

# MEMORANDUM

Date: **February 17, 2023**

To: **George Pfeiffer, P.E., Honeywell**  
**William Hague, P.E., Wood**

From: **Mark Nielsen, P.E., Ramboll**  
**Jose Sananes, P.E., Ramboll**  
**Owen Zalme, Ramboll**

Subject: **SA-7 Sediment Remedy Long-Term Monitoring**  
**Summary of Year 9 Monitoring & Proposed Year 10 Program**

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As required by the Consent Order on Sediment Remediation and Financial Assurances (Consent Order) entered by the U.S. District Court (District of New Jersey) on May 28, 2008 in the matter of Interfaith Community Organization et al vs. Honeywell International et al, and Riverkeeper, Inc., et al vs. Honeywell International et al (Civil Action Nos. 95-2097 and 06-0022), Honeywell conducted sediment remediation in the Hackensack River in the vicinity of Study Area (SA) 7 (Site) along Route 440 in Jersey City, New Jersey. The Consent Order, as amended in September 2013, set forth the specific components of dredging, capping, and monitored natural recovery (MNR) for the Sediment Remedy.

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In accordance with the *Long-Term Monitoring Plan* (LTMP; revised April 18, 2012) developed as part of the 100% Design for Study Area 7 (100% Design; Cornerstone/ENVIRON 2012), annual monitoring is conducted to assess the on-going effectiveness of the sediment remedy. This report presents the results of monitoring performed by Ramboll US Consulting, Inc. (Ramboll) during Year 9 of the LTMP and the monitoring activities proposed for Year 10.

## OVERVIEW OF LTMP

As summarized on Table 1, the LTMP requires bathymetric surveys, cap integrity monitoring, pore water sampling, biological monitoring, and surface sediment sampling at designated locations in Years 1, 2, and 5 of post-construction of the sediment cap areas. After Year 5, the monitoring program is reduced to conducting a bathymetric survey once every five (5) years. In addition, the LTMP requires continued hydraulic and hydrodynamic monitoring to identify high energy events that trigger additional assessment of cap areas<sup>1</sup> (note that no

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<sup>1</sup> High Energy Events are defined by the Consent Order as summarized on Tables 1 and 2

high energy events were identified during the first five years of post-construction monitoring or in Years 6, 7 and 9)<sup>2</sup>.

Similar to the cap area monitoring, the LTMP specifies bathymetric surveys and sediment profile imaging (SPI) for monitored natural recovery (MNR) areas in Years 1, 2 and 5 of the post-construction period (see Table 2). After Year 5, the monitoring program is reduced to conducting a bathymetric survey once every five (5) years. In addition, the LTMP requires continued hydraulic and hydrodynamic monitoring to identify high energy events that trigger additional assessment of MNR areas.

As specified in the LTMP and confirmed in the LTMP Year 5 Implementation Report (Year 5 Report; Ramboll, May 2019), cap integrity monitoring, pore water sampling, biological sampling, surface sediment sampling, and SPI were discontinued after Year 5, as the results of the first five years of post-construction monitoring demonstrated that the remediation areas remain stable relative to constructed conditions.

Bathymetric surveys will be conducted every 5 years. All long-term monitoring (LTM) activities can be terminated after 15 years (i.e., 2028) and through two high-energy events, or a total period of 25 years (i.e., 2038), whichever is shorter.

## SUMMARY OF YEAR 9 ACTIVITIES

As described in the Year 5 Report, construction of Cap Areas 16 and 22 in Droyers Cove was completed in 2018 in coordination with the Beneficial Environmental Project (BEP) implementation. As a result, these two cap areas were not included in the routine monitoring completed in Years 1 through 5 of the LTMP. Therefore, these cap areas were inspected in coordination with the BEP inspection program in Years 6, 7, 8 and 9.<sup>3</sup>

The specific scope of inspections and monitoring conducted in Year 9 were as follows:

- Ramboll completed three visual inspections of the Droyers Cove BEP area to document the continued establishment of vegetation and functionality of the BEP. Since Cap Area 16 underlies the BEP area and Cap Area 22 is located proximate to the BEP area, these cap areas were also visually inspected three times in Year 9.<sup>4</sup> The inspections were performed at low tide on May 25, July 14, and November 21, 2022. The results of these inspections were documented in summary logs (see **Attachment A**). Inspection of the Cap Area 16 and 22 long-term monitoring plate locations determined that the long-term monitoring plates were not visible, confirming that the plates have remained buried and no observable loss of cap material has occurred. In fact, some deposition of sediment (up to 6 inches in Cap Area 22) was observed over the caps.
- As required by the LTMP, Ramboll monitored hydraulic and hydrodynamic data to identify high energy events that would trigger additional assessment. The results of hydraulic and hydrodynamic monitoring performed during the first (January through March), second (April

<sup>2</sup> A high energy event occurred on September 1, 2021 (Year 8) caused by the remnants of hurricane Ida.

