

**Day in the Life of the Hudson River 10/20/16 Data
(Salt Front ~RM 83)
RIVER MILE 25.4W
Piermont Pier**

Margie Turrin & 12 Lamont Scientists, Lamont-Doherty Earth Observatory



**Jen Mazza, Clarkstown South High School, 18 students
Tom Mullane & Brenda King, Pearl River High School, 71 students
Shawn Kapusinsky, Spring Valley High School, 11 students
Julie West, Oak Meadow School, 5 students
Latitude N 41 degrees 02'592 Longitude W 73 degrees 53'789**



Clarkstown High School



Oak Meadow School



Spring Valley Students



Some Pearl River Students

Location: Piermont Pier, Piermont NY

Area: Man made fishing/shipping pier at the east end, long pier with paved roadway and vegetated strip along both sides

Surrounding Land Use: Urban/residential 80% , Forested 20%

Sampling Site: Pier, roadway in center of whole pier, parking area at end, Plants and trees along side. Shoreline Rip Rap, collected wood in area and piping entering river on the south of sampling site

Plants in area: no submerged aquatic plants in the water

Water depth: Varied by location on the pier and by tide

River Bottom – sandy/rocky bottom with marsh grass growing in or near the water

Plants in area: sumac and other plants 15%; phragmites 85%

<i>ITEM</i>	Group A			Group B		
<i>Physical</i>	Weather Today	Weather Last 3 Days		Weather Today	Weather last 3 days	
	Fair	Dry and hot		Fair	Dry and hot	
Time	Cloud Cover	Air Temp °C		Cloud Cover	Air Temp °C	
9:00	75%	17.6		79%	20	
10:00	75%	20		90%	18	
11:00	75%	20		75%	20	
12:25	75%	23		85%	22	
1:15	50%	23		60%	22	
Time	Wind – Beaufort, Direction	Wind Anemometer		Wind – Beaufort, Direction	Wind Anemometer	
9:00	2 N	5		2 N	6	
10:00	2 E	6		2.5 SE	4.5-7.1 mph	
11:00	4 E	10		3 SE	10 mph	
12:25	3 SE	10		2.5 SE	5.3 mph	
1:15	2 SE	5		2.8 SE	7.2	
<i>Turbidity –</i>	Group A			Group B		
<i>Long Site Tube</i> <i>All average 4 readings</i>	Time	Long Site Tube	Secchi	Time	Long Site Tube /	Secchi
	9:15 AM	40 cm	86.5	9:35	27.2 cm	53.1 cm
	10:00 AM	33.6	55.26	10:14	31.8 cm	52.5 cm
	10:43	30.4	52.6	11:08	30.7 cm	56.75
	12:14	29.7	34	12:39	32.8 cm	44 cm
	13:00	37.8	59.8	13:21	49.9 cm	55.7 cm
<i>Chemical</i>						
DO	TIME	DO Reading		Water Temp °C	% Saturation	
Group A	9:00	12 mg/L		17.2	125%	
Group B		8 mg/L		17.1	80%	
	10:00	NR		18.0	NR	
		9 mg/L		17.9	94%	
	11:00	7 ppm		18.0	75%	
		8 ppm		18.0	85%	
	12:00	7 mg/L		19.0	80%	
		10 ppm		18.0	105%	
	13:00	8 mg/L		19.0	84%	
		7 mg/L		NR	NR	
<i>pH</i>	TIME	Group A		Group B		

	9:00	8.25	7.0	
	10:00	8.0	7.0	
	11:00	7.5	7.5	
	12:00	8.25	7.0	
	13:00	7.0	8.0	
Phosphates	TIME	Group A	Group B	
	NR	NR	NR	
Nitrates	TIME	Group A	Group B	
	9:00	0 ppm	<1 ppm	
	10:00	NR	0 ppm	
	11:00	0 ppm	0.15 ppm	
	12:00	0.05 ppm	0 ppm	
	13:00	0.01 ppm	0 ppm	
Alkalinity	TIME	Group A	Group B	
<i>Drop count</i>	9:00	NR	40 ppm	
	10:00	50 ppm	51 ppm	
	11:00	80 ppm	70 ppm	
	12:00	40 ppm	74 ppm	
	13:00	84 ppm	70 ppm	
*Salinity	Refracto.	Hydrometer Glass Hydrometer	Quantab ppm Cl⁻	*Quantabs ppm total salinity
9:00	15 ppt 13 ppt	1.090 (?) 11.9 ppt	NR NR	NR NR
10:00	14 ppt 14 ppt	NR 12.2 ppt	4944 ppm	8932 ppm
11:00	14 ppt 15 ppt	17.4 ppt 13.6 ppt	6526 mg/L 4944 ppm	11790 ppm 8932 ppm
12:00	14 ppt 13.5 ppt	13.7 ppt 13.5 ppt	4425 ppm 4944 ppm	7994 ppm 8932 ppm
13:00	13.85 ppt 15 ppt	14 ppt 12.4 ppt	5608 ppm	10131 ppm
Tides- Time	Group A Pier to water	Flood/Ebb	Group B Pier to water	Flood/Ebb
9:06 AM	196 cm	Flood	215.2 cm	Flood
10:14 AM	155 cm	Flood	185 cm	Flood
10:41 AM	141 cm	Flood	172 cm	Flood
12:23 PM	102 cm	Flood	124 cm	Flood
1:03 PM	110 cm	~Still	110 cm	Flood
Currents	Group A		Group B	
Time	Rate of Flow	Type	Rate of Flow	Type
9:00	9.6 cm/sec 0.2 kt	Flood	27.3 cm/sec	Flood
10:00	27.2 cm/sec 0.5 kt	Flood	63.6 cm/sec	NR
11:00	68.0 cm/sec	NR	42 cm/sec	Flood

