The ChemResponder Network, Advanced Session February 25, 2021

23rd California Unified Program Annual Training Conference
February 2 – March 18, 2021

Agenda

- Introductions
- Refreshers from yesterday's "intro" session
- Managing Facility Information in ChemResponder
- New and Upcoming with Facilities
- IMAAC Portal
- APIs in ChemResponder
- Q&A

Introduction

- This session builds off yesterday's "introductory" session about ChemResponder
- Whereas yesterday's session described many topics at a high level, today's session explores fewer topics but in greater detail

Introduction

- Refresher – what is ChemResponder?
  - A cloud-hosted common operating picture tool for the collection, management and sharing of chemical incident and facility information.
  - Provided at no cost to all users; sponsored by the FEMA CBRN office and its interagency partners

CUPA Pilot with ChemResponder

- **Purpose**: develop implementation guidelines for using CBRNResponder as a local hazmat response tool, an electronic Unified Program Area Plan using real world organizations and limitations, and for DEAP integration
- **Partners**: Cal EPA (lead), Yuba County, Contra Costa County, Roseville County, San Diego County
- **Approach**:
  - 4 CUPAs participating
  - Uploading CUPAs' facility information (from CERS) into their respective ChemResponder organizations
  - Accrue feedback on ChemResponder incident response and facility management capabilities from CUPAs; use as basis for developing implementation guidelines
- **Current status**: uploading CUPA facility information this month to proceed with pilot activities

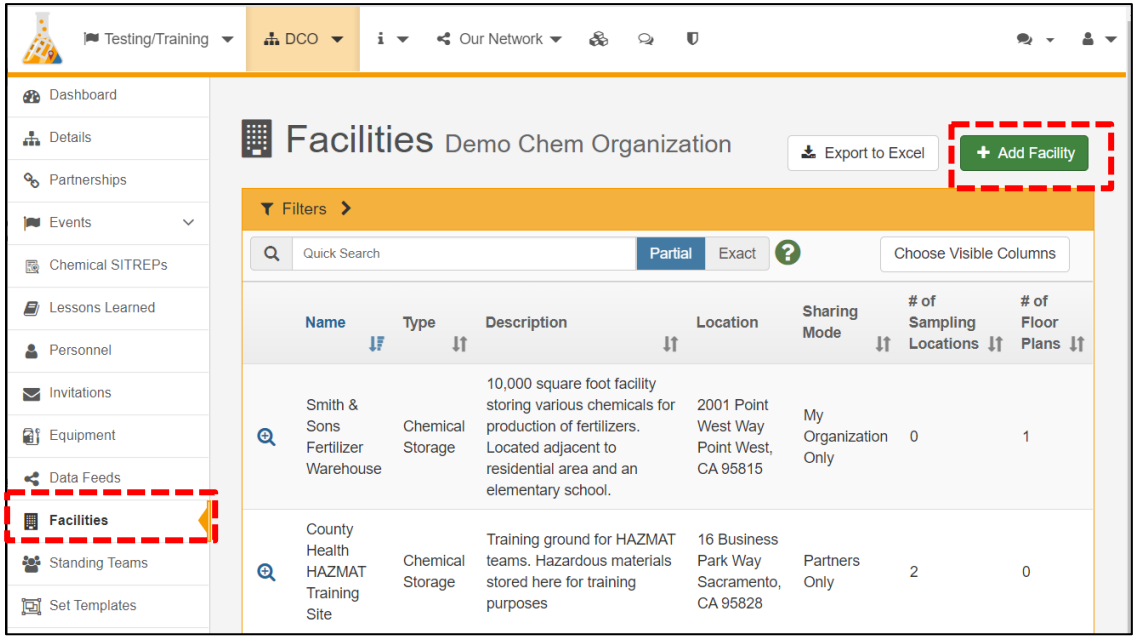
Managing Facilities in ChemResponder

Topics we'll cover:

- Uploading facilities and adding…
  - chemical inventory
  - documents
  - contacts
- Utilize "indoor data collection" feature
  - Upload floor plans from mobile application or on website
  - Add ground truth data to floor plans (chemical readings, spectra, pictures, etc.)
  - Edit data point locations in bulk, and translate data points to updated floor plan images
- Share facilities with partners and display on event map

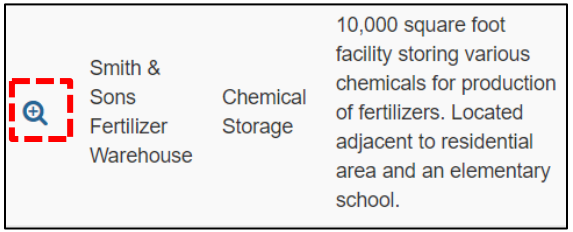
Upload Facilities

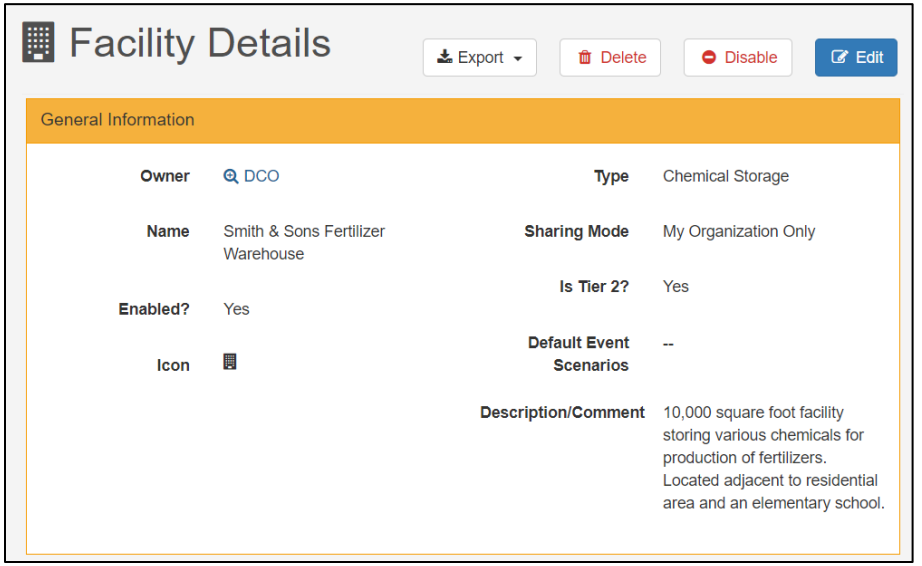
- Users can upload facilities to their ChemResponder organizations and share them with partners
- Include information like:
  - Documents (e.g. area plans, emergency response plans)
  - Floor plans
  - Chemical inventories
  - Points of contact
- "Bulk upload" capability presently under requirements development. Chainbridge tasked with completing by Oct. 2021.



Upload Facility Info

Navigate to "Facility Details" page for a given facility to add POCs, documents, floor plans, chemical inventory



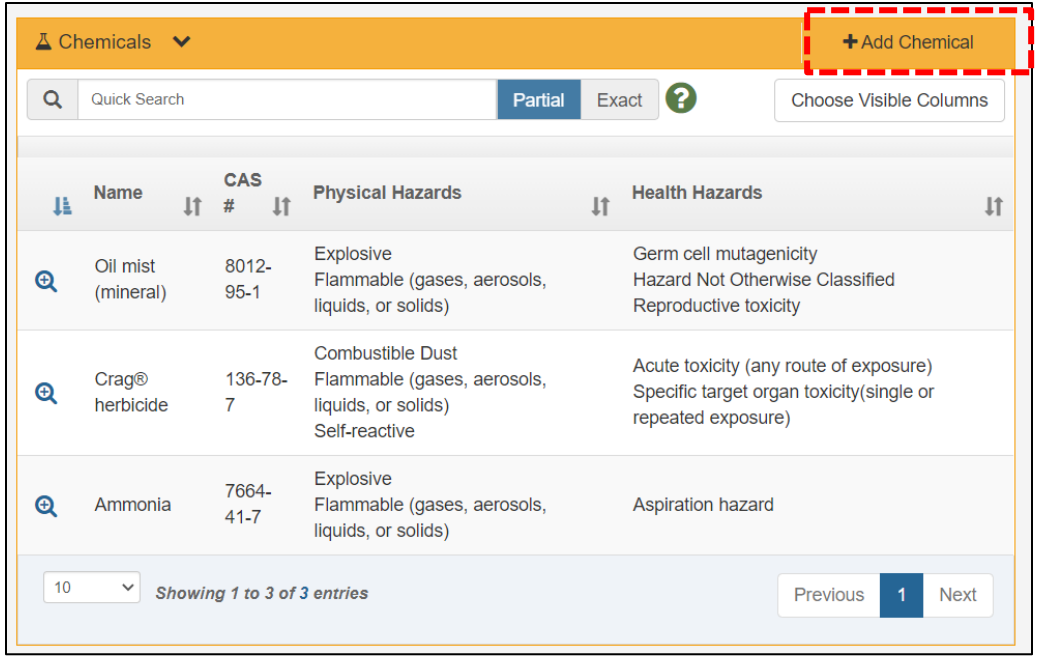


Upload Facility Info

At the bottom of the "Facility Details" page, see sections for uploading chemicals, floor plans, documents, and contacts.