<sup>3</sup> The Year 6, 7, and 8 inspections and monitoring activities were documented in memoranda dated January 30, 2020, February 26, 2021, and May 10, 2022, respectively.

<sup>4</sup> Cap Area 22 was not visible at the time of inspection on May 25, 2022 and was not fully exposed at the time of inspection on July 14 and November 21, 2022 (i.e., low tide was not low enough to fully expose the cap surface).

through June), third (July through September), and fourth (October through December) quarters of 2022 are attached (**Attachment B**). These monitoring data indicate that no high energy events meeting the defined criteria have occurred during these monitoring periods.

As detailed in Ramboll's February 2022 Post-High Energy Event Report and Ramboll's May 10, 2022 Year 8 Summary Report, the assessment of conditions within the SA-7 sediment area following the September 2021 high energy event demonstrated that the remediation of capped and MNR areas remained stable relative to constructed conditions and no further actions were warranted. However, the following repairs to portions of the BEP area were performed by Arecon Ltd. under the supervision of Wood PLC between March 10 and 15, 2022 (documentation of the repairs is provided as **Attachment C**):

1. Repaired an approximately 20-square feet and 4-foot deep eroded area located in the southeast corner of the BEP near Kellogg Street using 2.5-inch stone. The area was overlain with 6 to 12-inch diameter stone;
2. Repaired approximately 60 linear feet of stone revetment berm displaced by the high energy event;
3. Repaired the edge of the rip-rap aprons for Outfalls A, B, and C, where they meet the stone revetment berm; and
4. Trimmed or covered with 2.5-inch stone exposed geotextile fabric.

Subsequent inspections of the BEP area performed on May 25, July 14, and November 21, 2022 indicate that the repairs remain stable.

Consistent with Year 6, 7 and 8, only hydraulic and hydrodynamic monitoring and visual inspections were considered necessary to evaluate the integrity of Cap Areas 16 and 22 in Year 9 given the following factors:

1. The results of eight years of post-construction monitoring of the SA-7 sediment remedy area within the main portion of the Hackensack River have documented the relative stability of the cap areas completed in 2013.
2. Cap Areas 16 and 22 are located within Droyers Cove, which exhibits lower currents than the main portion of the Hackensack River.
3. Cap Area 16 is within the BEP shoreline wetland area, which has been vegetated.

In accordance with the LTMP, the next bathymetric surveys of the entire SA-7 sediment remedy area will be conducted in 2023 and 2028 (i.e., 10 and 15 years after completion of the sediment remedy in 2013), unless a high-energy event occurs sooner. These surveys will include Cap Areas 16 and 22.

### **PROPOSED ACTIVITIES FOR YEAR 10**

Consistent with the requirements of the LTMP, in Year 10 (2023), Ramboll proposes to collect bathymetric surveys of the entire SA-7 sediment remedy area. The results of the Year 10 survey will be compared with the results of the baseline bathymetric survey completed in Year 1 to identify any evidence of erosion of cap materials or native sediments in the MNR areas. In addition, Ramboll proposes to continue to perform hydraulic and hydrodynamic monitoring on a monthly basis to identify any high-energy events that would trigger additional assessment of the remedy area. Ramboll will

prepare quarterly reports summarizing the hydraulic and hydrodynamic monitoring results. If a high-energy event occurs in Year 10, Ramboll will implement LTMP field activities (bathymetric survey, ROV cap integrity monitoring, and SPI survey) over the entire sediment remedy area.

In addition, consistent with activities in Years 6, 7, 8 and 9, Ramboll will conduct a minimum of three visual inspections of the BEP Area in Year 10 (April, July, and October 2023) to continue to document the establishment of vegetation and functionality of the BEP. Cap Areas 16 and 22 will be included in these inspections. Following each inspection, summary logs documenting observations will be submitted to Honeywell and after the third inspection, Ramboll will prepare a summary report documenting all Year 10 inspection and monitoring activities.

