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| **C:\HRECOS\HRECOS_logo.small.TIFMetadata: Yonkers Water Quality Station**  **Location:** Yonkers, NY [(40.9362778, -73.9043056)](https://www.google.com/maps/place/40%C2%B056'10.6%22N+73%C2%B054'15.5%22W/@40.9362778,-73.9043056,414m/data=!3m2!1e3!4b1!4m4!3m3!8m2!3d40.9362778!4d-73.9043056?entry=ttu)  **Data collection period:** 06/12/2014 – present (seasonal)  **Parameters:** acidity, dissolved oxygen, salinity, specific conductance, turbidity, and water temperature. | |
| **Disclaimer:** HRECOS is a research project. No warranty—either express or implied—is made for any information presented by this program.  Researchers interested in accessing this station for research projects or collocating equipment should contact Ryan Palmer of the Center for the Urban River at Beczak, (see contact info below). | |
| **Contacts**:  Brittney Flaten, HRECOS Coordinator  NY State Dept. of Environmental Conservation  256 Norrie Point Way, Staatsburg NY 12580  Phone: 845-889-4745 x117  Email: brittney.flaten [at] dec.ny.gov | Ryan Palmer, Station Manager  Center for the Urban River at Beczak  35 Alexander St., Yonkers, NY 10701  Sarah Lawrence College  Phone: 914-377-1900 x15  Email: rpalmer [at] sarahlawrence.edu |
| **Station details:**  The station is located on the Science Barge (40° 56'10.52" N, 73° 54'15.47" W) which is located just south of the Center for the Urban River at Beczak (CURB). The Science Barge is located directly north of where the Saw Mill River outflows into the Hudson River, and ~500’ south (downstream) of a sewage outfall. The magnitude and frequency of the effects from these features on the sensor data are not yet known.  A sonde is deployed in a perforated PVSC pipe strapped to the floating Science Barge. A YSI 6-series sonde was in place from the first deployment through 2017, after which a YSI EXO sonde was installed. **Note: The Science barge was moved ~15 feet toward the main channel in the spring of 2018, therefore the sonde location differs accordingly.**  The river bottom is characterized by thick mud and rocks. The installed sensors monitor dissolved oxygen, salinity, specific conductivity, turbidity, and water temperature and pH. See the section titled “Sensor Specifications” for more information.  CURB initiated this station to support their education and research goals. CURB educates over 5,000 youth annually on the Hudson River and urban watershed issues, and in 2013 launched a research and monitoring program utilizing Sarah Lawrence College students and faculty. The Groundwork Hudson Valley Science Barge joined the partnership as a host site for the station. CURB and the Science Barge are open to the public during operational hours, which vary seasonally. | |
| **Notes and remarks:**   * Sonde is removed in the winter to avoid ice damage to the equipment. Station is seasonal. * Winter 2015-16 – Sonde removed due to concerns of ice flow damage. A stainless housing is being fabricated and is expected to be installed in April 2016. * July 2016 – PVC sonde housing replaced with stainless pipe. * October 2017 – Station removed in anticipation of barge being dry-docked for maintenance. Station will be rebuilt with a new sonde/telemetry/logging system upon completion of barge maintenance. * 7/12/18 – Station rebuilt with a new YSI EXO2 sonde, logger, and telemetry system. The stainless pipe was replaced back to a PVC pipe due to concerns about corrosion to the barge. Note that barge was moved 15 feet out toward main channel before new deployment. * 11/1/18 – The station had to be put offline again as the barge required further maintenance and went back in dry dock. * 5/10/18 – Station back online. * 12/4/19 – Station shut down for winter 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. Beczak station data. Accessed April 13th, 2015. <http://www.hrecos.org/>.” | |
| **Data Quality Assurance:**  Data collection and verification is performed quarterly according to the HRECOS Quality Assurance Project Plan, which is available at [www.hrecos.org](http://www.hrecos.org)”. See relevant section on following pages for QAQC flag and comment code definitions. | |
| **QAQC 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 | |

