

INSTRUCTION MANUAL
For the
H₂O Cloud Reporter

Riverdale Water Department

H₂O Software Cloud Reporter



Administration and Setup

Facility Data

Data Entry

Report Generator

Import External Data

Set Up New PWS

Set Up New Contract Operation

H₂O Cloud Reporter
Version 3.2

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INTRODUCTION	1
SETUP	2
< Administration and Setup>	2
Public Water System Administration	3
Laboratory (Contractor Information)	3
Facilities, Locations and Associated Data	4
1. Facility Setup	5
2. < Location Setup >	6
3. < Water Quality Sample Setup >.....	8
4. < Pump and Flow Setup >	11
5. < Chemical Feed System Setup >.....	15
6. < Level Setup >	22
7. < CT Data Setup >.....	24
8. < Filter Data Setup >	29
9. < SCADA Tag Setup >.....	32
10. < SCADA Upload Setup >	35
DATA ENTRY	38
Facility Data	38
1. Water Quality Locations and Sampling	39
2. Pump/Flow, Level, Filter and CT Data	43
<Pump and Flow Data>.....	44
3. Chemical System Data	47
Chemical Feed Data Entry	47
Chemical Delivery Data Entry	49
User Configured Data Entry	51
1. Data Entry Screen Setup	51
2. Using the User Configured Data Entry Screens	56
3. Off-line Data Entry	58
4. Uploading External Data	61

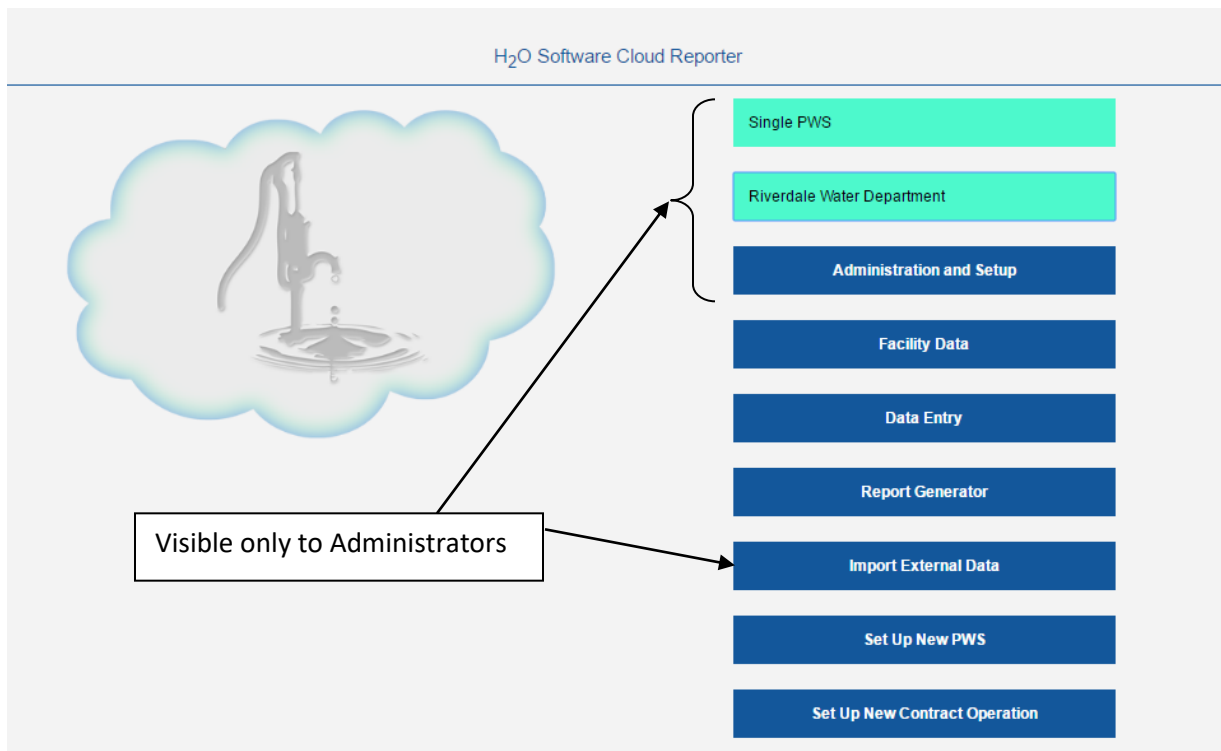
REPORT GENERATION	66
Report Generation	66
Report Setup	67
Generate Report	68
Special Reports	68
Report Tables	70
Additional Notes or Instructions for Specific Reports	75

INTRODUCTION

Thank you for subscribing to H₂O Software's Online Report Generation, Cloud Reporter. It is a comprehensive water works report generation program designed to integrate administrative, pumpage, chemical feed and water quality information to produce a variety of process, State and USEPA mandated reports.

These instructions will step you through program setup, data entry and report generation. After installation, the program will automatically open to the H₂O Cloud Reporter's "Home Page" whenever the program is loaded. From the "Home Page" you are directed to the following locations by pressing the desired pushbutton:

1. Administration and Setup
2. Facility Data
3. Data Entry Screens (User Configured)
4. Report Generation
5. Import External Data

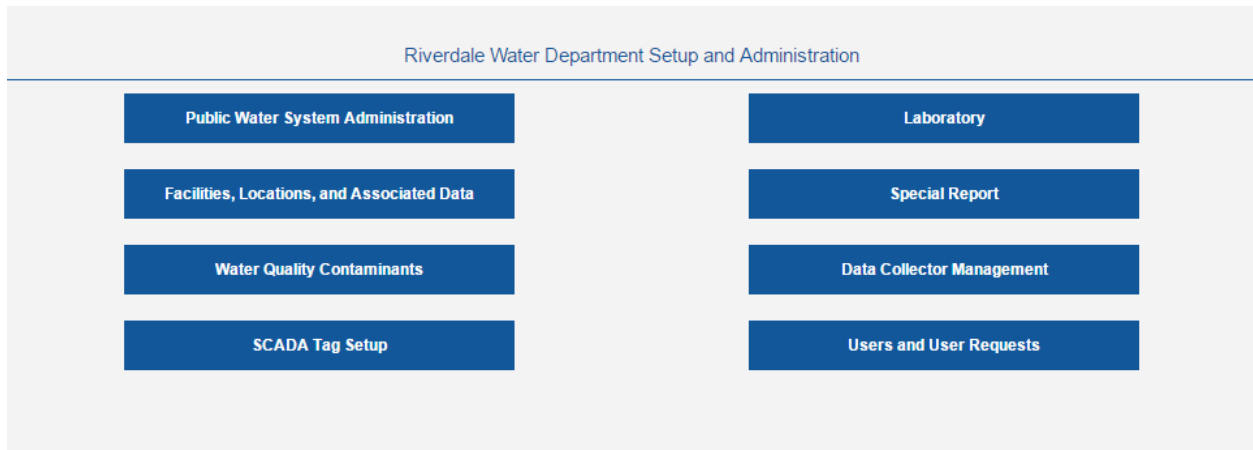


Throughout these instructions, we refer to pressing a pushbutton by showing the button's name encased by the symbols <> in bold. Therefore, the reference, <Setup>, requests that the user press or click the "Setup" pushbutton. In this document, we use the terms "form" and "screen" interchangeably. Also, the layout of each screen may look different on your device since the layouts are device specific, and optimized depending on screen size.

SETUP

< Administration and Setup >

When getting started you must **first go to the Administration and Setup Screens** to set up all administrative data, pump, flow and sample locations, chemical, chemical feed system and chemical pump and water quality data information. From your Home Page, the user will click **<Administration and Setup>**. The Setup directory screen will appear and direct the user to individual setup pages. These include pages for:



1. Public Water System Administration Information
2. Laboratory Contractor Information
3. Facilities, Locations and Associated Data (Flow, Chemical Feed, Water Quality, CT, Turbidity, etc.)
4. Water Quality Contaminants
5. Special Report Information
6. SCADA Tag Setup
7. Data Collector Management
8. User and User Requests

Public Water System Administration

< Public Water System Administration >

The Public Water System Administration setup screen is the first form that the user must complete. Complete this form by filling in as many fields in each form as possible. This information may be used in various reports generated by this program.

Riverdale Water Department Administration

PWS Name:	<input type="text" value="Riverdale Water Department"/>	Normal/Winter Population:	<input type="text" value="38981"/>
PWS No.:	<input type="text" value="9999000"/>	Summer Population:	<input type="text" value="38981"/>
Community:	<input type="text" value="Riverdale"/>	No. of Connections:	<input type="text" value="1900"/>
Address 1:	<input type="text" value="P.O. Box 9999"/>	Percent Metered:	<input type="text" value="100"/>
Address 2:	<input type="text" value="900 Water Street"/>	Type of Government:	<input type="text" value="Town"/>
City:	<input type="text" value="Riverdale"/>	No. of Mailings:	<input type="text" value="0"/>
State:	<input type="text" value="Massachusetts"/>	System Type:	<input type="text" value="Community"/>
Zip:	<input type="text" value="09999-0999"/>	Default Time:	<input type="text" value="00:00"/>
Phone:	<input type="text" value="(978) 999-0000"/>	Default Snow EQ Factor:	<input type="text" value="0"/>
Fax:	<input type="text" value="(978) 999-0001"/>	PWS Admins:	
Email:	<input type="text" value="Snow.Edwin@Riverdale.gov"/>	Total Users:	<input type="text" value="1"/>
Website:	<input type="text"/>	Last Accessed:	

Laboratory (Contractor Information)

<Laboratory >

The Laboratory setup screen is used for recording information about each of the Certified Laboratories that the PWS or contractor uses. This information may be used in various reports generated by this program.

Riverdale Water Department Laboratory Setup

New Lab

Laboratory Name:	<input type="text" value="Nashoba Analytical"/>	Lab Address 1:	<input type="text" value="29 King Street"/>
	Edit Name	Lab Address 2:	<input type="text"/>
State Certification No.:	<input type="text" value="MA1118"/>	City:	<input type="text" value="Littleton"/>
Contact Name:	<input type="text" value="David Knowlton"/>	State:	<input type="text" value="Massachusetts"/>
Contact Title:	<input type="text" value="Laboratory Director"/>	Zip:	<input type="text" value="01460"/>
		Phone:	<input type="text" value="(978) 486-3316"/>
		Fax:	<input type="text" value="(978) 486-3319"/>
		Email:	<input type="text"/>

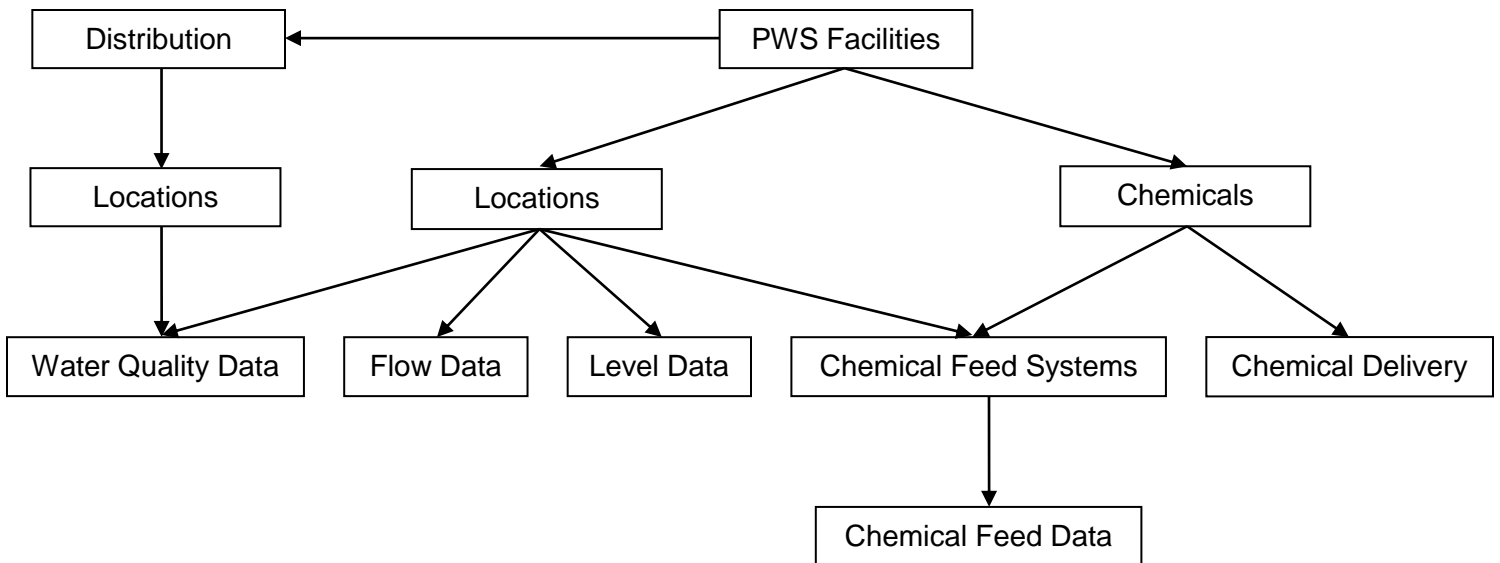
Click to Set up
New Laboratory

Facilities, Locations and Associated Data

<Facilities, Locations and Associated Data>

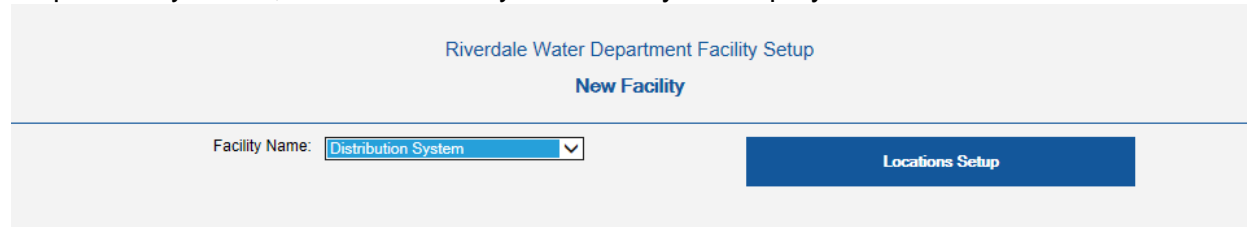
Setting up your facilities is the first step required for setting up locations and chemicals, and subsequently all pumpage, flow, water quality and chemical feed data. “**Distribution**” is set up as a default facility for all public water supply systems. All locations in the distribution system will fall under the facility “Distribution”. Only water quality data can be collected at distribution system locations.

The following is a flow schematic that shows the order in which all data is indexed. Accordingly, it also shows the order that program setup should follow.



1. Facility Setup

Multiple public water supply (PWS) facilities may be set up for any Public Water Supply System. As previously stated, a “Distribution System” facility is setup by default for each PWS.

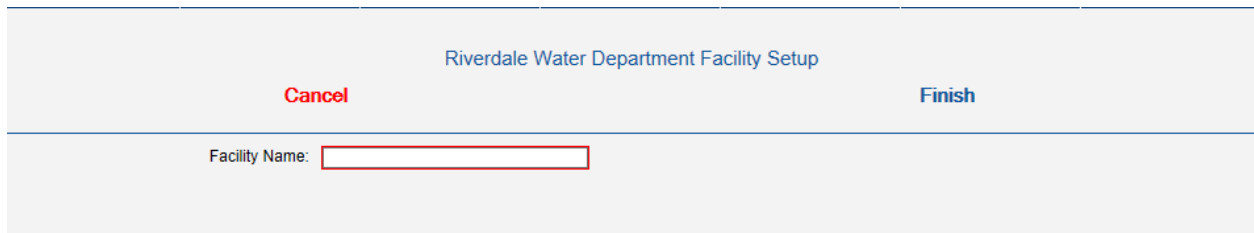


Riverdale Water Department Facility Setup
New Facility

Facility Name: Distribution System ▼

Locations Setup

Create a new PWS facility by pressing <Add New Facility>. The facility name field will clear.

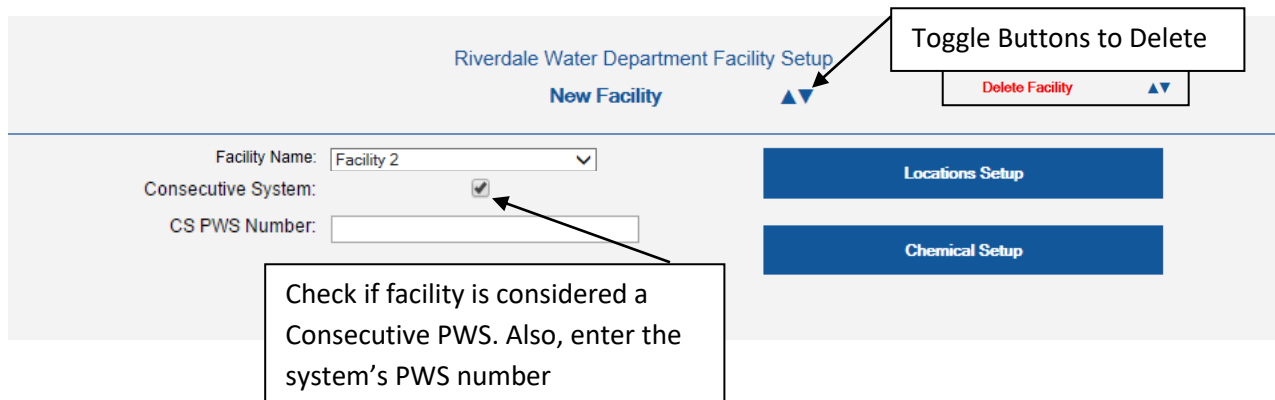


Riverdale Water Department Facility Setup

Cancel Finish

Facility Name:

Enter the name of your new facility and click <Finish>. For this document “Facility 2” is used as an example. The Location Setup and Chemical Setup pushbuttons will appear. Since all new facilities are PWS facilities, you will can now create both locations and chemicals for this facility. Only locations may be created for the distribution system.



Riverdale Water Department Facility Setup
New Facility

Facility Name: Facility 2 ▼

Consecutive System:

CS PWS Number:

Locations Setup

Chemical Setup

Delete Facility

Toggle Buttons to Delete

Check if facility is considered a Consecutive PWS. Also, enter the system's PWS number

Note the “New Facility/Delete Facility” toggle button. The facility that was just created may be deleted at this time. However, once the user creates either a location or chemical for this facility, the facility will not be able to be deleted. To delete an existing facility, all associated flow, level, water quality, chemical delivery and chemical feed data, as well as all chemical feed systems, chemicals and locations created for this facility must first be deleted. In short, to delete a facility all associated information in the database must first be deleted.

2. < Location Setup >

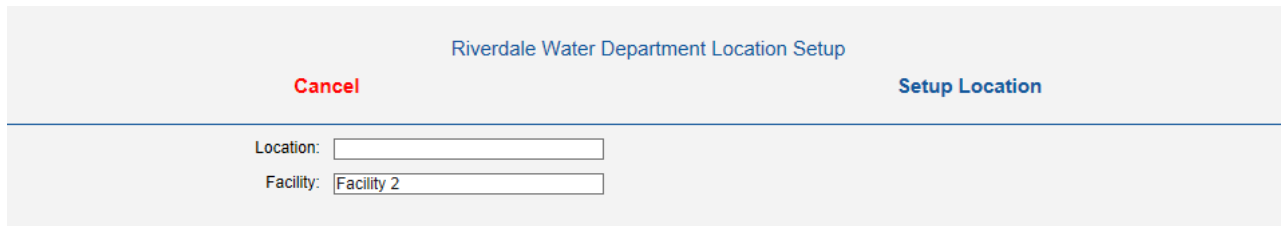
Locations may be setup for all facilities.

Distribution System facility locations may be set up for any location where only water quality samples may be collected, tested and saved to the database. These locations may include residential locations, businesses, schools, sampling stations and/or most other locations within the distribution system. Locations that require parameters other than water quality to be monitored should not be included as a distribution system location. For example, since level may also be monitored at distribution system storage tanks, they are not included as a Distribution System facility location.

PWS facility locations may be set up for any location associated, directly or indirectly, with the facility and where water quality, flow, level chemical feed and/or other process data may be monitored and saved to the database.

When setting up any location (Distribution or PWS Facility), it is recommended that the user also records the first set of data for each type of data that is to be collected. See “Location Setup” form below.

Create the first location for the Facility 2 example by pressing <Location Setup>. A screen will appear where the facility name is shown and the location name is blank.



