ADVANTEX SYSTEMS

TRI-COUNTY
WATER SERVICES

PASEO / PSMA Super Conference

01.2026

Presented By:
Jeremy Kerstetter

AGENDA

- **What is AdvanTex & how does it work?**
- **Inspections**
- **Sampling & Maintenance**

WHAT IS ADVANTEX?

Quality (treatment)

AX20 Pod

AX20RT

Dual AX20 stream discharge

AX20 modification of existing system

RT-UV unit for Stream Discharge

Clarification chamber w/ UV – gravity discharge

TREATMENT METHODOLOGY & APPLICATIONS

- An ADVANTEX treatment system features a multi-pass, packed bed, fixed-film media filter designed for consistent, high-quality effluent, from domestic- and commercial-strength wastewater sources.
- Per our PA DEP Technology Approval:
  - ✓ Reduction of CBOD5 (10 mg/l)
  - ✓ Reduction of TSS (10 mg/l)
  - ✓ Reduction of Total Nitrogen (20 mg/l)
  - ✓ Utilized as a replacement for sandmounds
  - ✓ Utilized in sub-20-inch limiting zone applications
  - ✓ Utilized for Small Flow Treatment Facilities
  - ✓ Commercial & residential projects

Commonwealth of Pennsylvania
Department of Environmental Protection (DEP)
Bureau of Point and Non-Point Source Management
Harrisburg, PA

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Classification Type: Alternate technology (Listing #A2009-0001-0004)

In accordance with Title 25, Chapter 73, Section 73.72, the Department generally classifies the Orenco AdvanTex® (AdvanTex) treatment system for use as an alternate on-lot sewage treatment system. This general classification permits, when designed, constructed, operated and maintained, as set forth in this general classification, the use of the AdvanTex as a treatment system for the specific purposes of reducing $CBOD_5$, TSS, and total nitrogen in the sewage effluent prior to discharge to an absorption area. This system has demonstrated that it can produce an effluent which must not exceed 10 mg/L $CBOD_5$ and 10 mg/L TSS as monthly averages. With ultraviolet (UV) disinfection, the AdvanTex can also reduce fecal coliform concentrations to treatment levels which must not exceed 200 cfu/100 ml on a monthly average basis. When the system is used to reduce total nitrogen, the discharge limitations for total nitrogen must not exceed 20 mg/l as a monthly average. The system is approved for use on limiting zones of less than 20 inches. The AdvanTex also satisfies NSF Std-40 criteria and may be used as a conventional aerobic treatment tank described in Section 73.32 where nitrogen removal is not a concern.

