

# Operating Permit template instructions

## Subsurface Sewage Treatment Systems (SSTS)

*Doc Type: Compliance and Enforcement*

The following instructions provide an explanation for local units of government (LGU) and designers to complete the operating permit template. This is intended to provide guidance to LGUs in developing operating permits for subsurface septic treatment systems (SSTS). The template could be modified for holding tanks. A signed contract, between the owner and Service Provider, should be attached to the operating permit to help ensure the owner has made the necessary arrangements to have the system maintained and monitored. All text in red and underlined should be changed to be specific to the SSTS that the permit is designed for.

**LGU Name, Department and Address** – fill in the name, department and address of local unit of government at the top of the operating permit.

**SSTS Operating Permit No.** – assign an operating permit number to be able to track the system over the years.

**Permittee name, telephone number, and address** – fill in the name, address and phone number of the owner.

**Property ID Number** – these are simply identifiers used by local units of government in the event the property address changes over time.

**Name of Local Unit of Government** – fill in the name of the local unit of government. This authorizes the Permittee to operate the SSTS at the address named above, according to the operating permit, attached Management Plan and contract with the Service Provider.

**Issuance date** – fill in the date the operating permit is issued. The operating permit should not be issued until all required information is submitted.

**Expiration date** – fill in the date when this operating permit expires. The first time an operating permit is issued to an owner, it is typically issued for 1 year. This helps ensure the owner does the required maintenance and monitoring during the first year. If the owner complies, LGU may wish to issue the operating permit for a longer period of time. However, if the owner does not comply the first year, the second operating permit could, again, be issued for a period of 1 year.

**System type** – fill in the type of system installed.

**Treatment Level** – specify Treatment Level A, A2, B, B2, C, TN or TP. Treatment Level A = Carbonaceous Biochemical Oxygen Demand, five day (CBOD<sub>5</sub>) 15 milligrams per liter (mg/L), Total Suspended Solids (TSS) 15 mg/L, Fecal Coliform Bacteria 1,000 per 100 milliliter (mL); Treatment Level A2 = CBOD<sub>5</sub> 15 mg/L, TSS 15 mg/L; Treatment Level B = CBOD<sub>5</sub> 25 mg/L, TSS 30 mg/L, Fecal Coliform Bacteria 10,000 per 100 mL; Treatment Level B2 = CBOD<sub>5</sub> 25 mg/L, TSS 30 mg/L; Treatment Level C = CBOD<sub>5</sub> 125 mg/L, TSS 60 mg/L, Oil and Grease (O&G) 25 mg/L; Total Nitrogen (TN) = 20 mg/L or less, or Total Phosphorus (TP) = 5 mg/L or less.

**System Design Flow** – fill in the design flow specified on the construction permit for the system, along with the projected average daily flow for the system. Average daily flow is generally 60 to 70 percent of design flow if it is not specified in the design.

**Residential/Other Establishments** – specify if the system is residential or what type of other establishment. Specify additional information, such as classification of dwelling, number of bedrooms; or type of other establishment (include square footage, seats, employees or other methods used for design flow as necessary)

**System components** – provide a brief description of the system components. An example would be the following: 600-gallon trash tank, 600-gallon treatment device, 1 Ultraviolet (UV) light disinfection unit, 500-gallon pump tank, pump, floats and controls, and 250-foot shallow trenches using pressure distribution

## Monitoring requirements (Table)

The monitoring requirements specified in an operating permit are unique to the site and soil conditions of the property (its environmental sensitivity) and system complexity. The monitoring requirements include specific parameters to be monitored, target limits and the frequency and location of monitoring. The monitored parameters, at a minimum, would include: 1) average flow - the most basic parameter to know in understanding system performance, 2) ponding in the soil treatment system and 3) surfacing of the soil treatment system. Monitoring for CBOD<sub>5</sub>, TSS, fecal coliform bacteria and nitrogen are unique to the site, its receiving environment and complexity of the SSTS. Field tests for temperature, pH and dissolved oxygen can be performed by the Service Provider to serve as general indicators of system performance. The compliance limits are set up and color-coded depending on the treatment level desired. The remaining limits and suggestions that do not apply should be removed from the template before finalization. Keep in mind the effluent limits may differ depending on Treatment Level, Secondary Treatment technology and Tertiary Treatment technology.

1. **Flow** – flow to each system needs to be determined as specified in the Management Plan or as determined by the local unit of government. Flow can be determined several ways, using water meters, event counters, and running time clocks. Telemetry can also be used and has the advantage that flow can be determined continually.

The determination for the frequency of flow measurement is done on a case-by-case basis. At first, daily flow monitoring may be needed to determine average flow and peak flows to a system. After a period of time, weekly or monthly flow determination may be acceptable. Flow determinations once a year generally provide limited information.