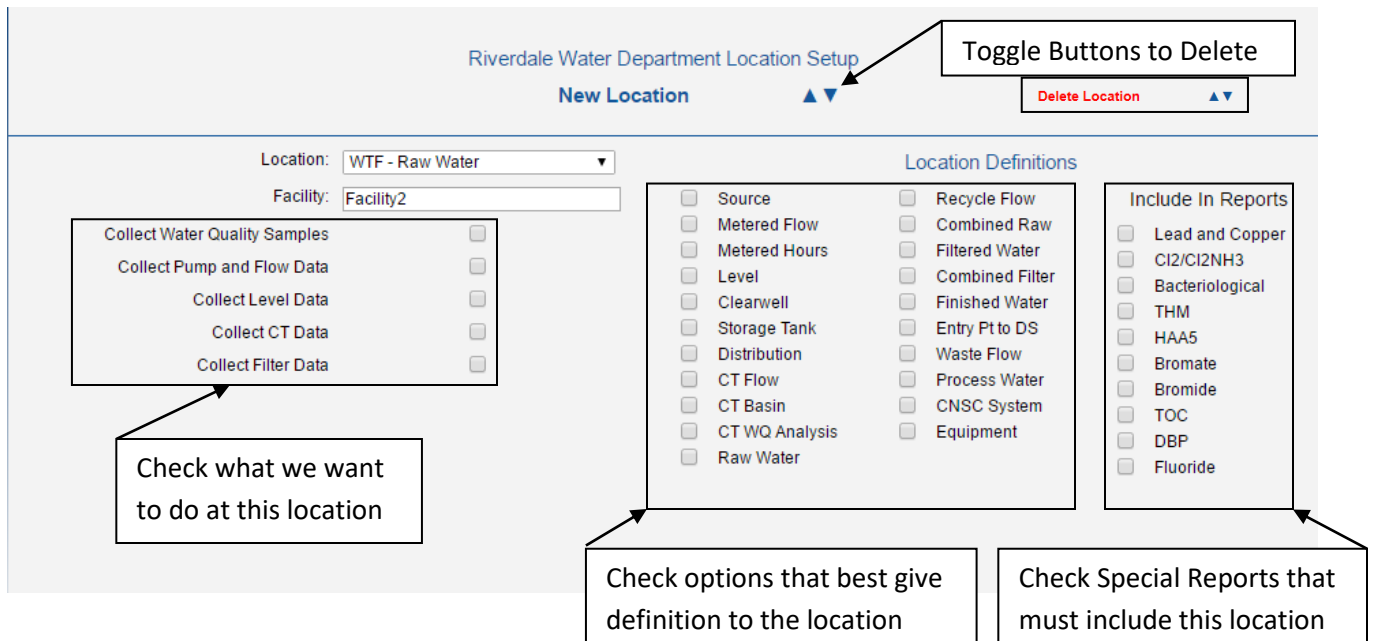
Riverdale Water Department Location Setup

Cancel Setup Location

Location:

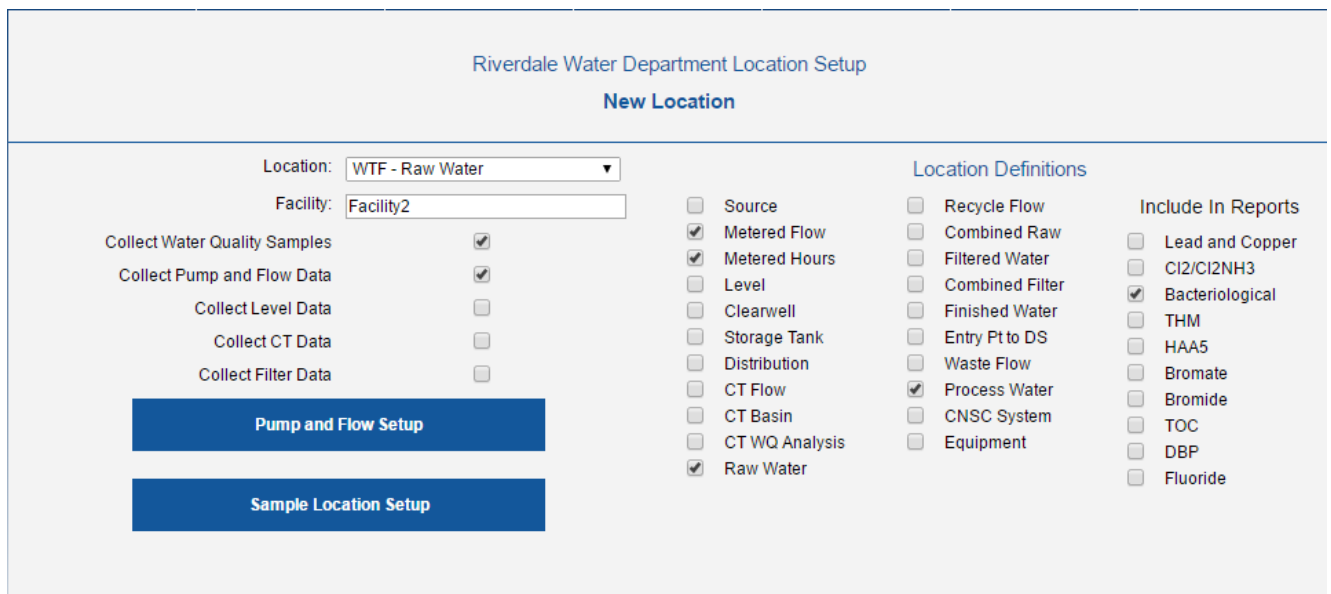
Facility:

Enter in the name of the first location; for example, let us say that location is the facility process point “Raw Water”. **Hint:** To keep all water treatment facility (WTF) locations together in an alphabetical list of all locations, the user may want to add the prefix to the location name. Enter “WTF – Raw Water” into the Location field and then press <Setup First Location>. This will bring up the Location Setup screen.



On the Location Setup page the user must do the following:

- 1) Select all that you want to do at this location.
- 2) Select options that best define what this location is. **Hint:** Only check options that you are sure accurately defines what the location is.
- 3) Select all Report types or names that must include this location.



3. < Water Quality Sample Setup >

If the user checked the check box labeled “Collect Water Quality Samples at this location”, click the <Sample Location Setup> pushbutton. The Sample Location Setup screen will appear.

Riverdale Water Department
WTF - Raw Water Sample Location Setup

Location:	<input type="text" value="WTF - Raw Water"/>	Acct #:	<input type="text"/>
City:	<input type="text" value="Riverdale"/>	Category:	<input type="text" value="v"/>
State:	<input type="text" value="Massachusetts"/>	Source Code:	<input type="text" value="01RW"/>
Zip:	<input type="text"/>	Fluoride Code:	<input type="text"/>
Phone:	<input type="text"/>	Sample No.:	<input type="text" value="F2-01RW"/>
Salutation:	<input type="text"/>	Sample No. - Fl:	<input type="text"/>
Owner:	<input type="text"/>	Sample No. - DBP:	<input type="text"/>
Last Name:	<input type="text"/>	Sample No. - TOC:	<input type="text"/>
First Name:	<input type="text"/>	Sample No. - Misc:	<input type="text"/>
MI:	<input type="text"/>	Sample No. - PbCu:	<input type="text"/>

Fill in as much additional information about this location as possible. Since this location is part of a PWS facility and does not have a phone number, owner name, etc., the user may disregard all the additional information requested in the left column and fill in only the fields in the right column that applies. For example, only the “Source Code” and “Sample No.” fields apply for this location.

Next, set up the first water quality record by clicking <Single Contaminant>. The Single Contaminant screen will appear. See Next Page.

Riverdale Water Department Water Quality Sampling

Sample Collection Time

Sample Collection Date


Cancel
Finish

<p>Location: <input style="width: 150px;" type="text" value="WTP - Raw Water"/></p> <p>Time: <input style="width: 80px; border: 1px solid red;" type="text" value="--:-- --"/></p> <p>Contaminant Name: <input style="width: 150px;" type="text"/></p> <p>Contaminant Value: <input style="width: 150px; border: 1px solid red;" type="text"/></p>	<p>Sample Collector: <input style="width: 150px;" type="text"/></p> <p>Primary Lab Name: <input style="width: 150px;" type="text"/></p> <p>Sub-Contracted: <input type="checkbox"/></p> <p>Analysis Lab Name: <input style="width: 150px;" type="text"/></p> <p>Analysis Date: <input style="width: 100px;" type="text" value="mm / dd / yyyy"/></p> <p>Analysis Time: <input style="width: 80px;" type="text" value="--:-- --"/></p> <p>Analyst: <input style="width: 150px;" type="text"/></p> <p>Analysis Method: <input style="width: 150px;" type="text"/></p> <p>Pretreated: <input type="checkbox"/></p> <p>Lab Sample ID: <input style="width: 150px;" type="text"/></p> <p>Detection Limit: <input style="width: 150px;" type="text"/></p> <p>Units: <input style="width: 150px;" type="text"/></p> <p>Resubmit Indicator: <input style="width: 150px;" type="text"/></p> <p>Resubmit Reason: <input style="width: 150px;" type="text"/></p> <p>Original Sample Date: <input style="width: 100px;" type="text" value="mm / dd / yyyy"/></p> <p>Collection Method: <input style="width: 150px;" type="text"/></p> <p>Sample Code: <input style="width: 150px;" type="text"/></p> <p>Sample Type: <input style="width: 150px;" type="text"/></p> <p>Split Sample: <input type="checkbox"/></p> <p>Comments: <div style="border: 1px solid gray; height: 40px; width: 100%;"></div></p>
--	---



The sample collection “Date” and “Time”, “Contaminant Name” and “Contaminant Value” fields must be completed before the user will be able to enter information in any of the other fields. Enter data into each of these four fields and then tab out of the “Contaminant Value” field **and then click “Finished”** to open the other fields for data entry. Note: The Date and Time fields may appear different in different browsers. Be sure to always use the “Long Form” for the year, i.e., 2017.

After entering information into all the fields that apply, click <Finish> to complete sample setup. Data entry is now complete and the finished screen will appear as seen below.

Riverdale Water Department Water Quality Sampling

2010-01-01 

|< < **New Record** ▲ ▼ > >|

Location: <input type="text" value="WTP - Raw Water"/> Time: <input type="text" value="00:00"/>  Edit Time Contaminant Name: <input type="text" value="pH Analyzer"/>  Contaminant Value: <input type="text" value="6.75"/>	Sample Collector: <input type="text" value="Edwin Snow"/> ▼ Primary Lab Name: <input type="text" value="Riverdale Water Division Laborat"/> ▼ Sub-Contracted: <input type="checkbox"/> Analysis Lab Name: <input type="text" value="Riverdale Water Division Laborat"/> ▼ Analysis Date: <input type="text" value="01 / 01 / 2010"/> Analysis Time: <input type="text" value="12 : 00 AM"/> Analyst: <input type="text" value="Analyzer"/> ▼ Analysis Method: <input type="text" value="EPA 150.1"/> ▼ Pretreated: <input type="checkbox"/> Lab Sample ID: <input type="text"/> Detection Limit: <input type="text" value="0"/> Units: <input type="text" value="pH Units"/> ▼ Resubmit Indicator: <input type="text" value="Original"/> ▼ Resubmit Reason: <input type="text"/> ▼ Original Sample Date: <input type="text" value="mm / dd / yyyy"/> Collection Method: <input type="text" value="Analyzer"/> ▼ Sample Code: <input type="text" value="RS"/> ▼ Sample Type: <input type="text" value="Grab"/> ▼ Split Sample: <input type="checkbox"/> Comments: <div style="border: 1px solid gray; height: 40px; width: 100%;"></div>
---	--

Please note the following when a new record is created:

1. The values in the fields labeled: Primary Lab Name, Sub-Contracted, Analysis Lab Name, Analysis Time, Method Number, Units, Resubmit Indicator, Collection Method, Sample Code and Sample Type are automatically populated in the new record with the values found in the most recent record having the same location name and contaminant name.
2. The value in the field labeled: Analysis Date is automatically populated in the new record with the record's respective Collection Date.
3. The value in the field labeled: Detection Limit is automatically populated in the new record with the default value for the contaminant it is found in the Water Quality Contaminants form. The user may change the default value at any time by going to the Water Quality Contaminants form, Administration and Setup, and selecting the contaminant name

These fields are automatically populated for the user's convenience. It is also the user's responsibility to check that these fields are populated correctly. As an example, if a location is

resampled and the sample code is changed for that sample, the sample code will have to be manually changed back to its regular sample code for the location's next regular sampling.

4. < Pump and Flow Setup >

If the user checked the check box labeled "Collect Pump and Flow Data at this location", click the <Pump and Flow Setup> pushbutton to continue with Pump and Flow Setup. The new Pump and Flow Setup screen will first appear.

Riverdale Water Department New Pump and Flow Setup
In this section you will set up pump flow data. To begin, enter the date for the first record available at this location.

Cancel **Back** **Next**

Pump and Flow Default Values

Location: WTF - Raw Water

First Date:

Format: YYYY-MM-DD

In the "First Date" field, enter the first date for which there is data. Then click the <Next>. The second Pump and Flow Setup screen will appear.

Riverdale Water Department New Pump and Flow Setup
Does this location take combined data from 1 or more other locations?

Cancel **Back** **Next**

Pump and Flow Default Values

Location: WTF - Raw Water

First Date: 2010-01-01

Format: YYYY-MM-DD

Combined Data:

Check box if this is a "Virtual Flow" location, having the sum of one or more other flow locations.

On this screen the user can set up this new location as a "Virtual Flow Location" which is a defined location that gets its flow data from another location's flow data in the database. Its flow data is the sum (+ or -) of one or more existing flow locations. For example, if this facility has two source wells, each with a flow meter on its influent pipe, a "Virtual" combined Raw Water flow meter may be created that is the sum of the flow from the two individual well flow meters. Check the Combined Data checkbox if this new location is to be a Virtual Flow Location. If checked, and when the <Next> pushbutton is clicked, the page above will expand to provide fields for selecting the existing flow locations that will provide the data for the new location.

Location flows may either be added or subtracted. In this example, we are adding two well flows. Using the drop down menu “Add Location” under “Locations Added”, select the locations

Riverdale Water Department New Pump and Flow Setup
Select locations whose flows will be either added or subtracted from this location's daily total.

Cancel **Back** **Next**

Pump and Flow Default Values

Location:

First Date:
Format: YYYY-MM-DD

Combined Data:

Locations Added: WTF2 - Well 1 -
 WTF2 - Well 2 -

Add Location

Locations Subtracted:

Add Location

Multiplier:

Delete a location by clicking the red “-“ box.

Using the drop down menu “Add Location” in “Locations Added” box, select the locations to be added.

Using the drop down menu “Add Location” in “Locations Subtracted” box, select the locations to be subtracted.

to be added. They will show in the “Locations Added” box. Also, the multiplier for this new location’s data will be set by default to “1”. This cannot be changed for a Virtual Flow Location. Click <Next> to continue.

If the Combined Data checkbox was not checked, the following screen will appear when the <Next> pushbutton is clicked. On this screen the user is asked to enter a multiplier that is applied to the pump or flow data. In this example a multiplier of 1000 is entered into the “Multiplier” field. As noted on the screen, enter a 1 if no multiplier is to be applied.

Riverdale Water Department New Pump and Flow Setup
Enter a multiplier to be applied to your flow meter. Enter 1 if no multiplier is applied.
This should be a default for all your records or a specific date range.
Defaults can be manipulated at a later time in the set up.

Cancel **Back** **Next**

Pump and Flow Default Values

Location:

First Date:
Format: YYYY-MM-DD

Combined Data:

Multiplier:

Click <Next>. The third Pump and Flow Setup screen will appear.

Riverdale Water Department New Pump and Flow Setup
Enter the maximum capacity of the flow meter used. This should be a default for all your records or a specific date range.
Defaults can be manipulated at a later time in the set up.

Cancel **Back** **Next**

Pump and Flow Default Values

Location:

First Date:
Format: YYYY-MM-DD

Combined Data:

Multiplier:

Maximum Capacity (MGD): x

Enter the maximum capacity of the flow meter in the “Maximum Capacity (MGD)” field. This value is the assigned maximum capacity for all your records for this location or all records in a defined date range. Note: Default values will be discussed later. Click <Next>. The forth Pump and Flow Setup screen will appear.

Riverdale Water Department New Pump and Flow Setup
Select how total flow and hours of operation are calculated.
These will be the default values for a defined date range.

Cancel **Back** **Next**

Pump and Flow Default Values

Location:

First Date:
Format: YYYY-MM-DD

Combined Data:

Multiplier:

Maximum Capacity (MGD):

Calculate Flow Using: ▼

Calculate Hours Using: ▼

On this screen the user will select how total flow and hours of operation are calculated. Enter the selections in the “Calculate Flow Using” and the “Calculate Hours Using” fields respectively.

In the “Calculate Flow Using” field, the user selects one of four way for calculating flow.

1. Select “Totalizer” if you are calculating flow by using a running counter (Totalizer) where the total flow for today is determined by subtracting today’s totalizer reading from tomorrow’s totalizer reading.

2. Select “Daily Total” for entering the total flow value for each day. This is always the previous day’s pumpage or total flow.
3. Select “Hours/ETM” for calculating flow by multiplying the hours of operation by the maximum capacity of the meter, expressed in gallons per hour (gph). The hours of operation may either be a manually entered value for Hours of operation or determined by an hour meter or elapsed time meter (ETM) where the total flow for today is determined by subtracting today’s ETM reading from tomorrow’s ETM reading and then multiplying the difference by the maximum capacity, expressed in gph.
4. Select Hours*GPM for calculating flow by multiplying the Hours of Operation expressed in minutes by the recorded GPM (Gallons per Minute) reading for the day.

In the “Calculate Hours Using” field, elect “Time Meter” if you are calculating hours by using an elapsed time meter (ETM) where the hours of operation for today is determined by subtracting today’s ETM reading from tomorrow’s ETM reading. Select “Daily Total” if the user is going to just enter the total hours of operation each day.

Click <Next>. The fifth and last Pump and Flow Setup screen will appear.

Riverdale Water Department New Pump and Flow Setup
Finally, enter as much daily information as you have for you first record.

Cancel
Back
Finish

Pump and Flow Default Values

Location:

First Date:
Format: YYYY-MM-DD

Combined Data:

Multiplier:

Maximum Capacity (MGD):

Calculate Flow Using:

Calculate Hours Using:

Pump and Flow Daily Records

Date:

Time:

Totalizer/Flow or Pumpage (Today):

Adjusted Flow (Gallons):

gpm:

psi:

Well Level:

Hours/ETM (Today):

Adjusted Hours:

Hours of Operation:

Comments:

DataCollector:

On this screen the user will enter data for the first date including, the daily totalizer or daily total flow, flow rate in gpm, etc. When finished, click <Finish>. This action returns the user to the Locations Setup screen where new locations may be added. Click <Cloud Reporter> to return to the H₂O Cloud Reporter’s “Home Page”.

5. < Chemical Feed System Setup >

To set up a chemical feed system the user starts by clicking <Administration and Setup> on the Home Page. From the Administration and Setup screen click <Facilities, Locations and Associated Data>. This will open the Facility Setup screen. Using the “Facility Name” dropdown menu, select the facility that has the chemical feed system that you want to set up. The Chemical Setup button will appear on the screen. Click <Chemical Setup>. The Chemical Setup screen will appear.

Riverdale Water Department Chemical Setup

Cancel Add Chemical

Chemical Attributes

Facility: Facility 2

Chemical Name:

Formula:

Initial Delivery Date:

Enter chemical name, formula, and initial delivery date

Enter the chemical name in the “Chemical Name” field, the chemical’s formula in the formula field. and the initial chemical delivery date in the “Initial Delivery Date” field. Then click <Add Chemical>. The second Chemical Setup screen will appear. Enter information as shown below.

Riverdale Water Department Chemical Setup

Click to add new Chemical New Chemical Delete Location

Chemical Attributes

Facility: Facility 2

Chemical Name: Sodium Hydroxide

Formula: NaOH

Latest Delivery Date: 2010-01-01

Residual to Monitor 1: pH Analyzer

Residual to Monitor 2: pH

Residual to Monitor 3:

Chem Feed System Setup

Chemical Delivery Data

Check all that apply to this chemical

Select water quality parameters that are to be monitored with this chemical

- Disinfectant
- Coagulant
- pH Control
- Oxidant
- Misc Purpose
- Corrosion Control
- Sequestrant
- Fluoride
- Taste and Odor Control
- Chloramination

Click <Chemical Delivery Data>. The Chemical Delivery Page will appear. Enter as much chemical delivery information as possible, including delivery specification, manufacturer, etc. When complete, click the <Back> button to return to previous Chemical Setup page.

From the Chemical Setup page, click <Chem Feed System Setup>. The first Chemical Feed System Setup Page will appear.

Enter the chemical system name and then click <Add System>. The second Chemical Feed System Setup Page will appear.

Click <System Settings>. The third Chemical Feed System Setup Page will appear.

Riverdale Water Department Chemical Feed System Settings
In this section you will set up chemical feed system data. To begin, enter the date for the first record available for this chemical system.

Cancel **Back** **Next**

Chemical System Default Settings

Facility:

Chemical Name:

System Name:

Default Adjustment Date:

Enter the Default Adjustment Date for the chemical feed system. This will be the first date that all the default values for the chemical feed system will apply. If a default value is changed, new default dates will be called for. Click <Next> to open the forth Chemical Feed System Setup Page.

Riverdale Water Department Chemical Feed System Settings
Select at least one Point of Application and one Sample Point.

Cancel **Back** **Next**

Chemical System Default Settings

Facility:

Chemical Name:

System Name:

Default Adjustment Date:

Point of Application 1:

Point of Application 2:

Point of Application 3:

Point of Application 4:

Point of Application 5:

Sample Point 1:

Sample Point 2:

Sample Point 3:

Select at least one Point of Application and one Sample Point

Under “Chemical System Default Settings”, select the one or more points of application and sample points that may apply.

Click <Next> to open the fifth Chemical Feed System Setup Page.

Riverdale Water Department Chemical Feed System Settings
Select how your chemical usage is calculated.

[Cancel](#) [Back](#) [Next](#)

Chemical System Default Settings

Facility:

Chemical Name:

System Name:

Default Adjustment Date:

Chemical Usage Calculated By:

Under “Chemical System Default Settings”, select how the chemical usage is calculated by using the “Chemical Usage Calculated By” dropdown menu. In this example select “Inches in day Tank” for calculating the gallons of chemical used by subtracting tomorrow’s day tank reading in inches from today’s day tank reading in inches and multiplying the difference by the Day Tank Capacity expressed as gallons per inch (gal/In). The user has the following additional selections available for calculating chemical usage.

1. Gallons in Day Tank
2. Pounds in Day Tank
3. Water Meter Reading
4. Gallons Used
5. Inches Used
6. Feet Used
7. Pounds Used
8. Chemical Pump Setting
9. Revolutions/Pulses

Click <Next> to open the sixth Chemical Feed System Setup Page.

Riverdale Water Department Chemical Feed System Settings
Enter the solution strength for the chemical system.

[Cancel](#) [Back](#) [Next](#)

Chemical System Default Settings

Facility:

Chemical Name:

System Name:

Default Adjustment Date:

Chemical Usage Calculated By: ▼

Solution Strength:

Under “Chemical System Default Settings”, enter the solution strength as either lbs/Gal or lbs/Lb dry weight of chemical.

Click <Next> to open the seventh Chemical Feed System Setup Page.

Riverdale Water Department Chemical Feed System Settings
Enter the day tank, day tank 2 and bulk tank capacities. If you enter nothing, these will default to 1.

[Cancel](#) [Back](#) [Next](#)

Chemical System Default Settings

Facility:

Chemical Name:

System Name:

Default Adjustment Date:

Chemical Usage Calculated By: ▼

Solution Strength:

Day Tank Cap:

Day Tank Cap 2:

BulkTankCap:

Under “Chemical System Default Settings”, enter the day tank capacities as gallons per inch or gallons per foot if “Inches in Day Tank” was selected under Chemical Usage Calculated By. In this example, Inches in Day Tank was selected, and there are 3.0 gallons in every inch of the day tank’s height.

Click <Next> to open the eighth Chemical Feed System Setup Page.

Riverdale Water Department Chemical Feed System Settings
Enter as much information as you have in the fields below.

Cancel

Back

Next

Chemical System Default Settings

Facility:

Chemical Name:

System Name:

Default Adjustment Date:

Number of Anti-Siphon Valves:

Latest Anti-Siphon Test Date:

Anti-Siphon Comments:

Chemical Measuring Unit Label:

Reason for Adding:

Associated System Name:

Maximum Associated Flow:

Use With Chloramination:

Notes:

Under “Chemical System Default Settings”, you may enter as much information as is available in this screen. For example, in their respective fields enter the number of anti-siphon valves used with this system and their latest test date. Select the chemical measuring unit label that is to be used on report by using the “Chemical Measuring Unit Label” dropdown menu.

Click <Next> to open the last Chemical Feed System Setup Page.

Riverdale Water Department Chemical Feed System Settings
Finally, enter as much day tank and pump information as you have for you first record. This can be manipulated at a late time in the chemical feed data entry section.

Cancel

Back

Finish

Chemical System Default Settings

Facility:

Chemical Name:

System Name:

Default Adjustment Date:

Number of Anti-Siphon Valves:

Latest Anti-Siphon Test Date:

Anti-Siphon Comments:

Chemical Measuring Unit Label:

Reason for Adding:

Associated System Name:

Maximum Associated Flow:

Use With Chloramination:

Notes:

Chemical System Daily Records (Read Only)

Date:

Time:

Total Flow (Gallons):

mg/L:

Day Tank 1 Readings

Initial:

Before Fill:

After Fill:

Day Tank 2 Readings

Initial:

Before Fill:

After Fill:

Pump 1 Readings

Stroke:

Speed:

Pump 2 Readings

Stroke:

Speed:

Now enter as much day tank and pump information as you have for the first record. If required, this data may be edited later. Then finish the set up by clicking <Finish>. This action will direct the user to Chemical Settings page, normally accessed under Facility Data from the Home Page. From this page the user may start adding chemical feed data to the database. See next page.

