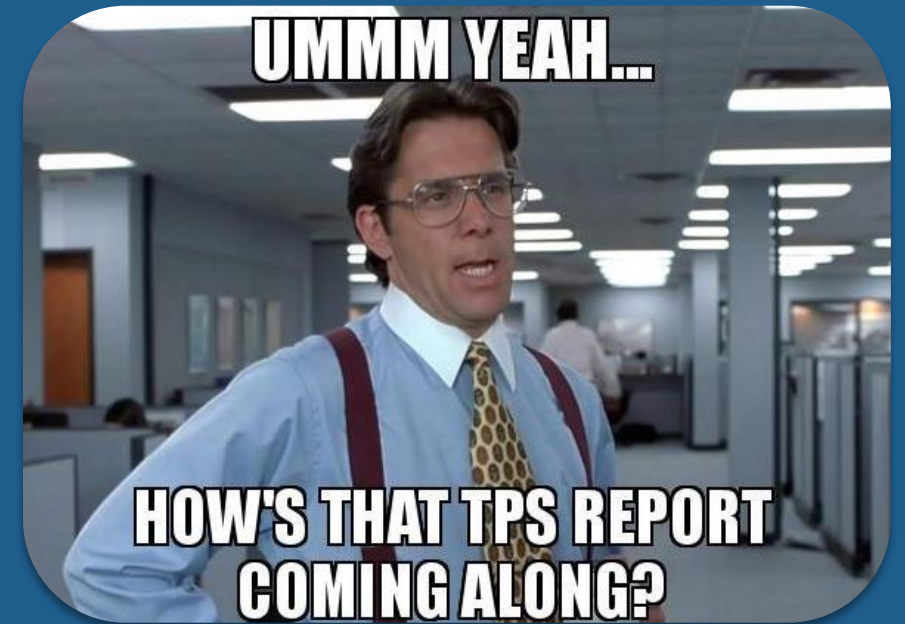


# Get Me That Report!

Grant Gilron | EDUCATION SPECIALIST

Mark Edwards | SENIOR CUSTOMER SUPPORT SPECIALIST

Tom Jurenka | SOLUTIONS ENGINEER





# AGENDA

---

- Can you customize that report please?
- What are some common system reports?:
  - Change List
  - Daily Statistic by Year/Overlaid by Year Chart
  - Inventory
  - Rating Curve
  - Time Series Data Reporting
- How can you enable custom report plugins?
- Where are reports in WebPortal?
- Getting data from the API
- Question and Answers



# Customize Report – Organization Logo

- Upload and display your organization's logo on Springboard's interface as well as system-generated reports... (only Admins!!)

The screenshot shows the 'System Config' sidebar on the left with 'Settings' highlighted. The main content area displays a search for 'icon' and a table of customization options. A yellow arrow points from the 'Settings' menu to the 'Reporting' row in the table.

Group	Key	Value	Description
Customization	OrganizationIcon	ndr-logr	Relative or a in reports th
Reporting	OrganizationIconTemplateDimensions	412x12	Size of the lo setting is no

The screenshot shows the AQUARIUS Time-Series interface. The organization logo 'NEBRASKA Good Life. Great Water. DEPT. OF NATURAL RESOURCES' is displayed in the top right corner, highlighted with a yellow box and an arrow. Below the header, there is a 'Locations' section with a search bar and a list of locations. A 'New Location' button is visible at the bottom left.

Locations

There are 33 locations. You can grant **User Access** by location folder.

Find Locations by Name, Identifi

Location	Parame...	Label	Period	Compu...	Sub-Lo...	Units	Start D...	End Date	Update...	Publish
training01-...	Air Temp	Logger				°C	2013-08-07 ...	2015-09-30 ...	2020-08-18 ...	
training01-...	Discharge	Working				m^3/s	2013-08-07 ...	2015-09-30 ...	2024-06-24...	
training01-complete	Stage   Working	2024-06-24 11:26								
training01-complete	Stage-Discharge   Log Method	2024-03-13 16:37								
training01-complete	Discharge   Daily Mean   Daily   Mean	2024-06-24...								
training01-complete	Discharge Total   Daily Totals   Daily   Total Amoun...									
training01-...	Stage	Compensated				m	2012-07-17 1...	2013-08-08 ...	2020-08-18 ...	
training01-...	Stage	SECONDARY				m	2013-08-07 ...	2014-01-29 ...	2020-08-18 ...	
training01-...	Stage	Vertical Datum NAV...				m	2013-08-07 ...	2015-09-30 ...	2024-06-24...	
training01-...	Stage	Working				m	2013-08-07 ...	2015-09-30 ...	2024-06-24...	
training01-complete	Stage   Logger	2020-08-18 09:17								
training01-complete	Stage   Telemetry	2023-06-23 09:51								
training01-...	Stage	Working (Fill Missing...				m	2013-08-07 ...	2015-09-30 ...	2024-04-10 ...	
training01-complete	Stage   Logger	2020-08-18 09:17								
training01-complete	Stage   Telemetry	2023-06-23 09:51								
training01-...	Stage	test				m	2021-08-07 ...	2021-08-07 ...	2024-03-19 ...	
training01-...	Stage-Disc...	Descriptive Equatio...				m^3/s			2023-10-12 1...	
training01-...	Stage-Disc...	Ronan Rating Model				m^3/s			2024-05-29...	
training01-...	Stage-Disc...	test				m^3/s			2024-03-05...	
training01-...	Stage-River...	stage-area-test				m^2			2023-08-29...	
training01-...	Voltage	Logger Battery				V	2013-08-07 ...	2015-09-30 ...	2020-08-18 ...	



# Customize Report - Headers and Footers

- Customize the Header, Sub header and footer of your reports

**System Config**

- Approval Levels
- Computation Periods
- Computation Types
- Drop-down Lists, Configurable
- Drop-down Lists, Fixed
- Extended Attributes
- Grades
- Location Folders
- Location Types
- Methods
- Parameters
- Plugins, Field Data
- Plugins, Report
- Qualifier Groups
- Qualifiers
- Recurring Reports
- Roles
- Settings

reporting ✕

Group	Key	Value	Description
EventProcessor	Reporting.ReportCreateAction.LimitPercent	50	Maximum perc...
Reporting	GeneratedReportCleanupFrequency	24	Frequency, in nu...
Reporting	GeneratedReportCleanupStartTime	03:00:0	Local server tim...
Reporting	GeneratedReportRetentionPeriod	24	All generated re...
Reporting	GeneratedReportsViewMaxResult	1000	
Reporting	OrganizationIconTemplateDimensions	412x12	Size of the logo ... when this settin...
Reporting	PageFooter	DISCLA	Configurable fo...
Reporting	PageHeader	Aquatic	Configurable pr...
Reporting	PageSubheader	Faster A	Configurable se...
Reporting	RunRecurringReportsCheckFrequency	10	Frequency, in m...
Reporting	RunRecurringReportsCheckStartTime	00:00:0	Local server tim...
Reporting	WaterYearStartMonthOffset	-3	An integer repr...

**NEBRASKA**

Good Life. Great Water.

DEPT. OF NATURAL RESOURCES

Aquatic Informatics Data Management Software - REPORTS ARE COOL!  
Faster Analysis. Better Decisions. With Cool Reports!

**Change List Report**

Changes applied to Stage Working @ Arid River - For Demo Purposes

Aug 15, 2024 | 1 of 2

Period Selected: Entire Record

Source Data: Stage.Working@training01-complete, Arid River COMPLETE (SHW)