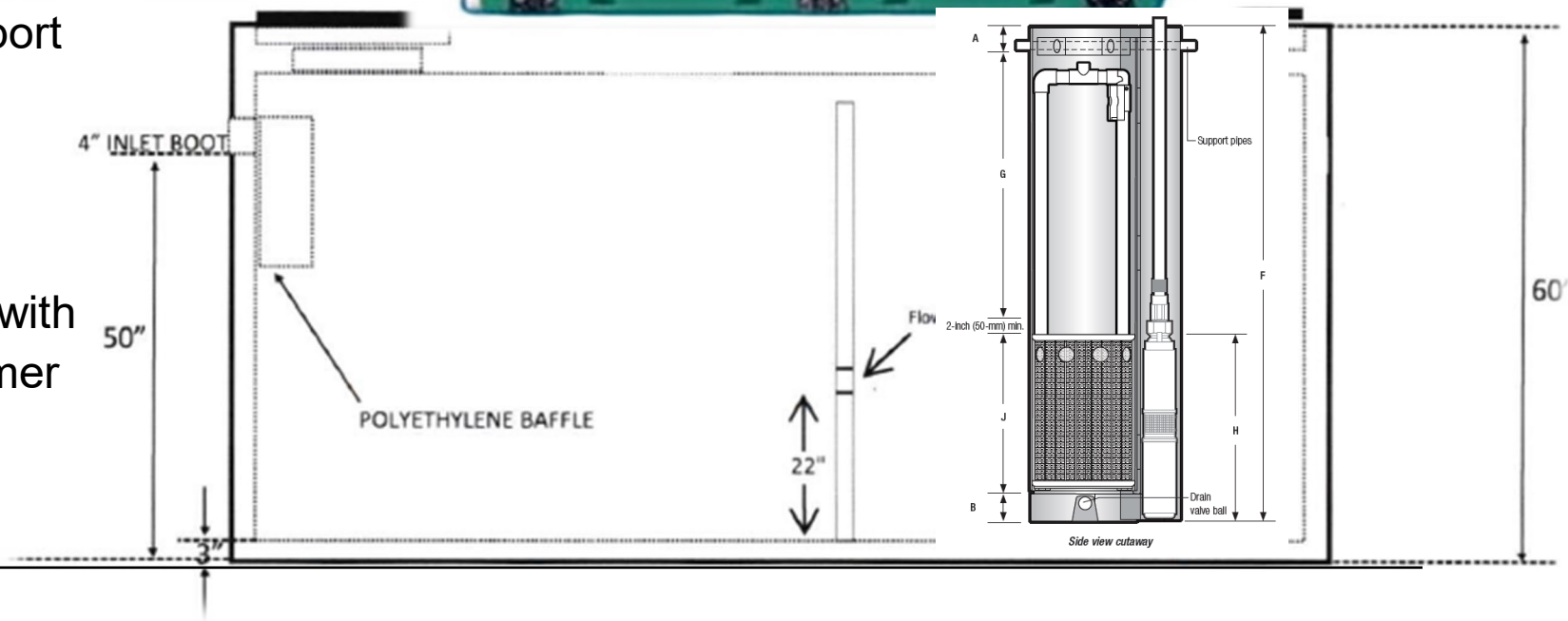
The AdvanTex treatment system configuration consists of either a single dual-compartment processing tank or a combination of separate septic and recirculating tanks with each configuration recirculating wastewater through an AdvanTex packed bed filters, and a final discharge of the effluent to an on-lot absorption area or spray field.

II. Design Requirements

BASIC CONFIGURATIONS

AX20 system (typical)

- A dual-compartment processing tank with thru port
- A recirculation pump vault (PVU)
- An AX20 textile filter pod
- A Vericomm control panel with a programmable dosing timer (telemetry-enabled)

