

HRECOS Mohawk River at Rexford Water Quality Metadata

Last updated: 03/25/2025

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Station Overview

Location: Rexford Bridge ([42.851 N, 73.887 W](#))

Data collection period: 08/04/2014

Parameters: pH, dissolved oxygen, specific conductance, turbidity, water temperature, chlorophyll*, phycocyanin*, water elevation**

*Chlorophyll and phycocyanin data available beginning in 2024

** Water elevation data collected by USGS at co-located site

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Station Description:

The HRECOS water quality station at Rexford Bridge is located on the north side of the Mohawk River/Erie Canal, just downstream of the city of Schenectady. Equipment is mounted remnants of the Rexford Aqueduct just east of the Rexford Bridge. Preliminary cross-sectional sampling at this site showed no obvious differences across the channel. Sensors are approximately 2 ft. above the riverbed.

Prior to 2019, a YSI 6600V2 sonde was deployed at this site. All parameters are measured using a YSI EXO2 sonde beginning 10/04/2019. Data are logged to a Campbell Scientific CR1000 datalogger.

*Water elevation is measured by a USGS co-located station using an OTT Compact Bubbler System. Water level is converted from NGVD29 to NAVD88 relative to sea level (USGS gage height + 200 ft – 0.538 ft). Only 15-minute data is retained for HRECOS, but the gage records at 5-minute intervals. Original USGS data can be accessed at the following URL: <https://waterdata.usgs.gov/monitoring-location/01355475/#parameterCode=00065&period=P7D&showMedian=false&timeSeriesId=106956>

Special Remarks:

| Date | Remark |
|------------|--|
| 10/04/2019 | 6600 sonde replaced with YSI EXO2 sonde |
| 12/17/2024 | Sonde pulled for winter due to freezing risk |
| 3/13/2025 | Sonde re-deployed for 2025 season |

Distribution Terms:

HRECOS requests that attribution be given whenever HRECOS material is reproduced and re-disseminated and the HRECOS Coordinator be notified prior to publications including any part of the data. Example citation: "Hudson River Environmental Conditions Observing System. 2012. Albany Hydrologic Station data. Accessed April 13th, 2016. <http://www.hrecos.org/>."

Data Quality Assurance:

Data collection and verification have been performed on all parameters (except velocity; see below) since the establishment of this station (January 2011) according to the HRECOS Quality Assurance Project Plan, which is available at www.hrecos.org

Remark on velocity: The level gage and velocity meter have been maintained by the U.S. Geological Survey since their adoption/installation by the agency in September 2016. Water elevation is verified by USGS annually, while velocity is only a working dataset and is primarily purposed for short-term operational use. USGS-verified data may have been corrected based on field measurements, sensor calibrations, sensor cleanings, and other observations using standard USGS methodology. Unverified data is provisional and is subject to revision.

Code Definitions

Flag code definitions:

| | |
|---|---------------------------------------|
| A | Accepted data |
| P | Provisional data |
| S | Suspect data, consult comment codes |
| R | Rejected data, consult comment codes |
| C | Corrected data, consult comment codes |

Comment code definitions:

General Errors

| | |
|-------|---|
| [GIM] | instrument malfunction |
| [GIT] | instrument recording error, recovered telemetry data |
| [GMC] | no instrument deployed due to maintenance/calibration |
| [GPF] | power failure/low battery |
| [GQR] | rejected due to QAQC checks |
| [GSM] | see metadata |
| [GIC] | no instrument deployed due to ice |
| [GNF] | deployment tube clogged/no flow |
| [GOW] | out of water event |

Sensor Errors

| | |
|-------|---|
| [SBO] | blocked optic |
| [STF] | catastrophic temperature sensor failure |
| [SCF] | conductivity sensor failure |
| [SDF] | depth port frozen |
| [SDP] | DO membrane puncture |
| [SDO] | DO suspect |
| [SIC] | incorrect calibration/contaminated standard |
| [SNV] | negative value |
| [SPC] | post calibration out of range |
| [SSD] | sensor drift |
| [SSM] | sensor malfunction |
| [SOW] | sensor out of water |
| [SSR] | sensor removed (not deployed) |
| [STS] | turbidity spike |
| [SWM] | wiper malfunction/loss |

Comments

| | |
|-------|---|
| (CAB) | algal bloom |
| (CAF) | acceptable calibration/accuracy error of sensor |
| (CAP) | depth sensor in water, affected by atmospheric pressure |
| (CBF) | biofouling |
| (CCU) | cause unknown |
| (CDA) | DO hypoxia < 28 percent saturation |
| (CDB) | disturbed bottom |
| (CDF) | data appear to fit conditions |
| (CFK) | fish kill |

| | |
|-------|---------------------------------------|
| (CIP) | surface ice present at sample station |
| (CLT) | low tide |
| (CMC) | in field maintenance/cleaning |
| (CMD) | mud in probe guard |
| (CND) | new deployment begins |
| (CRE) | significant rain event |
| (CSM) | see metadata |
| (CTS) | turbidity spike |
| (CVT) | possible vandalism/tampering |
| (CWD) | data collected at wrong depth |
| (CWE) | significant weather event |

YSI EXO2 Sensor Specifications:

Consult description and remarks for upgrade dates.

