

Commercial Plan Review Checklist: AX100 & AX20 Systems

Project Name: _____

Reviewed By: _____ Review Date: _____

Is the overall Design in compliance with applicable Design Criteria? Yes No

Suggested Disclaimers (to be included in the design)

| In The Design? | Disclaimer |
|--|--|
| <input type="checkbox"/> Yes <input type="checkbox"/> No | "This plan set is based upon the expected flows and waste strengths dated (date) for the purpose of serving (project name). Any changes in usage that may affect flows or waste strength require a review by this designer." |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | "Once a facility is placed into operation, the flows and waste strengths to the facility should be monitored. If flow or any of the influent waste strengths exceed those listed in the design above, measures should be taken to reduce these parameters to those listed on the plan set. Otherwise additional treatment capacity and plant expansion will be necessary." |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | "Don't dispose of toxics or chemicals into system. Examples: restaurant degreasers and cleansers, odor controllers and disinfectants for RV tanks, wax stripper for linoleum, and carpet shampoo." |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | "Water softener brine discharge is prohibited from being discharged into the AdvanTex advanced treatment system. Failure to adhere to this policy will void Orenco's warranty." |
| <input type="checkbox"/> Yes <input type="checkbox"/> No | "Follow manufacturer's instructions for tank installation and watertight testing" |

Design Basis

| Item | Compliant | Comments |
|---|---|----------|
| Design Maximum Day Flow (gpd/Lpd) specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Design Average Flow (gpd/Lpd) specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Kitchen Flow (gpd/Lpd) specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Expected or measured influent characteristics specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Required effluent characteristics specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |

Primary Tankage

| Item | Compliant | Comments |
|---|---|----------|
| Primary tank volume specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper hydraulic retention time based on Orenco's primary tank-sizing chart | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Tank dimensions or elevations specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper access hole specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: When using a Biotube pump vault (PVU), the access hole should be no less than 19 in. (482 mm) in diameter.</i> | | |
| Proper risers (dia. and height) specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: For a simplex pumping system, the riser should be no less than 24 in. (610 mm) in diameter. For a duplex pumping system, the riser should be no less than 30 in. (762 mm) in diameter.</i> | | |
| Riser attachment method specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |

Primary Tankage Continued

| Item | Compliant | Comments |
|---|---|----------|
| Lid insulation specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Effluent filter(s) size is appropriate for design flow | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper pumps specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper discharge assembly specified and compatible with pump | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Gravity or pressure transport line size listed on plans | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper float model(s) specified for the control panel | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: All TCOM or MVP panels require model "A" floats or model "V" floats (non-mercury).</i> | | |
| Float functions appropriate for application | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Notes:</i> <i>On-Demand Simplex: High water alarm, Pump On, Pump Off, Redundant Off/Low Water Alarm (4 floats).</i> <i>On-Demand Duplex: High Water Alarm/Lag Pump Enable, Lead Pump On, Pumps Off, Redundant Off/Low Water Alarm (4 floats).</i> <i>Timer Simplex: High Water Alarm, Timer Override, Timer On/Off, Redundant Off/Low Water Alarm (4 floats).</i> <i>Timer Duplex: High Water Alarm/Lag Pump Enable, Timer Override, Timer On/OFF, Redundant Off/Low Water Alarm (4 floats).</i> | | |
| Float settings or elevations listed and appropriate for specified pump vault and tank | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: To find the available float stem length of a pump vault, you can subtract the cartridge height plus 11 inches (279 mm) from the vault height. For example, for a PVU95-2425, the lowest float setting is 95 in. - (24 in. + 11 in.) = 60 in. [2413 mm - (610 mm + 279 mm) = 1524 mm]. Float settings are measured from the outside top of the tank down.</i> | | |
| Proper pump vault model specified and is appropriate for the tank | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Control panel model properly specified with options | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Voltage and phase specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Properly plumbed into recirc./blend tank | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: The inlet to the recirculation/blend tank should always be located near the RSV/MM valve.</i> | | |

Recirculation/Blend Tank

| Item | Compliant | Comments |
|---|---|----------|
| Recirc./blend tank volume specified and at least 80% of Q _{peak} or larger | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Tank dimensions or elevations specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper access hole specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper risers (diameter and height) specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Riser attachment method specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Lid insulation specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper pump(s) specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper discharge assembly specified and compatible with pump(s) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |

Recirculation/Blend Tank Continued

| Item | Compliant | Comments |
|--|---|----------|
| Proper transport line size specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Non-FRP Style MM/RSV: Proper model and size specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Non-FRP-Style MM/RSV: Setting for stinger seat (top of cage) at 80% of tank depth or volume. | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: Non-FRP Style MM/RSV: The stinger seat (top of the cage) is typically set at 80%, but this can vary between 70-90%. For concrete tanks, use inside depth (inside top to inside bottom). For fiberglass tanks, use tank volume and find height on manufacturer's dipstick charts.</i> | | |
| Water column acting upon the RSV/MM buoy is less than 90 in. (2286 mm) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Water column acting upon the RSV3Q is less than 36 in. (914 mm) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| FRP Style MM/RSV: Liquid level at 80% when seated | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: FRP Style MM/RSV: The liquid level should be 80% of the tank depth for concrete tanks or volume for fiberglass tanks. The liquid level will be measured from the inside bottom of the tank to the middle of the buoy when seated.</i> | | |
| Proper float model(s) specified for control panel | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Float functions appropriate for application | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Float settings or elevations listed and appropriate for specified pump vault, tank, and RSV/MM or RSV3Q stinger seat setting | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: To find the available float stem length of a pump vault, you can subtract the cartridge height plus 11 inches (279 mm) from the vault height. For example, for a PVU95-2425, the lowest float setting is 95 in. - (24 in. + 11 in.) = 60 in. [2413 mm - (610 mm + 279 mm) = 1524 mm].</i> | | |
| <i>Non-FRP Style MM/RSV: Float settings are measured from the outside top of the tank down. Float settings are based on the stinger seat setting (top of cage). The override float is typically 3 in. (75 mm) above the stinger seat setting or elevation. The HWA/Lag Enable is typically 10% of the tank depth or a few in. below the inlet invert. The RO/LWA float is typically set at 50% of the tank depth or at least 10 in. (254 mm) below the stinger seat.</i> | | |
| <i>FRP Style MM/RSV: Float settings are based on the liquid level elevation at 80%. The override float is typically 9 in. (229 mm) above the liquid level when seated. HWA/Lag Enable and RO/LWA floats are set as the non-FRP style valves.</i> | | |
| Proper pump vault or flow inducer model specified and is appropriate for the tank | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Control panel model properly specified with options | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Voltage and phase specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper timer settings specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |

Treatment

| Item | Compliant | Comments |
|---|---|----------|
| Proper distributing valve location | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Distributing valve enclosure (size, height) specified and appropriate | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Pod insulation specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Appropriate hydraulic loading rate for application | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |

Treatment Continued

| Item | Compliant | Comments |
|---|---|----------|
| Appropriate organic loading rate for application | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Appropriate number of pods based upon maximum hydraulic and organic loading as specified in design criteria | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Appropriate anti-buoyancy is specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: AX20 pods must have anti-flotation flanges. AX100 pods cannot be buried. Pods must be bermed on the bottom or be no more than 9 in. (229 mm) below grade.</i> | | |
| Appropriate pod spacing | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: AX20 pod spacing is 44 in. (1118 mm) with anti-flotation flanges or 24 in. (610 mm) with anti-flotation flanges and 3.5 ft³ (0.1 m³) of concrete. AX100 pod spacing is a minimum of 2 feet (610 mm).</i> | | |
| Proper filtrate return line size and slope specified) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: AX20 minimum return line size is 2 in. (50 mm) for up to three pods and 3 in. (75 mm) for up to four pods. AX100 minimum return line size is 4 in. (100 mm) for up to eight pods and 6 in. (150 mm) from nine to fifteen pods.</i> | | |
| Proper venting (passive, active with manifold) | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Heater/fan placement correct | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Flow splitter basin for nitrogen reduction | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Water source for maintenance is available | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |

Final Discharge - Tank or Pump Basin

| Item | Compliant | Comments |
|---|---|----------|
| Tank/basin volume specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Dimensions or elevations specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Anti-flotation base for basin | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper access hole specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper risers (dia. and height) specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: For a simplex pumping system, the riser should be no less than 24 in. (610 mm) in diameter. For a duplex pumping system, the riser should be no less than 30 in. (762 mm) in diameter.</i> | | |
| Riser attachment method specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Lid insulation specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper discharge assembly specified and compatible with pump | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Transport line size listed on plans | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Proper float model(s) specified for control panel | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| <i>Note: All TCOM or MVP panels require model "A" floats or model "V" floats (non-mercury).</i> | | |
| Float functions appropriate for application | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Control panel model properly specified with options | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |
| Voltage and phase specified | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A | |