What is the RBDMS Inspection Module project status?

Sacramento, California
November 17, 2016
Walkthrough the project

- The concept
- The documentation
- The application in development
- Next steps
- Risk based prioritization
Building the requirements?

- Visit some states to observe the process
- Talk to the field staff to learn the data and priorities
- Talk to the management to learn future plans
- Collect all of the conversation
  - Priorities
  - Tracking tools
  - Maps used
  - Cell phone and air card functionality in the field
What is an inspection?

- Every field visit should be documented
- Not every inspection is a well site
- Should a visit to a complainant be an inspection
- Why not make the application document our time
- Sometimes I just go by to see if there is a problem
- Sometimes I spend all day at a single site
What is needed for the application?

- There are as many styles as there are states
  - Ability to address the most complicated situation
  - Keep it simple to use
  - There has to be access to agency information for the site
  - And remember where we were, almost no inspection is without interruption
  - We have to collect detail and show why we are here
  - Can we use it on a tablet or even a cell phone
Field Inspectors are busy professionals.

- Minimize data entry
- Maximize the ability to document site details and problems
- Feed the system
  - If I have to come back don’t let me forget
  - Problems have to be addressed
  - Let the operator know what was observed
  - Establish communications with stakeholders
Inspect any O&G Field Operation

- Incidents tend to occur not at the well but the support facilities
  - Tanks
  - Water storage
  - Pipelines
  - Process equipment
- Other issues
  - Noise
  - Odors
Collect Details as Data not Text

- Identify criteria for different types of operation
- New areas not previously captured
- Monitor and track larger operations
- Group operations to minimize confusion about large site information and evaluation.
Definition of a Facility

Definition – Facility

Something designed, built, installed, etc., to serve a specific function affording a convenience or service.
Something that permits the easier performance of an action, course of conduct, etc.

Dictionary.com;
http://dictionary.reference.com/browse/facility
### Example of Facility Types

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>GP</td>
<td>Gas Plant</td>
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<tr>
<td>TB</td>
<td>Tank Battery</td>
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<tr>
<td>CS</td>
<td>Compressor Station</td>
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<td>WN</td>
<td>Waste Facility/Non-Commercial</td>
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<tr>
<td>EP</td>
<td>Emergency Pit/Non-Commercial</td>
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<tr>
<td>WC</td>
<td>Waste Facility/Commercial</td>
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<td>PG</td>
<td>Gas Pipeline</td>
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<td>PW</td>
<td>Saltwater Pipeline</td>
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<tr>
<td>PO</td>
<td>Oil Pipeline</td>
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<tr>
<td>SEISTMICPROJECT</td>
<td>Seismic Project</td>
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</table>
Grouping Elements of an Inspection

- By Location
- By Lease
- By Spacing or Unit
An Oil & Gas Location Concept

- There should be a record every time an agency employee visits the field to make observations.
- Observations are made of many items that are not wells or there is no visible equipment.
- Many locations have multiple wells or a variety of facilities.
- The location itself has attributes that require observation.
An Oil and Gas Lease

- In high density operations there needs to be a way to group wells
- Reclamation requirements are frequently laid out in the lease terms
Secure Login

Field Inspection Identity Server

Username

Password

Remember My Login

Login
Sync to Server

Note we’re connected
## Inspections Ready to Upload

### Available Inspections

<table>
<thead>
<tr>
<th>Location Name</th>
<th>Included Facilities</th>
<th>Inspection Date</th>
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</thead>
<tbody>
<tr>
<td>Location 11</td>
<td>Tank 58, Pit 60, Pit 56, Well 57, Well 59</td>
<td>10-25-2016 01:48:46 PM</td>
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<td>Location 7</td>
<td>Tank 38, Well 39, Pit 30, Well 37, Pit 40</td>
<td>10-06-2016 07:22:30 AM</td>
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<td>Location 9</td>
<td>Tank 48, Pit 46, Well 47, Well 49, Pit 50</td>
<td>10-06-2016 07:21:53 AM</td>
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<td>Location 12</td>
<td>Pit 65, Well 62, Tank 63, Pit 61, Well 64</td>
<td>09-23-2016 09:49:19 AM</td>
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<td>Location 11</td>
<td>Tank 58, Pit 60, Pit 56, Well 57, Well 59</td>
<td>06-01-2016 12:55:06 PM</td>
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<tr>
<td>Location 14</td>
<td>Well 74, Pit 75, Well 72, Tank 73, Pit 71</td>
<td>06-01-2016 12:47:40 PM</td>
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</tbody>
</table>

