

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**  
**PROPOSED PERMIT FACT SHEET**  
**November 2019**

Permittee Name: Guam Waterworks Authority

Mailing Address: Gloria B. Nelson Public Service Building, Suite 200  
688 Route 15  
Mangilao, Guam 96913

Facility Locations: GU0020141  
Northern District Sewage Treatment Plant  
Route 34, Harmon Annex  
Dededo, Guam 96912

GU0020087  
Agaña/Hagåtña Sewage Treatment Plant  
Marine Corps Drive, Route 1  
Hagåtña, Guam 96932

GU0020222  
Agat-Santa Rita Wastewater Treatment Plant  
Route 2A, Tupalao  
Agat, Guam 96928

GU0020273  
Umatac-Merizo Wastewater Treatment Plant  
Route 2  
Merizo, GU 96915

Contact Person(s): Paul Kemp, Assistant General Manager- Compliance  
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**I. STATUS OF PERMIT**

Guam Waterworks Authority (“GWA” or “the permittee”) has applied for the renewal of their National Pollutant Discharge Elimination System (NPDES) permits to authorize the discharge of treated effluent from Northern District (GU0020141) and Agaña/Hagåtña (GU0020087) Sewage Treatment Plants to the Pacific Ocean in Guam. Applications were originally submitted on November 27, 2017 and supplemented on December 7, 2017. In addition to these two facilities, GWA currently has active NPDES permits for wastewater treatment plants Agat-Santa Rita (GU0020222) and Umatac-Merizo (GU0020273). EPA Region IX (“EPA”) is reissuing all four permits jointly to promote consistent regulatory requirements across all facilities by issuing them in a single document which includes a joint set of general conditions applicable to all four facilities. Justification for all four permits is supported in this fact sheet. The permit for Baza Gardens Wastewater Treatment Plant (GU0020095) expired on August 31, 2018, was terminated on January 31, 2019, and the WW flow formerly processed at this facility

site was re-routed to the new Agat WWTP on December 31, 2018 and will not be replaced by this permitting action.

EPA has developed these permits and fact sheet pursuant to Section 402 of the Clean Water Act, 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 permits GU0020141, GU0020087, GU0020273, and GU0020222. Pursuant to 40 CFR 122.21, the terms of the existing permits which are beyond their expiration date are administratively extended until the issuance of a new permit.

EPA has classified GU0020141, GU0020087, GU0020222 as major dischargers and GU0020273 as a minor discharger.

## II. SIGNIFICANT CHANGES TO PREVIOUS PERMITS

Permit Condition	Previous Permit(s)	New Permit	Reason for change
Northern Effluent Limitations	Settleable Solids	Nitrate, orthophosphate, copper, zinc, and toxicity.	Settleable solids limitation and monitoring removed due to new regional policy.  Limitations for new parameters added due to reasonable potential resulting from new information.  BOD and TSS limitations reduced based on flow calculation.
Agaña Effluent Limitations	Settleable Solids	Nitrate, orthophosphate, copper, silver, and toxicity.	Settleable solids limitation and monitoring removed due to new regional policy.  Limitations for new parameters added due to reasonable potential resulting from new information.
Agat Effluent Limitations	Ammonia Impact Ratio (“AIR”)	Arsenic	Ammonia limitation removed for marine discharge. Guam WQS has numeric criteria only for surface discharges.  Limitation for arsenic established due to reasonable potential resulting from new effluent data.
Umatac Effluent Limitations	-	River flow and toxicity  Elevated limitations for BOD, TSS, AIR, nitrate, and	River flow limitation added to enforce discharge prohibition (see below)  Limitation for toxicity established due to reasonable potential.

		orthophosphate	Elevated limitations for BOD and TSS due to application of equivalent to secondary standards.  Elevated limitations for AIR, nitrate, and orthophosphate as a result of proposed mixing zone.
Umatac Dry Weather Discharge Prohibition	Discharge authorized year-round.	Discharge only authorized when river flow is greater than 1.5 cfs.	Dry weather discharge prohibition included as a contingency of allowing for mixing in ephemeral Toguan River.
Umatac Internal Monitoring	Single compliance point	Multiple compliance points before and after Wetland Treatment System	Allows flexibility to meet technology-based effluent limits and enterococcus prior to natural treatment system.
Pretreatment	-	Pretreatment program submittal required one year after permit issuance	Due to volume of discharge and presence of industrial users, permittee must develop a pretreatment program within one year of permit issuance.
FOG and Asset Management	Agat only	All facilities	Fats, Oils and Grease (“FOG”) and Asset Management requirements applied across complete collection system consistent with Agat-Santa Rita permit within six months of permit issuance.
Electronic Reporting	Agat and Umatac only	All facilities	Permit requirements updated to comply with electronic reporting rule. All effluent data must be submitted electronically.
Receiving Water Monitoring	Many parameters, many locations	Monitoring required only for pollutants receiving dilution credit; monitoring focused at edge of mixing zone and ambient station.	Receiving water monitoring program has been simplified to corroborate dilution assumptions and collect data for future mixing zone applications.

### III. GENERAL DESCRIPTION OF FACILITIES

#### Northern District WWTP

Northern District WWTP is located in Dededo on the northwestern coast of the island of Guam (see Appendix A). The facility is located on a plateau that is 91 m (300 ft) above the Philippine Sea. The facility collects and treats wastewater from the regions of Dededo, Latte Heights, Perez Acres, Ypaopao, and Marianas Terrace, the Yigo Collector System, and other unincorporated subdivisions throughout Yigo and Dededo municipalities. The service area also includes U.S. military facilities (Air Force and Navy) within the areas of Dededo and Harmon Annex, and Anderson Air Force Base. The Northern District WWTP currently provides Chemically Enhanced Primary Treatment (CEPT) for a population of approximately 76,000 people.

The Department of Defense (DoD) is planning an expansion of military operations in Guam with the construction of a new Marine base that will neighbor the Northern District WWTP facility. Based on information from DoD, EPA understands that DoD is considering the installation of a new sewage connection system from the new base to the Northern District WWSTP. Present expectation is that the new DoD base will be occupied in 2022. The DoD expansion may increase future flows at Northern District.