Riverdale Water Department Chemical Feed System Settings

2010-01-01

|< < > >|

Chemical System Default Settings

1 2 3

Facility:

Chemical Name:

System Name:

Default Adjustment Date:

Point of Application 1:

Point of Application 2:

Point of Application 3:

Point of Application 4:

Point of Application 5:

Sample Point 1:

Sample Point 2:

Sample Point 3:

Chemical System Daily Records (Read Only)

Time:

Total Flow (Gallons):

mg/L:

Day Tank 1 Readings

Initial:

Before Fill:

After Fill:

Day Tank 2 Readings

Initial:

Before Fill:

After Fill:

Pump 1 Readings

Stroke:

Speed:

Pump 2 Readings

Stroke:

Speed:

6. < Level Setup >

To set up a Level Location the user starts by clicking <Administration and Setup> on the Home Page. From the Administration and Setup screen click <Facilities, Locations and Associated Data>. This will open the Facility Setup screen. Using the "Facility Name" dropdown menu, select the facility that the level location is associated with. The Locations Setup button will appear on the screen. Click <Locations Setup>. This will bring up the Locations Setup screen.

Riverdale Water Department Location Setup

New Location

Location:

Facility:

Collect Water Quality Samples

Collect Pump and Flow Data

Collect Level Data

Collect CT Data

Collect Filter Data

Location Definitions

<input type="checkbox"/> Source <input type="checkbox"/> Metered Flow <input type="checkbox"/> Metered Hours <input checked="" type="checkbox"/> Level <input type="checkbox"/> Clearwell <input checked="" type="checkbox"/> Storage Tank <input type="checkbox"/> Distribution <input type="checkbox"/> CT Flow <input type="checkbox"/> CT Basin <input type="checkbox"/> CT WQ Analysis <input type="checkbox"/> Raw Water	<input type="checkbox"/> Recycle Flow <input type="checkbox"/> Combined Raw <input type="checkbox"/> Filtered Water <input type="checkbox"/> Combined Filter <input type="checkbox"/> Finished Water <input type="checkbox"/> Entry Pt to DS <input type="checkbox"/> Waste Flow <input type="checkbox"/> Process Water <input type="checkbox"/> CNSC System <input type="checkbox"/> Equipment
--	--

Include In Reports

<input type="checkbox"/> Lead and Copper <input type="checkbox"/> Cl2/Cl2NH3 <input type="checkbox"/> Bacteriological <input type="checkbox"/> THM <input type="checkbox"/> HAA5 <input type="checkbox"/> Bromate <input type="checkbox"/> Bromide <input type="checkbox"/> TOC <input type="checkbox"/> DBP <input type="checkbox"/> Fluoride

If the location has not already been created, create the location as described under “Location Setup”. Under Location Definitions, check all that apply. Checked the check box labeled “Collect Level Data” and the <Level Setup> pushbutton will appear.

Click this button to bring up the first Level Setup screen as seen on the next page.

Riverdale Water Department Level Data Setup
In this section you will set up level data. To begin, enter the date for the first record available at this location.

Cancel **Back** **Next**

Level Data Default Values

Location:

Defaults Since: x

Under the “Level Data Setup” page, enter the first default data date in the field labeled “Defaults Since”.

Click <Next> to open the second Level Data Setup Page.

Riverdale Water Department Level Data Setup
Enter a unit of measurement and the volume per unit of measurement for your well.

Cancel **Back** **Next**

Level Data Default Values

Location:

Defaults Since:

Unit of Measurement: v

Volume Per Unit:

Enter the unit of measurement and the volume per unit of measurement for the location. Click <Next> to open the third Level Data Setup Page.

Riverdale Water Department Level Data Setup
Finally, enter your first level reading for your first record.

Cancel **Back** **Finish**

Level Data Default Values

Location:

Defaults Since:

Unit of Measurement: v

Volume Per Unit:

Level Data Records

Time:

Level (Today):

Enter the level reading for the first record. Click <Finish> to finish the setup. This action will bring the user back to the Location Setup page.

7. < CT Data Setup >

The CT Monitoring Setup uses a facility's CT basin or CT pipe as the setup starting point. On the Location Setup screen select the name of the CT basin or pipe in the Location field. The user then checks the check box labeled "Collect CT Data" on the Locations Setup screen, as seen in the screenshot below, and once selected, the <CT Monitoring Setup> pushbutton will appear.

Riverdale Water Department Location Setup
New Location

Location: WTP - Clearwell
Facility: Riverdale Water Treatment Facility

Collect Water Quality Samples
Collect Pump and Flow Data
Collect Level Data
Collect CT Data
Collect Filter Data

Location Definitions

<input type="checkbox"/> Source	<input type="checkbox"/> Recycle Flow	<input type="checkbox"/> Include In Reports
<input type="checkbox"/> Metered Flow	<input type="checkbox"/> Combined Raw	<input type="checkbox"/> Lead and Copper
<input type="checkbox"/> Metered Hours	<input type="checkbox"/> Filtered Water	<input type="checkbox"/> Cl2/Cl2NH3
<input checked="" type="checkbox"/> Level	<input type="checkbox"/> Combined Filter	<input type="checkbox"/> Bacteriological
<input checked="" type="checkbox"/> Clearwell	<input type="checkbox"/> Finished Water	<input type="checkbox"/> THM
<input type="checkbox"/> Storage Tank	<input type="checkbox"/> Entry Pt to DS	<input type="checkbox"/> HAA5
<input type="checkbox"/> Distribution	<input type="checkbox"/> Waste Flow	<input type="checkbox"/> Bromate
<input type="checkbox"/> CT Flow	<input type="checkbox"/> Process Water	<input type="checkbox"/> Bromide
<input checked="" type="checkbox"/> CT Basin	<input type="checkbox"/> CNSC System	<input type="checkbox"/> TOC
<input type="checkbox"/> CT WQ Analysis	<input type="checkbox"/> Equipment	<input type="checkbox"/> DBP
<input type="checkbox"/> Raw Water		<input checked="" type="checkbox"/> Fluoride

Sample Location Setup
Level Setup
CT Monitoring Setup

Click the <CT Monitoring Setup> pushbutton to bring up the first CT Monitoring Setup screen.

WTP - Clearwell CT Monitoring Setup
In this section you will set up CT monitoring. To begin, enter the date for the first zero-hour record available at this location.

Cancel Back Next

CT Monitoring Default Settings
Disinfection Basin: WTP - Clearwell
Default Adjustment Date: mm / dd / yyyy

Enter the Default Adjustment Date for the CT system. This will be the first date that all the default values for CT Monitoring will apply. If a default value is changed, new default dates will be called for.

Click <Next> to open the second CT Monitoring Setup Page.

It is very important that CT Setup is done accurately, with the correct CT setup values being entered when called for. This will assure that your PWS CT report is accurate. Therefore, when doing this section, it is best to have a copy of your Regulatory Agency's CT Design Approval for your System. If not in your files, the user may obtain a copy of this Approval from either your regulatory agency or from your consulting engineer who designed the system. Most of the information need to complete the CT setup will be found in your CT system's design approval documents.

WTP - Clearwell CT Monitoring Setup
Next, enter the sequence number for this CT basin. This number CANNOT be shared with any other sequence at this facility.

Cancel Back Next

CT Monitoring Default Settings

Disinfection Basin: WTP - Clearwell

Default Adjustment Date: 01/01/2008

Sequence: 1

Under “CT Monitoring Default Settings”, enter a “1” for the first or only sequence for your approved CT system. Most CT systems have only one point of application for your chlorine or other disinfectant. However, some may have subsequent points of application. These would be numbered as Sequence “2”, “3” etc. In this example, there is only one sequence.

Click <Next> to open the third CT System Setup Page.

WTP - Clearwell CT Monitoring Setup
Next, complete as much information as you can about how your CT is calculated.

Cancel

Back

Next

CT Monitoring Default Settings

Disinfection Basin:	WTP - Clearwell
Default Adjustment Date:	01 / 01 / 2008
Sequence:	1
Filter Mode:	Conventional - GAC/Sand
Units of Measurement:	Feet
Volume Per Foot (Gal):	52632
Fixed Plug/Flow Volume (Gal):	0
Measure Flow In:	GPM
CT Chlorine:	Chlorine (Free)
POE Chlorine:	
Maximum CT Flow Rate:	21600
Minimum CT Flow Rate:	200
Time(min) to Reach Minimum CT Flow Rate:	0
Minimum CT Chlorine Level:	0.2
Flow Monitoring:	WTP - Finished Water
Disinfection Sample Point:	WTP - Clearwell
Turbidity Sample Point:	WTP - Clearwell
Disinfectant:	Sodium Hypochlorite
Raw Water Sample Point:	WTP - Raw Water
Entry Point to Distribution:	WTP - Finished Water
Advanced Disinfection Process:	None
Log Removal:	0.5
Report Notes:	

Fill in all the information that is called for. It is important that all the information is complete for the CT Report to be generated. Click <Next> to open the forth part of the CT System Setup Page for defining the Baffling Factor.

WTP - Clearwell CT Monitoring Setup
Next, complete as much information as you can about how your CT is calculated.

Cancel

Back

Next

CT Monitoring Default Settings

Disinfection Basin:

Default Adjustment Date:

Sequence:

Filter Mode:

Units of Measurement:

Volume Per Foot (Gal):

Fixed Plug/Flow Volume (Gal):

Measure Flow In:

Monitor Chlorine:

Maximum CT Flow Rate:

Minimum CT Flow Rate:

Time(min) to Reach Minimum CT Flow Rate:

Minimum CT Chlorine Level:

Flow Monitoring:

Disinfection Sample Point:

Turbidity Sample Point:

Disinfectant:

Raw Water Sample Point:

Entry Point to Distribution:

Advanced Disinfection Process:

Log Removal:

Report Notes:

Baffling Factor (T10/T):

[Custom Baffling Factor](#)

Baffling Condition:

Baffling Description:

Baffling Factor (T10/T): 0.57

Baffling Condition: 0.1

Baffling Description: 0.3

0.5

0.7

1

- 0.1 = Unbaffled (Mixed Flow)
- 0.3 = Poor Baffling
- 0.5 = Average Baffling
- 0.7 = Superior Baffling
- 1 = Perfect Baffling (Plug Flow)

Define the Baffling Factor by clicking the dropdown menu in the Baffling Factor field. A list of 5 default baffling factors (0.1, 0.3, 0.5, 0.7, and 1.0) will appear as shown above. They represent 5 default baffling conditions that are typically used when there is no tracer study done to determine a calculated factor. In this example, a Tracer Study was performed and a calculated baffling factor of 0.57 was determined. This value was entered by clicking <Custom Baffling Factor>. The user now clicks <Next> to enter the first CT data record.

WTP - Clearwell CT Monitoring Setup
Next, complete as much information as you can about how your CT is calculated.

Cancel

Back

Finish

CT Monitoring Default Settings

Disinfection Basin:	WTP - Clearwell	Time:	00:00
Default Adjustment Date:	01/01/2008	CT Flow (GPM/MGD):	2605.0000
Sequence:	1	CT Basin Level:	17.1000
Filter Mode:	Conventional - GAC/Sand	CT Chlorine:	1.7560
Units of Measurement:	Feet	CT pH:	6.1400
Volume Per Foot (Gal):	52632	CT Temperature:	0.5000
Fixed Plug/Flow Volume (Gal):	0	Point of Entry Chlorine:	1.9400
Measure Flow In:	GPM		
Monitor Chlorine:	Chlorine (Free)		
Maximum CT Flow Rate:	21600		
Minimum CT Flow Rate:	200		
Time(min) to Reach Minimum CT Flow Rate:	0		
Minimum CT Chlorine Level:	0.2		
Flow Monitoring:	WTP - Finished Water		
Disinfection Sample Point:	WTP - Clearwell		
Turbidity Sample Point:	WTP - Clearwell		
Disinfectant:	Sodium Hypochlorite		
Raw Water Sample Point:	WTP - Raw Water		
Entry Point to Distribution:	WTP - Finished Water		
Advanced Disinfection Process:	None		
Log Removal:	0.5		
Report Notes:	<input type="text"/>		
Baffling Factor (T10/T):	0.57		
	Custom Baffling Factor		
Baffling Condition:	Tracer Study		
Baffling Description:	<input type="text"/>		

Enter all the information for the first CT record. The time must = "00:00". Now Click <Finish> and the first CT record is complete.

8. < Filter Data Setup >

The Filter Monitoring Setup at a minimum includes monitoring the Combined Filter Effluent turbidity and flow rate. From this point individual filter effluent turbidities and flow rates/on/off contacts may also require monitoring. From the Location Setup screen select the name of the combined filter effluent or individual filter site in the Location field. The user then checks the check box labeled “Collect Filter Data” on the Locations Setup screen, as seen in the screenshot below, and once selected, the <Filter Data Setup> pushbutton will appear.

Riverdale Water Department Location Setup
New Location

Location: WTP - Combined Filter Effluent
Facility: Riverdale Water Treatment Facility

Collect Water Quality Samples
Collect Pump and Flow Data
Collect Level Data
Collect CT Data
Collect Filter Data

Pump and Flow Setup

Sample Location Setup

Filter Data Setup

Location Definitions

Source
 Metered Flow
 Metered Hours
 Level
 Clearwell
 Storage Tank
 Distribution
 CT Flow
 CT Basin
 CT WQ Analysis
 Raw Water

Recycle Flow
 Combined Raw
 Filtered Water
 Combined Filter
 Finished Water
 Entry Pt to DS
 Waste Flow
 Process Water
 CNSC System
 Equipment

Include In Reports

Lead and Copper
 Cl2/Cl2NH3
 Bacteriological
 THM
 HAA5
 Bromate
 Bromide
 TOC
 DBP
 Fluoride

Clicking the <Filter Data Setup> button will open the first filter monitoring setup page.

WTP - Combined Filter Effluent Filter Data Setup
In this section you will set up Filter Data. To begin, enter the date for the first record available at this location.

Cancel **Back** **Next**

Filter Data Default Settings

Filter: WTP - Combined Filter Effluent
Default Adjustment Date: 07 / 26 / 2008

Enter the first date for which you have records. This will also be your first default date.

Click <Next> to open the second part of the filter monitoring setup page.

WTP - Filter 1 Filter Data Setup
Next, enter a filter number, select a filter type and, if available, an associated CT basin.

Cancel Back Next

Filter Data Default Settings

Filter:

Default Adjustment Date:

Filter Number:

Filter Sample Location:

Filter Type:

Assoc Disinfection Basin:

In the “Filter Number” field, enter the number of the individual filter. If it is a combined filter effluent flow, enter a zero or leave it blank. In the “Filter Sample Location” field, enter the where the combined filter effluent sample is collected. In the “Filter Type” field, select either “Combined Filter Effluent” or “Individual Filter”. In the next field, select the facility’s associated disinfection basin. In this example, it is “WTP – Clearwell”.

Click <Next> to open the third part of the filter monitoring setup page.

WTP - Combined Filter Effluent Filter Data Setup
Next, complete as much information as you can about how your Filter Data is calculated.

Cancel Back Next

Filter Data Default Settings

Filter:

Default Adjustment Date:

Filter Number:

Filter Sample Location:

Filter Type:

Assoc Disinfection Basin:

More Default Settings ▼

Filter Technology:

Turbidity - Monthly Limit:

Turbidity - Max Day Limit:

Turbidity - Warning(RW):

Turbidity Sampling Frequency(min):

Filter On/Off Measured By:

Minimum Flow Rate:

Time(min) to Complete Plant Startup:

Filter Technology:

Turbidity - Monthly Limit:

Turbidity - Max Day Limit:

Turbidity - Warning(RW):

Turbidity Sampling Frequency(min):

Filter On/Off Measured By:

Filter On/Off Measured By:

Minimum Flow Rate:

Time(min) to Reach Minimum Flow Rate:

Complete the fields below the “Assoc Disinfection Basin” with required information provided by your Regulatory Agency. We draw your attention to three of these fields. For the “Filter Technology” field, select the type of filter technology used in your treatment facility. For the “Turbidity Sampling Frequency (min)” field, enter frequency in minutes that you would like your Combined Filter Effluent turbidity to be sampled. In the example, a turbidity measurement is made every hour (60 minutes). In the “Filter On/Off Measured by” field, select how your facility (and this application) determines whether a filter is operating or offline. When “Flow (GPM)” is used for that determination, the filter is considered online or offline when the filter flow rate is

equal to or greater than; or less than the “Minimum Flow Rate” value, respectively. “Filter Contact” should be selected if an “On (1)/Off (0)” digital contact value is provided to indicate that a filter is Online/Offline.

When complete, click <Next> to open the fourth and final part of the filter monitoring setup page.

WTP - Combined Filter Effluent Filter Data Setup
Next, complete as much information as you can about how your Filter Data is calculated.

Cancel **Back** **Finish**

Filter Data Default Settings

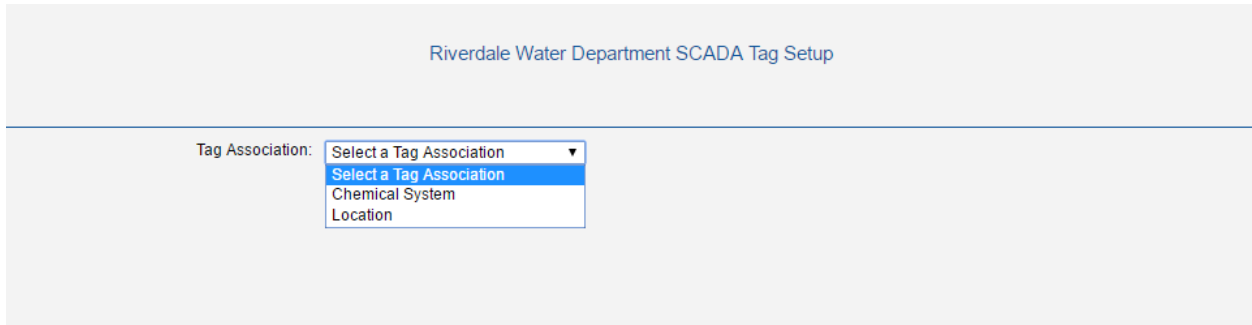
Filter: <input type="text" value="WTP - Combined Filter Effluent"/>	Time: <input type="text" value="12:00 AM"/>
Default Adjustment Date: <input type="text" value="07/26/2008"/>	Flow (GPM/Contact): <input type="text" value="5.2686"/>
Filter Number: <input type="text" value="0"/>	Turbidity Value: <input type="text" value="0.0781"/>
Filter Sample Location: <input type="text" value="Combined Filter Effluent"/>	
Filter Type: <input type="text" value="Combined"/>	
Assoc Disinfection Basin: <input type="text" value="WTP - Clearwell"/>	
More Default Settings ▼	
Filter Technology: <input type="text" value="Conventional - GAC/Sand"/>	
Turbidity - Monthly Limit: <input type="text" value="0.3"/>	
Turbidity - Max Day Limit: <input type="text" value="1"/>	
Turbidity - Warning(RW): <input type="text" value="5"/>	
Turbidity Sampling Frequency(min): <input type="text" value="60"/>	
Filter On/Off Measured By: <input type="text" value="Flow (GPM)"/>	
Minimum Flow Rate: <input type="text" value="0.2"/>	
Time(min) to Complete Plant Startup: <input type="text" value="0"/>	

Enter the 12:00 AM flow and turbidity values that you have for the first date. The first record must be timestamped as 12:00 AM. To complete filter monitoring setup for the Combined Filter Effluent location, click <Finish>

To complete filter monitoring setup for the entire treatment facility, the user must now repeat the Filter Monitoring Setup procedure for each of the facility's individual filters.

9. < SCADA Tag Setup >

The first step to uploading SCADA data to the cloud is to identify and define the SCADA Tag Names that are associated with respective digital values required to produce process and regulatory reports.

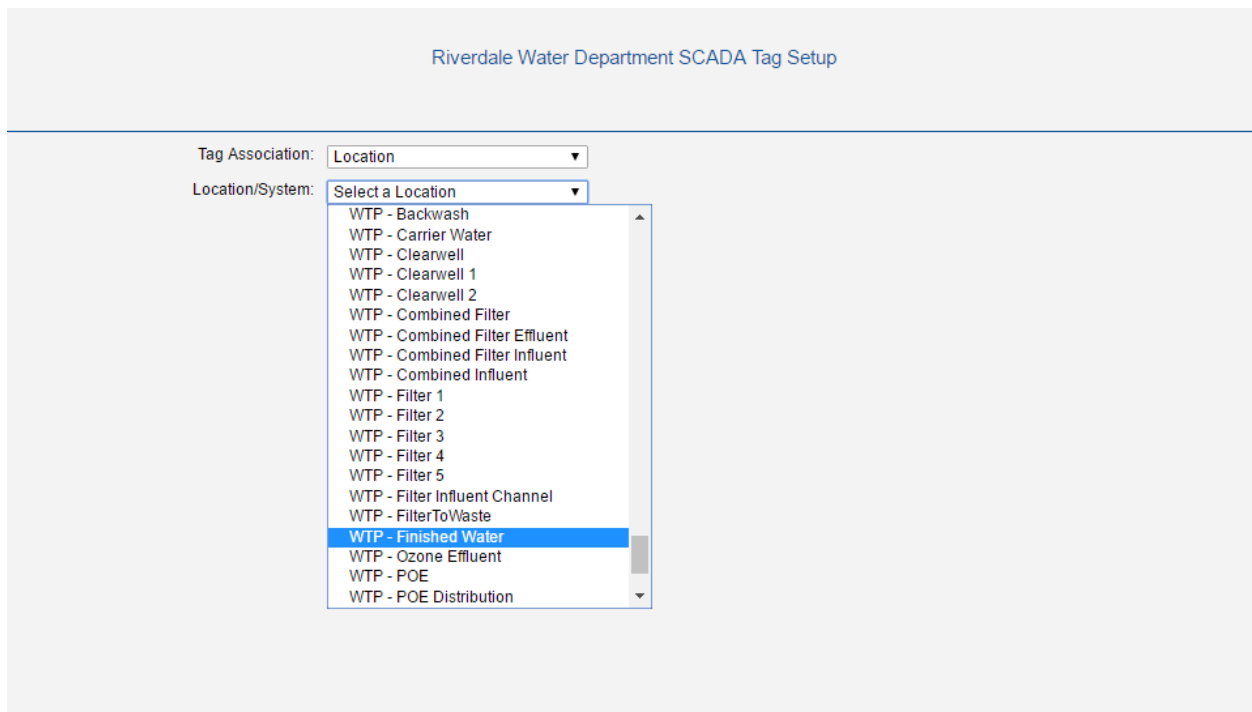


Riverdale Water Department SCADA Tag Setup

Tag Association: ▼

- Select a Tag Association
- Chemical System
- Location

From the Home Screen, select “Administration and Setup”, followed by selecting “SCADA Tag Setup” on the next screen. Start the SCADA Tag Setup by first selecting whether the SCADA Tag is associated with a location or a chemical feed system by using the dropdown menu in the “Tag Association” field. All Tag names are associated with either a location or a chemical feed system. For this example, the Tag Name is associated with a location. A new field labelled “Location/System” will appear.



