

Environmental Information



# EN2017

## TABLET BASED GIS SYSTEM FOR STREAMLINED COMPLIANCE WORKFLOW

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Environmental Quality*

**2017 Exchange Network National Meeting**

Innovation and Partnership

May 15-18, 2017

Sheraton Philadelphia Society Hill Hotel  
Philadelphia, Pennsylvania

#EN2017

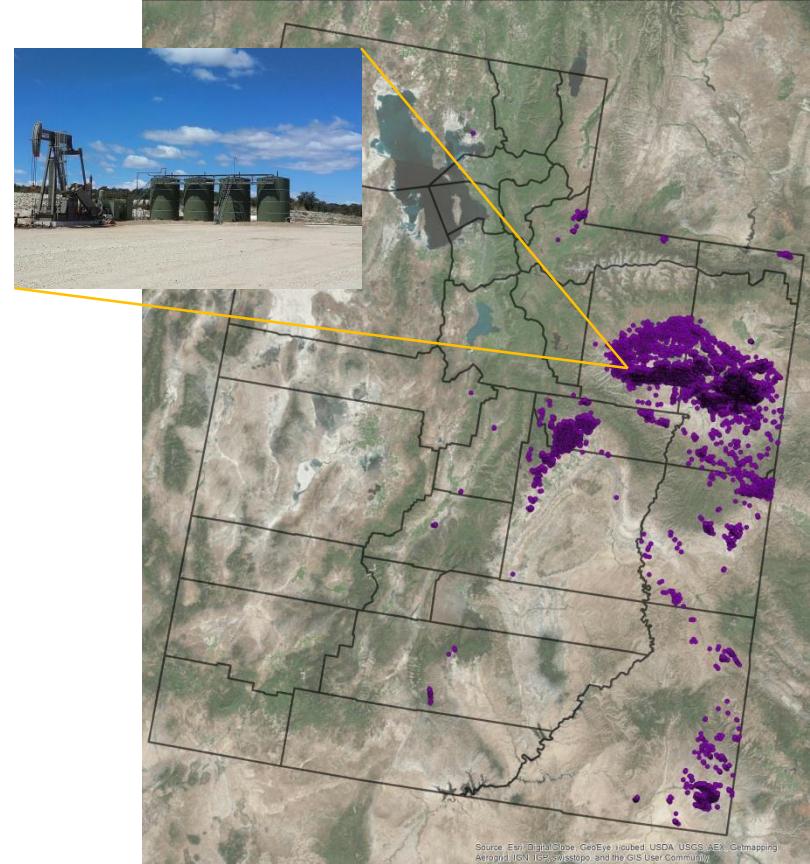
<http://www.exchangenetwork.net/en2017>

# ABSTRACT

Utah DEQ completed a beta version of a 2015 EN grant project developing a general platform architecture for tablet-based field collection of environmental data. The application provides UDEQ's air quality inspectors an integrated system for accessing, gathering, and editing compliance data while in remote field locations. It also enables quick on the spot decision making through the use of spatial data and GIS feature layers. In my presentation I will give an update of our progress on the project, and discuss how our exploration of solutions may be useful for similar projects being developed by other organizations.

# Oil and Gas Wells in Utah

- 16,715 producing and shut-in wells in 2015
- 4,580 on State Jurisdiction
- 3 Dedicated O&G Inspectors
  - **Efficiency is KEY**



# Compliance: In the Field

- Attach electronic documents as needed to features
  - Linked to our compliance records database (Documentum)
  - Can also use file browser
- No need to print paper documents
- Take notes and markup with: stylus, finger, voice-to-text, keyboard

**GO FROM THIS**



**TO THIS**



# Making Decisions Easier

- Easier to plan sites visits both in advance and on-the-fly.
  - Desktop and tablet functionality

