

George Washington Bridge Metadata  
Latest Update: July 23, 2010

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An example citation:

2010 George Washington Bridge Data (finalized) courtesy of the Hudson River Environmental Conditions Observing System (<http://www.hrecos.org>)

**Entry Verification:**

Data collection is performed according to the HRECOS Quality Management Plan and the HRECOS Estuary Stations Quality Assurance Project Plan available at [www.hrecos.org](http://www.hrecos.org). This station is quality level C and does not verify data. All data are provisional and subject to change.

**Site Location and Character:**

40° 51.118' 073° 57.556'

The George Washington Bridge station is located within the Palisades Interstate Park near Hazard's Dock, which is located near the base of the bridge's western tower. The site consists of two parts, with the datalogger, solar panels and antenna being located on a steel mast near the shoreline, and an in-water gauge attached to the shoreline. The shoreline at this location consists of a rock slope. A stainless steel mount was fabricated and is bolted to a rock on the slope. A 4" schedule 40 PVC pipe is clamped to this mount and angles down into the water. Due to the angle of the slope, the depth of the instrument is approximately 5-6'.

The station sensor consists of a YSI 6600EDS sonde equipped with sensors to measure salinity, temperature, dissolved oxygen and turbidity. Data is run through a YSI 6200 datalogger which transmits the data to Stevens Institute via HF radio.

Permission for the site consists of a permit through the Palisades Interstate Park, NJ section. Site visits are coordinated with their operations division due to the proximity to the bridge tower and the presence of Port

**Data collection period:**

Weather data has been collected from the George Washington Bridge Station since 3/5/2004.

**Post deployment information**

This information is being compiled and will be provided by August, 2012.

**Other remarks / notes including data coded "See Metadata":**

This information is being compiled and will be provided by August, 2012.

## Sensor Specifications

### Hydrological

George Washington Bridge

General Information	Date first operational	03/05/2004
	Date of first transmission	03/05/2004
	Data Logger Model	YSI 6200
	Data Transmitter	Ritron DX-450
	Vented to Atmosphere?	No
	Collection Interval	15 min
Temperature	Units	Celsius (°C)
	Sensor type	Thermistor
	Model #	YSI 6560
	Range	-5 to 45
	Accuracy	+/- 0.15
	Resolution	0.01
Salinity	Units	parts per thousand (ppt)
	Sensor type	
	Range	0 to 70
	Accuracy	+/- 1.0% of reading or 0.1ppt
	Resolution	0.01
Dissolved Oxygen % Saturation	Units	percent air saturation (%)
	Sensor type	Rapid pulse – Clark type, polarographic
	Model #	YSI 6562
	Range	0 to 500%
	Accuracy	0 to 200%: ±2% of reading or 2% air saturation, whichever is greater; 200 to 500%: ±6% of reading
	Resolution	0.1%

Dissolved Oxygen mg/L	Units	milligrams/ Liter (mg/L)
	Sensor type	Membrane
	Model #	YSI 6562
	Range	0 to 50
	Accuracy	0 to 20 mg/L: ± 0.2 mg/L or 2% of reading, whichever is greater; 20 to 50 mg/L: ±6% of reading
	Resolution	0.01
Water Level	Units	meters (m)
	Sensor type	Stainless steel strain gauge
	Vented to Atmosphere	No
	Range	0 to 9.1
	Accuracy	+/- 0.018
	Resolution	0.001
Turbidity	Units	nephelometric turbidity units (NTU)
	Sensor type	Optical 90° scatter with mechanical cleaning
	Model #	YSI 6136
	Range	0 to 1000
	Accuracy	+/- 5% reading or 2 NTU
	Resolution	0.1
Absolute Pressure	Sensor Type	
	Sensor Model	
	Units	NA
	Range	
	Accuracy	
pH	Units	pH units
	Sensor type	Glass combination electrode
	Model #	YSI 6561 Flat Glass
	Range	0 to 14 units
	Accuracy	+/- 0.2 units
	Resolution	0.01 units

