

WATER AUDITING FOR BETTER TOMORROW

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Water Auditing, Water Conservation, Water Policy, Water Consumption, Water Management

1. INTRODUCTION

Water is life and virtually everything we do or use each day involves water. We need water from fork to field. Virtually everything we do or use each day involves water. Need of hour is to give importance that is due to this precious resource.

One of the most common words that we read, write, listen and discuss everywhere is Water Scarcity. Scarcity means that people ~~want~~ need more than is available. Scarcity ~~requires~~ entails choice. People must choose which of their desires they will satisfy and which they will leave unsatisfied. BUT IN CASE OF WATER THERE IS NO CHOICE, WE NEED IT FROM CRADLE TO GRAVE.

Do we know that Water Scarcity at most palaces is not a natural but a human-made phenomenon! There is enough freshwater on the planet but it is distributed unevenly and too much of it is wasted, polluted and unsustainably managed. Accurate consumption of water and its preservation are highly essential for keeping life secure on earth. **And Water audit is a way to determine the availability of water in a particular area and to utilize it in the most respected manner. Its a torch to show us the way to move forward in most safe manner in using our water resources.**

An audit is an evaluation of a person, organization, system, process, enterprise, project or product. But the real value of the audit process goes far beyond 'ticking a box'. **Audit has a life cycle, starting from Birth, to Discovery, to Maturity stage and finally to Predictive stage or audit fatigue.** The need of water audit has already taken birth. **Water audit is in now discovery stage which is the most crucial stage** as what we will sow in this stage, we will reap the same in maturity stage. At maturity stage, not much can be contributed but at present we can mould the unbaked pot and shape it wonderfully. The baby of concept of water audit, is born, now its in our hands, how we nurture it. We have to see that an honest water auditing is done to conserve and manage water resources in such a way that we get a water nourished future and not water starved one!

2. WATER AUDIT

2.1 What

In financial audits, we balance credits and debits, similarly here we have to balance the water availability and its uses judiciously because any imbalance may lead to deficit. Water audit also determines the amount of water lost from a distribution system due to leakage and other reasons such as pilfering, unauthorized or illegal withdrawals from the systems and the cost of such losses to the utility. Comprehensive water audit gives a detailed profile of the distribution system and water users, thereby facilitating easier and effective management of the resources with improved reliability. It helps in correct diagnosis of the problems faced in order to suggest optimum solutions. It is also an effective tool for realistic understanding and assessment of the present performance level and efficiency of the service and the adaptability of the system for future expansion & rectification of faults during modernization.

2.2 Why

There cannot be any successful water conservation without water audit as it enables complete mapping of water usage, wastage, leakage etc. This data helps in diagnosing the problem areas as well as planning for conservation. Therefore, we need water audit:

- To provide a constructive link between policy making and users.
- To identify risks and wastages.
- For efficient use of existing water resources.
- To Save Money by detection and prevention of wastages and leakages

2.3 How

It starts with basic knowledge of the amount of water being use in all physical commodities that are available around us. We may not drink, feel or see the quantity of water utilized in producing those commodities but indirectly we are consuming that much quantity of water. This understanding would also helps in deciding the real need of those commodities which in turn make users conserve water in an indirect manner.

Elements of water audit include a record of the amount of water produced, water delivered to users, water loss and suggested measures to address water loss of any type. A successful water audit follows a logical sequence of events. Implementation should be conducted in phases, starting with the most obvious and low-cost options. An effective audit examines not just how much water is being used, but how it is used and by whom. When analyzing a water audit, we ask the question: “Can this process be done as well or better using less water?” This will save water and reduce its wastage.

Water Audit Checklist for Domestic and Industrial Water Use

STEP 1: Preparation and Information Gathering

Before beginning the actual water audit, We have to collect pertinent information about type of use, building and location information, including physical size of the facilities, plumbing schematics and drawings, watering schedule etc.

STEP 2: Conduct Facility Survey

After the information in Step 1 has been collected, the next step is a physical survey of the facility.

STEP 3: Prepare An Audit Report

This report provides the “baseline” by which our water conservation efforts will be measured.

STEP 4: Determine Total Water Cost

3.0 APPROACH FOR BETTER TOMORROW

Water consumption, whether it be in the household, through industry and manufacturing or in agriculture, must be given the consideration it deserves. We as citizens of this planet, need to participate in water conserving activities if we hope to sustain our way of life. And water auditing is a precursor to conservation. Basic knowledge of concepts helps us to know, **what We Can Do?**

Water Management involves two distinct areas: technical and human

The technical side includes collecting data from water audits and installing water- efficient fixtures and procedures. The technical side cannot be successful without human side which involves changing behaviors and expectations about water usage and “the way things should be done.” Both areas must be addressed for a water auditing program to succeed. Human side is very important to maintain honesty in water auditing. The need of the hour is to upgrade human side, technologies have already been developed for auditing so need is to inculcate better and honest usage of water.

