EQuIS at Antea Group

Large-scale Implementations incorporating EQuIS and other Enterprise systems

Susan Welch, Antea Group
Background

Antea Group (Formerly Delta Consultants)

Environmental consulting, “soup to nuts”
• Design approach to each project
• Remediation
• Sampling, Gauging
• Data and System Evaluation
• Goal = closure (clean it up and prove it)

TDM = Technical Data Management at Antea Group
Built on EQuIS, iEHS®, and other custom tools
Congratulations! Now what?

Scenario:
You’re chosen to manage a big project. You know you want the industry-standard data management solution, EQuIS.

Where to get started? How to ensure that the implementation gets off to a good start and has the ongoing support needed? How to keep everything moving and avoid disaster?
An Example EQuIS Implementation

At project initiation:

- Ongoing project, with data since 1984
- 12 states across western/central U.S.
- 295 active facilities (207 now active)
- 56,000 gauging records (62,000 now)
- 58,000 samples (65,000 now)
- 454,000 analytical results (573,000 now)
- 64 users
- 5+ labs
Needs Assessment

“Don’t just do something, stand there!”

Take Stock = Needs Assessment

- Size/scope
- Historical Data
- Anticipated approach (O&M, Gauging, Analysis, Field Rdg)
- Labs
- Users and roles
- Supplemental tools
- Integration with other Enterprise systems
- Overall Technical Data Management (TDM) Solution
**Needs Assessment: Size and Scope**

Facilities
Locations per facility
Existing/new wells *(survey data, well construction)*
Matrices for analysis *(new? Implications?)*
Remediation systems *(number, type, data collection)*
Reference values *(approve and update)*

Decisions:
- Separate Database, EQuIS Enterprise Instance?
- Custom format, reference values, workflow, export/report?
Needs Assessment: Historical Data

How much, and what form?

- No historical data 🍀
- Analytical Data available from lab, Field data in standard XLS form (HDP, Lab EDDs, server-side scripts; minimal labor)
- Analytical data, and all Field data in standard XLS or MDB form (HDP; medium labor)
- Data in multiple formats, varying by previous data manager, PM, etc. (HDP; maximal labor)
Needs Assessment: Anticipated Approach

Charting a course

- Remediation Systems (O&M)
- Gauging
- Field Readings
- Analytical Sampling

Shared expertise

- Portfolio managers, PMs
- Communication process
  - Track plans, status, progress
  - Needs: shared, secure, self-maintaining
Needs Assessment: Labs

New labs?
Confirm lab is set up to:
• Perform needed analyses
• Provide data in specified EQuIS format
  • Structure
  • Reference values
  • Business rules (standard and custom)
  • Naming conventions
Needs Assessment: Users and Roles

Choosing the right team

- Understanding the process means we can assign roles to the right users
- Roles:
  - Portfolio Manager(s)
  - Project Managers
  - System Experts (“TDM Experts”)
  - Field Agents
  - Lab (IT and data submitters)
  - Support (Administrators)
TDM Workflow

Field Agent

1. Sample Planning (TDM Expert)

Antea Group

2. Bottle/Analysis Order "BO"

3. Work Order "WO"

4. Bottles/Labels

5. Undertake Field Work

6. Samples/COC

7. Analysis of Samples

8. Field EDDs

9. Lab EDDs

Planned EDDs

Notice that EQuIS is in one box…?
To 90% of our users, EQuIS is invisible.
(while 10% of our users exploit the full functionality available via EQuIS 5 Professional)

EQuIS Modules

Errors (if found)

Antea Group Data Managers

Data Verification & Review

Final Reports

Validation
Needs Assessment: Supplemental tools

The Right tools → Efficiency and Quality

What are we still missing?

- System Configuration (custom: Configuration Template)
- Historical Data Processor (custom: Historical Data Processor)
- Sample Planning (custom: SPM)
- Field Data Entry (custom: Field UI)
- Custom(ized) Reporting (e.g., CO MMR)
- Post-process report customization (custom: Report Formatter)
- Shared information (iEHS)
- High level analysis (iEHS)
- Meta-data (iEHS)
- Training and Support (iEHS, TDM Support Team)
Needs Assessment: Integration with other Enterprise Systems

Factors

• Large portfolio, large team to support
• Geographically spread out

How do we keep this on track? Need:

• Up-to-date statistics
• Trackable information (by event, by facility, by role)
• Reminders (SPM, field, lab, EDDs, reports)
• Meta-data (TAT, hold time, completeness checks)
The right tool for the job

Matching tools to each need

Goals

• A tool for each job
• Electronic transfer of data
• Quality checks at every step
• Defined user roles
Historical Data Processor

Distributed Labor

“Pre-Processing” into Analytical And Gauging

Creates EDDs ready to submit to EQuIS
**Configuration Template**

**Distributed Labor**

**Simple Interface**

**Creates EDDs for upload to EQuIS**

![Excel screenshot of a configuration template](image-url)
Sample Planning Module
Simple Interface
Repeatable
Field User Interface

Uses Work Order information to pre-populate EDD
User is prompted to fill in remaining required fields
“INSERT EQUIS HERE”

EQuIS covers the not insignificant tasks of:

- Checking all data submissions (using AG custom format)
- Inserting/merging to database
- Sending notifications as appropriate

Additional work done on the server

- Scripted Nightly backups, weekly DB maintenance
- Scripted updates (Custom CA Analytical Suites; qualifier updates)
- Custom report development and scripts to view meta-data, perform QA
ReportFormatter

Alter existing reports to meet PM preference
User chooses options
Standard report becomes custom
Custom Reports

EQuIS makes it easy to create new reports
Export to Excel → exported EDD
Ready for import into required state application
EQuIS Integration with other Enterprise systems

What makes EQuIS work with other Enterprise systems?

