

EQulS and Tableau

Getting the most out of your tools

All in One



Let each tool do what it is
BEST at.

What is EQiS?



earthsoft

Data management software and database specifically designed for managing environmental science and chemistry data.

What is Tableau?

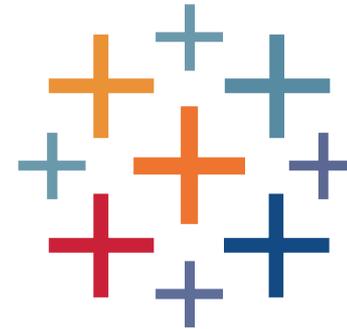


Powerful and flexible Data Analytics tool, focused on being beautiful, versatile and easy to use.

Best of Both Worlds



Let EQUIS manage the data.



Leverage Tableau for more graphical analytics.

Let each tool do what it is BEST at, instead of trying to make one tool do everything.

Why Use EQuIS?



Database

- Managed, curated, well formed data
- Relational structure
- Reference value control
- Tools for loading, cleaning, checking data

Why Use EQuIS?



EQuIS Reporting in General

- Easy to use
- Repeatable, consistent, solid
- Flexible – able to set parameters at run time
- Good at generating Crosstabs
- Can Output Flat to Excel

Why Use EQulS?



Reports are Optimized for Environmental Chemistry

- Unit conversion
- How to deal with Non-Detects
- Action Levels (TOC normalization, etc.)
- Ability to filter for most recent sampling

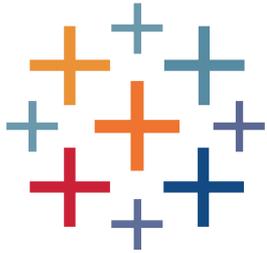
Why Use EQUIS?



Limitations:

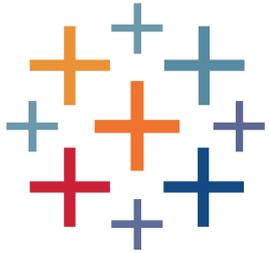
- Some of the graphing UIs are a little awkward
- Some things are difficult (box-plots, complicated charts)
- Dashboards on Enterprise can be tricky and a little limited

Why Use Tableau?

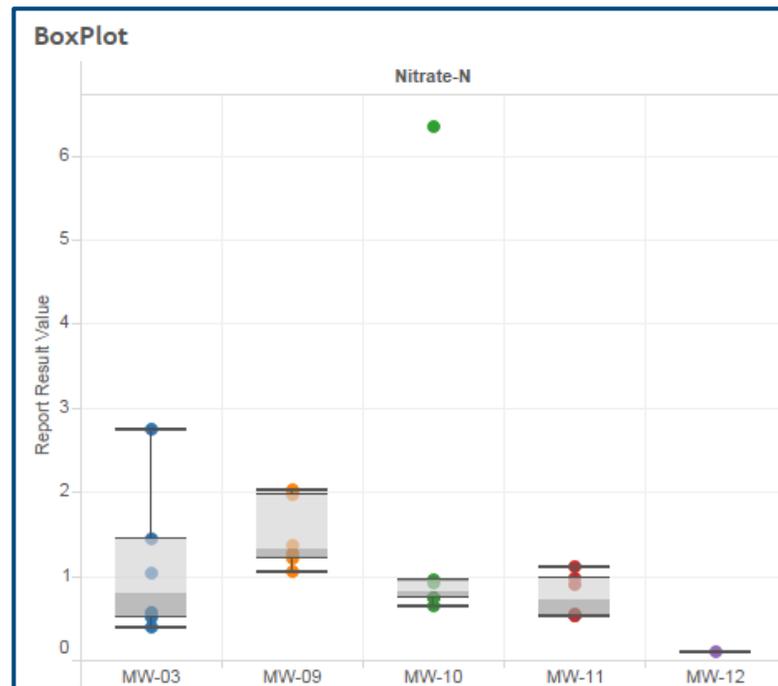


- Rules-based graphical system / analysis
- Easy interface
- Great data analytics and graphics:
 - Dynamic Filtering and Coloring
 - R integration
 - Mixing datasets
 - Charts & Graphs
 - Dashboards

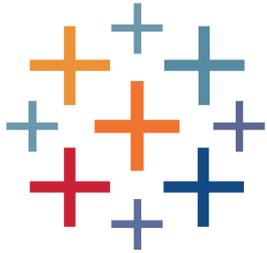
Why Use Tableau?



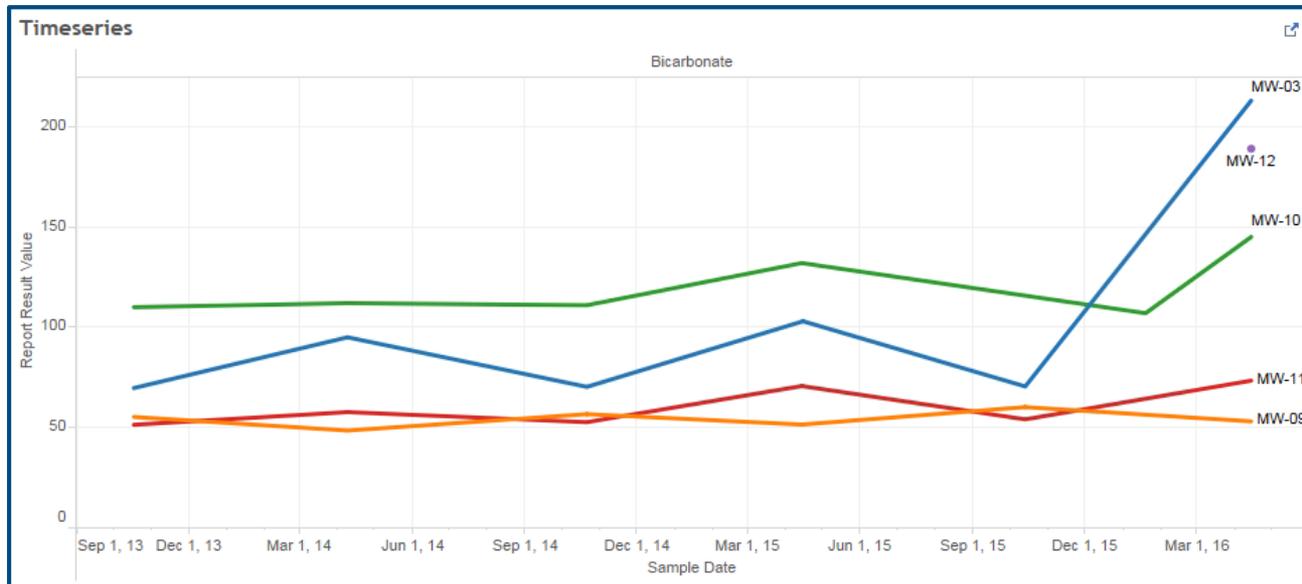
Box Plots



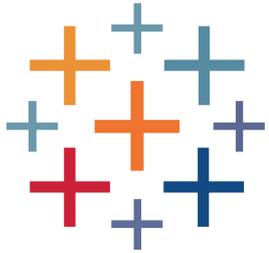
Why Use Tableau?



