difference in sample and control means is real and not simply reflective of random variation among the tested organisms.

for monitoring and reporting chronic toxicity, so that effluent toxicity can be assessed in relation to CWA requirements for the permitted discharge (see Part I, Table 2 in NPDES permit).

Permit Part II.C.3 describes the WET method (Fertilization Test Method 1008.0) and test species to be used for this effluent monitoring, requiring the permittee to conduct chronic toxicity monitoring using either the purple sea urchin or the eccentric sand dollar via U.S. mainland laboratories. For NPDES samples for toxicity testing, the sample hold time begins when the 24-hour composite sampling period is completed (or the last grab sample in a series of grab samples is taken) and ends at the first time of sample use (initiation of toxicity test). 40 CFR § 136.3(e) states that the WET method's 36-hour hold time cannot be exceeded unless a variance of up to 72-hours is authorized by EPA. In a June 29, 2015 inter-office memorandum, EPA Region 9 authorized a hold time variance of up to 72-hours applicable only to Pacific Island Territory permittees **which ship the NPDES sample to the continental U.S. for toxicity testing**, with conditions (see NPDES permit).

In accordance with 40 CFR § 122.44(d)(1)(ii), in setting the permit's levels for chronic toxicity and conditions for discharge, EPA is using a test species/chronic short-term WET method and a discharge Instream Waste Concentration (IWC) representing conservative assumptions for effluent dilution necessary to protect receiving water quality. The IWC is a discharge-specific term based on the permit's authorized mixing zone or initial dilution. Generally, the dilution model result "S" from Visual Plumes/Cormix is used. S is the volumetric dilution factor, i.e. 1 volume effluent is diluted with S - 1 volumes surface water = $[(V_e + V_a) / V_e]$. Following the mass balance equation, if the dilution ratio $D = Q_s / Q_e$, then $[(Q_e + Q_s) / Q_e] = 1 + D = S$.

For this discharge, $S = 1$ (i.e., no authorized dilution). The discharge-specific IWC = 1 to 1 dilution (1:1, 1/1) = 100% effluent. The IWC made by the toxicity laboratory is mixed as 1 part solute (i.e., effluent) to 0 parts dilutant (1: (1 - 1)) for a total of 1 part.

The TST's null hypothesis for chronic toxicity (H_0) is: In-stream Waste Concentration (IWC) mean response (% effluent) ≤ 0.75 Control mean response. The TST's alternative hypothesis is (H_a): IWC mean response (% effluent) > 0.75 Control mean response. For this permit, results obtained from a single chronic toxicity test are analyzed using the TST statistical approach, where the required chronic toxicity IWC for Discharge Point Number 001 is 100% effluent.

For POTWs, it is not practicable (40 CFR § 122.45(d)) for EPA to set an average (median) weekly effluent limit, in lieu of a maximum daily effluent limit. This is because discharges of unacceptable toxicity—true chronic toxicity ≥ 25 PE, the TST's chronic toxicity RMD—are not adequately restricted by two effluent limits (median weekly and median monthly) each using a median of up to 3 toxicity test results. Under such limits, a highly toxic (chronic, acute) discharge could occur with no restriction. Moreover, using two such median limits further decreases the probability that an effluent with unacceptable toxicity will be caught, resulting in a permitted discharge which under-protects the aquatic life from unacceptable chronic toxicity.

Species sensitivity screening for chronic toxicity is not an automatic requirement in this permit. However, the permit retains a species sensitivity screening condition as an option for the

permitting authority to exercise, particularly when the quality of the permitted discharge has changed, or is expected to change, during the permit term.

D. Receiving Water Monitoring

The permit requires the permittee to continue to monitor for pollutants or parameters with technology-based effluent limits (i.e., pH) and water quality-based effluent limits (e.g., dissolved oxygen, temperature, turbidity, total nitrogen, total phosphate and enterococcus) in the receiving waters for the duration of the permit. The purpose of this receiving water monitoring is to determine compliance, based in part on the approved mixing zone conditions and dilution value therein; i.e., evaluate if the effluent pollutant levels, upon reaching the edge of the mixing zone, have met the ambient water quality standards. This permit adds one ambient control station, titled “RWC”, which is to be located approximately 1000 m. away from the edge of the zone of mixing and up current from discharge outfall. This RWC location is designed to reduce influence of the outfall discharge and represent a reference or control station. This permit defines the minimum frequency of monitoring in the receiving waters. The special conditions within this permit provide the permittee with the option of submitting a receiving water monitoring plan that may propose changes to locations, frequency and parameters. The permittee must submit this proposed receiving water monitoring plan to EPA for review and approval prior to switching over to the receiving water monitoring plan. Once EPA has evaluated the permittee’s receiving water monitoring plan, EPA may need to re-open the permit to be consistent with federal regulations at 40 CFR §§ 122 and 124. EPA may separately request the permittee provide receiving water results via email in spreadsheet format.

Based on this analysis, this permit retains the receiving water monitoring requirements.

IX. SPECIAL CONDITIONS

A. Biosolids

Standard requirements for the monitoring, reporting, recordkeeping, and handling of biosolids in accordance with 40 CFR § 503 are incorporated into the permit. The permit also includes, for dischargers who are required to submit biosolids annual reports, which include major POTWs that prepare sewage sludge and other facilities designated as “Class 1 sludge management facilities”, electronic reporting requirements. Permittees shall submit biosolids annual reports using EPA’s NPDES Electronic Reporting Tool (“NeT”) by February 19th of the following year. See CDX.epa.gov; the Sadog Tasi facility number for biosolids is MPL020010.

B. Pretreatment

EPA has established pretreatment standards to prevent the introduction of pollutants into POTWs which will interfere with or pass through the treatment works, and to improve opportunities to recycle and reclaim municipal and industrial wastewaters and sludges (Section 307 of the CWA). EPA requires any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 MGD and receiving from nondomestic sources

pollutants which pass through or interfere with the operations of the POTW or are otherwise subject to pretreatment standards to establish a pretreatment program.

