

Facility Registry Service APIs and eEnterprise

EN2014

| | | |
|--------------|--------------|--|
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Why APIs? Why REST?



- Services can be built once, and then power many different types of applications and serve many different needs
- You can mix and match different APIs to serve emergent needs
- REST is a great option for building interactive, dynamic applications



**REST = “REpresentational State Transfer”*

Why does EPA care?



- We are putting APIs into action, using them to power our own applications
- EPA Enforcement and Compliance History Online (ECHO)
- <http://epa.gov/echo>

```
{
  "results":{
    "Message":"Success",
    "Permits":[
      {
        "Statute":"","
        "EPASystem":"FRS",
        "EPAREgion":"03",
        "SourceID":"110006368206",
        "FacilityName":"AKER PHILA SHIPYARD",
        "FacilityStreet":"PORTER AVENUE AND BRIDGE STREET",
        "FacilityCity":"PHILADELPHIA",
        "FacilityState":"PA",
        "FacilityZip":"19112",
        "Universe":"","
        "Areas":null,
        "Expdate":null,
        "statute":"CAA",
        "EPASystem":"AFS",
        "EPAREgion":"03",
        "SourceID":"4210101569",
        "FacilityName":"AKER PHILA SHIPYARD/SHIPBUILDING YARD",
        "FacilityStreet":"PHILA NAVAL BUS CTR",
        "FacilityCity":"PHILADELPHIA",
        "FacilityState":"PA",
        "FacilityZip":"19112",
        "Universe":"Major",
        "Areas":"SIP, NSPS, MACT (SECTION 63 NESHAPS), TITLE V PERMITS",
        "Expdate":null,
        "Latitude":null,
        "Longitude":null,
      }
    ]
  }
}
```

