## NJDEP Initiatives To Share Radon Data

The New Jersey Department of Environmental Protection (NJDEP) is a State Agency responsible for the protection of human health and the environment by ensuring clean air and water, managing solid waste, disposing hazardous waste and preserving wetlands and coastal resources. While NJDEP maintains its own database repository to store important environmental data, it also shares this information with other enforcement and interest groups. These agencies include the US Environmental Protection Agency (EPA), the Department of Health (DOH), the Department of Energy (DOE), the Federal Emergency Management Agency (FEMA), New Jersey Law & Public Safety Department, NOAA, other states, partners, and the general public.

To share environmental information with these groups efficiently, NJDEP implemented a Node based on the National Environmental Information Exchange Network (EN) open protocols. This EN provides an IT infrastructure (data standards and open protocols) to allow data providers to publish their data and to offer the data consumers access to the data, without the limitation of computer or operating platforms. In addition, the node, in conjunction with the EN Browser (a data discovery & analysis tool for the Exchange Network), allows NJDEP to broaden their data sharing capability with the highest return-on-investment at the minimum effort.

Publishing Radon Data for Public Use

Long-term exposure to Radon above 4 pCi/L poses a significant health risk to human beings. Radon has been considered as the second leading cause of lung cancer and is a leading environmental cause of cancer mortality (approximately 21,000 deaths per year in USA) in accordance with the USEPA. Radon testing can be conducted by property owners or certified radon testers and it is common that testing occurs during real estate transactions. The Radon test results are managed by the NJDEP. NJDEP has made the Radon data available for interested parties to request and view Radon Testing and Mitigation Data. The following diagram illustrates the data exchange process.
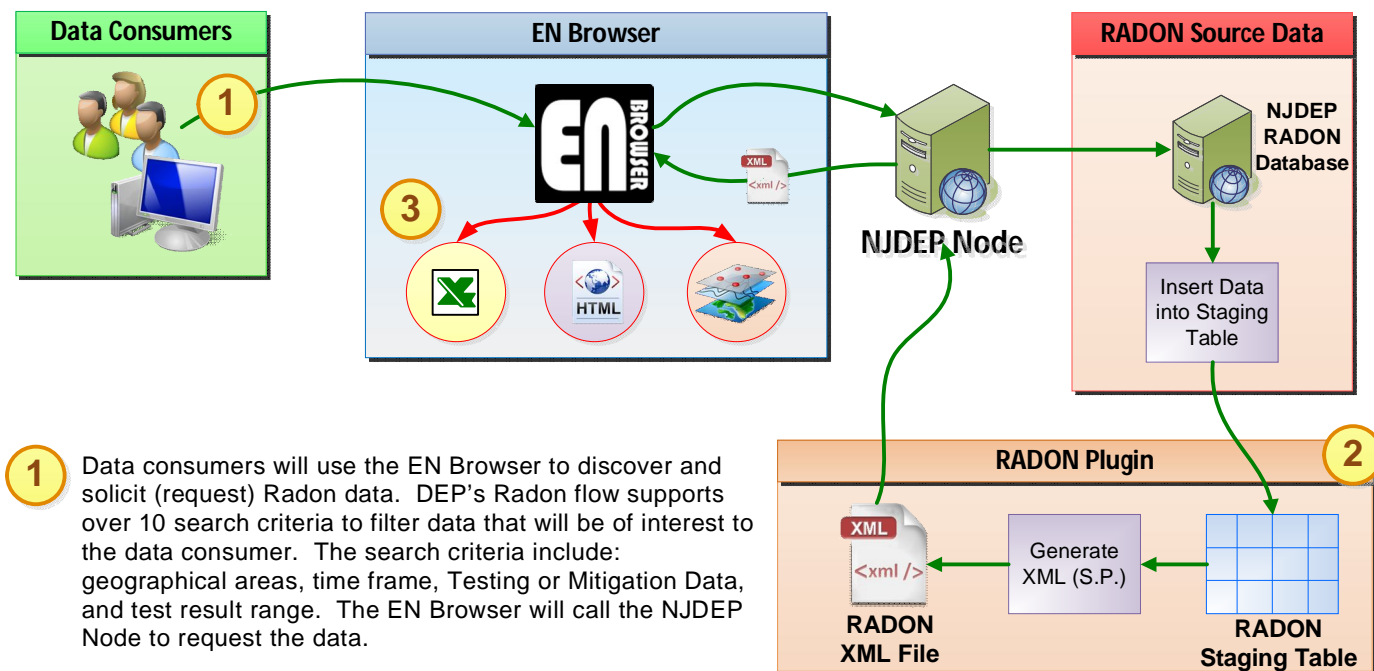
1 Data consumers will use the EN Browser to discover and solicit (request) Radon data. DEP's Radon flow supports over 10 search criteria to filter data that will be of interest to the data consumer. The search criteria include: geographical areas, time frame, Testing or Mitigation Data, and test result range. The EN Browser will call the NJDEP Node to request the data.
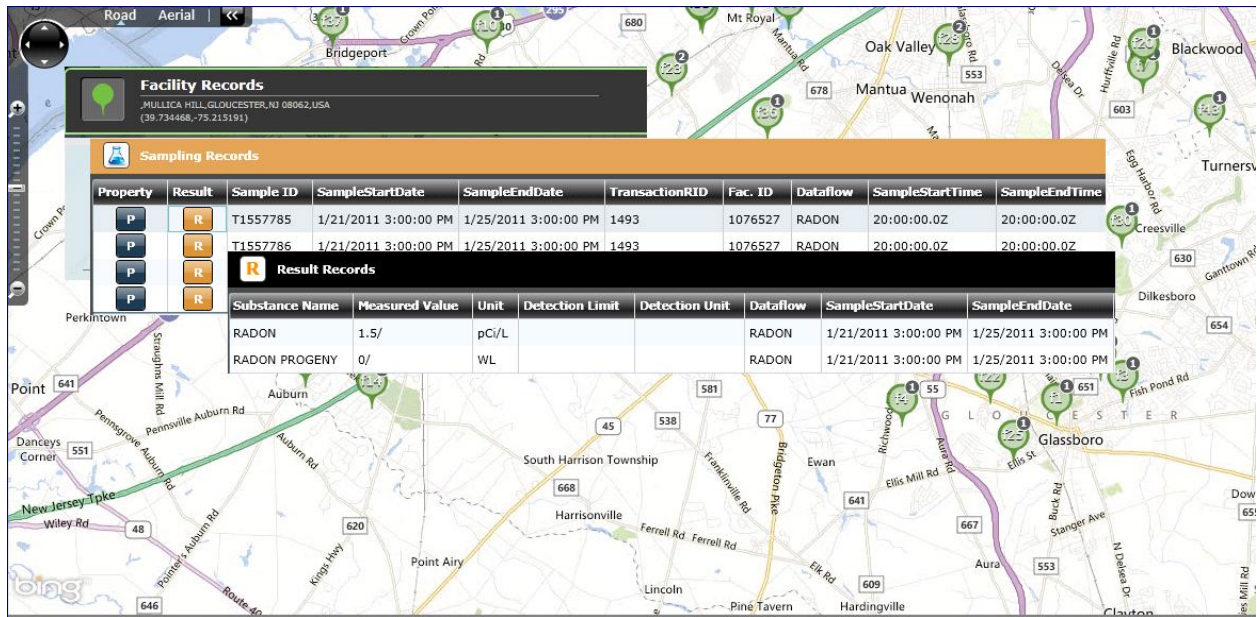
2 NJDEP's Node will respond to a EN Browser request. A Node Radon Plug-in will interact with the DEP's backend database to retrieve the data and generate the data in the RADON schema format published by the Exchange Network. The XML file from the Node will be sent to the EN Browser. The EN Browser will automatically alert the data consumer when the data is ready for download and analysis.