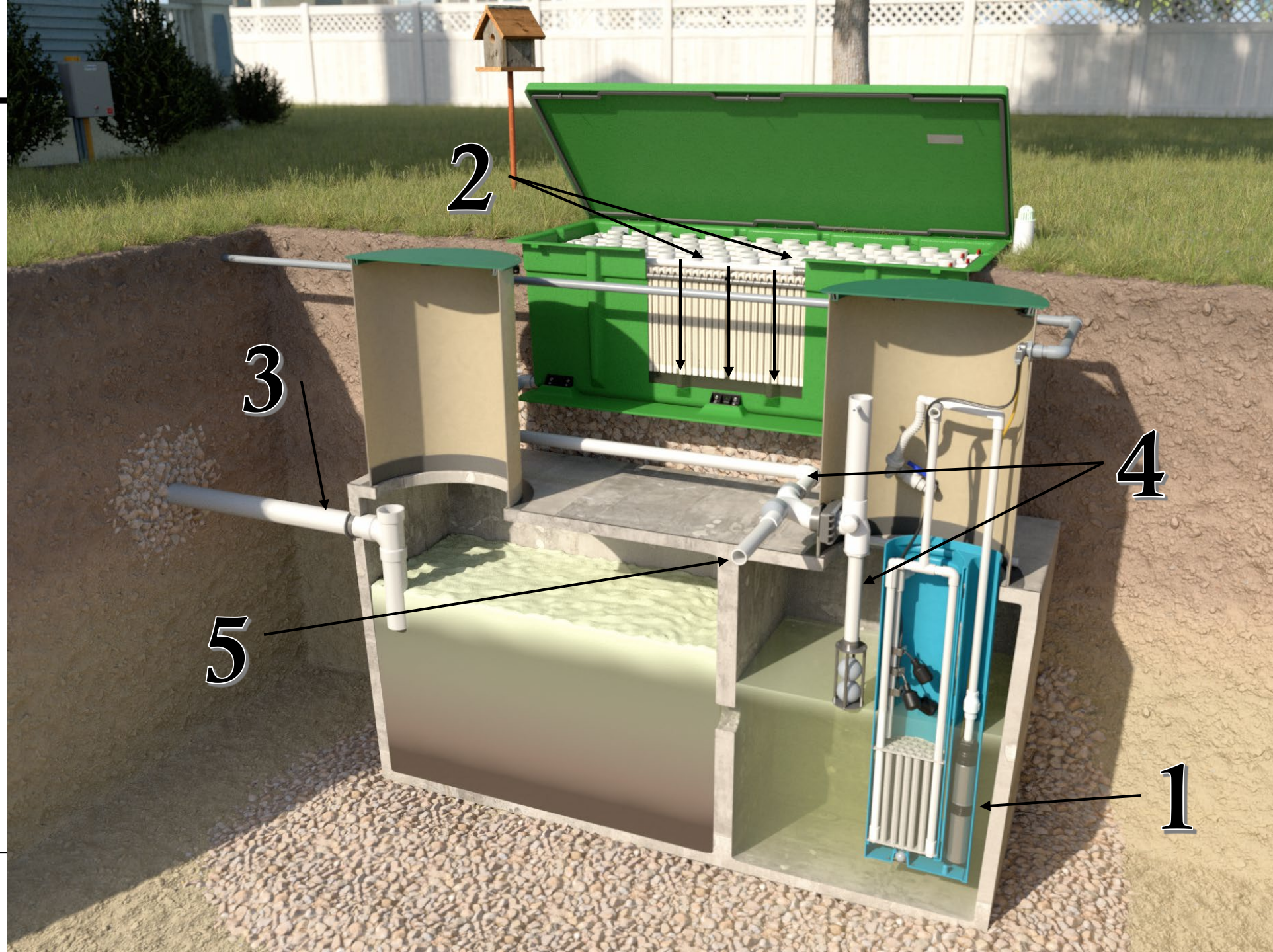


AX20 Pod:

- Up to 4 Bedrooms
- Flexible Design
- Expandable
- Concrete or Plastic Compatible

Process Summary:

1. Dose to filtration media
2. Filtration via gravity over textiles
3. 50% recirculates to processing tank
4. 50% continues to clarifying chamber
5. Once full, RSV enables discharge from clarifying chamber



Pump Vault Unit (PVU)

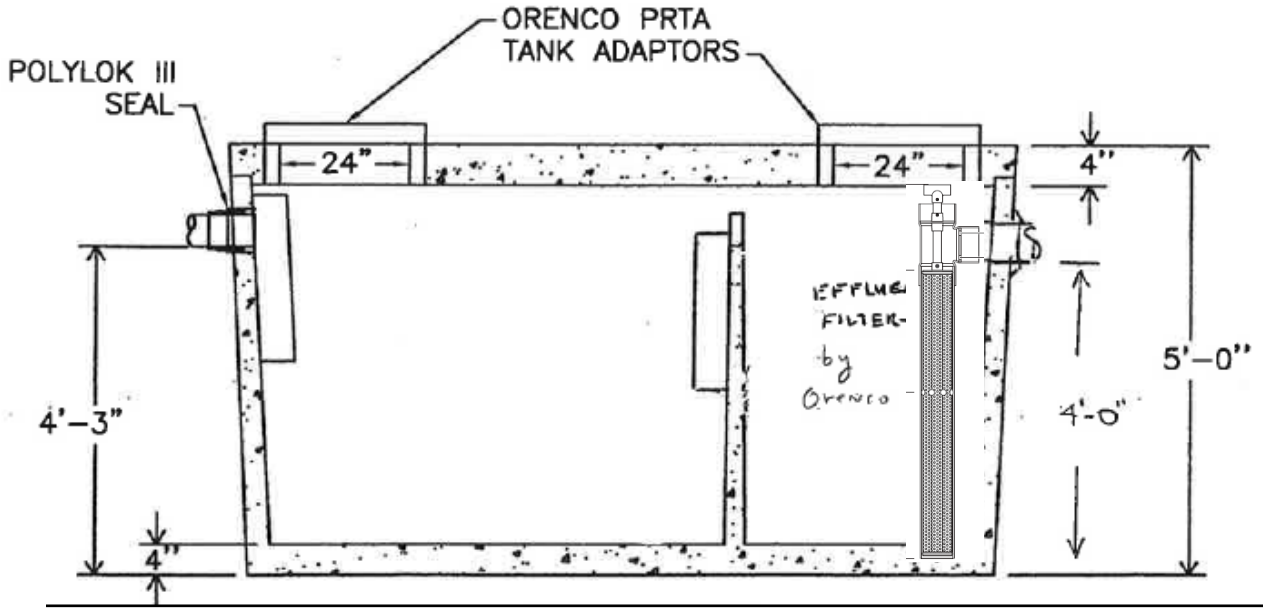
UV Basin for disinfection & sampling

RECIRCULATING SPLITTER VALVE (RSV)