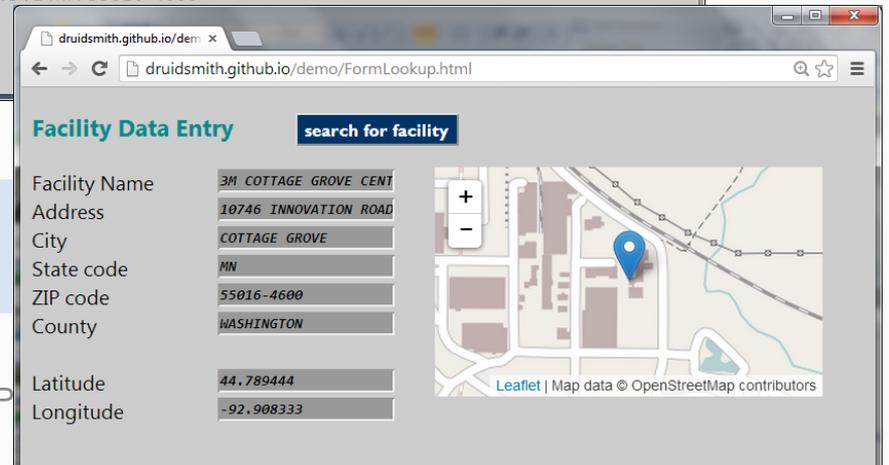
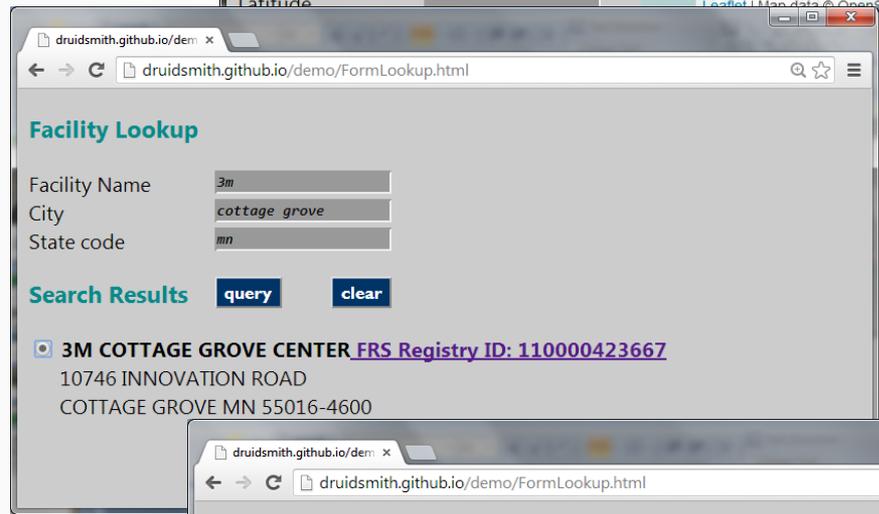
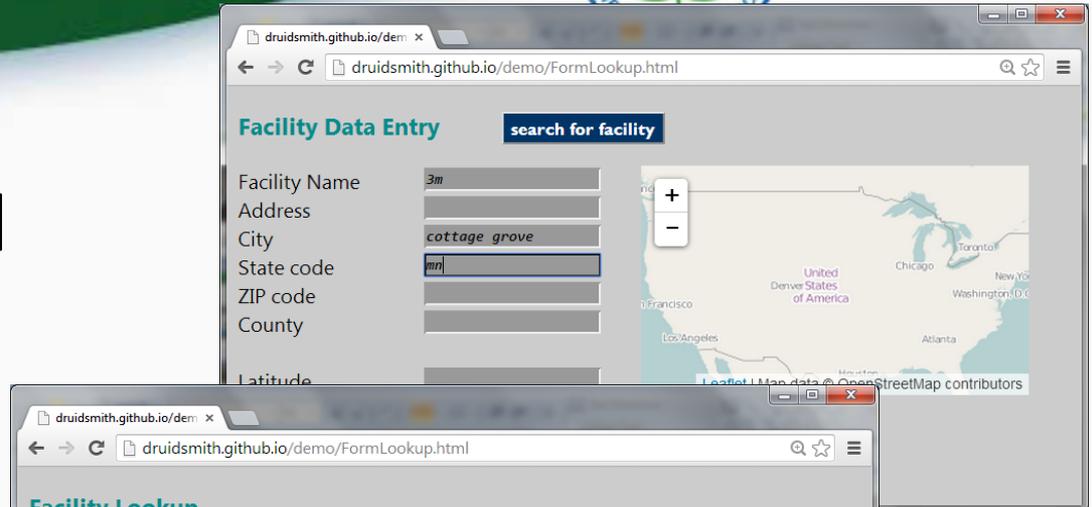
A screenshot of the EPA's ECHO (Enforcement and Compliance History Online) website. The browser address bar shows the URL: echo.epa.gov/detailed_facility_report?fid=110006368206. The page title is "Detailed Facility Report | E x". The EPA logo and navigation menu are visible. The main content area shows a satellite map of the facility location in Philadelphia, PA. To the right of the map, the facility name "AKER PHILA SHIPYARD" is displayed, along with its address: "PORTER AVENUE AND BRIDGE STREET, PHILADELPHIA, PA 19112". Below this, there are sections for "Facility Information (FRS)" and "Regulatory Interests". The FRS section lists details such as FRS ID (110006368206), EPA Region (03), Latitude (39.884891), Longitude (-75.191124), and Industry. The Regulatory Interests section lists various acts and permits, including Clean Air Act: Operating Major (421010), Clean Water Act: Minor, Permit Effective Terminated (PA0058483), Resource Conservation and Recovery Act (PAR000040162), and Safe Drinking Water Act. There are also buttons for "Expand All", "Collapse All", "Report Violation", "Report Data Error", "Data Dictionary", and "Download".

e-Enterprisey goodness..?



- APIs can be useful in reporting and burden reduction via lookups, prepopulating forms, and validation

<https://github.com/USEPA/FRS-getfacilities-samples/blob/master/FormLookup.html>



Why might others care?



- ***Because you can use some of these services, too!***

```
{
  "results":{
    "Message":"Success",
    "Permits":[
      {
        "Statute":"","
        "EPASystem":"FRS",
        "EPAREgion":"03",
        "SourceID":"110006368206",
        "FacilityName":"AKER PHILA SHIPYARD",
        "FacilityStreet":"PORTER AVENUE AND BRIDGE STREET",
        "FacilityCity":"PHILADELPHIA",
        "FacilityState":"PA",
        "FacilityZip":"19112",
        "Universe":"","
        "Areas":null,
        "ExpDate":null,
        "statute":"CAA",
        "EPASystem":"AFS",
        "EPAREgion":"03",
        "SourceID":"4210101569",
        "FacilityName":"AKER PHILA SHIPYARD/SHIPBUILDING YARD",
        "FacilityStreet":"PHILA NAVAL BUS CTR",
        "FacilityCity":"PHILADELPHIA",
        "FacilityState":"PA",
        "FacilityZip":"19112",
        "Universe":"Major",
        "Areas":"SIP, NSPS, MACT (SECTION 63 NESHAPS), TITLE V PERMITS",
        "ExpDate":null,
        "Latitude":null,
        "Longitude":null,
      }
    ]
  }
}
```

Detailed Facility Report | E x

echo.epa.gov/detailed_facility_report?fid=110006368206

EPA United States Environmental Protection Agency

Learn the Issues Science & Technology Laws & Regulations About EPA

ECHO Enforcement and Compliance History Online

You are here Home > Detailed Facility Report

Detailed Facility Report

This page updates dynamically based on your search within the page.