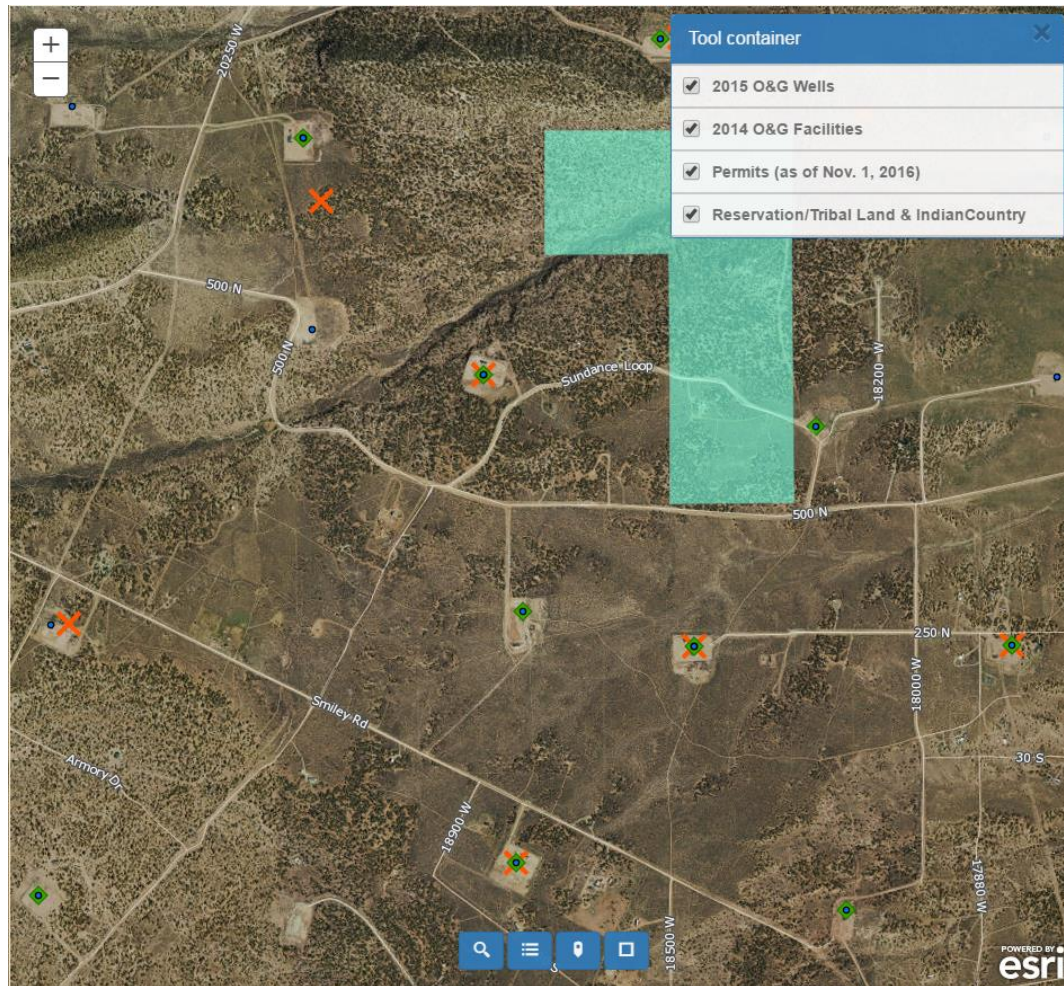


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- Ability to identify sites of interest, and easily prioritize.
  - Overlaid Feature Layers
  - Data Comes with You (Annual Production, Jurisdiction, Emissions, Etc.)



