**Meeting Minutes for Region 8 STORET/WQX Meeting**

**Date:** April 18-19, 2006
**Location:** EPA Region 8 Office, Denver, CO
**Attendees:** See Attached

Overview:

A meeting was held between EPA Headquarter, EPA Region 8, Region 8 States, and the National Park Service on April 18-19 in Denver, CO. The purpose of this meeting was to discuss the future of STORET, explain the Water Quality Exchange (WQX), solicit feedback on WQX, and discuss transition options for the users.

Summary of Action Items:

1 – Taxonomic Names: There needs to be a standard list of Taxonomic names. ITIS is a good start, but it is missing a number of Periphyton species. EPA Region 8 is working on standardizing this list. A similar effort is also needed at EPA Headquarters. EPA will continue working on this coordination (**EPA R8, EPA HQ**)

2 – Groundwater Samples: EPA will research if WQX will be able to handle Groundwater samples (**EPA HQ**)

3 – HUC: EPA will add a data element to capture 8-digit HUCs. EPA will also research adding an element for 12-digit HUC (the same watershed that are being defined and finalized by NRCS). EPA will also explore the possibility of providing a web service that will return the NHD Reach Codes to the users of WQX for their stations. EPA will also research if this could also provide a validation routine for counties and HUCs based on the provided lat/long (**EPA HQ**)

4 – External Station ID Scheme: EPA will research adding External Station ID data element for each monitoring location. This element would be optional and would allow a user to identify one alternative ID for each station. This would be used in cases where different organizations share the same station (**EPA HQ**)

5- Activity_ID Length: There was a question about the max length for Activity ID. EPA needed to verify that the current length is 25 characters. In the current schema, the length is 25 characters, but will be increased to 35 characters (**EPA HQ**).

6 – Activity inter-relationships: There was some discussion on how activities should be able to relate to each-other. EPA agreed that there were some issues with the existing sample/sub-sample relationship. EPA agreed to research this issue focusing on the following four areas (**EPA HQ**):

> A. Field Set descriptors
> B. Trip Blanks
> C. Duplicate Samples
> D. Sub-Samples

7 – Activity Depth: In the current schema, Activity Depth is required for Samples. This will be changed to optional (**EPA HQ**)

8 – Relative Depth:  There is currently not a data element for "Relative Depth" (i.e. Surface, bottom, etc.).  EPA will research this element to determine if it is necessary for data sharing and data analysis. **(EPA HQ)**

9 – Sample Preparation Procedures:  This data element is currently required for samples.  It will be changed to optional.  **(EPA HQ)**

10 – Result Qualifier:  ESAR has added a data element to capture Result Qualifier.  Some discussion was had as to whether or not it would make sense to add this data element to WQX. This data element would consist of those qualifiers that are provided by the labs, or are added as a result of QC, that accompany each result value.  This information is also captured in other data elements, but is broken out over multiple elements to cover the entire meaning.  EPA plans to add this data element as an optional element, with an accompanying domain value list.  EPA will also put together some data examples using Result Qualifier **(EPA HQ)**.

11 – Parse and Load/Partial Submittal:  The current data flow requires that an entire data submittal pass the data validation checks before it can be loaded into the database.  Region 8 expressed some concern that they would like this to also allow for a partial submittal if only part of the file did not pass the validation check.  For example, 9 out of 10 activities pass the validation check, the system would then allow the user to upload the 9, and then the data submitter would work on the 10$^{th}$ and then load at a later date.  EPA will research the feasibility of allowing this, and what it would mean to data submitters.  EPA also agreed to provide statistical information pertaining to system performance in loading data into WQX ODS **(EPA HQ)**.  Performance information for OWWQX pilot was as follows:

> Oregon:
> > 12,540 Results (+256 Monitoring Locations & 1 project)
> > 14.25 minutes to load
> > ~ 60,000 Results per hour

> Wind River:
> > 32,021 Results (+83 Monitoring Locations & 1 project)
> > 16.05 minutes to load
> > ~ 120,000 Results per hour

> The performance seems fairly similar to SIM.  Usually 50k – 100k per hour is good performance for SIM.  Additionally, SIM does have the migration step (which many people forget to count).  Migration is 4 or 5 times faster than importing but does bring the numbers down about 15%.

> Likewise the 60k – 120k per hour recorded by WQX are certainly likely to change in the final implementation and could go up or down depending on the hardware, volume of existing data already in WQX before loading, and whether we're running on a dedicated server or a shared server.

12 – Portable Data Logger:  The data element PortableDataLogger would be renamed to DataLogger **(EPA HQ)**.

13 – Unique Activity IDs example:  EPA will provide an example of how to create unique activity ids for an Organization **(EPA HQ)**.