BASIC CONFIGURATIONS

AX RT system (typical)

- A processing tank
- Orenco effluent filter
- An AX20RT treatment and recirculation unit
- A Vericomm control panel with a programmable dosing timer (telemetry-enabled)



AX20RT With Pump Discharge

(UV not shown)

- 500-625 GPD
- All-in-one
- Plug-and-play design
- Residential design

Process Summary:

1. Dose engages (4:1 ratio)
    - 80% recirculates to processing tank
    - 20% continues to clarifying chamber
2. Discharge occurs from final chamber either by pressure or gravity (demand)

INSPECTIONS

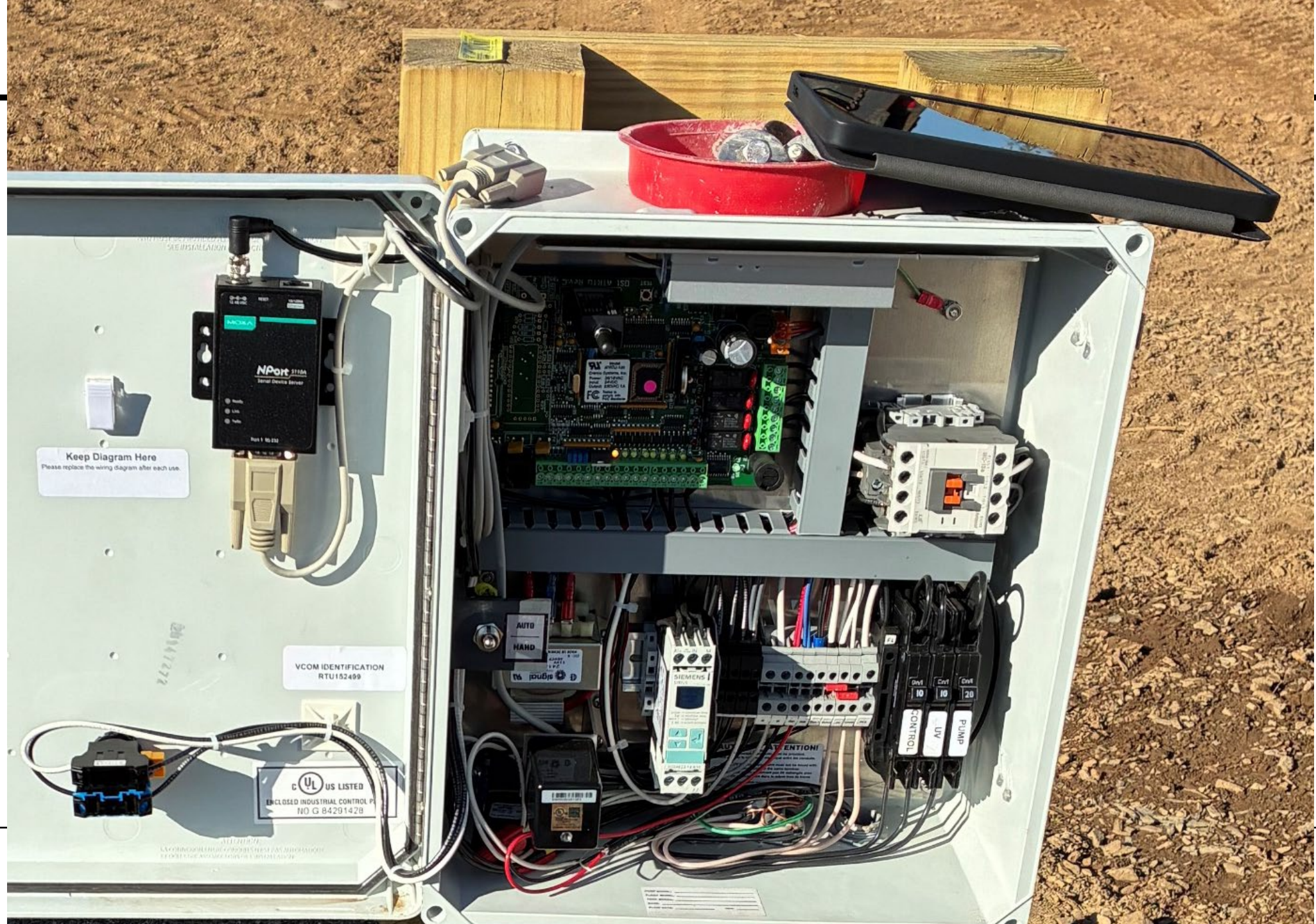
What to look for

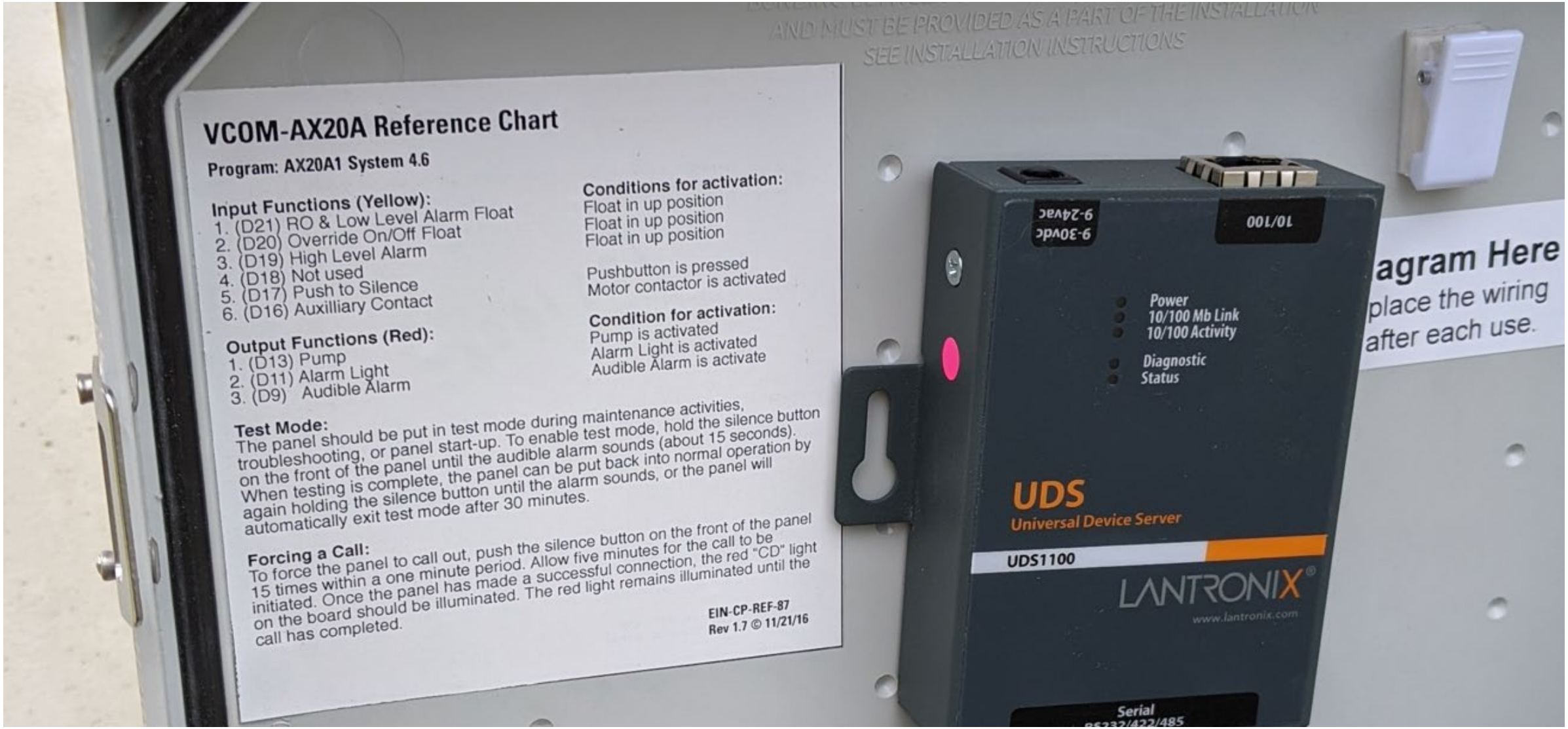
INSPECTIONS

- Lids are not to be buried
- Operational liquid levels
- BioTube Effluent Filter is present (if AXRT installed)
- No groundwater infiltration present
- The recirculation pump should run every 15-25 minutes (timer settings)
- The discharge pump is working (if equipped)
- Textile sheets are earth tone colors and have a musty smell (no strong or pungent odor)
  - No bridging
- Crystal clear treated effluent

INSPECTIONS

- Panel
  - Should always be under power (all switches in the panel should be “on”)