3 After receiving an ENB alert, the data consumer could use the EN Browser's analytical, GIS and graphing tools to perform further manipulation of the returned XML file. It can transform the file into HTML or CSV format so that the Radon data is presented in a more user-friendly structure. In addition, the EN Browser can portray the data on a GIS map as well as display the data in a time series plot to analyze the concentration of Radon over different time frames.

Data on a GIS Map and Analysis

The EN Browser includes an interactive mapping service hosted by Bing Map to interface with the requested Radon data and display the points of interest on the map (specific locations are not shown). All visual map features are supported by accessible text equivalents through HTML and CSV file formats. Radon data in these formats allow users to conduct additional data manipulation.

Reusability

DEP's Radon dataflow consists of several components that could be potentially reusable and be easily implemented by other EN Partners who wish to share their Radon data with other interested parties. These components are highlighted below:

RADON XML Schema: The Radon dataflow uses a shared, common XML schema that has been approved by the US EPA. This provides and creates a set structure for future data providers to fit their Radon data into and exchange data.

Node Radon Plug-in: The Radon Dataflow Plug-In provides the capability to generate XML files from a pre-defined staging table that complies with the Radon XML schema structure. The XML generation code (e.g. stored procedure) is universal and will grab the data that has been put into the Radon staging table, and generate the XML file. Data providers could simply map their source data to the corresponding fields in the staging table to generate the Radon XML file. Both the staging table and XML generation code could be potentially reused by other Radon data providers seeking to publish their data on the Exchange Network.

EN Browser: The ENB provides analysis tools that can be leveraged by any individual seeking to retrieve and analyze environmental data published on the EN. The Radon HTML and CSV stylesheet can be used by data consumers and/or providers to transform the XML data into CSV and/ or HTML for easier viewing. In addition, individuals may utilize ENB's native GIS and graphing tools to analyze their data

Flow Configuration Document: NJDEP's Radon FCD provides a framework for publishing Radon data on the Exchange Network. Data providers may reference the Radon FCD to learn about how they may potentially design their Radon service(s) and publish their data on the Exchange Network Discovery Services (ENDS).

Contacts

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