Please let us know should you have any questions or wish to discuss further.

## **TABLES**

<b>Table 1: Summary of Long-Term Monitoring of the Capped Areas</b>								
Monitoring Elements for Capped Areas	YEAR							LTMP Section Reference
	1	2	5	6 to 15	20	25	HEV	
<b>Hydraulic and Hydrodynamic Evaluation</b>								
Routine Monitoring and Analysis	X	X	X					4.1.1
Severe Event Monitoring and Analysis	X	X	X	X			Note 1	4.1.1
Bathymetry	X	X	X	X	X	X	Note 2	4.1.2
Cap Integrity Monitoring	X		X				Note 3	4.1.3
Pore Water Sampling	X	X	X	Note 4, 5				4.2.1
Surface Sediment Sampling			X	Note 5				4.2.2
Sediment Trap Sampling				Note 6				4.2.3
Biological Monitoring	X		X	Note 5				4.3
<p>HEV: Following all High Energy Events</p> <p>Note 1: After 15 years, high-event assessments will be discontinued if the monitoring objectives have been achieved and maintained for 15 years and through at least two high energy events.</p> <p>Note 2: Bathymetric surveys will be conducted following up to two high-energy events (if not encountered in the first five years). No additional surveys will be performed if bathymetric surveys show no negative impacts on overall cap integrity (i.e., cap maintains coverage of target areas) for a period of 15 years and through two high-energy events, or a total period of 25 years, whichever is shorter.</p> <p>Note 3: After Year 5, routine sediment cap integrity monitoring will be discontinued unless data collected during the first five years of monitoring indicate that additional monitoring is warranted. Monitoring will still be conducted following a high-energy event if two such events did not occur within the first five years. Monitoring may also be performed after Year 5 if the bathymetry survey identifies an area of potential erosion warranting further assessment (see Section 4.1.2)</p> <p>Note 4: The first year of pore water sampling is limited to those areas of potential intermediate groundwater plume upwelling identified in the 2007 Final Groundwater Investigation Report, Honeywell Study Area 7 Site; this corresponds to portions of Cap Areas 1, 6, 8, 13, and 18 . In Year 2, sampling will be performed in Areas 1, 8, 13 and 18.</p> <p>Note 5: After Year 5, sampling will be discontinued, unless the data collected during the first five years of monitoring indicate further monitoring is warranted.</p> <p>Note 6: If surface sediment sampling of capped areas results in the detection of total chromium concentrations greater than 370 ppm, sediment trap sampling units may be deployed in those areas to further assess site conditions and to evaluate potential contaminant sources.</p>								

<b>Table 2: Summary of Long-Term Monitoring of the MNR Areas</b>								
<b>Monitoring Elements for MNR Areas</b>	<b>YEAR</b>							<b>LTMP Section Reference</b>
	<b>1</b>	<b>2</b>	<b>5</b>	<b>6 to 15</b>	<b>20</b>	<b>25</b>	<b>HEV</b>	
<b>Hydraulic and Hydrodynamic Evaluation</b>								
Routine Monitoring and Analysis	X	X	X					5.1
Severe Event Monitoring and Analysis	X	X	X	X			Note 1	5.1
Bathymetry	X	X	X	X	X	X	Note 2	5.2
Sediment Profile Imaging	X	X	X				Note 3	5.3
Sediment Core Sampling	Note 4							5.2, 7.2
<p>HEV: Following all High Energy Events</p> <p>Note 1: After 15 years, severe event assessments will be discontinued if the monitoring objectives have been achieved and maintained for 15 years and through at least two high energy events.</p> <p>Note 2: Bathymetric surveys will be conducted following up to two high-energy events (if not encountered in the first five years). Following at least two high energy events, bathymetry surveys will be conducted only in MNR areas where erosion may have resulted in more than a 4-inch decrease in the elevation of the sediment surface, based on the results of the hydrodynamic evaluation.</p> <p>Note 3: Following high energy events, SPI surveys will be performed in MNR areas where erosion may have resulted in more than a four-inch decrease in surface sediment elevations based on the hydrodynamic evaluation and measured observations</p> <p>Note 4: In the event that a bathymetric survey identifies an Erosional Area as defined in the LTMP, sampling of top 12-inches sediment for total chromium in Erosion Areas is required to confirm that concentrations in top 12-inches remain below 370 ppm.</p>								