Add Chemicals to Facilities

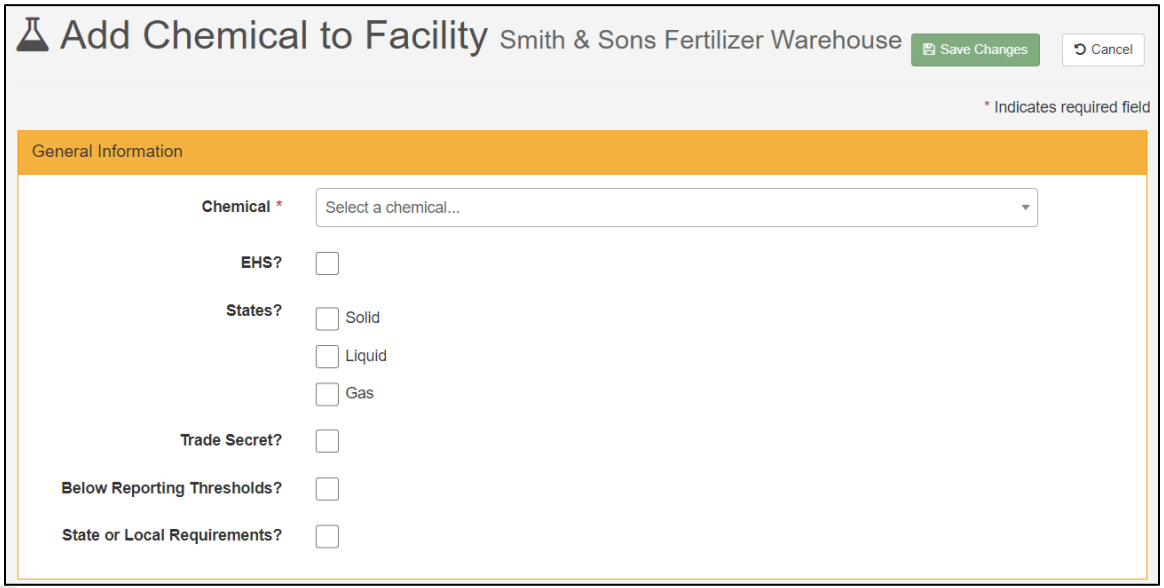
Opening the chemical list shows existing inventory. Choose "Add Chemical" to add new chemical records.



Add Chemicals to Facilities

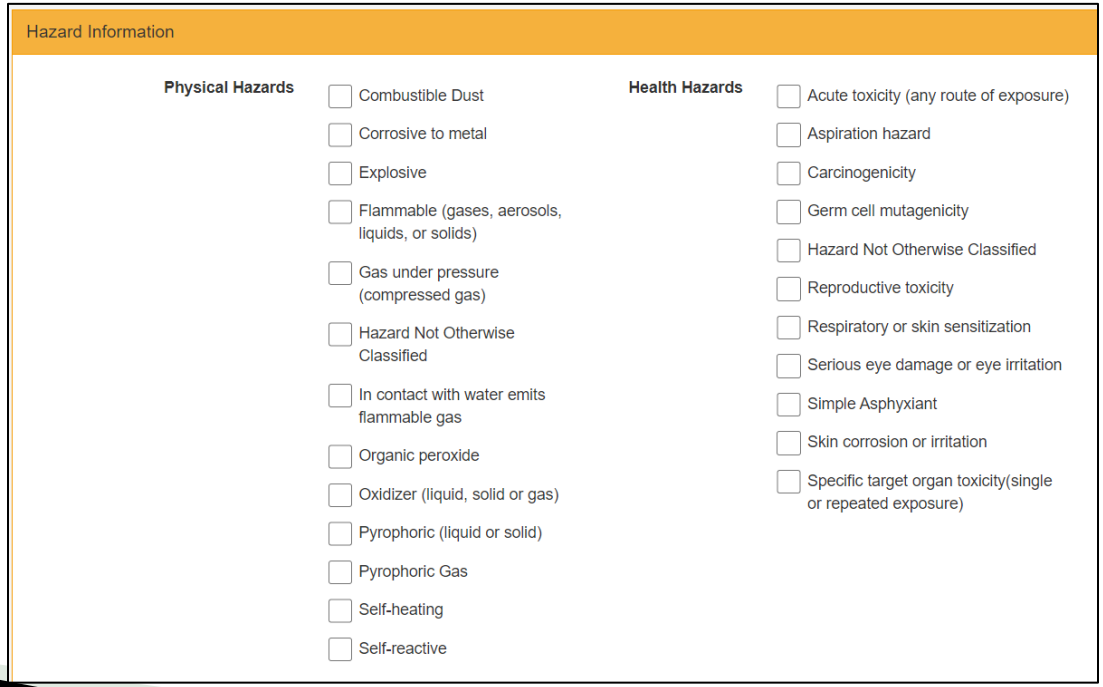
Choose chemical from the list and indicate whether it's EHS, physical state, etc.

Coming soon: ability to add mixtures and their components



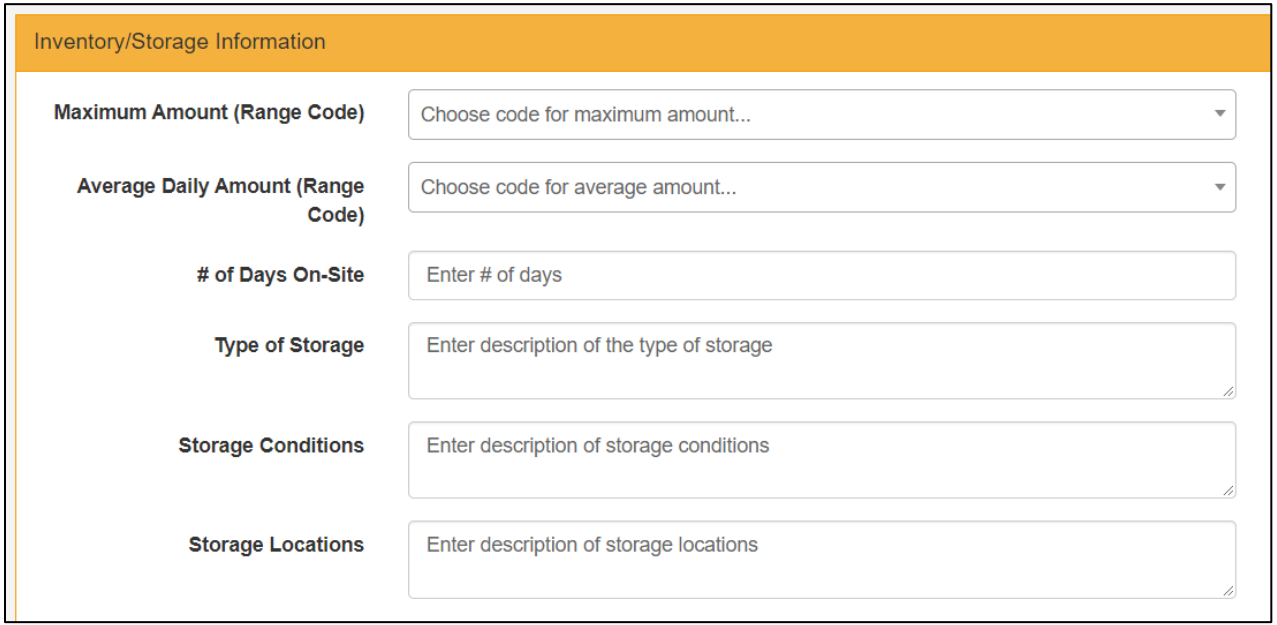
Add Chemicals to Facilities

Indicate Hazard Information for the chemical



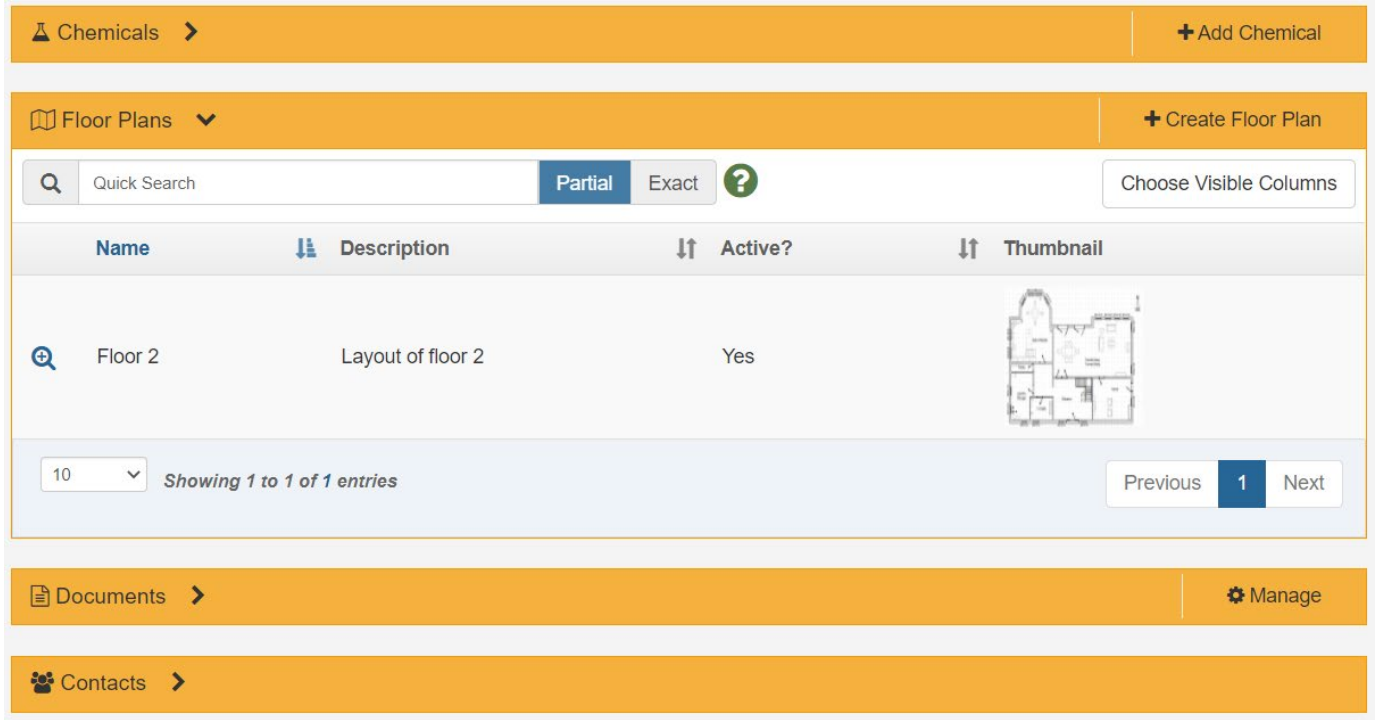
Add Chemicals to Facilities

Provide storage information and click Save Changes .



