



OFFICE OF THE BIDS & AWARDS COMMITTEE

SUPPLEMENTAL/BID BULLETIN NO. 2

Reference No.: **PB# 23-10-0033**

Title: ***Procurement of One Complete Unit for Commercial Type Aquaponics Equipment***

Subject: Addendum

Breakdown of the Technical Specifications

I. SUPPLY AND INSTALLATION, TESTING AND COMMISSIONING OF DESULFURIZATION FACILITY. TRAINING OF PERSONNEL. SUPPLY AND INSTALLATION OF WATER TANKS. WATER QUALITY TESTING. ELECTRICAL WORKS

QUANTITY: 1.00 set of Water Desulfurization and Purification with enclosure

A. DIRECT COST

A.1 MATERIALS

- For Supply and Installation of 1000 liters per hour Water Desulfurization and Purification Facility 1 lot
- > Chlorinator Pump: Dosing pump, 3 liters per hour with chlorine and tank
- > Static mixer
- > Booster Pump: 3 cu meter per hour head = 36 m, P = 1.1 kW
- > Multi-media sand filter: Quartz sand filter 400mm dia x 1650 mm, FRP with automatic head valve F56A
- > Flocculant pump: dosing pump, 3 liter per hour flocculant chemical and tank
- > Coagulant pump: Dosing pump, 3 liters per hour with coagulant chemical and tank
- > Rapid mixers for flocculant and coagulant, motor at least 0.12 kW, PVC material - AISI 316 < Shaft length : 600 - 800 - 900 - 1100 mm < Propeller diameter: Slow 150 - 220 mm / Fast 90 mm < Motor : 0,12 kW
- > Clarifier chamber: Fiber glass reinforced chambered tank with capacity of 3 cubic meters
- > Holding tank: PE UV protected tank 1000 liters
- > Raw water pump: 4.5 cu meters per hour, head=36 m, 1.5 kW SUS 316
- > Multi-media sand filter: Quartz sand, 400 mm dia x 1650 mm, FRP with manual head valve F56A
- > Activated carbon filter: Activated carbon, 400 x 1650 mm, FRP with manual head valve
- > Anti-scaling dosing pump, 3 liters per hour
- > Security filter: Type: 20" x 5 core, PVC material
- > High pressure pump: 3 cu meters per hour head = 199 m, 4 kW SUS 316
- RO Water System
- > 1000 liters per hour, max working pressure 2.5 Mpa, desalination rate 96 - 98 %, system efficiency >= 35 %
- > Membrane casing components 8040, FRP 450 psi
- > Membrane BW30-400IG
- > Stainless steel rack SUS 316
- > Inlet water solenoid valve DN25 uPVC
- > Dense water electric valve DN25 SUS-316
- > High pressure water inlet regulating valve DN25 SUS-316
- > Dense water flow control valve DN25 SUS-316



- > Flow meter/pressure meter
- > Low pressure protection switch
- > low pressure valves, fittings uPVC
- > High pressure valve and pipe fittings SUS 316
- Shutdown flush system
 - > Shutdwn flush pump: flow 3 cu meters per hour head = 27 m, 0.75 kW SUS 304
 - > Cleaning box PE 300
 - > Connecting pipe and fittings uPVC
- CIP cleaning system
 - > CIP cleaning pump: 3 cu meters per hour h = 27.5 m, 0.75 kW, CIP cleaning box PE 300, uPVC pipes/fittings
- Electronic Control Automation System
 - > PC program controller
 - > RO online water quality detector
 - > AC contactor, thermal relay
 - > Air switch fuse box
 - > indicator light, knob switch
 - > terminals, electrical miscellaneous pieces
 - > intermediate relay
- Construction of facility enclosure 1 lot
 - > floor area 5m x 10m, ceiling height 3 m
 - > outlet and switch
 - > Louver sidings
 - > steel trusses and corrugated gi sheets roof
- Electrical connection from source to facility 1 lot
 - > Wires, AWG 8
 - > Electrical Wire and Accessories
- Storage Tank and Pump
 - > 2000 liters, stainless vertical 1 set
 - > Distribution pump: 25 GPM, head = 30 m 1 set
 - > Pipes and fittings from source to facility and to fish tank
 - > Water testing, commissioning and training of personnel