According to the permit application, the average daily and peak hourly design flow capacities of the facility are 12.0 and 28.6 million gallons per day (“MGD”), respectively. The average and maximum daily flow discharge effluent flow was 6.04 MGD and 8.1 MGD, respectively, in 2017.

Current treatment at Northern District WWTP includes chemically enhanced primary treatment. Design treatment includes screening of raw sewage, pre-aeration for odor control and mixing of coagulant and flocculation aid, (CEPT) and primary sedimentation. Appendix B [*labeled Attachment C in draft NPDES Permit*] provides a schematic of present Northern District WWTP treatment works. GWA installed a new outfall in January 2009, extending the point of discharge approximately 500 feet further offshore, but GWA has not yet installed the multi-port diffuser which would extend the terminus of the outfall to 7,972 feet into the Philippine Sea and 140 feet deep. EPA’s 2013 Final Decision Document on Northern District’s CWA 301(h) waiver from secondary treatment standards presumed full installation of the multi-port diffuser.

#### Agaña/Hagåtña WWTP

Agaña WWTP is located on a 152.4 m by 213.4 m (500 ft by 700 ft) man-made island west of Hagåtña Bay. The facility collects and treats wastewater from the central region of Guam which includes the villages of Hagåtña, Agaña Heights, Asan Piti, Tamuning, Mongmong-Toto, Sinajana, Chalan Pago-Ordot, Yona, Mangilao, portion of Barrigada, and Tumon. The service area also includes federal government installations (Naval Hospital facilities and personnel residences). Agaña WWTP currently provides Chemically Enhanced Primary treatment (CEPT) for a population of approximately 82,645 people.

According to the application, the average daily and peak hourly design flow capacities of the facility are estimated at 12.0 and 34.1 million gallons per day (“MGD”), respectively. According to their application, the average and maximum daily flow discharge effluent flow was 6.11 MGD and 9.23 MGD, respectively, in 2017.

Design treatment at the Agaña WWTP includes screening of raw sewage, grit removal, and primary sedimentation. The existing facility conducts enhanced primary sedimentation using three clarifiers operated in parallel. Sludge is pumped to aerobic digesters and decanted prior to hauling off-site. The treatment removal is estimated to be between 30 and 80% for TSS and between 15 and 50% removal for BOD<sub>5</sub>, short of standards for secondary treatment. The outfall discharges 366 m (1,200 ft) beyond the reef line at a depth of 84 m (275 ft). According to GWA’s Basis of Design report, the outfall consists of a 107 cm (42 in) diameter pipe with a new single-port diffuser (GMP Associates, Inc. 2001).

#### Agat-Santa Rita WWTP

The former Agat-Santa Rita WWTP was located at Ga’an Point and collected sanitary wastewater from approximately 19,800 residents in Agat and Santa Rita. The permittee has

constructed a new WWTP that began operating in March 2017 and has a maximum daily inflow rate of 1.6 MGD during dry weather and 9.3 MGD during wet weather. The facility consists of a headworks, flow equalization tanks, oxidation ditches (2 anoxic/anaerobic basins and 2 aerobic basins), 2 secondary clarifiers, 2 ultraviolet disinfection channels, and 3 aerobic digesters, and 2 gravity belt thickeners. Solids are removed from the secondary clarifier and sent to aerobic digestion, then sludge drying beds before being trucked to Northern District WWTP (GU0020141).

The effluent from this treatment facility is sent through a combined outfall shared with the U.S. Navy's Apra Harbor Wastewater Treatment Plant (permit GU0110019) and discharged to the ocean through the Tipalao Bay outfall. The outfall terminates at a diffuser located approximately 1,600 feet from shore, at a depth of 125 feet.

The permittee shut down their Baza Gardens Treatment Plant on December 31, 2018 and re-routed all flows to the Agat-Santa Rita facility by that date. The permit for Baza Gardens has been terminated.

#### Umatac-Merizo WWTP

Umatac-Merizo WWTP is located in the town of Merizo, Guam. The facility discharges treated domestic wastewater from the facility to the Toguan River, which flows into the Toguan Bay, a part of the Philippine Sea.

The facility was built in 1981 and is a Class II wastewater treatment plant as defined by the Guam Environmental Protection Agency ("GEPA") and was designed to serve approximate 4,000 residents. The facility has a Waste Stabilization Pond Treatment System ("WSPTS"; a mechanically aerated, facultative treatment lagoon) and Wetlands Treatment System ("WTS"). The WTS consists of six constructed wetland ponds where evapotranspiration and percolation treat effluent from the stabilization pond. The facility does not currently disinfect its effluent.

Design flow for the facility is 0.39 million gallons per day ("MGD"), however discharge is intermittent and correlates to rainfall.

The applicant is currently upgrading the headworks, aerated lagoon, pump station and WTS system to increase effectiveness of treatment at the facility. The applicant expects the project to be completed by July 2019.

#### Court Order

An order for preliminary relief was filed by the Guam District Court in November 2011 against the permittee. The order mandates upgrades and studies for all five existing facilities and their collection systems. EPA is working with the permittee to help oversee compliance with the order.

#### Detailed Maps and Schematics

GWA has provided more detailed maps and schematics of current and planned operations for all four facilities. The files are being maintained in the admin record and are available upon request.

#### **IV. DESCRIPTION OF RECEIVING WATER**

##### Northern District WWTP

Northern District WWTP discharges into coastal waters that are located south of Tanguisson Point on the northern shoreline of Guam. There are no embayments in this area, but long, shallow indentations exist to the north and south of Tanguisson Point.

##### Agaña/Hagåtña WWTP

Agaña/Hagåtña WWTP discharges into coastal waters that are located off Agaña Bay on the central and western shoreline of Guam in the Philippine Sea. Agaña Bay is located between Oca and Adelup Points and is characterized by a wide fringing reef flat that borders most of the area. The shoreline is characterized as rubble with sand with coral-algal rubble covering the ocean floor.

##### Agat-Santa Rita WWTP

Agat-Santa Rita WWTP discharges out a joint deep ocean outfall along with the U.S. Navy's Apra Harbor WWTP into Tupalao Bay of the Philippine Sea. Discharge from Apra Harbor WWTP is regulated under NPDES permit GU0110019.

