



SCOPE OF SUPPLY & PRICING PROPOSAL

FOR AEDGE WATER TECHNOLOGIES APU26
OXIDATION/FILTRATION TREATMENT FOR
IRON AND MANGANESE REMOVAL IN A
WATERPOD CONTAINER

Site Name:

Turin, GA

Date:

July 30, 2018

Contacts:

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Turin, GA

Site Profile and Budgetary Proposal

Contact Information

End User / Utility:	Turin, GA
Site / Well Identity / Location:	City Hall Well
Local Engineer / Firm:	Brennan Jones Engineering
Target Date for Installation:	
Funding Source:	
Treatment Goals:	Fe and Mn < SMCL

Date:	7/30/2018
Project Contact:	Brennan Jones
Contact Phone:	770-688-5148
Contact Email:	brennanjones@comcast.net
Rep Contact:	Bob Kazmier
Rep Phone:	770-789-7715
Rep Email:	bob@kazmierinc.com

Site Information

System Type / Application:	Municipal	
Population Served:	No Data	(for municipal applications)
Number of Connections:	No Data	
Number of Wells:	1	
Max Flowrate (gpm):	125	(design flowrate)
Ave Flowrate (gpm):	125	
Ave Gallons per Day:	40,000	
Ave Well Runtime (hr/day):	5	
Operating Pressure (psi):	Well ON @ 70 psi, Well OFF @ 75 psi	
Discharge Options Available:	Pond or Drying Bed	
System Redundancy Required:	None	
Existing Treatment or Disinfection:	NaOCl and AquaMag	
Available Electrical Supply:	230V, 3 PH	
Atm Storage Tank Present / Size:	75,000 gal	
Hydropneumatic Tank Present / Size:	None	
Building Present / Available Space:	WaterPOD	
Additives (Phosphates, Fluoride, etc.):	AquaMag	

Site Specific Notes:

Process Flow:
Well >> NaOCl (existing in well house) >> APU26 (in POD) >> AquaMag (existing in well house) >> Dist. >> Atm Tank

*Estimated wet weight of the system: 24,000 lbs operating

Site Shipping Address:

Turin, GA

Prepared by: TB/PA

Reviewed by: BM

Additional Water Quality Information:

Please specify:

Water Quality from 3/10/17. New water quality sample taken 7/18/18.

rev 01.11.18

	Parameters	
pH	7.30	
Total Arsenic	No Data	mg/L As
Arsenic (III)	No Data	mg/L As(III)
Total Sulfides	0.600	mg/L Total Sulfides
Alkalinity	85.000	mg/L (as CaCO ₃)
Bicarbonate	No Data	mg/L (as CaCO ₃)
Hardness	76.600	mg/L (as CaCO ₃)
Calcium	25.600	mg/L Ca
Magnesium	3.060	mg/L Mg
Phosphate	1.550	mg/L as P
Silica	No Data	mg/L SiO ₂
Vanadium	No Data	mg/L V
Iron	0.59	mg/L Fe
Manganese	0.04	mg/L Mn
TOC	No Data	mg/L TOC

Water Chemistry

	Parameters	
Ammonia	No Data	mg/L NH ₃ -N
Nitrate	No Data	mg/L NO ₃ -N
Sodium	No Data	mg/L Na
Chloride	No Data	mg/L Cl
Sulfate	No Data	mg/L as SO ₄
Fluoride	0.250	mg/L F
Total Dissolved Solids	No Data	mg/L TDS
Total Suspended Solids	No Data	mg/L TSS
Gross Alpha	No Data	pCi/L
Combined Radium	No Data	pCi/L Ra 226/228
Uranium	No Data	mg/L U 238
Turbidity	No Data	NTU
Temperature	No Data	°F
Dissolved Oxygen	No Data	mg/L DO
Chromium VI	No Data	mg/L Cr(VI)