MATERIALS COST

A.2 LABOR COST

A.3 EQUIPMENT EXPENSES

TOTAL ESTIMATED DIRECT COST (A.1 + A.2 + A.3)

B. INDIRECT COST

B.1 OCM 10%

B.2 CP 8%

TOTAL INDIRECT COST (B.1 + B.2)

B.3 VAT 5%

TOTAL COST ITEM - I

II. SUPPLY AND INSTALLATION OF COMMERCIAL TYPE AQUAPONICS SYSTEM COMPONENTS SUCH AS GROW BEDS (FLOOD AND DRAIN), WATER PUMP, AIR PUMP, MECHANICAL FILTERS, BIO-FILTERS, CIRCULATION PIPES, RECIRCULATING AQUACULTURE SYSTEM (RAS), HOUSING COVERED WITH UV AND GREENHOUSE NETS, BIOSECURITY ENTRANCE/EXIT. ELECTRICAL WORKS

QUANTITY: 1.00 lot

A. DIRECT COST

A.1 MATERIALS

Greenhouse Structure for the aquaponic system

Main Structural Frame for greenhouse (20 m x 25 m x 5 m height)



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All GI pipe frames according to Philippine Standard construction, UV treated clear PE longlife greenhouse film roofing 200 microns, UV stabilized superfine net with strands density of 24 x 24 mesh. All stabilized silver straw shading net 40 % shade for curtain type shading.

- Post Base G.I. Pipe 1 1/2" sched 40, 6m
 - Post G.I. Pipe 1 1/2" sched 40, 6m
 - U Frame G.I. Pipe 1 1/2" sched 40, 6m
 - Main Arc G.I. Pipe 1 1/4" sched 20, 6m
 - Main Arc Ver. Support G.I. Pipe 1" sched 20,6m
 - Main Arc Support G.I. Pipe 1" sched 20,6m
 - Arc Frame Insert G.I. Pipe 1" sched 20, 6m
 - Horizontal Frame G.I. Pipe 1" sched 20, 6m
 - Columns G.I. Pipe 1 1/2" sched 20, 6m
 - Air Vent Frame G.I. Pipe 1" sched 20,6m
 - Main Purlins G.I. Pipe 1" sched 20, 6m
 - Air Vent Purlins G.I. Pipe 3/4"ø, sched 20, 6m
 - Connectors G.I. Pipe 3/4" sched 20, 6m
 - Connectors G.I. Pipe 1/2" sched 20, 6m
 - Air Vent. Support G.I. Pipe 1/2" sched 20,6m
 - Gutter Holder Angle Bar 1"x1"x6m
 - Front & Back G.I. Pipe 1 1/4" sched 20,6m
 - Post Base Suppt Deformed Bar 10mm,6m
 - Door Frame Holder G.I. Pipe 1" sched 20,6m
 - Door Frame G.I. Pipe 3/4" sched 20, 6m
 - Side Support G.I. Pipe 1 1/4", sched 40ø
 - Shading Net Holder G.I. Pipe 3/4"ø, sched 20, 6m
 - Green Rope
 - Pulley Single
 - Pulley Double
 - Gutter 0.4mm Plain Sheet White x 25m Taiwan
 - Portland Cement
 - Fine Aggregates
 - Coarse Aggregates
 - G.I. Tie Wire #16
 - Welding Rod
 - Nylon Cable Tie 8"
 - Turn Buckle M12
 - Bolt & Nut 1/4"x2"
 - Paint, Aluminum
 - Paint, Epoxy Primer
 - Paint Brush 2"
 - Paint Thinner
 - Lacquer Thinner
 - PVC Pipe Gray 4"ø
 - Angle Bar 2"x2"x6m
 - uPVC Downspout Tube
 - uPVC Elbow
 - uPVC Dropper Outlet
 - uPVC Clamp
 - Downspout Strainer
- Roofing and Sidings
- Aluminum Locking Profile 6m



