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9 **BEFORE THE GUAM PUBLIC UTILITIES COMMISSION**

10 IN THE MATTER OF:

) **GWA DOCKET NO. 23-01**

11 **PETITION TO AUTHORIZE**
12 **THE GUAM WATERWORKS**
13 **AUTHORITY TO ISSUE A**
14 **COMPETITIVE BID TO**
15 **REHABILITATE THE UGUM**
16 **SURFACE WATER TREATMENT**
17 **PLANT**

) **PETITION FOR GWA TO ISSUE A**
) **COMPETITIVE BID TO PROCURE**
) **CONSTRUCTION SERVICES AND**
) **SUPPLIES TO REHABILITATE THE**
) **UGUM SURFACE WATER**
) **TREATMENT PLANT**

18 **COMES NOW**, the GUAM WATERWORKS AUTHORITY (“GWA”), by and through
19 its counsel of record, THERESA G. ROJAS, ESQ., and hereby files its petition seeking PUC
20 approval to issue an Invitation for Bid (“IFB”) to procure construction services and supplies to
21 rehabilitate the Ugum Surface Water Treatment Plant (“Ugum SWTP”).

22 **BACKGROUND**

23 Water sources on Guam include groundwater of 120 active groundwater wells, surface
24 water as treated and produced by the Ugum Surface Water Treatment Plant (“Ugum SWTP”)
25 and one active spring. Among these, the Ugum SWTP serves Guam’s southern water system;

26
27

GWA Docket 23-01

28 PUC Review: Petition for GWA to Issue a Competitive Bid to Procure Construction Services and Materials to
Rehabilitate the Ugum Surface Water Treatment Plant

1 treating the Ugum River water and then pumping the river's water into storage reservoirs to serve
2 the island's southern residents.¹

3 Originally constructed in 1991, the Ugum SWTP plant was first retrofitted and
4 modernized in 2007, continually receiving upgrades and repairs through 2010. Today, and since
5 March 2011, the Ugum SWTP operates a membrane filtration treatment system. This
6 treatment system generally uses membranes to remove particles from the water and functions as
7 a purification system to treat the river water.
8

9 Notwithstanding the upgrades and repairs continually made, the aging plant's existing
10 equipment and systems have been in need of major infrastructure improvements and refurbishment
11 for some time. This refurbishment has been documented and supported in GWA's Master Plan and
12 since 2015 and has been assessed three (3) times by separate professional engineering firms. First,
13 by Brown and Caldwell in 2015, second by Du Pont in 2021 and most recently by Duenas Camacho
14 and Associates ("DCA") in 2022. The 2022 DCA assessment, incorporated the analysis of the two
15 earlier reports (See Exhibit A-8) and recently concluded that the plant today is in operating
16 condition but requires significant rehabilitation work and materials to continue providing safe
17 drinking water to GWA customers in southern Guam.
18
19

20 Findings from DCA's 2022 report include: failing equipment and equipment beyond
21 repair requiring immediate replacement; inferring that the plant's present conditions limit the
22 plant's capability, operability, and reliability. See Exhibits A-7 to A-11. Considering these
23 assessments, GWA now seeks the PUC's approval to procure construction services and materials
24
25

26 ¹ GWA Water Resource Master Plan Update, August 2018

1 in support of the needed Ugum SWTP rehabilitation for services to include, but not specifically
2 limited to, the following: rehabilitation and upgrades to the raw water pumps at the river intake,
3 settling basins, membranes, pipe gallery, generator room, backwash, neutralization tank, sludge
4 tank, thickening system, operations and chemical building, and administration building. See
5 Exhibits A-6 to A-11.

6
7 DCA's 2022 Assessment and Replacement report provided an assessment, scope of
8 work, and cost estimate on the needed capital improvements to the Ugum SWTP and Raw River
9 Intake facility. The report estimated the needed work to cost Four Million Two Hundred Five
10 Thousand Five Hundred Dollars (\$4,205,500.00), to include a ten percent (10%) contingency of
11 Four Hundred Twenty Thousand Five Hundred Fifty Dollars (\$420,550.00), bringing the total
12 estimated cost for rehabilitation and upgrades to Four Million Six Hundred Twenty-Six
13 Thousand Fifty Dollars (\$4,626,050.00). See Exhibit A-1:22-27.

