

# **Protocol for Septage Management**

## **Contents**

- 1. Title, Extent and Commencement**
- 2. Basic Concept in Septage Management**
- 3. Definition**
- 4. Purpose and Scope**
- 5. Elements of Septage Management**
  - 5.1 Monitoring Committee**
  - 5.2 Cell for Septage Management.**
  - 5.3 Identification of individual septic tanks and Community septic tanks.**
  - 5.4 Creation of infrastructure for treatment of effluent collected from septic tanks**
    - 5.4.1 Collection of Septage**
    - 5.4.2 Transport of Septage**
    - 5.4.3 Treatment and Disposal of Septage**
  - 5.5 IEC & Capacity Building for Septage Management**

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## **Protocol for Septage Management**

### **1. Title, Extent and Commencement**

In accordance with the provisions of U.P. State Water Supply and Sewerage Act, 1975/ Municipalities Act, 1916 and having modified and adopted by the Government of Uttarakhand, the following protocol is notified, namely:-

#### **"Protocol for Septage Management".**

The provisions of these Protocols shall apply to the area under the jurisdiction of the ULB of Uttarakhand.

It shall come into force with effect from the date of notification by the State Govt.

### **2. Basic Concept in Septage Management**

The National Urban Sanitation Policy (NUSP), 2008 specifically highlights the importance of safe and hygienic sanitation facilities with proper collection; proper disposal and treatment of sludge from on-site installations.

Septage Management entails regular and i) safe disposal of effluent from septic tank/bio-digester; ii) safe removal of septage sludge from septic tanks/bio digesters and iii) proper operation and maintenance of septic tanks/bio digesters.

### **3. Definition**

**"Septage"** is the settled solid matter in semi-solid condition usually a mixture of solids and water settled at the bottom of septic tank. It has an offensive odour, appearance and is high in organics and pathogenic microorganisms. Septage, in case of bio-digester, is that sludge which has not been completely digested, it happens in case when the bio digester is not functioning properly.

**Scum** – Oil and grease that floats on the top

**Influent**- The liquid waste of a household or community including human excreta.

**Effluent**-The supernatant liquid discharge from a septic tank.

**Supernatant liquor**- The layer of liquid overlying the settled solids which have separated from it.

**Desludging:** Desludging refers to the process of removing the accumulated sludge or septage from the septic tank

**Facility:** Facility means any site or location where septage is handled.

**Septic Tank:** An underground tank that treats wastewater by a combination of solids settling and anaerobic digestion. The effluents may be discharged into soak pits or trench, and the solids have to be pumped out periodically.

**Bio Digester:** A bio digester toilet is an anaerobic multi compartment tank with inoculum (anaerobic bacteria) which digests organic material biologically. This system converts faecal waste into unstable water and gases in an eco-friendly manner.

**Sludge:** is the settled solid matter in semi-solid condition – it is usually a mixture of solids and water deposited on the bottom of septic tanks, ponds, etc. The term sewage sludge is generally used to describe residuals from centralized wastewater treatment, while the term septage is used to describe the residuals from septic tanks.

**Faecal sludge** is the solid or settled contents of pit latrines and septic tanks. Faecal sludge differs from sludge produced in municipal wastewater treatment plants. Faecal sludge characteristics can differ widely from household to household, from city to city, and from country to country. The physical, chemical and biological qualities of faecal sludge are influenced by the duration of storage, temperature, intrusion of groundwater or surface water in septic tanks or pits, performance of septic tanks, and tank emptying technology and pattern.

**Septage Management:** Septage Management refers to the comprehensive programme for managing septic tanks, bio digesters and the procedures for desludging, transporting, treating and disposing of septic tank content.

**“Septage transporter”:** Septage transporter means any person who engages in the collection, transportation, disposal of domestic septage.

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#### **4. Purpose and Scope**

The purpose and scope of these Protocols are:


- (1) To provide a regulatory framework for construction, routine maintenance of septic tanks and bio digesters; transportation, treatment and safe disposal of septage;
- (2) To prescribe the actions to be taken by the owners of the premises connected to septic tanks/bio digesters and septage transporters to ensure compliance with their obligations;
- (3) To provide for appropriate inspection and enforcement mechanisms;
- (4) To ensure cost recovery on a sustainable basis for proper septage management;
- (5) To facilitate participation of private and non-Government sector in septage management

#### **5. Elements of Septage Management**

- (1) Monitoring Committee
- (2) Cell for Septage Management
- (3) Identification of individual septic tanks, bio digester, Community septic tanks/bio digester
- (4) Creation of infrastructure for treatment of Septage
  - a. Collection of Septage
  - b. Transport of Septage
  - c. Treatment and Disposal of Septage

##### **5.1 Monitoring Committee**

The following Monitoring Committee shall be in place to monitor the activities related to septage management at timely intervals, as and when required-