- Zigzag Lock 2m
- UV Treated PE Film 0.008" (200 microns) x 3.5m x 26m
- Superfine Net 24 x 24 Mesh x 3.6m x 100m
- Superfine Net 24x24 Meshx3.6mx100m
- Black Plastic Wire 3mm
- Greenhouse Black Strap
- Sliding Door Alloyed with Double Roller
- Eye Bolt
- Rivets
- Aluminum Flat Bar
- Tex Screw

Hydroponics - NFT (100 mm dia pipe x 55 mm x 3 m, 2700 holes, 4 tables: each table supports 45 holes by 15 holes) 70 cm elevation

- G.I. Pipe 2"ø, sched 20, 6m
- Cement
- Sand & Gravel
- Deformed Bar 10mmø
- Welding Rod
- Paint, Epoxy Primer
- Paint, Silver/Aluminum
- Paint Brush 2"
- Paint Thinner
- Lacquer Thinner
- Spray Paint White
- Flat Bar 1 1/4"
- Cut Off Disc
- NFT Channel 100mmx55mmx3m
- NFT Connector 100mmx55mm
- NFT End Cap with Spout
- NFT End Cap without Spout
- PVC Pipe 1", 3m
- PVC Elbow 1"
- PVC Tee 1"
- PVC End Cap 1"
- PVC Reducing Tee 1" x 1/2"
- PVC Pipe 1/2", 3m
- PVC Ball Valve 1/2"
- PVC Female Adapter 1/2"
- Compression Male Tee 20mm
- Compression End Cap 20mm
- LDPE Pipe 20mm
- PVO1064 Micro PVC Tube 6mm x 4mm
- 4mm OD Mini Micro Tube Coupling IM7156000N055
- PVC Pipe 1 1/4", 3m
- PVC Pipe 1", 3m
- PVC Elbow 1 1/4"
- PVC Tee 1 1/4"
- PVC End Cap 1 1/4"
- PVC Reducing Tee 1 1/4" x 1"
- PVC Tee 1" White



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- PVC End Cap 1" White
 - PVC Elbow 1" White
 - CF Male Adapter 1"
 - CF Female Adapter 1"
 - Brass Ball valve 1"
 - Filter 1"
 - CF Equal Elbow 1"
 - CF Reducing Coupling 1" x 1/2"
 - LDPE Pipe 1"
 - Submersible Pump
 - Fittings and accessories for submersible pump
 - Circuit Breaker Wall Mounted DPST 30 Amp
 - THHN Stranded Wire #14
 - 2 Gang Outlet
 - 1" Electrical PVC Moulding
 - Armak Electrical Tape (Big)
 - Net Pots 2"
 - Rock Wool
 - Seeds (leafy's)
- Aquaponics - Flood and drain (4 beds, 1.5 m width x 3 m length x 40 cm, 70 cm elevation)
- G.I. Pipe 2"ø, sched 20, 6m
 - Cement
 - Sand & Gravel
 - Deformed Bar 10mmø
 - Welding Rod
 - Paint, Epoxy Primer
 - Paint, Silver/Aluminum
 - Paint Brush 2"
 - Paint Thinner
 - Lacquer Thinner
 - Cut Off Disc
 - Angle Bar 2"x2"x6m
 - Flat Bar 2" x 6m
 - Maintenance Free Nursery Bench
 - Polyethylene (PE) UV Treated 1.2mm thick x 1.3 m x 30
 - Bell Siphon Customized
 - Bio Balls/Filter Media
 - Volcanic Rock/Hydroton Media
 - Miscellaneous/Other Accessories
- Water Tank Standform and Works
- Portland Cement
 - Fine Aggregates
 - Coarse Aggregates
 - 12mm Dia. Def Bars
 - 1/4"thk x 2" x 6m Flat Bar
 - 1/4"thk x 2" x 6m Angle Bar
 - 1"ø G.I. Pipe S40
 - 3"ø G.I. Pipe S40
 - Welding Rod
- Micro-Sprinkler Irrigation System
- Empty Tank 1,000 Liters Capacity