Time Series



Why Use Tableau?



Basic Maps

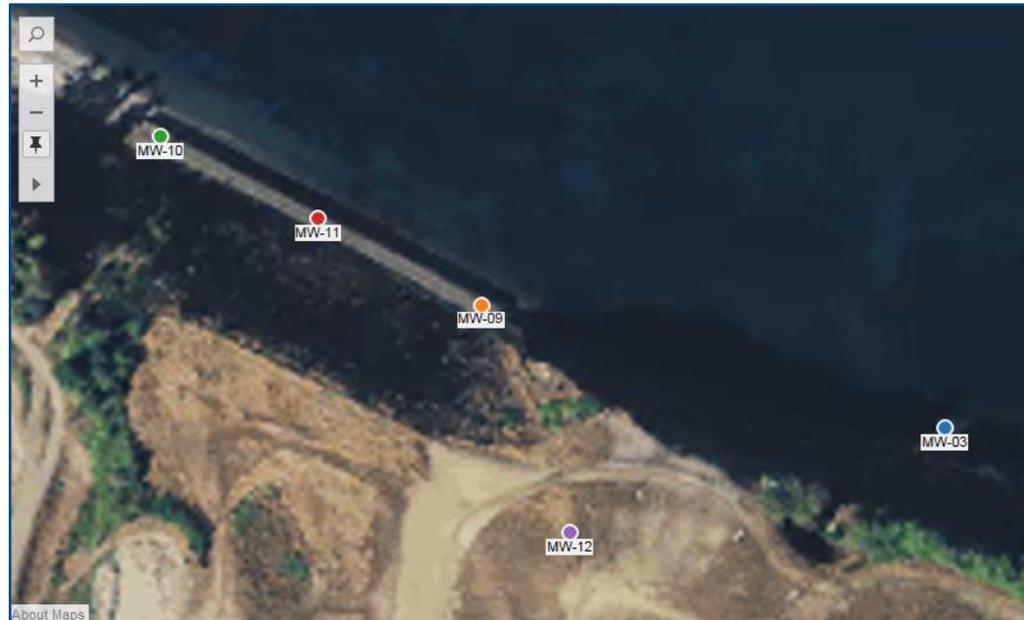


Tableau - COPA_

File Data Worksheet Dashboard Story Analysis Map Format Server Window Help

Normal Show Me

Data Analytics

- Sheet1 (304-ALE2 wCoords)
- Sheet1 (ALE2_304)

Dimensions

- Abc Result Type Code
- Abc Result Unit
- Sample Date
- Sample Id
- Abc Sample Name
- Abc Sample Type Code
- Abc Sampledate
- Abc Sampletime
- Abc Short Name
- Abc Start Depth
- Abc Sys Loc Code
- Abc Sys Sample Code
- Abc Task Code
- Abc Task Code 2

Measures

- # Action Level Min Value
- # Action Level Value
- # AI Result Value
- # Dilution Factor
- # Mag Report Order
- # Report Result Value
- # Result Numeric
- X Coord
- Y Coord
- # Number of Records
- # Measure Values

Parameters

- # Action Level Value Parameter

Pages

Columns

Rows

Filters

Marks

Abc Automatic

Color Size Text

Detail Tooltip

Drop field here

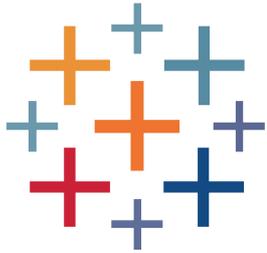
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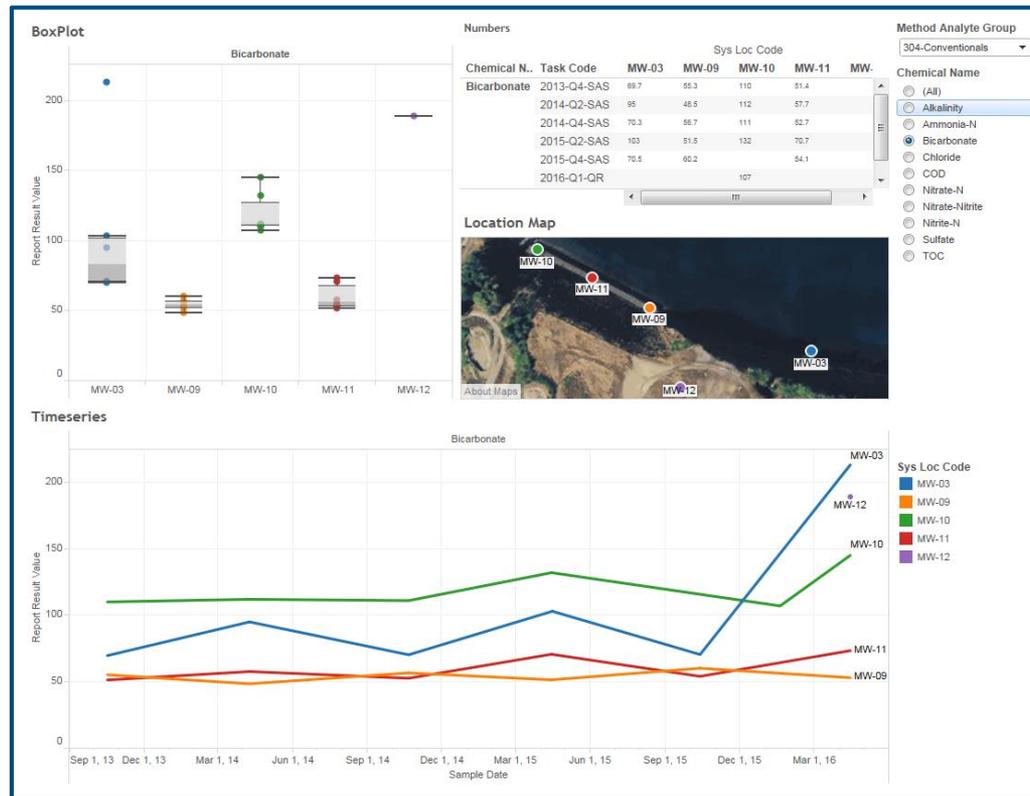
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Data Source BoxPlot Numbers Timeseries Dashboard 1 Location Map Sheet 6 Sheet 7 **Sheet 8**