##### Umatac-Merizo WWTP

Umatac-Merizo WWTP discharges to the Toguan River via a spillway downstream of the Wetland Treatment System and outfall 001. The discharge comingles with the Toguan River for less than half a mile before flowing into the Toguan Bay in the Philippine Sea.

##### Receiving Water Classifications and TMDLs

The Guam Water Quality Standards ("WQS") classify the Toguan River in the vicinity of the Umatac-Merizo discharge as "Category S-3 Low." Surface water in this category is primarily used for commercial, agricultural, and industrial activities.

For all other outfall locations, the Guam WQS classify the vicinity of the receiving water as "Category M-2 Good" marine waters. The beneficial uses for this category of waters are the propagation and survival of marine organisms, particularly shellfish and coral reefs. Other important and intended uses include maricultural activities, aesthetic enjoyment, and compatible recreation inclusive of whole-body contact and related activities.

Beaches throughout Guam are listed as impaired for enterococcus. TMDLs for Guam's northern and southern beaches were adopted in December 2013 and February 2015, respectively, and include waste load allocations ("WLAs") for all permitted wastewater treatment facilities in Guam. For facilities discharging into M-2 waters, WLAs for Enterococcus are 35/100 mL geometric mean and 104/100 mL instantaneous maximum.

## V. DESCRIPTION OF DISCHARGE

Table 1 provides a summary of existing effluent limitations and monitoring data based on the facility's most recent DMRs (2015 to 2018). Maximum detected level is the highest value reported in either a recent DMR submittal or permit application. Values highlighted in red exceed the most stringent applicable standard.

Table 1. Summary of Data as Reported through Discharge Monitoring Report Data (July 2015 – 2018) or Permit Application

Parameter	Units	Maximum Detected Level				Most Stringent Applicable Standards		
		Northern District	Agaña/Hagåtña	Agat-Santa Rita <sup>(3)</sup>	Umatac-Merizo	Technology	M-2	S-3
Flow Rate	MGD	13.6	11.6	2.29	1.44	-	-	-
Temperature	°C	29.9	33.2		32.4	-	(1)	(1)
pH	s.u.	<b>4.9-8.7</b>	6.7-8.1	<b>6.92-8.65</b>	<b>5.4-8.78</b>	6.0-9.0	6.5-8.5	6.5-9.0
Ammonia (as N)	mg/L	24.9 (2)	20.8 (2)	0.58	0.3	-	(1)	(1)
	Ratio	-	-	-	0.15	1		
Biochemical Oxygen Demand (5-day) <sup>(2)</sup>	mg/L	<b>128</b>	<b>166</b>	4	20	30	-	-
	% Remove	<b>22</b>	<b>14</b>	86	<b>23</b>	85	-	-
Total Suspended Solids <sup>(2)</sup>	mg/L	<b>53</b>	<b>130</b>	10	<b>371</b>	30	-	-
	% Remove	<b>78</b>	<b>34</b>	<b>84</b>	<b>3</b>	85	-	-
Enterococci	MPN/ 100mL	<b>241,960</b>	<b>1,109,898</b>	<b>7,701</b>	<b>111,990</b>	-	35	33
Total Coliform	MPN/ 100mL	-	-	400	-	-	-	-
Fecal Coliform	CFU	-	-	-	<b>241,960</b>	200	-	-
E. coli	CFU	-	-	-	<b>241,960</b>	-	-	126

Parameter	Units	Maximum Detected Level				Most Stringent Applicable Standards		
		Northern District	Agaña/Hagåtña	Agat-Santa Rita <sup>(3)</sup>	Umatac-Merizo	Technology	M-2	S-3
Oil and Grease	mg/L	59.6	149	3.7	4	10	-	-
Nitrite + Nitrate (as N)	mg/L	-	-	-	0.49	-	-	-
Nitrate (as N)	mg/L	-	-	-	1.62	-	0.2	0.5
Orthophosphate	mg/l	-	-	-	1.7	-	.05	0.1
Settleable Solids	mL/L	6.1	7	-	-	1	-	-
Total Residual Chlorine	mg/L	0	0	0	0	-	.0075	.011
Dissolved Oxygen <sup>(2)</sup>	mg/L	-	-	-	4.5	-	(1)	(1)
Arsenic	µg/L	-	3.1	50	-	-	36	150
Chromium III	µg/L	-	2.8	-	-	-	-	210
Zinc	µg/L	20	84	77	-	-	86	110
Silver	µg/L	-	.56	-	-	-	2.3	4.1
Lead	µg/L	-	1.7	0.8	-	-	8.1	3.2
Copper	µg/L	9	40	8.8	-	-	3.1	12

Parameter	Units	Maximum Detected Level				Most Stringent Applicable Standards		
		Northern District	Agaña/Hagåtña	Agat-Santa Rita <sup>(3)</sup>	Umatac-Merizo	Technology	M-2	S-3
Nickel	µg/L	-	-	6.9	-	-	8.2	52
Aluminum	µg/L	-	-	<b>230</b>	-	-	200	1,000
Toluene	µg/L	1.2	1.4	-	-	-	200,000	200,000
Chloroform	µg/L	-	1	-	-	-	470	470
Phenol	µg/L	5.8	10	-	-	-	4,600,000	4,600,000

(1) Standard is variable and dependent on additional effluent or receiving water characteristics.

(2) Dissolved Oxygen and BOD/TSS % removal reported as minimums.

(3) Data for non-toxic pollutants from Agat assessed from opening of new facility (June 2017).

## VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

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

### A. Applicable Technology-Based Effluent Limitations

#### *Secondary Treatment Standards (Northern, Agaña/Hagåtña, and Agat-Santa Rita)*

Because the permittee operates wastewater treatment facilities that do not have waivers from requiring secondary treatment, Northern, Agaña/Hagåtña, and Agat Santa Rita are all required to meet technology-based treatment standards for municipal treatment plants in accordance with Section 301(b)(1)(B) of the Clean Water Act. The minimum levels of effluent quality attainable by secondary treatment for Biochemical Oxygen Demand (BOD<sub>5</sub>), Total Suspended Solids (TSS), and pH, as defined in 40 CFR 133.102, are listed below. In addition, Oil & Grease is a common pollutant in domestic wastewater and considered in EPA Region 9 permits on the basis of “Best Professional Judgment”; Oil & Grease limits were also previously applied in all GWA permits. Mass limits, as required by 40 CFR 122.45(f), are included for BOD<sub>5</sub> and TSS.