+ Expand All - Collapse All Report Violation Report Data Error Data Dictionary Download

Facility Summary

AKER PHILA SHIPYARD
PORTER AVENUE AND BRIDGE STREET, PHILADELPHIA, PA 19112

Facility Information (FRS)
FRS ID: [110006368206](#)
EPA Region: 03
Latitude: 39.884891
Longitude: -75.191124
Industry:
Indian Country: --
[Go To Facility/System Characteristics](#)

Regulatory Interests
Clean Air Act: Operating Major (421010)
Clean Water Act: Minor, Permit Effective Terminated ([PA0058483](#))
Resource Conservation and Recovery Act (PAR000040162)
Safe Drinking Water Act:
Also Reports

What we hear...



“Getting information back by state ID - would like to be able to return the following information using the state ID: 1) the active FRS ID, 2) the FRS facility name, 3) the facility location (decimal degree coordinates and physical address), and 4) associated program IDs.”

“A service that returns sub facility points (by state ID) - This could be useful or QC on locations. It would be beneficial if we get information on: 1) sub-facility points with more than one coordinate pair, 2) sub-facility points where the state-supplied coordinates differ from the FRS coordinates by 50 meters or more, and 3) source of the coordinates stored in FRS (state, EPA, etc).”

“The ability to search for data adjacent to the state, returning points from that nearby state - Our Site Investigation maps include potential sources and receptors within 4 miles (ground water/soil contamination) or 15 miles (surface water contamination) of the site center. If this service could be tailored to return results based on a point location or user-defined polygon, this could be useful for us.”

“A service that compares the FRS point to the state point - It would be beneficial if we get information on: 1) facilities with more than one coordinate pair, 2) facilities where the state-supplied coordinates differ from the FRS coordinates by 50 meters or more, and 3) source of the coordinates stored in FRS (state, EPA, etc). ”

“Getting information back by state ID - would like to be able to return the following information using the state ID: 1) the active FRS ID, 2) the FRS facility name, 3) the facility location (decimal degree coordinates and physical address), and 4) associated program IDs.”

druidsmith.github.io/demo/SysIDQuery.html

Facility Search by State ID

State Acronym

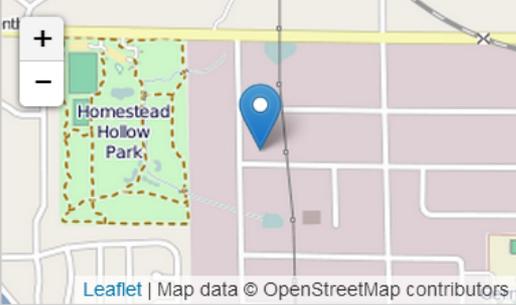
State ID

- BRENNTAG GREAT LAKES LLC** [FRS Registry ID: 110000416158](#)
W194 N11756 MCCORMICK DRIVE
GERMANTOWN WI 530222491

druidsmith.github.io/demo/FormLookup.html

Facility Data Entry

| | |
|---------------|--|
| Facility Name | <input type="text" value="BRENNTAG GREAT LAKES"/> |
| Address | <input type="text" value="W194 N11756 MCCORMICK"/> |
| City | <input type="text" value="GERMANTOWN"/> |
| State code | <input type="text" value="WI"/> |
| ZIP code | <input type="text" value="530222491"/> |
| County | <input type="text" value="WASHINGTON"/> |
| Latitude | <input type="text" value="43.23138"/> |
| Longitude | <input type="text" value="-88.14909"/> |



Leaflet | Map data © OpenStreetMap contributors

druidsmith.github.io/demo/FormLookup.html#

“Getting information back by state ID - would like to be able to return the following information using the state ID: 1) the active FRS ID, 2) the FRS facility name, 3) the facility location (decimal degree coordinates and physical address), and 4) associated program IDs.”