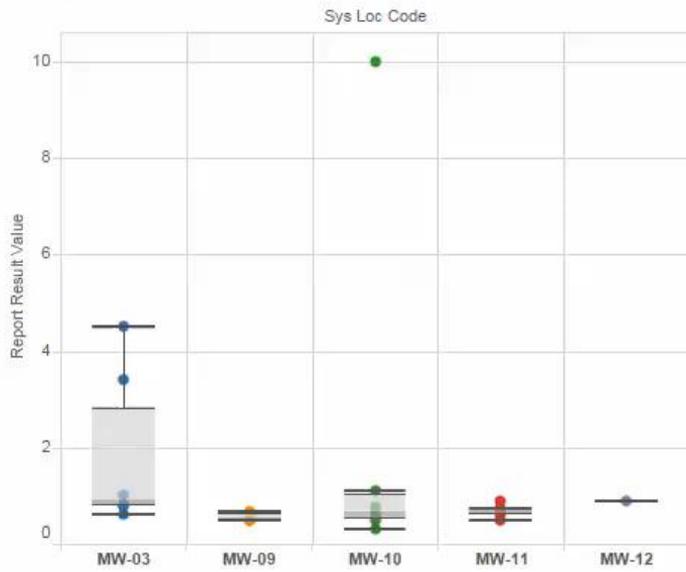
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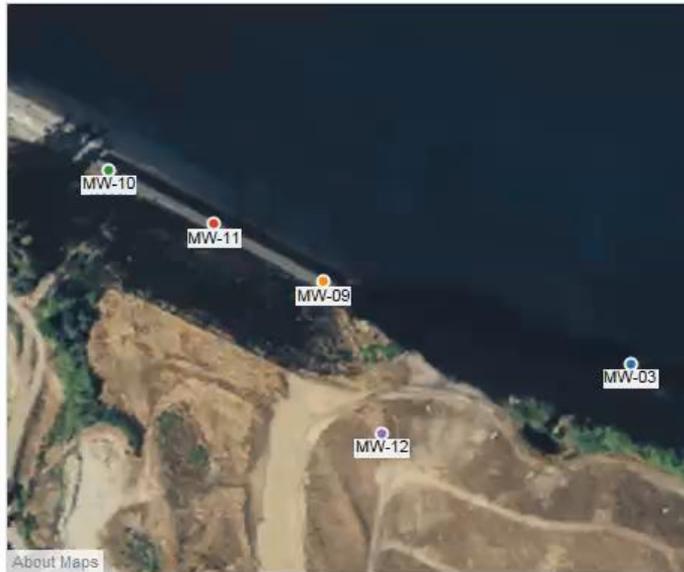
Dashboards