Oxidation-Filtration System

AdEdge Packaged System:	APU26-3660CS-3-AVH
Media:	AD26L
Number of Vessels:	3
Vessel Information:	100 PSI Non-Code Carbon Steel
Size of Vessels:	36 in D x 60 in Side Shell
Operation:	Parallel
Approximate System footprint:	20' L x 8' W
Piping Material:	Sch 80 PVC
Total Qty of AD26L Media:	64 cuft
Est. Media life (Years):	10 Years

Design Flow Rate:	125 gpm
Treated gallons/day :	40,000 gal/day
Hydraulic Utilization %:	22%
Hydraulic Loading Rate:	5.9 gpm/sqft
Backwashing Configuration:	Reverse Flow Backwash
Backwashing Frequency:	Every 12.2 days
Backwashing flow rate:	125 gpm
Backwashing loading rate:	17 gpm/sqft
Est. BW water per Event:	3,750 gallons
Est. BW water per Vessel:	1,250 gallons

*All parameters are based on hydraulic utilization provided.

System Costs

Capital Cost

Treatment System in WaterPOD:	Included
Equipment Shop drawings:	Included
AdEdge Startup and Commissioning:	Included
Engineering / Permitting:	By Engineer
Taxes (if applicable):	Not included
Total capital, startup (sans freight):	\$162,400
Freight:	\$1,000
Optional HVAC unit in WaterPOD:	\$7,350
Optional WaterPOD wood siding:	\$21,850

Annualized O&M Cost

Est. Annual Oper. Costs:	\$767	(Media, NaOCl)
Costs per 1000 gal:	\$0.05	(avg calculated per 1,000 gal)

AdEdge Water Technologies - Scope of Supply

Turin, GA



AdEdge Filtration System for Iron and Manganese

Tyler Butel, Technical Sales Engineer
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7/30/2018

Item	Detail	Parameter		Design
		Design	Supply	Install
	APU26-3660CS-3-AVH-WP, Carbon Steel Vessel System in a WaterPOD container, Automatic Operation	AdEdge	AdEdge	Others
	Pre-packaged Skid Mounted System with Vessels, Interconnecting Piping, and Valve Harness designed to run in parallel. System is shipped Factory Assembled, Skid Mounted, Pre-piped and Wired, Pressure and Flow Tested, and Ready for Installation.			
A	Carbon Steel Pressure Vessels	AdEdge	AdEdge	Others
	Carbon Steel Vessels Operating in parallel with Media and Underbedding 100 psi Non-Code Vessels Vessels are lined with internal NSF61 Epoxy Liner One (1) Drain Valve per Vessel One (1) Manway for Media Loading Internal Inlet Distributor and Hub and Lateral Design One (1) Combination Air/Vacuum Release Valve per Vessel			
B	Process Valves and Piping	AdEdge	AdEdge	Others
	Inlet, Treated Outlet, and Backwash Headers with Flanged Tie Points Harness Piping on Each Vessel Valve Harness with Five (5) Lug-Style Bray Butterfly Control Valves with 120VAC RCEL Electric Actuators Manual Isolation Valve at the Inlet of Each Vessel Manual Flow Control Valve on System Backwash Outlet Manual Flow Control Valve on System Treated Outlet Reverse Flow Backwash Configuration			
C	PLC and Controls Detail	AdEdge	AdEdge	Others
	Automatic System Operation (Service, Backwash, and Rinse Modes) Allen Bradley Micrologix 1400 PLC Installed Inside Control Panel for Automatic Operation C-More 10" Color Touch Screen HMI Mounted on Control Panel Operator "Touch" Graphics Screens for Automatic and Manual Operation 304SS NEMA 4X Skid-mounted Control Panel to House Electrical and System Controls Terminal Locations on Control Panel for Ancillary Controls and Device Inputs/Outputs (factory installed and labeled)			
D	Instrumentation / Monitoring	AdEdge	AdEdge	Others
	304SS Hydraulic Panel with System Inlet/Outlet Pressure Gauges and Sample Ports, One (1) per system Pressure Gauges and Sample Ports on Each Vessel's Inlet and Outlet E+H Electromagnetic Promag L400 Flow Meter on Each Vessel's Inlet Pressure Sensors on System Inlet/Outlet for System DP measurement			
E	WaterPOD Container	AdEdge	AdEdge	Others
	One (1) 20-foot long Container External Dimensions - 20' Length x 8' Width x 9.5' Height Internal Dimensions - 19.5' Length x 7.5' Width External Solid Color Marine Grade Industrial Enamel Double-swing corrugated steel panel doors with locking devices Lighting & Electrical Panel Electrical sub-panel w/ 3-phase circuit breaker Interior overhead fluorescent light fixtures Interior-mounted electrical receptacles PVC Coating on Plywood floor Interior wall and ceiling insulation One (1) Electric Wall Heater One (1) Shutter Mount Exhaust Fan One (1) Rain Driven Louver for supply air			
F	Included Field Services and Miscellaneous	AdEdge	AdEdge	NA
	O&M Manuals (+1 Hardcopy, +1 Electronic Copy) including Engineering Drawings, Design Report, and Control Description System Commissioning Plan and Coordination of Installation with Installer (Pre-Startup) System Startup and Commissioning On-Site Including Media Loading Supervision and Initial Media Flush Three (3) x 8 hour Days Included for Start-Up and Training. Additional Work Billed on Time and Materials Basis Operator Training During System Startup			
G	Factory Testing	AdEdge	AdEdge	NA
	Factory Acceptance Testing in accordance with AdEdge QC procedures and SOPs Hydraulic and Mechanical Testing to Ensure System Meets Requirements Pressure Testing per AdEdge Standard Procedures to Test for Leaks			
H	Warranty and Maintenance	NA	AdEdge	NA
	Standard 1-year Equipment Warranty			
I	Freight for Media, Sub-Fill, and System		Not Included	
J	Taxes (end use, sales or duty taxes as applicable)		Not Included	