REST Call:

http://ofmpub.epa.gov/enviro/frs_rest_services.get_facilities?pgm_sys_acrnm=WI-ESR&pgm_sys_id=162059&program_output=yes&output=JSON

WI Program Acronym

Wisconsin ID

REST Response (JSON)

```
{
  "Results":{
    "FRSFacility":[
      {
        "RegistryId":"110000416158",
        "FacilityName":"BRENNTAG GREAT LAKES LLC",
        "LocationAddress":"W194 N11756 MCCORMICK DRIVE",
        "SupplementalLocation":null,
        "CityName":"GERMANTOWN",
        "CountyName":"WASHINGTON",
        "StateAbbr":"WI",
        "ZipCode":"530222491",
        "FIPSCode":"55131",
        "Latitude83":"43.23138",
        "Longitude83":"-88.14909",
        "ProgramFacilities":[
          {
            "ProgramSystemAcronym":"ICIS",
            "ProgramSystemId":"8026569",
            "ProgramFacilityName":"HCI WORUM CHEMICAL COMPANY"
          }
        ]
      }
    ]
  }
}
```

FRS Registry ID

FRS Name, Location, Lat/Long

Linked program info follows

```
{
  "ProgramSystemAcronym":"RCRAINFO",
  "ProgramSystemId":"WIR000029033",
  "ProgramFacilityName":"NORTH AMERICAN COMPOSITES"
},
{
  "ProgramSystemAcronym":"TRIS",
  "ProgramSystemId":"53022HCWRMW194N",
  "ProgramFacilityName":"BRENNTAG GREAT LAKES LLC"
},
{
  "ProgramSystemAcronym":"WI-ESR",
  "ProgramSystemId":"162059",
  "ProgramFacilityName":"NORTH AMERICAN COMPOSITES CO"
}
]
```

RCRA Handler ID

Toxic Release Inventory (TRIFID)

External linkages



FRS Facility Detail Report

http://iaspub.epa.gov/enviro/fii_query_detail_disp_program_facility?p_registry_id=110000416158

The screenshot shows the EPA FRS Facility Detail Report for Brenntag Great Lakes LLC. The page includes a map of the facility location in Germantown, WI, with a legend for Selected Facility, EPA Facility of Interest, State/Tribe, and Facility of Interest. The facility address is 11756 McCormick Drive, Germantown, WI 53022. The page also features a table of environmental interests and a sidebar with navigation options.

| Information System | Information System ID | Environmental Interest Type | Data Source | Last Updated Date | System Status |
|--|-----------------------|---------------------------------|--------------------|-------------------|---------------|
| Toxic Release Inventory System | 530222491 | TRI REPORTER | TRI REPORTING FORM | 07/25/2008 | Active |
| Integrated Compliance Information System | 8024748 | ENFORCEMENT/COMPLIANCE ACTIVITY | ICIS | 02/13/2008 | Active |
| Wisconsin Environmental System Registry | 162058 | STATE REGISTER | WI-ER | 01/13/2008 | Active |

ECHO Enforcement and Compliance Report

http://echo.epa.gov/detailed_facility_report?fid=110000416158

The screenshot shows the EPA ECHO Enforcement and Compliance Report for Brenntag Great Lakes LLC. The page includes a facility summary, enforcement and compliance summary, and facility/system characteristics. The facility address is 11756 McCormick Drive, Germantown, WI 53022. The page also features a table of enforcement and compliance summary and a sidebar with navigation options.

| State | Insp. CY | Days of Last Inspection | Current Compliance Status | OSIs in RC for 12 | OSIs in Significant Violation | Informal Enforcement Actions (5 year) | Formal Enforcement Actions (5 year) | OSI Cases |
|-------|----------|-------------------------|---------------------------|-------------------|-------------------------------|---------------------------------------|-------------------------------------|-----------|
| WI | 2008 | 0 | Non-compliance | 0 | 0 | 0 | 0 | 0 |

“A service that compares the FRS point to the state point - It would be beneficial if we get information on: 1) facilities with more than one coordinate pair, 2) facilities where the state-supplied coordinates differ from the FRS coordinates by 50 meters or more, and 3) source of the coordinates stored in FRS (state, EPA, etc). ”

REST Call:

http://ofmpub.epa.gov/enviro/frs_rest_services.get_facilities?pgm_sys_acrnm=WI-ESR&pgm_sys_id=162059&coordinates_output=Yes&output=JSON