BoxPlot



Location Map



Method Analyte Group

304-Metals

Chemical Name

- (All)
- Calcium
- Iron
- Magnesium
- Manganese
- Potassium
- Sodium
- Zinc

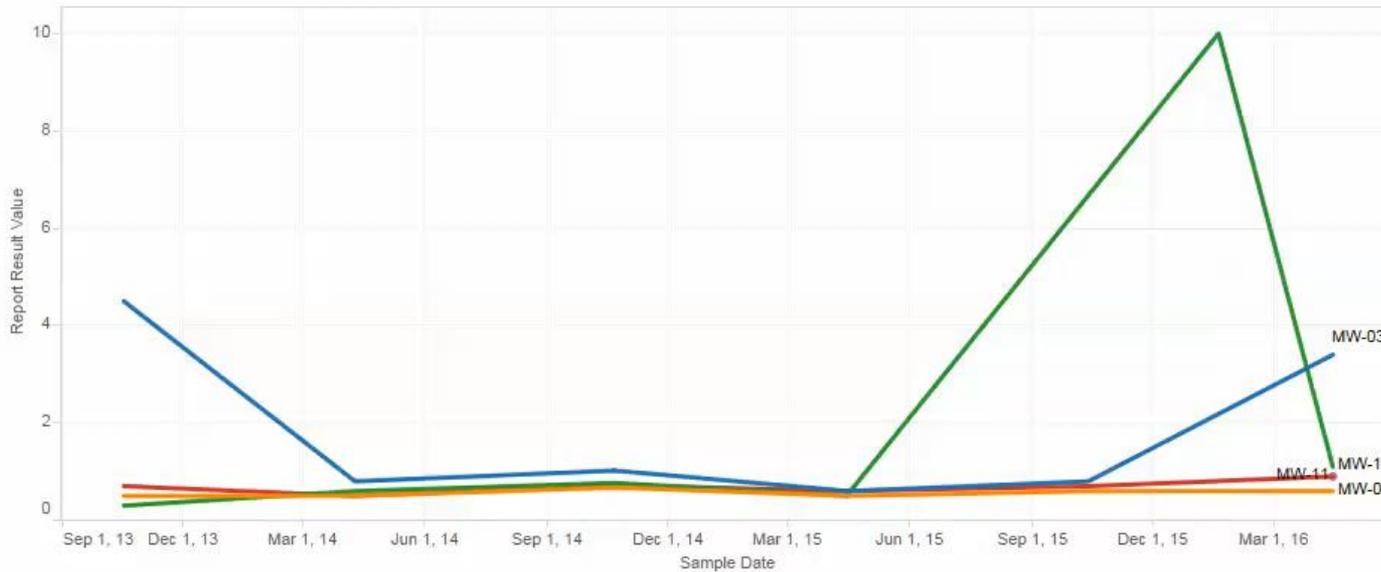
Sys Loc Code

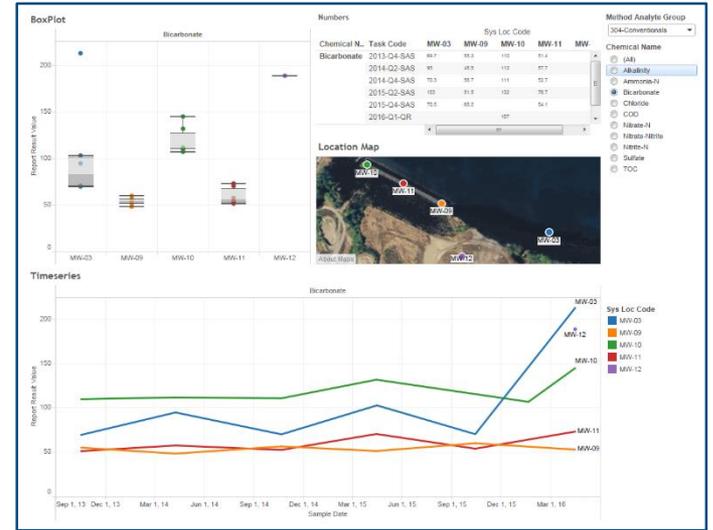
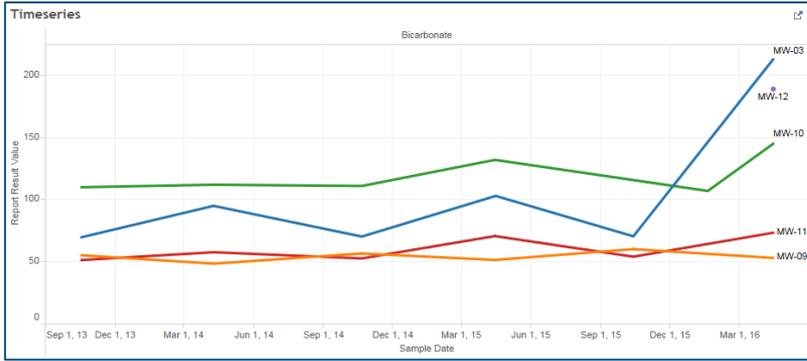
- MW-03
- MW-09
- MW-10
- MW-11
- MW-12

Flag

- No Exceedance

Timeseries





Charts / Graphics / Analytics / Maps

Dashboards

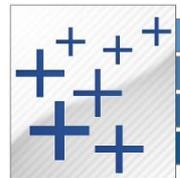
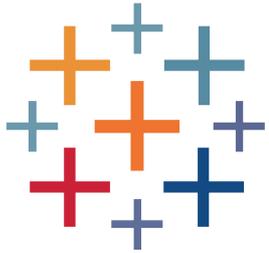


Tableau Workbook

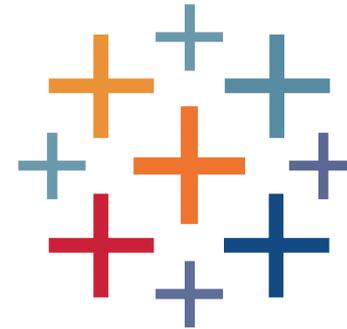
Why Use Tableau?



Limitations:

- It isn't great with tables
- Optimized for Business Analytics – which has different defaults than science.
- It is NOT for storing or managing data

Best of Both Worlds



Let EQIIS manage the data.

Leverage Tableau for more graphical analytics.

How?

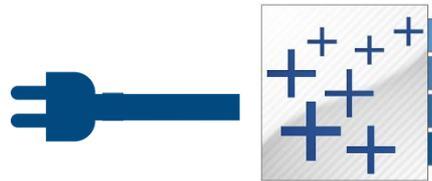
How?

Tableau can plug into almost anything



How?

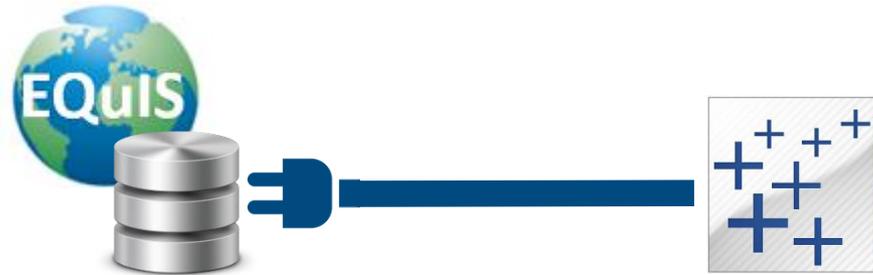
Tableau can plug into almost anything



- Excel
- Text (CSV)
- SQL
- Oracle
- Access
- Power Pivot
- DB2
- Azure
- Google (Analytics & BigQuery)
- Hadoop
- OData
- ODBC
- Sybase
- Firebird
- And More...

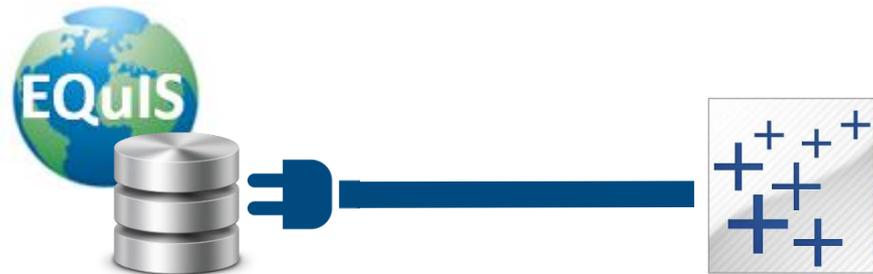
How?

Option 1: Plug a Tableau workbook directly into the EQuIS database.



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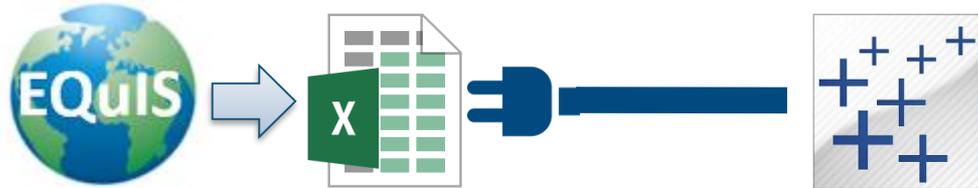


Issues:

- Requires a more expensive Tableau license
- More filtering has to be done, either in SQL or in Tableau
- Each workbook needs to be specifically set up.
- More Coding (SQL, T-SQL, Tableau functions)
- **You lose all the extra functionality that EQUIS reports provide**

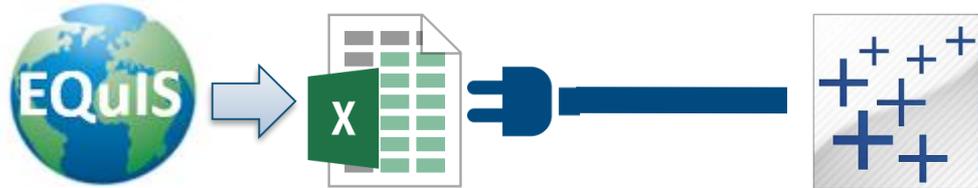
How?