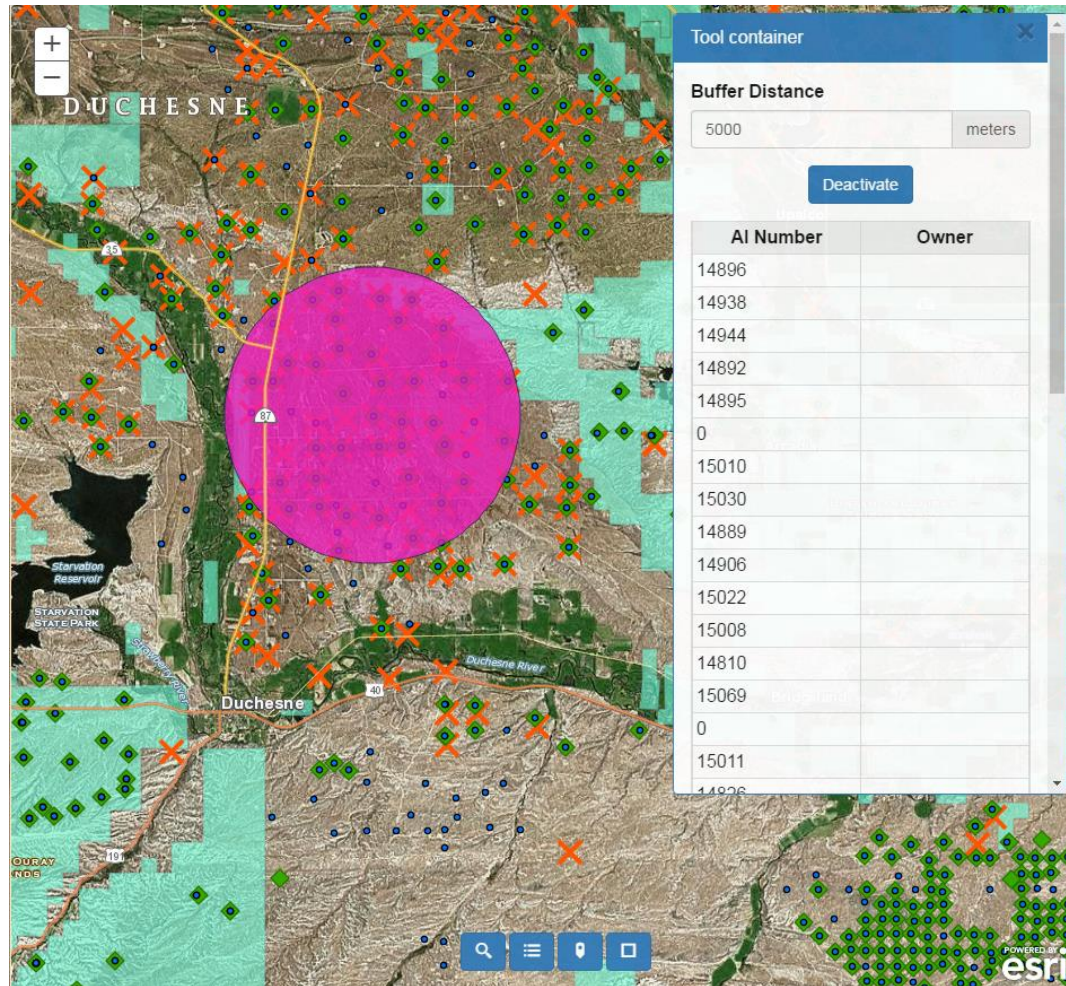


# Making Decisions Easier



- Easier to plan sites visits both in advance and on-the-fly.
  - Desktop and tablet functionality
- Ability to identify sites of interest much more readily, and easily prioritize.
  - Overlaid Feature Layers
  - Data Comes with You (Annual Production, Jurisdiction, Emissions, Etc.)
- More efficient use of time in field
  - Already visiting specific site? What additional sites of potential interest could you also visit that day?
    - Buffer - lets you know what is nearby





# Application Needs

- Offline Use
  - Editing
  - Cached Basemaps
- Directions and Routing
- Buffers
- Access to Documents
- Ability to Add Attachments (Images or Videos)
- Queries



# Stumbling Blocks

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  - Cons: somewhat buggy and closed system
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- **Number of results restricted**