REST Response (JSON)

```

{
  "Results": {
    "FRSFacility": {
      "RegistryId": "110000416158",
      "FacilityName": "BRENNTAG GREAT LAKES LLC",
      "LocationAddress": "W194 N11756 MCCORMICK DRIVE",
      "SupplementalLocation": null,
      "CityName": "GERMANTOWN",
      "CountyName": "WASHINGTON",
      "StateAbbr": "WI",
      "ZipCode": "530222491",
      "FIPSCode": "55131",
      "Latitude83": "43.23138",
      "Longitude83": "-88.14909",
      "ProgramCoordinates": {
        "ProgramSystemAcronym": "TRIS",
        "ProgramSystemId": "53022HCWRMW194N",
        "SubId": null,
        "ObjectId": "11926591",
        "Latitude83": "43.229722",
        "Longitude83": "-88.15",
        "HDatum": "NAD83",
        "BestPick": "N",
        "CollectionMethod": null,
        "AccuracyValue": null,
        "AccuracyScore": "17447",
        "ReferencePoint": null,
        "DerivedCity": "GERMANTOWN",
        "DerivedCounty": "WASHINGTON",
        "DerivedZip": "53022",
        "DerivedFIPS": "55131",
        "DerivedWBD": "040400030401",
        "DerivedCB2010": "551314701002027",
        "DerivedCD112": "05",
        "MetersToBP": 0
      }
    },
    "DerivedFIPS": "55131",
    "DerivedWBD": "040400030401",
    "DerivedCB2010": "551314701002026",
    "DerivedCD112": "05",
    "MetersToBP": "198.48",
    "ProgramSystemAcronym": "WI-ESR",
    "ProgramSystemId": "162059",
    "SubId": null,
    "ObjectId": "19872365",
    "Latitude83": "43.23138",
    "Longitude83": "-88.14909",
    "HDatum": "NAD83",
    "BestPick": "Y",
    "CollectionMethod": "INTERPOLATION-PHOTO",
    "AccuracyValue": null,
    "AccuracyScore": "45",
    "ReferencePoint": null,
    "DerivedCity": "GERMANTOWN",
    "DerivedCounty": "WASHINGTON",
    "DerivedZip": "53022",
    "DerivedFIPS": "55131",
    "DerivedWBD": "040400030401",
    "DerivedCB2010": "551314701002027",
    "DerivedCD112": "05",
    "MetersToBP": 0
  }
}

```

FRS "Best Pick" (points to "BestPick": "Y")

Program coordinate data follows (points to "ProgramCoordinates" object)

Record-level geo metadata (points to "Latitude83" and "Longitude83" in the inner object)

Spatially Derived Value Add Attributes (points to "DerivedCity", "DerivedCounty", "DerivedZip", "DerivedFIPS", "DerivedWBD", "DerivedCB2010", "DerivedCD112", "MetersToBP" in the inner object)

Wisconsin's Lat-Long Used (points to "DerivedCity": "GERMANTOWN", "DerivedCounty": "WASHINGTON", "DerivedZip": "53022")

“A service that compares the FRS point to the state point - It would be beneficial if we get information on: 1) facilities with more than one coordinate pair, 2) facilities where the state-supplied coordinates differ from the FRS coordinates by 50 meters or more, and 3) source of the coordinates stored in FRS (state, EPA, etc). ”

Envirofacts
 You are here: EPA Home » Envirofacts » Facility Registry Service (FRS) » FRS Facility Coordinates

FRS Facility Coordinates

Home | Multiplatform Search | Topic Searches | System Data Searches | About

FRS

BRENNTAG GREAT LAKES LLC
 W194 N11754 MCCORMICK DRIVE
 GERMANTOWN, WI 530222491 USA
 FRS Registry ID: 110000416158

FRS GIS Report
http://iaspub.epa.gov/enviro/gis_viewer.m.ap_page?p_registry_id=110000416158

Map Legend

- Denotes the Facility Representative Point (best pick) location
- Denotes a non best pick facility location
- Denotes a water discharge location
- Denotes an air stack location
- Denotes a facility/site location that has been selected by clicking on the 'Magnifying Glass' in the tabular list of facility coordinates displayed below the map.
- In the tabular list of facility coordinates displayed below the map, a single click on the magnifying glass will center and zoom the map to that coordinate.

