

# Enhancing Data Sharing Among Labs, States, and EPA

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# Today's Presentation

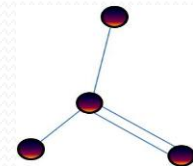
- Explain the Water Quality eXchange (WQX) data standard
- Show how labs can help reduce state reporting burden by providing the analytical metadata required for WQX
- Ask about other existing industry standards for reporting data elements

# WQX Data Standard

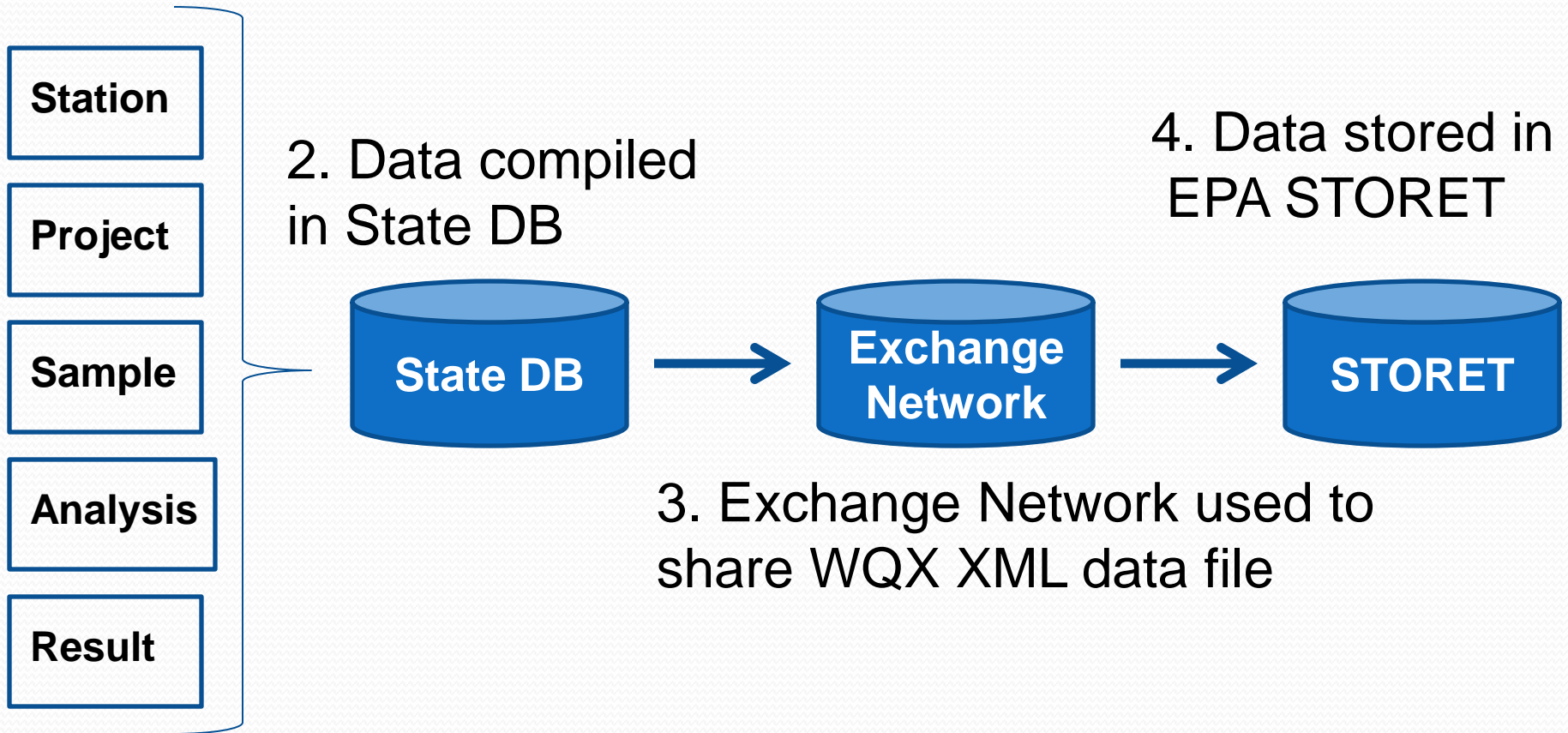
- EPA has a common language water data sharing template called the Water Quality eXchange (WQX) schema
  - Used by over 300 federal, state, and tribal agencies and watershed organizations
- All water data submitted to EPA must be in the WQX format. The data resides in EPA STORET (Storage and Retrieval database) which has over 100 million records
- WQX facilitates data submittal and exchange via the state shared Exchange Network
- WQX serves as the common format to integrate water quality data from the USGS National Water Information System (NWIS) and the EPA STORET Data Warehouse.

# WQX Data Standard

- Enables collection of physical, chemical, biological and habitat data
  - Data components are: Organization, Project, Monitoring Location, Monitoring Activity, Samples, and Results
- Incorporates Environmental Sampling, Analysis and Results (ESAR) data standard
  - Follows the business processes of sampling, analysis and results
    - 1) ESAR Project Data Standard, 2) ESAR Monitoring Location Data Standard, 3) ESAR Field Activity Data Standard, and 4) ESAR Analysis and Results Data Standard.
- Utilizes Substance Registry Service (SRS)
  - Includes every EPA tracked or regulated substance
    - Chemical Abstract Service (CAS) number for a chemical
    - Taxonomic Serial Number (TSN) for a biological organism



# WQX Data Flow Components



1. Components of a water monitoring data record identified

# WQX Data Standard - Station

## Station

- Station – where is it, who uses it
  - Example record

## Project

- Location Site ID - Site 72
- Name - Jones Falls

## Sample

- Org ID - MD DEQ
- Lat/Long - 39.2811, -76.6033
- State – MD

## Analysis

- County - Baltimore City
- HUC - 02060003, Gunpowder-Patapsco

## Result

# WQX Data Standard - Analysis

**Station**

**Project**

**Sample**

**Analysis**

**Result**

- Analysis – who analyzed it, how was it analyzed
  - Example record
    - Lab Name: EnviroAnalytics
    - Media: Water
    - Characteristic Name: Mercury
    - LabSamplePrepMethod: Method-001
    - LabAnalyticalMethod\_ID: USEPA 1631
    - LabAnalyticalMethod\_Name: Mercury in Water by Oxidation, Purge and Trap, and CVAFS
- Result - what was the result, what were the units
  - Example record
    - Fraction: Total
    - Result: 0.2 ug/L
    - Result Detection Limit: 0.5 ug/L

# Questions

- What role can labs play to better provide required data elements to state monitoring program?
  - Review the required data elements for monitoring and analysis when formatting to WQX schema
  - Identify ways labs can collaborate with state programs to reduce reporting burden
- What do labs need to better communicate data with state monitoring programs?
  - Explore how data standards can be used to open up operability and identify with which partners
  - Discuss options for standardized naming conventions