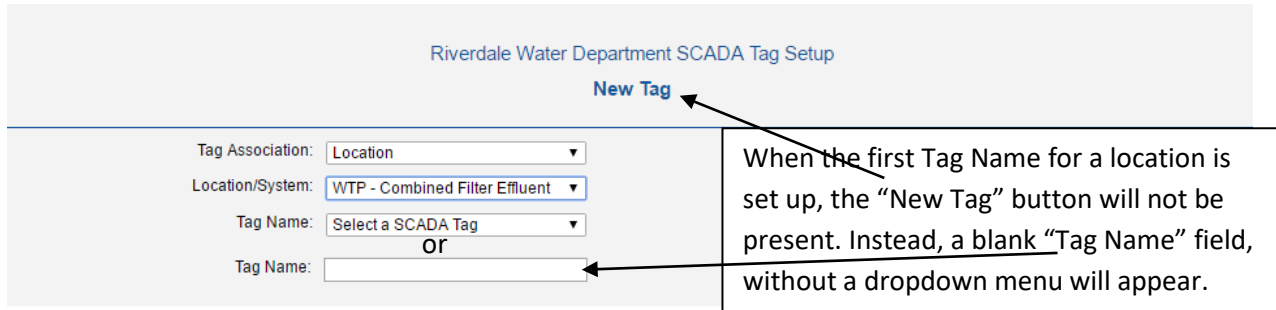
Riverdale Water Department SCADA Tag Setup

Tag Association: ▼

Location/System: ▼

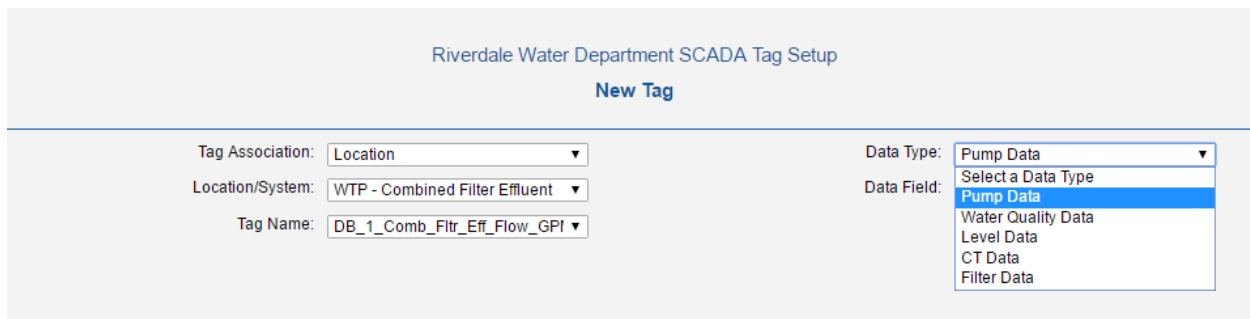
- WTP - Backwash
- WTP - Carrier Water
- WTP - Clearwell
- WTP - Clearwell 1
- WTP - Clearwell 2
- WTP - Combined Filter
- WTP - Combined Filter Effluent
- WTP - Combined Filter Influent
- WTP - Combined Influent
- WTP - Filter 1
- WTP - Filter 2
- WTP - Filter 3
- WTP - Filter 4
- WTP - Filter 5
- WTP - Filter Influent Channel
- WTP - FilterToWaste
- WTP - Finished Water
- WTP - Ozone Effluent
- WTP - POE
- WTP - POE Distribution

Next select the location name that is associated with the SCADA Tag Name. For this example, select “WTP – Combined Filter Effluent”. After selected, a new field will appear asking the user to enter the SCADA Tag Name, or an alias used for the Tag Name.



The user should note that multiple Tag Names may be set up for any one location. If a SCADA Tag Name, associated with the selected location has previously been set up, the “Tag Name” field will have a dropdown menu for selecting a tag name. To create a new SCADA tag name, the user clicks the <New Tag> button, the “Tag Name” field then changes to a blank field for entering the SCADA Tag Name. If a SCADA Tag Name has not previously been set up for the selected location, the blank “Tag Name” field will appear. Also, the “New Tag” button will not show.

In the blank “Tag Name” field, the user next enters the SCADA Tag Name (or alias Tag Name) exactly as it appears on the SCADA data “.csv” file to be uploaded to the cloud. Note: If the Tag Name is not entered exactly as it appears on the SCADA data file, the upload will fail. After entering the SCADA Tag Name exactly as it appears on the SCADA data “.csv” file, click the computer’s “Tab” key to continue with the SCADA Tag setup.



The “Data Type” field will appear. Using the dropdown menu, select the type of data that the Tag Name is associated with. Next, the “Data Field” field will appear.

Using the “Data Field” dropdown menu, select the field name that defines the Tag Name’s data values. The user may now add additional Data Types (Tables) with fields that the Tag Name values may also populate.

Riverdale Water Department SCADA Tag Setup
New Tag

Tag Association: <input type="text" value="Location"/>	Data Type: <input type="text" value="Pump Data"/>
Location/System: <input type="text" value="WTP - Combined Filter Effluent"/>	Data Field: <input type="text" value="GPM"/>
Tag Name: <input type="text" value="DB_1_Comb_Filtr_Eff_Flow_GPI"/>	<div style="border: 1px solid black; padding: 2px;"> <ul style="list-style-type: none"> Select a Field Adjusted Flow Comments <li style="background-color: #e0e0e0;">GPM PSI Static Well Level Suction PSI/Vacuum Totalizer/Hours Totalizer/Pumpage Well Level </div>

The information required for each data type selected may vary slightly as seen above for “Pump Data” and in the screen shots below. Each screen shot shows the setup for different types of data for which the Tag Name may be used.

Riverdale Water Department SCADA Tag Setup
New Tag

Tag Association: <input type="text" value="Location"/>	Data Type: <input type="text" value="CT Data"/>
Location/System: <input type="text" value="WTP - Combined Filter Effluent"/>	Data Field: <input type="text" value="CT Flow"/>
Tag Name: <input type="text" value="DB_1_Comb_Filtr_Eff_Flow_GPI"/>	<div style="border: 1px solid black; padding: 2px;"> <ul style="list-style-type: none"> Select a Field CT Chlorine <li style="background-color: #e0e0e0;">CT Flow CT Level CT pH CT Temp POE Chlorine </div>

Data Type = CT

Riverdale Water Department SCADA Tag Setup
New Tag

Tag Association: <input type="text" value="Location"/>	Data Type: <input type="text" value="Filter Data"/>
Location/System: <input type="text" value="WTP - Combined Filter Effluent"/>	Data Field: <input type="text" value="Turbidity Flow"/>
Tag Name: <input type="text" value="DB_1_Comb_Filtr_Eff_Flow_GPI"/>	<div style="border: 1px solid black; padding: 2px;"> <ul style="list-style-type: none"> Select a Field Turbidity <li style="background-color: #e0e0e0;">Turbidity Flow </div>

Data Type = Filter Turbidity

Riverdale Water Department SCADA Tag Setup
New Tag

Tag Association: <input type="text" value="Location"/>	Data Type: <input type="text" value="Water Quality Data"/>
Location/System: <input type="text" value="WTP - Combined Filter Effluent"/>	Data Field: <input type="text" value="Chlorine Analyzer (Free)"/>
Tag Name: <input type="text" value="DB_1_Comb_Filtr_Eff_Cl2_Free"/>	<p><small>Note: By default, water quality "one day" values are averages of all daily SCADA readings unless the box below is checked off.</small></p> <p>Take Single Point Value: <input checked="" type="checkbox"/></p> <p>Single Point Time: <input type="text" value="12:00 AM"/></p>

Data Type = Water Quality

10. < SCADA Upload Setup >

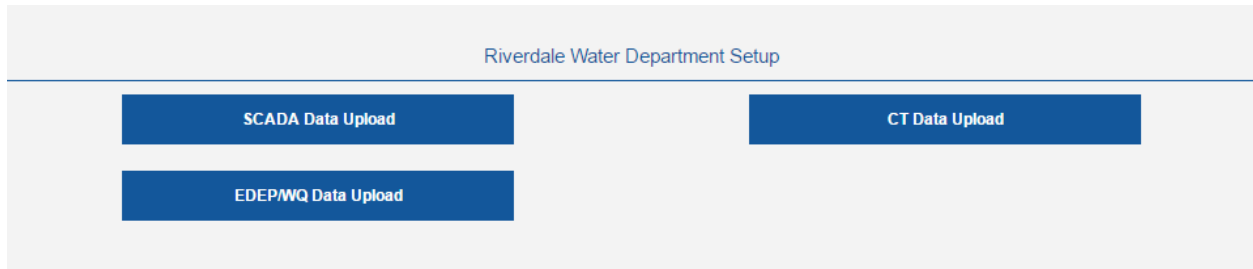
Data from external sources may be imported or uploaded to the cloud in one of four .csv file formats. From the home page, they are accessed by first clicking “Import External Data” and then, one of three pushbuttons, depending on the type data being uploaded. These buttons are:

- **CT Data Upload** - .csv formatted data files MUST have the following file headers: "Date", "Time", "CTFlow", "CTLevel", "CTChlorine", "CTpH", "CTTemp", "POEChlorine", "DisinfectionBasin"
- **EDEP/WQ Data Upload** - .csv formatted data files MUST have the following EDEP file headers: "TEXTLOCATIONNAME", "SAMPLELOCATION", "SAMPLECOLLECTIONSTARTDATE", "SAMPLECOLLECTIONSTARTTIME", "ANALYTENAME", "ANALYTEMEASUREMENTVALUE", "ROUTINEINDICATOR", "ANALYTICALMETHODIDENTIFIER", "PRIMARYLABIDENTIFIER", "LABSAMPLEIDENTIFIER", "ANALYSISSTARTDATE", "ANALYSISSTARTTIME", "SAMPLERINDIVIDUALFULLNAME", "SAMPLEACIDIFYINDICATOR", "RESUBMITINDICATOR", "RESUBMISSIONREASON", "ORIGINALSAMPLECOLLECTIONDATE", "SUBCONTRACTEDLABINDICATOR", "LABIDENTIFIER", "MDLMEASUREMENTVALUE"
- **SCADA Data Upload** – Whereas the “CT Data Upload” and “EDEP/WQ Data Upload” each require a defined file structure for upload to occur, the “SCADA Data Upload” does not. Rather, the upload file structure must be set up. Generally, there are two types of setups, defined broadly as either a vertical data table upload or a horizontal data table upload.

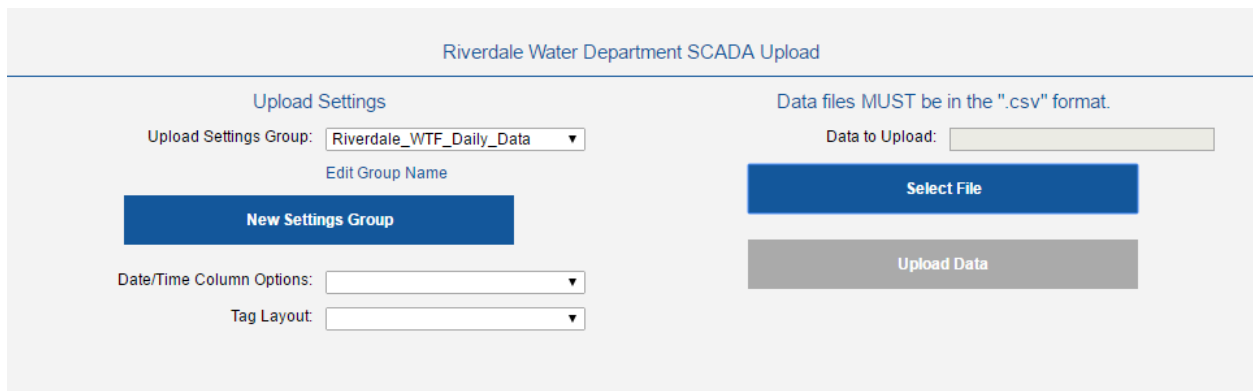
A vertical data table upload is set up when all the SCADA data, ready for upload, is all populated from a three or four column table, where each piece of data has a unique time stamp. The only difference between a three or four column format is how the time stamp is formatted, with either one or two date and time columns. There are three options, one column with “DateAndTime”, two columns, one with “Date” and one with “Time”, and one column with just date. In addition to the Date and Time column(s), there is a tag name column and there is a Value column. Each of these columns may have a unique user defined name. For example, the tag name column may be called “TagName”, “Tag Name”, or “Tag”.

A horizontal data table upload is set up when the SCADA data, is all populated from rows of data with a common, one or two column, date and time format and then multiple columns containing unique pieces of SCADA data, each with its column header having the data’s respective tag name. For this setup, one or two columns may be used as described above for the date and time format. Then multiple columns may follow, each with a unique tag name for the column and populated with the tag’s respective data values below. The tag names in each of these columns must have been pre-defined as describe in the previous section, “SCADA Tag Setup”.

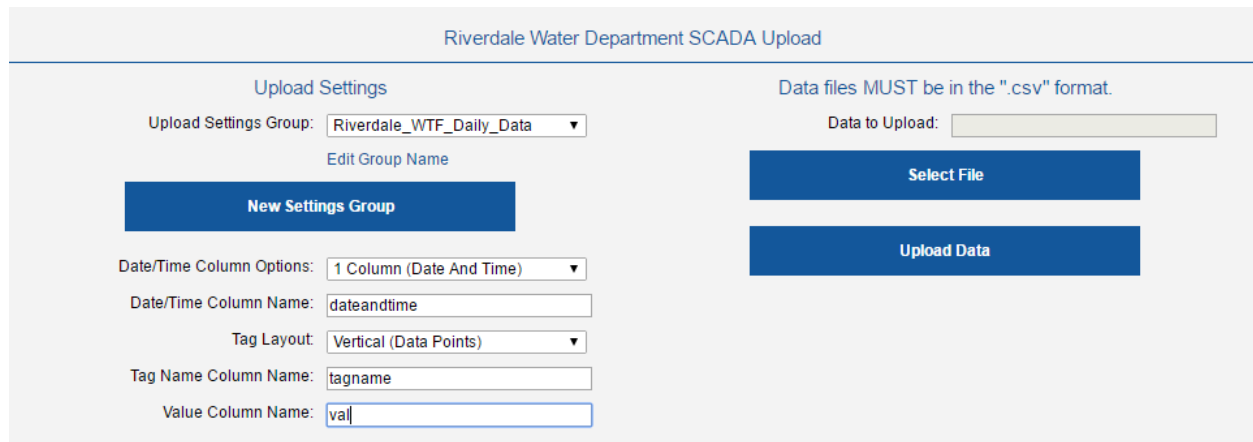
Set up the cloud reporter for a Vertical Data Table upload. Presume your SCADA data's .csv file has with four columns; dateandtime, tagname, val, and tagindex, first click the <Import External Data> button, located on the Home page to open the "Import External Data" page.



Click the <SCADA Data Upload> button to open the "SCADA Data Upload" page.



The SCADA data's .csv file has four columns; a "dateandtime" column, a "tagname" column, a "val" (value) column and a "tag index" column. In this example, all the required data falls vertically under "dateandtime", "tagname", and "val". We do not need the "tagindex" column. First, give the Upload Settings Group a unique name. Note: you may have multiple upload setting groups if your upload .csv files have different formats. Once you've created a unique name, click your device's tab key. The "Date/Time Column Options" and "Tag Layout" fields will appear. Complete these as required by your SCADA data upload .csv file.



Set up the cloud reporter for a Horizontal Data Table upload. Presume your SCADA data's .csv file has ten columns; a "Date" column, a "Time" column, and eight additional columns, each with unique Tag Names as column headers. As described above, first give the Upload Settings Group a unique name. Once you've created a unique name, click your device's tab key. The "Date/Time Column Options" and "Tag Layout" fields will appear. Complete these as required by your SCADA data upload .csv file.

Riverdale Water Department SCADA Upload

Upload Settings

Upload Settings Group: ▼
Edit Group Name

Date/Time Column Options: ▼
Date Column Name:
Time Column Name:
Tag Layout: ▼

Data files MUST be in the ".csv" format.

Data to Upload:

To upload your SCADA data, click <Select File>, a MS Windows browsing window will appear. Browse to find the SCADA data .csv file to be uploaded. Select the file. The file name will appear in the "Data to Upload" field. Click <Upload Data" to upload the data to the cloud.

Riverdale Water Department SCADA Upload

Upload Settings

Upload Settings Group: ▼
Edit Group Name

Date/Time Column Options: ▼
Date/Time Column Name:
Tag Layout: ▼
Tag Name Column Name:
Value Column Name:

Data files MUST be in the ".csv" format.

Data to Upload:

DATA ENTRY

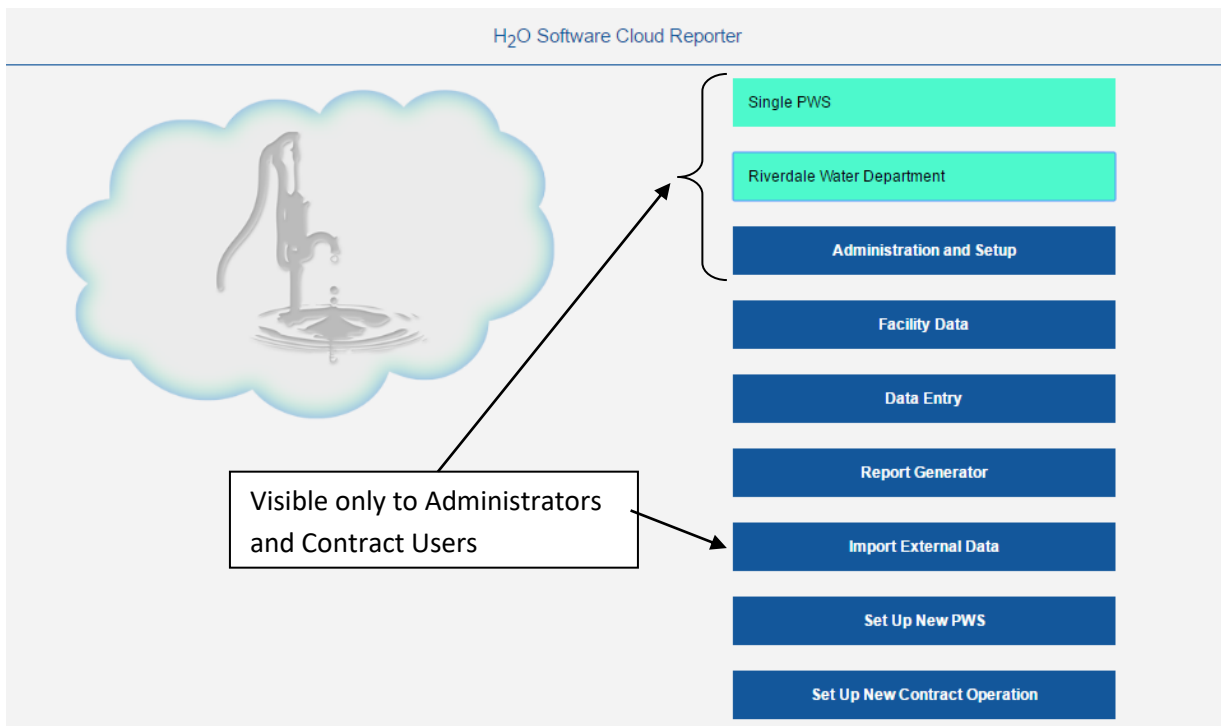
Presently, data may be entered manually into the database in two different ways.

1. The first is by entering each piece of data individually, through the Facility Data pages, based on the type of data, date, location, and if required, water quality contaminant name, chemical and chemical feed system. This method is best used when entering many days of the same data type, including location, water quality contaminant name, chemical and/or chemical feed system. Also, the user may prefer to make data corrections using this method. For more detailed data entry instruction for this method refer to the [Facility Data](#) sub-section below.
2. The second is by entering all types of data, including pumping or flow data, level data, chemical feed data and water quality data into unique, user configured data entry forms on a daily basis. This method is best used when entering a lot of data, of mixed types on a daily basis. The user may also use these forms for making data entry corrections. For more detailed data entry instruction for this method refer to the [Data Entry](#) sub-section below.

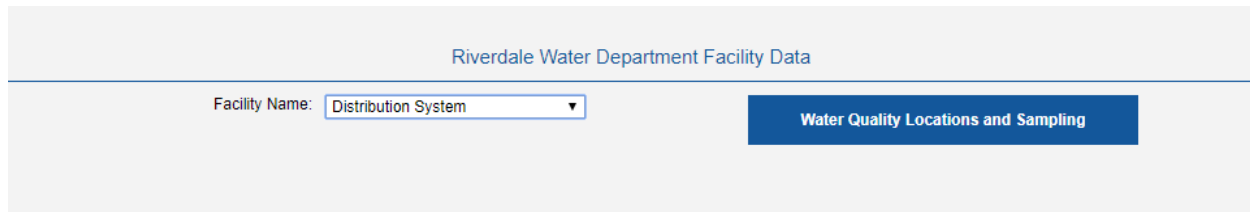
Facility Data

<Facility Data>

Six types of data may be entered individually through the Facility Data forms. These include pumping or flow data, level, chemical feed data, water quality, filter turbidity and CT data. To begin entering data using this method, the user must first get to and open the required form for the type of data to be entered. From the “Home Page”, first click <Facility Data>.



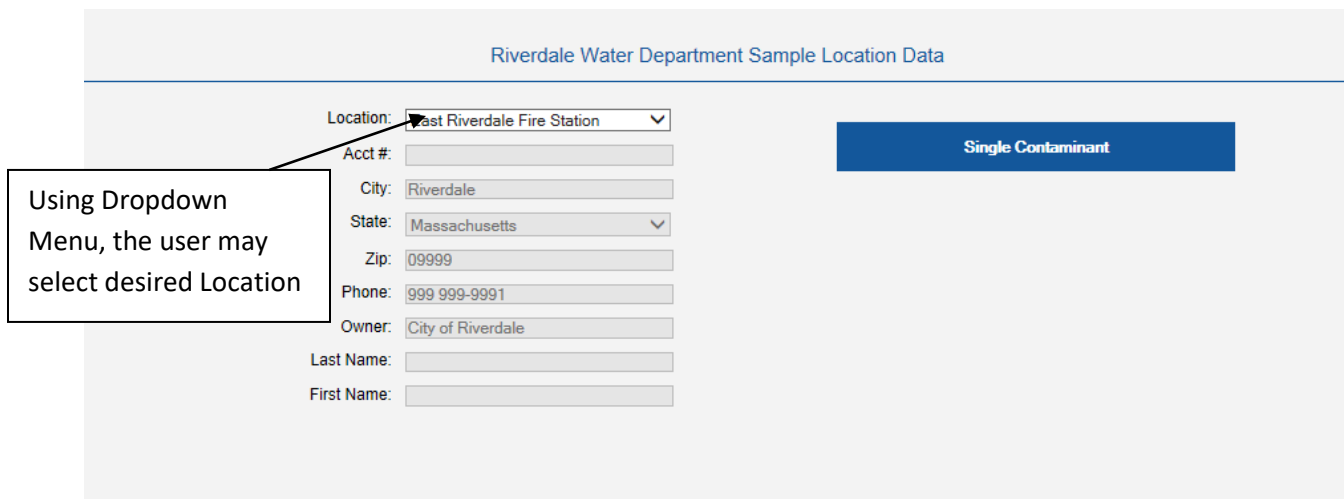
Clicking <Facility Data> opens the Facility Data screen.



