

## Operation & Maintenance MANUAL - RECOMMENDATIONS

The Operation and Maintenance (O&M) Manual for Wastewater Treatment Facilities should, as a minimum, include the following:

1. A table of contents showing the page number for each section.
2. A descriptive guide to using the manual, indicating the type of information to be found in each section.
3. A brief description of the treatment process and a discussion of the capacity of the facility, including the flow and loading assumptions used as a basis for the sizing of the plant.
4. Regulatory requirements including permits and stream standards and requirements for reporting effluent quality information, non-compliant events, spills, etc.
5. Recommended staffing and staff responsibilities including plant supervisor and other management staff.
6. Description, operation and control of each unit of the facility (include offsite lift stations, if appropriate):
  - a. Description, function, flow routing and design capacity for each unit.
  - b. Listing of major components and mechanical equipment.
  - c. Process control:
    1. Normal operating procedures and parameters including such things as valve positions, sludge depths, etc.
    2. Discussion of laboratory and field tests and expected operational ranges.
    3. Discussion of common operating problems and solutions.
    4. Alternate operational modes.
  - d. Hazards and safety concerns.
  - e. Recommended maintenance of mechanical equipment including lubrication schedules, recommended lubricants, etc.
7. Sludge management program:
  - a. Permit requirements and other limitations.
  - b. Method of disposal.
  - c. Method of tracking.
8. Recommended recordkeeping procedures for plant operating parameters, compliance reporting, sludge tracking and maintenance.

9. General safety information, procedures and accident reporting
10. Emergency operating procedures for such things as power loss, flood, freeze, etc.
11. Recommended maintenance program and schedule for any equipment or parts of the facility not covered in section 6 above, including painting, ground upkeep, tractors, mowers, portable pumps, etc.
12. Laboratory procedures and/or sample handling.
13. Collection system maintenance procedures.
14. Appendices:
  - a. Schematic and flow diagram for the facility.
  - b. List of process chemicals and their source.
  - c. List of utilities and contacts.
  - d. List of equipment suppliers.
  - e. List of sources of service and parts.
  - f. Protective coatings list for equipment and structures subject to corrosion.
  - g. Recommended spare parts inventory.
  - h. Warranties and bonds.
  - i. Sample forms for operating parameters, compliance reporting equipment maintenance, etc.
  - j. Map of the collection system including location and size of lines, manholes and lift stations, if available.