14 – Updating Existing STORET Data: The R8 states raised a question about how one would go about updating data that is currently in STORET after the September 2009 cut-off date. Since this data would not be in the WQX Data system, it wouldn't know that new updated data coming in should replace the older STORET data. EPA will research this scenario, and identify a solution **(EPA HQ)**.

15 – Provide examples of other state data models: EPA is aware of a number of other states that have successfully developed data management systems for tracking monitoring data. EPA will pursue the facilitation of the sharing of these data models with the user community **(EPA HQ)**.

**Transition/Issues Discussion:**

A large part of the discussion on the second day was focused on the issues surrounding the transition from STORET to WQX. A number of issues where identified, along with a number of possible solutions. Some of the issues that were identified are:

1. Without STORET, some states will not have a local data management system
2. The change causes a shift of the burden to the local/state level. This will result in a number of issues related to:
    a. Staff resources
    b. Development resources and capability
    c. Maintenance
3. WQX does not currently have a structure to cover biological data
4. If a Consortium approach is taken to facilitate the transition, there are a number of issues related to making the consortium work:
    a. How do you maintain the system
    b. Danger of being reliant on a single contractor
    c. How do you account for different platforms
    d. How do you cover maintenance costs
5. 2009 will be here sooner than we know it

To facilitate this transition, and keeping in mind these issues, the following options were proposed as ways to transition from STORET to WQX:

1. Keep the STORET data structure (rebuild the user interfaces)
2. Adopt the WQX data structure (build user interfaces around this structure)
3. Use other third party software
4. Region 8 lead a consortium of states to develop and maintain a system that interacts with WQX and meets the needs of the states

The group preferred Option 4 as the best way to meet their long-term data management needs. This option would need to rely on HQ seed money to get it started. How the system would be maintained is an issue that still needs to be resolved.

**Appendix A: Requested Changes to WQX Schema**

| Request No. | Description | Status |
|---|---|---|
| 1 | Need ability to add Biological Data | Will Add post Jan '07 release |
| 2 | Support Groundwater Samples | Research |
| 3 | Add 8-digit HUC | Implement 09/06 |
| 4 | Add 12-digit HUC | Research |
| 5 | External Station ID | Research |
| 6 | Change Activity_ID length from 25 to 35 | Implement 05/06 |
| 7 | Activity Inter-relationships (address QC data, subsampling issues, etc.). EPA may not implement the Field Set Requirement. | Implement 05/06 |
| 8 | Make Activity Depth Optional | Implement 05/06 |
| 9 | Add Data element: Relative Depth | Research |
| 10 | Make the Sample Preparation Procedure elements optional | Implement 05/06 |
| 11 | Allow Partial Submittals through WQX | Research |
| 12 | Change element name for PortableDataLogger to DataLogger | Implement 05/06 |
| 13 | Add Result Qualifier data element | Implement 05/06 |
| 14 | Store multiple personnel for a given activity | Research |
| 15 | Need ability to store user-defined Habitat assessments | Will Add post Jan '07 release |
| 16 | Need the ability to designate reference stations | Will Add post Jan '07 release |
| 17 | Need the ability to have user-defined groupings for monitoring locations | Will not be implemented |
| 18 | Inclusion of Water body name | Will not be implemented |
| 19 | Ability to cover transect information | Mostly covered by activity locations. There are a few other data elements that are not included, and also will not be included at this time |
| 20 | Add and element to capture 'Program' | Will not be implemented |

## Appendix B: Attendees

| Name | Organization | Email |
|------|-------------|-------|
| Dwane Young | EPA HQ | Young.dwane@epa.gov |
| Kristen Gunthardt | EPA HQ | Gunthardt.kristen@epa.gov |
| Marty McComb | EPA Region 8 | Mccomb.martin@epa.gov |
| Karl Hermann | EPA Region 8 | Hermann.karl@epa.gov |
| Arne Hultquist | UT | arnehultquist@utah.gov |
| Arne Sjodin | CO | alsjodin@smtpgate.dphe.state.co.us |
| Joe Gross | ND | jlgross@state.nd.us |
| Michael Pipp | MT | mpipp@mt.gov |
| Jolene Berscheid | MT | jberscheid@mt.gov |
| Rich Hanson | SD (by phone) | Rich.hanson@state.sd.us |
| Trish Kindt | SD (by phone) | Rish.kindt@state.sd.us |
| James Dorsch | Metro Wastewater | jdorsch@mwrd.dst.co.us |
| Dean Tucker | NPS | Tucker.dean@nps.gov |
| Mike Matz | NPS | Mike_matz@partner.nps.gov |
| Dave Wilcox | Goldsystems | davew@goldsystems.com |
| Ryan Jorgansen | Goldsystems | ryanj@goldsystems.com |
| Ernestine Bryant | Lockheed Martin | Ernestine.bryant@lmco.com |