2. **CBOD<sub>5</sub>** – monitoring for Carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>) is not typically required for most SSTS used for single-family homes generating typical domestic strength effluent. However, monitoring for CBOD<sub>5</sub> may be needed periodically. For example, there may be a need to audit systems as part of the product registration process in Minnesota or if the Service Provider is trying to troubleshoot a system. For other establishments, monitoring for CBOD<sub>5</sub> is generally necessary to determine CBOD<sub>5</sub> removal efficiencies of proprietary treatment devices and/or organic loading rates to the soil's infiltrative surface.
3. **TSS** – monitoring for Total Suspended Solids (TSS) is not typically required for most residential SSTS that generate typical domestic strength effluent. However, turbidity measurements may be taken in the field by Service Providers. Monitoring for TSS may be needed periodically as part of an audit process for the registration of proprietary treatment products in Minnesota. For other establishments systems, monitoring for TSS may be necessary.
4. **Fecal Coliform Bacteria** – monitoring for fecal coliform bacteria should generally be required for systems listed as Treatment Level A and Treatment Level B systems where reduced vertical soil separation is used.
5. **O&G** – monitoring for Oil and Grease (O&G) is not typically required for most residential SSTS; however, it is an important parameter to monitor for facilities that prepare and/or serve food for residences that generate high strength waste.
6. **Total Nitrogen and Total Phosphorus** – monitoring for Total Nitrogen (TN) may be needed in areas identified as nitrogen sensitive environments. Monitoring for Total Phosphorus (TP) may be required in phosphorus sensitive lake environments.
7. **Operational Field Tests** – these are tests performed by the Service Provider to help 'monitor' system performance and identify problems (troubleshooting a system). Although field tests are not a strict monitoring requirement, they are appropriate to list in the operating permit if specified in the Management Plan or in the product's Operation and Maintenance Manual. The local unit of government will determine if the permittee is required to report field test results as part of the operating permit.
  - pH – Should be within 0.5 of tap water
    - If a low reading occurs = Acidic Cleaners, FOG, Milk
    - If a high reading occurs = Ammonia Cleaners are present in the system.
  - DO – Measurements should be between 0-1.0 mg/L in Septic Tank. They should be much higher in an ATU.
8. **Ponding/Surfacing in soil treatment** – all systems should be monitored periodically as specified in the Management Plan to determine extent and frequency of ponding in soil treatment systems. A check for surfacing is needed. Some ponding may occur and is allowable in a gravity system. There should not be any ponding in a pressure system if the pump is not running.

## Monitoring requirements comment field

---

Provided in the comment field is a list of suggested requirements to include in the SSTS Operating Permit. The list is not all inclusive and should be tailored to meet the needs of the site and system specifically. All suggested bullet points that do not apply to the site should be removed from the permit. Additional comments can and should be added in this section as well.

## Maintenance requirements (Table)

---

This table lists some of the basic maintenance requirements for each major component of the SSTS. Since all maintenance requirements cannot be listed in this table, it is best to reference the Management Plan and the proprietary product's Operation and Maintenance Manual.

1. **System component** – list each system component, including the septic tank, trash tank, effluent screen, pump tank and controls, proprietary treatment product, disinfection device, and soil treatment and dispersal system.
2. **Maintenance** – briefly identify the maintenance requirements of each major system component. For additional information, please reference the proprietary product documents listed on the MPCA website at <http://www.pca.state.mn.us/programs/ists/productregistration.html>.
3. **Frequency** – briefly identify the frequency of maintenance as per the systems Management Plan and Operation and Maintenance Manual.

## Monitoring protocol

---

This section of the operating permit states that testing needs to be performed in accordance with approved methods and the results submitted to the local unit of government.

## Contingency plan

---

Briefly describes requirements if the system does not function as intended. The owner must notify the local unit of government when non-compliance occurs. The Management Plan may identify some of the corrective actions required or the owner will need to consult your Service Provider. The owner is responsible to obtain the services of an MPCA-licensed Service Provider or other qualified practitioner to complete the required corrective measures. More detail could be added here by the local unit of government.

## Authorization

---

Fill in the length of time of the operating permit; this is typically one to five years. Fill in the name of the local unit of government in the second blank space. Next, fill in the name of the MPCA-licensed Service Provider identified by the owner in their contract; this is needed to help ensure the owner has made the necessary arrangements to have the system maintained and monitored.

**The Operating Permit is Hereby Granted to** – print the name of the owner who signed the operating permit.

**Signature of Permittee (and date of signature)** – the owner signs and dates the operating permit.

**By Order of** – signature of the permitting authority, title, and date.

**Signature of Service Provider** – signature of service provider and license number.