There are no nondomestic facilities discharging pollutants which pass through or interfere with the operations of this POTW, or which are otherwise subject to pretreatment standards. Therefore, there are no pretreatment requirements in this permit.

C. Capacity Attainment and Planning

The permit requires that a written report be filed to EPA Region 9 within ninety (90) days if the average dry-weather wastewater treatment flow for any month exceeds 90 percent of the annual dry weather design capacity of the waste treatment and/or disposal facilities.

D. Development and Implementation of Best Management Practices

Pursuant to 40 CFR § 122.44(k)(4), EPA may impose Best Management Practices (BMPs) which are “reasonably necessary...to carry out the purposes of the Act.” The pollution prevention requirements or BMPs in the permit operate as technology-based limitations on effluent discharges that reflect the application of Best Available Technology and Best Control Technology. Therefore, the permit requires that the permittee develop and implement appropriate pollution prevention measures or BMPs designed to prevent pollutants from entering Saipan Lagoon and Tanapag Harbor and other surface waters while performing normal processing operations at the facility and during sampling events in the receiving waters.

E. Asset Management

40 CFR § 122.41(e) requires permittees to properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Asset management planning provides a framework for setting and operating quality assurance procedures and ensuring the permittee has sufficient financial and technical resources to continually maintain a targeted level of service. Asset management requirements have been established in the permit to ensure compliance with the provisions of 40 CFR § 122.41(e).

The permit requires the permittee to develop an Asset Management Plan (AMP), specific to the Sadog Tasi wastewater treatment plant, due within two years of permit effective date. The permittee is currently receiving technical support from EPA in form of contractor assistance to develop the AMP. EPA will review and comment on the AMP. Once EPA approves the AMP, then the permittee is expected to implement the plan and retain it on site throughout the permit time period.

The permittee shall also review and update their existing Emergency Response Plan or equivalent to describe protocols and equipment necessary to respond to emergencies (e.g., power outages) that could result in untreated or partially treated discharges from the WWTP into receiving waters and degrade water quality. The updated emergency response plan shall be completed before the end of the permit term and then retained on site and available upon request by EPA or BECQ.

F. Inspection of Outfall and Diffuser and Summary Report

This permit requires the permittee to inspect and report on the condition of the outfall pipe and diffuser within the three years of permit effective date. The previous inspection was completed around 2010. At that time, some diffusers were described as partially functional due to biofouling. Concurrent with the outfall inspection, the permittee is also required to assess the benthic physical habitat and marine organisms via visual observation regarding corals or fish habitat that may exist within 50 ft. radius of the outfall terminus. The permit also requires the permittee to submit an inspection plan to EPA and NMFS prior to performing the outfall inspection. EPA and NMFS will review and comment on the proposed inspection plan prior to the inspection. Upon completion, the inspection summary report is due within 180 days after the inspection completion date and shall also describe the permittee's plans and timeline to address any necessary repairs and/or maintenance to the outfall pipe or diffuser system.

G. Compliance Schedule for Enterococcus Effluent Limitations

When a discharger cannot immediately comply with a WQBEL upon the effective date of an NPDES permit, the permit may, when appropriate, specify a schedule of compliance leading to compliance with CWA and regulations (see 40 CFR § 122.47). The permit for Agingan WWTP establishes a more stringent WQBEL for enterococcus based on a revised water quality standard (CNMI Water Quality Standards, 2018). In determining whether a compliance schedule for enterococcus is appropriate to include in the permit, EPA considered the following information, in accordance with EPA's 2007 Memo,² titled Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits, and applicable regulations:

CNMI Water Quality Standards

Compliance schedules are allowed only if the territory has indicated in its water quality standards that it intends to allow them. Part 65-130-455 (f) of CNMI Water Quality Standards (2018) states "BECQ authorizes the use of compliance schedules for water quality-based effluent limitations in national pollution discharge elimination system (NPDES) permit issued by the permitting authority." Thus, EPA has determined the CNMI water quality standards allow for the inclusion of a compliance schedule.

Discharger Compliance

In order to grant a compliance schedule, EPA must determine the permittee cannot immediately comply with the WQBEL upon effective date of the permit. In the 2017-2022 permit term, the maximum daily discharge concentration of enterococcus was above the new maximum daily effluent limitation of 11,440 MPN/100mL in 35% of the reported samples. This new final maximum daily effluent limit is based on a recently (2018) revised WQS. Additionally, the permittee submitted the following as part of a comment in response to the public notice draft permit: "Should currently proposed Enterococci limits be established without a corresponding compliance schedule and necessary grant funding, permit exceedances will result." Based on this information, EPA has determined the discharger cannot immediately

² https://www3.epa.gov/npdes/pubs/memo_complianceschedules_may07.pdf

comply with the WQBEL based on the revised water quality standard upon the effective date of the permit.

Appropriateness of Compliance Schedule

During the 2017-2022 permit term, enterococcus concentrations above 37,440 MPN/100 mL (the maximum daily effluent limit) were concurrent with times when the WWTP was having operational issues with the clarifier and aerators. The permittee currently has both approved plans and funding for WWTP upgrades to replace the aerator, process flow pipe, and install a rotary fine screen and grit chamber at the headworks. These upgrades will improve system performance and should lower enterococcus concentrations in the effluent. Due to the need for effluent treatment upgrades to meet the daily maximum enterococcus effluent limitation in the permit, EPA has determined a compliance schedule is appropriate.