List of Facility Coordinates

| Zoom to Coordinate | ObjectID | Category | Geo Source Agency | Geo Source ID | Program SubID | Latitude | Longitude | Height Datum | Alt. Proj. | Collection Method | Reference Num. | Reported Accuracy | Calculated Accuracy |
|--------------------|----------|---------------|-------------------|-----------------|---------------|-----------|-----------|--------------|------------|---------------------|----------------|-------------------|---------------------|
| | 11420591 | TK05-REPORTED | TK05 | 13022HCW1941594 | | 43.229732 | -86.15 | NAD83 | 0 | | | | 17901 |
| | 13872385 | NO-ESA | WI-ESA | 142094 | | 43.23135 | -86.14924 | NAD83 | 0 | INTERPOLATION-PHOTO | | | 95 |

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“A service that returns sub facility points (by state ID) - This could be useful or QC on locations. It would be beneficial if we get information on: 1) sub-facility points with more than one coordinate pair, 2) sub-facility points where the state-supplied coordinates differ from the FRS coordinates by 50 meters or more, and 3) source of the coordinates stored in FRS (state, EPA, etc).”

FRS ArcGIS Server Subfacility Service

http://geodata.epa.gov/arcgis/rest/services/OEI/FRS_Subfacilities/MapSer

ArcGIS REST Services Directory
Home > services > OEI > FRS_Subfacilities (MapServer)

OEI/FRS_Subfacilities (MapServer)

View In: [ArcGIS JavaScript](#) [ArcGIS.com Map](#) [Google Earth](#) [ArcMap](#) [ArcGIS Explorer](#)

View Footprint In: [ArcGIS.com Map](#)

Service Description: The FRS Sub Facility layer is currently comprised from two programs, namely, Air stacks (release locations of regulated pollutants into the air), and the NPDES data set provides outfall locations from facilities being monitored by the EPA. As more reliable data becomes available, other programs providing a complete picture of sub-facility data contained with the EPA universe. The FRS facility location

Map Name: Layers

[Legend](#)

[All Layers and Tables](#)

Layers:

- [AIRS_APS](#) (0)
- [NPDES](#) (1)
- [Zoom In Text](#) (2)

Description:

Copyright Text: US EPA Facility Registry Service

Spatial Reference: 102100 (3857)

Single Fused Map Cache: false

Initial Extent:

XMin: -1.28048970513586E7
YMin: 5198072.399813289
XMax: -1.2176278930741478E7
YMax: 5309364.712996475
Spatial Reference: 102100 (3857)

Full Extent:

XMin: -1.999600552179396E7
YMin: -1.9155306869442478E7
XMax: 1.9959483137279287E7
YMax: 1.915530686944254E7
Spatial Reference: 102100 (3857)

HOME - My Map

Legend

FRS_Subfacilities

- AIRS_APS
- NPDES

POPUP WINDOW:

ADDR_APS: EXXONMOBIL REFINING & SUPPLY BAYTOWN REFINERY

| | |
|------------------|---|
| REGISTRY_ID | 1100000501 |
| FORM_SYS_ACRN | ADRGRPS |
| FORM_SYS_ID | 4020100021 |
| INTEREST_TYPE | ADR MAJOR |
| VAL_ID | 58 |
| SUB_TYPE_DESC | STACK |
| FORMSYS_NAME | EXXONMOBIL REFINING & SUPPLY BAYTOWN REFINERY |
| LOCATION_ADDRESS | 2800 DECKS DRIVE |

Zoom to | Get Directions

“The ability to designate a buffer zone adjacent to the state, returning points from that nearby state - Our Site Investigation maps include potential sources and receptors within 4 miles (ground water/soil contamination) or 15 miles (surface water contamination) of the site center. If this service could be tailored to return results based on a point location or user-defined polygon, this could be useful for us.”

Example: CERCLIS facilities within 4 mile radius of a location on the Missouri River in Kansas City, MO - REST Call:

http://ofmpub.epa.gov/enviro/frs_rest_services.get_facilities?latitude83=39.120638&longitude83=-94.573593&search_radius=4&pgm_sys_acrnm=CERCLIS