**QAQC flag definitions:**

	Flag	Description
Automatic Data Flags	0	Acceptable data
	5	Data that demonstrate a dramatic increase or decrease from the previous value. This flag will be applied to all parameters except chlorophyll, radiation, rainfall, wind direction, and wind direction standard deviation where dramatic increases and decreases are expected. The boundaries for these flags are: <ul style="list-style-type: none"> <li>○ <math>x &gt; 3(\text{previous value})</math> for Acidity, Dissolved Oxygen, Water Level, Water Temperature, Barometric Pressure, and Absolute Pressure.</li> <li>○ <math>x &lt; 1/3(\text{previous value})</math> for Specific Conductivity, Salinity, and Relative Humidity.</li> <li>○ <math>x &gt; 10 + 3(\text{previous value})</math> for Turbidity, Wind Gusts, and Wind Speed.</li> <li>○ <math> x  &gt; 10 + 3(\text{previous value})</math> for Air Temperature</li> </ul>
	6	Flat lined data (20 or more repeated records of the same value). This flag will be applied to all parameters except specific conductivity, chlorophyll, radiation, and rainfall where flat lined data is expected. For the same reason, this flag will not be applied to salinity data from Norrie Point.
	30	Hydrological data outside three standard deviations of the seasonal mean. The seasons will be defined by the solstices and equinoxes.
	40	Hydrological data outside four standard deviations of the seasonal mean. The seasons will be defined by the solstices and equinoxes.
	100	Data outside the range of the instrument.
Added by Site Manager	0	Data determined to be acceptable after a final review by the site manager.
	10,000	Suspicious data according to a final review by the site manager
	20,000	Corrected Data
	500,000	Rejected data according to a final review by the site manager.
Added by HRECOS Coordinator	5,000	Data from instruments that exceed the post-deployment warning level as defined by the HRECOS quality management plan
	9,000	Data from instruments that exceed the post-deployment alarm level as defined by the HRECOS quality management plan

**QAQC Comment Code definitions:**

Comment Codes Added By Site Managers	General Errors	Hyd + Met	[GIM]	instrument malfunction	[GPF]	power failure/low battery	
			[GIT]	instrument recording error, recovered telemetry data	[GQR]	rejected due to QAQC checks	
			[GMC]	no instrument deployed due to maintenance/calibration	[GSM]	see metadata	
		Hyd	[GIC]	no instrument deployed due to ice	[GOW]	out of water event	
			[GNF]	deployment tube clogged/no flow			
		Met	[GMT]	instrument maintenance	[GIM]	program reload	
			[GPD]	power down			
		Sensor Errors	Hyd	[SBO]	blocked optic	[SPC]	post calibration out of range
				[STF]	catastrophic temperature sensor failure	[SSDN]	sensor drift, record not corrected
	[SCF]			conductivity sensor failure	[SSDC]	sensor drift, record corrected	
	[SDF]			depth port frozen	[SSM]	sensor malfunction	
	[SDP]			DO membrane puncture	[SOW]	sensor out of water	
	[SDO]			DO suspect	[SSR]	sensor removed (not deployed)	
	[SIC]			incorrect calibration/contaminated standard	[STS]	turbidity spike	
	[SNV]			negative value	[SWM]	wiper malfunction/loss	
	Met		[SIC]	incorrect calibration constant, multiplier or offset	[SOC]	out of calibration	
			[SNV]	negative value	[SSM]	sensor malfunction	
			[SSN]	not a number/unknown value	[SSR]	sensor removed	
	Comments	Hyd		acceptable calibration/accuracy error of sensor	[CRE]	significant rain event	
			[CAF]		[CRE]	significant rain event	
			[CBF]	biofouling	[CSM]	see metadata	
			[CCU]	cause unknown	[CTS]	turbidity spike	
			[CDA]	DO hypoxia <28 percent saturation	[CWD]	data collected at wrong depth	
			[CDB]	disturbed bottom	[CAP]	depth sensor in water, affected by atmospheric pressure	
			[CDF]	data appear to fit conditions	[CAB]	algal bloom	
			[CFK]	fish kill	[CVT]	possible vandalism/tampering	
			[CIP]	surface ice present at sample station	[CMC]	in field maintenance/cleaning	
			[CLT]	low tide	[CMD]	mud in probe guard	
		[CND]	new deployment begins				
Met			acceptable calibration/accuracy error of sensor	[CSM]	see metadata		
		[CAF]		[CSM]	see metadata		
		[CDF]	data appear to fit conditions	[CVT]	possible vandalism/tampering		
		[CRE]	significant rain event				