Compliance Schedule and Actions

EPA has included a compliance schedule in the permit for the maximum daily effluent limit for enterococcus. The actions associated with the compliance schedule include WWTP upgrades in accordance with the ASADRA workplan reviewed and approved by EPA. These upgrades shall be completed by the date specified in the workplan, and no later than May 1, 2024. The upgrades are designed to improve effluent quality and the near-term schedule specified above are expected to lead to compliance with the final maximum daily effluent limit for enterococcus as soon as possible.

Compliance with the maximum daily effluent limitation of 11,440 MPN/100mL for enterococcus is required by May 1, 2024. Within 14 days of this date, the permittee shall report to EPA compliance or non-compliance with final requirements contained in the compliance schedule of this permit. See 40 C.F.R. § 122.41(l)(5).

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Consideration of Environmental Justice

EPA's Environmental Justice policy establishes fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. As part of the environmental permitting process, EPA considers cumulative environmental impacts to disproportionately impacted communities.

EPA conducted a screening level evaluation of vulnerabilities in the community posed to local residents near the vicinity of the permitted wastewater treatment plant using EPA's EJSCREEN tool. The purpose of the screening is to identify areas disproportionately burdened by pollutant loadings and to consider demographic characteristics of the population living in the vicinity of the discharge when drafting permit conditions.

In CNMI, EPA is aware of several environmental burdens facing communities including air emissions from petroleum power generation and bacteriological impairments for streams and

beaches across the territory. Most notably, Typhoon Yutu occurred in October 2018, this caused catastrophic destruction and subsequent power outages on CNMI and resulted in inconsistent drinking water supply.

EPA is aware of the potential for burden of the permitted discharge on the impacted community and issues this permit consistent with the CWA, which is protective of all beneficial uses of the receiving water. This includes more stringent enterococcus limits intended to protect human health from recreational use in the receiving waters. In addition to these permits, EPA provides support to CUC through compliance and State Revolving Funding assistance. Continued engagement across all water programs is critical to establish consistent expectations and resources to support water and wastewater infrastructure. In consideration of the above, EPA believes the permitted discharges to marine waters should not contribute to undue incremental environmental burden and has made reasonable effort to ensure the community has, at a minimum, the same degree of protection as communities with less environmental burdens.

B. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat.

Action Area

The federal action is EPA's renewal of the existing NPDES permit. The facility and its outfall are established and there are no plans for new construction to expand the WWTP facility, nor new pipelines or hydrology alterations that will cause disruption of land or removal of land-based habitat. The action area can be described as two general areas. First the land-based action area includes the facility, its treatment ponds and its surrounding grounds. Second, the marine-based action area includes the discharge area surrounding the outfall structure in Saipan Harbor. The total action area includes the landside footprint of the Sadog Tasi wastewater treatment plant and its existing discharges thru the outfall into the nearby harbor.

The outfall extends 1250 feet off Charlie Dock and its diffuser ports are 49 feet deep on the seafloor of Saipan Lagoon. The mixing zone is defined according to the location and dimensions of the active outfall diffuser ports (i.e., 49 feet deep and 49 feet in all directions). Thus, the action area is in the immediate vicinity of the discharge point to the boundary of the mixing zone is also equivalent to the "zone of initial dilution."³ Past the 49-foot radius, the effluent will be highly diluted after mixing with the surround waters in Tanapag Harbor, or the mixed effluent will reach the shore at Charlie Dock. EPA believes the effluent will be well mixed, highly diluted and insignificant in the receiving waters extending out to and including nearby coral reefs such as the Managaha Marine Conservation Area.

³ In 2023, BECQ issued a Mixing Zone approval for the existing permit and its timeframe.

This permit also requires the discharger to perform receiving water quality monitoring in the ambient waters at seaward and shoreline edge of mixing zone for each WWTP outfall. The vessel captain uses live boating techniques (i.e., GPS to reach and hold) each sampling site; therefore, the vessel does not use an anchor, nor are there any temporary or permanent wires to assist with locating the vessel. The discharger collects water samples at approximately 0.5 m. depth using a Niskin type/sampling device at each site. Given the close-to-surface sampling depth at each sampling site, the sampling device does not approach or harm the seafloor bottom nor aquatic plants. Receiving water quality monitoring for most parameters occurs monthly.

Listed Species Near the Action Area

On January 4, 2022, EPA contacted the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife’s (USFWS) Pacific Islands Offices requesting a list of threatened and endangered species in the vicinity of the outfall. EPA received a list of threatened and endangered species in the vicinity of the discharge from NMFS on January 5, 2022 and a list from USFWS on January 11, 2022. The listed status of each species is shown (E = endangered, T = threatened), as is the anticipated level of affect associated with this project, including: not likely to adversely affect (NLAA) and no effect (NE).

Status	Species/Listing Name	Designated Critical Habitat	Affect
T	Mariana fruit bat (<i>Pteropus mariannus mariannus</i>)	No	NE
E	Nightingale reed warbler (<i>Acrocephalus luscinia</i>)	No	NE
E	Mariana gray swiftlet (<i>Aerodramus vanikorensis bartschi</i>)	No	NE
E	Mariana common moorhen (<i>Gallinula chloropus guami</i>)	No	NE
E	Humped tree snail (<i>Partula gibba</i>)	No	NE
E	Central West Pacific green sea turtle ¹ (<i>Chelonia mydas</i>)	No	NLAA
E	Hawksbill sea turtle (<i>Eretmochelys imbricata</i>)	No	NLAA
T	Indo-West Pacific scalloped hammerhead shark (<i>Sphyrna lewini</i>)	No	NLAA
T	Oceanic Whitetip Shark (<i>Carcharhinus longimanus</i>)	No	NLAA
T	Giant Manta Ray (<i>Manta birostris</i>)	No	NLAA
T	Corals (<i>Acropora globiceps</i> ,)	Proposed	NLAA

1) Includes turtle nesting

Terrestrial Species

The Nightingale reed warbler, listed as endangered, may exist as three sub-species, including (*Acrocephalus hiwae*) which has known populations on Islands of Saipan and Alamagan. The Saipan population has decreased by more than half between 1982 and 2007. USFWS began conducting a home range study for the species in 2019; results are expected in 2021-22. Several on-going threats exist to the Saipan population, including habitat loss and degradation, predators such as brown treesnake, invasion of habitat by non-native plants, typhoons, fires and human disturbance.