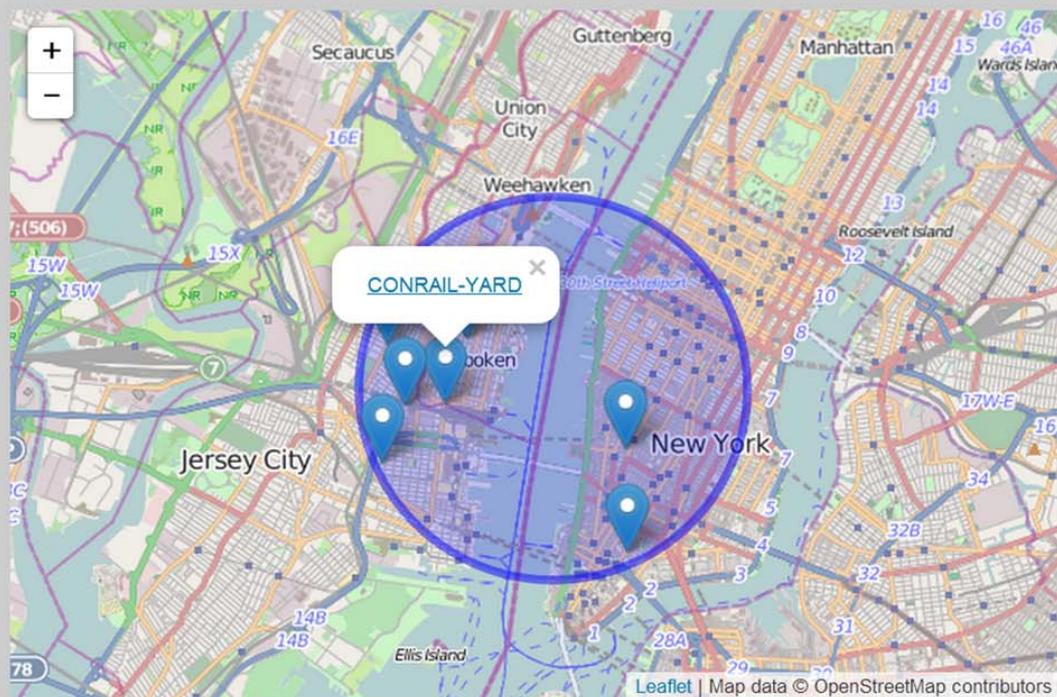
| | |
|---|--|
| <Results> | <ZipCode>64108</ZipCode> |
| <FRSFacility> | <FIPSCode>29095</FIPSCode> |
| <RegistryId>110039012626</RegistryId> | <Latitude83>39.087596</Latitude83> |
| <FacilityName>1ST AND FRANKLIN</FacilityName> | <Longitude83>-94.587622</Longitude83> |
| <LocationAddress>BUILDING 6G RICHMOND AVE</LocationAddress> | </FRSFacility> |
| <SupplementalLocation/> | <FRSFacility> |
| <CityName>KANSAS CITY</CityName> | <RegistryId>110000443217</RegistryId> |
| <CountyName>WYANDOTTE</CountyName> | <FacilityName>BRENNTAG MID SOUTH INCORPORATED</FacilityName> |
| <StateAbbr>KS</StateAbbr> | <LocationAddress>5200 STILLWELL AVENUE</LocationAddress> |
| <ZipCode>66101</ZipCode> | <SupplementalLocation/> |
| <FIPSCode>20209</FIPSCode> | <CityName>KANSAS CITY</CityName> |
| <Latitude83>39.124246</Latitude83> | <CountyName>JACKSON</CountyName> |
| <Longitude83>-94.613863</Longitude83> | <StateAbbr>MO</StateAbbr> |
| </FRSFacility> | <ZipCode>64120-1147</ZipCode> |
| <FRSFacility> | <FIPSCode>29095</FIPSCode> |
| <RegistryId>110022533132</RegistryId> | <Latitude83>39.144501</Latitude83> |
| <FacilityName>BIRCH TELECOM STYRENE ODOR</FacilityName> | <Longitude83>-94.52153</Longitude83> |
| <LocationAddress>2115 CENTRAL AVENUE</LocationAddress> | </FRSFacility> |
| <SupplementalLocation/> | |
| <CityName>KANSAS CITY</CityName> | |
| <CountyName>JACKSON</CountyName> | |
| <StateAbbr>MO</StateAbbr> | |

“The ability to search for data adjacent to the state, returning points from that nearby state - Our Site Investigation maps include potential sources and receptors within 4 miles (ground water/soil contamination) or 15 miles (surface water contamination) of the site center. If this service could be tailored to return results based on a point location or user-defined polygon, this could be useful for us.”

Map Search

Pan and zoom to area of interest; select search parameters, and click on the map to query.