S.No.	Designation	Members
1.	District Magistrate	Chairman
2.	Mayor/ Chairman, ULB	Co Chairman
3.	MNA / Executive Officer, ULB	Member
4.	Representative from State Pollution Control Board	Member
5.	S.E.Jal Nigam	Member
6.	S.E. JalSansthan	Member
7.	Representative from Health Department	Member
8.	Representative from Town & Country Planning Department	Member

## 5.2 Cell for Septage Management

**Septage Management Cell:** State Government by notification shall direct to each urban local body/District Board to create a "Septage Management Cell" (SMC). The cell shall have the following members:

### A. Nagar Nigam

S.No.	Designation	Members
1.	Municipal Commissioner, Nagar Nigam	Chairman
2.	Representative from Uttarakhand Jal Sansthan not below E.E.	Member
3.	Representative from PeyJal Nigam not below E.E.	Member
4.	Representative from State Pollution Control Board	Member
5.	Representative from Health Department	Member
6.	Other persons who may be invited to provide technical advice to the SMC	Member

### B. Nagar Palika Parishad/Nagar Panchayat

S.No.	Designation	Members
1.	SDM of the concerned sub-division in which the NPP/NP is located	Chairman
2.	E.O., NPP/NP	Member Secretary
3.	Representative from Uttarakhand JalSansthan not below A.E.	Member
4.	Representative from PeyJal Nigam not below A.E.	Member
5.	Representative from State Pollution Control Board	Member
6.	Representative from Health Department	Member
7.	Other persons who may be invited to provide technical advice to the SMC	Member

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**Responsibilities of SMC:** This cell shall be responsible for ensuring that the septage/effluent from individual or common septic tank and Bio digesters is collected and appropriately treated before its consequential safe disposal. The undigested partially digested waste of Bio Digester cell also be collected and treated before its safe disposal. The manure removed from the Bio-digester shall be distributed free of cost to the farmers around the area.

The SMC shall have power to impose the penalty to individual, government body or private entrepreneur to enforce the protocol.

### **5.3 Identification of individual septic tanks, Community septic tanks and Bio-Digesters**

**Identification of Septic tanks/bio digester:** The SMC shall carry out the survey of all households within the area of action to collect and compile the data regarding sanitation systems such as individual septic tank, community septic tank and its method of disposal of effluent/septage. It shall also carry out the survey to have the record of each Bio digester in the ULB's area, either operated by individual or any private or Government body.

**Location of Septic tank, bio digester:** The SMC shall also record the location of common septic tanks with its ownership (e.g. Sulabh Shochalya), individual or institutional bio digesters. The SMC shall also update the information by recording the new constructed Septic tanks/Bio digester.

**Registration of Septic tank, bio digesters:** Every such household/institutions having septic tanks/bio digester shall be registered by the SMC.

The SMC shall ensure that the new septic tanks are design along with proper soak pits, planted filter etc. If any existing septic tank is without the treatment of effluent/soak pit from septic tank, the SMC shall direct the individual, government body or private entrepreneur to construct the method of treatment of effluent from septic tanks within an appropriate time otherwise the SMC shall impose the penalty.

**Responsibilities of Owner:** The owner of a premises connected to septic tank shall be responsible for its operation and maintenance and shall ensure that its parts and components are fit for purpose, operational where appropriate and kept in good order and repair so as to prevent a risk to human health or the environment.

The owner of a premises connected to septic tank shall at least once a year check for the sludge level so that the effluent shall not discharge, seep, leak or otherwise escape

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from the septic tank, or part thereof into surface waters or onto the surface of the ground.

The owner of a premises connected to septic tank shall ensure that roof water or surface water run-off shall not enter a septic tank.

In case there is no ownership, SMC shall be the owner of common septic tanks. If the Bio digesters are constructed for community septage management, it shall be handed over to SMC for maintenance.

#### **5.4 Creation of infrastructure for collection, transportation and treatment of Septage**

##### **5.4.1 Collection of Septage/De Sludging of Septic tanks**

Though de-sludging frequencies vary, de-sludging of tanks will be done once every two to three years, or when the tank becomes two third full.

The owner of a premises connected to septic tank shall be responsible for informing the SMC for emptying the tank, as per the scheduled provided by SMC.

The de-sludging shall only be carried out by the septage transporters registered and authorized by SMC and as per the directions of the SMC.

Only mechanized vehicles shall be used for effective de-sludging and collection of septage from septic tanks. The mechanical tankers shall be used by the septage transporters to empty the septic tanks. Where such vehicles are not available or number is inadequate, the SMC shall encourage the private entrepreneurs to introduce new vehicles.

The SMC shall decide the time of cleaning of Septic Tanks etc. and shall provide the owner a chart in which the date of emptying of tank shall be recorded. A regular monitoring of Septic Tanks shall be carried out to determine this sludge levels in Septic Tanks. The SMC shall use proper method and equipments for monitoring the septic tanks to assess the effluent turbidity, sludge level in septic tanks. If the Septic Tank have enough space for sludge storage the emptying time of that tank can be enhanced.