#### BOD<sub>5</sub> and TSS:

30-day average – 30 mg/L

7-day average – 45 mg/L

Removal Efficiency – minimum of 85%

Mass-based effluent limitations (in lbs/day) for BOD and TSS are established for all facilities. Mass-based effluent limitations are calculated by multiplying the concentration-based effluent limit, flow (in MGD), and a conversion factor of 8.345. For example, the BOD and TSS limit for Northern District is:

$$30\text{-day average} - (30 \text{ mg/L})(12 \text{ MGD})(8.345 \text{ conversion factor}) = 3002 \text{ lbs/day}$$

#### pH

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

#### Oil & Grease

Average Monthly: 10 mg/L

Maximum Daily: 15 m/L

#### *Equivalent to Secondary Standards (Umatac-Merizo)*

The Umatac-Merizo WWTP operates a waste stabilization pond, which is capable of achieving significant reduction in BOD and TSS but might not consistently achieve secondary treatment standards for these parameters. 40 CFR 133.101(g) and 133.105 allow for alternate limitations appropriate to the facility’s technological capability.

In order to receive equivalent to secondary limitations, the facility must: consistently exceed secondary treatment standards, have a trickling filter or waste stabilization pond as a principal treatment process, and provide significant biological treatment. Currently, the facility

consistently exceeds effluent limitations for TSS and percent removal requirements for BOD and TSS. EPA believes that if inflow and infiltration into the system were repaired, the facility would likely also consistently exceed effluent limitations for BOD. The facility operates a waste stabilization pond with aerator that is capable of biological treatment followed by a wetland treatment system. Therefore, EPA is applying equivalent to secondary effluent limitations to outfall 004A at Umatac-Merizo. The following limitations apply:

BOD<sub>5</sub> and TSS:

30-day average – 45 mg/L

7-day average – 65 mg/L

Removal Efficiency – minimum of 65%

Mass-based limitations are calculated in accordance to the example above for secondary treatment facilities. Technology-based limitations for pH and Oil & Grease are also applied consistent with those for secondary treatment.

Technology-based effluent limitation for Umatac-Merizo will be monitored immediately following the waste stabilization pond and disinfection unit at Outfall 004A, an internal monitoring point prior to the Wetland Treatment System. The purpose of these limits is to ensure the lagoon system is performing equivalent to secondary and that the Wetland Treatment System, a natural polishing unit, is not interfering with that determination.

## **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)).

EPA evaluated the reasonable potential to discharge toxic pollutants and calculated applicable water-quality based effluent limitations according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers Manual* (Office of Water, U.S. EPA, December 1996). These factors include:

1. Applicable standards, designated uses and impairments of receiving water
2. Existing data on toxic pollutants - Reasonable Potential Analysis
3. Dilution in the receiving water

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

As discussed in Section III, above, the Guam WQS identify receiving waters as either S-3 Low (Umatac) or M-2 Good (Northern, Agaña, and Agat).

Many Guam beaches are listed as impaired for enterococcus according to the CWA Section 303(d) List of Water Quality Limited Segments. TMDLs for Guam’s northern and southern beaches were adopted in December 2013 and February 2015, respectively, and include waste load allocations (“WLAs”) for all permitted wastewater treatment facilities in Guam. For facilities discharging into M-2 waters, WLAs for Enterococcus are 35/100mL geometric mean and 104/100mL instantaneous maximum. All outfalls discharge into M-2 waters or tributaries to M-2 waters. The Margin of Safety discussion establishes an assumption of no mixing. Therefore, the WLA for enterococcus has been incorporated into these permits for all outfalls end-of-pipe.

## 2. 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 assuming a coefficient of variation of 0.6 and the 95 percent confidence interval of the 95<sup>th</sup> 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<sub>e</sub>” is the reported maximum effluent value and the multiplier factor is obtained from Table 3-1 of the TSD.

In instances when maximum effluent concentration projections are greater than the most stringent water quality criteria, the pollutant is deemed to have reasonable potential to exceed standards. These pollutants are identified with a “Y” and highlighted in the table below. Reasonable potential analysis does not take mixing into consideration. Dilution ratios are only used in effluent limitation calculations.

**Table 2. Summary of Reasonable Potential Statistical Analysis**

Parameter <sup>(1)</sup>	Units	Maximum Observed Concentration	n	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion	Reasonable Potential?
<b>Northern District (GU0020141)</b>							
<b>Zinc</b>	µg/L	<b>20</b>	<b>1</b>	<b>6.2</b>	<b>124</b>	<b>86</b>	<b>Y</b>
<b>Copper</b>	µg/L	<b>9</b>	<b>2</b>	<b>3.8</b>	<b>34.2</b>	<b>3.1</b>	<b>Y</b>
Toluene	µg/L	1.2	1	6.2	7.44	200,000	N
Phenol	µg/L	5.8	1	6.2	36.0	4,600,00	N
<b>Agaña/Hagåtña (GU0020087)</b>							
Arsenic	µg/L	3.1	1	6.2	19.2	36	N
Zinc	µg/L	84	2	3.8	319	200,000	N