From this screen, the user selects the Facility Name that the data to be entered is associated with. Once selected, pushbuttons will appear that will direct the user to the types of data forms that the facility has. As stated at the beginning of this document, only water quality data can be associated with the Distribution System facility. Therefore, as seen above, since “Distribution System” is selected as the Facility Name, only the **<Water Quality Locations and Sampling>** pushbutton appears.

1. Water Quality Locations and Sampling

<Water Quality Locations and Sampling>



For any facility, to enter water quality data through the Facility Data screens, the user first clicks **<Water Quality Locations and Sampling>**. This will open the “Sample Location” screen.

From this screen, the user will select the sample location for the water quality data to be entered. Note: Only locations that are associated with the selected facility (see above) will be available for selection. Once selected, the user should click **<Single Contaminant>** to open the “Water Quality Sampling” screen.

Riverdale Water Department Water Quality Sampling

2011-01-25

|< < **New Record** > >|
Delete Record

Location:

Time:

Contaminant Name:

Contaminant Value:

Sample Collector:

Primary Lab Name:

Sub-Contracted:

Analysis Lab Name:

Analysis Date:

Analysis Time:

Analyst:

Analysis Method:

Pretreated:

Lab Sample ID:

Detection Limit:

Units:

Resubmit Indicator:

Resubmit Reason:

Original Sample Date:

Collection Method:

Sample Code:

Sample Type:

Split Sample:

Comments:

Contaminant Value may be entered either as a numeric or text value.

Field Locks: Allows user to lock up to two field values when creating or scrolling through records

New Record/Delete Record toggle button

The “Water Quality Sampling” screen is a multi-functional form that allows the user to 1) create new water quality records, 2) scroll or jump to other records, 3) delete a record, or 4) edit a record.

1. Create new water quality records for the selected location. The user may create a new water quality record by first clicking the New Record/Delete Record toggle button to show “New Record”. Before clicking **<New Record>**, there are several conditions that the user may set to make data entry easier. These all require setting various combinations of the three available “Field Locks”, on Date, Time and Contaminant Name. Only two fields may be locked at a time. The available combinations include:
 - a. All fields **unlocked**. By clicking **<New Record>** with each field unlocked, all fields in the above form will clear except for the Location field (which always remains populated and cannot be changed), Collection Method, Sample Code, and Sample Type fields, and Date and Time fields. The Location field will remain populated with the same location name. The Date field will populate and advance by one day and Time field will populate with the default time, set up earlier under Public Water System Administration. If required, the date and time values may now be changed.

Note: For water quality data entered on this form, as well as the user configured data entry forms the following fields will always be populated with the most recent value for the location and contaminant name: Collection Method, Sample Code, Sample Type, Primary Lab Name, Analysis Time, Analysis Method and Units. If the value in a field has been changed from a normal value or is Null in the most recent record, the new record field will also reflect the change or be Null in the new record.

Note: On all forms the Date field must be entered in a “YYYY-MM-DD” format and the Time field must be entered in a “00:00” format.

The user must now select a Contaminant Name for the new record.

- b. Date field only locked. By clicking **<New Record>** with only the Date field locked, all fields in the above form will again clear except for the Location field, and the Date and Time fields. The Location field will remain populated with the same location name. The Date field will populate and remain the same and Time field will populate with the default time. If required, the time value may now be changed and **the user must select a Contaminant Name for the new record.**
- c. Date and Time fields locked. This combination is often used when more than one water quality analysis is performed on the same sample, collected on the same date and time. By clicking **<New Record>** with the Date and Time fields locked, all fields in the above form will again clear except for the Location, Date and Time fields. The Location field will remain populated with the same location name. The Date and Time fields will populate and remain the same. **The user must select a Contaminant Name for the new record.**
- d. Date and Contaminant Name fields locked. This combination is used when many samples are collected during the day and tested for the same water quality contaminant. By clicking **<New Record>** with the Date and Contaminant Name fields locked, all fields in the above form will again clear except for the Location, Date, Time, and Contaminant Name fields. The Location field will remain populated with the same location name. The Date and Contaminant Name fields will populate and remain the same. The Time field will populate with the default time. **The user must change the Time value to that for the new record.**
- e. Contaminant Name only field locked. This combination is used when the results of tests done for one contaminant, over more than one day are to be entered. By clicking **<New Record>** with the Contaminant Name only field locked, all fields in the above form will again clear except for the Location, Date, Time, and Contaminant Name fields. The Location field will remain populated with the same location name. The Contaminant Name field will populate and remain the same. The Date field will populate and advance by one day and Time field will populate with the default time.

At this time, the Contaminant Value for the water quality sample may be entered, along with all the other support data, found in the right column that further defines the sample.

Note: All water quality data is recorded in the database as both a numeric value and a text value. This is done because math functions can only be used with numeric values. Therefore, if the user enters a contaminant value as “<0.01”, a matching numeric value must also be entered for the average, maximum and minimum functions to work. The Contaminant Value (on any form with a water quality contaminant value field) may, therefore be entered as either a numeric or text value. When a text value is entered, a numeric value is matched to the text value from an internal table and updated to the numeric contaminant value field. Should a match not be found for the text value, a form will appear requesting that the user enter a matched numeric value. However, before completing this form verify that the value you entered is correct. If it is not, cancel and reenter the value.

2. Scroll through or jump to water quality records for the selected location. The user may view water quality data by scrolling through records using the scroll buttons on the screen and/or by jumping to records using the dropdown menus for the Date, Time and/or Contaminant Name fields. Viewing the records by scrolling may be enhanced by filtering the data using various combinations of the three available “Field Locks”, on Date, Time and Contaminant Name. Only two fields may be locked at a time. The available combinations include:
 - a. All fields unlocked. By using the scroll buttons with all fields unlocked the user will view the data as it is ordered by Date first, then Time and then alphabetically by Contaminant Name. The user may also jump to a different date using the Date dropdown menu. The program will find the record on the selected date where the contaminant name matches the contaminant name on the screen. Using the Contaminant Name dropdown menu and selecting a new contaminant, the program will find the first record where the contaminant names match.
 - b. Date only field locked. By using the scroll buttons with just the Date field locked, the user will view the data that is available for the locked Date as it is ordered by Contaminant Name. The user may also jump to different contaminants by using the Contaminant Name dropdown menu and selecting a new contaminant for that date.
 - c. Contaminant Name only field locked. By using the scroll buttons with just the Contaminant Name field locked, the user will view all the data that is available for the locked Contaminant Name, as it is ordered by Date. The user may also jump to different dates by using the Date dropdown menu and selecting a another dated for the locked contaminant.

3. Delete a water quality record for the selected location. The user may delete a water quality record by first clicking the New Record/Delete Record toggle button to show “Delete Record”. Next scroll to the record that is to be deleted. Before clicking **<Delete Record>**, **MAKE SURE YOU REALLY WANT TO DELETE THE RECORD. YOU CANNOT UNDO A DELETE!**
4. Edit a water quality record for the selected location. The user may edit any field in a water quality record by first scrolling to the record that is to be edited and then changing the value or adding additional information to the record.

If, from the Facility Data screen the user selects a Facility Name that has flow and chemical feed data associated with it, pushbuttons will appear that will direct the user to the types of data forms that the facility has. Since “Riverdale Water Treatment Facility” is selected as the Facility Name, and water quality, pump and flow, and chemical feed data are all associated with this facility. Three pushbuttons appear on the screen to direct the user to screens for each type of data used at the facility. For the Riverdale Water Treatment Facility, the **<Water Quality Locations and Sampling>**, **<Pump/Flow, Level, Filter and CT Data>**, and **<Chemical System Data>** pushbuttons appear.

Instructions for the “Water Quality Locations and Sampling” screens have been discussed above and are the same for all facilities. Instructions for the “Pump/Flow, Level, Filter and CT Data” and “Chemical System Data” screens follow.

2. Pump/Flow, Level, Filter and CT Data

<Pump/Flow, Level, Filter, and CT Data>

To enter pump and flow data through the Facility Data screens, the user first clicks **<Pump/Flow, Level, and CT Data>**. This will open the “Pump/Flow, Level and CT Locations” screen.

From this screen the user will select the location for the pump and flow data to be entered. Note: Only locations that are associated with the selected facility (see above) will be available for selection. Once selected, pushbuttons will appear on the screen to direct the user to the types of data associated with this location, including **<Pump and Flow Data>**, **<Level Data>**, **<Filter Data>**, and **<CT Data>**. For the location “WTP – Raw Water”, only pump and flow data is available and therefore, only the **<Pump and Flow Data>** pushbutton appears.

<Pump and Flow Data>

Pressing the **<Pump and Flow Data>** pushbutton directs the user to the “Pump and Flow Data” screen.

The screenshot shows the following fields and values:

Pump and Flow Daily Records		Pump and Flow Default Values (Read Only)	
Time:	12:00 AM	Facility:	Riverdale Water Treatment Facility
Totalizer/Total Flow (Previous Day):	3573000	Location:	WTP - Raw Water
Totalizer/Total Flow:	3536000	Defaults Since:	07/01/2005
Adjusted Flow (Gallons):	0	Combined Data:	<input type="checkbox"/>
Total Flow (Gallons):	3536000	Multiplier:	1
Total Flow (MG):	3.536	Maximum Capacity (MGD):	0
gpm:		Calculate Flow Using:	Daily Total
psi:		Calculate Hours Using:	Daily Total
Well Level:			
Totalizer/Hours (Previous Day):			
Totalizer/Hours (Today):			
Adjusted Hours:	0		
Hours of Operation:	0		
Comments:			
DataCollector:			

Two types of data are shown on the “Pump and Flow Data” screen. On the right side of the screen (may appear differently on other devices) are pump and flow default values. These are read-only fields. The values can only be changed on the setup screens, not under Facility Data. These read-only fields define various calculation factors that are shown to help the user understand how their final pumpage or flow values and hours of operation are calculated. All other fields on the page are read-write and may be used for user input. As with the “Water Quality Sampling” screen, the “Pump and Flow Data” screen is a multi-functional form that

allows the user to 1) create new flow records, 2) scroll or jump to other records, 3) delete a record, or 4) edit a record.

1. Create new flow records for the selected location. The user may create a new pump and flow record by first clicking the New Record/Delete Record toggle button to show "New Record". Upon clicking **<New Record>**, all read-write fields will clear except for the Date and Time fields, and the Totalizer/Total Flow (Previous Day) and Totalizer/Hours (Previous Day) fields. The Date field will populate and advance by one day and Time field will populate with the default time, set up earlier under Public Water System Administration. The Totalizer/Total Flow (Previous Day) and Totalizer/Hours (Previous Day) fields will be populated with the new previous day values since the date advanced by one day. The user may now input data into the available fields.
2. Scroll through or jump to pump and flow records for the selected location. The user may view pump and flow data by scrolling through records using the scroll buttons on the screen and/or by jumping to a record using the dropdown menu for the Date field.
3. Delete a pump and flow record for the selected location. The user may delete a pump and flow record by first clicking the New Record/Delete Record toggle button to show "Delete Record". Next scroll to the record that is to be deleted. Before clicking **<Delete Record>**, **MAKE SURE YOU REALLY WANT TO DELETE THE RECORD. YOU CANNOT UNDO A DELETE!**
4. Edit a pump and flow record for the selected location. The user may edit any read-write field in a pump and flow record by first scrolling to the record that is to be edited, and then changing the value or adding additional information to the record.

Occasionally, the user may find the value calculated in the "Total Flow (Gallons)" and "Total Flow (MG)" or "Hours of Operation" fields to be incorrect. When this happens, it is usually due to incorrect data entry. When this occurs, the user should verify, and if necessary correct the value in one of the "Totalizer" fields on either the present record or the record for the following day.

Less frequently, the error may be due to a water meter failure or replacement, flow totalizer turnover, elapsed time meter failure, or some other reason. The most common of these reasons is a totalizer turning over after reaching its maximum recording capacity. This is usually indicated in the "Total Flow (Gallons)" or "Hours of Operation" fields as a large negative number. When this occurs the following example and procedure may be used to correct the value. This procedure applies to both total flow, and hours of operation error corrections.

Presume the total raw water flow for a Utility is calculated based on flow meter totalizer reading, and on March 19th you replaced the raw water flow meter. Before replacement the meter reading was 5445802 with a multiplier of 100. On March 20th, the totalizer value is 700. The total flow for March 19th, as seen in the "Total Flow (Gallons)" field, is "-544510200".

2013-03-19

New Record

Pump and Flow Daily Records

Time: 08:00

Totalizer/Total Flow (Previous Day): 5444615

Totalizer/Total Flow: 5445802

Adjusted Flow (Gallons): 0

Total Flow (Gallons): -544510200

Total Flow (MG): -544.51

gpm: 326

psi: 90

Well Level:

Totalizer/Hours (Previous Day): 6

Totalizer/Hours (Today): 9

Adjusted Hours: 0

Hours of Operation: 9

Pump and Flow Default Values (Read Only)

Facility: Townsend Water Facilities

Location: Riverdale Water Treatment Facility

Defaults Since: 2006-04-01

Combined Data:

Multiplier: 100

Maximum Capacity (MGD): 0.72

Calculate Flow Using: Totalizer

Calculate Hours Using: Daily Total

Adjusted Flow
Adjusted Hours
Fields

Totalizer Fields

Pumpage (Total Flow) Fields

- a) First estimate, based on hours of operation and flow rate (gpm) the total raw water flow for March 19th. In this example it is estimated as 178,000 gallons.
- b) Take the "Total Flow (Gallons)" value and add it as a positive (+) number (+544510200) to the estimated (178,000 gallons) total flow value for the day. $+544,510,200 + 178,000 = \mathbf{544,688,200}$ Add this number to the "Adjusted Flow (Gals)" field.

2013-03-19

New Record

Pump and Flow Daily Records

Time: 08:00

Totalizer/Total Flow (Previous Day): 5444615

Totalizer/Total Flow: 5445802

Adjusted Flow (Gallons): 544688200

Total Flow (Gallons): 178000

Total Flow (MG): 0.178

gpm: 326

psi: 90

Well Level:

Totalizer/Hours (Previous Day): 6

Totalizer/Hours (Today): 9

Adjusted Hours: 0

Hours of Operation: 9

Pump and Flow Default Values (Read Only)

Facility: Townsend Water Facilities

Location: Ma Riverdale Water Treatment Facility

Defaults Since: 2006-04-01

Combined Data:

Multiplier: 100

Maximum Capacity (MGD): 0.72

Calculate Flow Using: Totalizer

Calculate Hours Using: Daily Total

Adjusted Flow
Adjusted Hours
Fields

- c) Upon tabbing out of the adjusted flow field, the "Total Flow (Gallons)" field will update to the correct value.

3. Chemical System Data

<Chemical System Data>

To enter chemical or chemical feed data through the Facility Data screens, the user first selects a facility name other than “Distribution”. Next, the user clicks **<Chemical System Data>**. This will open the “Treatment Chemicals” screen.

Riverdale Water Department Treatment Chemicals

Chemical Details

Facility:

Chemical Name:

Formula:

Residual to Monitor 1:

Residual to Monitor 2:

Residual to Monitor 3:

Select Chemical Name

From this screen, select the name of the chemical that the user would like to work with using the dropdown menu for the “Chemical”. Next, there are two pushbuttons on the screen to direct the user to either the **<Chemical Feed System Select>** screen or the **<Chemical Delivery Data>** screen. Clicking **<Chemical Feed System Select>** opens the “Chemical Feed System Select” screen.

Chemical Feed Data Entry

Riverdale Water Department Chemical Feed System Select

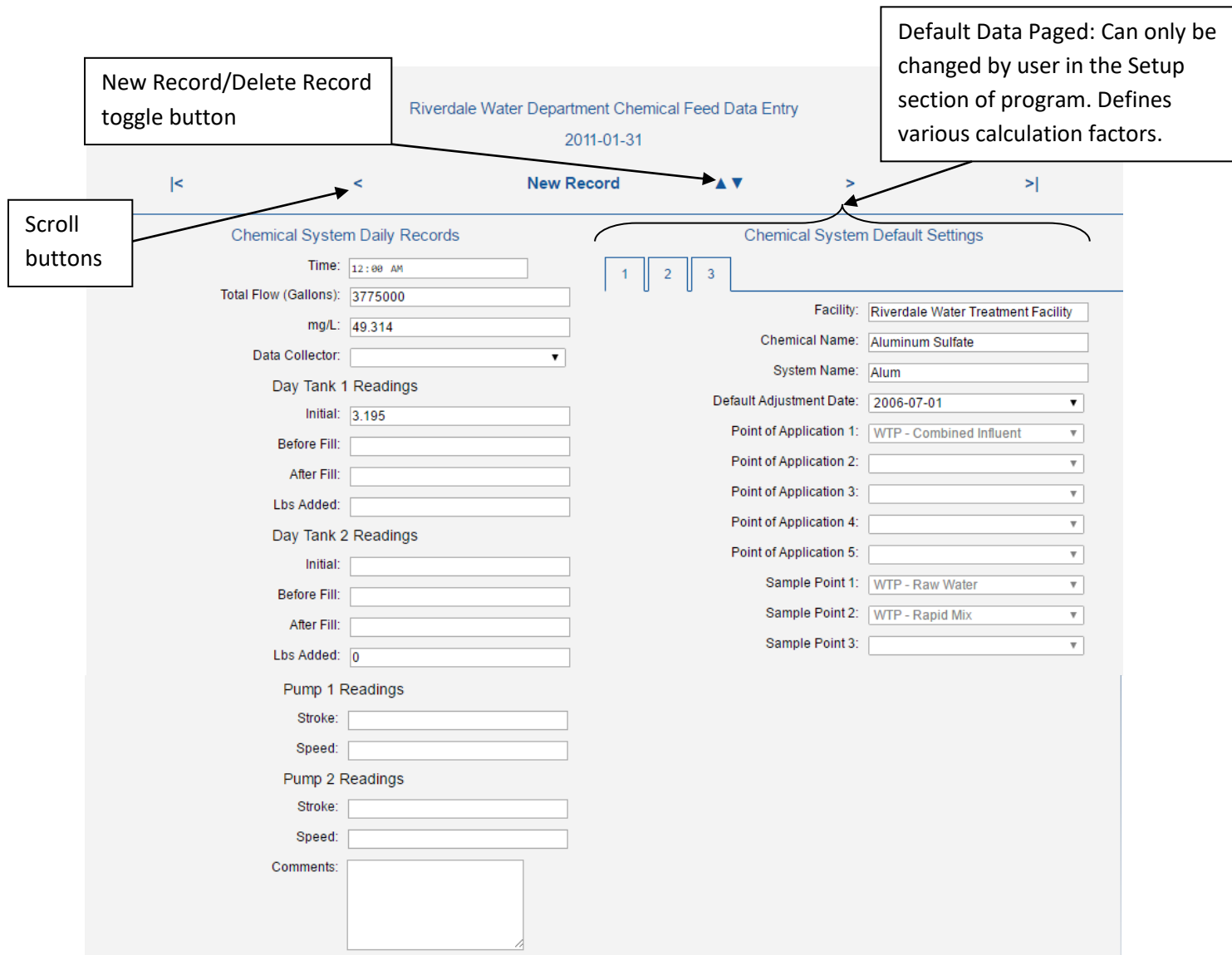
Facility:

Chemical:

Chemical System:

Select Chemical System Name

Using the dropdown menu for “Chemical System”, select the desired system name. The selected name will appear on the pushbutton, directing the user to “Chemical Feed Data Entry” screen.



As with the “Pump and Flow Data” screen, two types of data are shown on the “Chemical Feed Data Entry” screen. On the right side of the screen (may appear differently on other devices) are chemical feed system default values. Not all the default values are shown at once for the chemical feed systems due to the number of default values associated with chemical feed systems. At the top of the default values, there are page Select Numbers for selecting and viewing other default values associated with the system. Again, these are read-only fields. The values can only be changed on the setup screens, not under Facility Data. These read-only fields define various calculation factors and are shown to help the user understand their chemical feed data and how it is calculated. All other fields on the page are read-write and may be used for user input. As with the other data entry screens, this screen is multi-functional and allows the user to 1) create new chemical feed records, 2) scroll or jump to other records, 3) delete a record, or 4) edit a record.

1. Create new chemical feed records for the selected chemical feed system. The user may create a new chemical feed record by first clicking the New Record/Delete Record toggle button to show “New Record”. Upon clicking **<New Record>**, all read-write fields will

clear except for the Date and Time fields, and the Total Flow (Gallons) field. The Date field will populate and advance by one day and Time field will populate with the default time, set up earlier under Public Water System Administration. The value in the Total Flow (Gallons) field will be populated with the Total Flow value for the next day since the date advanced by one day. The user may now input data into the available fields.

2. Scroll through or jump to chemical feed records for the selected chemical feed system. The user may view chemical feed data by scrolling through records using the scroll buttons on the screen and/or by jumping to a record using the dropdown menu for the Date field.
3. Delete a chemical feed record for the selected chemical feed system. The user may delete a chemical feed record by first scrolling to the record that is to be deleted. Next click the New Record/Delete Record toggle button to show “Delete Record”. Before clicking **<Delete Record>**, **MAKE SURE YOU REALLY WANT TO DELETE THE RECORD. YOU CANNOT UNDO A DELETE!**
4. Edit a chemical feed record for the selected chemical feed system. The user may edit any read-write field in a chemical feed record by first scrolling to the record that is to be edited, and then changing the value or adding additional information to the record.

Chemical Delivery Data Entry

Riverdale Water Department Chemical Delivery

2006-07-01

< < New Record > >

Facility: Riverdale Water Treatment Facility

Chemical Name: Aluminum Sulfate

Chemical Specifications

Percent: 48

Specific Gravity: 1.33

Product Weight (Lbs/Gal): 11.1

Product Name: Aluminum Sulfate

Product Manufacturer:

Matrix: Liquid

Amount Delivered: 2000

With the “Chemical Delivery” screen, the user may keep a record of all chemical deliveries to a facility and their specifications. Chemical specifications found on reports are indexed by date to the nearest date that is less than or equal to the report date. Except for “Facility Name” and “Chemical Name”, all fields on this screen may be edited at any time. **Note: The user should remember that reports are indexed by date to these records and any change here may also appear on a report. If a new chemical delivery results in a specification change then a “New Delivery Record” should be created.** As with the other data entry screens, this screen

is multi-functional and allows the user to 1) create new chemical delivery records, 2) scroll or jump to other records, 3) delete a record, or 4) edit a record.