The Nightingale reed warbler is found in thicket-meadow habitat, upland marshes and inland wetland habitats on Saipan. There is no recent confirmation or additional information about the species in Saipan lagoon. Feeding habits include insects from live and dead leaves and dead stubs. Nesting occurs in upland habitats. No critical habitat has been provided by USFWS for this species.

The **Mariana common moorhen** (*Gallinula chloropus guami*) is an inhabitant of emergent vegetation in freshwater lakes, marshes, swamps, and wet rice paddies. The species exists on Saipan, Tinian and Rota. Its preferred habitat includes freshwater lakes, marshes and swamps. Moorhens feed on both plant and animal matter in or near water. The Mariana common moorhen appears to be active both during the day and at night. Some evidence suggests that moorhens fly primarily at night.

Because moorhens require wetlands with specific criteria for vegetative cover as well as depth, the most serious threat to the continued existence of the moorhen include the continuing disappearance of suitable wetland habitat. In addition, predation by the brown treesnake and the potential for avian disease are also considered serious threats to the species. No critical habitat has been provided by USFWS for this species.

The **Mariana grey swiftlet** (*Aerodramus bartschi*) is the only resident swift in the Marianas Islands. A 2020 population estimate has 3,817 individuals in 9 colonies on Saipan. This species belongs to a genus of swiftlet with the rare ability of echolocation which allows them to reside in caves. Mariana gray swiftlets forage over a wide variety of terrain and capture insects while flying. No critical habitat has been established by USFWS for this species.

The **Mariana fruit bat** (*Pteropus mariannus mariannus*) is threatened due to habitat loss/degradation, typhoons and predation by the brown treesnake. On islands inhabited by humans, bat colonies usually occur in remote sites, especially near or along cliff lines. Populations of this species are declining on Saipan, presumably due to illegal hunting since fruit bats are used as food by humans. Generally, these bats are highly colonial and known to roost and forage in various tropical fruit trees and other dense vegetation. The USFWS 2009 recovery plan for this fruit bat does not include descriptions that the species relies on water sources for life. No critical habitat has been established by USFWS for this species.

The **Humped Tree snail** (*Partula gibba*) is endemic to the forest ecosystem of the Marianas Islands, including Saipan. This land snail inhabits cool, dense forest habitat to provide shade and conserve moisture. They do not appear to rely on any specific vegetation and they forage on live and decaying plant material such as fungi and microalgae. These tree snails have declined primarily due to habitat degradation, including destruction by typhoons. Populations of this species on Saipan were estimated at 41 individuals in one location (USFWS 2010). No critical habitat has been established by USFWS for this species. No critical habitat has been established by USFWS for this species.

Dendrobium guamense is an orchid endemic to Saipan. *Heritiera longipetiolata* is a flowering plant or grown tree, growing from crevices in limestone plateaus or slopes. No critical habitat has been established by USFWS for both species.

EPA believes land-based these species are not likely to regularly interact, drink or ingest food associated with the facility's discharge; therefore, the permit will not affect the terrestrial species. EPA also believes the permit will have no effect on critical habitat.

Marine Species:

The **Central West Pacific Green Turtle and Hawksbill Sea turtle** have been sighted in nearshore waters of Saipan. NOAA/NMFS scientists have captured and/or tagged both types of turtles near Managaha Island and the surrounding Marine Conservation Area. Both turtles are generally found in shallow waters where they forage and rest, except when migrating. Green turtles eat a variety of plants and invertebrates, and adults feed almost exclusively on seagrass and marine algae. Hawksbill turtles feed mainly on sponges and sea anemones and jellyfish. Although green turtle nesting activity is documented along other coastal areas of Saipan, there has been no documented turtle breeding in the action area, specifically within Tanapag Harbor.

If a turtle were to come into contact with the effluent, the individual would be able to quickly pass through the effluent inside the mixing zone. Additionally, the permit establishes limits that will ensure the protection of aquatic life at the outer edges of the mixing zone and beyond to waters of the harbor.

Sea turtles are threatened by the loss of nesting and feeding habitats, excessive egg collection by humans, and illegal human take. Both Green and Hawksbill turtles suffer stranding due to fishing and debris entanglement, shark bites, boat strikes, and infectious disease. The permit does not consider or allow any activities on beaches, such as construction or compaction of sand that may alter nesting areas; thus, EPA has therefore determined the outfall may affect but is not likely to adversely affect threatened sea turtles in the greater Tanapag Harbor EPA has determined that the action will have no effect on sea turtle nesting areas on the neighboring shoreland.

The **Indo West Pacific Scalloped Hammerhead Shark and Whitetip Shark** are pelagic species and thus generally found offshore in open ocean waters. Both species are considered top predators and thus feed primarily on fish, squid, rays and even garbage. They are considered surface-dwelling sharks as they prefer warm waters in the surface mixed layer. The

biggest threat to both listed sharks is incidental bycatch in commercial fishing and used in shark fin trade.

There was one sighting of a scalloped hammerhead shark in 2007 by a NOAA diver in the lagoon. The fringing reef around Managaha Island provides better habitat for prey species, and thus better habitat for hammerhead sharks. If an individual of either species were to enter Tanapag Harbor and come in contact with the effluent, the individual would be able to move quickly thru the mixing zone.

The **Giant manta ray** is the world's largest ray and is a migratory species that make seasonal visits to productive coastlines areas and embayments. They utilize sandy bottom habitat and seagrass beds, as well as shallow reefs and shallow waters where they eat large quantities of zooplankton. The main threat to the giant manta ray is commercial fishing, with the species both targeted and caught as bycatch in fisheries throughout its range.

