

## **WATER AUDIT : SAVING WATER AT NIPS**

Water Audit is a qualitative and quantitative analysis of water consumption to identify means of Reducing, Reusing and Recycling of water.

A water audit is the method of quantifying all the flows of water in a system to understand its usage, reduce losses and improve water conservation. It can be performed on a large scale for a city or a state as well as on a smaller scale for irrigation projects, industries, and buildings. The audit can begin with an extensive approach to generate the water balance using available data and estimates which helps in identifying specific areas to concentrate in further stages. This method is also known as water conservation. Water Audit is aimed at undergraduate and graduate students in environmental engineering and science programs, water auditors and professionals in the water field, especially those motivated by quantitative water conservation needs.

The world's water resources are finite but exist on a planet with a constantly growing population. The development of water resources to man's benefit has been a fundamental factor in the evolution of civilization throughout history. But, as our populations continue to grow and shift, the availability of quality water resources is in decline. Pollution, climate change and construction of cities in dry regions are some of the factors exacerbating evolving supply/demand imbalances. To account this, it is essential that man utilize existing water resources in the most careful, efficient manner. Water audit provides a rational, scientific framework that categorizes all water use in your system. It is a tool to overcome drought related problem, shortage, leakage and losses. Using water efficiently is not just good for the environment; it's a smart business strategy. Every business is a little different, but a water audit is an easy way to start. It provides a way to inventory all water uses in your facility and identify ways to increase water use efficiency. A household water audit is an assessment of how much water is used and how much water can be saved in the home. Conducting a water audit involves calculating water use and identifying simple ways for saving water in the home.

**OBJECTIVE** – Water loss had no more remained a small and trivial problem, in fact, it had become a huge matter of concern. Thus, water conservation is the only way left to restore our precious natural resource (water). We still has time. So our aims are as follows:-

- Finding out water losses due to pipe leakage and overflow
- Identifying ways to increase water use efficiency.
- Ensuring availability of water for future generations by deeply focusing.

- on the ways to make water conservation a mass practice.

### **PROCEDURE**

- Making an inventory.
- Checking and focusing on the water relating status.
- Implementing the plans
- Reviewing the plans
- Implementing the water efficiency plan.

### **BENEFITS**

- ✓ It will reduce the scarcity of water which had become a major concern worldwide.
- ✓ It will enhance the knowledge of water distribution system.
- ✓ It will increase the efficiency in the use of existing supplies.
- ✓ It can safeguard both public health and property.
- ✓ It will encourage people to replace their water system with a new, more efficient one.
- ✓ A water audit will help reduce wastage and unnecessary use.
- ✓ It makes the students more aware and responsible.
- ✓ A water audit can be a student project that encompasses a number of subjects.

### **ANALYSIS**

#### Water consumption Pattern

When tabulating the consumption patterns, you may come across varied results from the normal.

- Consumption of water in winter may be less
- Consumption of water in summer just before the holidays may be high
- Rainy season – you might not consume water for gardening purpose
- Exams, Weekends and Holidays – water consumption is likely to be less

## **DISCUSSIONS AND TAKING THE RIGHT STEPS**

### **FIRST, FIX THE PROBLEMS**

#### Leaks and Overflow

- Identify the points where there are losses
- Identify the solutions
- Assign the responsibility for implementation.
- Implement the solutions
- Prepare a Monitoring schedule
- Assign a person for monitoring.

### **WAYS TO CONSERVE WATER**

1. Identify areas where water can be conserved.
2. Represent water usage graphically.
3. Conduct Group discussions and brainstorming sessions.
4. List down your Suggestions for each area where water is used.

### **WAYS TO CONSERVE WATER**

#### **IN SCHOOL GARDEN**

- Keeping a check on hoses in the garden
- Making use of efficient devices like the spray nozzles
- Following Drip Irrigation
- Planting native plants that require less water
- Changing the ground surfaces and vegetation to control run off in the school grounds
- Watering the roots of the plant and not splashing water all around

#### **TOILETS AND WASHING POINTS**

- Reducing the flush water volume in toilets.
- Replacing single flush cisterns with dual flush
- Installing low flow fixtures for taps.
- Installing a rainwater harvesting system and using the water for toilets, cleaning floors and gardening.

## **WATER AUDIT CHECKLIST**

- Green Team - Forming a Green Team (Green Team members should include members from the whole school community: teachers, students, administrator(s).
  - Installation of faucet aerators on all faucets.
  - Gives priority to replacing old fixtures and appliances with water-efficient models, including automatic faucets.
- Developing and implementing a Scope and Sequence plan that ensures all students, during the course of their education at the school, have been introduced to the topics of water, watersheds, water conservation, and water footprints through lessons or classroom activities.
- Creating a monitoring team to regularly assess (at least twice a year) the water conservation efforts and make recommendations on how to improve the current practices and infrastructure (this team can be part of the school's Green Team). They should establish a baseline for water use and report consumption data to staff and students.
- A group of students with the guidance of a teacher or advisor make a plan, based on the Water Audit results, to target specific measures for decreased water consumption.
- Finding out where the school's drinking water comes from and where it goes down the drain. Share this information with fellow students and staff.
- Students create water conservation stickers or signs for school and home.
- Students develop and send surveys out to parents regarding their water conservation practices at home.
- Students perform a skit, puppet show, or other student activities or lessons type of educational entertainment related to water conservation to other students, community members or another school.
- Teachers and staff create and sign a personal Water Conservation Pledge that includes at least five actions they will take to conserve water.
- Promoting the practice of turning water off while soaping hands.
- At least once a year, updating all students and staff about the school's current water conservation efforts (e.g. assemblies, classroom presentations, announcements, staff meetings, newsletters, etc.

## **SOME GUIDELINES FOR STUDENTS:**

### **Collect excess water and use it wisely**

Place ice cream containers under school water fountains and use excess water in the garden.

### **If not using the tap, turn it off**

Turn the tap off as soon as you've washed your hands. Put signs near the basins to remind students to do the same.

### **Report leaks**

Get someone to fix any leaking taps, water fountains or toilets as soon as they are reported. Make it a classroom activity to check for leaks regularly.

### **Use a container to wash your brushes**

Wash paint brushes in a bucket or ice cream container, rather than under a running tap.

### **Use a refillable water bottle**

Bring a water bottle to school. At the end of the day, any leftover water can be poured onto the garden.

### **Talk to others about water**

Raise awareness of the importance of water by creating colourful posters on water use and water saving. You can even start your own water saving team.

### **Install aerators on taps**

Care must be taken in installing or fitting the taps in school with aerators. Aerators reduce the amount of water flowing from the tap by up to 50%, while maintaining the pressure.

### **Install rainwater tanks**

Rainwater tanks must be installed. Once installed, they can be connected to the tanks to toilets or used for school gardens.