



Water Balance and Water Audit Information

On December 3, 2013, the New Hampshire Water Conservation rules, Env-Wq 2101, were readopted. The readopted rules require water systems with water conservation plans incorporating water accounting to submit an annual “water balance” to DES by March 1 for the previous year. Formerly, water systems were required to carry out a water audit yearly and report the results to DES with a three-year ongoing compliance report unless the percent of unaccounted for water exceeded 15%. In that case, a response plan stating the actions that would be taken to reduce unaccounted for water was required to be submitted to DES. The requirement remains the same except the term “unaccounted for water” has been replaced with the term “water balance,” and the water balance is required to be reported annually. To make reporting as easy as possible, DES has developed an online reporting tool, which is described in the “Reporting and Submittal Requirements” section below.

Water Balance vs. Water Audit vs. Unaccounted for Water

The American Water Works Association (AWWA) no longer uses the term “unaccounted for water,” because the definition was not being used consistently across the industry. Instead, AWWA adopted the terminology in Table 1, below, which the new water conservation rules reflect.

Table 1 represents the components of a water audit. The components outlined with the dark border make up the water balance. Specifically, the conservation rules define a water balance as the difference between the system input volume and authorized consumption which is metered. A water balance is much less comprehensive than a water audit. The results of a water balance will determine if a water audit is needed.

Table 1. Components of a Water Audit and a Water Balance

System Input Volume (Corrected for known errors)	Authorized Consumption	Billed Authorized	Billed Metered	Revenue Water
			Billed Unmetered	
		Unbilled Authorized	Unbilled Metered	Non Revenue Water
			Unbilled Unmetered	
	Water Losses	Apparent Losses	Unauthorized Consumption	
			Data Handling Error	
			Customer Metering Inaccuracy	
		Real Losses	Main Line Leakage	
		Storage Tank Overflow		
		Service Line Leakage up to Service Meter		

Reporting and Submittal Requirements

An annual water balance is required to be submitted to DES by March 1 for the prior year. The water balance is reported through an online form on the DES website (www.des.nh.gov).

Water Balance =

System Input Volume – (Billed Metered Water + Unbilled Metered Water)

Percent Water Balance = (Water Balance/System Input Volume) x 100

If the water balance exceeds 15% of the system input volume, then the next step is to complete a water audit and submit the audit to DES. Based on the water audit, DES will work with the system to determine if a response plan is required.

Definitions

“Apparent loss” means water that is metered by the water supplier as going into the distribution system and reaching an end user for which the water supplier is unable to bill. Apparent losses are caused by unauthorized consumption, service meter under-registration, data handling errors, or any combination thereof.

“Authorized consumption” means the volume of water removed from the distribution system with the explicit or implicit approval of the water supplier. The term includes water used by registered customers, water delivered to consecutive systems, and water consumed in public service activities including but not limited to fire fighting and training, flushing of mains and sewers, street cleaning, watering of municipal gardens, public fountains, frost protection, bleeder valves for water quality improvement, and water used in construction. Authorized consumption is either metered or unmetered and either billed or unbilled, in any combination.

“Authorized metered consumption” means billed metered water plus unbilled metered water.

“Billed metered water” means authorized consumption by all customer types that is both metered and billed.

“Nonrevenue water (NRW)” means the difference between System Input Volume and Billed Authorized Consumption.

“Real loss” means water that is physically lost from a water supplier’s water storage and distribution system due to overflow from storage tanks, leaking water lines between the source meter(s) and service meters where service meters are in place, and leaking water lines anywhere after the source meter(s) where service meters are not in place.

“Revenue water” means those components of System Input Volume which are billed and produce revenue.

“System input volume” means the volume of water input to the water supply system corrected for known errors, which is equal to the volume of water derived from the water system’s own sources, minus water consumed by treatment processes, plus water imported or purchased, plus or minus the net change in water storage where applicable.

“Unauthorized consumption” means any intentional use of water from the distribution system that is not authorized consumption.

“Unbilled authorized consumption” means any authorized consumption for which the water supplier does not bill, whether metered or unmetered.

“Unbilled metered water” means any authorized consumption that is metered but for which the water supplier does not bill.

“Unbilled unmetered water” means any authorized consumption that is neither metered nor billed.

Questions? Please contact:

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