Applied Time (+00:00)	From Time (+00:00)	To Time (+00:00)	User	Metadata Type	Operation Type	Comment
2020-08-18 16:07:47	Open	Open	admin	Gap Tolerance	Creation	
2020-08-18 16:07:47	Open	Open	admin	Grade	Creation	
2020-08-18 16:07:47	Open	Open	admin	Interpolation Type	Creation	
2020-08-18 16:07:47	Open	Open	admin	Method	Creation	
2020-08-18 20:28:10	2020-08-18 20:28:10	2020-08-18 20:28:10	grant	Correction	Creation	
2020-08-18 21:03:52	2020-08-18 21:03:52	2020-08-18 21:03:52	grant	Correction	Creation	Override: Moving Average Filter Window: 51. Iterations: 20.
2020-08-18 21:09:11	2020-08-18 21:09:11	2020-08-18 21:09:11	grant	Grade	Creation	
2020-08-18 21:03:52	2020-08-18 21:03:52	2020-08-18 21:03:52	grant	Correction	Deletion	Override: Moving Average Filter Window: 51. Iterations: 20.
2020-08-18 20:28:10	2020-08-18 20:28:10	2020-08-18 20:28:10	grant	Correction	Deletion	
2020-08-18 21:09:11	2020-08-18 21:09:11	2020-08-18 21:09:11	grant	Grade	Deletion	
2023-05-01 16:19:39	2023-05-01 16:19:39	2023-05-01 16:19:39	grant	Correction	Creation	Creating new data due to sensor painting issues. Override: Moving Average Filter Window: 51. Iterations: 20.
2023-05-01 16:26:23	2023-05-01 16:26:23	2023-05-01 16:26:23	grant	Grade	Creation	
2023-05-01 16:27:24	2023-05-01 16:27:24	2023-05-01 16:27:24	grant	Correction	Creation	
2023-05-01 16:31:21	2023-05-01 16:31:21	2023-05-01 16:31:21	grant	Correction	Creation	
2023-05-01 16:35:35	2023-05-01 16:35:35	2023-05-01 16:35:35	grant	Grade	Creation	
2023-06-14 21:25:55	Open	Open	grant	Correction	Creation	Invalid Values (below PZF) ThresholdBelow 1.45
2023-10-25 17:24:42	2023-10-25 17:24:42	2023-10-25 17:24:42	grant	Correction	Creation	Flat line
2023-10-25 17:26:26	2023-10-25 17:26:26	2023-10-25 17:26:26	grant	Correction	Creation	
2023-10-25 17:27:20	2023-10-25 17:27:20	2023-10-25 17:27:20	grant	Correction	Creation	Minor blip corrected
2023-10-25 17:26:26	2023-10-25 17:26:26	2023-10-25 17:26:26	grant	Correction	Creation	Sensor malfunction, offset applied
2023-10-25 17:26:26	2023-10-25 17:26:26	2023-10-25 17:26:26	grant	Correction	Deletion	
2023-10-25 17:28:05	2023-10-25 17:28:05	2023-10-25 17:28:05	grant	Correction	Creation	
2023-10-25 17:31:02	2023-10-25 17:31:02	2023-10-25 17:31:02	grant	Correction	Creation	
2023-10-25 17:32:37	2023-10-25 17:32:37	2023-10-25 17:32:37	grant	Correction	Creation	sensor malfunction, offset applied
2023-10-25 17:33:23	2023-10-25 17:33:23	2023-10-25 17:33:23	grant	Correction	Creation	
2023-10-25 17:33:53	2023-10-25 17:33:53	2023-10-25 17:33:53	grant	Correction	Creation	flatline
2023-10-25 17:35:43	2023-10-25 17:35:43	2023-10-25 17:35:43	grant	Correction	Creation	
2023-10-25 17:36:21	2023-10-25 17:36:21	2023-10-25 17:36:21	grant	Correction	Creation	
2023-10-25 17:36:55	2023-10-25 17:36:55	2023-10-25 17:36:55	grant	Correction	Creation	
2023-10-25 17:35:43	2023-10-25 17:35:43	2023-10-25 17:35:43	grant	Correction	Creation	

DISCLAIMER - AQUARIUS is the leading software suite to acquire, process, model, and publish water data. Environmental monitoring agencies worldwide trust AQUARIUS to produce accurate water information in real-time. A modern design delivers the latest water science in an intuitive experience.

# Reporting Toolbox



- Generate, view, download, and print reports for any of your time-series data sets.

## Steps to run...

- Select a report from the left menu
- Specify a time range
- Set required parameters
- Run report
- View generated reports / print or share with stakeholders

The screenshot displays the 'Reporting - Daily Statistic Overlaid by Year Chart' interface. The left sidebar contains a menu with 'Generated Reports' highlighted. The main panel is divided into 'Report Settings' and 'Time-Series and Processing' sections.

**Report Settings:**

- Time Range: Last Complete (dropdown), 10 (input), years (dropdown). Range: 2013-01-01 to 2023-01-01.
- Report Format: PDF (dropdown).
- Keep report permanently:

**Time-Series and Processing:**

Select the time-series to include in this Daily Statistic Overlaid by Year Chart report.

Input Label	Input Location	Input Time Series
Source Data	<input type="text" value="Find by name or identifier"/>	<input type="text" value="Find by Time-Series Identifier"/>

**Report Parameters:**

- Report Title: [Untitled Report]
- Description:
- Comment:
- Statistic: Mean (dropdown)
- Y Axis Scale: Linear (dropdown)
- Color Scheme: Color (dropdown)
- Gray color scheme highlight year (yyyy):
- Gray color scheme highlight year 2 (yyyy):

# Selected System Reports

---



- Change List
- Daily Statistic by Year
- Daily Statistic Overlaid by Year Chart
- Inventory
- Rating Curve
- Time Series Data Reporting



# REPORT: Change List

- Displays all changes, including...
  - corrections,
  - qualifiers,
  - grades and other metadata

...that have been applied to a selected data set within a specified time period.

AQUARIUS Time-Series		Aquatic Informatics Data Management Software Faster Analysis. Better Decisions.				
Change List Report			Oct 25, 2023   1 of 2			
Corrections made to Arid River Stage.Working			Period Selected: Entire Record			
Source Data: Stage.Working@training01-complete, Arid River COMPLETE (SHW)						
Applied Time (+00:00)	From Time (+00:00)	To Time (+00:00)	User	Metadata Type	Operation Type	Comment
2020-08-18 16:07:47	Open	Open	admin	Gap Tolerance	Creation	
2020-08-18 16:07:47	Open	Open	admin	Grade	Creation	
2020-08-18 16:07:47	Open	Open	admin	Interpolation Type	Creation	
2020-08-18 16:07:47	Open	Open	admin	Method	Creation	
2020-08-18 20:28:10	2013-10-03 12:30 (+00:00)	2013-10-03 12:30 (+00:00)	grant	Correction	Creation	
2020-08-18 21:03:52	2013-08-07 10:00 (+00:00)	2013-08-15 10:30 (+00:00)	grant	Correction	Creation	Override: Moving Average Filter Window: 51. Iterations: 20.
2020-08-18 21:09:11	2013-08-07 10:00 (+00:00)	2013-08-15 10:30 (+00:00)	grant	Grade	Creation	
2020-08-18 20:28:10	2013-10-03 12:30 (+00:00)	2013-10-03 12:30 (+00:00)	grant	Correction	Deletion	
2020-08-18 21:03:52	2013-08-07 10:00 (+00:00)	2013-08-15 10:30 (+00:00)	grant	Correction	Deletion	Override: Moving Average Filter Window: 51. Iterations: 20.
2020-08-18 21:09:11	2013-08-07 10:00 (+00:00)	2013-08-15 10:30 (+00:00)	grant	Grade	Deletion	
2023-05-01 16:19:39	2013-08-07 10:00 (+00:00)	2013-08-15 12:45 (+00:00)	grant	Correction	Creation	Creating new data due to sensor painting issues. Override: Moving Average Filter Window: 51. Iterations: 20.
2023-05-01 16:26:23	2013-08-07 10:00 (+00:00)	2013-08-15 12:45 (+00:00)	grant	Grade	Creation	
2023-05-01 16:27:24	2013-10-03 12:30 (+00:00)	2013-10-03 12:30 (+00:00)	grant	Correction	Creation	
2023-05-01 16:31:21	2013-10-03 12:15 (+00:00)	2013-11-15 07:45 (+00:00)	grant	Correction	Creation	
2023-05-01 16:35:35	2013-10-03 12:15 (+00:00)	2013-11-15 07:45 (+00:00)	grant	Grade	Creation	
2023-06-14 21:25:55	Open	Open	grant	Correction	Creation	Invalid Values (below PZF) ThresholdBelow 1.45
2023-10-25 17:24:42	2013-08-27 00:45 (+00:00)	2013-08-28 13:15 (+00:00)	grant	Correction	Creation	Flat line
2023-10-25 17:26:26	2013-12-08 09:45 (+00:00)	2013-12-12 09:45 (+00:00)	grant	Correction	Creation	
2023-10-25 17:26:26	2013-12-08 09:45 (+00:00)	2013-12-12 09:45 (+00:00)	grant	Correction	Deletion	
2023-10-25 17:26:26	2013-12-08 09:45 (+00:00)	2013-12-12 09:45 (+00:00)	grant	Correction	Creation	Sensor malfunction, offset applied
2023-10-25 17:27:20	2013-12-15 05:45 (+00:00)	2013-12-15 06:45 (+00:00)	grant	Correction	Creation	Minor blip corrected
2023-10-25 17:28:05	2014-01-09 14:20 (+00:00)	2014-01-23 13:40 (+00:00)	grant	Correction	Creation	
2023-10-25 17:31:02	2014-01-09 14:20 (+00:00)	2014-01-23 13:40 (+00:00)	grant	Correction	Creation	
2023-10-25 17:32:37	2014-02-17 05:15 (+00:00)	2014-02-19 11:30 (+00:00)	grant	Correction	Creation	sensor malfunction, offset applied
2023-10-25 17:33:23	2014-03-17 14:15 (+00:00)	2014-04-02 00:30 (+00:00)	grant	Correction	Creation	
2023-10-25 17:33:53	2014-06-28 22:30 (+00:00)	2014-06-30 14:15 (+00:00)	grant	Correction	Creation	flatline
2023-10-25 17:36:21	2015-01-24 22:00 (+00:00)	2015-02-03 11:30 (+00:00)	grant	Correction	Creation	
2023-10-25 17:35:43	2015-01-24 22:00 (+00:00)	2015-02-03 11:30 (+00:00)	grant	Correction	Creation	
2023-10-25 17:36:55	2015-05-03 12:45 (+00:00)	2015-05-05 09:45 (+00:00)	grant	Correction	Creation	
2023-10-25 17:35:43	2015-01-24 22:00 (+00:00)	2015-02-03 11:30 (+00:00)	grant	Correction	Deletion	

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# REPORT: Daily Statistic by Year

A table of output values of the selected daily statistic (such as mean), for the selected time-series, over the specified time range.