14 **REQUEST FOR APPROVAL**

15
16 In light of the need to preserve and improve one of GWA's main water resources, GWA
17 now desires to procure an experienced and qualified contractor to support and complete the
18 needed repairs for the Ugum SWTP. The contractor will be selected through competitive sealed
19 bidding with the bid to be awarded to the lowest bidder. A draft bid is available for review but
20 is not included here. The services for bid are needed to augment GWA's water resources and
21 will ensure the south's critical water source remains safe, reliable, and operable.
22

23
24 This respective procurement is estimated to exceed expenses of ONE MILLION
25 DOLLARS (\$1,000,00.00) based on costs estimates already received of Four Million Six
26 Hundred Twenty-Six Thousand Fifty Dollars (\$4,626,050.00). Therefore, pursuant to its

27 GWA Docket 23-01

28 PUC Review: Petition for GWA to Issue a Competitive Bid to Procure Construction Services and Materials to
Rehabilitate the Ugum Surface Water Treatment Plant

1 Contract Review Protocol, GWA requests the PUC approve and allow GWA to issue a
2 competitive procurement bid to solicit proposals from experienced and qualified construction
3 companies to provide services and materials necessary to ensure the efficient operation of the
4 Ugum SWTP. Funding for the procured services will come from bonds funds.

5 In support of this Petition, the CCU has approved GWA's request to procure construction
6 services and materials needed to support the Ugum SWTP rehabilitation by its adoption of GWA
7 Resolution 03-FY2023. GWA Resolution 03-FY2023 and its supporting exhibits are attached as
8 Exhibit A and are incorporated by reference as if fully set forth herein.

10 **CONCLUSION**

11 Based on the foregoing, GWA requests the PUC approve and authorize GWA
12 management to begin the procurement of materials and construction services for the rehabilitation
13 of the Ugum SWTP as it is reasonable, prudent, and necessary. Once the bids are received and
14 evaluated, GWA shall then return to the PUC for a second approval on the contract and amounts
15 to be awarded.
16

18 **RESPECTFULLY SUBMITTED** this 10th day of November, 2022.

21 By: 

22 **THERESA G. ROJAS**
23 GWA Legal Counsel

27 GWA Docket 23-01

28 PUC Review: Petition for GWA to Issue a Competitive Bid to Procure Construction Services and Materials to
Rehabilitate the Ugum Surface Water Treatment Plant



CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

GWA RESOLUTION NO. 03-FY2023

**RELATIVE TO REQUESTING APPROVAL TO PROCURE CONSTRUCTION
SERVICES RELATIVE TO THE UGUM SURFACE WATER TREATMENT PLANT
REHABILITATION**

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities (“CCU”) has plenary authority over financial, contractual, and policy matters relative to the Guam Waterworks Authority (“GWA”); and

WHEREAS, the Guam Waterworks Authority (“GWA”) is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, the Ugum Surface Water Treatment Plant (SWTP) is a critical water source which provides water to much of southern Guam; and

WHEREAS, the Ugum SWTP was originally constructed in 1991; and was retrofitted during the period of 2007 to 2010, and has operated using membrane filtration treatment since March 2011; and

WHEREAS, Duenas Camacho and Associates Inc. has conducted an assessment and prepared a scope of work and cost estimate of the needed capital improvements to the Ugum SWTP and Raw River Intake facility in the amount of Four Million Two Hundred Five Thousand Five Hundred Dollars (\$4,205,500.00), and to include a ten percent (10%) contingency of Four Hundred Twenty Thousand Five Hundred Fifty Dollars (\$420,550.00), the total cost estimate is Four Million Six Hundred Twenty-Six Thousand Fifty Dollars (\$4,626,050.00); and

WHEREAS, the recommended Scope of Work in Exhibit A includes rehabilitation and upgrades to the raw water pumps at the river intake, settling basins, membranes, pipe gallery,

EXHIBIT A-1

1 generator room, backwash, neutralization tank, sludge tank, thickening system, operations and
2 chemical building, and administration building; and

3
4 **WHEREAS**, the proposed rehabilitation is necessary and urgent to improve plant
5 capacity, treatment performance, and provide reliable operation of the water treatment plant; and
6