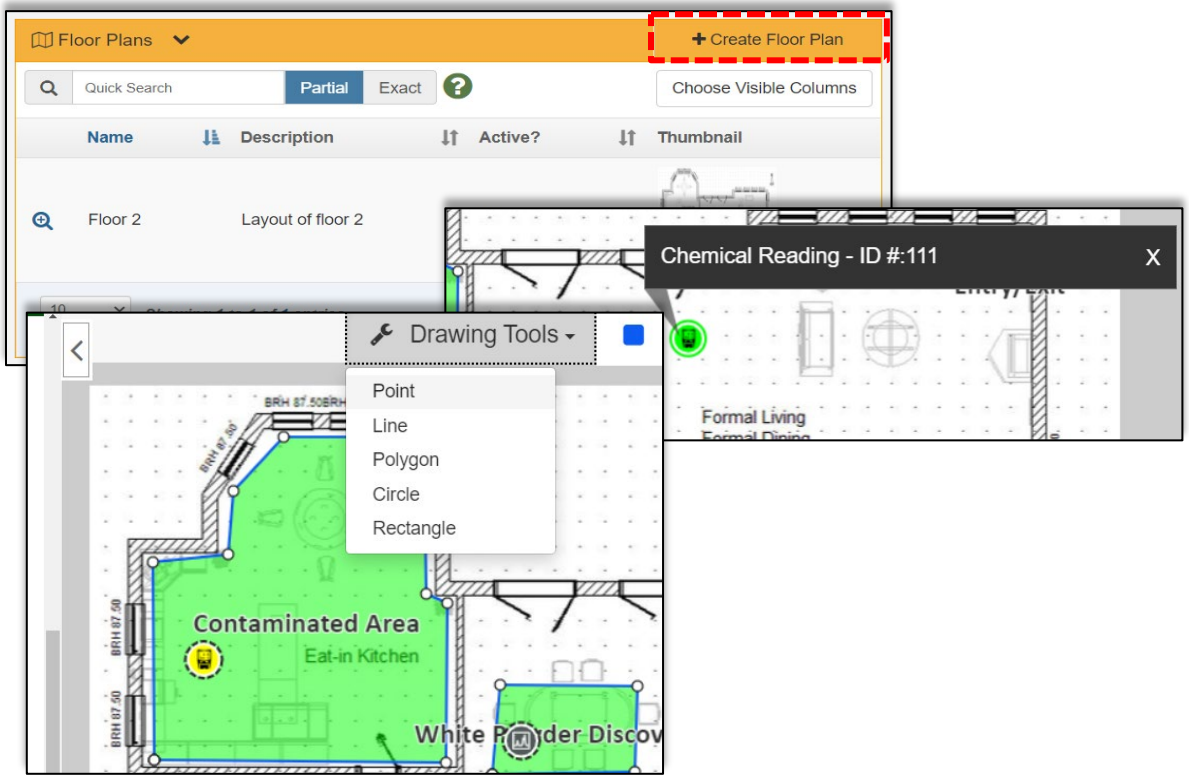
Add Floor Plans

Next: add Floor plans



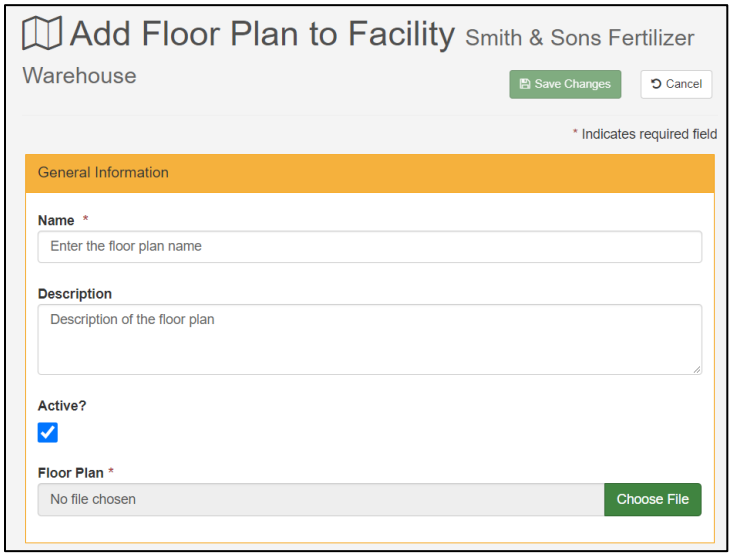
Add Floor Plans

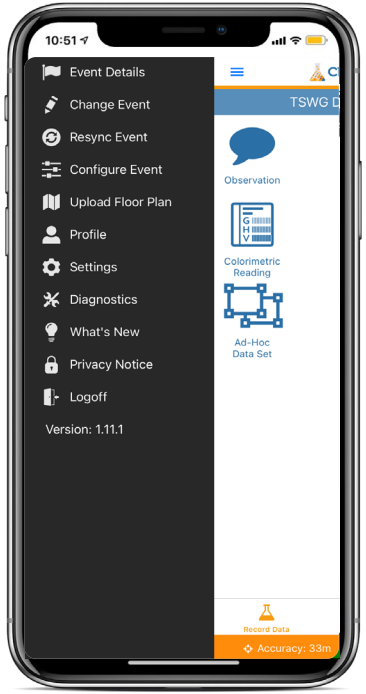
- Add a **floor plan** to a facility to plot data on the plan and annotate it with drawing tools
- Add floor plans from either the website OR the mobile application
- Other features: "bulk move" data point locations, transfer data to new floor plan

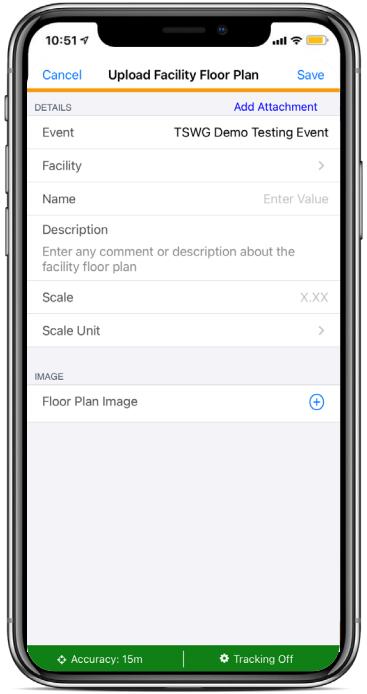


Add Floor Plans

Name the floor plan, add description, and upload image file or PDF. You can do this from either the website or mobile application.

