



### Quick Start Guide for the Water Loss Audit

1. Download the software.
  - a. Link: <https://www.awwa.org/Resources-Tools/Resource-Topics/Water-Loss-Control>
    - i. Scroll down to “AWWA Free Water Audit Software (v6.02020)”
    - ii. Fill in the form and click the “submit” button
    - iii. Save As “**Your Utility Name INXXXXXXXX Water Loss Audit DATE**” on your computer
  - b. If you cannot find the link, we can email the file to you
2. Open the software. Some basics: you only enter information in blue cells. Cells that require data are blue, auto generated ones are orange.

<b>Color Key</b>	User input	Calculated	Optional default
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Here is a screenshot of first tab. The red box highlights the location of the tabs. You will enter data in the first couple tabs; the rest of the tabs will be auto populated.

**AWWA Free Water Audit Software v6.0**  
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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format and is not meant to take the place of a full-scale, comprehensive water audit format. Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targeting loss reduction levels. This tool contains several separate worksheets. Sheets can be accessed using the tabs at the bottom of the screen, or by clicking the TOC links below.

Table of Contents (TOC)	Enter Basic Information	Key of Input Acronyms <small>In order of appearance in the Worksheet</small>
<b>Start Page</b> The current sheet. Enter contact information and basic audit details.	Name of Utility: Name of Contact Person: Email: Telephone   Ext.: City/Town/Municipality: State / Province:	<b>VOS</b> Volume from Own Sources <b>VOSEA</b> VOS Error Adjustment <b>WI</b> Water Imported <b>WIEA</b> WI Error Adjustment <b>WE</b> Water Exported <b>WEEA</b> WE Error Adjustment
<b>Worksheet</b> Enter the required data on this worksheet to calculate the water balance and data grading.	Country: Audit Preparation Date: Audit Year: Audit Year Label: (Fiscal, Calendar, etc)	<b>BMAC</b> Billed Metered Authorized Consumption <b>BUAC</b> Billed Unmetered Authorized Consumption <b>UMAC</b> Unbilled Metered Authorized Consumption <b>UJAC</b> Unbilled Unmetered Authorized Consumption <b>SDHE</b> Systematic Data Handling Errors
<b>Interactive Data Grading</b> Answer questions about operational practices for each audit input, and the data validity grades will automatically populate.	Audit Period Start Date: Audit Period End Date: Volume Reporting Units: Water System Structure: Water Type:	<b>UC</b> Unauthorized Consumption <b>CMI</b> Customer Metering Inaccuracies <b>Lm</b> Length of mains <b>Nc</b> Number of service connections <b>Lp</b> Average length of (private) customer service line
<b>Dashboard</b> Review NRW components, performance indicators and graphical outputs to evaluate the results of the audit.	System ID Number: Validator Name/ID: Validator Email: Estimated Total Population Served by Water Utility:	<b>AOP</b> Average Operating Pressure <b>CRUC</b> Customer Retail Unit Charge <b>VPC</b> Variable Production Cost
<b>Notes</b> Enter notes to explain how values were calculated, document data sources, and related information about data management practices.		
<b>Blank Sheet</b> By popular demand! A blank sheet. The world is your canvas.		
<b>Water Balance</b> The values entered in the Worksheet automatically populate the Water Balance.		
<b>Loss Control</b> Use this sheet to interpret the results of the audit		

**Color Key**    User input    Calculated    Optional default

Start Page    Worksheet    Interactive Data Grading    Dashboard    Notes    Blank Sheet    Water Balance    Loss Control Planning    Definitions    Service Connection Diagram    Acknowledgment

3. The Start Page Tab is where you enter some basic identification information.
  - a. Please enter name of utility without the words “Town of/City of” at the beginning.
  - b. **Contact person** is the name of the person who should be contacted for questions about the audit.
  - c. **Audit Year** is the four-digit year of the data that will be analyzed.
  - d. Hover over cells for more information about what is being requested.
  - e. **System ID Number:** Each audit should reference a single PWSID but, if your system has special circumstances and needs to include multiple PWSIDs, multiple PWSIDs may be entered.
  - f. Enter your **validator’s name, certification number, and email**. Or have them do it when they complete their validation.
  
