



USBF™ PACKAGED WWTP

OPERATIONS & MAINTENANCE REQUIREMENTS

GENERAL DESCRIPTION

One operator is typically required on site twice a week for approximately 2-3 hours per visit. During that visit, the routine O&M of the plant may consist of the following tasks.

Observation

1. While approaching the site, listen for unusual noise and take note of odors, if present.
2. Before doing any cleaning or plant adjustments, check the plant discharge (clarity/quality) and bioreactor appearance (foam, floating sludge, scum etc.).

Testing and Sampling

1. If samples are taken to be analyzed by a professional laboratory, do it before disturbing the bioreactor.
2. Commence by measuring Dissolved Oxygen (DO) concentrations in the anoxic and aeration compartments; do a Settled Sludge Volume (SSV) test with the Mixed Liquor Suspended Solids (MLSS) out of the aeration compartment; check the bioreactor (effluent) pH and the effluent ammonia nitrogen concentration using test kits.

Records Keeping

1. Log all onsite test results and observations in log sheets and compare to historical data.
2. Log pump run times (influent and effluent pumps) and blower run times and air pressure in log sheets; compare them with the historical data; if data are inconsistent, troubleshoot.

Operations & Maintenance

1. Adjust bioreactor DO and RAS (Returned Activated Sludge) as needed.
2. Once all the sampling and/or onsite testing is completed, start wasting sludge from the bioreactor (since the process generates sludge, it must be wasted – usually to a sludge holding tank).
3. Clean/hose down the basket screen (if applicable) and all bioreactor tank walls, collect screenings and dispose of as needed.

4. Refer to air blower manual for O&M requirements; blower bearings require grease-lubrication about once a month (every 500 hours); oil changes are required roughly every 1,500 hours; blower drives need lubrication approximately once a year.
5. Always refer to equipment O&M manual for proper equipment maintenance.
6. General plant and site housekeeping.

Operator Qualification

1. Only one qualified person is required to operate packaged USBF plants; however, FOP recommends training at least two operators for redundancy.
2. FOP can demonstrate to local operators the routine operation and maintenance of their system. If requested, FOP can conduct further O&M training for personnel to become more familiar with wastewater treatment.
3. Usually, wastewater treatment plants are classified to provide an indication of the degree of knowledge and training that is required of an operator of that facility. Classification provides both the facility operator and the owner with an indication of the level of certificate the facility operators should hold.

For example, in British Columbia, a USBF packaged wastewater treatment plant with flows of approximately 10,000 gpd might be classified as “Small Wastewater System – Mechanical”. Wastewater operators will generally be certified, paralleling the facility classification. The requirements for a certified “Small Wastewater System Operator” are:

1. Minimum 1.2 continuing education credits (CEU's).
2. Minimum of at least six (6) calendar months (minimum 50 hours) of hands-on experience operating the system or one equivalent to it or higher.