AQUARIUS Time-Series												Aquatic Informatics Data Management Software Faster Analysis. Better Decisions.	
Daily Statistic by Year - Mean Stage from Telemetry (for APAC Demo)											Oct 24, 2023   2 of 3 Period Selected: Entire Record		
Source Data: Stage:Telemetry@TrainingLocationFullDataSets, Training 123 UTC Offset: +00:00, Start Time: 2021-08-07 10:00:00, End Time: 2023-09-30 23:30:00											Units: m Data Coverage Threshold: 80%		
Year: 2022											Max: 9.192 Min: -999.000 Mean: 2.440		
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	2.378	3.151	3.069	1.654	2.558	2.469	2.204	2.343	2.667	2.241	2.236	2.295	
2	2.379	3.046	3.123	3.009	2.554	2.455	2.200	2.314	2.815	2.237	2.234	2.291	
3	2.378	2.976	3.168	2.971	2.549	2.438	2.208	2.302	2.715	2.234	2.231	2.285	
4	2.389	3.141	3.109	2.953	2.538	2.425	2.217	2.414	2.742	2.233	2.228	2.281	
5	2.387	3.133	3.038	2.922	2.526	2.413	2.209	2.358	2.815	2.250	2.227	2.280	
6	2.403	3.025	2.998	2.889	2.517	2.401	2.202	2.334	2.703	2.304	2.227	2.279	
7	4.125	2.916	2.970	2.868	2.509	2.390	2.247	2.329	2.588	2.293	2.227	2.277	
8	4.799	2.912	2.930	2.851	2.502	2.377	2.271	2.324	2.520	2.303	2.229	2.279	
9	3.579	2.982	2.906	2.844	2.495	2.365	2.219	2.322	2.481	2.315	2.231	2.279	
10	3.181	2.990	2.888	2.837	2.489	2.353	2.208	2.338	2.452	2.289	2.238	2.285	
11	3.038	2.984	2.877	2.826	2.480	2.338	2.221	2.359	2.452	2.276	2.249	2.290	
12	2.869	2.994	2.889	2.799	2.470	2.324	2.223	2.325	2.456	2.274	2.252	2.293	
13	2.757	2.985	2.929	2.768	2.462	2.314	2.281	2.342	2.467	2.298	2.249	2.292	
14	2.670	2.979	2.990	2.735	2.459	2.304	2.281	2.337	2.441	2.345	2.250	2.297	
15	2.586	3.015	3.037	2.711	2.455	2.295	2.271	2.398	2.418	2.391	2.256	2.316	
16	2.511	3.034	3.042	2.699	2.445	2.284	2.283	2.414	2.408	2.350	2.256	2.336	
17	2.445	2.941	2.992	2.692	2.441	2.274	2.262	2.441	2.356	2.327	2.256	2.666	
18	2.370	2.881	1.517	2.692	2.430	2.265	2.250	2.472	2.327	2.309	2.256	2.731	
19	2.304	2.937	0.673	2.680	2.422	2.258	2.234	2.579	2.311	2.295	2.256	2.663	
20	2.263	2.999	0.654	2.668	2.418	2.250	2.224	2.473	2.300	2.284	2.257	2.513	
21	2.223	2.998	0.657	2.648	2.412	2.244	2.230	2.429	2.296	2.276	2.257	2.427	
22	2.200	3.039	0.681	2.633	2.415	2.237	2.319	2.409	2.289	2.268	2.258	2.389	
23	2.167	3.093	0.708	2.619	2.440	2.232	2.385	2.381	2.276	2.262	2.256	2.751	
24	2.127	3.139	0.730	2.608	2.485	2.227	2.447	2.356	2.268	-8.174	2.254	2.693	
25	2.119	3.078	0.749	2.603	2.487	2.223	2.417	2.337	2.261	2.254	2.256	2.701	
26	2.112	3.038	0.778	2.600	2.488	2.218	2.513	2.344	2.254	2.252	2.260	4.522	
27	2.171	3.013	0.805	2.593	2.502	2.214	2.464	2.413	2.247	2.248	2.273	3.752	
28	7.328	2.993	0.815	2.585	2.516	2.210	2.462	2.368	2.250	2.245	2.383	3.007	
29	5.369		0.828	2.575	2.510	2.207	2.438	2.408	2.252	2.243	2.354	2.748	
30	4.180		0.826	2.566	2.491	2.205	2.410	2.437	2.240	2.240	2.307	2.612	
31	3.559		0.818		2.481		2.365	2.444		2.238		2.555	
Max	9.192	3.464	3.193	3.066	2.565	2.477	2.594	2.763	2.954	2.418	2.489	5.239	
Min	2.084	2.803	0.443	0.597	2.407	2.199	2.197	2.283	2.234	-999.000	2.223	2.272	
Mean	2.947	3.015	2.006	2.703	2.482	2.307	2.296	2.382	2.436	1.942	2.257	2.561	

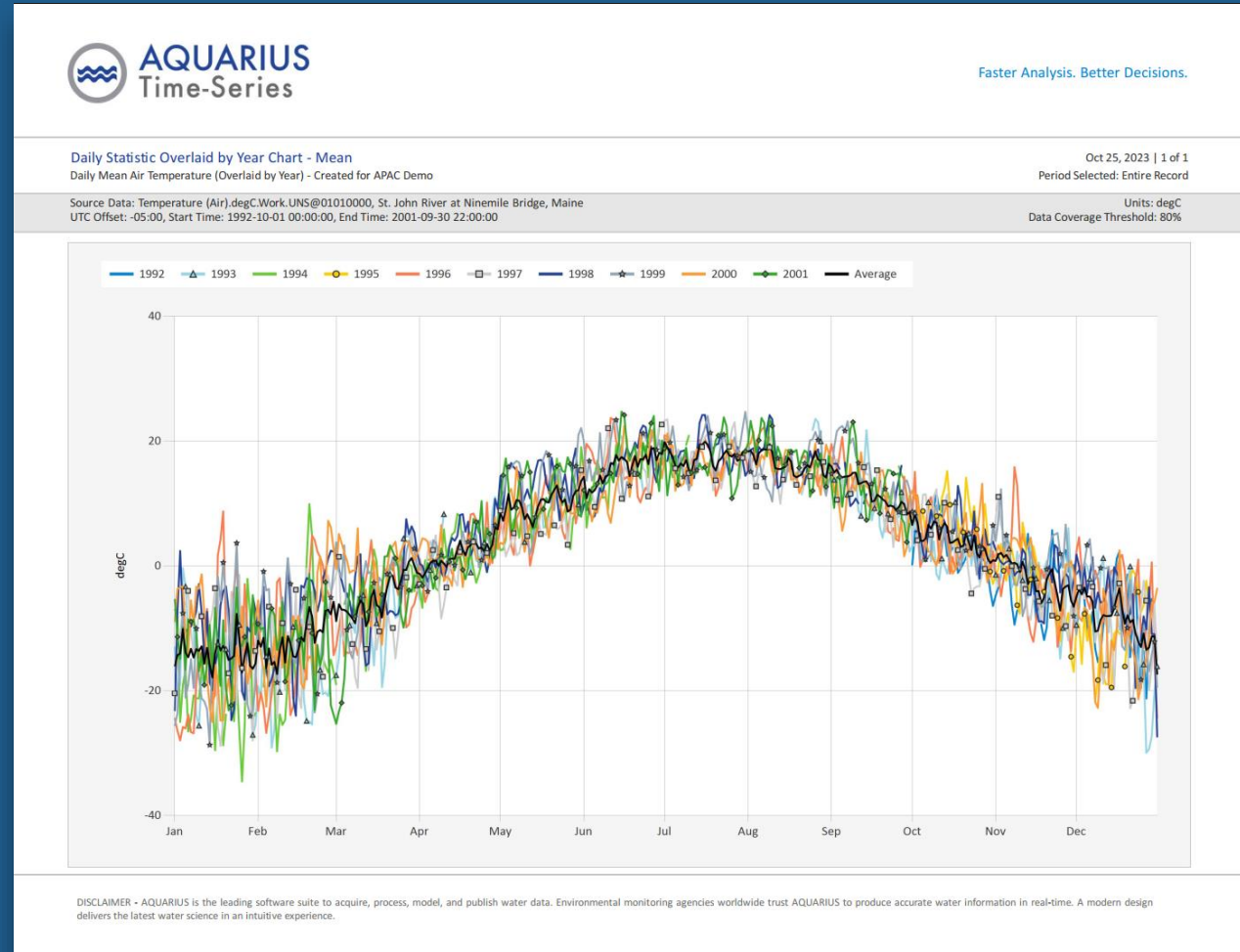
DISCLAIMER - AQUARIUS is the leading software suite to acquire, process, model, and publish water data. Environmental monitoring agencies worldwide trust AQUARIUS to produce accurate water information in real-time. A modern design delivers the latest water science in an intuitive experience.