##### **5.4.2 Transportation of Septage**

**Registration:** The SMC shall register and issue license to private entrepreneurs having mechanized emptying and transport vehicles. The SMC prior to issuing license shall ensure that these trucks have proper equipments and adequate safety measures.

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An application for registration as a septage transporter and registration of septage transportation vehicle shall be made to the SMC. The SMC shall also motivate the private persons to engage in this activity.

No person/vehicle shall be engaged by the registered septage transporter in the collection, transportation and disposal of septage, unless it is registered as a septage transportation vehicle with the SMC under these Protocols.

**Renewal of registration:** The application for renewal of a registration shall be made by a septage transporter at least three months before the expiry of registration. Every renewal granted under these Regulations shall be for a period not exceeding three years.

### **Responsibilities of Septage Transporter**

(1) The septage transporter shall be responsible for safe transport of vehicle to the approved treatment facility designated by the SMC from time to time.

(2) The septage transporter shall ensure that:

(a) the registered collection vehicle including all equipments used for the transport of septage shall have a leak-proof body and lock to secure the sludge and septage; comply with applicable standards.

(b) Any tank and equipments used to transport septage shall not be used for the transportation of any other materials or liquids;

### **User charges:**

All owners of the premises connected to a septic tank shall pay a user charge for the desludging of their septic tanks and treatment of the septage, as notified by the SMC from time to time.

The SMC shall revise the charges based on revisions in costs involved from time to time. Such user charges shall include cost of desludging, transportation, treatment and disposal.

The SMC may authorize any person including septage transporter to collect user charges from the owners of the premises connected to a septic tank.

**Monitoring of De-sludging:** The SMC shall keep records of emptying the septic tanks. The owner/occupier of premises having septic tank shall have to maintain a chart,



supplied by SMC, in this chart the date of emptying and next due date shall be recorded. The same record shall be maintained by the SMC.

The SMC shall make the monthly schedule of emptying. This schedule shall be decided on the basis of monitoring or time period as mentioned earlier. While preparing the schedule the following shall be considered:

- Each truck shall collect the sludge from the same or nearby localities.
- Based on the sludge volume, the number for cleaning the septic tank may be more than one and the charges shall be decided accordingly.
- The charges shall be decided as per distance of locality from the Septage Treatment Plant (SeTP).
- Movement of sludge carrying vehicle shall be decided as per traffic load.

### **Safety Measures**

(1) The desludging shall be carried out using appropriate technology, equipment, safety gear and using operating practices which are in compliance with the CPHEEO Manual 2013.

(2) The septage transporter shall ensure that:

(a) all desludging workers wear appropriate personal protective equipment, safety gear and accessories including shoulder length fully coated neoprene gloves, rubber boots, a face mask, and eye protection as specified in the Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013;

(b) all the safety equipment are operational before proceeding to a collection site;

(c) all desludging workers are trained to use the safety gear and on hygiene practices;

(d) first aid kit, gas detection lamp and fire extinguisher are kept in the vehicle before it goes to the collection site;

(e) smoking shall be prohibited while working at septic tank;

- (f) desludging workers shall never enter septic tank and shall ventilate the covered tanks by keeping them open for sufficient period before starting the operation;
- (g) children are kept away and tank lids are always secured with screws and locks. The workers shall be cautious while performing desludging process as excessive weight on lid or manhole cover may result breakage;

#### **5.4.3 Treatment and Disposal of Septage**

Each Urban town shall have its own treatment unit. If there already exists any STP within 25 km distance, the septage shall be transported to the nearest STP otherwise a separate Septage Treatment Plant (SeTP) shall be constructed.

This treatment unit may be single or multiple based on the nature of urban population, existing provisions for sewage treatment etc. The treatment unit will be designed and constructed in accordance with the **CPHEEO Manual on Sewerage, 2013**.

It shall be promoted to engage private partners for construction and maintenance of STP/SeTP otherwise State Government shall make the provision of funds for the construction of new STPs/Septage treatment facility as well as the maintenance of all STPs/septage treatment facility. These STPs/septage treatment facility shall be constructed by Uttarakhand Peyjal Nigam or any other agency as directed by the State Government and the maintenance shall be carried-out by Uttarakhand JalSansthan or any other agency as directed by the State Government.

The construction agency shall construct the STP/septage treatment facility based on such technology which is cheaper in construction and maintenance. The construction agency shall also make the provision for the disposal/reuse of treated septage/sewage. These STP/SeTP should meet the norms as specified by the CPCB.

#### **5.5 IEC and Capacity Building about Septage Management**

Awareness program from time to time shall be run to teach the individual, government bodies or private entrepreneur about the proper construction technology of septic tanks, bio digesters, de-sludging of septic tanks, collection mechanism, transportation, disposal and the treatment of septage.

Regular handholding of the staff shall be done for monitoring of different activities for proper management of Septage.

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