



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,

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
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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:

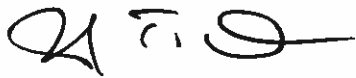
- 27 1. The recitals set forth above hereby constitute the findings of the CCU.
- 28 2. The CCU finds that rehabilitation of the Ugum Surface Water Treatment Plant
29 is necessary to ensure the efficient operation of the plant and the continued
30 provision of safe drinking water to GWA customers in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

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

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

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

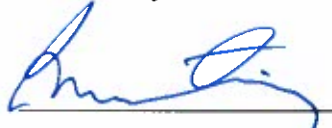
Certified by:



JOSEPH T. DUENAS

Chairperson

Attested by:



PEDRO ROY MARTINEZ

Secretary

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SECRETARY'S CERTIFICATE

I, Pedro Roy Martinez, Board Secretary of the Consolidated Commission on Utilities as evidenced by my signature above do hereby certify as follows:

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:

AYES:	<u>4</u>
NAYS:	<u>0</u>
ABSENT:	<u>0</u>
ABSTAIN:	<u>0</u>



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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

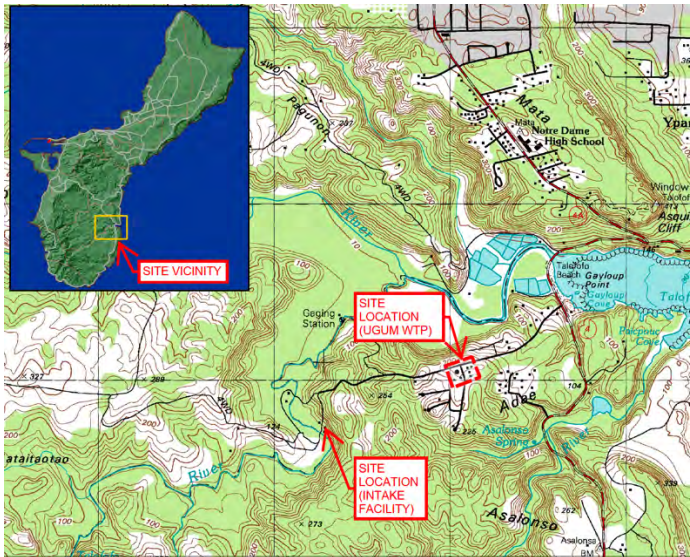


Figure 1: Project Location

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

- A. 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.
- B. 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.
- C. 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.