  - Green “OK” led is flashing (bottom right-hand corner of circuit board)
  - UV (if equipped) and R/O indicator LEDs should always be lit
  - Red LED lights on the panel front and interior indicate system is in alarm
  - If in doubt regarding functionality, test mode can be run
- Normal Sample Results: BOD & TSS <10 mg/l, TN < 20 mg/l, and Fecal < 200 colonies/100ML (with UV)
- All PSMA tank, riser, and infiltration standards apply to the AdvanTex treatment system
- Confirm the owner has an *annual* maintenance agreement with a service provider (inspect, clean, report)


Keep Diagram Here
Please replace the wiring diagram after each use.
MOXA
NPort 5110A
Serial Device Server
VCOM IDENTIFICATION
RTU152499
AUTO
HAND
SIEMENS
CONTROL
UV
PUMP
US LISTED
NO G 84291428


AND MUST BE PROVIDED AS A PART OF THE INSTALLATION
SEE INSTALLATION INSTRUCTIONS
VCOM-AX20A Reference Chart
Program: AX20A1 System 4.6
Input Functions (Yellow):
1. (D21) RO & Low Level Alarm Float
2. (D20) Override On/Off Float
3. (D19) High Level Alarm
4. (D18) Not used
5. (D17) Push to Silence
6. (D16) Auxilliary Contact
Conditions for activation:
Float in up position
Float in up position
Float in up position
Pushbutton is pressed
Motor contactor is activated
Output Functions (Red):
1. (D13) Pump
2. (D11) Alarm Light
3. (D9) Audible Alarm
Condition for activation:
Pump is activated
Alarm Light is activated
Audible Alarm is activate
Test Mode:
The panel should be put in test mode during maintenance activities, troubleshooting, or panel start-up. To enable test mode, hold the silence button on the front of the panel until the audible alarm sounds (about 15 seconds). When testing is complete, the panel can be put back into normal operation by again holding the silence button until the alarm sounds, or the panel will automatically exit test mode after 30 minutes.
Forcing a Call:
To force the panel to call out, push the silence button on the front of the panel 15 times within a one minute period. Allow five minutes for the call to be initiated. Once the panel has made a successful connection, the red "CD" light on the board should be illuminated. The red light remains illuminated until the call has completed.
EIN-CP-REF-87
Rev 1.7 © 11/21/16
9-30vdc
9-24vac
10/100
Power
10/100 Mb Link
10/100 Activity
Diagnostic
Status
UDS
Universal Device Server
UDS1100
LANTRONIX
www.lantronix.com
Serial
agram Here
place the wiring
after each use.