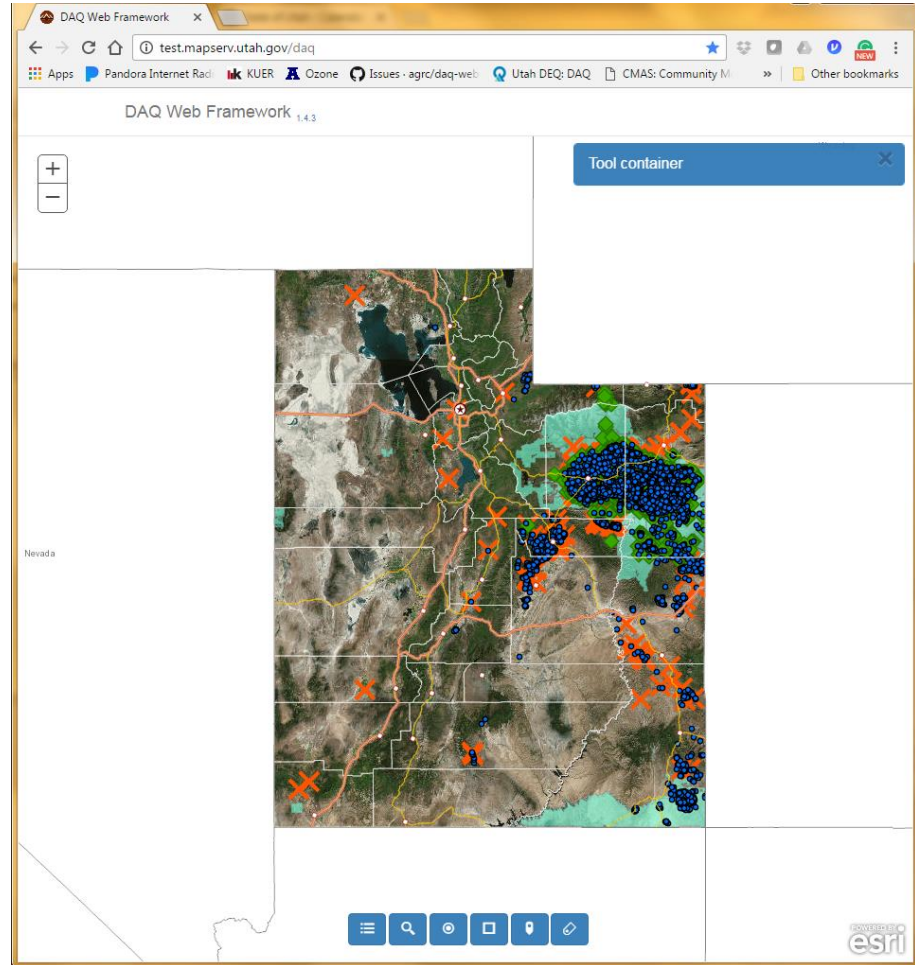


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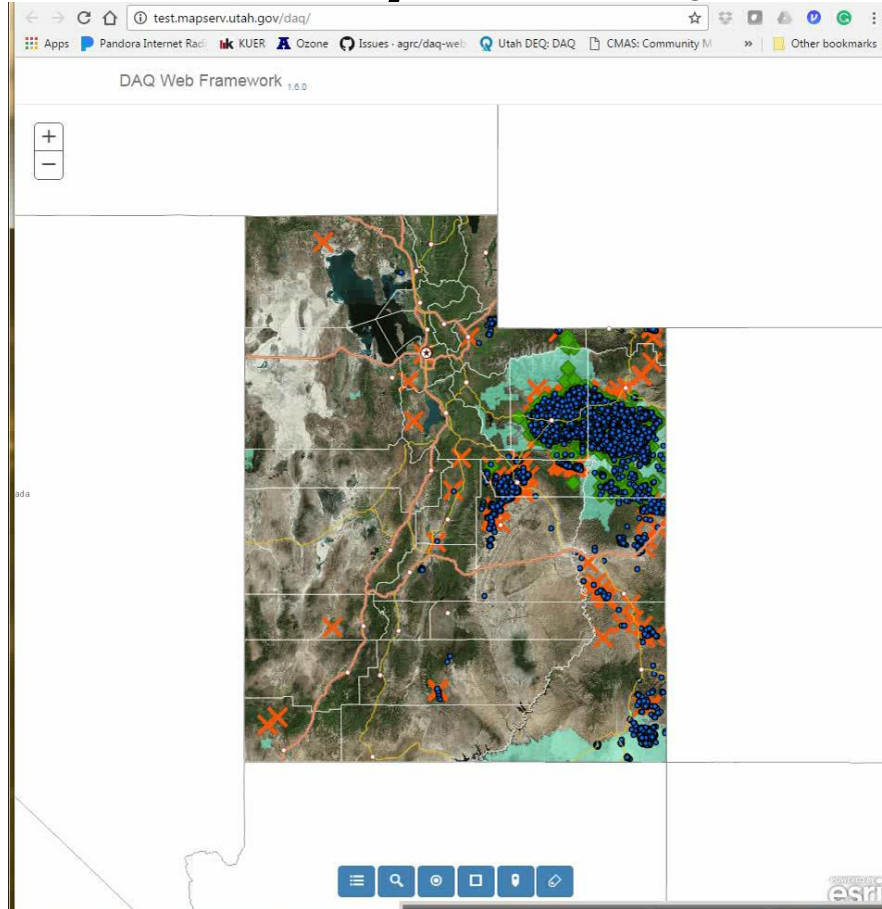
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- Number of results restricted
- Performance loss with large data sets