# REPORT: Daily Statistic Overlaid by Year Chart




Displays annual plots of the specified daily statistic for each year, within the specified time range of the input time-series.



# REPORT: Inventory



- A list of locations and time-series data sets in the system, along with basic attributes such as the number of points and type.
- Contains information about locations, their properties, extended attributes, and time-series data sets.


Faster Analysis. Better Decisions.

---

Inventory Oct 25, 2023 | 6 of 12  
 Inventory of AQT5 DB (Last complete 5 years) - Created for APAC Demo Period Selected: 2018-01-01 00:00 - 2022-12-31 23:59

Location Identifier	Location Name	Primary Folder	UTC Offset	Latitude	Longitude	Elevation	Type																												
01142500	USGS AYERS BROOK AT RANDOLPH, VT	All Locations.Vermont	+00:00	43.93450969	-72.6578821	0 m	Rainfall Station																												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Extended Attribute Name</th> <th>Extended Attribute Value</th> </tr> </thead> <tbody> <tr><td>ACTIVE</td><td></td></tr> <tr><td>CONTACT_USERID</td><td></td></tr> <tr><td>INVENTORY</td><td></td></tr> <tr><td>INSTALLDATE</td><td></td></tr> <tr><td>Site Status</td><td></td></tr> <tr><td>Start Date</td><td></td></tr> </tbody> </table>		Extended Attribute Name	Extended Attribute Value	ACTIVE		CONTACT_USERID		INVENTORY		INSTALLDATE		Site Status		Start Date																					
Extended Attribute Name	Extended Attribute Value																																		
ACTIVE																																			
CONTACT_USERID																																			
INVENTORY																																			
INSTALLDATE																																			
Site Status																																			
Start Date																																			
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01139800	USGS EAST ORANGE BRANCH AT EAST ORANGE, VT	All Locations.Vermont	+00:00	44.0928419	-72.33565327	0 m	Rainfall Station																												

DISCLAIMER - AQUARIUS is the leading software suite to acquire, process, model, and publish water data. Environmental monitoring agencies worldwide trust AQUARIUS to produce accurate water information in real-time. A modern design delivers the latest water science in an intuitive experience.

# REPORT: Rating Curve



A curve plot followed by base and adjusted rating tables for each rating curve, with a rating period within the specified time range, for the specified Rating Model at a selected location.

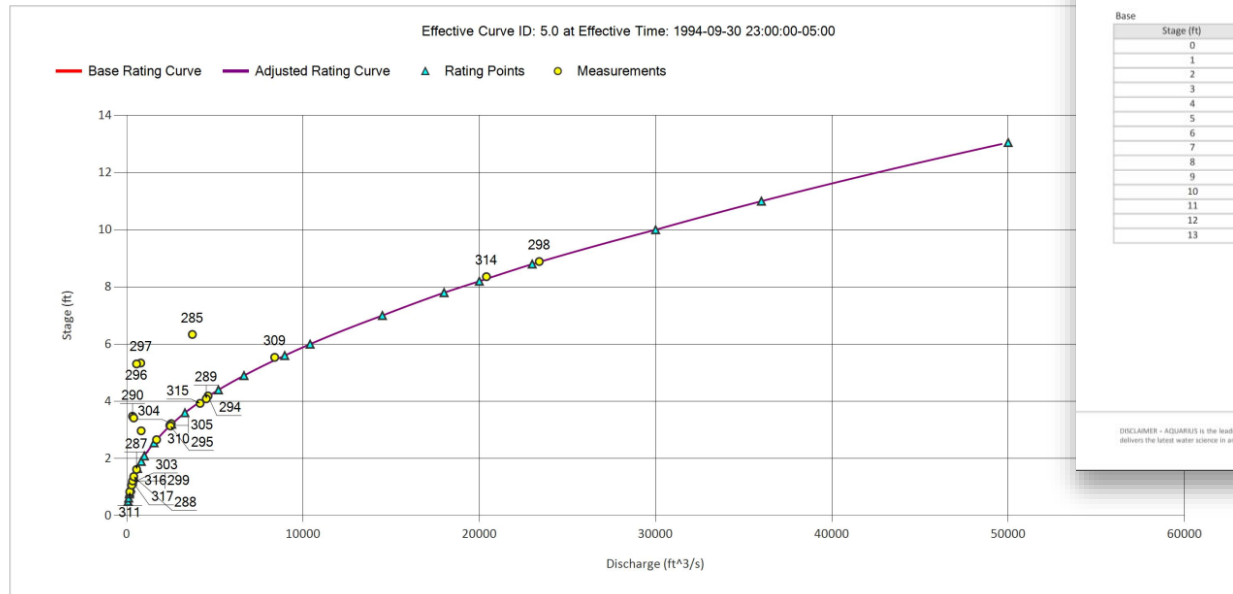


Faster Analysis. Better Decisions.

Rating Curve  
Rating Curve @ St John River at Ninemile

Rating Model: Stage-Discharge.STGQ.(well-DCP).Work@01010000, St. John River at Ninemile Bridge, Maine, Stage (ft) - Discharge (ft<sup>3</sup>/s), Number of curves: 4, 1966-05-21 01:00:00-05:00

Rating Curve ID: 5.0, Rating Period 2: 1994-09-30 23:00:00-05:00 - 2000-09-30 23:00:00-05:00, Type: Logarithmic Table, Remarks: New low end and refinement of high end of rating 4



Faster Analysis. Better Decisions.

Rating Curve  
Rating Curve @ St John River at Ninemile

Oct 25, 2023 | 20 of 37  
Period Selected: Entire Record

Rating Model: Stage-Discharge.STGQ.(well-DCP).Work@01010000, St. John River at Ninemile Bridge, Maine, Stage (ft) - Discharge (ft<sup>3</sup>/s), Number of curves: 4, 1966-05-21 01:00:00-05:00 - end of time

Rating Curve ID: 5.0, Rating Period 3: 2000-09-30 23:00:00-05:00 - 2000-09-30 23:15:00-05:00, Type: Logarithmic Table, Remarks: New low end and refinement of high end of rating 4

Base Stage (ft)	Discharge (ft <sup>3</sup> /s)									
	0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0						80.00	104.79	132.34	163.22	197.80
1	238.43	282.59	330.00	382.45	441.39	507.70	578.72	655.11	737.07	824.00
2	914.48	1010.57	1119.63	1234.83	1356.21	1483.83	1617.42	1756.95	1902.78	2054.96
3	2213.53	2378.53	2550.00	2727.68	2911.89	3102.65	3300.00	3511.39	3730.13	3956.29
4	4189.90	4431.04	4679.73	4936.04	5200.00	5474.02	5755.98	6045.94	6343.92	6650.00
5	6956.85	7271.35	7593.55	7923.48	8261.18	8606.67	8960.00	9309.21	9665.60	10029.19
6	10400.00	10777.30	11161.82	11553.58	11952.59	12358.88	12772.45	13193.34	13621.54	14057.09
7	14500.00	14916.85	15339.59	15768.24	16202.79	16643.24	17089.59	17541.85	18000.00	18469.63
8	18986.16	19489.62	19999.99	20485.60	20976.96	21474.08	21976.96	22485.61	23000.01	23546.58
9	24099.82	24659.73	25226.32	25799.59	26379.54	26966.19	27559.53	28159.58	28766.34	29379.81
10	30000.00	30576.50	31158.23	31745.19	32337.38	32934.79	33537.41	34145.25	34758.30	35376.55
11	36000.00	36631.75	37268.76	37911.05	38558.60	39211.41	39869.47	40532.79	41201.36	41875.17
12	42554.23	43238.52	43928.06	44622.82	45322.81	46028.03	46738.47	47454.13	48175.01	48901.10
13	49632.40									