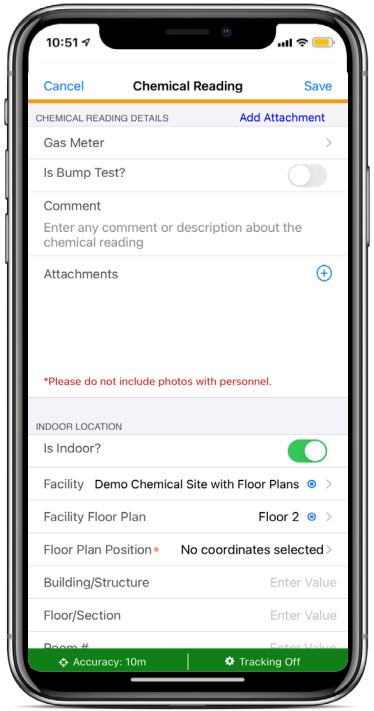






Collect Data on Floor Plans

Select "Is Indoor" and choose facility and floor plan

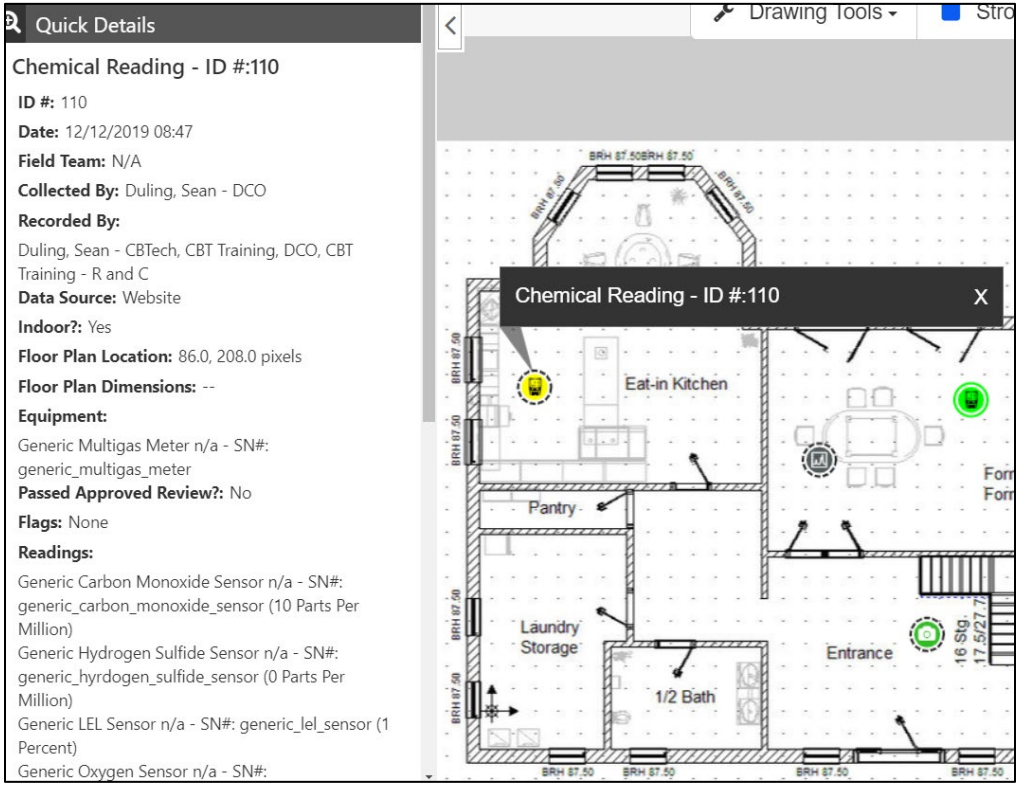


Choose location on floor plan for plotting the data point

View Data on Floor Plan

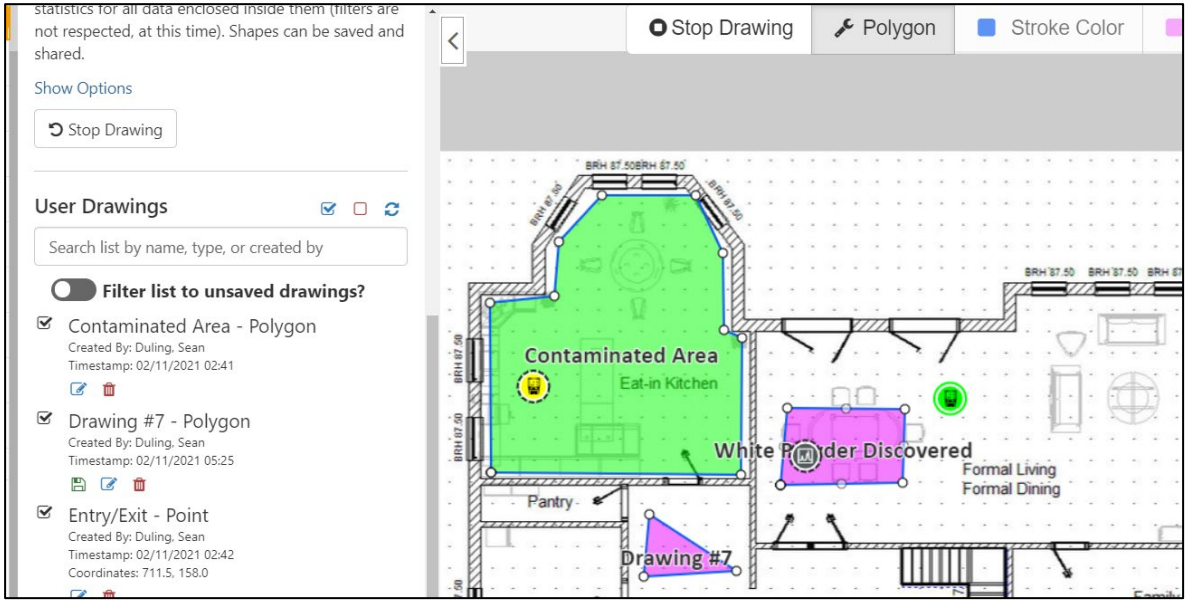
From website, view data points plotted on floor plan

Note that all details are shown about the data point



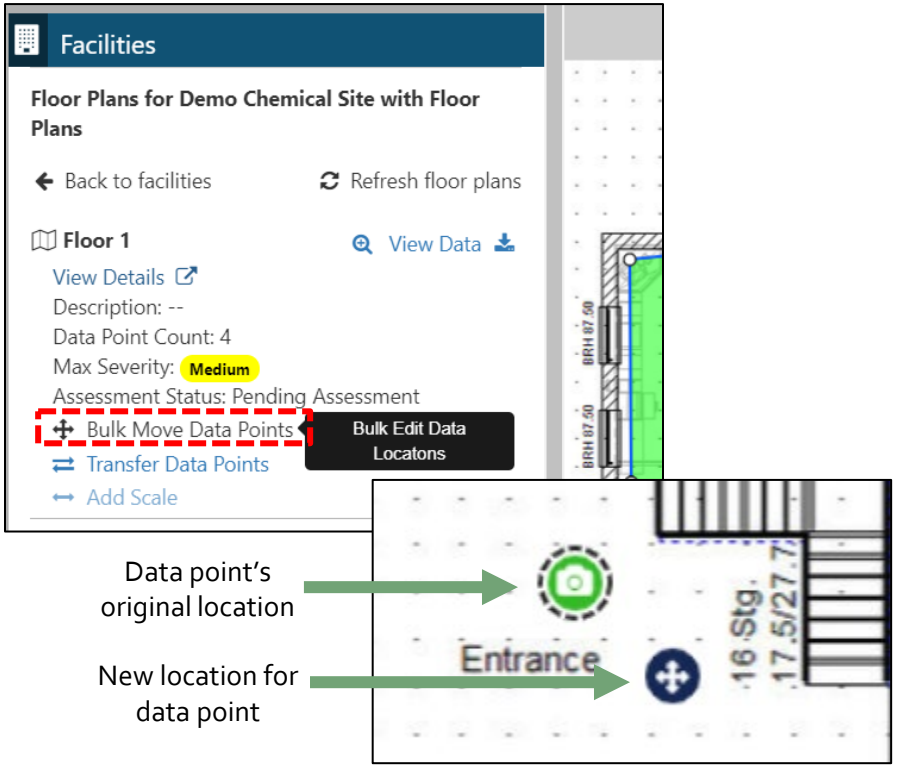
Drawing Tools on Floor Plan

Annotate the indoor floor plan with Drawing Tools; add notes, points, shapes, etc.



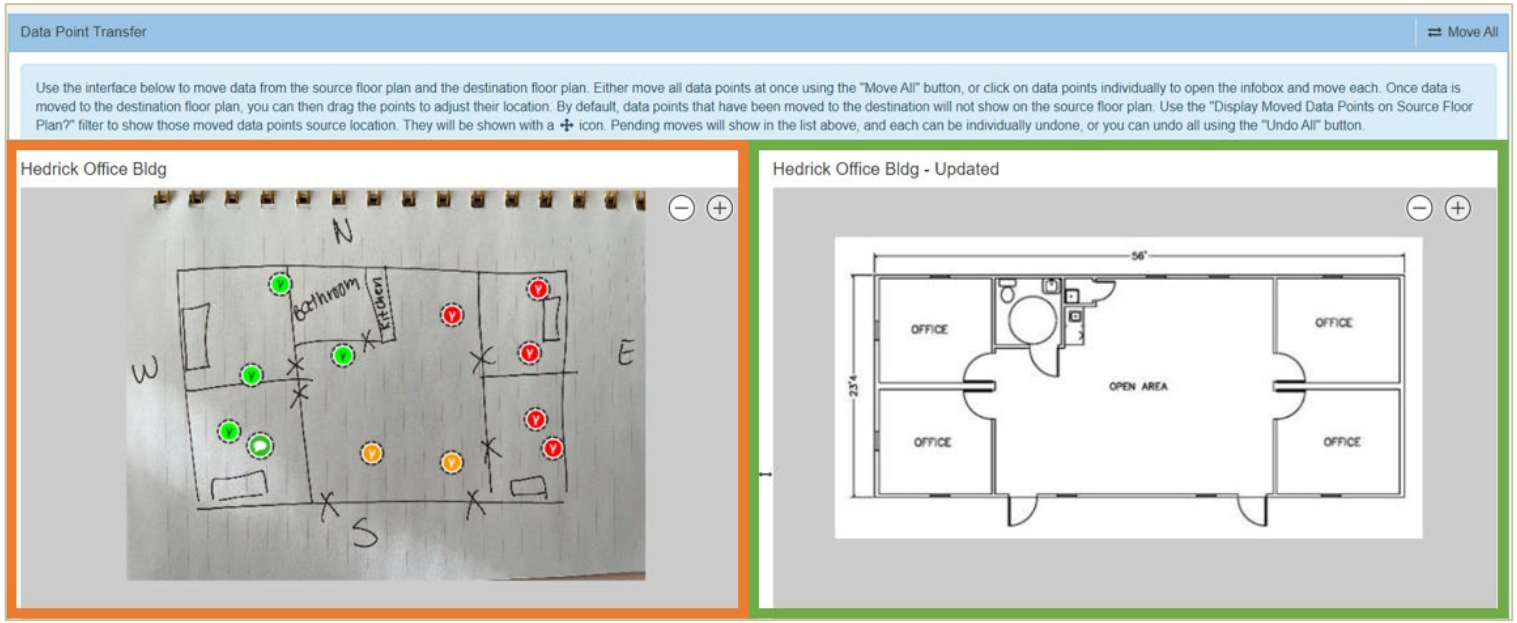
Bulk Edit Locations

"Bulk Move Data Points" lets you "click and drag" the data point locations on the floor plan to change their locations