Parameter <sup>(1)</sup>	Units	Maximum Observed Concentration	n	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion	Reasonable Potential?
<b>Silver</b>	<b>µg/L</b>	<b>0.56</b>	<b>1</b>	<b>6.2</b>	<b>3.47</b>	<b>2.3</b>	<b>Y</b>
Lead	µg/L	1.7	2	3.8	6.46	8.1	N
<b>Copper</b>	<b>µg/L</b>	<b>40</b>	<b>2</b>	<b>3.8</b>	<b>152</b>	<b>3.1</b>	<b>Y</b>
Toluene	µg/L	1.4	2	3.8	5.32	200,000	N
Chloroform	µg/L	1	2	3.8	3.8	470	N
Phenol	µg/L	10	2	3.8	38	4,600,000	N
<b>Agat-Santa Rita (GU0020222)</b>							
<b>Arsenic</b>	<b>µg/L</b>	<b>50</b>	<b>1</b>	<b>6.2</b>	<b>310</b>	<b>36</b>	<b>Y</b>
<b>Zinc</b>	<b>µg/L</b>	<b>77</b>	<b>16</b>	<b>1.6</b>	<b>123</b>	<b>86</b>	<b>Y</b>
Lead	µg/L	0.8	1	6.2	4.96	8.1	N
<b>Copper</b>	<b>µg/L</b>	<b>8.8</b>	<b>&gt;20</b>	<b>1.4</b>	<b>12.3</b>	<b>3.1</b>	<b>Y</b>
<b>Nickel</b>	<b>µg/L</b>	<b>6.9</b>	<b>1</b>	<b>6.2</b>	<b>42.8</b>	<b>8.2</b>	<b>Y</b>
<b>Aluminum</b>	<b>µg/L</b>	<b>230</b>	<b>&gt;20</b>	<b>1.4</b>	<b>322</b>	<b>200</b>	<b>Y</b>
<b>Umatac-Merizo (GU0020273)</b>							
<b>Nitrate (as N)</b>	<b>mg/L</b>	<b>1.62</b>	<b>8</b>	<b>1.9</b>	<b>3.08</b>	<b>0.5</b>	<b>Y</b>
<b>Ortho-P</b>	<b>mg/L</b>	<b>1.7</b>	<b>16</b>	<b>1.6</b>	<b>2.72</b>	<b>0.1</b>	<b>Y</b>

<sup>(1)</sup> For purposes of RP analysis, parameters measured as Non-Detect are considered to be zero. Only parameters with Maximum Observed Concentration >0 are included in this analysis.

### 3. Dilution in the Receiving Water

The applicant has applied for a mixing zone for all four outfalls for the parameters below. Although all mixing zone applications must be approved by Guam EPA, EPA is recommending effluent limitations consistent with EPA's technical review of the applications. All effluent limitations resulting from EPA mixing zone calculations are subject to Guam EPA approval and may be modified based on Guam EPA review and determination. Dilution was recommended only for parameters requested by the applicant and where adequate receiving water data was provided.

All effluent limitations incorporating mixing are calculated using the following formula:

Effluent Limitation= Water Quality Standards + Dilution Ratio \* (Water Quality Standard – Ambient Concentration).

*Northern District*

The existing permit for Northern District incorporates a Guam EPA-approved 200:1 mixing zone. The mixing zone was proposed based on the former 301(h) Final Decision Document, which recommended an initial dilution that ranged between 260:1 and 275:1. To be conservative, the applicant applied for a 200:1 mixing zone which was approved by Guam EPA for the previous permit term. The mixing zone assumed installation of a 400-foot diffuser. The diffuser has yet to be installed.

On August 8, 2017, Brown and Caldwell, on behalf of GWA, completed a *Conception Design Report for Northern District Wastewater Treatment Plant Outfall Diffuser*. The analysis uses NRFIELD/Visual Plumes and recommends a 235:1 critical conditions dilution ratio for parameters with acute toxicity effects and a 400:1 critical conditions dilution ratio for parameters with chronic toxicity effects.

Because the previous mixing zone of 200:1 was granted by Guam EPA and incorporated by US EPA on the assumption that a diffuser would be installed by the time of permit issuance in 2013, and that diffuser has yet to be installed, EPA does not recommend consideration of additional mixing until the diffuser is installed. If the diffuser is installed prior to subsequent permit issuances, EPA may consider allowance for greater mixing. Therefore, EPA is proposing a mixing zone of 200:1 at Northern District for all parameters, subject to Guam EPA approval.

Ambient concentrations for nutrients were determined using receiving water data monitoring results reported by the permittee from the previous permit term. Highest observed concentrations are used as values for ambient water.

Although dilution is considered in establishing effluent limitations, EPA is not factoring dilution into the reasonable potential analysis. Given potential sensitivity of endangered species in the receiving water, EPA is requiring monitoring and effluent limitations for all pollutants which have the potential to exceed water quality standards at the end-of-pipe.

#### *Agaña/Hagåtña*

The existing permit for Agaña/Hagåtña incorporates a Guam EPA-approved 100:1 mixing zone. The mixing zone was proposed based a 2001 mixing zone study completed by GMP Associates, Inc. which predicted initial dilution rates between 111:1 and 120:1. To be conservative, the applicant applied for a 100:1 mixing zone which was approved by Guam EPA for the previous permit term.

EPA recommends continuance of the 100:1 mixing zone and has proposed limits accordingly.

Ambient concentrations for nutrients were determined using receiving water data monitoring results reported by the permittee from the previous permit term. Highest observed concentrations are used as values for ambient water.

#### *Agat-Santa Rita*

Dilution for Agat-Santa Rita was based off two mixing zone studies: a 2015 Space and Naval Warfare Systems “SPAWAR” study and a 2017 Brown and Caldwell study conducted on behalf of GWA. Based on the results of the mixing zone study, EPA is proposing application of the conservative peak wet weather effluent flow, 10th percentile current speed, centerline initial

dilution for acute impacts from toxics, including metals and ammonia, of 45:1. For nutrients, EPA is proposing application of the annual average effluent flow, flux-average dilution at the edge of the mixing zone of 186:1. Because this estimate is not conservative, EPA is applying a 10% margin of safety, resulting in a dilution ratio for nutrients and chronic impacts from toxics of 167:1.

Ambient water data was gathered as part of the mixing zones studies. Maximum ambient data is used for pollutants with a chronic impact while mean ambient concentrations are used for pollutants with a chronic impact.

#### *Umatac-Merizo*

The applicant submitted a Water Quality Evaluation (“Umatac WQE”) for Umatac-Merizo WWTP on August 2017. The Umatac WQE characterizes receiving water and effluent flow and pollutant data, correlates it to 24-hour precipitation data, and provides a series of dilution scenarios using the RiverPlume6 model. Because EPA is implementing a discharge prohibition for conditions when river flow is less than 1.5 cubic feet per second (cfs), only model results for flow above 1.5 cfs has been considered for dilution purposes.