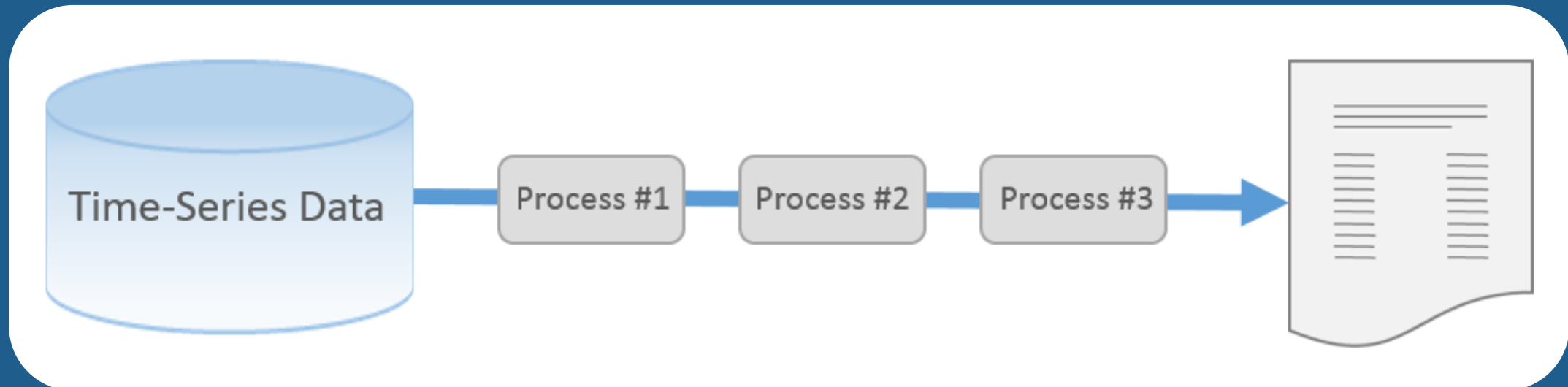
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# REPORT: Time Series Data – *Is there anything it can't do?*



- Build **powerful analytics** using **serial computations**.
- A **customized computation chain** can be applied against data to report events such as monthly low flow or annual frequency counts.

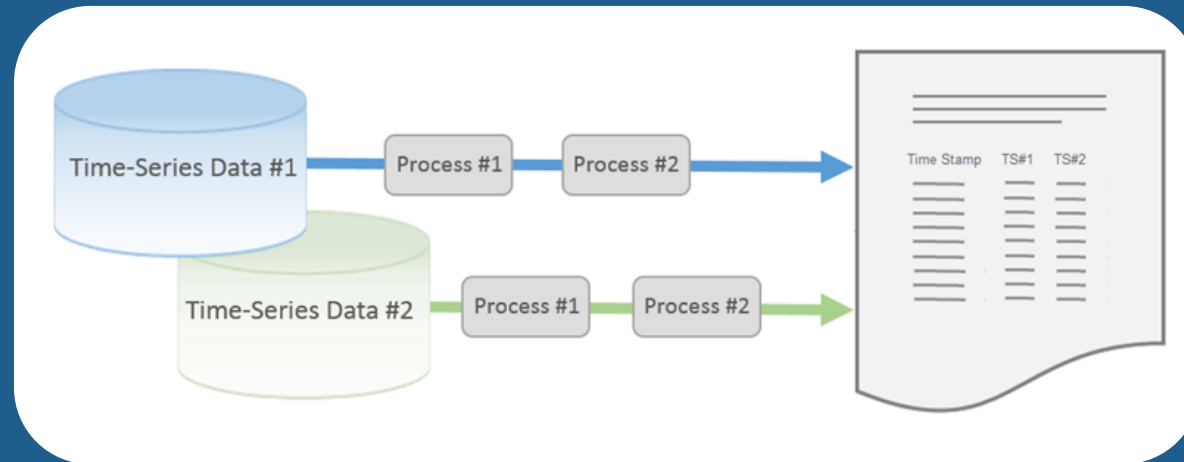




# REPORT: Time Series Data – *Is there anything it can't do?*



- Use **one or more input time-series**, and compare as many as **five parameters** (from many types of time-series) at the same location, or compare the same parameter (same type of time-series) across as many as **ten locations**



- Any combination of Count, Factor and/or Offset, Event, Intensity, and Statistical computations, that satisfy the validation criteria for processing interpolation types, may be used

# REPORT: Time Series Data – Process Options



OPTION	DESCRIPTION
Count	Reports the number of measurements occurring with each time step. Measurements occurring on an interval boundary are counted only for the interval ending on the boundary (and not the subsequent interval).
Event	Extracts a single sample point associated with each event in which values were either above or below a specified threshold.
FactorOffset	Applies a specified factor (multiplier) and/or offset to each value in a time-series. One or both processes can be applied; when both are specified, the system will always process the factor before the offset. If you need to apply these processes in the reverse sequence, specify each as a separate process.
Intensity	Computes the maximum or minimum aggregate value for a specified duration starting within each time step (interval period). Computes the maximum or minimum intensity for a specified duration, starting within each time-step interval.
Statistic	Computes a user-specified statistic. You can apply any of the following periodic statistical calculations to process your data

# REPORT: Time Series Data – Examples in the Help!



**Build a Time Series Data Report without a Computation Chain**

Although Time Series Data reporting is primarily intended for building complex reports composed of many processed time-series, it can also be used to build a simple report—composed of *unprocessed* time-series. For such a simple report, you may wish to generate its CSV format, making it easy to add your data to a third-party tool for further processing and analysis.

**Example: A Report Setup to Export Many Parameters for the Same Location**

The following combination of stage and discharge data shows how multiple time-series can be combined solely for the purpose of exporting the data to a single CSV file.

Time-Series Data #1	Time-Series Data #2
<b>Time-Series #1.</b> Choose a stage time-series with ft unit values.	<b>Time-Series #2.</b> Choose discharge time-series with ft <sup>3</sup> /s unit values.
<b>Report Description #1.</b> Time-aligned data in CSV format; single column.	<b>Report Description #2.</b> Time-aligned data in CSV format; single column.

**Set up a Computation Chain for a Single Time-Series**

You can set up a simple computation chain—that is—apply one or more processes against the same time-series location to report events of interest such as:

- A monthly count of all rainfall intensity events where maximum daily rainfall exceeds a specified threshold.
- The highest total rainfall in a single day, for each month, in a specified date range.
- A monthly count of all low flow events in a specified date range.

**Example 1: A Report Setup for Monthly Rainfall Intensity Frequency**

- **Time-Series Data.** Choose a precipitation time-series with decumulated unit values.
- **Process #1.** Choose INTENSITY to find maximum daily rainfall of a specified duration, (for example, at least one hour).
- **Process #2.** Choose EVENT to find all events above a specified threshold, (for example, above 20 mm).
- **Process #3.** Choose COUNT to total the number of events for each specified time period, (for example, monthly).
- **Report Description.** Monthly count of all events where maximum daily rainfall exceeded 20 mm.

**Set up Computation Chains for Many Time-Series**

You can set up a complex computation chain—that is—apply *many* processes against *many* time-series locations to create reports that help with comparative analyses of your data. For example, you can create complex process chains to:

- Report the same parameter from several locations.
- Report different parameters (and associated events) at the same location.
- Report key parameters, from the same location, and then report to a CSV format for further processing.

**Example 1: A Report Setup to Compare the Same Parameter across Several Time-Series Locations**

This example shows how multiple time-series and processes may be combined to compute daily mean stage at many locations and compare this value across many locations.

Time-Series Data #1	Time-Series Data #2	Time-Series Data #3
<b>Time-Series #1.</b> Choose a stage time-series location with ft unit values.	<b>Time-Series #2.</b> Choose a stage time-series location with ft unit values.	<b>Time-Series #3.</b> Choose a stage time-series location with ft unit values.
<b>Process #1.</b> Choose STATISTIC: Mean of 1-day	<b>Process #2.</b> Choose STATISTIC: Mean of 1-day period	<b>Process #3.</b> Choose STATISTIC: Mean of 1-day period

# How Can I Enable Custom Report Plugins?

Install out-of-the-box report plug-ins, as well as your own custom report plug-ins, in System Config...

The screenshot shows the 'System Config' interface. On the left, a navigation menu lists various configuration categories, with 'Plugins, Report' highlighted. The main area displays a table of report plugins. A yellow box highlights the 'Is Enabled' column, which contains 'false' for most items and 'true' for 'CrossSectionSurvey'. A '+ Add Item' button is visible in the top right corner of the table area.