Estimated Fabrication and Delivery Schedule

1	Produce Shop Drawings / Submittals from Award / PO	3 weeks
2	Fabrication of System upon approval of Shop Drawings (based on shop availability and project timing)	10-14 weeks
3	Shipping to the site	TBD
4	Installation of the System	TBD by others
5	Startup, Commissioning, Training following Mech/Electrical Completion	2-3 days

Notes, Clarifications and Exceptions

1	AdEdge will coordinate closely with Installer and the Engineer on all equipment and design related items
2	System will be shipped on a flatbed trailer for offloading by others with appropriate equipment and trained operator
3	Media will be shipped in bags on pallets for offloading by forklift - By Others
4	No seismic engineering or seismic related design or equipment modifications are considered in the pricing; can be incorporated as appropriate for the project
5	Costs of metal components, especially steel, in our system are subject to change due to the volatilities of market pricing and imposed taxes and tariffs, therefore AdEdge reserves the right to adjust pricing to pass along any such increases.

Items Supplied by Others / Contractor

A	Installation, interconnecting pipe to the system, and appropriate electrical connections to AdEdge Equipment
B	Pressurized water supply for use during start-up
C	Non-AdEdge system related site, civil, or structural engineering or support costs from Owner
D	Safety equipment as required for media loading, startup/commissioning
E	Offloading, storage and placement of all equipment and media
F	Site work and any building structure / facility or shade structure to be provided; HVAC
G	Construction of structural concrete pad as necessary for treatment equipment provided by AdEdge
H	Anchoring Equipment, tanks and other equipment to the building's foundation/structural pads
I	Dedicated power supply to AdEdge equipment; Interconnecting control and instrumentation wiring to control panel
J	Two laborers for one day for Media loading with AdEdge Supervision
K	Interface with Regulators / Permitting and all permits for successful completion of the project