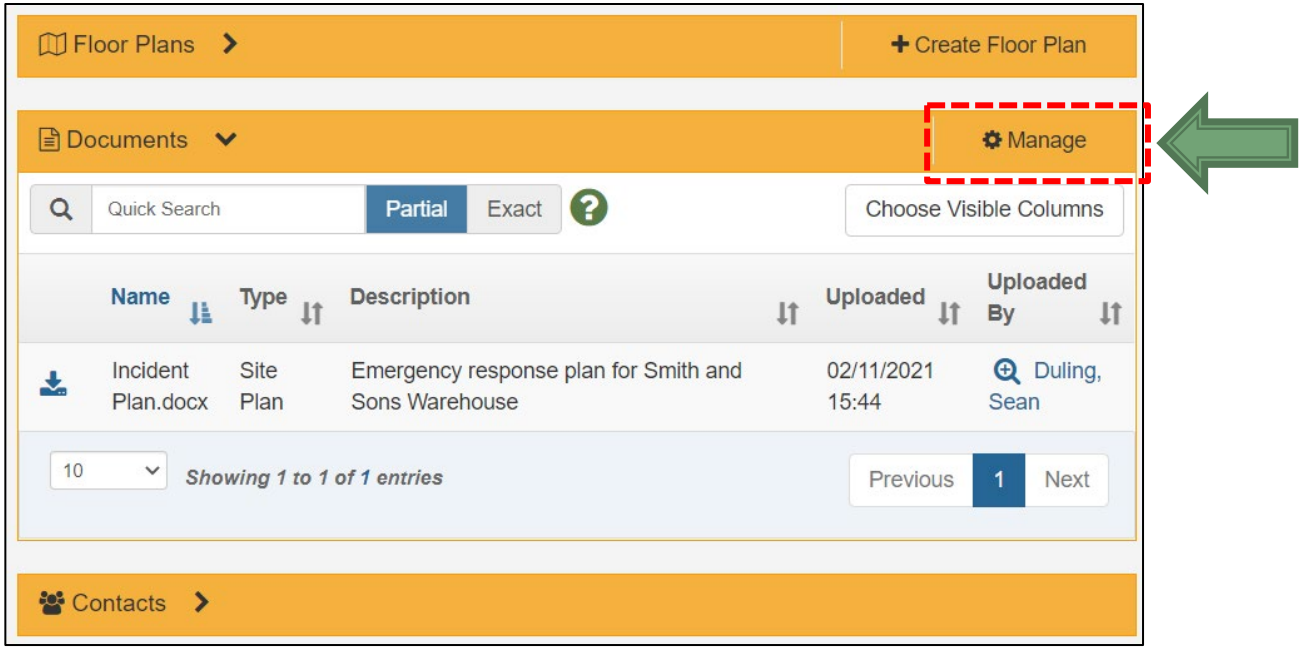
Transfer to New Floor Plan

Transfer data points from one floor plan to another. Potential use case: initial floor plan is a rough sketch of the layout. As response endures, better floor plan becomes available and you want to move points to the new drawing.



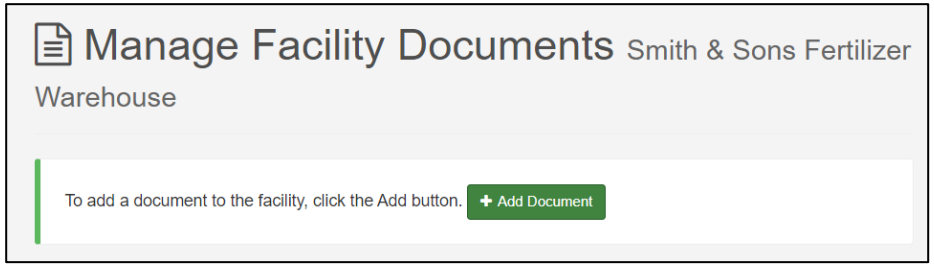
Add Documents to Facility

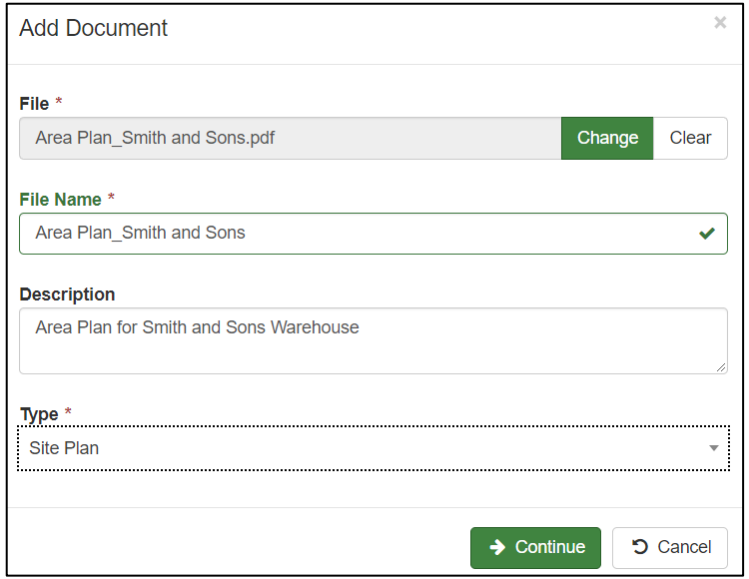
Next: view, add and manage documents for your facility (e.g. area plans, site maps, emergency response plans)



Add Documents to Facility

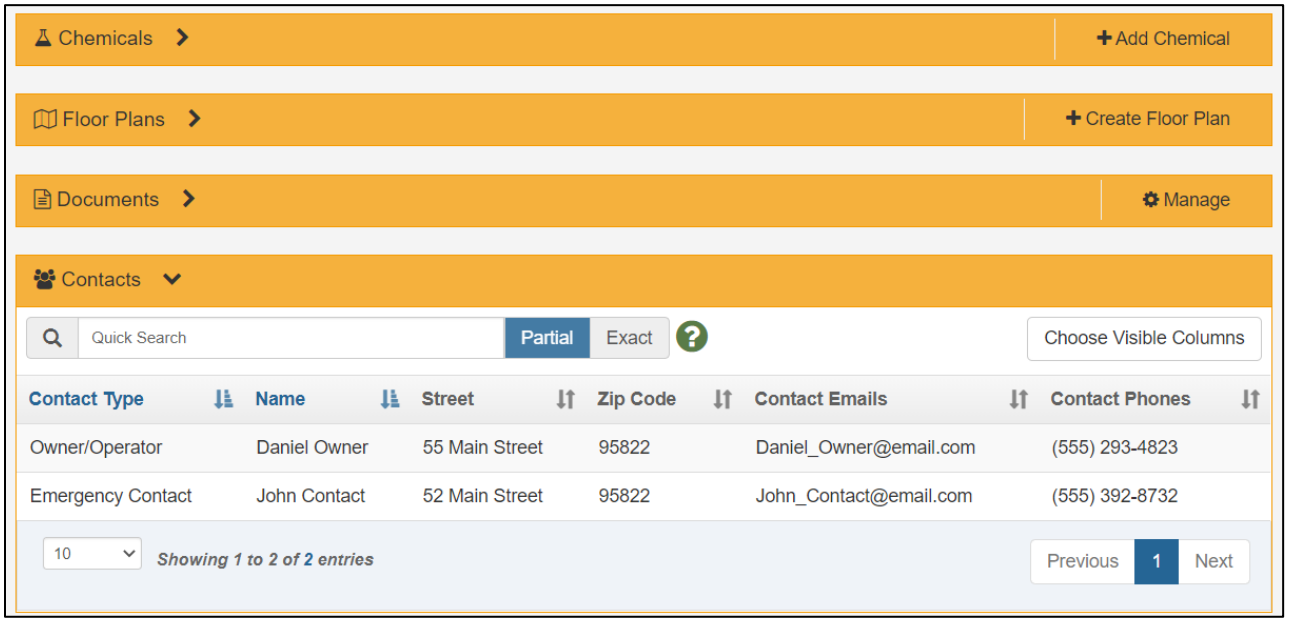
- Accepted file types: Word, Excel, PPT, PDF, image files (jpg, png, jpeg), video files (mp4), GIS files (kml/z), others