EPA acknowledges that federally listed marine species could pass through the mixing zone area and encounter higher exposure to pollutants, albeit for short times and short exposures. At the outer edge of the mixing zone and extending beyond, the effluent will be sufficiently diluted as to meet water quality standards. For these mobile marine species, their range of existence could be larger than the greater Tanapag Harbor and thus their exposure to effluent is further dispersed, infrequent and insignificant outside the zone of mixing.

The facility does not project increased flows during the permit term. Also, the permit doesn't include a compliance plan, so the quality of the discharge is anticipated to meet permit effluent limitations and CNMI marine water quality standards in receiving waters. Given the mobile nature of marine organisms and wide range of habitat, EPA expects the permit renewal, but not likely to adversely affect the ESA-listed turtles, sharks and manta ray.

NMFS has listed as threatened 15 **coral species** in Indo-Pacific ocean waters. NMFS has confirmed only one species, *Acropora globiceps*, exists on Saipan coasts. The *Acropora globiceps* is a species of stony corals, which occur in shallow waters (less than 10 meters). The Sadog Tasi outfall for the discharge is at 49 feet (about 15 meters). In order to establish and thrive in an area, reef-building corals need the water temperature to be within a certain range (typically 25 °C-30 °C), as well as hard substrate, enough light, adequate water flow, and good water quality.

Top threats to corals include ocean warming, ocean acidification, dredging, coastal development, coastal point source pollution, agricultural and land use practices, disease, predation, reef fishing, aquarium trade, physical damage from boats and anchors, marine debris, and aquatic invasive species.

A recent scientific study (Nalley; et al., 2021) evaluated the water quality thresholds for coastal contaminants on corals. The results present exposure levels of contaminants to certain coral species and various biological responses. For example, copper levels at approximately 50 ug/L showed adverse effects to coral gamete fertilization success and larval survival. Coral adult photosynthetic efficiency was more vulnerable to similar concentrations of the herbicide Diuron.

This study, which includes analysis of numerous studies, describes that pollutants can cause reductions in coral reproductive function, recruitment, growth rates, and a survivorship of both larvae and adult coral species.

The facility reports below detection levels for many priority pollutants in effluent, including copper and other heavy metals. The permit requires one priority pollutant scan to be completed, concurrent with whole effluent toxicity testing. The permit retains effluent limitations for sediment in the form of total suspended solids. The permit retains effluent limitations for nutrients and monitoring of effluent and receiving water is required for total nitrogen and total phosphorus. The facility does not apply chlorination for disinfection. The discharge is unlikely to be contribute to ‘bleaching’ of nearby coral reefs. EPA has therefore determined the outfall may affect but is not likely to adversely affect threatened coral species in the greater Tanapag Harbor.

Critical Habitat for Corals

NMFS has proposed critical habitat for two of these three species in CNMI at depth of 0-40m. The definition of critical habitat includes areas occupied by the species that have “essential features” which may require special management and are within U.S. waters. The proposed critical habitat includes the greater Tanapag Harbor, yet it excludes “managed areas” (e.g., harbors, navigation channels, channel markers, anchorages, buoys, boat ramps, wharves, etc.) within the Harbor. The facility outfall into Saipan Lagoon is likely within the “managed areas”, yet the action area of the permit is within the proposed critical habitat areas for these threatened corals. The distance from the outfall terminus to Managaha Island is approximately 1.5 miles. As previously stated, the discharge will be sufficiently dispersed at the edge of mixing zone to meet CNMI water quality standards in the proposed critical habitat. EPA has concluded the permit may affect but is not likely to adversely affect proposed coral critical habitat in the greater Tanapag Harbor.

Summary

In summary, EPA concludes this permit reissuance will not affect the federally listed threatened and endangered birds, bats or snail species that may be present in the action area under the US Fish and Wildlife Services jurisdictions. There will be no effect on critical habitat for these terrestrial species.

For the marine species, EPA concludes the continued discharge may affect but not likely to adversely affect the federally listed threatened and endangered turtles, sharks, manta ray and corals, under the NOAA National Marine Fisheries jurisdictions. The effluent limits in the permit will not result in acute or chronic exposures to contaminants that would affect federally listed threatened and endangered species or impair any designated critical habitat. The effluent limits and monitoring requirements in the permit are designed to be fully protective of the beneficial uses of the receiving waters. Proposed critical habitat for coral species may be affected but is not likely to be adversely affected by the permit reissuance.

On June 14, 2022, EPA provided NMFS with a copy of the draft fact sheet, draft permit, and Biological Evaluation to initiate informal consultation. EPA submitted a revised Biological Evaluation on July 29, 2022. NMFS concurred with EPA’s determinations in a letter dated

August 26, 2022. If, in the future, EPA obtains information or is provided information that indicates that there could be adverse impacts to federally listed species, EPA will contact the appropriate agency or agencies and initiate consultation, to ensure that such impacts are minimized or mitigated.

C. Impact to Coastal Zones

The Coastal Zone Management Act (CZMA) requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA §§ 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR § 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

On July 29, 2022, EPA received a CZMA consistency certification from the CNMI Division of Coastal Resources Management for the Sadog Tasi WWTP permit.

D. Impact to Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (MSA) set forth a number of new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires Federal agencies to make a determination on Federal actions that may adversely impact Essential Fish Habitat (EFH).

EFH has been designated in the Marianas and includes the marine water column from the surface to a depth of 1,000 meters from the shoreline to the outer boundary of the Exclusive Economic Zone (200 nautical miles), and the seafloor from the shoreline out to a depth of 400 meters around each of the Mariana Islands. Thus, the waters and seafloor surrounding Saipan are designated EFH. The EFH in the Marianas is designated to support various life stages of Bottomfish and Pelagics. Bottomfish EFH designations include the benthos, which includes habitat forming EFH (e.g., corals), from the shoreline to the 400-meter isobath.