Search National Program: Search Radius: (miles)



CITY CHEMICAL CORP

- CERCLIS Program ID: NJD001306414
- ICIS Program ID: 2656053
- ICIS Program ID: 811
- NJ-NJEMS Program ID: 7442
- RCRAINFO Program ID: NJD001306414

CONRAIL-YARD

- CERCLIS Program ID: NJD980770036

EIGHTH STREET SITE

- CERCLIS Program ID: NJD986571115

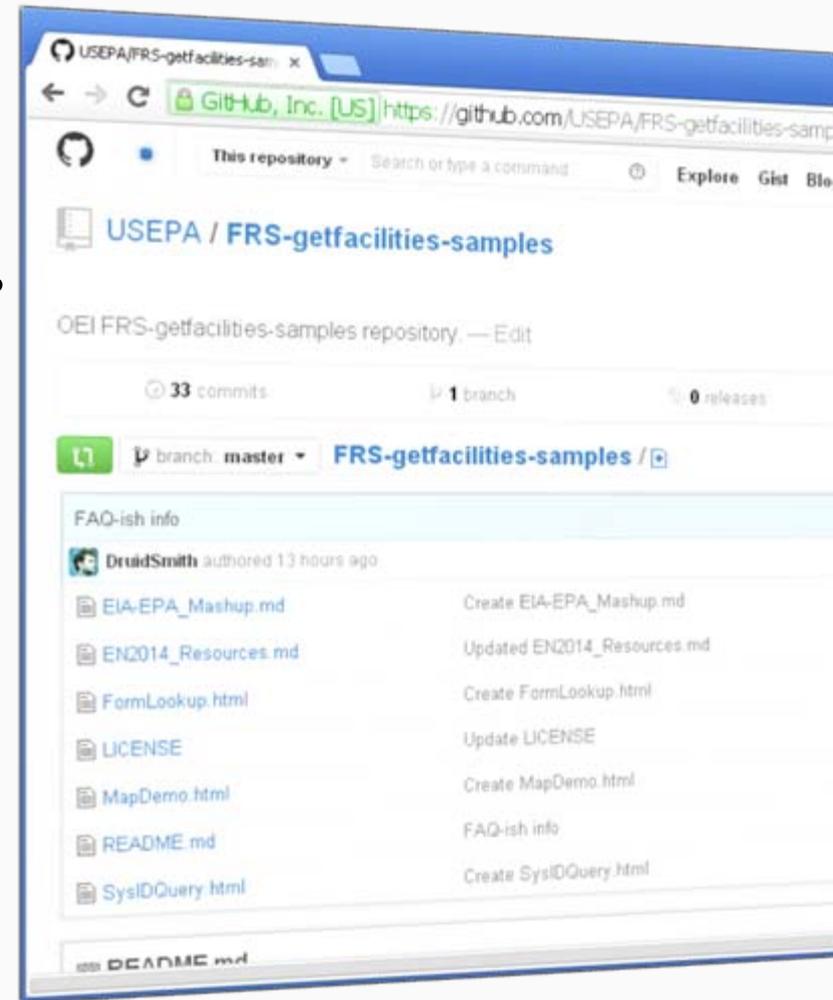
NEW YORK CITY ANTHRAX

<https://github.com/USEPA/FRS-getfacilities-samples/blob/master/MapDemo.html>

APIs – Easy to use



- *The code samples can help jumpstart development, contain a readme doc, references and tips*
- *Easy-to-use tools, which should be accessible to most developers via jQuery or other JavaScript frameworks*
- *Took me (a non-developer) just a few hours and a few dozen lines of code*
- <https://github.com/USEPA/FRS-getfacilities-samples>



Thank You / Questions?



| | | |
|---------------------|---------------------|---|
| David Smith | 202-566-0797 | <u>Smith.DavidG@epa.gov</u> |
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| Aaron Meyers | 202-566-0690 | <u>Meyers.Aaron@epa.gov</u> |
| Lee Kyle | 202-564-4622 | <u>Kyle.Lee@epa.gov</u> |

| Topic | URL |
|------------------------------------|--|
| FRS Homepage | <u>http://www.epa.gov/frs/</u> |
| FRS REST Services | <u>http://www.epa.gov/enviro/html/fii/FRS_REST_Services.html</u> |
| FRS REST Services Demo Code | <u>https://github.com/USEPA/FRS-getfacilities-samples</u> |
| FRS Data Resources | <u>http://www.epa.gov/enviro/html/fii/dataresources.html</u> |
| EPA Geospatial Program | <u>http://www.epa.gov/geospatial/index.html</u> |
| EPA Geodata Gateway | <u>https://edg.epa.gov/</u> |