Assembly Name	Folder Name	Version	Is Enabled	Actions
AnnualMaximumAndMinimum	AnnualMaximumAndMinimum	22.3.5	false	
AntecedentRainfall	AntecedentRainfall	21.1.12	false	
AutomatedSnowWeatherStationGraph	AutomatedSnowWeatherStationGraph	21.1.12	false	
BenchmarkHistory	BenchmarkHistory	21.3.5	false	
ContinuousDataProduction	ContinuousDataProduction	21.4.6	false	
CrossSectionSurvey	CrossSectionSurvey	21.2.2	true	
CrossSectionSurveyPlot	CrossSectionSurveyPlot	22.1.1	false	
CurrentConditionsPlot	CurrentConditionsPlot	21.1.12	false	
CurrentConditionsTable	CurrentConditionsTable	21.1.12	false	
DailyAggregateByYear	DailyAggregateByYear	21.1.12	false	
DailyMeanDischarge	DailyMeanDischarge	21.1.12	false	

EXCEPT!! Aquarius Cloud has increased security measures and therefore disabled the ability to add custom plug-ins.

However, they are updated in each AQTS version!



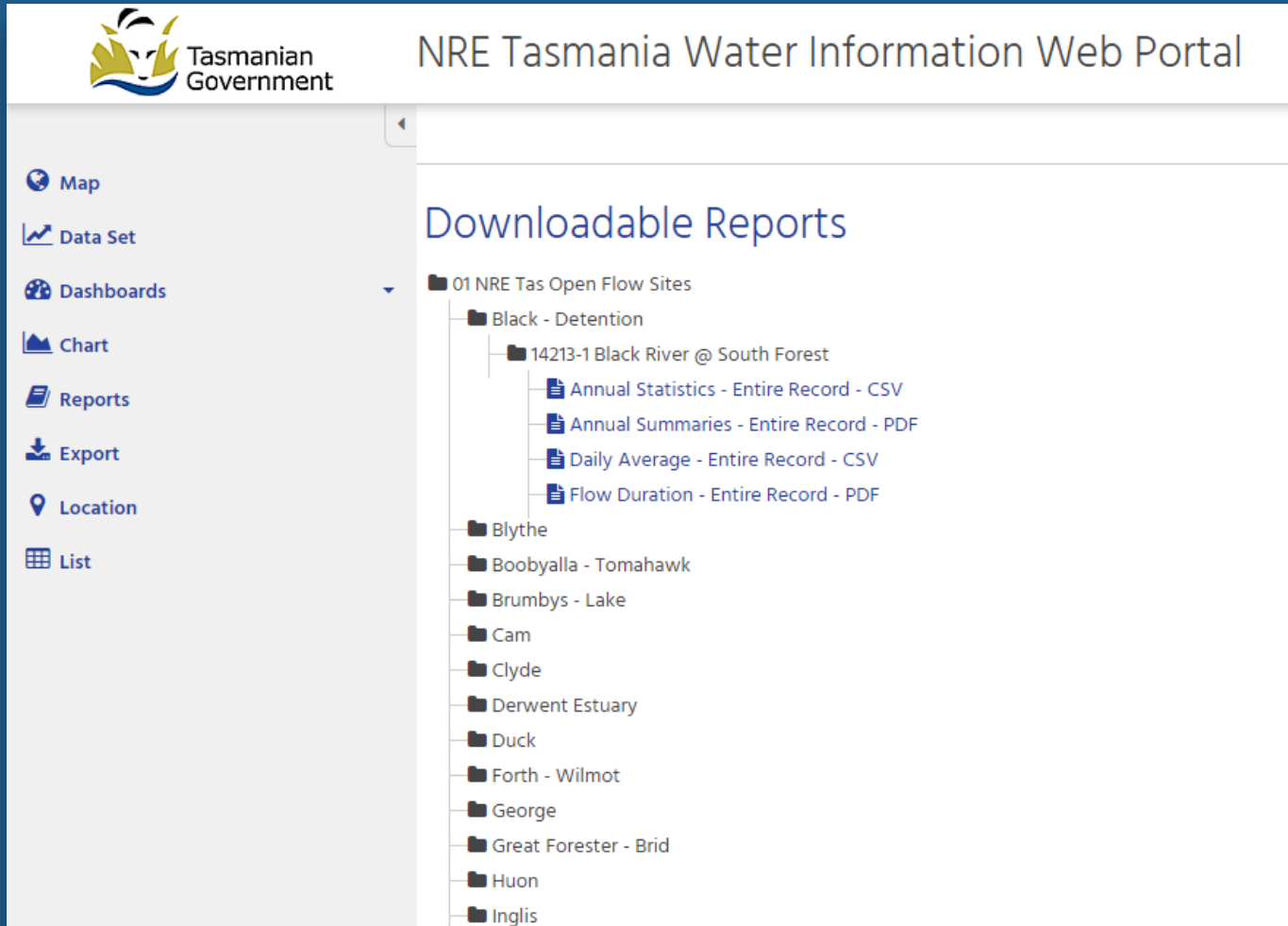
# Configure Reports for Availability in WebPortal

## WebPortal Reports:

1. Generated in Time-Series - can be synchronized making them available for download, or...
2. Info Requests (generated by WebPortal)

The screenshot displays the AQUARIUS WebPortal interface. The top navigation bar includes the logo, a search icon, a help icon, a globe icon, and a 'Sign in' button. The left sidebar contains navigation options: Map, List, Location, Data Set, Chart, Export, Reports (highlighted with a yellow box), and Dashboards. The main content area is divided into two panels. The left panel, titled 'Downloadable Reports', lists various report types such as 'Corrections made to Discharge Time-Series @ St', 'Daily Mean Air Temperature (Overlaid by Year)', 'Daily Mean Discharge (Overlaid by Year)', 'Daily Mean Discharge (Overlaid by Year) - 2003-2023', 'Inventory of AQTS DB (Last complete 5 years)', 'Rating Cruve @ St John River at Ninemile', 'Test', 'Test3', 'Windrose at MET001', and 'Windrose\_WS500'. The right panel, titled 'Info Requests', features a dropdown menu for 'Info Requests' with 'changerep' selected. Below this is a 'Type Optional Arguments:' section with an input field containing 'Info Request Arguments' and a 'Run Info Request' button. A large blue arrow points to the 'Type Info Request Arguments' section, which includes instructions: 'Type Info Request Arguments and press the "Run Info Request" button.' and a 'Usage:' section showing 'changerep LocID:String'. At the bottom of the right panel is an 'Export Data' button. The footer of the page reads 'AQUARIUS WebPortal v2024.1.67'.

# Customer Example



The screenshot displays the 'NRE Tasmania Water Information Web Portal'. The top left features the Tasmanian Government logo. The main navigation sidebar on the left includes: Map, Data Set, Dashboards, Chart, Reports, Export, Location, and List. The main content area is titled 'Downloadable Reports' and shows a tree view under the category '01 NRE Tas Open Flow Sites'. The tree view includes the following items:

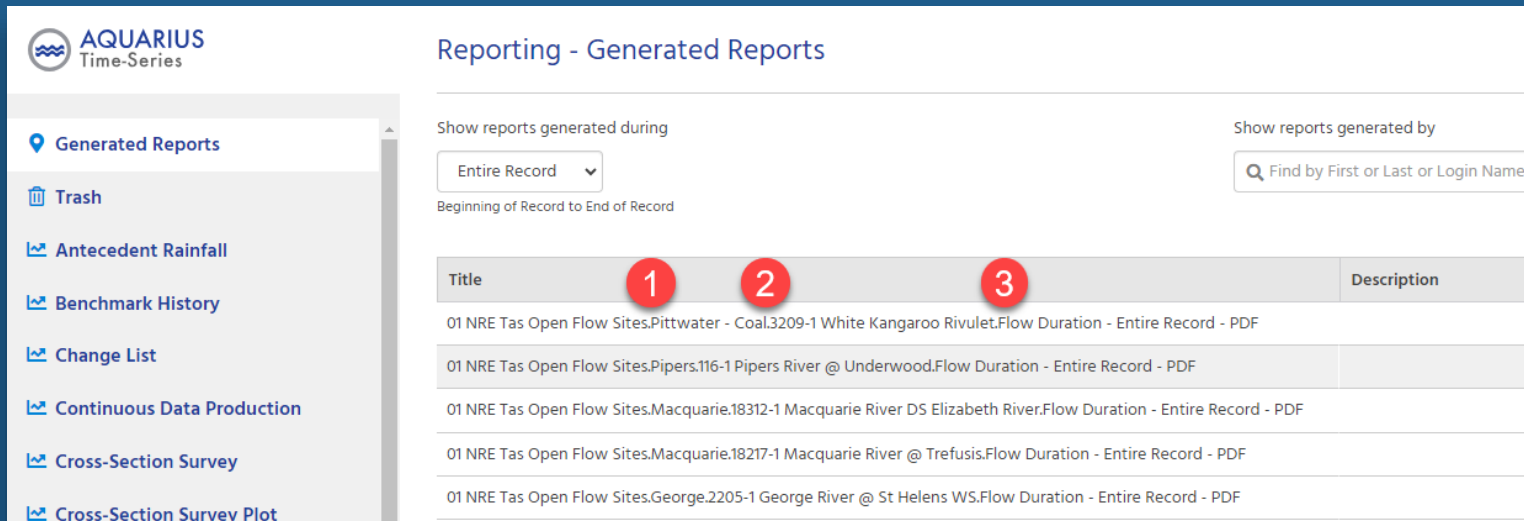
- 01 NRE Tas Open Flow Sites
  - Black - Detention
    - 14213-1 Black River @ South Forest
      - Annual Statistics - Entire Record - CSV
      - Annual Summaries - Entire Record - PDF
      - Daily Average - Entire Record - CSV
      - Flow Duration - Entire Record - PDF
  - Blythe
  - Boobyalla - Tomahawk
  - Brumbys - Lake
  - Cam
  - Clyde
  - Derwent Estuary
  - Duck
  - Forth - Wilmot
  - George
  - Great Forester - Brid
  - Huon
  - Inglis

<https://portal.wrt.tas.gov.au/Data/Report>

- ~150+ updated reports per month (for open sites)
- ~80+ updated reports per season (for closed sites)
- CSV & PDF

# Configure Reports for Availability in WebPortal

- Establish a naming convention for logical and hierarchical report groupings.
- WebPortal generates a folder structure for each dot (".")



