



# Advanced Monitoring IMPRESS – Field Monitoring NEIC's Field Monitoring Capabilities

## Key Capabilities:

- Continuous monitoring system for water quality
- Provides real-time data reporting to your computer for pH, bromide, conductivity, and other water quality parameters
- Allows for remote operation
  - Activation of sensors
  - Programming for periodic sample collection
  - Trigger automatic collection of samples in response to specified sensor detections
  - Take photographs
- Connects to commercial off-the-shelf instruments
- 30-day programming capability

## Integrated Instruments:

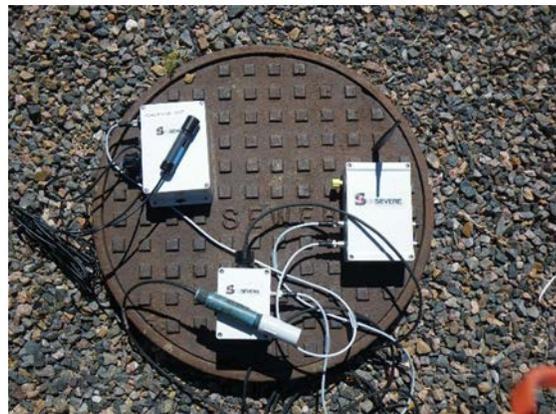
- Bromide sensors, with an operating range from 25 parts per billion (ppb) to 1,000 parts per million (ppm)
- pH probes, with a pH range from 0 to 14 standard units
- Conductivity probes, with a detection range of 0-120,000 micro-Siemens per centimeter
- YSI® multi-parameter water quality sonde capable of measuring dissolved oxygen up to 50 ppm, turbidity up to 1,000 nephelometric turbidity units, and temperature with a range of 23 to 122 degrees Fahrenheit
- ISCO® automatic composite sampler with remote control to program/trigger sample collection
- Flow sensors for determining the presence or absence of flow
- Camera for photo documentation of field conditions

## Key Personnel:

- Daren Vanlerberghe – project manager

## Integrated Monitoring Platform for Remote Environmental Sensor Systems (IMPRESS):

IMPRESS is a modular water sensor platform developed by the National Enforcement Investigations Center (NEIC). IMPRESS provides remote continuous monitoring of water and wastewater with real-time wireless transmission of pollutant concentration and water quality parameter data to a computer. It also allows for remote operation by EPA, which includes the ability to start or stop specific sensors or sampling equipment, and to change the sampling frequency. Another key feature of IMPRESS is the ability to manually or automatically trigger the collection of samples in response to the data collected by sensors connected to the platform.

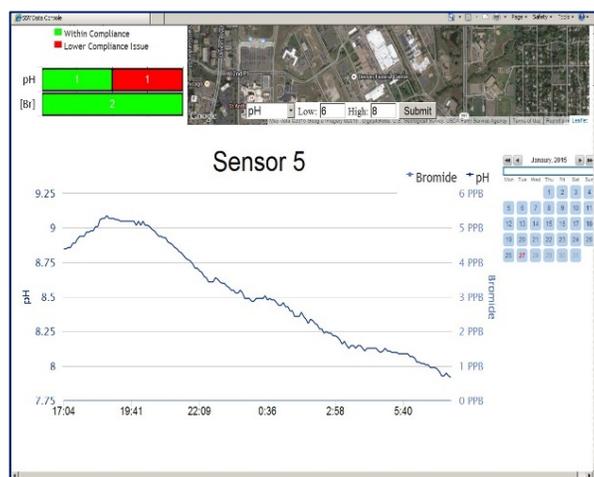


IMPRESS pH and conductivity probes

Use of this system will significantly reduce the resources required for field sampling and can also reduce the number of samples for laboratory analysis.

## IMPRESS development for field applications:

IMPRESS's bromide sensor has been field-tested with the Pittsburgh Water and Sewer Authority and EPA Region 4. NEIC has scheduled future field trials and is interested in working with other EPA offices to continue the validation of IMPRESS.



Real-time display of pH data from IMPRESS

In addition, NEIC continues to evaluate new and existing sensor technology for incorporation into IMPRESS, including additional water quality parameters such as nutrients and metals. NEIC is also working to use the IMPRESS platform to remotely operate air sensors, such as sensor pods (SPods) technology under development by EPA's Office of Research and Development.

## How to obtain NEIC's support

If your office would like to partner on an IMPRESS pilot, or if you would like to learn more about IMPRESS or NEIC's other advanced monitoring capabilities, please contact us at [neic\\_project\\_requests@epa.gov](mailto:neic_project_requests@epa.gov).