|  |
| --- |
| **C:\HRECOS\HRECOS_logo.small.TIFMetadata: Pier 25 Water Quality Station****Location:** Beginning July 2018: Pier 25, New York, NY ([40.720474, -74.016363](https://www.google.com/maps/place/Pier%2B25%2Bat%2BHudson%2BRiver%2BPark/%4040.7198403%2C-74.0150607%2C62m/data%3D%213m1%211e3%214m6%213m5%211s0x89c259f62b939287%3A0x8d965a08cff27149%218m2%213d40.7202901%214d-74.0141132%2116s/g/1wzt38tj?entry=ttu))Prior to July 2018: Pier 26, New York, NY ([40.721538 , -74.015600](https://www.google.com/maps/place/40%C2%B043%2717.5%22N%2B74%C2%B000%2756.2%22W/%4040.7215314%2C-74.0157962%2C93m/data%3D%213m1%211e3%214m5%213m4%211s0x0%3A0x0%218m2%213d40.721538%214d-74.0156?hl=en) )**Data collection period:** 9/16/2016 – present**Parameters:** acidity, dissolved oxygen, salinity, specific conductance, turbidity, water depth, and water temperature. |
| **Disclaimer:** HRECOS is a research project. No warranty—either express or implied—is made for any information presented by this program. |
| **Contacts**:Brittney Flaten, HRECOS CoordinatorNY State Dept. of Environmental Conservation256 Norrie Point WayStaatsburg, NY 12580Phone: 845-889-4745 x117Email: brittney.flaten [at] dec.ny.gov | Carrie Roble, Station ManagerHudson River Park Trust353 West Street, Pier 40, 2nd FlNew York, NY 10014Phone: (917) 661-8771Email: croble [at] hrpt.ny.gov |
| **Location and equipment:**The purpose of the Hudson River Park Pier 26 station is to generate a consistent and precise stream of water quality data to the general public and interested stakeholders. The goal in collecting this data is to ultimately inform Hudson River management policies, restoration efforts, and extreme event planning. This station was selected due to its location near the NYC Harbor and in lower Manhattan, one of the world’s most heavily developed and densely populated urban environments. The Hudson River Park Pier 26 station is located on the northwestern piling at the end of Pier 26 (40.721538 N, 74.015600 W). The water depth at this location ranges from 4.0 to 6 meters. Sensors are deployed on a YSI EXO2 sonde, approximately 2 meters off the bottom and record Dissolved Oxygen (mg/L and %sat), pH, Specific Conductance (µS/cm) and Salinity (ppt), Turbidity (NTU), Depth\* (m), and Water Temperature (°C) (see sensor specs section for details).Data is recorded by a CR200 datalogger and transmitted every 15 minutes to the HRECOS database via a cellular modem.\*Depth measurements corrected for influence of atmospheric pressure in real-time (see [here](http://www.ysi.com/parametersdetail.php?Depth-8) for more information). This calculation is performed within the data logger using barometric pressure from the co-located weather station, applied to the following equation: *Corrected depth = measured depth + ((1013 - barometric pressure) \* .0102)*When station was moved from Pier 26 to Pier 25 in July of 2018, the same equipment was used to rebuild.  |
| **Special notes:** * 2/1/2017 – 12J Noticeable drift so taken in to check template for Conductivity and pH
* 4/13/2017 – 14L pH sensor replaced; Conductivity sensor replaced
* 4/25/2017 – 14L Conductivity measurements dampened. Removed copper sleeve, recalibrated, and redeployed.
* 6/28/2017 – Fish found in 14L sonde cage
* 7/24/2017 – 16H Conductivity probe not reading on EXO program. Replaced and recalibrated before deployment
* 9/11/2017 – 14L Cond and DO show drift. Replaced and recalibrated.
* 9/20/2017 – Data logging issue. Sonde logging internally.
* 9/26/2017 – 10/11/2017 – Depth not corrected for barometric pressure since it was logged internally (and not using Campbell logger automatic correction)
* 11/28/2017 – Resolved modem transmission issues.
* In July of 2018, station was moved from Pier 26 to Pier 25 due to long-term construction on Pier 26.
 |
| **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. 2016. Pier 26 Water Quality Station data. Accessed April 13th, 2016. <http://www.hrecos.org/>.” |
| **Data Quality Assurance:**Data collection and verification have been performed since the establishment of this station according to the HRECOS Quality Assurance Project Plan, which is available at [www.hrecos.org](http://www.hrecos.org) (“About HRECOS” -> “Supporting Documents”). 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 eventSensor 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 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 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 | 0 – 200 µS/cm | 0 to 100: ±0.5% of reading or 0.001 mS/cm, w.i.g.; 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 | 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 |  |  |  | NA |
| **Turbidity** | Nephelometric Turbidity Units (NTU) | Optical | EXO2 - 599101 | 0 – 4000 NTU | 0 to 999 NTU: 0.3 NTU or ±2% of reading, w.i.g.; 1000 to 4000 NTU: ±5% of reading | 0 to 999 NTU = 0.01 NTU; 1000 to 4000 NTU = 0.1 NTU | NA |
| **Water level** | Meters (m) | Pressure Transducer | Integral in EXO2 sonde | 0 – 10 m | 0 – 15 ft: ±0.01 ft (0.003 m);15 – 35 ft: ±0.065%;35 – 50 ft (0.006 m) | Max. traceable rate of change: 3 ft/minute | Non-vented |
| **Water temperature** | Celsius (°C) | Thermistor | EXO2 - 599870 | -5 to 35 °C | ±0.04% FS (±0.004 m or ±0.013 ft) | 0.001 °C | NA |

**Table 1. YSI EXO2 sensor specifications.**