The model outputs a centerline, flux average and complete mix dilution scenario. Guam WQS specify that river mixing be applied no further than a distance equal to five times the river width. Centerline dilution was calculated as the minimum dilution and flux average was calculated as the average dilution across the lateral extent of the effluent plume at the distance equal to five times the river width. For pollutants with an acute impact, the centerline dilution in the worst-case rainfall scenario is proposed by EPA to Guam EPA for approval (6:1). For pollutants with a chronic impact, the flux average in the worst-case rainfall scenario is proposed by EPA to Guam EPA for approval (9:1)

**Table 3. Summary of Mixing Zone Calculations**

<b>Pollutant</b>	<b>Units</b>	<b>Averaging Period</b>	<b>Dilution Ratio</b>	<b>Water Quality Standard</b>	<b>Ambient Water</b>	<b>Effluent Limitation</b>
<b>Northern District (GU0020141)</b>						
Nitrate	mg/L	Monthly	200	0.2	.05	30.2
Orthophosphate	mg/L	Monthly	200	.05	.01	8.0
<b>Agaña/Hagåtña (GU0020087)</b>						
Nitrate	mg/L	Monthly	100	0.2	.05	15.2
Orthophosphate	mg/L	Monthly	100	.05	.01	4.0
<b>Agat-Santa Rita (GU0020222)</b>						
Copper	µg/L	Daily Max	45	4.8	.33	197
		Monthly	167	3.1		465
Nickel	µg/L	Daily Max	45	74	.56	3,378
		Monthly	167	8.2		1,284
Aluminum	µg/L	Daily Max	45	200	16.5	8,457
Nitrate	mg/L	Monthly	167	0.2	.031	28.5
Orthophosphate	mg/L	Monthly	167	0.05	.012	6.3
<b>Umatac-Merizo (GU0020273)</b>						
Nitrate	mg/L	Monthly	9	0.5	0.04	4.6

<b>Pollutant</b>	<b>Units</b>	<b>Averaging Period</b>	<b>Dilution Ratio</b>	<b>Water Quality Standard</b>	<b>Ambient Water</b>	<b>Effluent Limitation</b>
Orthophosphate	mg/L	Monthly	9	0.1	0.03	0.7
Ammonia Impact Ratio	Ratio	Daily Max	6	1	0	7

### **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 standards 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 permits. Where monitoring is required, data will be re-evaluated and the permits may be re-opened to incorporate effluent limitations as necessary.

The following effluent imitations have been established for each of the parameters below:

#### *Flow*

Flow limits have been established for all facilities consistent with design capacity of each facility.

#### *BOD<sub>5</sub> and TSS*

Limits for BOD<sub>5</sub> and TSS are established for POTWs as described above and are incorporated into the permits for all four facilities. Under 40 CFR Section 122.45(f), mass limits are also required for BOD<sub>5</sub> and TSS. Based on the design flow for each facility, the mass-based limits are included in the proposed permits.

#### *pH*

Technology-based standards for POTWs require pH limits between 6.0 and 9.0 Standard Units. The Guam WQS establish pH standards between 6.5 and 8.5 standard units for marine waters and 6.5 to 9.0 for surface waters. All GWA permits currently include pH limitations of 6.5 and 8.5. Based on historical limitations and performance, all effluent limitations for pH will be retained, with an instantaneous minimum of 6.5 and maximum of 8.5.

#### *Oil & Grease*

Oil & Grease is a common pollutant in domestic wastewater. Guam WQS state that waters shall be free from oil, grease and scum which degrade water quality or use. Oil & Grease limitations of 10 and 15 mg/L average monthly and max daily are common in POTW permits on a “best professional judgment” basis and have been retained from previous permits.

#### *Total Residual Chlorine*

Chlorine is used to disinfect wastewater after secondary treatment and, by design, is toxic to aquatic microorganisms. Although GWA facilities predominantly do not use chlorine to disinfect, they have the potential to switch to chlorine due to maintenance or operational changes. Therefore, EPA is requiring chlorine monitoring and limitations in instances when a facility does disinfect using chlorine. EPA must be notified in advance of any chlorine application. All limitations have been retained from previous permits.

### *Ammonia and Ammonia Impact Ratio*

Treated and untreated domestic wastewater may contain levels of ammonia that are toxic to aquatic organisms. Ammonia is converted to nitrate during biological nitrification process, and then nitrate is converted to nitrogen gas through biological denitrification process. The Guam WQS includes numeric ammonia objectives for surface waters. Due to the potential for ammonia to be present in sanitary wastewater at toxic levels and due to the conversion of ammonia to nitrate, effluent limitations are established using the Ammonia Impact Ratio (“AIR”) for Umatac. Because there are no marine objectives for ammonia, EPA is not including effluent limitations for other facilities.

The AIR is calculated as the ratio of the ammonia value in the effluent to the applicable ammonia water quality standard. The Guam WQS contain ammonia criteria which are pH-dependent. Therefore, pH and ammonia sampling must be concurrent. EPA is using the water quality criterion from the chronic tables in section 5103(C)(3), “Nutrients,” because the chronic criterion is most protective of water quality. See Attachment E of the permits for a sample log to help calculate and record the AIR values and Attachment F for applicable pH-dependent Water Quality Standards.

AIR limitation values are set to be the value of the dilution granted for ammonia plus one. Umatac has a 6:1 dilution factor for toxics, therefore their AIR limitation is 7.

The permittee also must monitor and report ammonia effluent values in addition to the AIR value. AIR provides more flexibility than a specific, fixed effluent concentration and is protective of water quality standards since the value is set relative to the water quality standard, with consideration of dilution. If the reported value exceeds the AIR limitation, then the effluent ammonia-N concentration exceeded the ammonia water quality criterion after dilution.