# Desktop

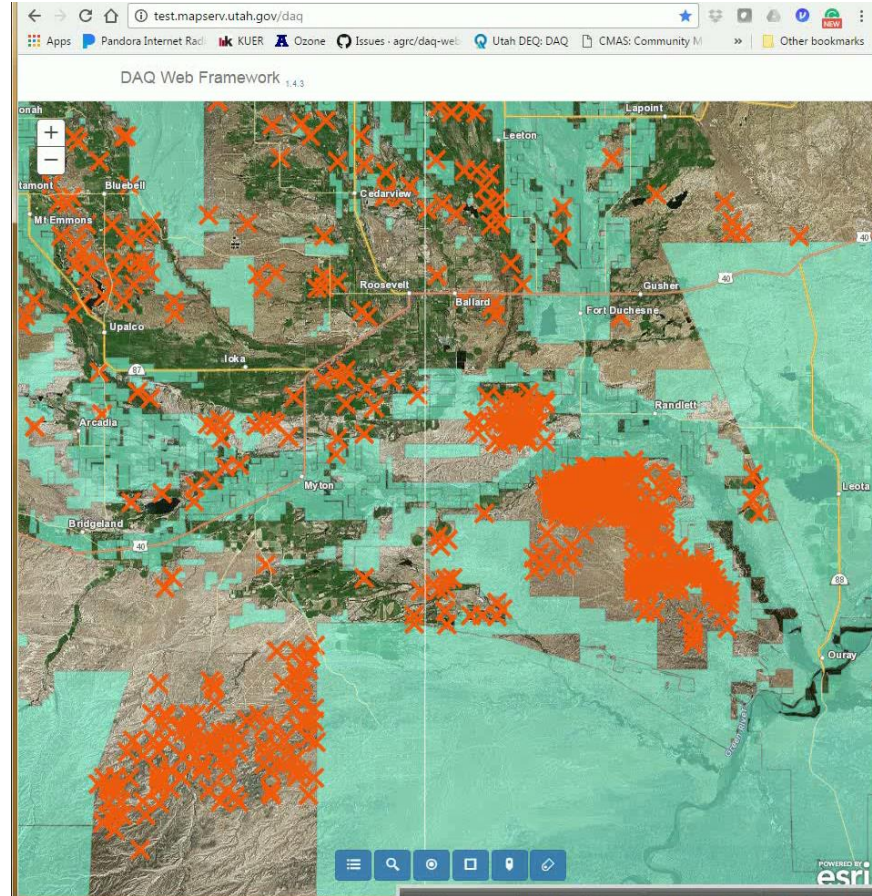
- Simple layout
  - Only necessary tools