1. Create new chemical delivery records for the selected chemical. The user may create a new chemical delivery record by first clicking the New Record/Delete Record toggle button to show “New Record”. Upon clicking **<New Record>**, all fields will remain the same except for the Date and Amount Delivered fields. The Date field will populate and advance by one day. The user must then overwrite the date with the actual date of delivery. The Amount Delivered field will clear and the amount of chemical delivered must be entered into the field. Each of the specification fields will remain the same as in the previous record. However, if one or more of the specifications have changed, it may be edited directly in the field.
2. Scroll through or jump to chemical delivery records for the selected chemical. The user may view chemical delivery data by scrolling through records using the scroll buttons on the screen and/or by jumping to a record using the dropdown menu for the Date field.
3. Delete a chemical delivery record for the selected chemical. The user may delete a chemical delivery record by first scrolling to the record that is to be deleted. Next click the New Record/Delete Record toggle button to show “Delete Record”. Before clicking **<Delete Record>**, **MAKE SURE YOU REALLY WANT TO DELETE THE RECORD. YOU CANNOT UNDO A DELETE!** Also, remember that chemical feed records are indexed to respective chemical delivery records as described above. If a chemical delivery record is deleted, respective chemical feed records will now be indexed to the previous chemical delivery record.
4. Edit a chemical delivery record for the selected chemical. The user may edit the specification fields and Amount Delivered field in a chemical delivery record by first scrolling to the record that is to be edited, and then changing the value or adding additional information to the record. Again, remember that chemical feed records are indexed to the nearest chemical delivery record that is less than or equal to the chemical feed record. If a chemical delivery record is edited, respective chemical feed records will now also reflect the change in the chemical delivery record.

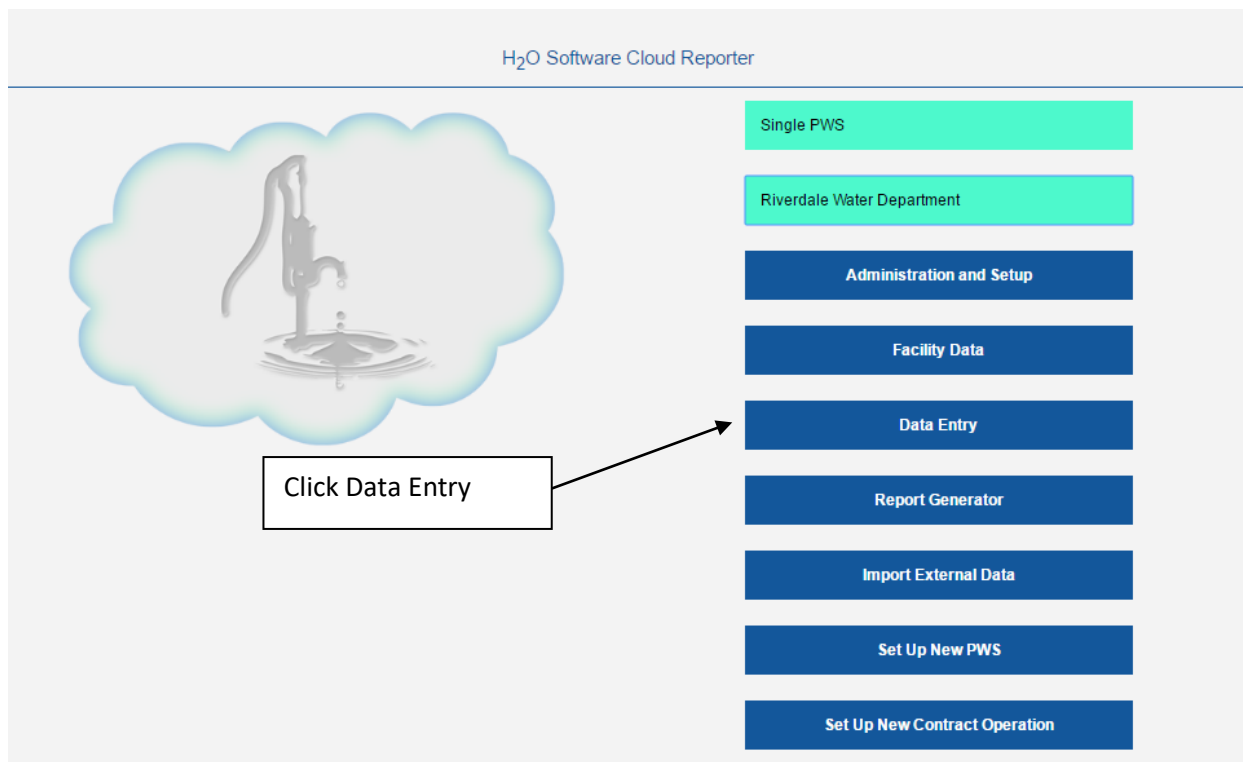
User Configured Data Entry

<Data Entry>

The user has the capability to create and configure any number of unique data entry forms (or pages) that may be customized around single operational tasks or daily sampling and data collection routines. Unlike data entry under Facility Data, all six types of data may be entered on a single user configured data entry page. These include pumping or flow data, level data, chemical feed data, and water quality data, filter turbidity data, and CT data. Also, weather data may be added on the data entry screens.

1. Data Entry Screen Setup

Data Entry Screen setup is easy. When starting first click <Data Entry> from the Cloud Reporter's "Home Page" screen.



Clicking **<Data Entry>** for the first time will open the “Data Entry setup” page as shown below.

The “Page Name” field will be blank. Enter a page name. The user may want add a numerical prefix to each page name that may help in ordering the page names when comes to selecting Data Entry pages. After entering the page name click your browser’s refresh button to refresh the page. This will bring you back to the first data entry page. Click the green page button for a drop down menu of all available pages. Click the page that you are configuring. Now click the blue **<Data Entry Page Setup>** button. This will bring you back into the setup for the page that you’re configuring. Select the first group type.

Each Data Entry page may be configured with up to fifteen (15) data entry groups. The type of data that may be configured in any one of the 15 groups is Pump Data, Chemical System Data, Water Quality Data, Level Data, Filter Turbidity Data, CT Data, and Weather Data. Each group will automatically expand, leading the user through the setup process. The setup process for each type of data is as follows:

1. Pump (or Flow) Data (Group 1 is used as example)
 - a. Location – Using dropdown menu select Pump or Flow Data location.
 - i. Under Group 1, Fields 1 - 6 – Select as many field names as the user desires to enter for this pump or flow location. For example: Totalizer/Pumpage, gpm, etc.
2. Chemical System Data (Group 2 is used as example)
 - a. System Name - Using dropdown menu select Chemical System name.
 - i. Under Group 2, Fields 1 - 6 – Select as many field names as the user desires to enter for this chemical system. For example: Initial, Before Fill, After Fill, Comments, etc.
 - ii. If more fields are required than fields are available in group, continue to Group 3.

3. Water Quality Data (Group 3 is used as example)
 - a. Location – Using dropdown menu select Water Quality Data location.
 - i. Under Group 3, Fields 1 - 6 – Select a contaminant for as many field names as the user desires to enter for this location. For example: pH, Temperature, Alkalinity, etc.
 - ii. If more contaminants are required than fields are available in group, continue to Group 4.
4. Level Data (Group 4 is used as example)
 - a. Location – Using dropdown menu select Level Data location.
 - i. Under Group 4, Field 1 - Select Level. There is only one field available for Level Data.
5. CT Data (Group 5 is used as example)
 - a. Contact Basin Name (Location Name) - Using dropdown menu select the Contact Basin Location Name.
 - i. Under Group 5, Fields 1 - 6 – Select all the required CT field names. These include: CT Flow, CT Level, CT Chlorine, CT pH, CT Temperature, and POE (Point of Entry) Chlorine.
6. Weather Data (Group 6 is used as example)
 - a. Public Water Supply Name - Using dropdown menu select the Public Water Supply name that is associated with the weather data.
 - i. Under Group 6, Fields 1 - 6 – Select all the weather-related field names that the user desires to record. These may include: Temperature (Air), Temperature (Water), Temperature High (Air), Temperature Low (Air), Weather, Precipitation (rain), Precipitation (Snow), Snow/Rain Equalization Factor.
 - ii. If more fields are required than fields are available in group, continue to Group 7.

When complete, the “Data Entry Setup” page should appear as shown below.

Riverdale Water Department Data Entry Setup

Primary Treatment

Data Entry

Edit Page Name

New Page

Group 1	Group 2	Group 3	Group 4	Group 5
Group Type: <input type="text" value="Pump Data"/>	Group Type: <input type="text" value="Chemical System Data"/>	Group Type: <input type="text" value="Water Quality Data"/>	Group Type: <input type="text" value="Level Data"/>	Group Type: <input type="text" value="CT Data"/>
Location: <input type="text" value="WTP - Combined Influent"/>	Chemical System: <input type="text" value="Alum"/>	Location: <input type="text" value="WTP - Combined Influent"/>	Location: <input type="text" value="Riverdale Storage Tank"/>	Location: <input type="text" value="WTP - Clearwell"/>
Field 1: <input type="text" value="Totalizer/Pumpage"/>	Field 1: <input type="text" value="Initial"/>	Field 1: <input type="text" value="pH"/>	Field 1: <input type="text" value="Level"/>	Field 1: <input type="text" value="CT Flow"/>
Field 2: <input type="text" value="GPM"/>	Field 2: <input type="text" value="Before Fill"/>	Field 2: <input type="text" value="Temperature"/>	Field 2: <input type="text"/>	Field 2: <input type="text" value="CT Level"/>
Field 3: <input type="text"/>	Field 3: <input type="text" value="After Fill"/>	Field 3: <input type="text" value="Alkalinity (Total)"/>	Field 3: <input type="text"/>	Field 3: <input type="text" value="CT Chlorine"/>
Field 4: <input type="text"/>	Field 4: <input type="text" value="Comments"/>	Field 4: <input type="text"/>	Field 4: <input type="text"/>	Field 4: <input type="text" value="CT pH"/>
Field 5: <input type="text"/>	Field 5: <input type="text"/>	Field 5: <input type="text"/>	Field 5: <input type="text"/>	Field 5: <input type="text" value="CT Temp"/>
Field 6: <input type="text"/>	Field 6: <input type="text"/>	Field 6: <input type="text"/>	Field 6: <input type="text"/>	Field 6: <input type="text" value="POE Chlorine"/>
Group 6	Group 7	Group 8	Group 9	Group 10
Group Type: <input type="text" value="Weather Data"/>	Group Type: <input type="text"/>	Group Type: <input type="text"/>	Group Type: <input type="text"/>	Group Type: <input type="text"/>
Public Water Supply: <input type="text" value="Riverdale Water Departm"/>				
Field 1: <input type="text" value="Weather"/>				
Field 2: <input type="text" value="Precipitation (Rain)"/>				
Field 3: <input type="text" value="Precipitation (Snow)"/>				
Field 4: <input type="text" value="Temperature (Air)"/>				
Field 5: <input type="text" value="Snow/Rain EQ Factor"/>				
Field 6: <input type="text"/>				
Group 11	Group 12	Group 13	Group 14	Group 15
Group Type: <input type="text"/>	Group Type: <input type="text"/>	Group Type: <input type="text"/>	Group Type: <input type="text"/>	Group Type: <input type="text"/>

The user may now click **<New Page>** to create a new “Data Entry” page or begin data entry by clicking **<Data Entry>** or by first returning to the Cloud Reporter’s “Home Page” screen by clicking **<Cloud Reporter>** from the menu bar and then clicking **<Data Entry>** to access the “Data Entry” pages. The “Data Entry” page will open to the first available page.

The screenshot displays the "Riverdale Water Department Data Entry" interface for the date 2011-01-31. The interface includes a navigation bar with buttons for "<", "<", "New Date", ">", and ">|". A "Page Options" dropdown menu is visible, with a callout box explaining its "Minimize/Expand Page Options" functionality. Below the navigation bar, there are sections for "Page" (containing "Primary Treatment", "Print Page", and "Data Entry Page Setup") and "Data Collector" (containing "Edwin Snow"). A callout box explains the "Select Page", "Select Data Collector", and "Select Analyst" options. The main data entry area is divided into five columns: "Pump Data WTP - Combined Influent", "Chemical System Data Alum", "Water Quality Data WTP - Combined Influent", "Level Data Riverdale Storage Tank", and "CT Data WTP - Clearwell". Each column contains various input fields for data entry. A callout box points to the "WQ Sample Data" dropdown menu in the Water Quality Data column, explaining that clicking it expands for additional support info for the WQ Group. At the bottom, there is a "Weather Data" section with fields for "Weather", "Precipitation (Rain)", "Precipitation (Snow)", "Temperature (Air)", and "Snow/Rain EQ Factor".

2. Using the User Configured Data Entry Screens

As with entering data using the Facility Data screens, the user configured data entry screens are multi-functional and allow the user to 1) create new records, 2) scroll or jump to other records, and 3) edit a record.

1. Create new records. The user may create new records by first clicking the “New Record” button. With the user configured data entry pages there is not a delete option. Records cannot be deleted here. Upon clicking **<New Record>**, all fields will clear except for the Date and water quality Time fields. The Date field will populate and advance by one day and each of the water quality Time fields will populate with the default time that was set up earlier under Public Water System Administration. The user may now input data into the available fields.
2. Scroll through or jump to records for other selected dates. The user may view records for other dates by using the scroll buttons on the screen and/or by jumping to a record by either clicking the Date field directly or using the dropdown menu for the Date field and then finding the desired date to view.
3. Edit data in a record for a selected date. The user may edit any data in a record for a selected date by first scrolling to the date of the record that is to be edited, and then changing the value or adding additional information to the record.

There is a “Page Options” section on the user configured Data Entry pages. This section may be expanded or hidden by clicking the toggle arrow that is adjacent to the title “Page Options”. Expanding this section gives the user the following options:

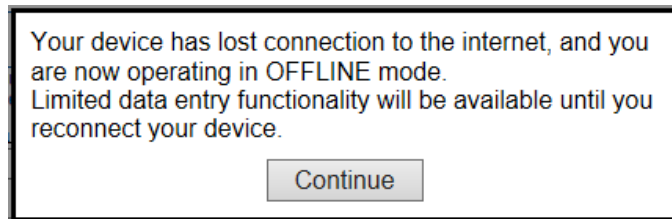
1. Clicking the <Page> button (green button located just below the title “Page”) opens a list of available user configured Data Entry pages. The user may select any one of the pages by clicking the page name.
2. Clicking the <Data Entry Page Setup> button brings the user to the “Data Entry Page Setup” screen as shown and discussed above. The User may create a new page, or using the dropdown menu by the Page name, the user may select to edit, delete or change its name of any page.
3. Clicking either the <Select a Data Collector> or <Select an Analyst> button opens a list of people who are available as a data collector or a laboratory analyst. The lists include both present and previously registered users and any non-registered users or entities that have been setup. **Note: The data collector’s name and/or analyst’s name must be selected before data in a field group is added. Once data is entered in a group, the data collector’s name or analyst’s name cannot be subsequently added. If a data collector or analyst must be added, the user may either delete an associated data record or they may be added under the Facility Data section.**

Under each Water Quality Data Entry Group there is an Expand button titled “WQ Sample Data” that when clicked reveals additional support data fields. When a value is entered, it is applied to all the water quality contaminants in that group. Presently, Lab Sample ID is the only available support field.

3. Off-line Data Entry

A unique feature of the user configured data entry pages is its capability to be used in both an “On-line” and an “Off-line” mode when the internet browser that’s being used has “Off-line” capabilities. This feature allows the user to enter data whether or not they have an internet connection. To the water works operator this means that whether in the office, in the pipe gallery of a water treatment facility or in a remote area of your community, without any internet or cell phone access, data can still be entered into the data entry screens.

When the user’s data entry device recognizes that internet access has been lost, the program will automatically alert the user to the loss of service with the following on-screen message:



By clicking <Continue> the user is working in the Off-line mode. While in the Off-line mode, the user only has data entry capabilities with the Data Entry screens. All Data Entry pages that were previously configured may be accessed and all types of data may be entered. The user will not have access to previously entered data and will not have the capability to edit previously entered data. Also the user will be limited to entering data for only today and yesterday. Once in the Off-line mode, the program will automatically open the Off-line data entry screens as seen in the figure below. ***SEE NOTE AT THE END OF THIS SECTION!**

Riverdale Water Department Data Entry

2014-07-03

Page

Main Street Pumping Station1

Select either today’s date or yesterday’s date

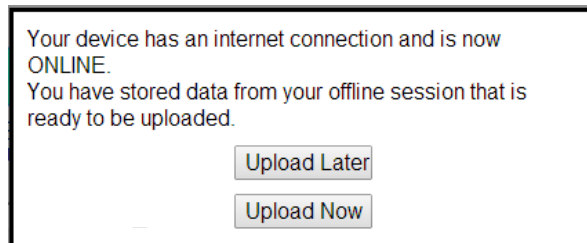
Click to select other Data Entry Pages

Pump Data Main Street Pumping Station	Chemical System Data NaOH - Main Street Station	Water Quality Data Main Street Pumping Station	Level Data Fitchburg Rd. Storage Tank	Level Data Highland St. Storage Tank
Totalizer/Pumpage: <input type="text"/>	Initial: <input type="text"/>	Time: <input type="text" value="08:00"/>	Level: <input type="text"/>	Level: <input type="text"/>
GPM: <input type="text"/>	Before Fill: <input type="text"/>	pH Analyzer: <input type="text"/>		
PSI: <input type="text"/>	After Fill: <input type="text"/>			
Totalizer/Hours: <input type="text"/>	Stroke1: <input type="text"/>			
	Comments: <input style="height: 40px;" type="text"/>			
No Data Type Selected	No Data Type Selected	No Data Type Selected	No Data Type Selected	No Data Type Selected
No Data Type Selected	No Data Type Selected	No Data Type Selected	No Data Type Selected	No Data Type Selected

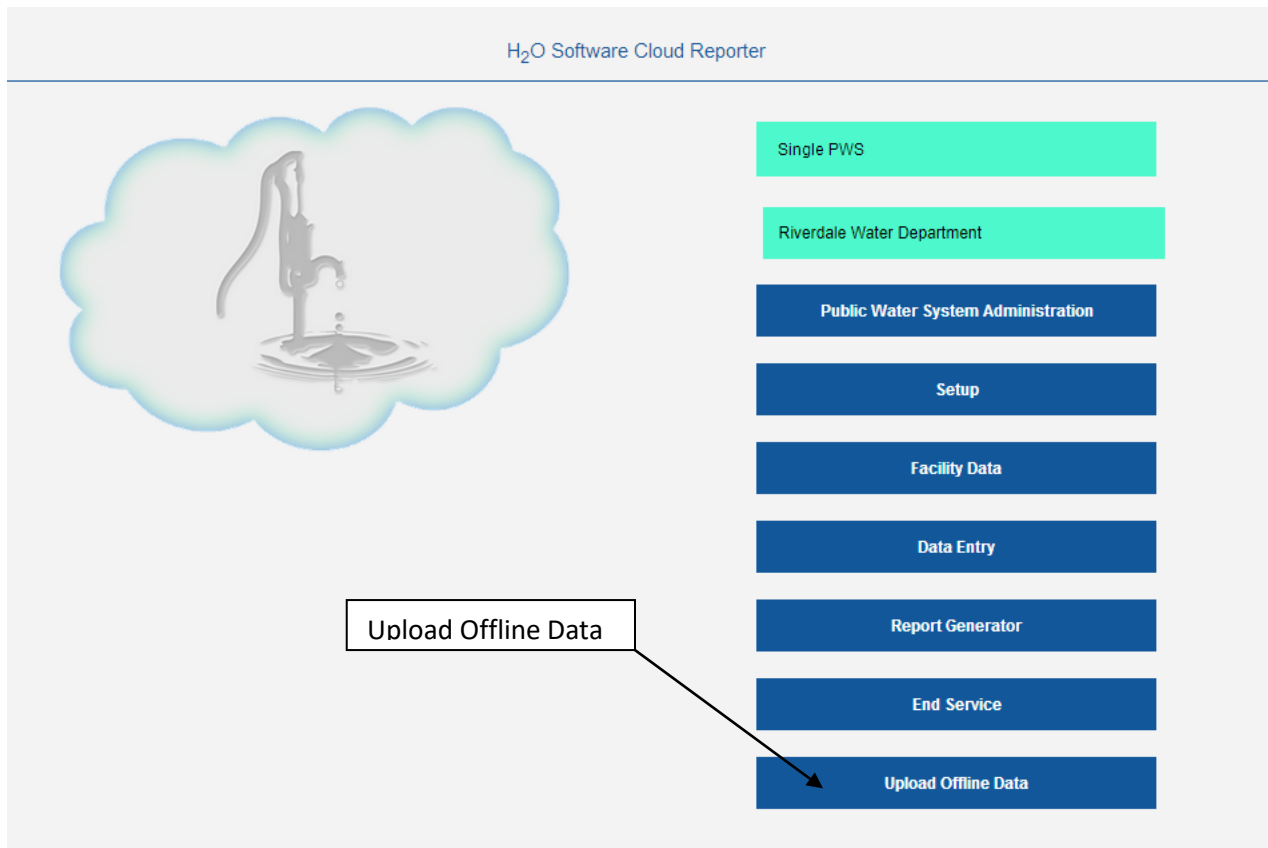
The user may enter data directly into the appropriate field and then “Tab” to the next field, enter data, then “Tab” and so forth. When all the data has been entered, the user may select another page and continue entering data.

Note: All data that is entered while the device is Off-line is stored in the devices cache or temporary memory. Do not clear cache until this data is uploaded to the web, or the data will be permanently lost.

If the data entry device detects that internet access has been restored, the program will automatically alert the user that internet service has been restored with the following on-screen message:



We recommend that you upload your data as soon as you have a **GOOD** internet connection. If you do have a good connection when this message appears, click <Upload Now>. If you don't or don't know whether you have a good internet connection, click <Upload Later>. If the user selects to upload later, the following new button will appear at the bottom of the “Home Page”:
Upload Offline Data.



Remember to Upload Off-line data as soon as possible. All data that is entered while the device is Off-line is stored in the devices cache or temporary memory. Do not clear cache until this data is uploaded to the web, or the data will be permanently lost.

When the user initiates Data Upload, the procedure is the same whether initiated by clicking **<Upload Now>** from the on-screen message or by clicking **<Upload Offline Data>** from the Home Page. The following screen will open that shows the user all the off-line data that is stored on the device and is ready to be uploaded. Click **<Upload Now>** located at the top of the screen, above status. **Note:** On some devices you may need scroll to the right to see the **<Upload Now>** button.