BEFORE
AFTER

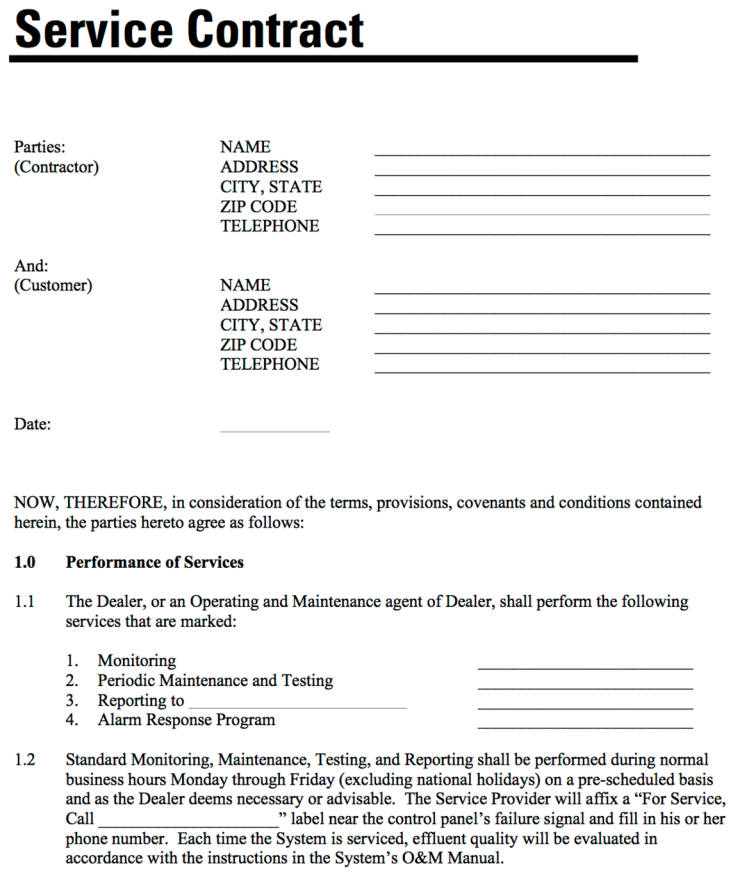
FOG – COMMERCIAL APPLICATIONS

Oils and grease are not typically a problem in commercial, when designed and managed correctly

MAINTENANCE

- Why is consistent maintenance important?
  - Provides early detection of potential future problems
  - Ensures longevity via anticipated system performance
  - Establishes industry and tech standards (accountability)
  - Protects owner investment

Upon completion of installation, a Service Contract should be in place for maintenance to be performed by an Authorized Service Provider ensuring compliance with regulatory requirements.



Service Contract

Parties:
(Contractor)
NAME _____
ADDRESS _____
CITY, STATE _____
ZIP CODE _____
TELEPHONE _____

And:
(Customer)
NAME _____
ADDRESS _____
CITY, STATE _____
ZIP CODE _____
TELEPHONE _____

Date: _____

NOW, THEREFORE, in consideration of the terms, provisions, covenants and conditions contained herein, the parties hereto agree as follows:

1.0 Performance of Services

1.1 The Dealer, or an Operating and Maintenance agent of Dealer, shall perform the following services that are marked:

1. Monitoring _____
2. Periodic Maintenance and Testing _____
3. Reporting to _____ _____
4. Alarm Response Program _____

1.2 Standard Monitoring, Maintenance, Testing, and Reporting shall be performed during normal business hours Monday through Friday (excluding national holidays) on a pre-scheduled basis and as the Dealer deems necessary or advisable. The Service Provider will affix a "For Service, Call _____" label near the control panel's failure signal and fill in his or her phone number. Each time the System is serviced, effluent quality will be evaluated in accordance with the instructions in the System's O&M Manual.

MAINTENANCE

- Twice inspected in first year of start up
- Annual maintenance after the first year from start up, performed by a certified provider
  - Cleaning of all components
  - Replacement of UV bulb
  - Testing electrical components
  - Confirming timer settings and adjusting accordingly

SAMPLING

- Collect Effluent Samples From
  - the inlet of the RSV
  - Discharge compartment (RT) or external sample basin (AX20)
  - Stream point-of-discharge
- Acceptable Sampling Values
  - Turbidity (> 15 NTU)
  - Dissolved Oxygen (DO) (4-6 mg/L)
  - pH (6-8 SU)
  - Other Permit Requirements (TSS, BOD, TN, etc.)
- Sampling and reporting based on level of permit (i.e., General vs Individual NPDES Permit)

KEY TAKEAWAYS

- Two basic configurations in residential applications – AX20 (pods) and AXRT
- The system will continue to run in some instances of malfunctioning/underperforming parts, unless a UV is connected.
- When denitrification is required, telemetry (remote monitoring) is required, allowing observation and troubleshooting to be conducted remotely
- Yearly maintenance is required to ensure quality of effluent and system longevity

CONTACT US

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TCW

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