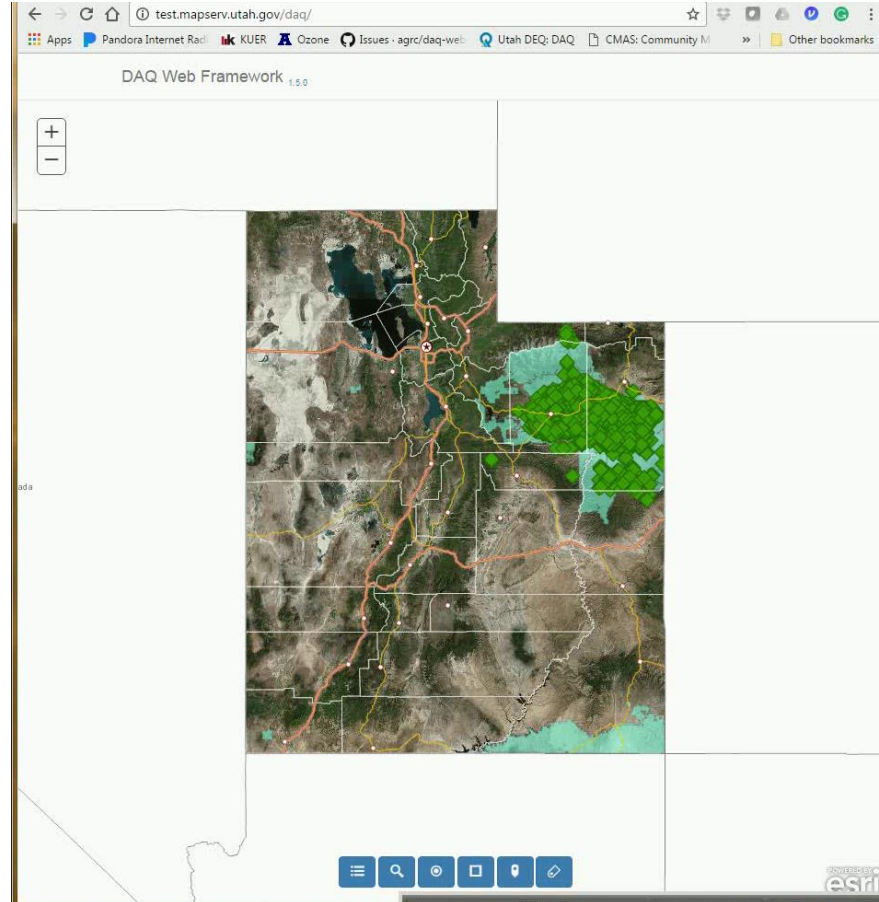
# Turn Layer On/Off



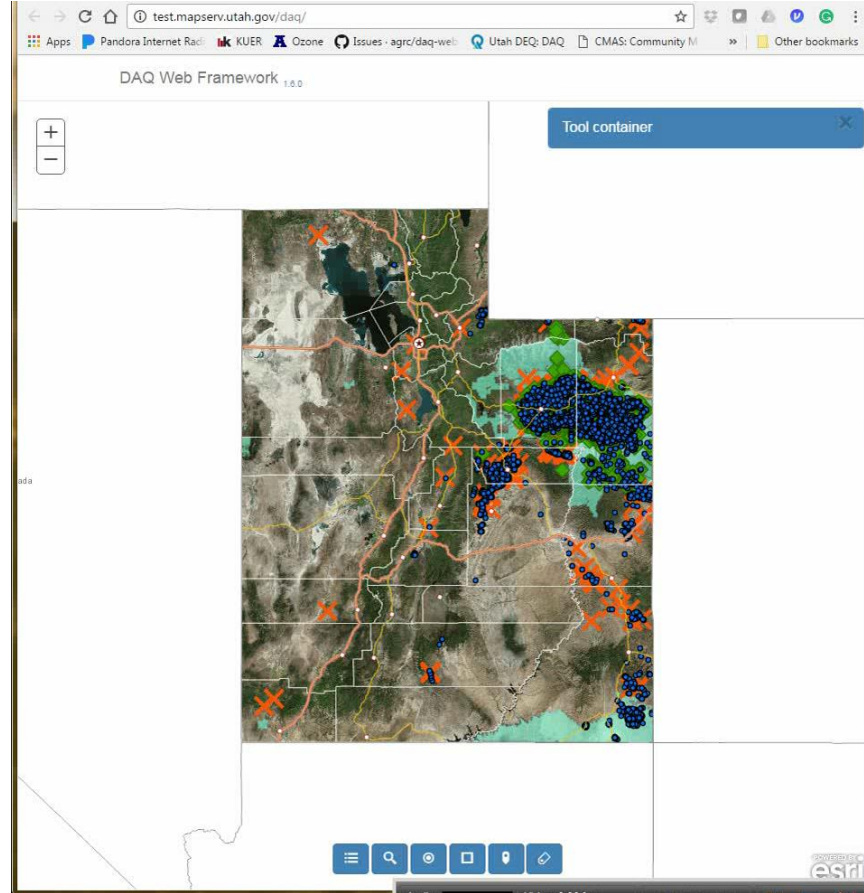
# Query Layers



# Buffer

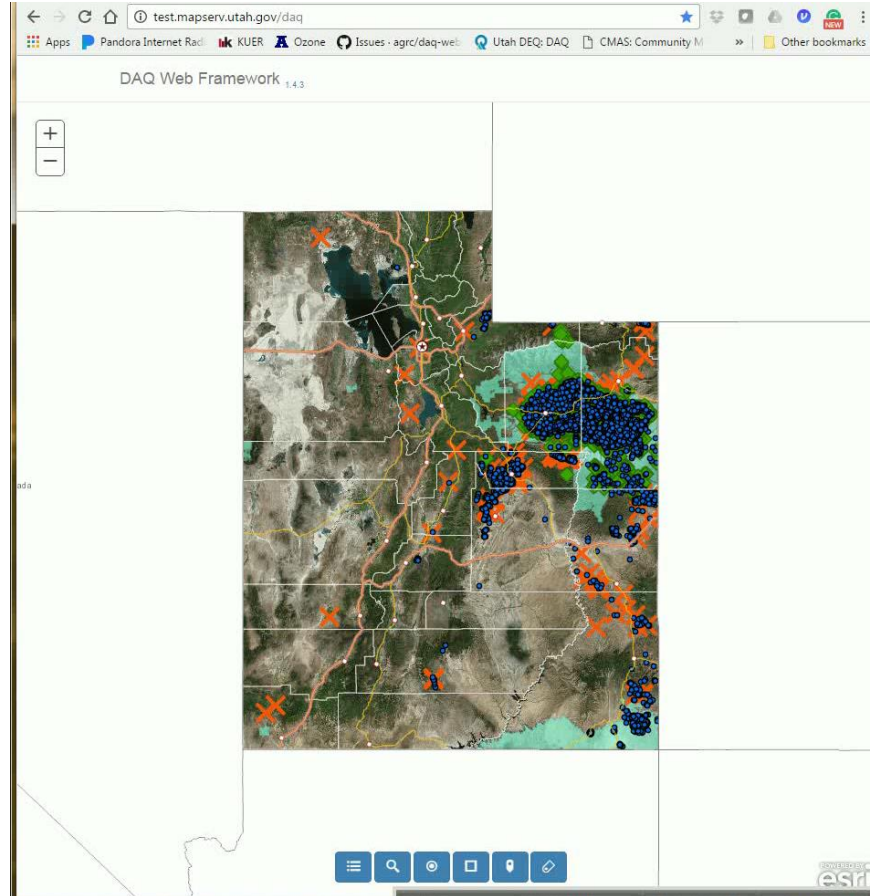


# Section/Township/Range Search



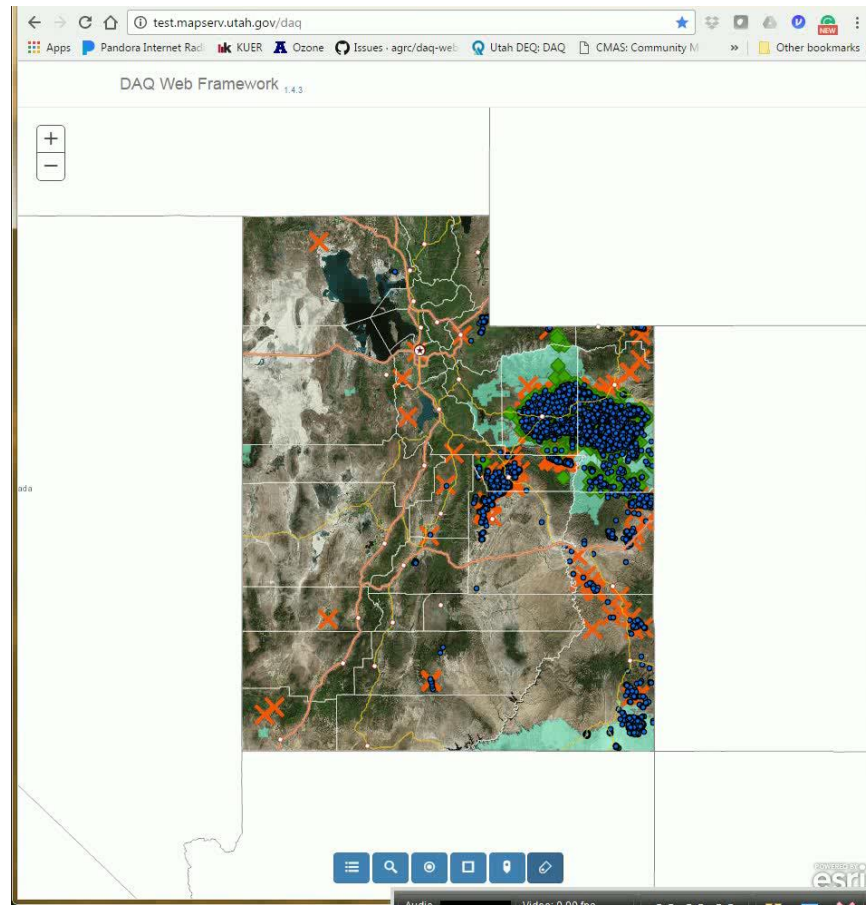


# Lat/Long Search

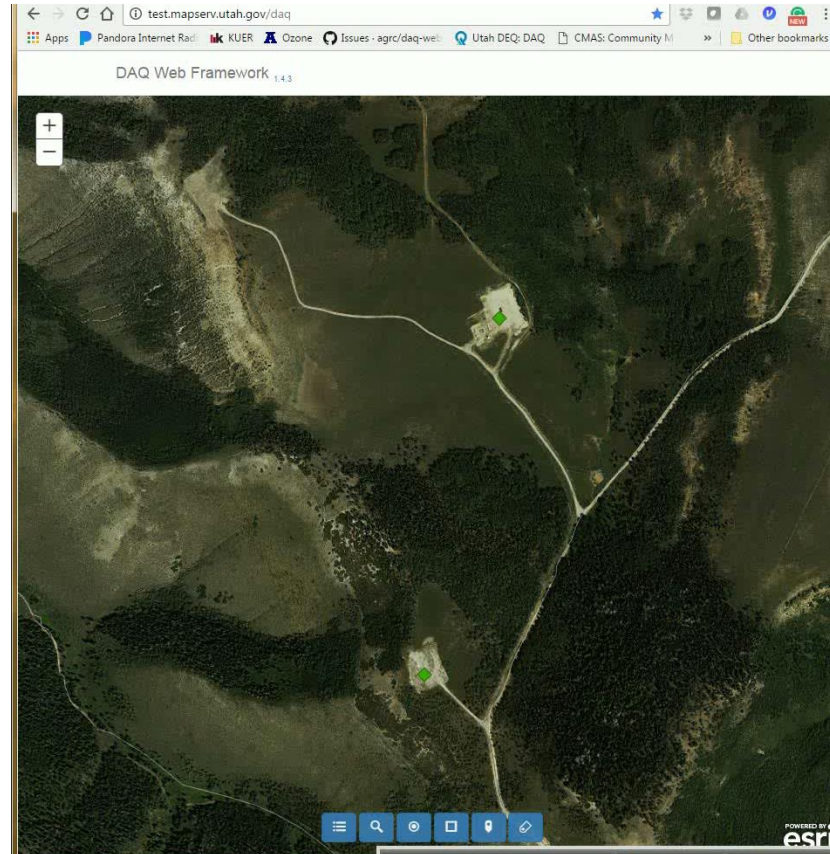