4. The Worksheet Tab is where you enter most of the water data. There are three categories of data to enter:
  - a. **Basic water data** which includes WATER SUPPLIED, AUTHORIZED CONSUMPTION, SYSTEM DATA, and COST DATA. If you have questions, most words have a hyperlink to a definition.

**AWWA Free Water Audit Software: Worksheet**

Water Audit Report for:

Audit Year:

Click 'n' to add notes      Click 'g' to determine data validity grade      To edit water system info: [go to start page](#)

To access definitions, click the [input name](#)      All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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**WATER SUPPLIED**      [Water Supplied Error Adjustments](#)

choose entry option:

VOS	Volume from Own Sources:	<input type="text" value="n"/> <input type="text" value="g"/>	<input type="text" value="379.310"/>	MG/Yr	<input type="text" value="n"/> <input type="text" value="g"/>	<input type="text" value="percent"/>	<input type="text" value=""/>
WI	Water Imported:	<input type="text" value="n"/> <input type="text" value="g"/>	<input type="text" value="0.000"/>	MG/Yr			
WE	Water Exported:	<input type="text" value="n"/> <input type="text" value="g"/>	<input type="text" value="0.000"/>	MG/Yr			

**WATER SUPPLIED:**  MG/Yr

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**AUTHORIZED CONSUMPTION**

BMAC	Billed Metered:	<input type="text" value="n"/> <input type="text" value="g"/>	<input type="text" value="250.556"/>	MG/Yr			
BUAC	Billed Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/>	<input type="text" value=""/>	MG/Yr			
UMAC	Unbilled Metered:	<input type="text" value="n"/> <input type="text" value="g"/>	<input type="text" value=""/>	MG/Yr			
UUAC	Unbilled Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/> <input type="text" value="3"/>	<input type="text" value="0.626"/>	MG/Yr			

Default option selected for Unbilled Unmetered, with automatic data grading of 3

**AUTHORIZED CONSUMPTION:**  MG/Yr

choose entry option:

- b. **Error Adjustments:** no system is perfect, and the spreadsheet is set up to account for typical water supply errors. You can use the “default” or enter another number. These boxes set off to the right of the main data entry cells.

**AWWA Free Water Audit Software: Worksheet**

Water Audit Report for: **Sarah's water system**  
 Audit Year: **2020** | **Jan 01 2020 - Dec 31 2020** | **Calendar**

To access definitions, click the [input name](#) | Click 'n' to add notes | Click 'g' to determine data validity grade | To edit water system info: [go to start page](#)

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

**WATER SUPPLIED** | Water Supplied Error Adjustments | choose entry option:

VOS	Volume from Own Sources:	<input type="text" value="n"/> <input type="text" value="g"/>	379.310	MG/Yr	<input type="text" value="n"/> <input type="text" value="g"/>	percent <input type="text" value=""/>
WI	Water Imported:	<input type="text" value="n"/> <input type="text" value="g"/>	0.000	MG/Yr		
WE	Water Exported:	<input type="text" value="n"/> <input type="text" value="g"/>	0.000	MG/Yr		

**WATER SUPPLIED:** 379.310 MG/Yr

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**AUTHORIZED CONSUMPTION** | choose entry option:

BMAC	Billed Metered:	<input type="text" value="n"/> <input type="text" value="g"/>	250.556	MG/Yr		
BUAC	Billed Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/>		MG/Yr		
UMAC	Unbilled Metered:	<input type="text" value="n"/> <input type="text" value="g"/>		MG/Yr		
UUAC	Unbilled Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/> <input type="text" value="3"/>	0.626	MG/Yr	<input type="text" value="0.25%"/> <input type="text" value="default"/>	

Default option selected for Unbilled Unmetered, with automatic data grading of 3

**AUTHORIZED CONSUMPTION:** 251.182 MG/Yr

- c. **Data validity grades:** this is measurement of how confident you are in the data that you are providing. You will enter a data validity grade by clicking on lower case “g”.

