Risk Based Data Management Solutions (RBDMS) Water

Helping to shape the way agencies, industry, and the public manage water and energy resources

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GROUNDWATER PROTECTION COUNCIL
RBDMS Works for all environmental programs

- Developed for the oil and gas regulatory program
- Modules are compatible with all water programs
- Modules include:
  - Field inspection
  - Data mining
  - Well schematics
  - Electronic permitting and reporting
  - National UIC database
  - Water quality/quantity
RBDMS partners nationwide number 21 states and the Osage Nation.

- Since its inception in 1992, RBDMS has continuously improved and expanded its form and function as a result of user feedback.
- RBDMS successfully moved from client-server to Web database interfaces, thus easing data exchange between agencies and industry operators.
RBDMS program history is one of collaborative success.

• Developed under a grant funding from the DOE NETL with matching funding from the benefiting state agencies.
• Directed by a four-state Steering Committee (NY, ND, MT, NE).
• Advised by a rotating Technical Committee of state agency representatives.
• Supported by a state-to-state peer network and a panel of consultants tapped through help desk referrals.
RBDMS user support takes many forms.

- Telephone and remote support (Terminal Services and/or Virtual Private Network)
- Project tracking through SharePoint Services
- Code sharing
- Bi-annual training meetings
- Open-attendance telephone and Web conferencing
- Onsite consulting support when necessary
Water Quality and Analytical Data Reporting from Field and Laboratory

RBDMS ENVIRONMENTAL
A server-neutral GIS interacts with both statistical reports and the project builder.
RBDMS Env manages field, analytical data from areas disturbed by oil & gas and mining activities.

- Qualitative and measured field observations for soil, sediment, surface water, ground water, and air matrices.
- Analytical water quality and chemical data reporting from industry and third-party laboratories.
- Installations of RBDMS Env:
  - In CO, RBDMS Env is being developed to track environmental data associated with oil and gas regulation, including but not limited to hydraulic fracturing operations.
  - In OH, agency staff use RBDMS Env on the desktop to track data associated with mined lands. ODNR is in the process of launching the Web version to support inspectors and watershed volunteers and to serve data to the public.
  - Agencies in NV, NE, and MS have previously used the RBDMS Env data structure in connection with their source water protection programs.
RBDMS Environmental features:

• Secure logon and roles-based security that integrates with the eForm architecture.
• A filterable dashboard.
• Online form completion for facility creation, sample data, and field and laboratory results.
• Client- and server-side data validation for immediate user feedback.
• A server-neutral GIS.
• An extension of the eForm Alerts module that includes sophisticated analytical data checks.
• Chain-of-custody and statistical reporting.
• Electronic data deliverable formats based on the EPA WQX schema (http://www.epa.gov/storet/wqx/index.html).
Filterable dashboard offers extensive flexibility for data retrieval.

- Search by project, facility, media type, well API, and various location extents.
RBDMS Env administrators define parameters and test methods as a one-time set-up task.

- These lists become lookups that can be used to create grouped analysis lists.
- Analysis lists can then be assigned to sample sets as needed to record sample results.
- Samples are associated with specific facilities.
- Facilities can be grouped into one or many projects.
- The application hierarchy provides a flexible structure for organizing data views according to need.

- Project (Site)
  - Facilities (Locations)
    - Samples
      - Results
Automated alerts and data validation checks included in RBDMS Env:

- **Facility:**
  - Name
  - Location
  - Location Extent

- **Sample:**
  - Sample Date
  - Sample Location
  - Sampler Name
  - Orphaned Data

- **Results:**
  - Cation:Anion Ratio
  - Exceedance
  - Holding Time
  - Missing Analysis
  - Dissolved vs. Total
  - % Difference from Baseline
  - Sodium Absorption Ratio
Labs can upload reports to the RBDMS Env Web in one of several possible formats:

- In online forms.
  - Create new facilities and report sample data and results on single forms through the secure login.
  - Client-side data validation checks flag entries that are out of range or incorrectly formatted for immediate corrections.
Labs can upload reports to the RBDMS Env Web in one of several possible formats:

- In an Excel format mapped to the XML schema.
  - The spreadsheet data is parsed for the same validation checks used in the other formats.
  - Users receive a confirmation of the status of the upload (Pass or Fail with reason).
Labs can upload reports to the RBDMS Env Web in one of several possible formats:

- **In EPA WQX-compliant XML directly from a LIMS.**
  - The data submitted will be checked for pre-defined validation errors.
  - Users receive a confirmation of the status of the upload (Pass or Fail with reason).
  - Using this method avoids key-entry errors and saves time.
A server-neutral GIS interacts with both statistical reports and the project builder.