These EFH designations encompass the outfalls and mixing zones for this facility. Thus, the Sadog Tasi WWTP discharges into designated EFH. The vessel transit pathway (approximately 10 miles) along the west coast is also assumed to be within the EFH designation.

The federal action is renewing the existing NPDES permit for the facility's discharge of treated wastewater into Saipan Lagoon. The outfall extends 1250 feet offshore into Saipan Lagoon with the diffuser system resting on the harbor bottom at a depth of about 49 feet. A mixing zone surrounds the outfall, as described by CNMI BECQ, is defined 49 feet in all directions from the diffuser.

The potential adverse effects to essential fish habitat are possible distribution and settling of discharged solids and semi-solids onto the seafloor within the mixing zone area. Also discharged

pollutants (both sorbed to particles and dissolved) will mix within waters within the mixing zone and possibly affect nearby bottom fish and crustacean habitat. As for fish habitat outside the mixing zone BECQ's mixing zone approval states "*at the boundary of the mixing zone the water shall comply with the water quality standards*", thus, water at the edge and beyond the mixing zone will meet BECQ designated Class1 marine water quality standards.

The permittee reports the harbor bottom in immediate vicinity of the outfall is sand and hard surface/rock. The permit retains effluent limitations for sediment in the form of total suspended solids. The permit retains effluent limitations for total nitrogen and total phosphorus. The permittee is not currently using chlorine for disinfection; this permit does not require adding chlorination to treatment.

In this permit, EPA included a requirement for the permittee to submit a draft plan for the outfall inspection and the benthic habitat assessment. This plan will be submitted to EPA and shared with NMFS for review and recommendations by both federal agencies prior to implementation by the discharger. Within 180 days after the inspection and assessment are complete, then the permittee must provide a final report, including any photographs or videos (and audio description of photos) to EPA. This report will be shared with NMFS soon thereafter.

The permit requires compliance with technology-based effluent limits, and numerical and narrative CNMI water quality standards designed to be compatible with the protection and propagation of fish, shellfish, and wildlife.

EPA concluded the permit and associated treated discharges will have no adverse effect on essential fish habitat outside the mixing zone; whereas, there may be adverse effects to coral, crustacean and shallow water bottom fish habitat within the 49 foot mixing zone based on the following considerations:

- Inside the zone of mixing, pollutant levels may exceed applicable water quality criteria, in accordance with the mixing zone policy in CNMI WQS. Potential adverse effects to essential habitat within the mixing zone include possible settling of solids and semi-solids onto the seafloor. Additionally, EFH may be negatively affected by the levels of dissolved or sorbed pollutants in the mixing zone, which can be toxic to aquatic marine life and the habitat they depend on.
- At the edge of the mixing zone and beyond, the discharge must meet water quality criteria for Class A marine waters, including standards for the protection of aquatic life. WQS for the protection of aquatic life were adopted to allow for the protection and propagation of marine organisms, including fish, shellfish and other aquatic organisms, corals, and other reef-related resources. These standards include narrative criteria as well as numeric criteria for bacteria, pH, and nutrients.
- Monitoring results of effluent from each facility show no chronic toxicity and no detections of priority pollutants; e.g., metals, PAHs, legacy pesticides, other priority organic pollutants within the full list of priority pollutants.

- Each facility does not apply chlorination for disinfection; thus, the discharges are unlikely to be contribute to ‘bleaching’ (via chlorine) of nearby coral. In addition, ongoing upgrades at both CNMI WWTPs (planned and funded for next two years) will continue to improve the quality of effluent flowing through each respective outfall.
- A recent scientific study (Nalley, et al., 2021) evaluated the water quality thresholds for coastal contaminants on corals. The results present the lowest-observed adverse effect levels (LOAEL) for contaminants for various coral species. The effluent concentrations are expected to be below the listed LOAELs at the edge of the mixing zone.
- The permits retain receiving water monitoring for several parameters, including pH, dissolved oxygen, nutrients, and enterococci.
- The permits retain chronic toxicity testing once per permit term.
- Regarding vessel transit and potential interactions with the designated essential fish habitat areas and fish and coral species, there may be motor noise that reaches these organisms although it would be intermittent and occur for a short time. EPA assumes that during transit the vessel pathway is thru deeper waters (say 10-20 m.) and generally avoids driving thru the shallower waters). The vessel motor may release small amounts of hydrocarbons into waters (surface only) and this will disperse quickly and to insignificant levels. Thus, there would be minimal harmful effects due to vessel motor noise, hydrocarbon compounds or vessel transit.

On June 14, 2022, EPA provided NMFS with a copy of the draft fact sheet and the draft permit and initiate informal consultation on EFH with NMFS. NMFS replied on July 20, 2022 and concurred with EPA’s determination. NMFS included several specific BMPs related to receiving water monitoring and continued coordination with NMFS regarding the outfall inspection and benthic habitat assessment by the permittee. NMFS concluded the “permit requirements, including increased monitoring and new BMPs, are suitable to ensure that adverse effects to EFH will be no more than minimal and that any mixing zone-specific adverse effects can be integrated into the next permit renewal process.”

A reopener clause has been included in the permit should new information become available to indicate that the requirements of the permit need to be modified.

E. Impact to National Historic Properties

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR § 800.3(a)(1), EPA is making a determination that issuing this NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

F. Water Quality Certification Requirements (40 CFR §§ 124.53 and 124.54)

For States, Territories, or Tribes with EPA approved water quality standards, on March 17, 2022, the discharger was required to seek certification (including paying applicable fees) from CNMI BECQ that the permit will meet all applicable water quality standards. Certification under CWA Section 401 shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law. EPA cannot issue the permit until the certifying Territory has granted certification under 40 CFR § 124.53 or waived its right to certify.