**AQUARIUS**  
Time-Series

Reporting - Generated Reports

Show reports generated during: Entire Record (dropdown)  
Beginning of Record to End of Record

Show reports generated by: Find by First or Last or Login Name (search box)

Title	Description
01 NRE Tas Open Flow Sites.Pittwater - Coal.3209-1 White Kangaroo Rivulet.Flow Duration - Entire Record - PDF	
01 NRE Tas Open Flow Sites.Pipers.116-1 Pipers River @ Underwood.Flow Duration - Entire Record - PDF	
01 NRE Tas Open Flow Sites.Macquarie.18312-1 Macquarie River DS Elizabeth River.Flow Duration - Entire Record - PDF	
01 NRE Tas Open Flow Sites.Macquarie.18217-1 Macquarie River @ Trefusis.Flow Duration - Entire Record - PDF	
01 NRE Tas Open Flow Sites.George.2205-1 George River @ St Helens WS.Flow Duration - Entire Record - PDF	



- Pipers
- Pittwater - Coal
  - 3203-1 Coal River @ Baden
  - 3206-1 Coal River DS Craighourne Dam
  - 3208-1 Coal River @ Richmond
  - 3209-1 White Kangaroo Rivulet
    - Annual Statistics - Entire Record - CSV
    - Annual Summaries - Entire Record - PDF
    - Daily Average - Entire Record - CSV
    - Flow Duration - Entire Record - PDF
- Port Davey
- Prosser

# Customer Example



Flow Duration - Time Weighted

01 NRE Tas Open Flow Sites.Black - Detention.14213-1 Black River @ South Forest.Flow Duration - Entire R

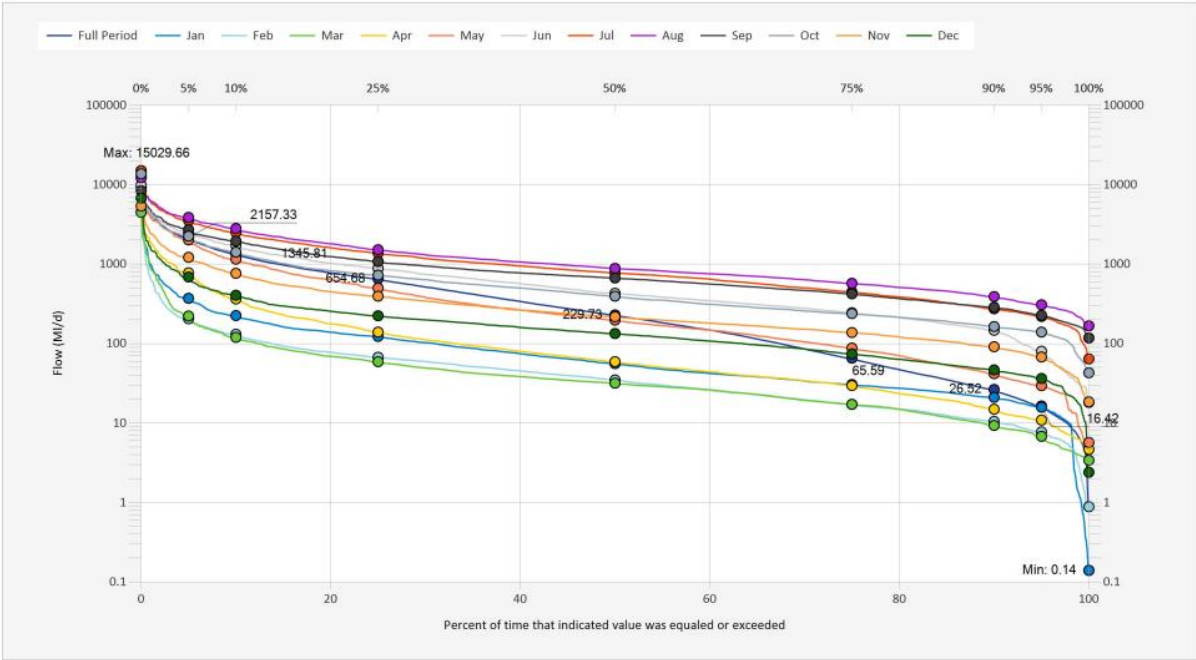
Aug 1, 2024 | 1 of 4

Period Selected: Entire Record

Source Data: Flow.MLD@14213-1, BLACK RIVER AT SOUTH FOREST  
UTC Offset: +10:00, Start Time: 1968-05-28 13:00:00, End Time: 2024-08-02 02:15:00

Units: Ml/d

Aggregation Mean, Interval: 1 Day, Data Coverage Threshold: 80%, Percent Missing: 3.7%



DISCLAIMER - Data is provided by NRE Tas, in partnership with Hydro Tasmania and Tasmanian Irrigation, and may include real-time data from automated telemetry systems which has not been checked or quality controlled, it is the responsibility of the data user to make their own decisions about the accuracy, currency, reliability and correctness of information provided.



# Customer Example

<https://bcmoe-prod.aquaticinformatics.net/Data/Report>

~350+ Reports generated per day!

The screenshot displays the user interface of the British Columbia Aquatic Informatics web application. The top navigation bar includes the British Columbia logo, a 'View Quick Start Guide' button, and user profile information for 'aq support'. A left-hand sidebar contains navigation options: Map, List, Location, Data Set, Chart, Export, Reports, and Dashboards. The main content area features a large 'Select Report' prompt with a right-pointing arrow and the instruction 'Select a Report to be downloaded to your machine'. On the right side, a 'Downloadable Reports' panel is highlighted with a yellow border, showing a hierarchical tree structure of report categories: Groundwater, Hydrometric, and Snow. Under the 'Snow' category, the '1A01P' folder is expanded to show three report types: 'Automated Snow Weather Station Graph' and 'Weekly Report'. Other folders listed include 1A02P, 1A03P, 1A05P, and 1A12P.

# Customer Example

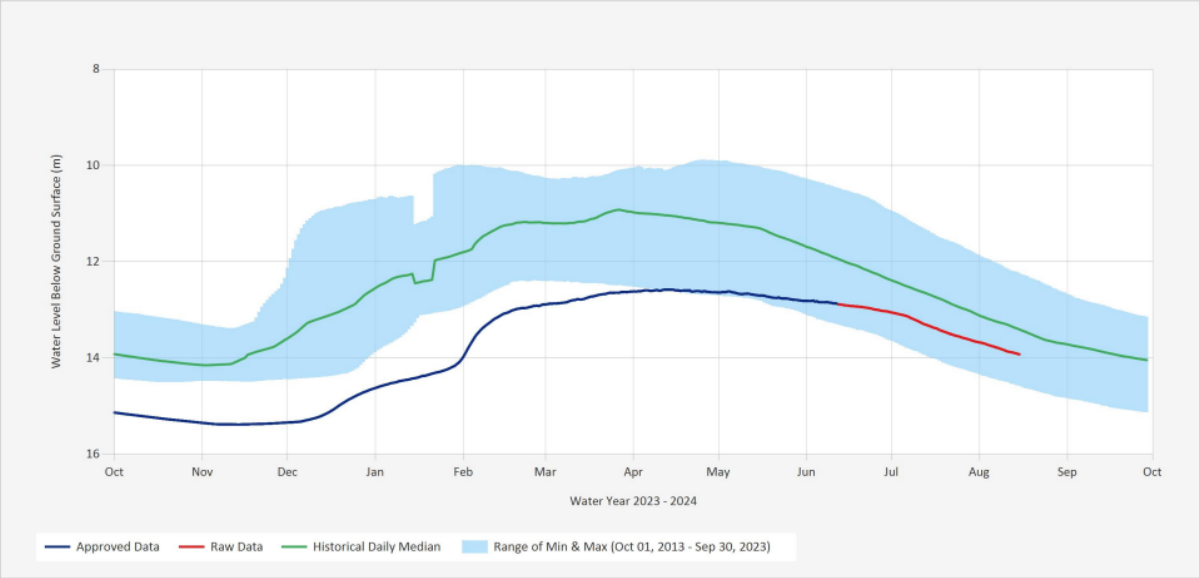


### Groundwater Level Statistics Chart

Groundwater:OW002.Groundwater Level Statistics Chart

Aug 15, 2024 | 1 of 1

Source Data: SGWLWorking@OW002  
Location: OBS WELL 002 - Abbotsford, Latitude: 49.017101, Longitude: -122.341651, Elevation: 58.86 m