**ATTACHMENT A  
YEAR 9 INSPECTION LOGS**

**ATTACHMENT A.1**  
**MAY 25, 2022 INSPECTION LOG**



## SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG			
BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
<b>SHORELINE STABILIZATION</b>	<ul style="list-style-type: none"> <li>• Shoreline stabilization damaged by the September 2021 storm event on the eastern side of the BEP near Outfall D was repaired in March 2022 with the placement of 22 cubic yards of ASTM #1 (3.5 inch stone).</li> <li>• Areas of exposed geofabric were observed between the BEP fill material and the shoreline stabilization stone west of Outfall A.</li> </ul>	6 to 7	<ul style="list-style-type: none"> <li>• Cut or cover with stone exposed geofabric located between the BEP fill material and the shoreline stabilization stone.</li> </ul>
<b>OUTFALL RIPRAP APRONS</b>	<ul style="list-style-type: none"> <li>• Outfall damage resulting from the September 2021 storm event was repaired in March 2022. Specifically,                             <ul style="list-style-type: none"> <li>– Outfall A: The scour on the southwestern corner was repaired using ASTM #1 Stone (1.5 to 3.5 inch stone) overlain by 1 foot of core rock (6 to 12 inch stone).</li> <li>– Outfalls B and C: Consistent with prior observations, approximately 1 to 3 inches of siltation (likely displaced shoreline fill) were observed throughout the riprap apron, especially in the vicinity of both outfalls. Approximately 3 to 4 inches of siltation was observed along the western edge of the Outfall B riprap apron. The displaced stone edge along the northwestern corner of the apron was repaired using ASTM #1 Stone (1.5 to 3.5 inch stone) overlain by 1 foot of core rock (6 to 12 inch stone).</li> <li>– Outfall D: The outfall makes a 90-degree turn near the southernmost corner of the bulkhead at the terminus of Kellogg Street. A significant area of erosion approximately 20 square feet and 4 feet deep was observed after the September 2021 storm event, exposing the pipe. This area was repaired by filling in the scour hole with ASTM #1 Stone (1.5 to 3.5 inch stone) overlain by 1 foot of core rock (6 to 12 inch stone), regrading, and placement of ASTM #1 (3.5 inch stone) and core rock (6 to 12 inch stone) around the outfall effluent.</li> </ul> </li> </ul> <p>Although outside of the BEP area, an approximately 65 ft long, 1 to 1.5 feet deep and 1 to 2 feet wide scour channel had been observed in sediments at the discharge of Outfall D. This eroded area previously observed appears to have naturally infilled with sediment. A minor flow channel was observed at the time of the inspection. However, it also appears to naturally fluctuate with the tide.</p>	8 to 14	<ul style="list-style-type: none"> <li>• None</li> </ul>

## SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG			
BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
<b>PLANTING ZONE A – LOW MARSH</b>	<ul style="list-style-type: none"> <li>• The overall total vegetative coverage in the upper portion of the low marsh area was 70 to 80% (a significant increase relative to July and October 2021 inspections, when 25% coverage was observed). However, coverage remained consistent with less than 5% observed elsewhere within the low marsh zone.                             <ul style="list-style-type: none"> <li>– Significant new growth was observed on the established specimens present within the low marsh planting zone. Vegetation appeared healthy and vibrant in the highest elevation of the low marsh zone. Lower elevation areas appeared as mudflats with limited to no vegetation other than algae.</li> <li>– Emergent shoots are present along the southern boundary of vegetation located in the upper portion of the low marsh.</li> <li>– On the eastern side of the BEP near Outfall D, some of the low marsh plants remain partially uprooted.</li> <li>– Consistent with prior observations, approximately 2 to 3 inches of siltation was observed over a small area of GroSoxx (approximately 2 SF) to the west of Outfall A. The GroSoxx in this area are completely covered by silt.</li> <li>– No invasive species were observed at the time of inspection.</li> <li>– Significant amounts of algae, resembling sea lettuce (<i>Ulva intestinalis</i>), was observed within the mudflat like portion of the low marsh area.</li> </ul> </li> <li>• 7 of the 12 reference posts installed are located within the low marsh zone. Following installation, baseline coordinates and measurements were collected.</li> <li>• Approximately 1,750 square feet of surface erosional damage in the northernmost portion of the low and high marsh zones following the September 2021 storm event were repaired in March 2022. Repairs consisted of regrading eroded areas using displaced BEP fill material.</li> </ul>	15 to 19	<ul style="list-style-type: none"> <li>• Resume monitoring erosional/depositional rates using reference posts during inspections.</li> <li>• Monitor area where plugs were uprooted or lost, primarily in the eroded area on the eastern side of the BEP, for signs of recovery.</li> <li>• Consider planting additional plugs in the low marsh areas where establishment remains low. In low elevation areas, consider clumping, or using larger plugs for increased stability and to improve resistance to tidal energy.</li> </ul>