BECQ provided a CWA Section 401 certification for Sadog Tasi on December 6, 2022. This document is attached to the permit as Attachment E. BECQ also provided a Mixing Zone approval for the Sadog Tasi discharge on January 17, 2023.

XI. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR §§ 122 and 124, this permit may be modified by EPA to include effluent limits, modify monitoring requirements, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

B. Standard Provisions

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions.

XII. ADMINISTRATIVE INFORMATION

A. Public Notice (40 CFR § 124.10)

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a NPDES permit or other significant action with respect to an NPDES permit or application.

B. Public Comment Period (40 CFR § 124.10)

Notice of the draft permit was placed in a local newspaper within the area affected by the facility and on the EPA website, starting on June 11 and ending on July 18, 2022; this comment period met the minimum of 30 days for interested parties to respond in writing to EPA. The permit and fact sheet were posted on the EPA website for the duration of the public comment period. EPA also requested that CUC include summary information about the public comment period on its website and add web link to EPA's website for specific public notice information. EPA received written comments from one commenter. EPA developed a response to comment document to respond to all significant comments and made corresponding changes to the permit and factsheet as part of the final permit decisions and issuance. .

C. Public Hearing (40 CFR § 124.12)

A public hearing may be requested in writing by any interested party who issued comments during the public comment period. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

XIII. CONTACT INFORMATION

Additional information relating to this permit may be directed to:

Peter Kozelka (415) 972-3448
kozelka.peter@epa.gov

EPA Region IX
Water Division
R9NPDES@epa.gov

XIV. REFERENCES

- CNMI BECQ, 2002, Chapter 65-130. *Water Quality Standards*. And as Amended in 2004, 2014, 2018.
- CNMI BECQ, 2014, *Water Quality Standards Implementation Guidance Manual*. April 2014.
- CNMI BECQ, 2018, Total Maximum Daily Loads for Coastal Waters Impaired by Bacteria on Saipan. Final report dated 2017. CNMI BECQ approved December 7, 2017. EPA approved January 10, 2018.
- CNMI BECQ 2022. Probabilistic Monitoring Data at Sadog Tasi Outfall_2016-2022. Email from D. Chambers (BECQ) to P. Kozelka (EPA), dated August 9, 2022.
- CNMI BECQ, 2022. Clean Water Act Section 305(b) and 303(d) Water Quality Assessment Integrated Report. Dated October 2022.
- CNMI BECQ, 2022. Clean Water Act Section 401 certification (401-2023-003), dated December 6, 2022.
- CNMI BECQ, 2022. Mixing Zone approval (ZOM-2022-001), dated January 17, 2023.
- CNMI BECQ DCRM, 2022. Coastal Zone Management Act, consistency certification letter provided to EPA via email, dated 7/29/2022.
- CUC Wastewater Master Plan. 2013. Outfall Assessment and Dilution Analysis.
- CUC 2018. Application for Sadog Tasi Upgrades Project, Project Title –S17-059 Wastewater System Improvements for Northern Marianas Islands, signed October 19, 2018
- CUC 2020. Application [to EPA] for Additional Supplemental Appropriations for Disaster Relief Act of 2019 (ASADRA) Project Title – Wastewater System Improvements for Northern Marianas Islands, dated April 13, 2020
- CUC 2021. Conference call notes between EPA staff and CUC staff. Dated December 15, 2021.
- CUC 2022. Conference call notes between EPA staff and CUC staff on Sadog Tasi Entero[coccus]. Dated January 4, 2022.
- Denton DL, Diamond J, and Zheng L. 2011. Test of significant toxicity: A statistical application for assessing whether an effluent or site water is truly toxic. *Environ Toxicol Chem* 30:1117-1126

- Diamond D, Denton D, Roberts J, Zheng L. 2013. Evaluation of the Test of Significant Toxicity for determining the toxicity of effluents and ambient water samples. *Environ Toxicol Chem* 32:1101-1108.
- EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. Office of Water, EPA. EPA/505/2-90-001.
- EPA. 1996b. *Regions IX & X Guidance for Implementing Whole Effluent Toxicity Testing Programs*, Interim Final, May 31. 1996.
- EPA. 2002a. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms - Fifth Edition*. Office of Water, EPA. EPA-821-R-02-012.
- EPA. 2002b. *National Recommended Water Quality Criteria*. Office of Water, EPA. EPA-822-R-02-047.
- EPA. 2002c. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms (EPA/821/R-02/014, 2002)
- EPA. 2010. *U.S. EPA NPDES Permit Writers' Manual*. Office of Water, EPA. EPA-833-K-10-001.
- EPA. 2010. *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document* (EPA 833-R-10-003) 2010.
- EPA. 2013. *National Recommended Water Quality Criteria*. Office of Water, EPA. Aquatic Life Criteria Table. <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table#table>
- EPA. 2015. *National Recommended Water Quality Criteria*. Office of Water, EPA. Human Health Criteria Table. <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table>
- EPA 2022. *Essential Fish Habitat Assessment – NPDES Permit renewals for Commonwealth Utilities Corporation in CNMI, revised July 5, 2022*.
- EPA 2022. *Endangered Species Act Biological Evaluation – NPDES Permit renewals for Commonwealth Utilities Corporation in CNMI, revised June 30, 2022*.
- EPA 2022. Letter regarding NPDES renewal applications for Agingan WWTP (No. MP0020028) and Sadog Tasi WWTP (No. MP0020010). Dated February 1, 2022.
- Nalley EM, Tuttle LJ, Barkman AL, Conklin EE, Wulstein DM, Richmond RH, Donahue MJ. 2021. *Water quality thresholds for coastal contaminant impacts on corals: A systematic*

review and meta-analysis. Science of The Total Environment (794) 148632.
<https://doi.org/10.1016/j.scitotenv.2021.148632>.