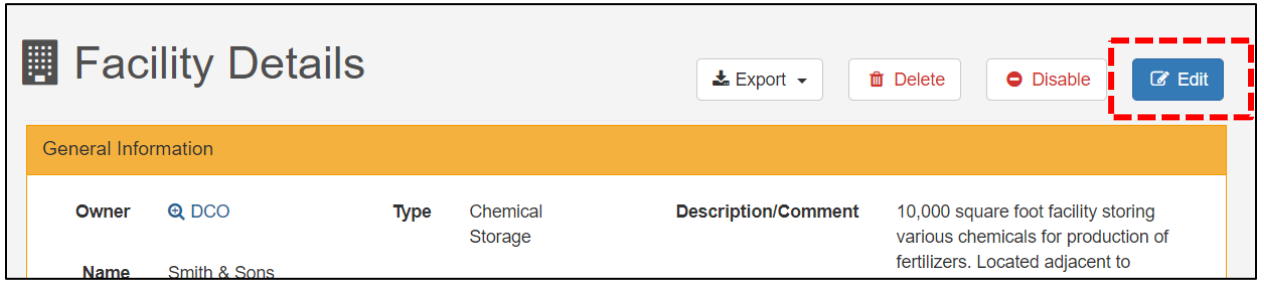
Add Contacts to Facility

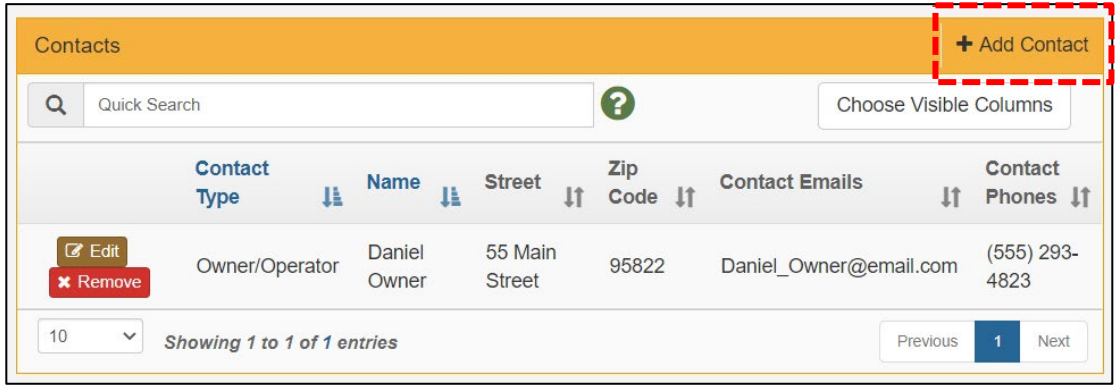
- Next: Add contacts to the facility



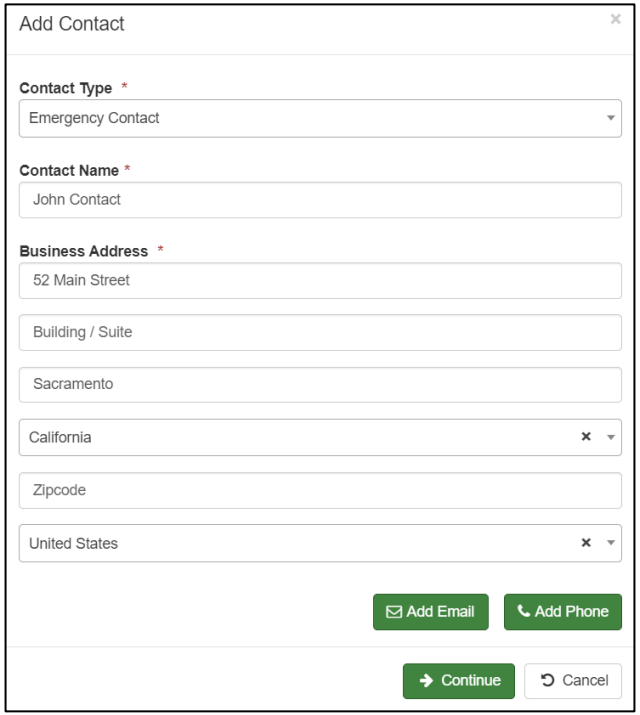
Add Contacts to Facility

- Edit the facility information
- Scroll down to "Contacts" section
- Click "Add Contact"

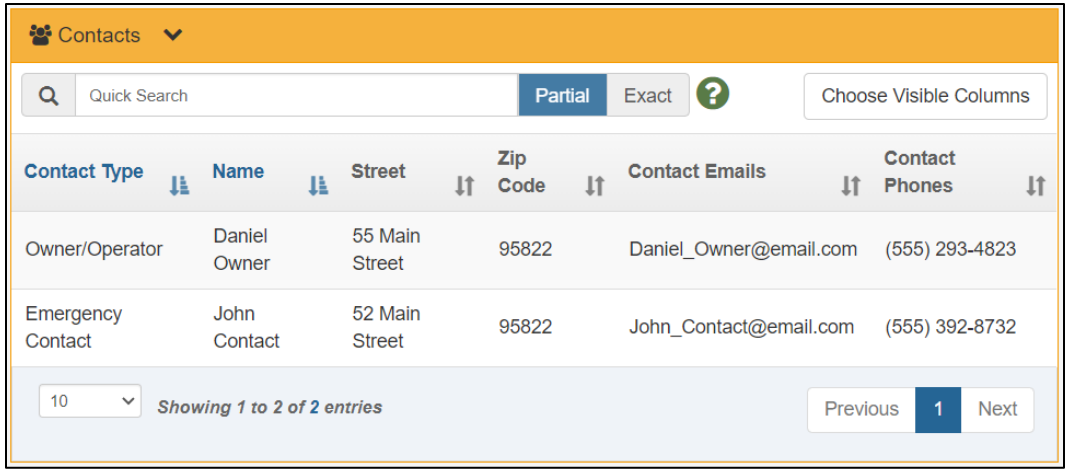




Add Contacts to Facility

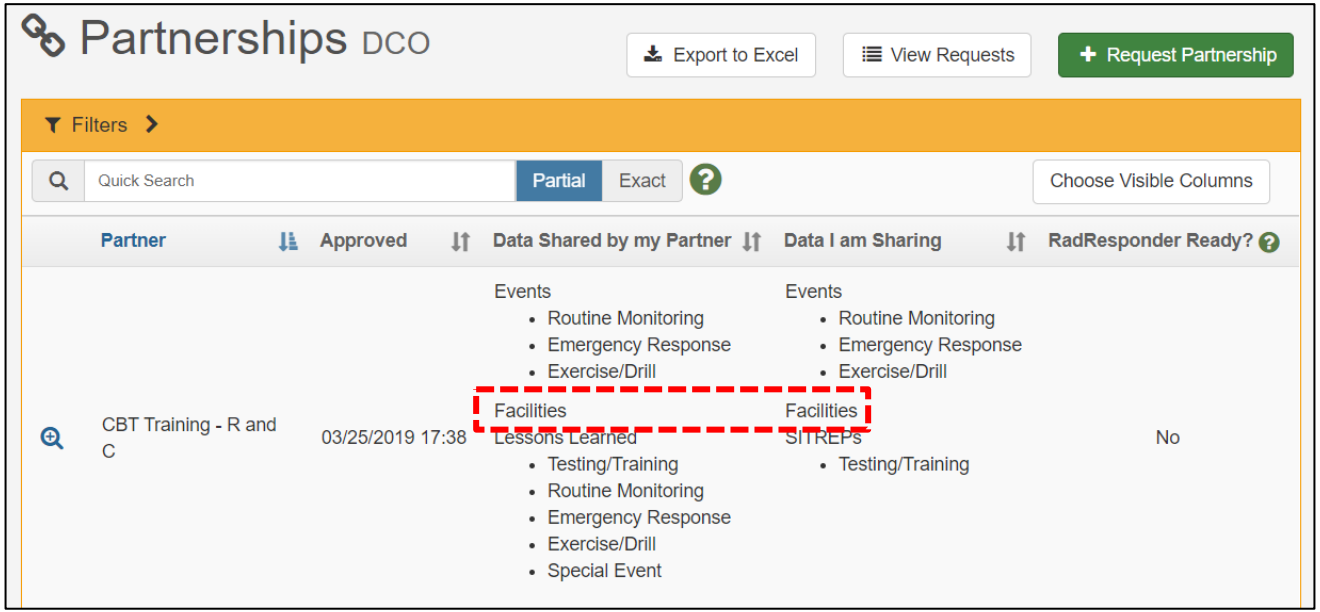


Save and add any number of contacts at the facility level



Share Facilities with Partners

Seamlessly share facilities with your partners in ChemResponder



New and Upcoming with Facilities

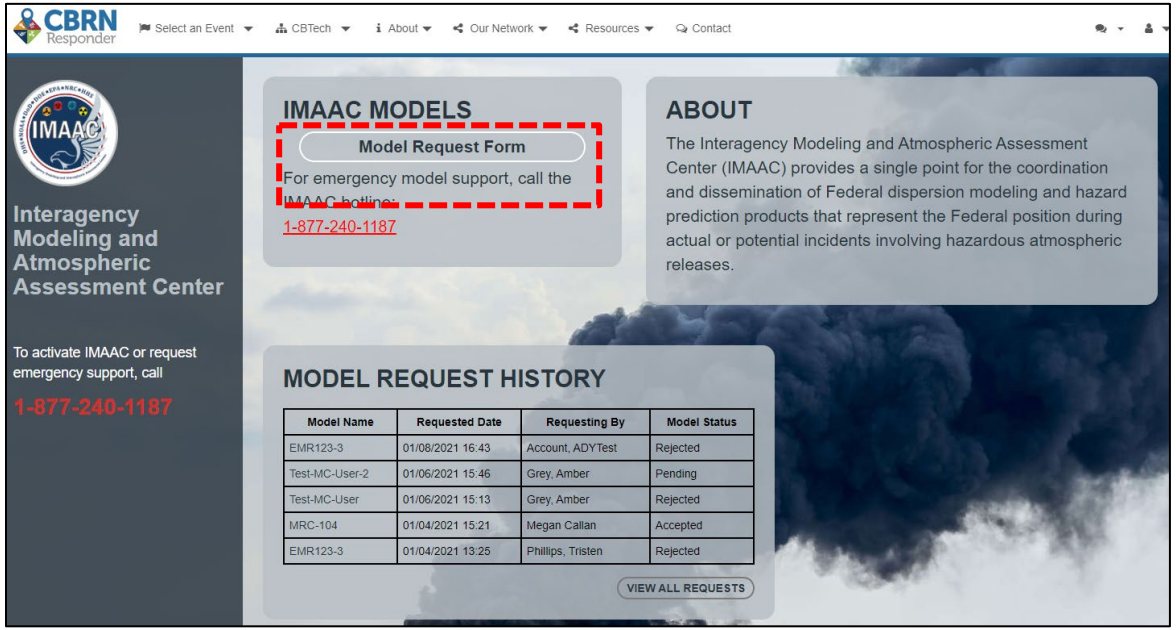
- Add mixtures and their components to the chemical inventory at facilities
- DOT Hazard Classes and Fire Code Hazard Classes for chemicals
- Ability to bulk upload facilities to an organization
- Exploring other bulk upload/edit capabilities for facilities (APIs, exchange networks)
- Potential forthcoming enhancements based on findings from the CUPA Pilot…