- Ability to build on EQuIS application
  - Custom format files for input
  - Reports
  - Export data in custom format
- EQuIS database
  - Normalized, with “everything in its place and a place for everything”
  - Extensible
  - Link to other systems (financial, information sharing)
**iEHS®: intelligent Environment, Health & Safety**

**Purpose:**
- Manage client and portfolio information
- Track:
  - Progress
  - Tasks
  - Documents
- Business Intelligence
  - Cognos 10
  - Views over EQuIS data and meta-data
  - Trends, drill-down
iEHS®: intelligent Environment, Health & Safety

Distinct site for each project
NOT 1:1 with EQuIS Databases
Retains visual separation of data
iEHS®: portfolio dashboard

View overall progress at a glance
iEHS®: Facility overview

Drill down on any data point to view detailed data
Views on EQuIS database
iEHS®: Event tracking

Tasks are set up in iEHS, assigned to roles
Frequency, due date, trackable
Tasks mimic workplan:
• Sample Event Planning
• WO/BO to Lab/Field agents
• Field Data upload
• Reports
**iEHS®: Event tracking**

PM Overview... down to details... and summary back to PM
## iEHS®: Event Data and meta-data

Compare Planned Sampling to data received (completeness)
Check TAT, hold time, etc.

![Image of iEHS® interface]

<table>
<thead>
<tr>
<th>Facility</th>
<th>Delta PM</th>
<th>Task Code</th>
<th>Task Month</th>
<th># Planned Samples</th>
<th># Sample Records</th>
<th># Samples</th>
<th># QC Samples</th>
<th># Sample Qual</th>
<th># Lab Samples Rec</th>
<th># Lab Samples Analysed</th>
</tr>
</thead>
<tbody>
<tr>
<td>256209</td>
<td>Lia Holden</td>
<td>WG_Q_201007</td>
<td>201007</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td></td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>256211</td>
<td></td>
<td>WG_Q_201101</td>
<td>201101</td>
<td>12</td>
<td>12</td>
<td>11</td>
<td>1</td>
<td></td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>256200</td>
<td></td>
<td>WG_S_201001</td>
<td>201001</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td></td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>256277</td>
<td>Tony Povini</td>
<td>WG_BM_201104</td>
<td>201104</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>256297</td>
<td>John Aminato</td>
<td>WG_Q_201101</td>
<td>201101</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WG_Q_201102</td>
<td>201102</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WG_S_201001</td>
<td>201001</td>
<td>9</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WG_S_201007</td>
<td>201007</td>
<td>9</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>256223</td>
<td>Doug Umland</td>
<td>WG_A_201008</td>
<td>201008</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td></td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>256230</td>
<td>Decie Bush</td>
<td>WG_S_200912</td>
<td>200912</td>
<td>20</td>
<td>20</td>
<td>15</td>
<td>3</td>
<td></td>
<td>6</td>
<td>22</td>
</tr>
</tbody>
</table>
**Quality approach**

TDM developed to ensure quality and efficiency by means of:

Standard Workflow (consistent process)

Defined Roles, tasks, and a tool for each task

Data quality enforced at multiple points

- System Implementation – data cleanup
- SPM enforces use of valid locations, analytic methods, etc.
- Data entry (Field UI pre-populates from SPM)
- Data Check (EQuIS EDP)
- Central Database (at EDD load and afterwards via verification/validation)

Data transferred electronically at ALL steps of the Workflow

Central database (data security) and advanced reporting tools, allowing for detailed analysis through standard and custom reports, charts, modeling tools
With the right tools, it all falls into place

EQuIS: Reliable, Customizable, Extensible

EQuIS allows the creation of a Technical Data Management solution to support a portfolio of any size.

Thank you....
Susan Welch
Senior Project Manager
Antea Group
Susan.welch@anteagroup.com
Appendix: TDM Workflow

Field Agent

3. Work Order “WO”

6. Samples/COC

5. Undertake Field Work

Antea Group

1. Sample Planning
   TDM Expert

2. Bottle/Analysis Order “BO”

4. Bottles/Labels

3. Planned EDDs

6. Samples/COC

Field EDDs

Antea Group

Data Managers

Errors (if found)

Data Verification & Review

Validation

Laboratory

7. Analysis of Samples

9. Lab EDDs

Planned EDDs

Antea Group

Final Reports
Appendix: TDM Applications

iEHS®
Historical Data Processor
Configuration Template
Sample Planning Module
Field User Interface
Report Formatter