The statistics (median/min/max) are based on the previous 10 years of available data prior to the current Water Year

Data last appended: August 15, 2024 02:00 UTC+00:00

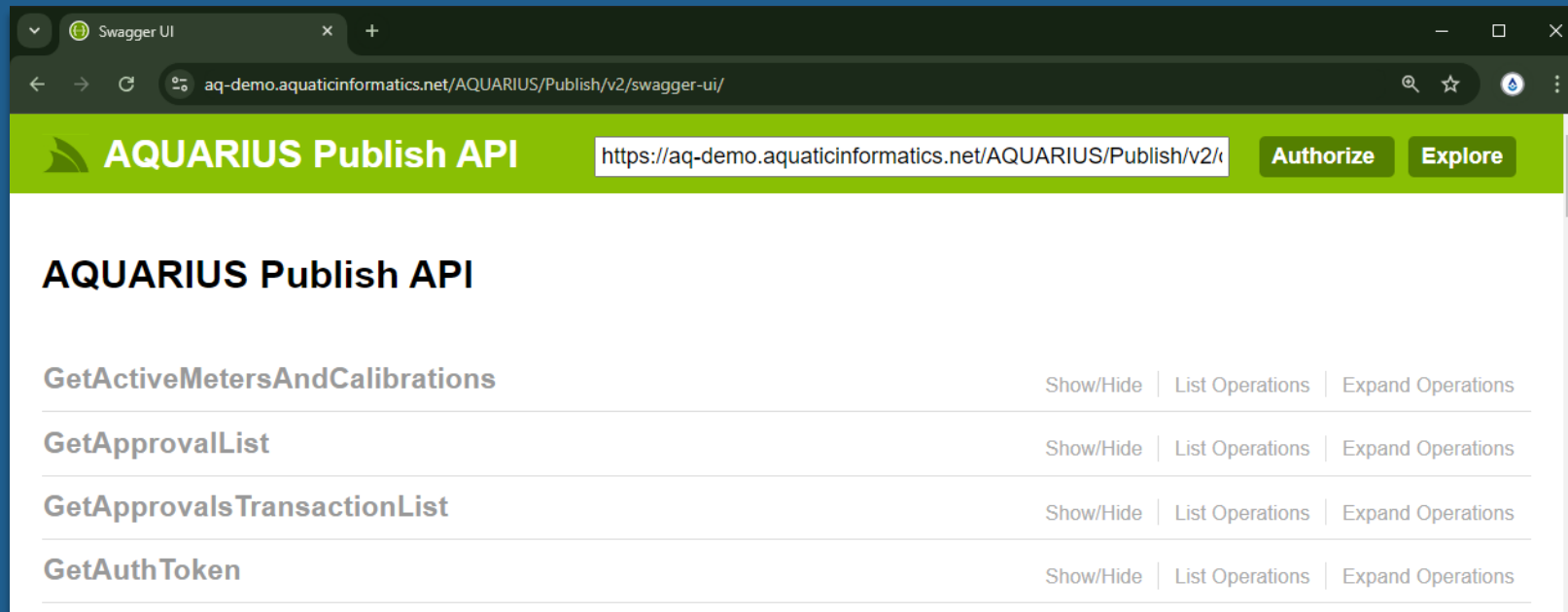
The statistics (median/min/max) are only displayed for wells with at least two years of data

The Groundwater Level Statistics Chart is only available for Active Wells

Status: Active

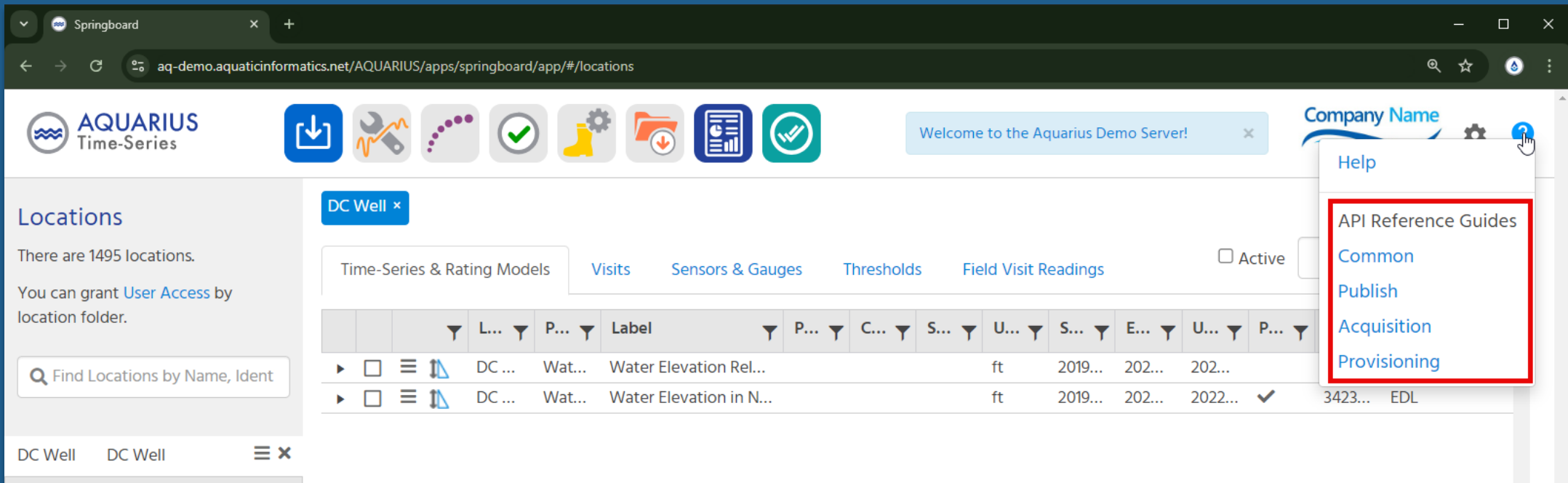
# Using the API...

- Time Series has an extensive library of secure, industry standard APIs (REST)
- For data publishing, you can find the library of Publish APIs at *<https://<your domain>/AQUARIUS/Publish/v2/swagger-ui>*



# Using the API

- You can also find links to the API documentation in the Help menu:



The screenshot shows the AQUARIUS Time-Series application interface. The top navigation bar includes the logo, a toolbar with various icons, a welcome message, and a user profile section. The main content area displays a table of locations for 'DC Well'. A help menu is open, showing options like 'API Reference Guides', 'Common', 'Publish', 'Acquisition', and 'Provisioning'. The 'API Reference Guides' option is highlighted with a red box.

Locations

There are 1495 locations.  
You can grant [User Access](#) by location folder.

Find Locations by Name, Ident

DC Well x

DC Well x

Time-Series & Rating Models Visits Sensors & Gauges Thresholds Field Visit Readings  Active

	L...	P...	Label	P...	C...	S...	U...	S...	E...	U...	P...
▶ <input type="checkbox"/> ≡ ⚙	DC ...	Wat...	Water Elevation Rel...				ft	2019...	202...	202...	
▶ <input type="checkbox"/> ≡ ⚙	DC ...	Wat...	Water Elevation in N...				ft	2019...	202...	2022...	✓ 3423... EDL

Help

- API Reference Guides
- Common
- Publish
- Acquisition
- Provisioning



# Why use the API?

- Get your data easily, and use it in any way you want, without contacting AQI
- Make data available to custom / third-party or in-house systems
- AQI provides easy-to-use libraries for powerful scripting tools such as Python or R, or programming environments such as .NET or Java. Examples provided!
- You can find these links at:

<http://github.com/AquaticInformatics/getting-started>

<a href="#">Python integration</a>	A sample API wrapper for AQUARIUS Time-Series.
<a href="#">R integration</a>	A fairly rich API wrapper for consuming time-series data in R.



AQUATIC  
Informatics

ONE WATER.  
PLATFORM.

# Which reports do you use?



# THANKS!

---

## ANY QUESTIONS OR COMMENTS?

AQUATIC INFORMATICS

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