IMAAC Portal

- **Interagency Modeling and Atmospheric Assessment Center (IMAAC)** provides a **single point for the coordination and dissemination of Federal dispersion modeling and hazard prediction products** that represent the Federal position during actual or potential incidents involving hazardous atmospheric releases.
- Led by FEMA CBRN office; IMAAC Portal development funded by **DHS S&T NUSTL**
- "**IMAAC Portal**" will allow any CBRNResponder user to request IMAAC models, and allows **IMAAC to seamlessly push models and briefing products to users' events** for exercises and/or real-world emergency events
- Development complete; release coming soon

IMAAC Portal

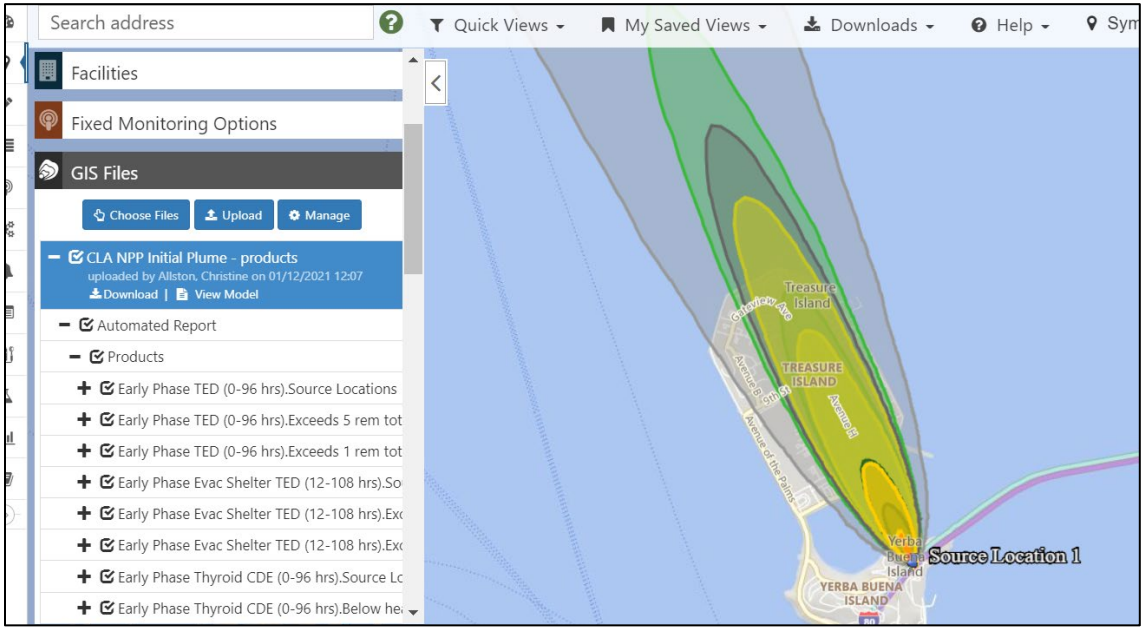
IMAAC portal homepage with a "Model Request Form" and emergency number for real-world incidents



*These are forthcoming features not yet available to end-users but will be soon. The screenshots here are from the CBRNResponder development region.

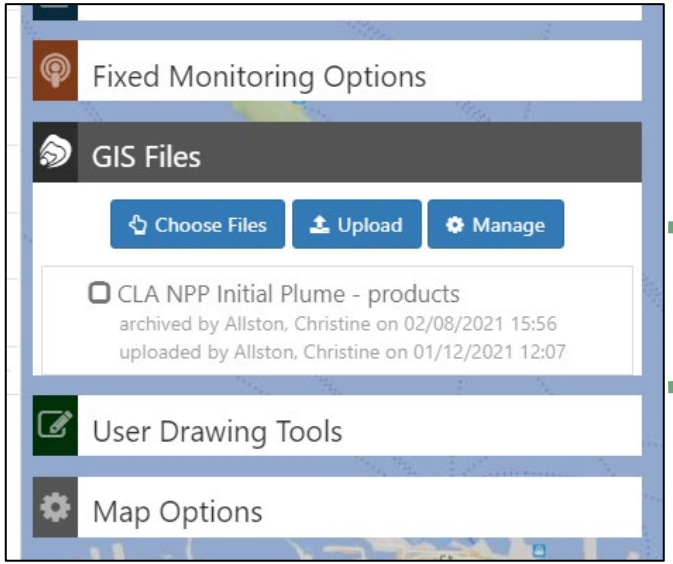
IMAAC Portal

IMAAC can push products directly to GIS files section of the event map for immediate display



IMAAC Portal

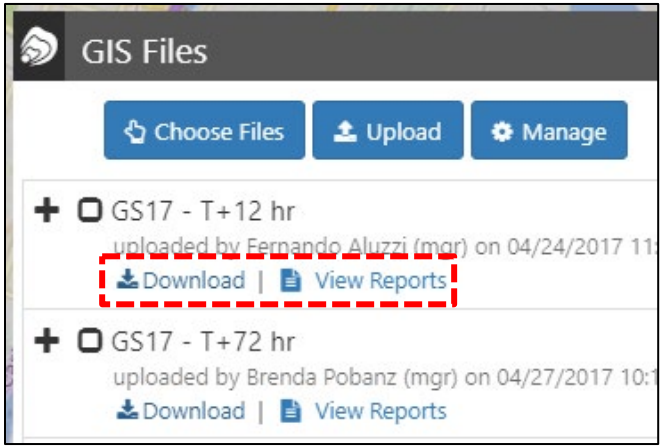
IMAAC can **archive** models that are outdated and supply new, updated models in real-time



Grayed out text indicates model has been archived

IMAAC Portal

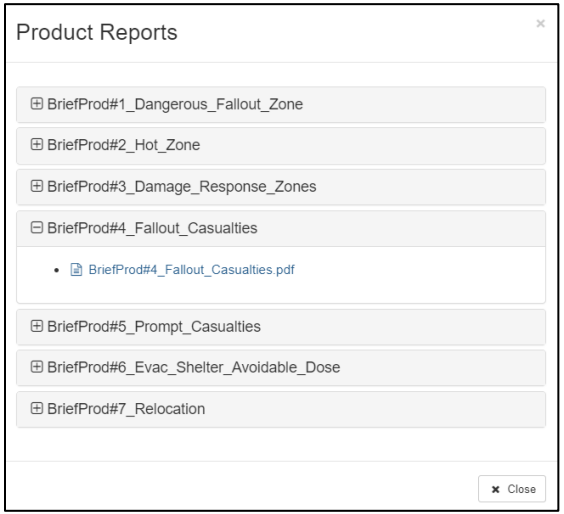
- Download files for offline use
- "View Reports" to see briefing products supplied by IMAAC that accompany the GIS files

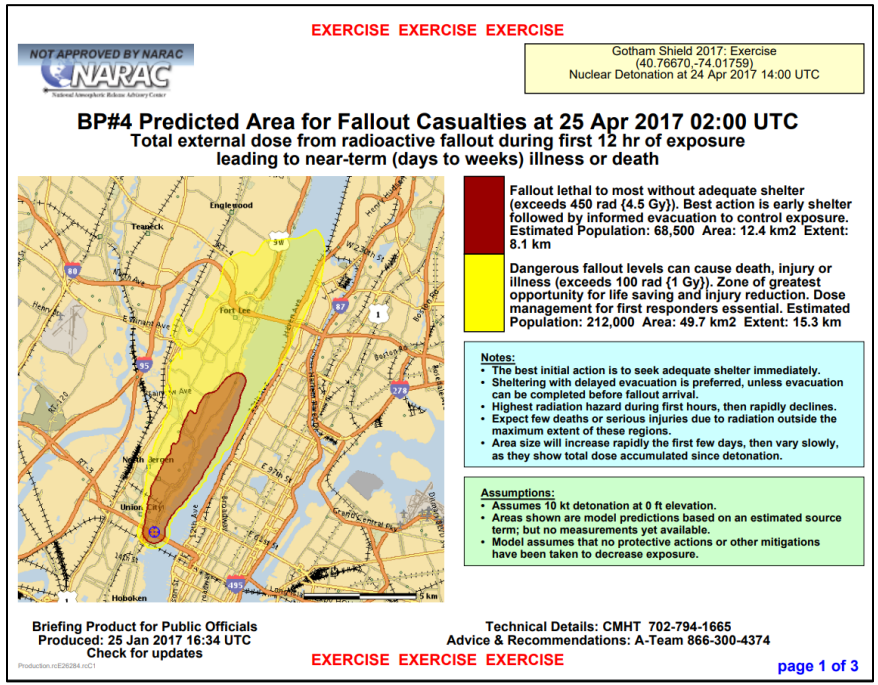


IMAAC Portal

ChemResponder

Briefing products viewable in PDF format





EXERCISE EXERCISE EXERCISE

NOT APPROVED BY NARAC — NARAC

Gotham Shield 2017: Exercise
(40.76670,-74.01759)
Nuclear Detonation at 24 Apr 2017 14:00 UTC

BP#4 Predicted Area for Fallout Casualties at 25 Apr 2017 02:00 UTC
Total external dose from radioactive fallout during first 12 hr of exposure leading to near-term (days to weeks) illness or death

Fallout lethal to most without adequate shelter (exceeds 450 rad {4.5 Gy}). Best action is early shelter followed by informed evacuation to control exposure. Estimated Population: 68,500 Area: 12.4 km2 Extent: 8.1 km

Dangerous fallout levels can cause death, injury or illness (exceeds 100 rad {1 Gy}). Zone of greatest opportunity for life saving and injury reduction. Dose management for first responders essential. Estimated Population: 212,000 Area: 49.7 km2 Extent: 15.3 km

Notes:
- The best initial action is to seek adequate shelter immediately.
- Sheltering with delayed evacuation is preferred, unless evacuation can be completed before fallout arrival.
- Highest radiation hazard during first hours, then rapidly declines.
- Expect few deaths or serious injuries due to radiation outside the maximum extent of these regions.
- Area size will increase rapidly the first few days, then vary slowly, as they show total dose accumulated since detonation.