Option 2: Run a report in EQUIS, and Plug Tableau into the Excel Output.



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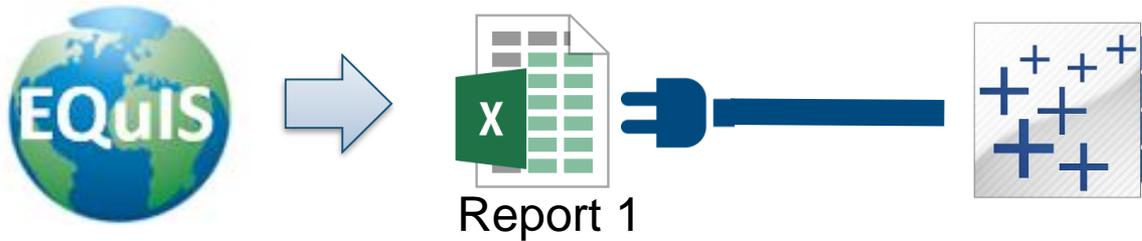
Wait.... what? Why would we want that?

Let each tool do what it is
BEST at.

Why?

- Analyte Names
- Unit Conversion
- Groups (Location groups, & Method Analyte Groups)
- Remapping Values
- Coordinates
- Non-detect Logic
- Action Levels
 - Advanced Action Levels (TOC normalization, etc.)
 - Significant figure logic for comparison
 - Advanced Comparison Options (Matrix, Fraction, Method, Depth, etc.)