Water conservation cannot be considered as an option any longer. Current circumstances require our full attention if we hope to thrive as a civilization. It includes improved water management practices that reduce or enhance the beneficial use of water.

Water conservation falls into three general areas:

1. Reducing losses (i.e. fixing leaky faucets and pipes)
2. Reducing use (for example, installing ultra-low-flush toilets and automatic shut-off faucets or eliminating once-through cooling)
3. Reusing water that is currently being discarded (such as using treated rinse water to irrigate landscaping).

We should not consider water auditing and conservation as a Govt. policy and wait & watch the actions to be taken by Govt. agencies. We have to start self water auditing with better usage habits and using latest technology & devices.

Change in basic thinking about water is very important in present scenario. Whether we are at home, in fields, in industries or any other place, **we have to develop a mind set that water is our own property, our own resource and not a mandate of government policies.** Water audit, water conservation, water management may sound some heavy words but these are meaningless without involvement of Human resources i.e. each one of us!

Water management plans must be part of an integrated approach that examines how changes in water use will impact all other areas of operation. Before water saving measures are implemented, a thorough water audit should be conducted to determine where water is being used. Then, water use can be monitored to track conservation progress. **A successful water conservation plan follows a logical sequence of events.** Implementation should be conducted in phases, starting with the most obvious and lowest-cost options. **An effective plan examines not just how much water is being used, but how it is used and by whom. The quality of water needed should be matched with the application.** Whenever possible, substitute recycled water used in one process for use in another.

4.0 Recommendations

We can implement certain measures to reduce water losses, but for that we should know where, why and how much water is lost or wasted and how much is required actually, this answer is given by water auditing. Conservation cannot be materialized without auditing.

A water conservation plan depends upon accurate data. Before water saving measures are implemented, a thorough water audit should be conducted to determine where water is being used. Then, water use can be monitored to track conservation.

The Water Audit Checklist should be prepared to provide a step-by-step approach in conducting an accurate and thorough examination of current water usage.

The part of wastage of water through pollution and contamination which affects the water quality is totally in our hands. Water Audit is ladder taking us towards proper water management but each step of the ladder has to be climbed by us.

Basically, we need an action, behavioral change, device, technology, or improved design or process implemented to reduce water loss or waste and make its optimum use. And Water system audits facilitate the assessment of current water uses, provide data needed to reduce water and revenue losses, and forecast future demand resulting in water getting conserved.

We need to encourage the users by giving incentives and recognizing their efforts. Like Industry bodies are encouraging companies by recognizing their proactive implementation of sustainable water management programs through '**National Award for Excellence in Water Management**'. Time has come when policy makers and common people need to start preparing action plans and implement roadmaps to ensure adequate water availability in the country.

Water Auditing and hence, conservation needs to be a way of life, not just something we think about once in a while.

5.0 Conclusion

If there is no water on Earth, there will be no life, no environment. When it comes to water conservation, the key is to stop wasting and to know what is happening to water around us by proper and honest auditing. It is time for us to wake up and take responsibility. It is easy to practice water auditing and conservation in the home, but there is more to be done. Water Auditing and Conservation ideas are cropping up in exciting legislation. That's why our participation is very important. Let's act now, so our kids will have a brighter, greener future.

Demands are increasing every year for water while resources are becoming more and more limited. Since many individuals are unaware (**or, sadly, just don't care**) that this issue needs attention. Water needs are increasing every year and the proven fact is that clean water is not available to 1 out of 5 people on earth. Solutions are clearly needed. The increased demand in water combined with the pollution of water has had many adverse effects on the environment, growth and economy of many countries.

Water Auditing and Conservation are big things, but every little bit helps, so we cannot think that what we do doesn't matter. **A whole lot of people doing a little bit adds up to a whole lot.** We must all make changes in our lifestyles that will change the course of our water and its quality. **It is rightly said that water is a gift from the God as it rained from the heaven and now its we, who must conserve it before it's too late.**

So, water audit provides answers to all WHATs, WHYs and WHEREs of the water related problems, HOWs are to be devised and implemented by us and result is water gets conserved leading to a better tomorrow!

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CERTIFICATE

The author(s) certify that the paper titled "WATER AUDITING FOR BETTER TOMORROW" and submitted for consideration for Conference on "India Water Week" to be held in New Delhi from 8-12 April, 2013 is in original and has not been published or presented at any other forum.

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