Parameter: Temperature

Units: Celsius (C)

Sensor Type: Thermistor

Model#: 599870-01

Range: -5 to 50 C

Accuracy: -5 to 35: +/- 0.01, 35 to 50: +/- .005

Resolution: 0.01 C

Parameter: Conductivity

Units: mS/cm

Sensor Type: 4-electrode cell with autoranging

Model#: 599870-01

Range: 0-200 mS/cm

Accuracy: 0 to 100: +/- 0.5% of reading or 0.001 mS/cm; 100 to 200: +/- 1% of reading

Resolution: 0.001 mS/cm to 0.1 mS/cm

Parameter: Salinity

Units: practical salinity units (psu)/parts per thousand (ppt)

Sensor Type: Calculated from conductivity and temperature

Range: 0 to 70 psu

Accuracy: +/- 1.0% of reading pr 0.1 ppt, whichever is greater

Resolution: 0.01 psu

Parameter: Dissolved Oxygen % saturation

Sensor Type: Optical probe w/ mechanical cleaning

Model#: 599100-01

Range: 0 to 500% air saturation

Accuracy: 0-200% air saturation: +/- 1% of the reading or 1% air saturation, whichever is greater 200-500% air saturation: +/- 5% or reading

Resolution: 0.1% air saturation

Parameter: Dissolved Oxygen mg/L (Calculated from % air saturation, temperature, and salinity)

Units: milligrams/Liter (mg/L)

Sensor Type: Optical probe w/ mechanical cleaning

Model#: 599100-01

Range: 0 to 50 mg/L

Accuracy: 0-20 mg/L: +/-0.1 mg/l or 1% of the reading, whichever is greater
20 to 50 mg/L: +/- 5% of the reading

Resolution: 0.01 mg/L

Parameter: pH

Units: pH units

Sensor Type: Glass combination electrode

Model#: 599701 (guarded) or 599702 (wiped)

Range: 0 to 14 units

Accuracy: +/- 0.01 units within +/- 10° of calibration temperature, +/- 0.02 units for entire temperature range

Resolution: 0.01 units

Parameter: Turbidity

Units: formazin nephelometric units (FNU)

Sensor Type: Optical, 90-degree scatter

Model#: 599101-01

Range: 0 to 4000 FNU

Accuracy: 0 to 999 FNU: 0.3 FNU or +/-2% of reading (whichever is greater); 1000 to 4000 FNU +/-5% of reading

Resolution: 0 to 999 FNU: 0.01 FNU, 1000 to 4000 FNU: 0.1 FNU

Parameter: Chlorophyll

Units: micrograms/Liter, RFU

Sensor Type: Optical probe

Model#: 599102-01

Range: 0 to 400 ug/Liter; 0 to 100 RFU

Accuracy: Dependent on methodology

Resolution: 0.1 ug/L chl a, 0.1% RFU

Parameter: Phycocyanin

Units: micrograms/Liter, RFU

Sensor Type: Optical probe

Model#: 599102-01

Range: 0 to 100 ug/Liter; 0 to 100 RFU

Accuracy: Dependent on methodology

Resolution: 0.1 ug/L PC, 0.1% RFU

YSI 6600 Sensor Specifications

Consult description and remarks for upgrade dates.

Parameter: Temperature

Units: Celsius (C)

Sensor Type: Thermistor

Model#: 6560

Range: -5 to 45 C

Accuracy: +/- 0.15 C

Resolution: 0.01 C

Parameter: Conductivity

Units: mS/cm

Sensor Type: nickel electrode

Model#: 6560

Range: 0-100 mS/cm

Accuracy: 0 to 100: +/- 0.5% of reading or 0.001 mS/cm

Resolution: 0.001 mS/cm to 0.1 mS/cm

Parameter: Salinity

Units: parts per thousand (ppt)

Sensor Type: Calculated from conductivity and temperature

Parameter: Dissolved Oxygen % saturation

Sensor Type: Optical probe w/ mechanical cleaning

Model#: 6150 ROX

Range: 0 to 500% air saturation

Accuracy: 0-200% air saturation: +/- 1% of the reading or 1% air saturation, whichever is greater 200-500% air saturation: +/- 15% of reading

Resolution: 0.1% air saturation

Parameter: Dissolved Oxygen mg/L (Calculated from % air saturation, temperature, and salinity)

Units: milligrams/Liter (mg/L)

Sensor Type: Optical probe w/ mechanical cleaning

Model#: 6150 ROX

Range: 0 to 50 mg/L

Accuracy: 0-20 mg/L: +/-0.1 mg/l or 1% of the reading, whichever is greater 20 to 50 mg/L: +/- 5% of the reading

Resolution: 0.01 mg/L

Parameter: pH
Units: pH units
Sensor Type: Glass combination electrode
Model#: 6589
Range: 0 to 14 units
Accuracy: +/- 0.2 units
Resolution: 0.01 units

Parameter: Turbidity
Units: nephelometric turbidity units (NTU)
Sensor Type: Optical
Model#: 6136
Range: 0 to 1000 NTU
Accuracy: +/-2% of reading or 0.3 NTU (whichever is greater)
Resolution: 0.1 NTU

Parameter: Chlorophyll
Units: RFU, micrograms/Liter
Sensor Type: Optical probe
Model#: 6025
Range: 0 to 400 ug/Liter; 0 to 100 RFU
Accuracy: Dependent on methodology
Resolution: 0.1 ug/L chl a, 0.1% RFU

Remarks on Sensor Specifications and Units

Conductivity:

Historically, specific conductivity data from HRECOS sites was reported in millisiemens/cm. However beginning in 2019, reporting switched to microsiemens/cm. All data files available on hrecos.org have been converted to reflect this change.

Salinity:

The 6600 series sondes report salinity in parts per thousand (ppt) units, the EXO sondes report practical salinity units (psu).

Turbidity:

The 6600 series sondes report turbidity in nephelometric turbidity units (NTU), the EXO sondes use formazin nephelometric units (FNU).

Chlorophyll and Phycocyanin Disclaimer:

YSI chlorophyll sensors (6025 or 599102-01) are designed to serve as a proxy for chlorophyll concentrations in the field for monitoring applications and complement traditional lab extraction methods; therefore, there are accuracy limitations associated with the data that are detailed in the YSI manual.