**SITE INSPECTION LOG (CONTINUED)**

<p><b>PLANTING ZONE B – HIGH MARSH</b></p>	<ul style="list-style-type: none"> <li>• Between Outfalls A and B, primarily in the area of GroSoxxs, total vegetative coverage ranged from 20 to 30%. Elsewhere, total vegetative cover ranged from 50 to 60% compared to the 85 to 90% observed in July and October 2021. Vegetation appeared to still be emerging from the dormant season, so vegetative cover is expected to increase as the growing season progresses.             <ul style="list-style-type: none"> <li>– Significant new growth was observed on the specimens present within the high marsh planting zone. Vegetation was generally 2 to 3 feet in height throughout. Observations suggest that new colonization occurred since October 2021.</li> <li>– Consistent with observations since October 2019, an odor typically associated with an anoxic environment (e.g., bog, wetland, swamp, etc.) was noted when stepping on the GroSoxx on the central portion of the BEP area, east of Outfall A. No vegetative growth was observed at this location.</li> <li>– Vegetative growth observed throughout the areas of GroSoxx located at the interface of the uplands transition area and high marsh zone, particularly near the outfalls decreased from prior observations. However, many fresh shoots were observed, so vegetative cover within this area is expected to increase as the growing season progresses.</li> <li>– As observed in October 2021, much of the high marsh zone appears to have been largely unaffected by the September 2021 storm event, with the exception of the eastern side of the BEP where many of the planted plugs were uprooted and/or have exposed roots.</li> </ul> </li> <li>• Observations regarding the condition of the GroSoxx, geogrid, and anchors were consistent with those made since October 2019:             <ul style="list-style-type: none"> <li>– Empty GroSoxx sleeves were observed outside of the geogrid.</li> <li>– There were several areas where ripping/holes or loose geogrid were observed.</li> <li>– Several anchors (both the Gripple Rock and Terra-Lock™ Earth anchors) were exposed at the time of inspection, (possibly due to the deflation of the underlying GroSoxx).</li> <li>– Significant shifting of GroSoxx underneath the geogrid occurred, and the third row of GroSoxx (from the bottom) appeared to be mostly missing.</li> <li>– Significant siltation was observed over the GroSoxx located on the western side of Outfall A, with many of the GroSoxx completely buried up to the drift line.</li> </ul> </li> <li>• Observations regarding the condition of the RockSoxx installed along the interface of the upland transition area and high marsh zone in the central portion of the BEP area (between Outfalls A and B, and just north of Outfall C) were consistent with those made during prior inspections:             <ul style="list-style-type: none"> <li>– Some of the RockSoxx showed signs of wear and tear, with holes on the surface that could potentially result in loss of the material within.</li> <li>– Large cuts/openings were observed in RockSoxx in the central portion of the BEP area, primarily between Outfalls A and B.</li> </ul> </li> <li>• No invasive species were observed at the time of inspection.</li> <li>• Large amounts of debris (e.g., vegetative waste, plastic, trash, consumables) was observed along the drift deposit line (i.e., the transition zone between high marsh and uplands) below the bottom row of GroSoxx, especially on the eastern side of the BEP.</li> <li>• 5 of the 12 reference posts installed are located within the high marsh zone. Following installation, coordinates and baseline measurements were collected.</li> </ul>	<p>20 to 25</p>	<ul style="list-style-type: none"> <li>• Continue monitoring erosional/depositional rates using reference posts during inspections.</li> <li>• Monitor the area where plugs were uprooted or lost, primarily in the eroded area on the eastern most side of the BEP, for signs of recovery.</li> <li>• Repair or replace the damaged RockSoxx.</li> <li>• Consider planting plugs in the areas with exposed geogrid, where soil has filled in over previously installed GroSoxx to increase rate of colonization.</li> <li>• Consider implementing options to repair the high marsh zone (generally within the drift line) where vegetation is not successfully establishing and the GroSoxx appear to be saturated and in some cases “emptying out”.</li> </ul>
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### SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG			
BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
<b>PLANTING ZONE C – UPLANDS TRANSITION AREA</b>	<ul style="list-style-type: none"> <li>• Total vegetative cover within the upland transition area increased from 85-95% in October 2021 to greater than 95% throughout the BEP area. Consistent with prior observations:                             <ul style="list-style-type: none"> <li>– Many of the emergent shoots of vegetation previously observed are vibrant and healthy.</li> <li>– GroSoxx, geogrid, anchors, and the ¾-inch stone strip appeared to be in good condition.</li> </ul> </li> <li>• Invasive species coverage increased in the uplands planting zone. Invasive cover throughout the upland zone ranges from 50 to 60%, especially in the central and western areas of the BEP. The dominant species included hairy vetch (<i>Vicia villosa</i>), curly dock (<i>Rumex crispus</i>), bedstraw (<i>Gallium mollugo</i>), and Japanese stiltgrass (<i>Microstegium vimineum</i>). Consistent with previous inspections, a small amount of common reed (<i>Phragmites australis</i>) was observed on the eastern side of the BEP. Additional observed invasive species included:                             <ul style="list-style-type: none"> <li>– common mugwort (<i>Artemisia vulgaris</i>)</li> <li>– Yellow bushclover (<i>Lespedeza cuneata</i>)</li> </ul> </li> <li>• With the increase in invasive species cover, native species no longer make up the predominant vegetative cover within the uplands area. The following notable native species were observed:                             <ul style="list-style-type: none"> <li>– purpletop grass (<i>Tridens flavus</i>)</li> <li>– Creeping saltbush (<i>Atriplex prostrata</i>)</li> <li>– Switchgrass (<i>Panicum virgatum</i>)</li> </ul> </li> </ul>	26 to 30	<ul style="list-style-type: none"> <li>• Continue to monitor non-native plant density.</li> </ul>