Number	Date	Group Type	Field Type	New Value	Current Value	Status
						<input type="button" value="Upload Now"/>
1	2014-01-03	Pump Data	Totalizer_Flow	6005273		Ready to Upload!
2	2014-01-03	Pump Data	gpm	322		Ready to Upload!
3	2014-01-03	Pump Data	psi	90		Ready to Upload!
4	2014-01-03	Pump Data	Totalizer_Hrs	6.75		Ready to Upload!
5	2014-01-03	Chemical System Data	Initial	31.25		Ready to Upload!
6	2014-01-03	Chemical System Data	Stroke1	65		Ready to Upload!
7	2014-01-03	Water Quality Data	pH Analyzer	6.97		Ready to Upload!
8	2014-01-03	Level Data	Level1	31.5		Ready to Upload!
9	2014-01-03	Level Data	Level1	18.1		Ready to Upload!
10	2014-01-03	Pump Data	Totalizer_Flow	9081199		Ready to Upload!
11	2014-01-03	Pump Data	gpm	267		Ready to Upload!
12	2014-01-03	Pump Data	psi	104		Ready to Upload!
13	2014-01-03	Pump Data	Totalizer_Hrs	7.0		Ready to Upload!
14	2014-01-03	Chemical System Data	Initial	87.13		Ready to Upload!
15	2014-01-03	Chemical System Data	Stroke1	55		Ready to Upload!
16	2014-01-03	Water Quality Data	pH Analyzer	7.25		Ready to Upload!
17	2014-01-03	Pump Data	Totalizer_Flow	293641.8		Ready to Upload!
18	2014-01-03	Pump Data	gpm	0		Ready to Upload!
19	2014-01-03	Pump Data	psi	104		Ready to Upload!
20	2014-01-03	Pump Data	Well_Level	48.8		Ready to Upload!
21	2014-01-03	Pump Data	Totalizer_Hrs	0.0		Ready to Upload!
22	2014-01-03	Chemical System Data	Initial	37.0		Ready to Upload!
23	2014-01-03	Chemical System Data	Comments	Installed new Chemfeed pump on 1/3/14.		Ready to Upload!
24	2014-01-03	Water Quality Data	pH Analyzer	6.53		Ready to Upload!
25	2014-01-03	Pump Data	Totalizer_Flow	2885937		Ready to Upload!
26	2014-01-03	Pump Data	gpm	0		Ready to Upload!
27	2014-01-03	Pump Data	psi	102		Ready to Upload!
28	2014-01-03	Pump Data	Totalizer_Hrs	0.0		Ready to Upload!
29	2014-01-03	Chemical System Data	Initial	12.25		Ready to Upload!
30	2014-01-03	Pump Data	Totalizer_Flow	64945609		Ready to Upload!
31	2014-01-03	Pump Data	gpm	0		Ready to Upload!
32	2014-01-03	Pump Data	psi	102		Ready to Upload!
33	2014-01-03	Pump Data	Totalizer_Hrs	0.0		Ready to Upload!
34	2014-01-03	Chemical System Data	Initial	39.75		Ready to Upload!

As the upload procedure continues, the user will view the upload status of each data item. As soon as the data is uploaded, the status will change from an orange “Ready to Upload” to a green “Upload Successful”.

Number	Date	Group Type	Field Type	New Value	Current Value	Status
1	2014-01-03	Pump Data	Totalizer_Flow	6005273		Upload Successful!
2	2014-01-03	Pump Data	gpm	322		Upload Successful!
3	2014-01-03	Pump Data	psi	90		Upload Successful!
4	2014-01-03	Pump Data	Totalizer_Hrs	6.75		Upload Successful!
5	2014-01-03	Chemical System Data	Initial	31.25		Upload Successful!
6	2014-01-03	Chemical System Data	Stroke 1	65		Upload Successful!
7	2014-01-03	Water Quality Data	pH Analyzer	6.97		Upload Successful!
8	2014-01-03	Level Data	Level1	31.5		Upload Successful!
9	2014-01-03	Level Data	Level1	18.1		Upload Successful!
10	2014-01-03	Pump Data	Totalizer_Flow	9081199		Upload Successful!
11	2014-01-03	Pump Data	gpm	267		Upload Successful!
12	2014-01-03	Pump Data	psi	104		Upload Successful!
13	2014-01-03	Pump Data	Totalizer_Hrs	7.0		Ready to Upload!
14	2014-01-03	Chemical System Data	Initial	87.13		Ready to Upload!
15	2014-01-03	Chemical System Data	Stroke 1	55		Ready to Upload!
16	2014-01-03	Water Quality Data	pH Analyzer	7.25		Ready to Upload!
17	2014-01-03	Pump Data	Totalizer_Flow	293641.8		Ready to Upload!
18	2014-01-03	Pump Data	gpm	0		Ready to Upload!
19	2014-01-03	Pump Data	psi	104		Ready to Upload!
20	2014-01-03	Pump Data	Well_Level	48.8		Ready to Upload!
21	2014-01-03	Pump Data	Totalizer_Hrs	0.0		Ready to Upload!
22	2014-01-03	Chemical System Data	Initial	37.0		Ready to Upload!
23	2014-01-03	Chemical System Data	Comments	Installed new Chemfeed pump on 1/3/14.		Ready to Upload!
24	2014-01-03	Water Quality Data	pH Analyzer	6.53		Ready to Upload!
25	2014-01-03	Pump Data	Totalizer_Flow	2885937		Ready to Upload!
26	2014-01-03	Pump Data	gpm	0		Ready to Upload!
27	2014-01-03	Pump Data	psi	102		Ready to Upload!
28	2014-01-03	Pump Data	Totalizer_Hrs	0.0		Ready to Upload!
29	2014-01-03	Chemical System Data	Initial	12.25		Ready to Upload!
30	2014-01-03	Pump Data	Totalizer_Flow	64945609		Ready to Upload!
31	2014-01-03	Pump Data	gpm	0		Ready to Upload!
32	2014-01-03	Pump Data	psi	102		Ready to Upload!
33	2014-01-03	Pump Data	Totalizer_Hrs	0.0		Ready to Upload!
34	2014-01-03	Chemical System Data	Initial	39.75		Ready to Upload!
35	2014-01-03	Chemical System Data	Stroke 1	70		Ready to Upload!

Note: Once again, we recommend that you upload your data only when you have a GOOD internet connection. If you do not, or do not know whether you have a good internet connection, do not try to upload because you may lose data if the internet connection is lost during the upload procedure. Click <Upload Later> if you are unsure about your internet connection. *Also, if you are entering data at a location where the internet connection may be intermittent, it is strongly recommended that you put your device on "Airplane Mode" until you know you have a steady internet connection.

When complete, the user can return to the "Home Page" by clicking <Cloud Reporter> either from the menu bar or dropdown menu under the user's name.

4. Uploading External Data

Data from external sources may be imported or uploaded to the cloud in one of four .csv file formats. From the home page, they are accessed by first clicking "Import External Data" and then, one of three pushbuttons, depending on the type data being uploaded. These buttons are:

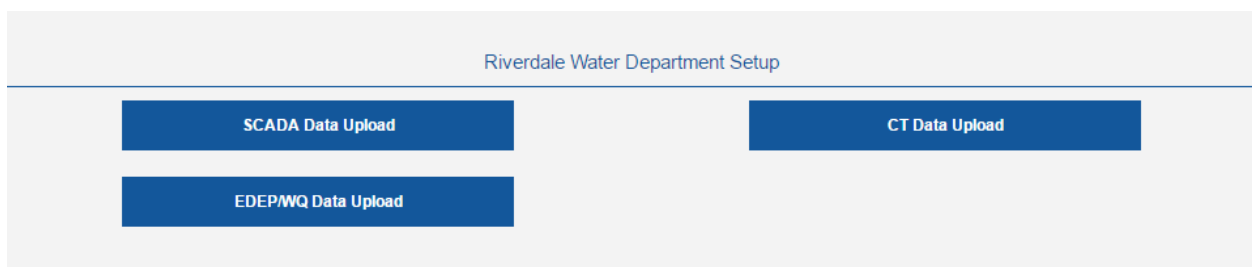
- **CT Data Upload** - .csv formatted data files MUST have the following file headers: "Date", "Time", "CTFlow", "CTLevel", "CTChlorine", "CTpH", "CTTemp", "POEChlorine", "DisinfectionBasin"

- **EDEP/WQ Data Upload** - .csv formatted data files MUST have the following EDEP file headers: "TEXTLOCATIONNAME", "SAMPLELOCATION", "SAMPLECOLLECTIONSTARTDATE", "SAMPLECOLLECTIONSTARTTIME", "ANALYTENAME", "ANALYTEMEASUREMENTVALUE", "ROUTINEINDICATOR", "ANALYTICALMETHODIDENTIFIER", "PRIMARYLABIDENTIFIER", "LABSAMPLEIDENTIFIER", "ANALYSISSTARTDATE", "ANALYSISSTARTTIME", "SAMPLERINDIVIDUALFULLNAME", "SAMPLEACIDIFYINDICATOR", "RESUBMITINDICATOR", "RESUBMISSIONREASON", "ORIGINALSAMPLECOLLECTIONDATE", "SUBCONTRACTEDLABINDICATOR", "LABIDENTIFIER", "MDLMEASUREMENTVALUE"
- **SCADA Data Upload** – Whereas the “CT Data Upload” and “EDEP/WQ Data Upload” each require a defined file structure for upload to occur, the “SCADA Data Upload” does not. Rather, the upload file structure must be set up. Generally, there are two types of setups, defined broadly as either a vertical data table upload or a horizontal data table upload.

A vertical data table upload is set up when all the SCADA data, ready for upload, is all populated from a three or four column table, where each piece of data has a unique time stamp. The only difference between a three or four column format is how the time stamp is formatted, with either one or two date and time columns. There are three options, one column with “DateAndTime”, two columns, one with “Date” and one with “Time”, and one column with just date. In addition to the Date and Time column(s), there is a tag name column and there is a Value column. Each of these columns may have a unique user defined name. For example, the tag name column may be called “TagName”, “Tag Name”, or “Tag”.

A horizontal data table upload is set up when the SCADA data, is all populated from rows of data with a common, one or two column, date and time format and then multiple columns containing unique pieces of SCADA data, each with its column header having the data’s respective tag name. For this setup, one or two columns may be used as described above for the date and time format. Then multiple columns may follow, each with a unique tag name for the column and populated with the tag’s respective data values below. The tag names in each of these columns must have been pre-defined as describe in the “SCADA Tag Setup” section.

To upload SCADA data, first click the <Import External Data> button, located on the Home page to open the “Import External Data” page.



Click the <SCADA Data Upload> button to open the “SCADA Data Upload” page.

Riverdale Water Department SCADA Upload

Upload Settings

Upload Settings Group: ▼

Edit Group Name

New Settings Group

Date/Time Column Options: ▼

Date/Time Column Name:

Tag Layout: ▼

Tag Name Column Name:

Value Column Name:

Data files MUST be in the ".csv" format.

Data to Upload:

Select File

Upload Data

Click <Select File>, a MS Windows browsing window will appear. Browse to find the SCADA data .csv file to be uploaded. Select the file. The file name will appear in the “Data to Upload” field. Click <Upload Data” to upload the data to the cloud.

Riverdale Water Department SCADA Upload

Upload Settings

Upload Settings Group: ▼

Edit Group Name

New Settings Group

Date/Time Column Options: ▼

Date/Time Column Name:

Tag Layout: ▼

Tag Name Column Name:

Value Column Name:

Data files MUST be in the ".csv" format.

Data to Upload:

Select File

Upload Data

To upload CT data, first click the <Import External Data> button, located on the Home page to open the “Import External Data” page.

Riverdale Water Department Setup

SCADA Data Upload

CT Data Upload

EDEP/WQ Data Upload

Click the <CT Data Upload> button to open the “CT Data Upload” page.

Riverdale Water Department CT Upload

Upload Directions

On this page you will be able to upload 1 minute data directly into the database. In order for this to be successful, keep in mind the following requirements.

- Data files MUST be in the ".csv" format.
- Data files MUST have the following headers: "Date", "Time", "CTFlow", "CTLevel", "CTChlorine", "CTpH", "CTTemp", "POEChlorine", "DisinfectionBasin"

Data to Upload:

[Select File](#)

[Upload Data](#)

Click <Select File>, a MS Windows browsing window will appear. Browse to find the CT data .csv file to be uploaded. Select the file. The file name will appear in the "Data to Upload" field. Click <Upload Data" to upload the data to the cloud.

Riverdale Water Department CT Upload

Upload Directions

On this page you will be able to upload 1 minute data directly into the database. In order for this to be successful, keep in mind the following requirements.

- Data files MUST be in the ".csv" format.
- Data files MUST have the following headers: "Date", "Time", "CTFlow", "CTLevel", "CTChlorine", "CTpH", "CTTemp", "POEChlorine", "DisinfectionBasin"

Data to Upload:

[Select File](#)

[Upload Data](#)

To upload eDEP/WQ data, first click the <Import External Data> button, located on the Home page to open the "Import External Data" page.

Riverdale Water Department Setup

SCADA Data Upload

CT Data Upload

EDEP/WQ Data Upload

Click the <EDEP/WQ Data Upload> button to open the "eDEP/WQ Data Upload" page, shown on the next page.

Riverdale Water Department Water Quality Upload

Upload Directions

On this page you will be able to upload water quality data directly into the database. In order for this to be successful, keep in mind the following requirements.

- Data files MUST be in the ".csv" format.
- Data files MUST have the following EDEP headers:
"TEXTLOCATIONNAME", "SAMPLELOCATION",
"SAMPLECOLLECTIONSTARTDATE",
"SAMPLECOLLECTIONSTARTTIME", "ANALYTENAME",
"ANALYTEMEASUREMENTVALUE", "ROUTINEINDICATOR",
"ANALYTICALMETHODIDENTIFIER", "PRIMARYLABIDENTIFIER",
"LABSAMPLEIDENTIFIER", "ANALYSISSTARTDATE",
"ANALYSISSTARTTIME", "SAMPLERINDIVIDUALFULLNAME",
"SAMPLEACIDIFYINDICATOR", "RESUBMITINDICATOR",
"RESUBMISSIONREASON", "ORIGINALSAMPLECOLLECTIONDATE",
"SUBCONTRACTEDLABINDICATOR", "LABIDENTIFIER",
"MDLMEASUREMENTVALUE"

Data to Upload:

Select File

Upload Data

Click <Select File>, a MS Windows browsing window will appear. Browse to find the eDEP data .csv file to be uploaded. Select the file. The file name will appear in the "Data to Upload" field. Click <Upload Data" to upload the data to the cloud.

Riverdale Water Department Water Quality Upload

Upload Directions

On this page you will be able to upload water quality data directly into the database. In order for this to be successful, keep in mind the following requirements.

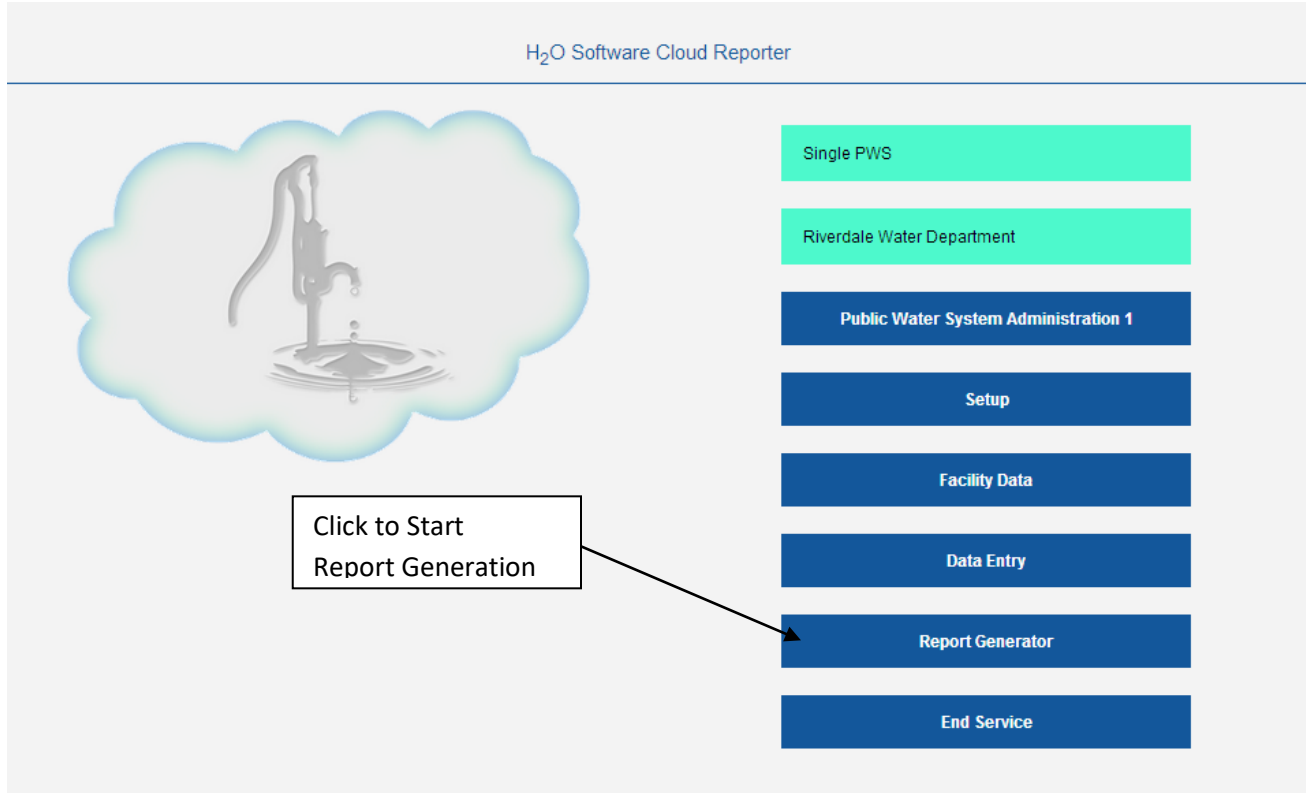
- Data files MUST be in the ".csv" format.
- Data files MUST have the following EDEP headers:
"TEXTLOCATIONNAME", "SAMPLELOCATION",
"SAMPLECOLLECTIONSTARTDATE",
"SAMPLECOLLECTIONSTARTTIME", "ANALYTENAME",
"ANALYTEMEASUREMENTVALUE", "ROUTINEINDICATOR",
"ANALYTICALMETHODIDENTIFIER", "PRIMARYLABIDENTIFIER",
"LABSAMPLEIDENTIFIER", "ANALYSISSTARTDATE",
"ANALYSISSTARTTIME", "SAMPLERINDIVIDUALFULLNAME",
"SAMPLEACIDIFYINDICATOR", "RESUBMITINDICATOR",
"RESUBMISSIONREASON", "ORIGINALSAMPLECOLLECTIONDATE",
"SUBCONTRACTEDLABINDICATOR", "LABIDENTIFIER",
"MDLMEASUREMENTVALUE"

Data to Upload:

Select File

Upload Data

REPORT GENERATION



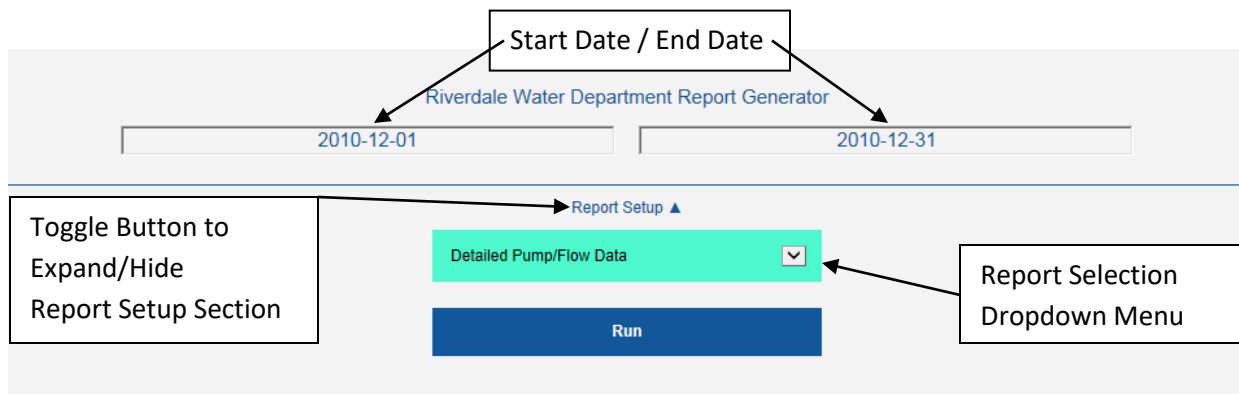
Report Generation

<Report Generator>

In the H₂O Cloud Reporter, reports are all created in either a “.PDF” format or in an Excel .csv file. How these reports are viewed on the screen may differ depending on the user’s data entry device and the browser that is being used. Some browsers do not support “.PDF” report generation. Internet Explorer, Goggle Chrome, Firefox Mozilla, and Safari all do support “.PDF” report generation. When a report is generated, some devices display the report immediately on the screen while other devices may save the report to a file folder. The user should check to see how their device handles reports. Microsoft Excel is required to generate all Export Data reports.

Report Generation begins by first clicking the **<Report Generator>** button. This action opens the “Report Generator” screen as seen in the figure below.

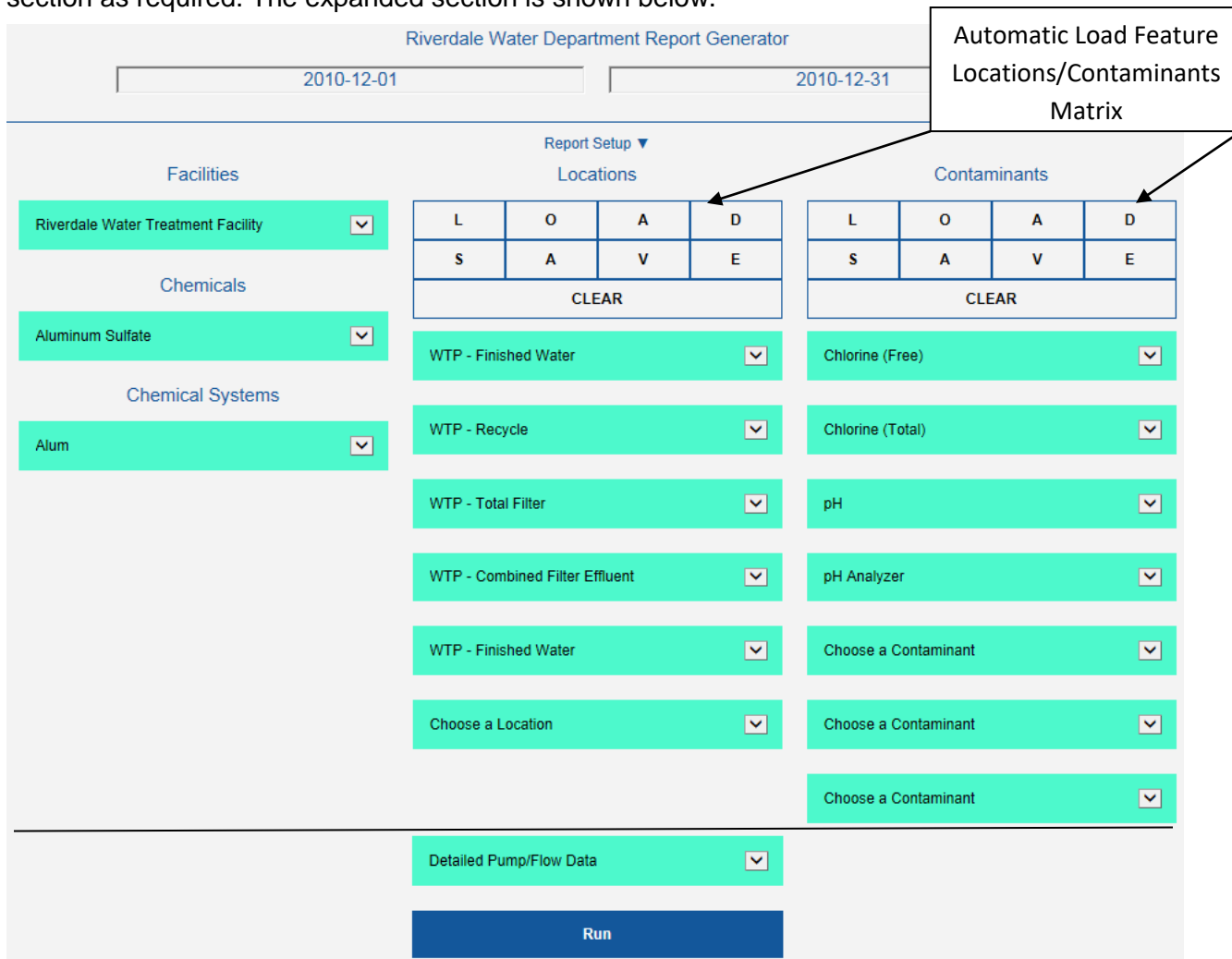
The “Report Generator” screen is the center for previewing and printing all the reports that are pre-configured in the H₂O Cloud Reporter. Available reports are accessed using the Report Selection dropdown menu. Generally, reports on the selection list are grouped by the type of report.