7 **WHEREAS**, GWA management seeks CCU approval to issue a competitive
8 procurement bid to solicit proposals from experienced and qualified construction companies to
9 provide the necessary materials and construction services, and to award the contract to the lowest
10 responsive responsible bidder; and
11

12 **WHEREAS**, funding in the amount of Four Million Six Hundred Twenty-Six Thousand
13 Fifty Dollars (\$4,626,050.00) is available through GWA Bonds for construction and capital
14 improvement projects; and
15

16 **WHEREAS**, GWA management further seeks CCU approval to submit a petition to the
17 PUC for approval; and
18

19 **WHEREAS**, the Public Utilities Commission (PUC) contract protocol requires GWA to
20 obtain approval prior to advertising procurement for projects with an anticipated value of One
21 Million Dollars (\$1,000,000.00) or greater; and
22

23 **WHEREAS**, the CCU must approve all petitions that will be submitted to the PUC.
24

25 **NOW BE IT THEREFORE RESOLVED**; the Consolidated Commission on Utilities
26 does hereby approve the following:

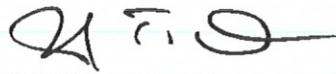
- 27 1. The recitals set forth above hereby constitute the findings of the CCU.
- 28 2. The CCU finds that rehabilitation of the Ugum Surface Water Treatment Plant
29 is necessary to ensure the efficient operation of the plant and the continued
30 provision of safe drinking water to GWA customers in Southern Guam.

- 1 3. The CCU finds that procurement of materials and construction services for the
2 Ugum SWTP rehabilitation is necessary.
3 4. The CCU hereby authorizes the amount for the construction services of the
4 Ugum SWTP Rehabilitation project of Four Million Six Hundred Twenty-Six
5 Thousand Fifty Dollars (\$4,626,050.00).
6 5. The CCU hereby further authorizes the management of GWA to fund the
7 Ugum SWTP Rehabilitation project from GWA funds applicable to the
8 project and other funding sources as they become available.
9 6. The CCU hereby further authorizes GWA management to submit a petition to
10 the PUC for the procurement of materials and construction services for the
11 rehabilitation of the Ugum SWTP.
12

13 **RESOLVED**, that the Chairman certified, and the Board Secretary attests to the adoption
14 of this Resolution.
15

16 **DULY AND REGULARLY ADOPTED**, this 25th day of October 2022.
17

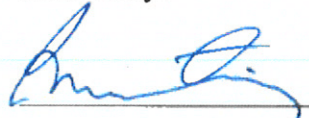
18 Certified by:

19 
20

21 **JOSEPH T. DUENAS**

22 Chairperson

Attested by:

23 
24

25 **PEDRO ROY MARTINEZ**


26 Secretary
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The foregoing is a full, true, and accurate copy of the resolution duly adopted at a regular meeting by the members of the Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

4







///



Guam Waterworks Authority

Ugum Water Treatment Plant Rehabilitation

GWA Project No: _____

Assessment and Procurement Report Removal and Replacement Scope of Work

April 9, 2022

Prepared for:



GUAM WATERWORKS AUTHORITY

Gloria B. Nelson Public Service Building

688 Route 15

Mangilao, Guam, 96913

Prepared by:



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Attachments:

1. Assessment Photos
2. DuPont Report
3. Equipment List
4. Site Sketches

1. Introduction Statement

Duenas Camacho and Associates (DCA) is contracted with the Guam Waterworks Authority (GWA) to provide program and construction management services. As part this contract, DCA has conducted a site assessment of the Ugum Surface Water Treatment plant (Plant) located in Talofofo, see Figure 1. The assessment was intended to cover the existing condition of the plant with the exception of the: Existing Steel 2.0 million gallon storage tank and the plant control system.