NOAA NMFS. 2015. *Assessing relative resilience potential of coral reefs to inform management in CNMI*. NOAA Technical Memorandum CRCP 22 153 pp.

NOAA/NMFS - list of endangered and threatened species within the action area. Email to EPA dated January 5, 2022.

NOAA/NMFS, 2022. Final Rule on 20 reef building Coral species under ESA.
<https://www.fisheries.noaa.gov/action/listing-20-reef-building-coral-species-under-esa>

NOAA NMFS. 2022. *Conclusion of Essential Fish Habitat Assessment – NPDES Permit renewals for Commonwealth Utilities Corporation in CNMI*, July 20, 2022.

NOAA NMFS. 2022. *Informal Concurrence with Endangered Species Act Consultation – NPDES Permit renewals for Commonwealth Utilities Corporation in CNMI*, August 26, 2022.

United States District Court, Commonwealth of the Northern Marianas Islands. Stipulated Order Number One for Preliminary Injunctive Relief (Civil Case No. CV 08-0051), dated March 11, 2009

US Fish and Wildlife Service. 2022. *List of Threatened and Endangered Species Within the Action Area*. Email to EPA dated January 8, 2022.

Appendix A. Calculations for Water quality based effluent limitations

WOBEL Calculation for Enterococci

Water quality-based effluent limits for pathogens are calculated based on applicable CNMI water quality standards and the applicable critical initial dilution value of 88:1 (or 88):

$$C_e = C_r \times D_c = \text{WQBEL (pathogen)}$$

EPA used the single threshold and geomean values for enterococci as “C_r” is the applicable water quality criterion (130 CFU/100 mL) for human health recreation in Class A waters.

$$\begin{aligned} \text{Maximum daily WQBEL} &= \text{STV} \times D_c \\ &= 130 \times 88 \\ &= \mathbf{11,440 \text{ CFU/100 mL for enterococci}} \end{aligned}$$

$$\begin{aligned} \text{Average monthly WQBEL} &= \text{geomean} \times D_c \\ &= 35 \times 88 \\ &= \mathbf{3080 \text{ CFU/100 mL for enterococci}} \end{aligned}$$

WOBEL Calculation for nitrogen-total

Acute, chronic, and human health wasteload allocations (WLAs) are calculated based on applicable CNMI water quality standards, using the following steady-state mass balance equation:

$$\begin{aligned} C_e &= C_r + D_c (C_r - C_b) \\ &= \text{WLA} \end{aligned}$$

“C_r” is the water quality criterion (in mg/l, µg/l, CFU per 100 mL or TU). “D_c” is the critical initial dilution value of 88:1 (or 88) and “C_b” is the background seawater concentration (or 0).

Using the September 2004 CNMI water quality standards for **nitrogen-total** in Class A waters is 0.75 mg/L.

$$\begin{aligned} \text{Acute} = C_e &= C_r + D_c (C_r - C_b) &= & 0.75 + 88 (0.75 - 0) \\ &= \text{acute WLA} &= & 66.75 \text{ mg/L} \end{aligned}$$

Following TSD Table 5-1 for acute water quality criteria protecting aquatic life, a value of 0.321 is used as the statistical multiplier for back-calculating the acute long-term average (LTA) when the acute wasteload allocation is established at the 99th percentile occurrence probability. EPA estimates that the CV of the pollutant in the effluent is 0.6.

$$\begin{aligned}\text{Acute LTA} &= \text{acute WLA} \times \text{acute WLA multiplier factor} \\ &= 66.75 \times 0.321 = 21.43 \text{ mg/L}\end{aligned}$$

Following TSD Table 5-2 for chronic water quality criteria protecting aquatic life, a value of 0.527 is used as the statistical multiplier for back-calculating the chronic long-term average when the chronic wasteload allocation is established at the 99th percentile occurrence probability and EPA estimates that the CV of the pollutant in the effluent is 0.6:

$$\begin{aligned}\text{Chronic LTA} &= \text{chronic WLA} \times \text{chronic WLA multiplier factor} \\ &= 66.75 \times 0.527 \\ &= 34.8 \text{ mg/L}\end{aligned}$$

Following TSD Section 5.4, the lowest of the acute or chronic long-term average is selected and used to calculate maximum daily and average monthly water quality-based effluent limits:

$$\begin{aligned}\text{Minimum LTA} &= \text{acute LTA} \\ &= 21.43 \text{ mg/L}\end{aligned}$$

If the minimum long-term average is based on a water quality criterion protecting aquatic life, then the statistical procedure outlined in TSD Table 5-2 is used to calculate maximum daily and average monthly water quality based effluent limits (WQBELs). In this procedure, EPA estimates that the CV of pollutants in the effluent is 0.6 and chooses the statistical multiplier factor of 3.11 to calculate a maximum daily water quality based effluent limit established at the 99th percentile occurrence probability:

$$\begin{aligned}\text{Maximum daily WQBEL} &= \text{minimum LTA} \times \text{LTA multiplier factor} \\ &= 21.43 \times 3.11 \\ &= \mathbf{67 \text{ mg/L for Nitrogen-total}}\end{aligned}$$

Continuing with this procedure, EPA estimates that the CV of pollutants in the effluent is 0.6, assumes that the minimum number of effluent samples per month is four, and chooses the statistical multiplier factor of “1.55” to calculate an average monthly water quality based effluent limit established at the 95th percentile occurrence probability:

$$\begin{aligned}\text{Average monthly WQBEL} &= \text{minimum LTA} \times \text{LTA multiplier factor} \\ &= 21.43 \times 1.55 \\ &= \mathbf{33 \text{ mg/L for Nitrogen-total}}\end{aligned}$$