The reports include both universal process and water quality reports, and regulatory reports that are usually unique to the reporting state. If there are unique reports available for a state, the report will populate based on the state that the Public Water Supply is located.

Report Setup

Setup information required to run a report differs from report to report. All reports require that a date range be set. For example, as seen above the Start Date is set as 12/01/2010 and the End Date is set as 12/31/2010. Beyond this, the user must access the Report Setup section of this screen by clicking the Report Setup toggle arrow. This will either expand the section or hide the section as required. The expanded section is shown below.



The expanded section of the Report Generator screen has three columns. In the first column, the user must select a facility name in the field below Facilities. This field is also required to be populated for all reports. Also, in this column a chemical name and chemical system name may be selected. These fields are required for any chemical feed report.

The second column is the Locations column. It is where the user selects one or more location names required to run some reports. The user may set up to six (6) locations, individually in each of the six location fields. Up to four groups of locations that are used regularly may be saved for later easy access using the column's LOAD/SAVE matrix. Before saving a group of locations, the user must first select up to six locations to be saved. Once selected, the first group is saved by clicking <S> in "SAVE" on the matrix, the second by clicking <A>, the third by clicking <V>, and the fourth by clicking <E>. Each of the four location groups may now be loaded. The first group is loaded by clicking <L> in "LOAD" on the matrix, the second by clicking <O>, the third by clicking <A>, and the fourth by clicking <D>.

The third column is the Contaminants column. It is where the user selects one or more contaminant names required to run some reports. The user may select up to six (6) contaminants, individually in each of the six contaminant fields. Up to four groups of contaminants that are used regularly may be saved for later easy access using the column's LOAD/SAVE matrix. Before saving a group of contaminants, the user must first select up to six contaminant names to be saved. Once selected, the first group is saved by clicking <S> in "SAVE" on the matrix, the second by clicking <A>, the third by clicking <V>, and the fourth by clicking <E>. Each of the four location groups may now be loaded. The first group is loaded by clicking <L> in "LOAD" on the matrix, the second by clicking <O>, the third by clicking <A>, and the fourth by clicking <D>.

The tables starting on page 70 and the Additional Notes or Instructions for Specific Reports that follow show the setup requirements for each report. As more reports become available, the user is encouraged to add to this table.

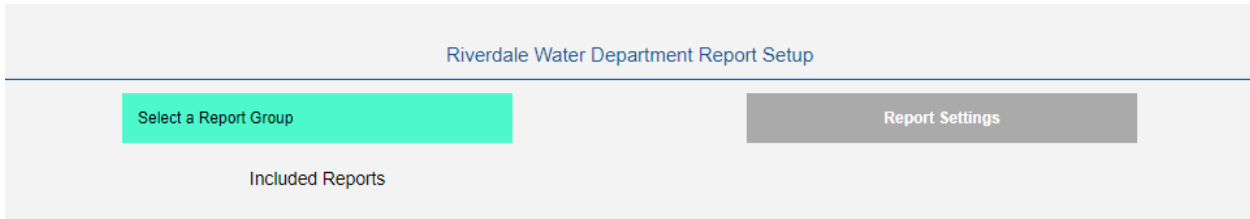
Generate Report

With report Setup complete, the user completes report generation by clicking the report's respective pushbutton.

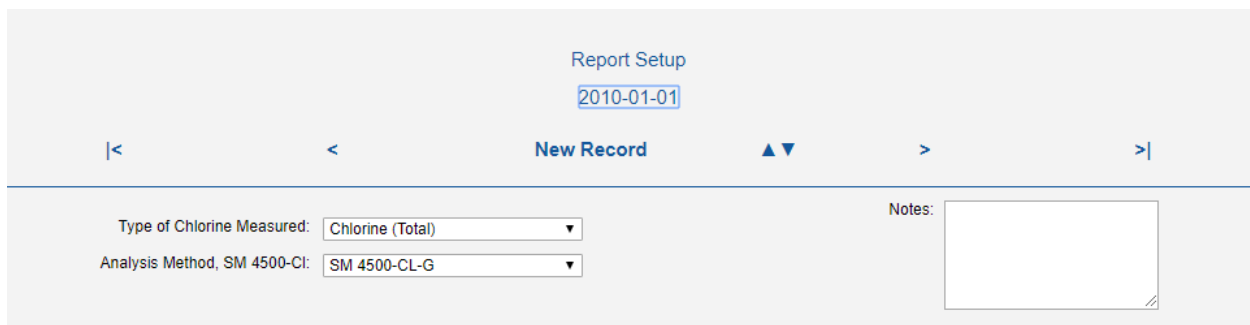
Special Reports

Special Reports are required by some regulatory reports to normally populate header and sub-header fields that may change on a monthly basis. Special Reports are required for the following regulatory reports: Chlorine/Chloramination, Fluoride, DBP Stage 2 – Worksheet, DBP Stage 2_2 – Compliance, Bacteriological, Filter Monitoring Compliance (SWTR G), CCR DBP Contaminants, CCR Microbiological Contaminants, Turbidity Individual Turbidity Monitoring (Form F).

There is one Special Report record associated, respectively with each monthly regulatory report as required. The initial Special Report record is set up manually by first clicking on <Administration and Setup> from the “Home” page. From the “Administration and Setup” page click <Special Report>. This will open the “Special Report” page.



Select the desired Report Group by clicking <Select a Report Group> and then selecting the report group. For example select “Chlorine/Chloramination” and then click <Report Settings>. This will open the “Report Settings” page for the “Chlorine/Chloramination” report.



The header fields required for this report include the type of chlorine used, the method of analysis and any notes you may want to add to the monthly (or quarterly) report. After the initial record is created, subsequent records are automatically generated using the previous months data. If a change to the monthly “Special Report” data is required, access the report via the Special Report setup.

Report Tables

Report	Date Range	Facility Name	Chemical Name	Chemical System Name	Locations Up to	Contaminants Up to	Special Instructions
Pump and Flow Reports							
Annual Pump/Flow	X	X			6-Req		
Detailed Pump/Flow	X	X			1-Req		
Combined Pump/Flow	X	X			6		
Summary Operational	X	X-Opt	X-Opt	X-Opt	6-Opt	6-1Req	
UnAccountedForWater	X	X			1-Req		Location must=UnAccountedForWater
Chemfeed Reports							
Detailed Chemical Feed	X	X	X	X			
State Chemical Feed	X	X-Opt	X-Opt	X-Opt			
Fluoride - Daily	X	X	X	X			X=Fluoride Chemical and Fluoride System. Special Report must be complete for each month and System
Fluoride - Weekly	X	X	X	X			
Fluoride – Split Sample	X	X	X	X			
DBP Reports							
Chlorine/Chloramination	X	X					Special Report must be completed for each quarter. See Special Report Inst.
Disinfection-By-Product DBP-Stage 2 - Worksheet	X	X					Start and End Dates must be first and last day of the last month in the quarter. Exp:03/01/2017 – 03/31/2017 Special Report must be completed for each quarter. See Special Report Inst.
Disinfection-By-Product DBP-Stage 2_2 – Compliance	X	X					Start and End Dates must be first and last day of the last month in the quarter. Exp:03/01/2017 – 03/31/2017 See Special Report Instructions.

Report	Date Range	Facility Name	Chemical Name	Chemical System Name	Locations upto	Contam-inants upto	Special Instructions
Water Quality Reports							
Bacteriological	X	X					Special Report must be completed for each quarter. See Special Report Inst.
Water Quality (WQ)	X	X			6	6	
Detected Contaminants (All)	X	X					Contaminants must have Detection Limit set
Detected Contaminants (Distr)	X	X					
Consumer Reports							
CCR–All Contaminants	X						For CCR Contaminants to be reported, each Water Quality record must have a Detection Limit, a Method of Analysis, and be analyzed by a certified laboratory
CCR-All Regulated Contm.	X						
CCR-All UnRegulated Contm	X						
CCR-DBP Contaminants	X						
CCR-Microbiological Contm	X						
CCR-Reg InOrganic Contm	X						
CCR-Reg Radio Active Contm	X						
CCR-Synthetic Organic Contm	X						
CCR-Reg Volatile Organic	X						
CT and Turbidity Reports							
CT Determination for Filtered Systems - 1 Seq (Form I)	X	X-Opt			1-Opt		Enter Facility Name and CT Basin Name if only one CT report is required
CT Determination for Filtered Systems -multi Seq (SWTR H)	X	X					A CT system setup must be completed for reports to run. See Setup instructions. Best report results occur when 1-Minute data is collected and uploaded.
CT Determination for GWR Systems (GWR CT1)	X	X-Opt			1-Opt		
CT Determination for GWR Systems 2 (GWR CT2)	X	X-Opt			1-Opt		

Report	Date Range	Facility Name	Chemical Name	Chemical System Name	Locations upto	Contam-inants upto	Special Instructions
CT and Turbidity Reports Cont.							
CT Determination for GWR Systems 2C (GWR CT2C)	X	X-Opt			1-Opt		See previous Special Instructions and GWR CT Required by Central Region
Filter Monitoring Compliance (SWTR G)	X	X-Opt			1-Opt		Location of Combined Filter Effluent Turbidity Site. A Filter system setup must be completed for reports to run.
Turbidity Data for Filtered Systems (SWTR F)	X	X-Opt			1-Opt		
Turbidity – Individual Filter Monitoring (SWTR J)	X	X			6-Max		Location Names for Individual Filters. If more than 6 Filter, then run again
Level Reports							
Miscellaneous Reports							
PWS Weather	X						
Export Reports to .csv Excel or .tab text files							
Pump/Flow Data (All) Daily	X						
Pump/Flow Data (Select) Daily	X	X			6		
Chemfeed Data (All) 15-Min	X						
Chemfeed Data (All) Daily	X						
Chemfeed Data (Select) 15-Min	X	X		1			
Chemfeed Data (Select) Daily	X	X		1			
CCR Data (All)	X						Each WQ record must have a Detection Limit, a Method of Analysis, and be analyzed by a cert. laboratory
CCR Data (Detected)	X						
CT Data (All) – 1 Hour	X						
CT Data (All) – 1 Minute							

Report	Date Range	Facility Name	Chemical Name	Chemical System Name	Locations upto	Contam-inants upto	Special Instructions
Export Reports to .csv Excel or .tab text files Cont.							
CT Data (Select) – 1 Hour	X	X			1		
CT Data (Select) – 1 Minute	X	X			1		
eDEP Upload Data - Bacteria	X						Report exported as a tab delimited text file for uploading to eDEP. Before uploading report, verify that all data in fields is accurate. This best viewed by first saving the text file and then opening the text file in Excel. When opening the file Excel will step you through a wizard to open the file. See Additional Report Instructions. Below.
Filter Data (All) – 15 Minute	X						
Filter Data (Select) – 15 Min.	X	X			6		
Level Data (All) - Daily	X						
Level Data (Select) - Daily	X	X			6		
Water Quality Data (All)	X						
Water Quality Data (All) - Uploaded	X						
Water Quality Data (Selected)	X				6	6	
Tracking Data - Chemfeed	X						
Tracking Data – CT – 1 Hour							
Tracking Data - Level							
Tracking Data – Pump/Flow							
Tracking Data – Water Quality							

Report	Date Range	Facility Name	Chemical Name	Chemical System Name	Locations upto	Contam-inants upto	Special Instructions

Additional Notes or Instructions for Specific Reports

Bacteriological Report

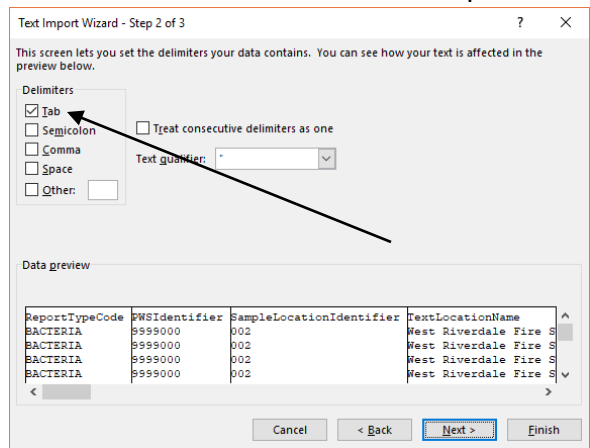
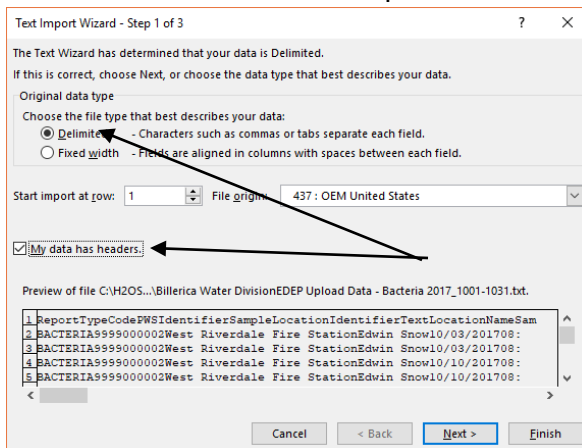
1. The PWS ID, PWS Name, City/Town and Class fields are each populated by information found under “Administration and Setup” and “Public Water System Administration”.
2. The Primary Lab MA Cert.#, Primary Lab Name, Analysis Lab MA Cert.#, Analysis Lab Name and Subcontracted? fields are each populated with information found in the Total Coliform record for the first sample location of the report.
3. All other fields in the Header of the report are populated with information found in the Water Quality Contaminant record for the first sample location of the report that has the information recorded.
4. The Location Code # field is populated with information in the Sample Location Setup for the location.
5. The Analysis Date, default is populated with the Collection Date. The Analysis Time, by default is populated with the Analysis Time of the previous record for the location and Total Coliform or E-coli as the contaminant.

eDEP Upload Data – Bacteria

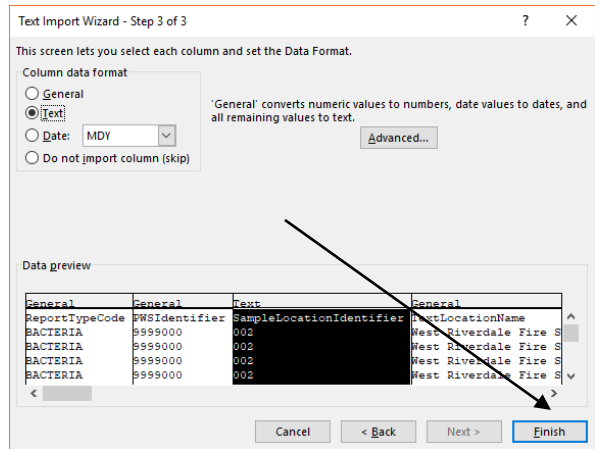
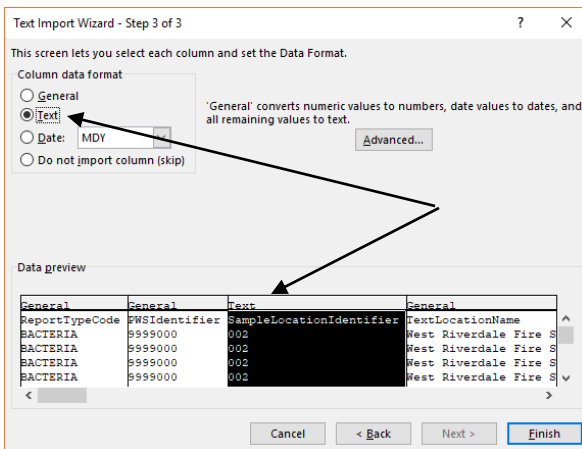
1. This report is required only for those PWS systems that operate a MA certified laboratory and upload reported data electronically to MA-eDEP. The file to be uploaded to eDEP must be in the form of a tab delimited text file and be complete and accurate by eDEP instructions for all required fields.
2. Before uploading report, verify that all data in fields is accurate. This best done by viewing the data in MS-Excel format. Use the following steps to view the data.
 - a. Run the “eDEP Upload Data – Bacteria” report by first clicking “Report Generator” from the Home page. Enter the date range, select the report’s name and click “Run” to generate the report. The report is generated and opens in “Notepad” as a “tab delimited” text file which is the format that is required for uploading data to eDEP. The tab delimited text file is normally viewed in Notepad. Save this text file, as a “.txt” file to a predetermined location in your computer for eDEP upload files.
 - b. Start MS Excel and then browse to the eDEP tab delimited text file that you have previously saved and open the text file in Excel. (**Note:** When browsing to the location where you saved the text file you will not see the file in the selected folder until you change “All Excel Files” to “All Files”).



- c. When opening the file, Excel will automatically start a wizard that will direct you through three steps to open the file. 1) The first step will ask you to “Choose the type of file that best describes your data”. Select “Delimited” if it is not already selected. Also, check “My data has headers” if there is the option available. Click “Next” to move to the second step.



- 2) Under “Delimiters”, check “Tab” if it is not already selected. Click “Next” to move to the third and final step.



- 3) In this step you have the option of defining the type of field that you would like to view your data as in Excel. For example, data in the field “SampleLocationIdentifier” has leading zeros (“0”). Excel will drop leading zeros. To maintain the zeros click on the “General” above the field, and then click “Text” under “Column data format”. The “LabSampleIdentifier” is another that we have identified as sometimes appearing different in Excel. Again, you may change this field to a text field by first clicking on

“General” above the field, and then clicking “Text” under “Column data format”. Click “Finish” to view your report in Excel.

- d. You may improve the viewing of your data in Excel by widening the fields so that you can see all the field names. This is done by first clicking the square corner between column “A” and row “1”. This will highlight the whole spreadsheet. Then move the cursor between two columns, as shown below, until you see a symbol with a black vertical bar and a horizontal double arrow crossing it appear. Double click when it appears. This will widen the fields so you’ll be able to read all the field names.

	A	B	C
1	ReportTy	PWSIdent	SampleLo
2	BACTERIA	9999000	002
3	BACTERIA	9999000	002
4	BACTERIA	9999000	002
5	BACTERIA	9999000	002

	A	B	C
1	ReportTypeCode	PWSIdentifier	SampleLocationIdentifier
2	BACTERIA	9999000	002
3	BACTERIA	9999000	002
4	BACTERIA	9999000	002
5	BACTERIA	9999000	002

3. Now the report is in a format that is easier to read than the text file in Notepad, the user can scan over the data in the columns to verify its integrity. Each column, for which data is required, must be complete with data in each row. Take special note of the following columns:
 - a. Please Note, since a number of fields associated with Water Quality Contaminant sampling usually do not change from sample to sample, the H₂O Cloud Reporter populates by default the following fields for contaminants at a defined location with the most recently recorded value for that contaminant at that location: "RoutineIndicator", "Analytical-MethodIdentifier", "PrimarylabIdentifier", "SampleAcidifyIndicator", "ResubmitIndicator", "ResubmissionReason", "SubcontractedLab-Indicator", "MDLMeasurementvalue", "AnalysisStartTime", "Analytical-MeasurementUnit". If any of these fields were changed from the norm in a previous sampling due to special requirements, then that field will have to be changed back to its normal value in subsequent samplings. For example, if the "RoutineIndicator" for a contaminant at a defined location that normally has a value of "RS" for (routine sample), was changed to "RO" for (repeat original sample) for one sample, by default the "RO" will be populated in the next sampling record. The "RO" must be changed back to "RS".
 - b. AnalysisStartDate – By default, the H₂O Cloud Reporter populates the AnalysisStartDate with the SampleCollectionStartDate. If the Analysis-StartDate differs it must be changed.

- c. AnalysisStartTime – Note, the AnalysisStartTime is populated by default as previously discussed. If it changes due to different sampling circumstances, it cannot be at an earlier time than the SampleCollection-StartTime. For example, presume that a specific contaminant at a defined location is sampled and analysed daily at midnight (0:00:00-Hrs). Then on Tuesday a sample is collected and analysed at 08:00:00-Hrs. Since the AnalysisStartTime is populated by default by the previously recorded time, the sample collected at 08:00:00-Hrs will have 00:00:00-Hrs populated for the AnalysisStartTime. If this is left unchanged, the report will be rejected by eDEP on upload because the AnalysisStartTime cannot be at an earlier time than the SampleCollection-StartTime.
 - d. LabIdentifier (Analyser Lab Identifier) – By default, the H₂O Cloud Reporter populates the “LabIdentifier” field with the “PrimaryLabIdentifier” unless the Sub-Contracted field is checked and the “SubContractedLab-Indicator” is populated with a “Y”. In this case the “LabIdentifier” field will be populated with the value entered in the “LabIdentifier” field for the most recently recorded sample for that contaminant at that location. The PrimaryLabIdentifier and LabIdentifier should only be different if the sample is subcontracted to another laboratory in which case, the “SubContractedLabIndicator” field should have been checked and will be populated with a “Y” instead of the default “N”.
4. Errors found while reviewing the excel spreadsheet cannot be corrected on the spreadsheet. The spreadsheet is only used to help identify errors that may cause a failure when uploading the Tab Delimited file to eDEP. All identified errors must be manually corrected for a water quality sample by
- a. clicking <Facility Data> from the Home page,
 - b. selecting the associated facility,
 - c. clicking <Water Quality Locations and Sampling>,
 - d. selecting the location of the sample to be corrected,
 - e. clicking <Single Contaminant>,
 - f. selecting the Sample Date,
 - g. unlocking any field that is locked,
 - h. scrolling to the Contaminant Name of the sample you need to correct,
 - i. and then correcting the required fields. Be sure you Tab out of any field being corrected.