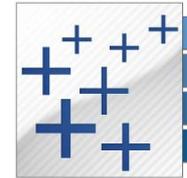
What this lets us do – Workflow 1



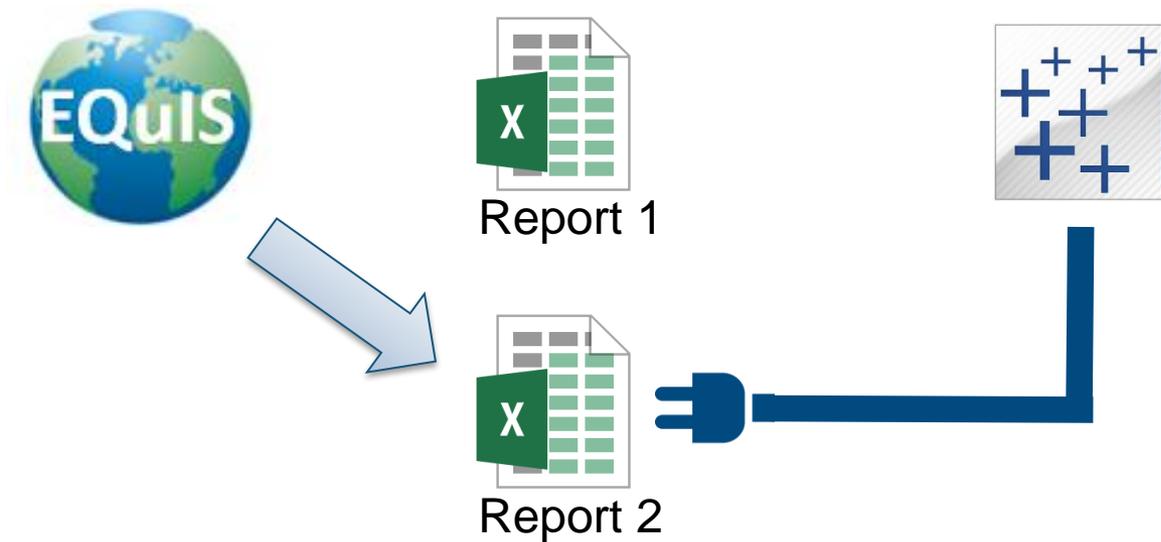
What this lets us do – Workflow 1



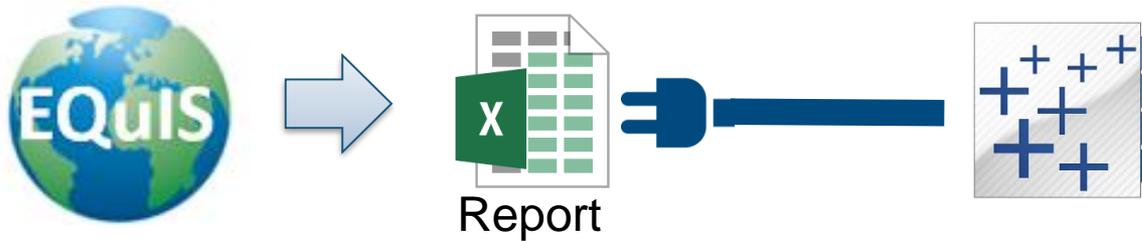
unplug



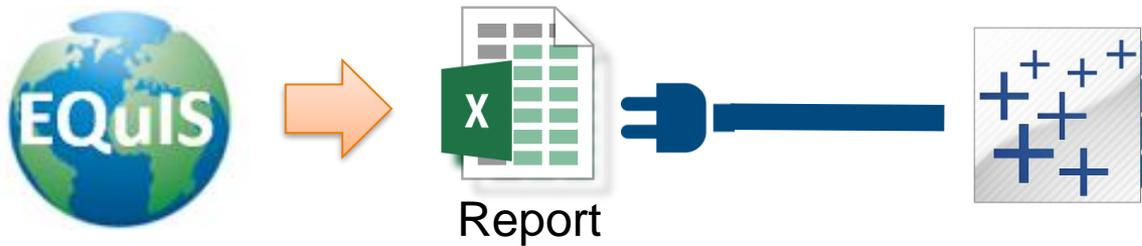
What this lets us do – Workflow 1



What this lets us do – Workflow 2

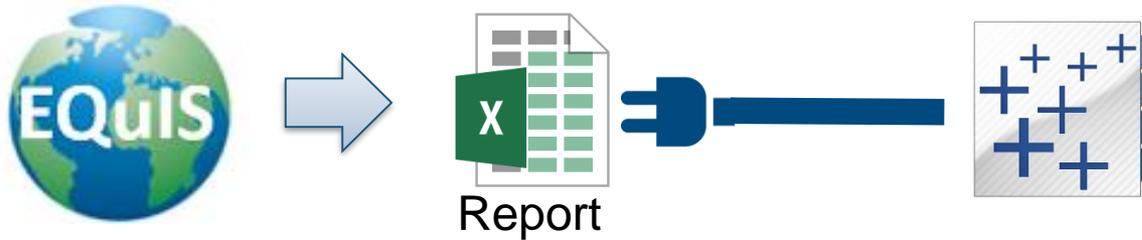


What this lets us do – Workflow 2



Re-run and overwrite Excel file

What this lets us do – Workflow 3



What this lets us do – Workflow 3

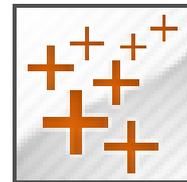
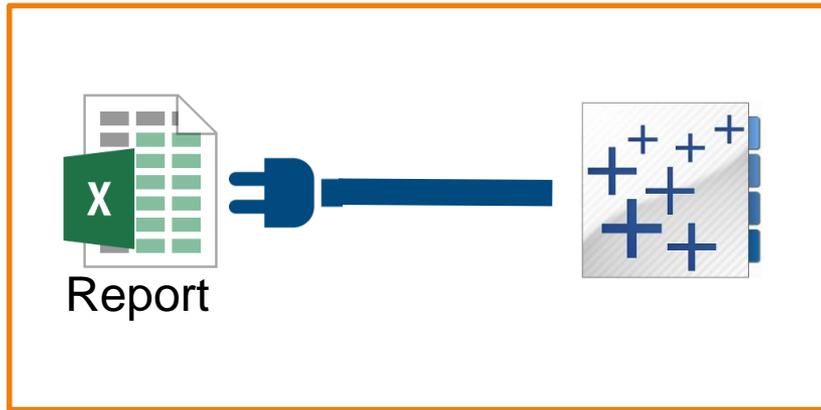
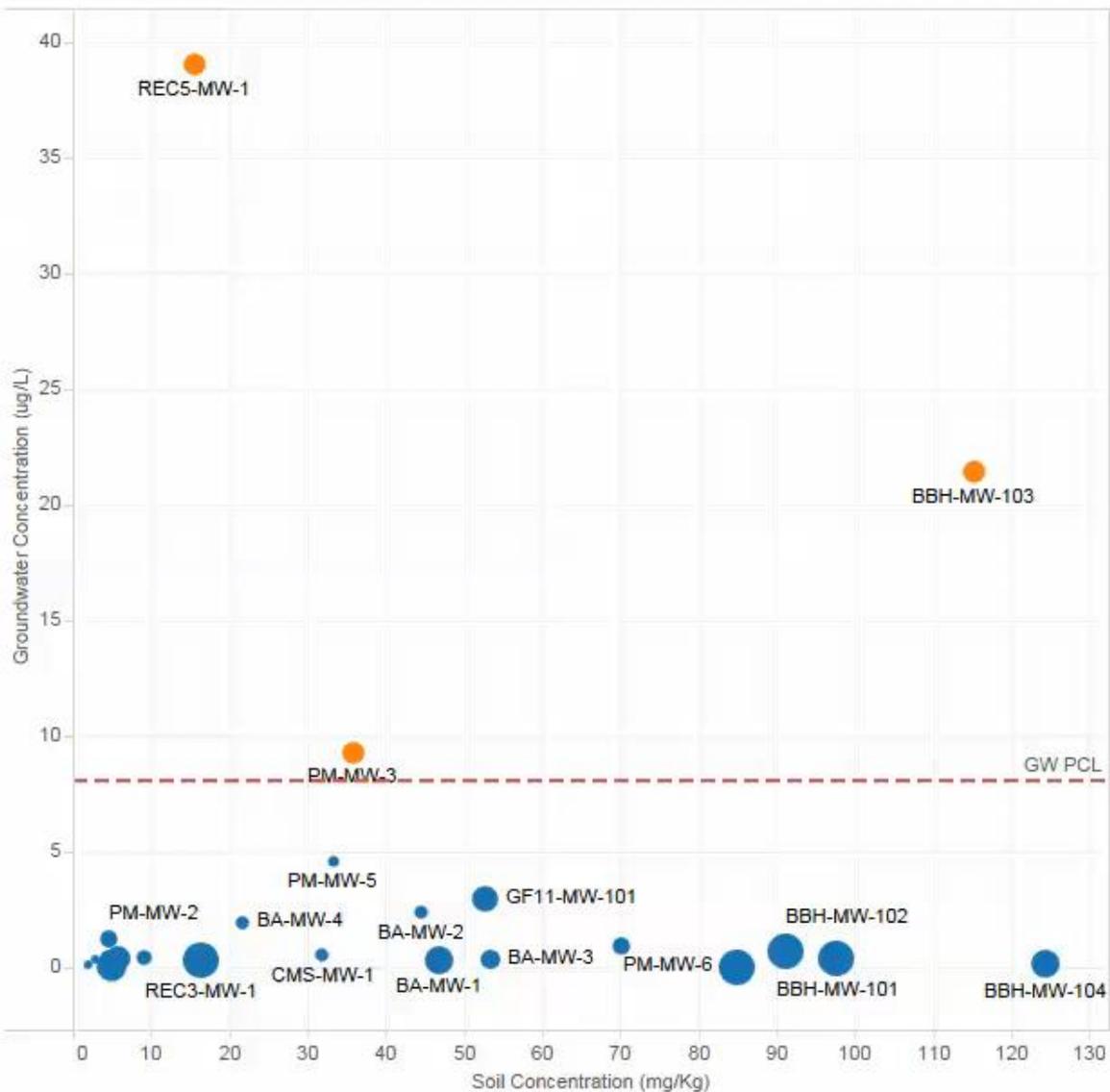


Tableau Reader File

Count of Soil Samples



Analyte

- Lead
- Mercury
- Naphthalene
- Nickel
- Total cPAHs TEQ
- Zinc

Site Unit

- (All)
- A
- B
- C
- D
- E

Excavated Water?

- (All)
- False
- True

Excavated Soil?