### *Enterococcus*

TMDLs were established in Guam for bacteria in northern watersheds (Dec 2009) and southern watersheds (Dec 2013). The TMDLs identify all four facilities as point source contributors to impairments for bacteria and establish waste load allocations (“WLAs”) for enterococcus for all of them. The WLAs for the facilities are 104/100mL as an instantaneous maximum and 35/100mL as a geometric mean. The WLAs have been applied as effluent limitations end-of-pipe for all four discharges.

Umatac-Merizo’s Wetland Treatment System is a natural treatment unit where birds may introduce enterococcus to the effluent. Enterococcus is established as a water quality standard as an indicator of human waste, so introduction of enterococcus from non-anthropogenic sources makes the enterococcus reading less accurate. Therefore, the enterococcus limitation for Umatac-Merizo is being applied immediately following disinfection at Outfall 004A and prior to polishing through the Wetland Treatment System. This is consistent with the application of bacteria standards for natural treatment systems for other facilities in the region.

### *Nitrate-Nitrogen and Orthophosphate*

Guam WQS establish criteria for nitrate as nitrogen and orthophosphate as phosphorus in both surface and marine waters. The applicant did not submit effluent data for Northern and Agaña for nutrients, however due to the likelihood of nutrients to be present in domestic

wastewater effluent, and a lack of evidence to the contrary, EPA is presuming reasonable potential based on Best Professional Judgment. Umatac and Agat currently have effluent limitations for nitrate and orthophosphate, which have been retained in these permits. Receiving water data was obtained for both parameters for all four facilities, so limits have been calculated with mixing zones.

#### *Copper, Zinc, Silver, Nickel, Aluminum, Arsenic, Chlordane, and Dieldrin*

Reasonable potential analyses were conducted for all toxic pollutants at each outfall without consideration of dilution. Each outfall was given a numeric effluent limitation for any pollutant determined to have a reasonable potential to exceed water quality standards. Chronic criteria are applied as monthly averages while acute criteria are applied as daily maximums. Dilution is applied for any facility with an approved mixing zone and for which receiving water data is available to calculate an end-of-pipe-effluent limitation. See *Reasonable Potential Analysis* and *Dilution Calculations* summarized above.

#### *Chronic Toxicity*

Guam WQS state that all waters must be free from substances which are toxic or harmful to humans, animals, plants or aquatic life. Chronic toxicity testing is implemented to ensure discharges are not toxic to sensitive organisms. All discharges must produce a result of “pass” with an effluent in-stream Waste Concentration calculated using initial dilution. In Guam, chronic toxicity in marine water is done using the purple sea urchin. Chronic toxicity testing must implement the *Test for Significant Toxicity*.

#### **D. Anti-Backsliding**

Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains effluent limits less stringent than those established in the previous permit, except as provided in the statute.

These permits do not establish any effluent limits less stringent than those in the previous permits and does not allow backsliding, with the following exceptions:

- *Settleable Solids for Northern and Agaña*: Limitations were removed for settleable solids based on a change in regional guidance to incorporate tech-based limitations on settleable solids. The limitations are superfluous to limitations for TSS and have therefore been removed. [40 CFR 122.44(1)(2)(i)(B)(1)]
- *Ammonia Impact Ratio for Agat*: Numerical ammonia standards are only specified for surface water and not marine waters in Guam. The previous permit erroneously applied numeric standards for surface water to a marine discharge. Although the discharger must continue monitoring for ammonia, there is no basis for setting a numeric limitation. [40 CFR 122.44(1)(2)(i)(B)(2)]
- *Umatac Secondary Standards*: Prior permits for Umatac improperly applied secondary treatment standards. Because the facility operates a waste stabilization pond, equivalent to secondary standards are more appropriate as a basis for technology-based limit for BOD and TSS. The facility never consistently met secondary treatment standards. For a more detailed explanation of the application of equivalent to secondary for Umatac, see Section VI.A., above. [40 CFR 122.44(1)(2)(i)(B)(2)]

- *Umatac Mixing Zone*: GWA has applied for a new mixing zone for Umatac. As a condition of recommending the mixing zone, EPA has included a dry-weather discharge prohibition in the permit. If granted by Guam EPA, effluent limits for ammonia (as AIR), nitrate, and orthophosphate will be relaxed to reflect approved mixing based on new information. The facility was unable to previously comply with effluent limitations for nutrients. [40 CFR 122.44(l)(2)(i)(B)(1)]

### **E. Antidegradation Policy**

EPA's antidegradation policy at 40 CFR 131.12 and Guam Water Quality Standards require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.

As described in this document, these permits establish effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. In addition, these permits do not authorize any new or increased discharge flow from any of the outfalls. All other increased effluent limitations have been justified as part of the anti-backsliding review.

Therefore, due to the low levels of toxic pollutants present in the effluent and application of water quality-based effluent limitations, the discharge is not expected to adversely affect receiving water bodies or result in any degradation of water quality.

## **VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS**

The Guam Water Quality Standards contains narrative water quality standards applicable to the receiving water. Therefore, these permits incorporate applicable narrative water quality standards.

## **VIII. MONITORING AND REPORTING REQUIREMENTS**

These permits require 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 may be required for 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 proposed 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 proposed permits. All monitoring data shall be reported on monthly DMRs and submitted quarterly as specified in the proposed permits. All DMRs are to be submitted electronically to EPA using NetDMR.

### **B. Priority Toxic Pollutants Scan**

A Priority Toxic Pollutants Scan must be conducted annually for Northern, Agaña and Agat and once during the fourth year of the five-year permit term for Umatac to ensure that the

discharge does not contain toxic pollutants in concentrations that may cause a violation of water quality standards. Results from the priority pollutant scans should be summarized in the re-application. Priority pollutants are identified in Attachment G of the permits.

### **C. Whole Effluent Toxicity Testing**

These permits establish tests for chronic toxicity. Chronic toxicity testing evaluates reduced growth/reproduction in Whole Effluent Toxicity. Chronic toxicity is to be reported based on the Test for Significant Toxicity.

## **IX. SPECIAL CONDITIONS**

### **A. Biosolids**

Standard requirements for the monitoring, reporting, recordkeeping, and handling of biosolids in accordance with 40 CFR Part 503 are incorporated into these permits. The permits also include, for dischargers who are required to submit biosolids annual reports, electronic reporting requirements. Permittees shall submit biosolids annual reports using EPA's NPDES Electronic Reporting Tool ("NeT") by February 19<sup>th</sup> of the following year.