Note:

SITE INSPECTION LOG (CONTINUED)



**Photo 1:** Northern end of Cap Area 16. Note vibrant vegetation present in high marsh planting zone (facing west).



**Photo 2:** Central portion of Cap Area 16. Note presence of algae over the low marsh zone (facing southwest).

**SITE INSPECTION LOG (CONTINUED)**



**Photo 3:** Western end of Cap Area 16. Note the mix of vibrant and dormant vegetation growth in the high marsh planting zone (facing northeast).



**Photo 4:** Siltation observed within Cap Area 22 (facing west).

SITE INSPECTION LOG (CONTINUED)



**Photo 5:** Siltation and subaquatic vegetation observed on Cap Area 22.



**Photo 6:** Repaired eroded area located on the eastern side of the BEP near Outfall D (facing southeast).

SITE INSPECTION LOG (CONTINUED)



**Photo 7:** Repaired shoreline stabilization stone located west of Outfall D (facing southwest). Note the exposed geotextile fabric between the shoreline stabilization stone and the BEP fill material.



**Photo 8:** Outfall B and surrounding armor stone (facing south). Note the healthy and vibrant vegetation within the uplands.

SITE INSPECTION LOG (CONTINUED)



Photo 9: Repaired armor stone along the western edge of the apron for Outfalls B and C (facing west).



Photo 10: Outfalls B and C (facing southeast). Note the siltation and algae present on the apron stone.

SITE INSPECTION LOG (CONTINUED)