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| Parameter | Units | Sensor type | Model | Range | Accuracy | Resolution | Other |
| **Acidity** | Hydrogen ion concentration (pH) | Glass combination electrode | EXO2 - 599702 | 0 – 14 units | ±0.1 pH units within ±10˚C of calibration temp; ±0.2 pH units for entire temp range | 0.01 units | NA |
| **Conductivity** | Microsiemens per cm (µS/cm) | 4-electrode cell with auto ranging | EXO2 - 599870-01 | 0 – 200 µS/cm | 0 to 100: ±0.5% of reading or 0.001 mS/cm, whichever is greater.; 100 to 200: ±1% of reading | 0.0001 – 0.01 µS/cm (range dependent) | NA |
| **Dissolved oxygen** | Air saturation (%)  ⎯⎯⎯⎯  mg/L | Optical  ⎯⎯⎯⎯  Calculated | EXO2 - 599199-01 | 0 – 500%  ⎯⎯⎯⎯  0 – 50 mg/L | 0 – 200%: ±1%  200 – 500%: ±5%  ⎯⎯⎯⎯  0 – 20 mg/L: ±-0.1 mg/L or 1% (whichever is greater);  20 – 50 mg/L: ±5% | 0.1%  ⎯⎯⎯⎯  0.01 mg/L | NA |
| **Salinity** | Practical salinity units (PSU) | Calculated from conductivity and temperature | EXO2 - 599870-01 |  |  |  | NA |
| **Turbidity** | Formazin  Nephelometric Units (FNU) | Optical | EXO2 - 599101-01 | 0 – 4000 FNU | 0 to 999 : 0.3 FNU or ±2% of reading, whichever is greater.; 1000 to 4000 FNU: ±5% of reading | 0 to 999 = 0.01; 1000 to 4000 = 0.1 | NA |
| **Water temperature** | Celsius (°C) | Thermistor | EXO2 - 599870-01 | -5 to 35 °C | ±0.04% FS (±0.004 m or ±0.013 ft) | 0.001 °C | NA |

**Table 1. YSI EXO2 sensor specifications, beginning 7/12/2018.**

**Table 2. YSI 6600-series sensor specifications. Equipment was upgraded on 7/12/18.**

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| Parameter | Units | Sensor type | Model | Range | Accuracy | Resolution | Other |
| **Acidity** | Hydrogen ion concentration (pH) | Glass combination electrode | YSI 6589FR | 0-14 units | ±0.2 units | 0.01 units | N/A |
| **Conductivity** | Microsiemens per cm (µS/cm) | Nickel electrode | YSI 6560 | 0 to 100 mS/cm | ±0.5% of reading plus 0.001 mS/cm | 0.001 to 0.1 mS/cm (range dependent) | N/A |
| **Dissolved oxygen** | Air saturation (%)  ⎯⎯⎯⎯  mg/L | Opitcal  ------------  Calculated | YSI 6150 ROX | 0-500%  -----------  0-50 mg/L | 0 to 200%: ±1% of reading or 1% air saturation,  whichever is greater; 200 to 500%: ±15% of  reading, relative to calibration gases  ---------------------  0 to 20 mg/L: ± 0.1 mg/L or 1% of reading,  whichever is greater; 20 to 50 mg/L: ±15% of  reading, relative to calibration gases | 0.1%  -------------  0.01 mg/L | N/A |
| **Salinity** | Practical salinity units (PSU) | Calculated from conductivity and temperature | |  |  |  | N/A |
| **Turbidity** | Nephelometric Turbidity Units (NTU) | Optical | YSI 6136 | 0-1000 NTU | 2% or 0.3 NTU (whichever is  greater) | 0.1 NTU | N/A |
| **Water temperature** | Celsius (°C) | Thermistor | YSI 6560 | -5 to 60ºC | ±0.15ºC | 0.01ºC | N/A |