### **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 that receives nondomestic sources pollutants which are subject to pretreatment standards to establish a pretreatment program.

The total design flow for all POTWs operated by GWA is approximately 26 MGD, and these POTWs receive pollutants from nondomestic sources which are subject to pretreatment standards, and which may pass through or interfere with the POTWs. Therefore, the permits require GWA to develop and submit to EPA for approval a pretreatment program that meets the requirements of 40 CFR 403.8 within one year of permit issuance. The permits may be modified to incorporate the approved pretreatment program as an enforceable condition, in accordance with 40 CFR 403.8(c).

### **C. Development of an Initial Investigation TRE Workplan for Whole Effluent Toxicity**

In the event effluent toxicity is triggered from WET test results, the permits require the permittee to develop and implement a Toxics Reduction Evaluation (TRE) Workplan. An unacceptable effluent toxicity is found when "Fail" is determined, as indicated by a statistically significant difference between a test sample of diluted effluent and a control using a t-test. The draft permits also require additional toxicity testing if a chronic toxicity monitoring trigger is exceeded. Within 90 days of the permit effective date, the permittee shall prepare and submit a copy of their Initial Investigation TRE Workplan (1-2 pages) for acute and chronic toxicity to EPA for review.

### **D. Fats, Oils, and Grease**

Fats, Oils, and Grease ("FOG") that enter a sewer system, generally from commercial businesses, may degrade collection systems and assets and lead to blockages and resulting sewer

overflows. The purpose of the FOG program is to minimize FOG inputs into the collection system through local ordinance, baseline assessment, tracking, outreach, and inspection. FOG requirements have been incorporated into these permits consistent with requirements in the Northern, Agaña, and Agat permits. The permittee is expected to maintain a FOG program throughout their entire collection system for all GWA-owned and operated facilities.

#### **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 these permits. 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 permits to ensure compliance with the provisions of 40 CFR 122.41(e).

#### **F. Umatac Discharge Prohibition**

The applicant requested a mixing zone for the Umatac-Merizo discharge (GU0020273). Their application indicated that the facility is designed to not discharge during dry weather and established a lower bound of 1.48 cfs of flow to model mixing in the river.

As a result of the applicant's desire to have a mixing zone and to ensure the permittee is properly operating their facility, EPA is establishing a discharge prohibition during dry weather. Dry weather is defined as times when Toguan River flow is less than 1.5 cfs.

### **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.

In Guam, EPA is aware of several environmental burdens facing communities including emissions from petroleum power generation, imminent Naval relocation and expansion, and bacteriological impairments for beaches across the territory. Guam has also experienced recent relocation of their primary landfill for industrial and municipal waste and received its first Municipal Separate Storm Sewer System ("MS4") permit in December 2018.

This permitting action will serve as the territory's primary wastewater regulatory mechanism and has been written to streamline regulatory requirements while ensuring discharged treated wastewater is protective of beneficial uses for the impacted environment and community. Furthermore, EPA has conducted outreach to impacted territory and Federal agencies and public noticed the permits in a local newspaper to refine requirements for local considerations.

In addition to these permits, EPA provides support to GWA 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 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 less burdened communities.

### **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.

Informal consultation was initiated on 7/25/18 with both U.S. Fish and Wildlife and the National Marine Fisheries Service. EPA received a response from USFWS in a letter dated 8/17/18 and an email from NMFS on 7/25/18.

EPA completed a Biological Evaluation for the discharge concurrent with public notice. EPA concluded that the wastewater discharges from the permit renewals will have “no effect” all listed species except the following species which it “may affect, but is unlikely to adversely affect:”

- Green Sea Turtle
- Hawksbill Sea Turtle
- Seriatopora aculeata (Coral Species)

On 6/18/19, EPA received a letter of concurrence from NMFS completing ESA section 7 consultation.

### **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 Sections 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 proposed activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

The applicant is required to seek coastal consistency certification from the Guam Bureau of Statistics and Plans. On November 4, 2019, Guam BSP completed its review of the Federal Consistency Certification by GWA and issued a conditional concurrence. The permittee must comply with all conditions set forth in the concurrence.

### **D. Impact to Essential Fish Habitat**

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (MSA) set forth 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).

The proposed permits contain technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. The proposed permits do not directly discharge to areas of essential fish habitat. Therefore, EPA has determined that the proposed permits will not adversely affect essential fish habitat. A copy of the draft permits and fact sheet have been shared with NMFS for review and comment. At time of issuance, EPA has not received any comments on EFH.

#### **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 has not found evidence of impact on historic properties and is making a determination that issuing this proposed 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. 401 Water Quality Certification Requirements**

For States, Territories, or Tribes with EPA approved water quality standards, EPA is requesting certification from the affected State, Territory, or Tribe that the proposed permit will meet all applicable water quality standards. Certification under section 401 of the CWA 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.

Conditional 401 certifications were transmitted by Guam EPA on each of the four permits on September 3, 2019. The four orders are summarized below:

**Table 4. 401 Water Quality Certifications**

<b>WQC Order Number</b>	<b>Facility</b>
#1907-01	Northern District Sewage Treatment Plant
#1907-02	Hagatna Sewage Treatment Plant
#1907-03	Agat Santa Rita Wastewater Treatment Plant
#1907-04	Umatac-Merizo Wastewater Treatment Plant

Conditions from the certifications have been incorporated by reference into the permits.

### **XI. STANDARD CONDITIONS**

#### **A. Reopener Provision**

In accordance with 40 CFR 122 and 124, these permits may be modified by EPA to include effluent limits, monitoring, 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**

These permits require the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, dated July 1, 2001.

## **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 draft NPDES permits or other significant action with respect to an NPDES permits or applications.

### **B. Public Comment Period (40 CFR 124.10)**

EPA places notice of the draft permits in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time final permits are issued.

### **C. Public Hearing (40 CFR 124.12(c))**

A public hearing may be requested in writing by any interested party. 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**

Comments, submittals, and additional information relating to this proposal may be directed to:

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