- Angle Bar 1 .5 x 1.5 x 6 mtr
- Paint (Aluminum)
- Paint, Primer Epoxy
- Welding Rod
- Paint Brush
- Speroni 1"hp with Bladder Tank Vertical 60L Hor. w/ St
- Fittings and Accessories for Motor Pump
- PVC Pipe 32mm, 3m
- Jain Driple Adapter 32mm with Rubber Gasket
- PVC Coupling/Female Adapter 32mm
- PVC Ball Valve 32mm Solvent Type
- PVC Elbow 32mm
- Brass Check Valve 32mm
- PVC Male Adapter 32mm
- Brass Ball Valve 32mm
- Screen Filter 32mm
- PVC Female Adapter 32mm
- PVC Reducing Tee 32mmx25mm
- PVC Female Adapter 25mm
- NDJ/Kinetic Air Release Valve 25mm
- PVC End Cap 32mm
- PVC Pipe 3/4", 3m
- LDPE1612 16mmø, 1.2mm Wall Thickness
- Saddle Clamp 32mmx25mm
- PVC Male Adapter 25mm
- PVC Male Elbow 25mm
- Brass Ball Valve 25mm
- NDJ Screen Filter 25mm
- PVC Female Adapter 25mm
- Saddle Clamp 25mmx20mm
- Jain Mini Air Release Valve 20mm
- PVC Elbow 25mm
- PVC Female Elbow 25mm
- Compression Male Adapter 25mm
- Compression Elbow 25mm
- Compression Female Tee 25mm
- Compression Female Elbow 25mm
- NDJ/Plason Male Adapter 25mmx16mm
- Poly End Stop 16mm
- Jain Mini Air Release Valve 20mm w/Adapter
- Suspended stand Fast & Fast 30cm
- Super fogger 13Lph 4 bar (56psi)
- Simple Hose Punch 2.5mm
- Solvent Cement
- Teflon Tape 1/2"

Aquaponics - Filtering System/Assembly

- | | | |
|--|----|------|
| ● Filtering system Mechanical Filters, HDPE drum 200 L with 2" pvc pipe, fittings and ball valve | 3 | sets |
| ● Filtering system: Bio Filters, HDPE drum 200 L with | 3 | sets |
| ● Net and brush for mechanical filters | | |
| ● k1 media (for biofilters) | 15 | kg |



- RAS pipes and fittings, 1.25" PPR
- water pump, centrifugal, 25 gpm, TDH=18 m, 220 V, single phase fish tank to filters 1 set
- water pump, centrifugal, 25 gpm, TDH=18 m, 220 V, single phase filters to grow beds 1 set
- electrical wires awg 8 source aquaponics 30 A breaker and fixtures

Storage Tank (Make-up water for the fish tank)

- 2000 liters, stainless vertical 1 set
- Air pump for aquaponics 220V, 300W, 60 Hz 1 set
- Distribution Manifold 6 ports with individual valves (stainless) 1 set
- Flexible aqua silicone air hose tubing 1 lot

MATERIALS COST

A.2 LABOR COST

A.3 EQUIPMENT EXPENSES

TOTAL ESTIMATED DIRECT COST (A.1 + A.2 + A.3)

B. INDIRECT COST

B.1 OCM 10%

B.2 CP 8%

TOTAL INDIRECT COST (B.1 + B.2)

B.3 VAT 5%

TOTAL COST ITEM - II

For your guidance and information.

MR. JONAS ROBERT L. MIRANDA
BAC Chairperson

Received by the Bidder: _____