**AWWA Free Water Audit Software: Worksheet**

Water Audit Report for: **Sarah's water system**  
 Audit Year: **2020** | **Jan 01 2020 - Dec 31 2020** | **Calendar**

To access definitions, click the [input name](#) | Click 'n' to add notes | Click 'g' to determine data validity grade | To edit water system info: [go to start page](#)

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

**WATER SUPPLIED** | Water Supplied Error Adjustments | choose entry option:

VOS	Volume from Own Sources:	<input type="text" value="n"/> <input type="text" value="g"/>	379.310	MG/Yr	<input type="text" value="n"/> <input type="text" value="g"/>	percent <input type="text" value=""/>
WI	Water Imported:	<input type="text" value="n"/> <input type="text" value="g"/>	0.000	MG/Yr		
WE	Water Exported:	<input type="text" value="n"/> <input type="text" value="g"/>	0.000	MG/Yr		

**WATER SUPPLIED:** 379.310 MG/Yr

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**AUTHORIZED CONSUMPTION** | choose entry option:

BMAC	Billed Metered:	<input type="text" value="n"/> <input type="text" value="g"/>	250.556	MG/Yr		
BUAC	Billed Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/>		MG/Yr		
UMAC	Unbilled Metered:	<input type="text" value="n"/> <input type="text" value="g"/>		MG/Yr		
UUAC	Unbilled Unmetered:	<input type="text" value="n"/> <input type="text" value="g"/> <input type="text" value="3"/>	0.626	MG/Yr	<input type="text" value="0.25%"/> <input type="text" value="default"/>	

Default option selected for Unbilled Unmetered, with automatic data grading of 3

**AUTHORIZED CONSUMPTION:** 251.182 MG/Yr

- The Interactive Data Grading tab is where the software helps you determine the data validity grade. There are 19 categories with a handful of questions related to each one. The cells at the top will turn from white (incomplete) to orange (complete) as the questions are answered.

Sarah's water system  
2020

AWWA Free Water Audit Software: Interactive Data Grading

White = incomplete  
Orange = complete

Use acronyms for navigation

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go to input

Volume from Own Sources (VOS) - Data Grading Criteria

vos	Criteria Question	Select Best-Fit Answers to All Visible Questions
vos.0	Did the water utility supply any water from its own sources during the audit year?	Yes
vos.1	What percent of own supply volume is metered?	>95 - 99%
	<p><b>For questions 2-10 below: Choose the answer that applies for those meters that measure &gt;90% of the finished water volume.</b></p> <p><b>In-situ flow accuracy testing</b> = a test process that confirms the flow measuring accuracy of the primary device (the flowmeter), in its installed location, using an independent reference volume.</p> <p><b>Electronic calibration</b> = a process that checks for error in the metering secondary device(s) and/or the tertiary device(s).</p> <p><b>Secondary device</b> can include conversion to mA, meter transmitter or similar instrumentation.</p> <p><b>Tertiary device</b> can include SCADA historian or other computerized archival system.</p>	
vos.2	What is the frequency of electronic calibration?	Annually

Once all the questions are answered, the data validity grades will populate on the Worksheet Tab and the Dashboard tab. The Worksheet Tab includes “**Priority Areas for Attention to Improve Data Validity**”, which may be useful next steps. The Dashboard Tab and the Loss Control Planning Tab also provide suggestions on improving performance.

**Still need help?** Email the IFA at [WaterResources@ifa.in.gov](mailto:WaterResources@ifa.in.gov)

**For more information:** visit the IFA Water Loss Audit website: <https://www.in.gov/ifa/water-loss-audits/>