[Your computer is connected to the internet.]
Locations Available for Inspection

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<thead>
<tr>
<th>Name</th>
<th>Geo Location</th>
<th>Last Inspected</th>
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<tbody>
<tr>
<td>Inspect Location</td>
<td>Location 12</td>
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<td>Inspect Location</td>
<td>Location 9</td>
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<tr>
<td>Inspect Location</td>
<td>Location 2</td>
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</table>
## Facility/Pit Inspection

### Facilities
- Pit 66
- Pit 70
- Tank 68
- Well 67
- Well 69

### Inspection for Pit 66
- **Facility Name:** Pit 66
- **Facility Type:** Pit
- **Facility Location:** Garfield 045 60W
- **Operator Name:** Troy Web Inc.
- **Field Name:** 9991

### Associated Facilities
- Well 67 Garfield 045 70W
- Tank 68 Garfield 045 80W
- Pit 70 Garfield 045 100W
- Well 69 Garfield 045 90W

### Previous Inspection:
- **Type**
  - Pit Type B
- **Lined**
  - Yes
- **Liner Comment**
  - Anchored wall and in good shape
- **Nutting Type**
- **2+ Feet Freeboard**
  - Satisfactory
- **Evaporative System**
- **Pit Leakage Observed**
- **Evidence of overfill**
  - No
- **Netting Condition**
  - Satisfactory
- **Anchor Trench Present**
  - Yes
- **Evaporative System Condition**
- **Pit Leakage comment**
- **Evidence of overfill comment**
- **Liner Condition**
  - Adequate
- **Netting Comment**
- **Dike Condition**
- **Oil Accumulation**
  - Satisfactory

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Well Inspection

Detailed Well Inspections

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<tr>
<th>Well Status</th>
<th>PR</th>
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<tr>
<td>Wellhead Assembly</td>
<td>Tubing Hanger</td>
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<td>No Leaking Seats?</td>
<td>Satisfactory</td>
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<tr>
<td>Bradenhead Valve Accessible?</td>
<td>Satisfactory</td>
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<tr>
<td>No Leaking Valves?</td>
<td>Satisfactory</td>
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<td>Overall Corrective Action</td>
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<td>Overall Corrective Action Date</td>
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<td>Result</td>
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<td>Comments</td>
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</tbody>
</table>
UIC Well Inspection
Interim Reclamation Inspection

Field Inspection

Associated Facilities:
- Tank 48 Garfield 045.80W
- Pit 46 Garfield 045.60W
- Well 47 Garfield 045.70W
- Well 49 Garfield 045.90W
- Pit 50 Garfield 045.100W

Debris Removed:

Debris Corrective Date:
12/10/2016

Debris Comment:
None present
Debris Corrective Action:

Landuse

Current Landuse:
Remove cuttings to disposal site as stated on permits

Interim Landuse Comment:

Waste

Waste Material Onsite:

Waste Corrective Action:

Waste Comment:
Cuttings pile
Waste Corrective Date:
12/10/2016

Equipment

Unused Equipment Onsite:

Equipment Comment:
What is remaining

- Finish the forms in the scope
- Add inspection history to the application
- Interface with RBDMS
- Application front end providing RBDMS data access and maps
- Pilot testing
# Phase II Project Plan

## Field Inspection Dev Phase II

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<th>Dec 18</th>
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<th>Feb 5</th>
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<th>Feb 19</th>
<th>Feb 26</th>
<th>Mar 5</th>
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<td>5. Create Proof of Concept to prove out what happens to the application when integrating a large data set</td>
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<td>6. Oil and Gas &quot;Location&quot; data structures and services in RBDMS</td>
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<td>7. COA / BMP data structures and services in RBDMS</td>
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<td>8. NET Data Services to push data to RBDMS after data submission to Inspection DB</td>
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<td>9. UI elements to support historical data retrieval, storage (offline) and display and NET Data Services for Historical Data</td>
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<td>10. Agency-defined prioritization data structures and services</td>
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<td>11. UI enhancements as needed</td>
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<td>Microsoft Azure setup and deployment of selected pilot states (MI &amp; UT)</td>
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<td>Place/Test RBDMS database on the Azure test site</td>
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<td><strong>Analysis &amp; Design for Phase III</strong></td>
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<td>17. Requirements Gathering &amp; Analysis</td>
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