The results of the assessment are presented on this report. These results are to be used as part of a procurement package to repair, replace or upgrade equipment. GWA will issue a notice to bid to contractors for the:

- Demolition and removal works
- Purchase and installation of equipment
- Installation and/or replacement of safety equipment

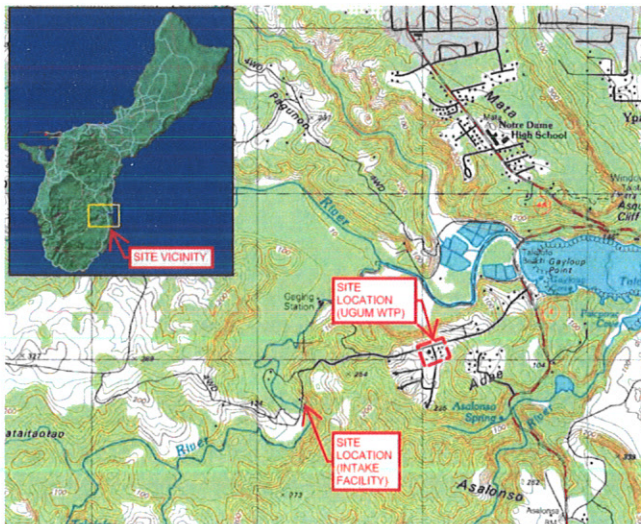


Figure 1: Project Location

2. Assessment Approach

The assessment was conducted in the months of June to August 2021. The project team consisted of process, civil and structural engineers from DCA, Electrical engineers from EMCE, and Mechanical engineer Marvic Acabado. GWA operations staff, Engineers and management assisted in the assessment. The assessment of the plant membranes was conducted by Mr. Charles Heard of DuPont.

Below is a list of the plans and reports provided by GWA and used as part of this assessment:

- 2007 Upgrade Plans Basis of Design
- 1993 As-built Plans
- 2021 Du Pont Assessment Report

The objective of this assessment is to determine existing equipment that can be replaced or repaired in kind. In some cases the replacement will include operation modifications requested by the owner. These modifications are listed in section 3 of this report. This assessment is not intended to address any new parts of the plant that will require design works.

The methodology used for this assessment was:

- Inspect and evaluate all existing equipment
- Take field measurements
- Interview GWA operations and engineering
- Review past plans and record drawings
- Review past assessment reports
- Conduct coordination meetings
- Develop equipment replacement list
- Develop sketches and specifications for replacement works
- Prepare cost estimate
- Provide a listing of future design needs

3. Procurement and Installation Needs

3.1. RIVER/INTAKE FACILITY

- Existing (3) intake pumps are old and outdated. Pumps (P100 and P102) will need to be replaced
 - Existing pumps' seals are leaking
 - Pump and motors #1 and #3 will be replaced in kind
 - No additional electrical power supply will be needed because of a one-to-one replacement
 - See attached photo assessment form for existing information.
- The VFD for pump #1 was removed to address a waste water emergency and was replaced with MCC. Existing MCC will need to be removed and replaced with VFD. Existing VFD screens for pumps #2 and #3 will need to be replaced in kind.
- Existing flowmeter screen is unreadable and will need to be replaced in kind
 - No additional electrical power supply will be needed because of a one-to-one replacement
 - No demolition needed
 - See attached photo assessment form for existing information.

- D. Strainers have been bypassed
- Strainers shall be removed

3.2. FLOCCULATION/SEDIMENTATION TANKS

- A. Furnish and install two (2) manual sluice gates
- Sluice gates will be removed and replaced in kind with manual ones
 - Operators will need to be able to operate the new manual sluice gates
 - Water in tanks will need to be removed to replace the sluice gates
 - No electrical supply will be needed as the sluice gates will be operated manually
 - Inv. El. 224.50' 2. Top El. 236.00' 3. Opening 12" 4. Water El. 233.67' 5. Bott. El. 224.00'
 - Contractor will have to bypass at most two of the four basins at any time. Bypassing of two basins must be limited to one sedimentation basin and one backwash clarifying basin. Existing sluice gates do not hold tight so temporary plugs will have to be placed within the drain line.
 - See attached documents for existing pictures and specification
- B. Furnish and install eight (8) sluice gates
- Sluice gates will be removed and replaced in kind with manual ones
 - Operators will need to be able to operate the new manual sluice gates
 - Water in wells will need to be removed to replace the sluice gates
 - No electrical supply will be needed as the sluice gates will be operated manually
 - Inv. El. 219.33' 2. Top El. 236.00' 3. Opening 6" 4. Water El. 233.67' 5. Bott. El. 219.33'
 - See attached photo assessment form for existing information.
- C. Remove and Replace sludge collection system (chain and flight) at contact basins (2 each) and recycle basins (2 each) total of four (4)
- Water will need to be removed from the basins to replace the sludge collection system
 - See attached photo assessment form for existing information.
 - See attached documents for specifications for new chain and flight system
- D. Remove and dispose of accumulated sludge.