Assumptions:
- Assumes 10 kt detonation at 0 ft elevation.
- Areas shown are model predictions based on an estimated source term; but no measurements yet available.
- Model assumes that no protective actions or other mitigations have been taken to decrease exposure.

Englewood
Teaneck
Fort Lee
North Bergen
Union City
Hoboken
5 km

Briefing Product for Public Officials
Produced: 25 Jan 2017 16:34 UTC
Check for updates

Technical Details: CMHT 702-794-1665
Advice & Recommendations: A-Team 866-300-4374

EXERCISE EXERCISE EXERCISE

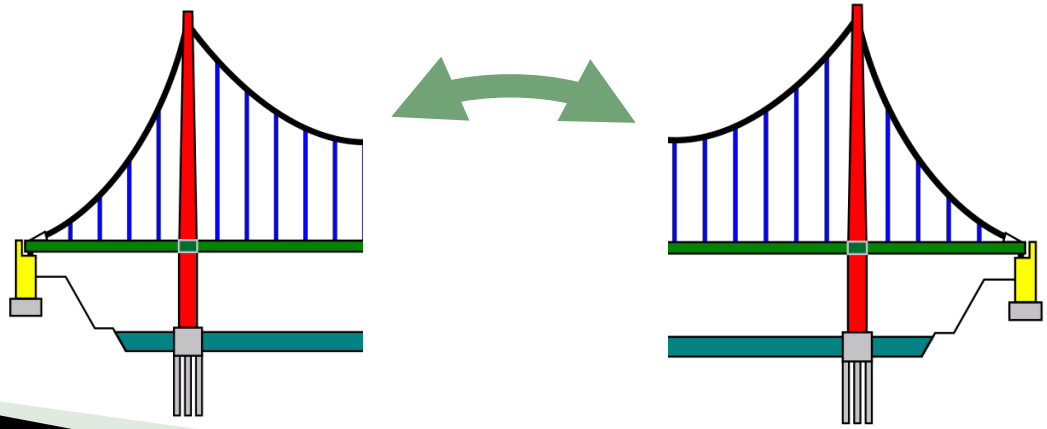
page 1 of 3

APIs in ChemResponder

- API = Application Programming Interface
- Allows two applications to "talk" to one another
- Our APIs will allow detection equipment to "talk" to ChemResponder directly
- Implications: Users won't enter data themselves; increases in efficiency and accuracy

APIs in ChemResponder

- ChemResponder builds half of the integration; manufacturers build the other half
- Costs for developing and maintaining integrations with all instruments would be unsustainably high for ChemResponder
- ChemResponder builds half of the "bridge" and manufacturers build the other half



APIs in ChemResponder

- ChemResponder has three APIs. The API the manufacturer should use depends on the type of equipment to be integrated.
- **User Data API** (the user has some interface for entering data, like a mobile app or a screen on the device itself)
- **Equipment API** (equipment doesn't have an interface the user interacts with, like a detector on a truck)
- **Fixed Data API** (for stationary instruments collecting data at a single location over time)

APIs in ChemResponder

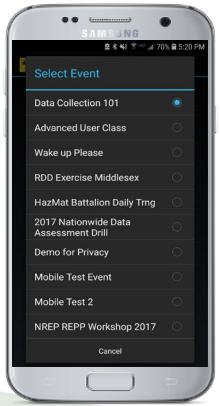
- Typically for handheld instruments (survey meters, PRDs, gas meters, PIDs)
- Manufacturer develops app. Detector telemeters data to app via Bluetooth, which sends it to ChemResponder

RadResponder Example

Polimaster PRD

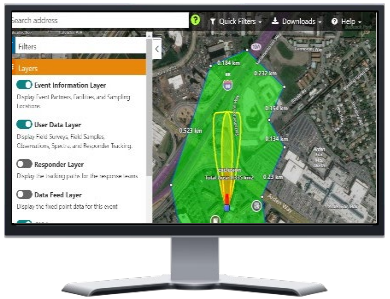
Bluetooth

Polismart mobile application



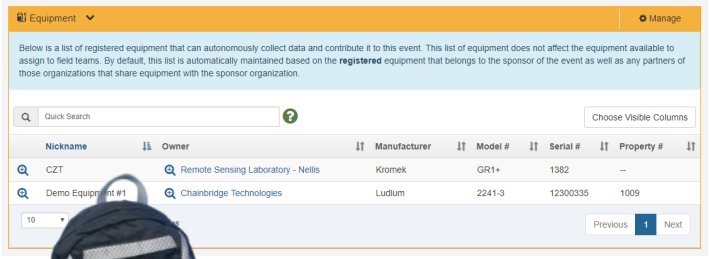
API

ChemResponder event



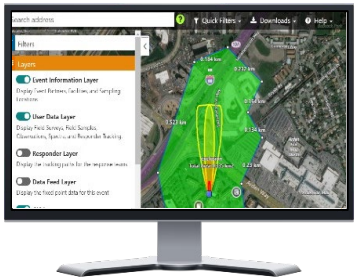
APIs in ChemResponder

- For equipment that collects data autonomously and doesn't require a user interface (e.g. vehicle-mounted detector)
- Equipment is registered to an event. When equipment is turned on, it starts sending data to the event



API

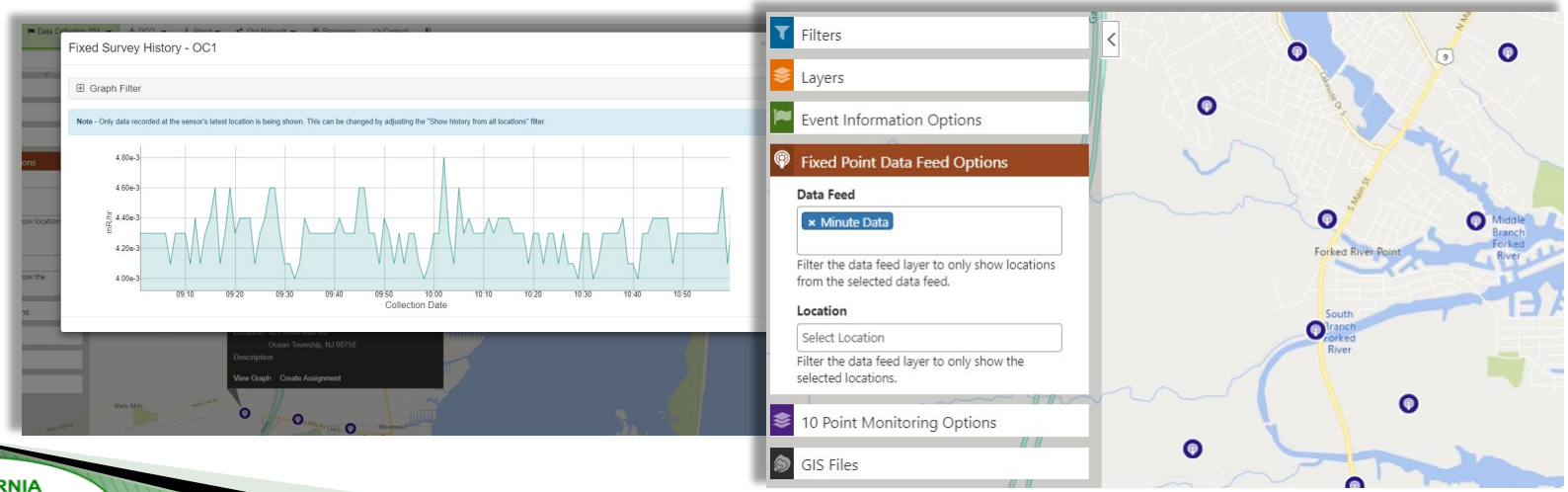
ChemResponder event



Detection equipment is registered to event on ChemResponder website

APIs in ChemResponder

- Takes data from a stationary or deployable sensor
- Setup data feeds that can be displayed as a layer on any event to show fixed sensor data
- Example from RadResponder: New Jersey Department of Environmental Protection



Post-Presentation Q&A

- After our Session is over, we are offering a Zoom Room opportunity to continue the conversation started in this Session
- Near the end of the Session in the QandA box, we will post the Zoom Room link
- To join in the conversation, you will need to copy that link BEFORE we close out the Session and paste it to a new browser tab/window
- In this Zoom Room, you may meet with the Speaker, Moderator and/or fellow Attendees for a post meeting de-brief

Any Questions?

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