- (All)
- False
- True

Exceeds PCL

- N
- Y

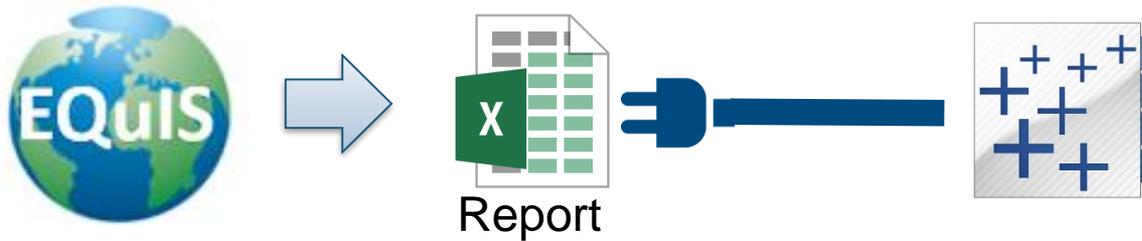
Detected Water Results

- (All)
- False
- True

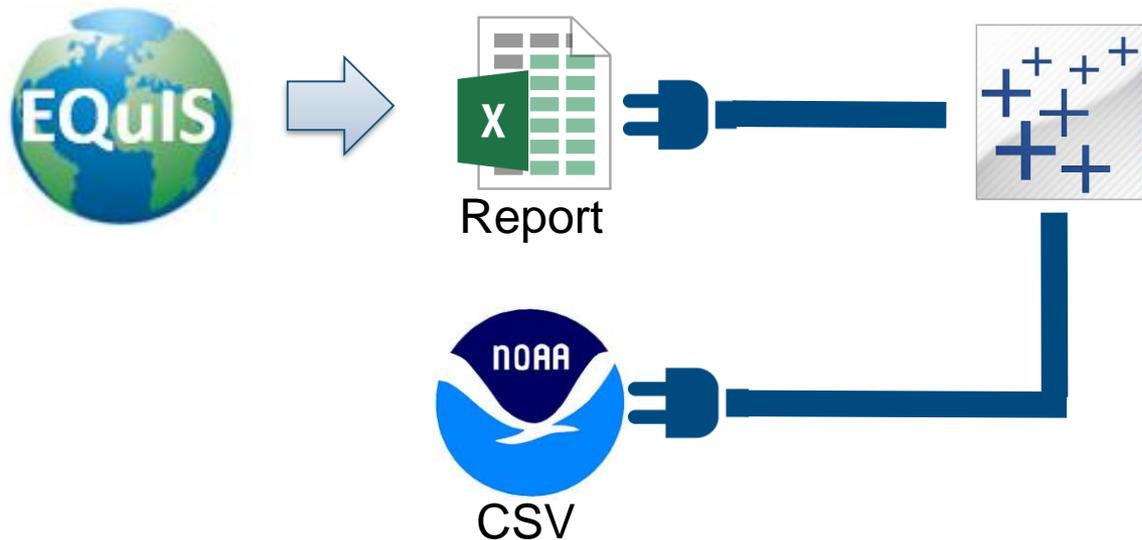
Detected Soil Results

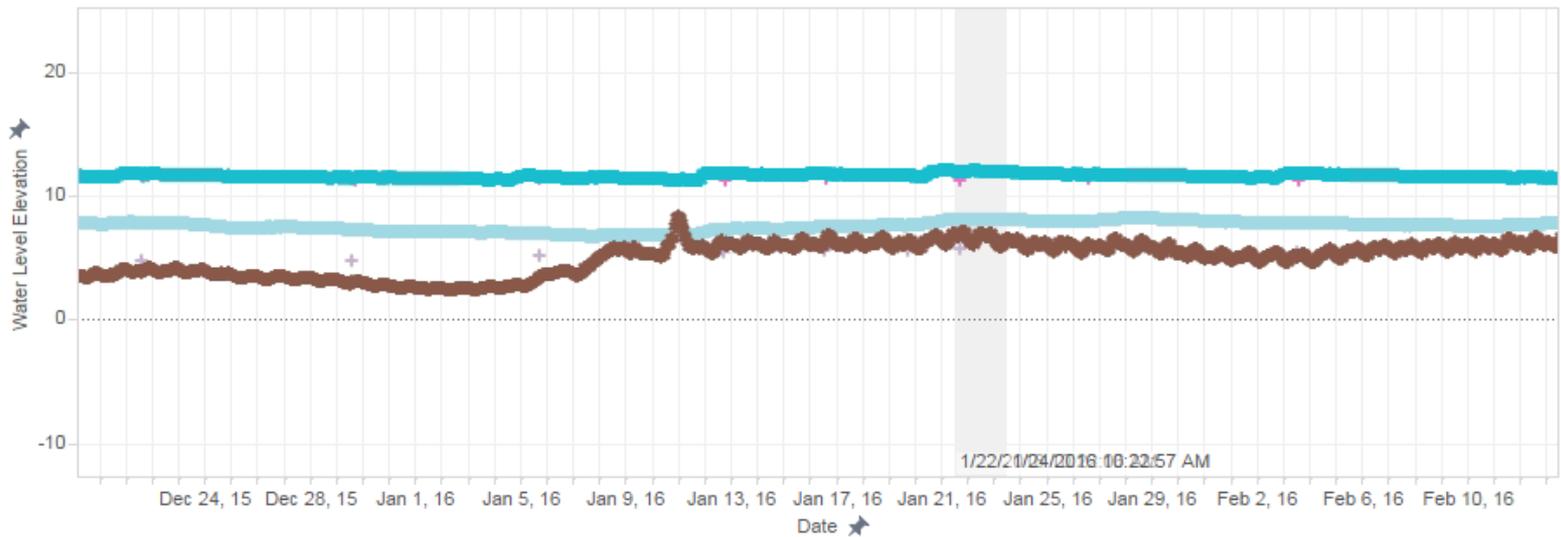
- (All)
- False
- True

What this lets us do – Workflow 4

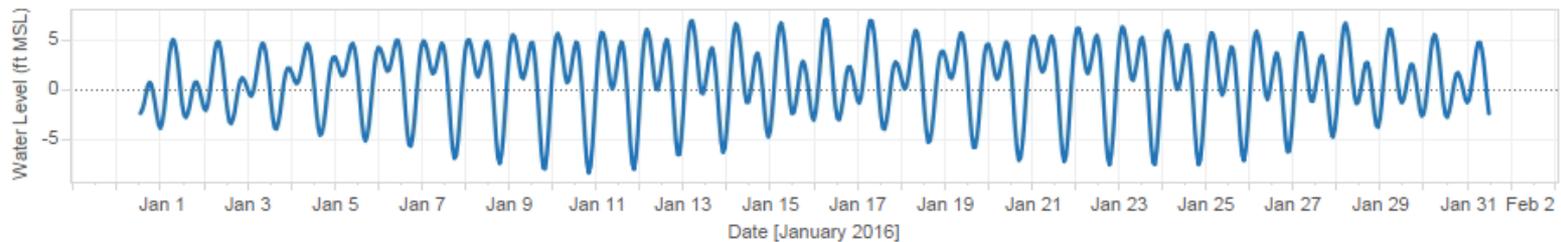


What this lets us do – Workflow 4