	1.3 kt			
12:25	59.5 cm/sec 1.0 kt	Flood	62.8 cm/sec 1.22 kt	Flood
1:15	NR	NR	54.67 cm/sec 1.06 kt	Flood
Fish Catch Northside of pier (2 Seining Groups)	Number Caught	Species	Measure of largest	TIME & CATCH
Rotation #1 Group A	5	Striped Bass	12 cm	9:48
FISH	60	Atlantic Silverside	8 cm	DIV 2 TOTAL 65
MACRO	3	Blue Crab	3 cm	DIV 2
	30	Comb Jelly	3.5 cm	TOTAL 63
Rotation #2 Group A	6	Striped Bass	10 cm	9:53
FISH	9	Atlantic Silverside	9 cm	DIV 3 TOTAL 11
	1	White Perch	20 cm	
	1	Bay Anchovy	4 cm	
MACRO	1	Blue Crab	5 cm	DIV 2
	10	Comb Jellies	3 cm	TOTAL 11
Rotation #3 Group A	13	Atlantic Silverside	12 cm	10:50
FISH	2	White Perch	17 cm	DIV 5
	3	Striped Bass	13 cm	TOTAL 21
	1	Bay Anchovy	4 cm	
	2	Blue Fish	19 cm	
MACRO	1	Sand Shrimp	3 cm	DIV 2
	2	Blue Crab	5 cm	TOTAL 3
Rotation #4 Group A	119	Atlantic Silverside	9	12:20 DIV 3
FISH	1	White Perch	11	TOTAL 125
	1	Striped Bass	9	
MACRO	4	Blue Crab		DIV 1 TOTAL 4
Rotation #1 Group B	19	Atlantic Silverside	11 cm	9:30 DIV 2
FISH	1	Striped Bass	20 cm	TOTAL 20
MACRO	1	Blue Crab	2.5 cm	DIV 2
	2	Comb Jellies	2 cm	TOTAL 3
Rotation #2 Group B	4	Striped Bass	10.6 cm	10:00
FISH	2	White Perch	4.1 cm	DIV 1 TOTAL 2
MACRO	1	Sand Shrimp	12.5 cm	DIV 1 TOTAL 1

Rotation #3 Group B FISH	1	Atlantic Silverside		8.2 cm	11:00 DIV 1 TOTAL 1
MACRO	~500	Comb Jellies		2 cm	DIV 1 TOTAL >500
Rotation #4 Group B	12	Atlantic Silverside		12 cm	DIV 1 TOTAL 12
Rotation #5 Group B	2	Atlantic Silverside		8 cm	DIV 1 TOTAL 2
GRAND TOTAL	FISH MACRO	TOTAL TOTAL		261 >585	F - DIV 5 M - DIV 3
Sediment Cores	Time	Length	Oxid Top	Grain Size	Other Items
Group A South of pier	9:00 AM	8 cm Top 3.5 cm Bottom 4.5 cm	NO	Top – - mud - gravel - sand Bottom - Clay	Wood Oyster Brick Iron Pyrite
Group B South of pier	9:00 AM	12 cm Top 6 cm Bottom 6 cm	NO	Top – - clay Bottom – - sand - gravel	Brick Coal Worm
Group A South of pier	10:00 AM	20 cm Top 5 cm Bottom 15 cm	NO	Top Mud with gravel middle clay_ Bottom Sandy Mud	Shell Fin of fish Red rock Wood Coal
Group B South of pier	9:50 AM	No layers - homogeou s	No	Sand Clay	Roots Wood Brick Coal
Group A South of pier	11:00 AM	2 cm no layers	NO	Sand Gravel Pebbles	leaves
Group B South of pier	10:30 AM	7 cm Top 3 cm Bottom 4 cm	Yes	Clay/Sand	Coal Slag Brick Roots
Group A South of pier	12:00 Noon	4 cm	No	Sand with gravel	Brick Wood Roots Leaves Brick

					Coal Glass
Group B South of pier	12:00 Noon	<i>Homogenous</i>	<i>No</i>	Sand Gravel	Brick Coal
Group A NORTH of pier	1:00 PM	<i>10.5 cm</i>	<i>No</i>	Sand with some gravel and pebbles	brick
Group B South of pier	12:45 PM	<i>3 layers</i> <i>Sand</i> <i>Gravel</i> <i>Sand</i>	<i>No</i>	Sand & gravel	Brick
Other Observations	Overcast day that ended with rain just as students were leaving.				