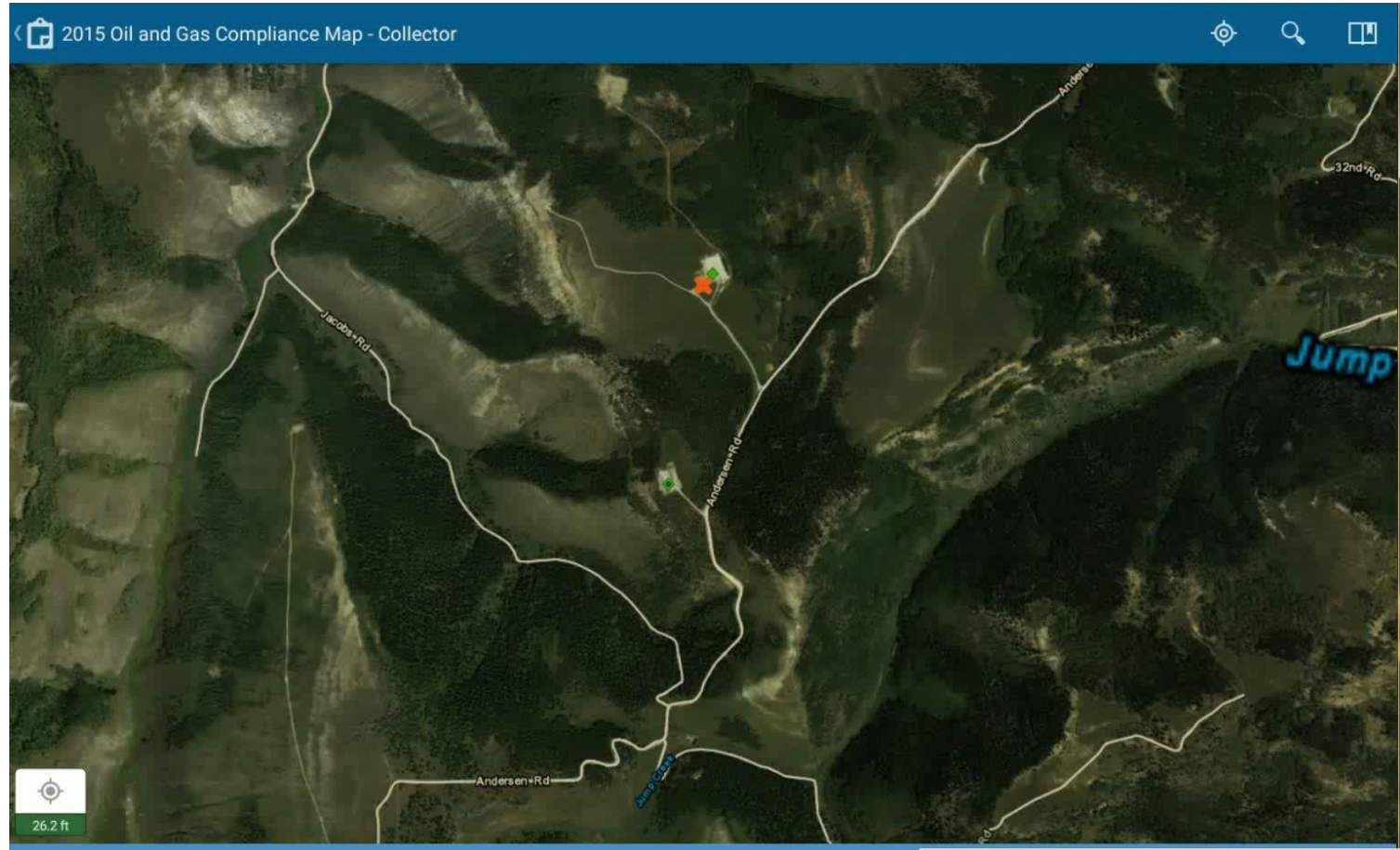
# Bookmarks



# Document Attachment



# Tablet



# Architecture is Reusable

- Current Iteration of Application is for O&G Compliance



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- Current Iteration of Application is for O&G Compliance
- With minor modifications same architecture could be use to transition the application to other uses (e.g. other area sources)
- Other institutions could reuse this same architecture





# Questions?

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- Patrick Barickman: [pbarickman@utah.gov](mailto:pbarickman@utah.gov)
- Thanks to:
  - Matt Peters and Steve Gourley, AGRC