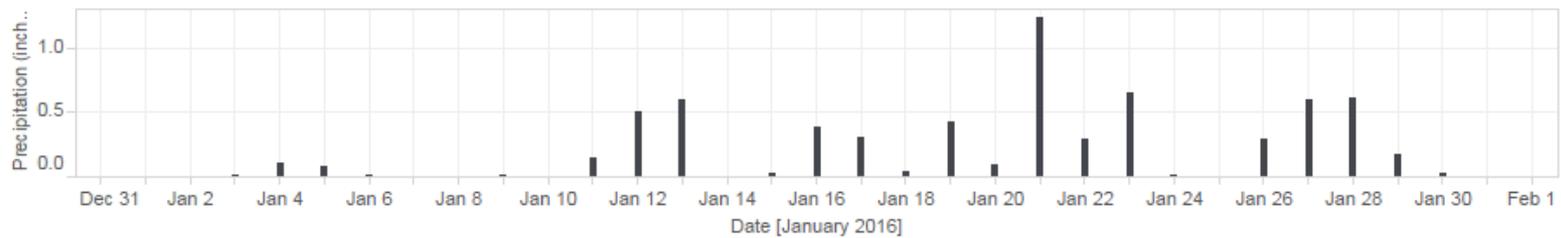




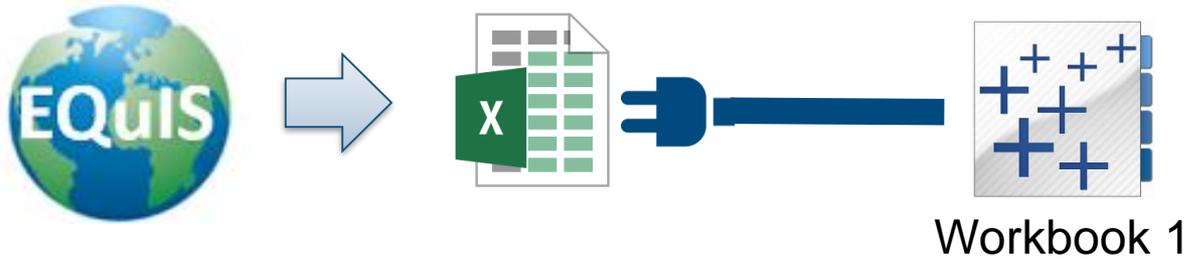
Tide Levels



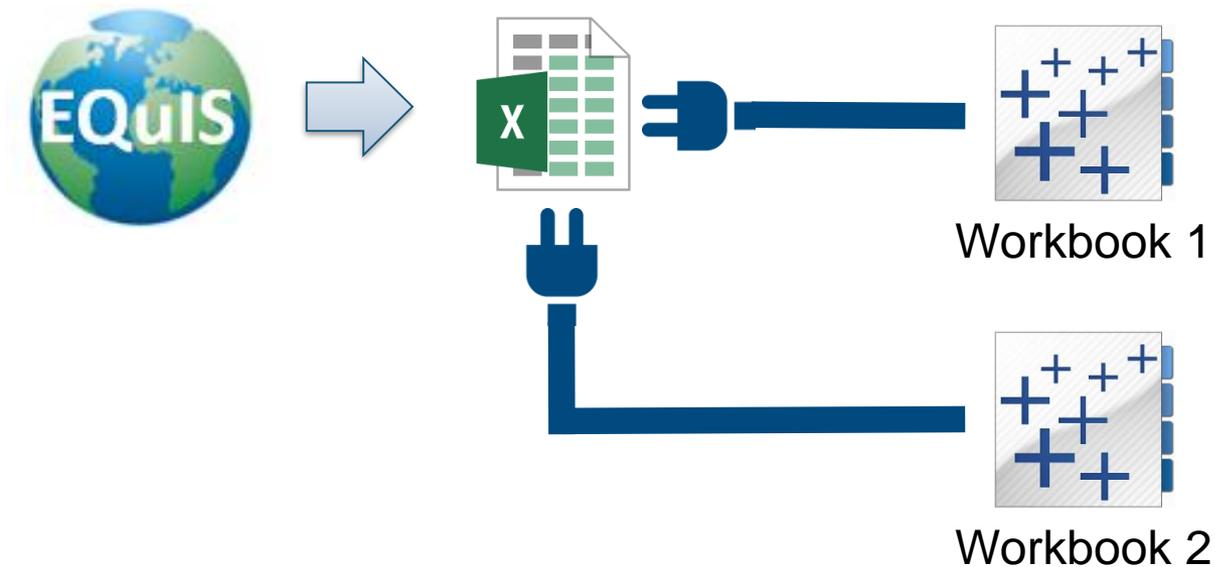
Precipitation



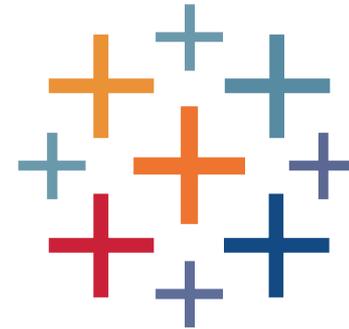
What this lets us do – Workflow 5



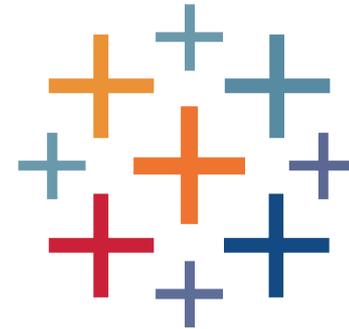
What this lets us do – Workflow 5



Big Picture



Big Picture



EASY

Questions?