3.3. MEMBRANE CELLS

- A. Remove and replace membrane equipment, see redacted forms for complete equipment list
- B. Provide variable speed 1-ton chain hoist (2 each) for membrane cell maintenance
- Variable speed chain hoists will be needed to easily access the membranes for cleaning. Existing hoists are considered a hazard for the workers
 - Existing hoists will need to be replaced from its location and replaced in kind with a variable speed 1-ton chain
 - Electrical power supply will be needed to power the variable speed chain hoist
 - See attached photo assessment form for existing information.
- C. Angle irons holding up metal plates on walkway between filter cells are rusted out and need to be replaced
- Steel angle iron and plates will be replaced in kind, see attached sketch
 - Electrical power supply not applicable

3.4. FILTER PIPE GALLERY AND GENERATOR ROOM

- A. Replace aluminum door and jamb in the piping room and in the generator room.
 - Remove existing steel door and jamb and replace in kind
- B. Provide butterfly valves actuators and status monitors replacement spares to be turned over to GWA.
 - See attached document for specifications
 - BRAY BUTTERFLY VALVES: MAINLY SERIES 30/31
 - o 2 each - 16" Flanged butterfly valves
 - o 3 each - 14" Flanged butterfly valves
 - o 4 each - 12" Flanged butterfly valves
 - o 2 each - 10" wafer style butterfly valves
 - o 4 each - 8" wafer style butterfly valves
 - o 2 each - 4" wafer style butterfly valves
 - o 3 each - 2" wafer style butterfly valves
 - BRAY PNEUMATIC ACTUATORS
 - o 5 each - PART# 92-2100-11300-532
 - o 4 each - PART# 92-1600-11300-532
 - o 2 each - PART# 92-1270-11300-532
 - o 2 each - PART# 92-1190-11300-532
 - o 4 each - PART# 92-1180-11300-532
 - o 4 each - PART# 92-0630-11300-532
 - o 2 each - PART # 92-1190-11300-532
 - BRAY VALVE STATUS MONITORS
 - o 14 each - PART# 50-0406-12610-532

3.5. BACKWASH (HOLDING TANK)

- A. Install new submersible pumps (P301 and P302)
 - The submersible pumps will be replaced in kind
 - Backwash will have to be drained or lowered to a certain level in order for operators to remove the existing backwash and install the new one
 - See attached document for specifications of submersible pump
- B. Remove and install new level sensor/level monitor
 - Level sensors/level monitors (three each) will be replaced in kind
- C. Remove and install new mixer (M301)
- D. Remove and install new magnetic flowmeter
 - Magnetic flowmeter removed and will be replaced in kind
 - No additional electrical power supply needed
- E. Remove and dispose of accumulated sludge

3.6. NEUTRALIZATION/SLUDGE TANK

- A. Install new submersible pump (P401) and nozzles within the tank
 - Water will be drained from the neutralization tank for the submersible pump to be removed
 - Submersible pump and nozzles will be replaced in kind
 - See attached document for spec and information

- B. Replace ORP and pH meter
 - pH meter will be replaced in kind
 - Additional electrical power supply not applicable
 - Future expandability not applicable
- C. Replace level sensor/ level monitors
 - Level sensors/level monitors (three each) will be replaced in kind
- D. Remove and dispose of accumulated sludge

3.7. THICKENER TANK

- A. Remove and replace thickener assembly (M370), see redacted form for equipment list
- B. Remove and replace thickener feed pumps and motors (P371 and P372).
 - Thickener and feed pumps will be removed
 - See attached document for additional information
- C. Remove and dispose of accumulated sludge

3.8. OPERATIONS BUILDING

- A. Remove and replace flow meter and pH meter at sodium hydroxide feed system.
- B. Remove and replace existing feed (piping) including metering pumps, 5 total.
- C. Remove and replace existing 2-ton hydraulic lift system.

3.9. ADMINISTRATION BUILDING

- A. Remove and replace front door
- B. Repair three (3) restrooms.
 - Remove and replace toilet bowl, sinks and exhaust fans complete in place.
- C. Repair leak from roof hatch at control room.