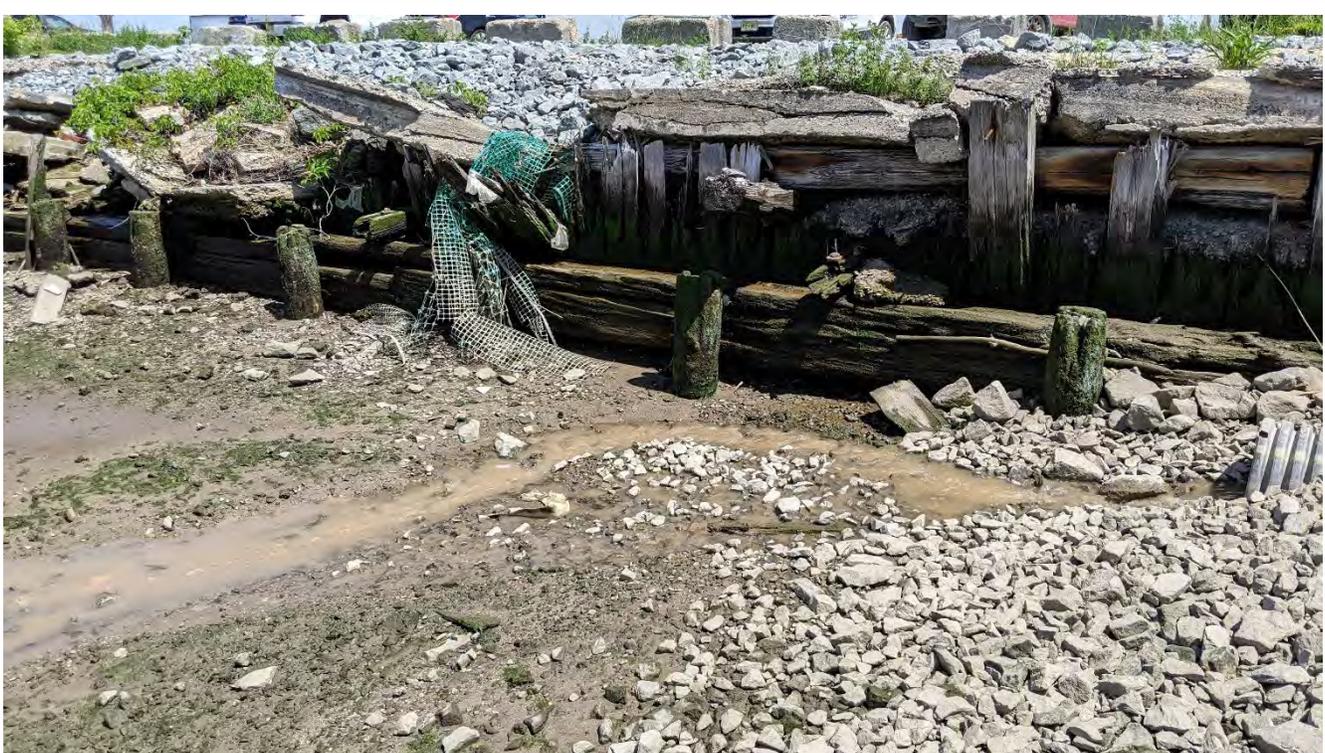


Photo 11: Minor scour channel was observed in sediments at the discharge of the Outfall D (facing east).



Photo 12: Scour channel observed at the discharge of Outfall D and Cap Area 22 in the background (facing northwest).

SITE INSPECTION LOG (CONTINUED)



Photo 13: Easternmost side of the BEP at Outfall D following March 2022 repairs (facing southeast).



Photo 14: Repaired area located in the easternmost corner of the BEP area using ASTM #57 (0.75 inch) stone (facing northwest).

SITE INSPECTION LOG (CONTINUED)



**Photo 15:** Low marsh planting zone on the eastern side of the BEP (facing northwest). Note the algae cover on the mudflats area.



**Photo 16:** Area where the low marsh planting zone meets the high marsh planting zone within the eastern side of the BEP (facing southwest). Note where present, the low marsh vegetation appears vibrant and healthy.

**SITE INSPECTION LOG (CONTINUED)**



**Photo 17:** Low marsh planting zone within Cap Area 16 (facing northeast). Note the algae cover throughout the lower elevations of the low marsh area.



**Photo 18:** Low marsh planting zone between Outfalls A and B (facing west). Note the vibrant and healthy vegetation within the upper portion of the low marsh planting zone and exposed geogrid and Rocksoxx.

**SITE INSPECTION LOG (CONTINUED)**



**Photo 19:** Stunted low marsh vegetation and exposed partially geogrid immediately west of Outfall A (facing northwest).



**Photo 20:** Partially dormant vegetation within the high marsh and vibrant and healthy vegetation in the upland transition area within Cap Area 16 (facing southeast).

SITE INSPECTION LOG (CONTINUED)



**Photo 21:** Partially dormant vegetation within the high marsh and vibrant and healthy vegetation in the upland transition area west of Outfalls A (facing southwest).



**Photo 22:** Healthy and vibrant low marsh, high marsh, and uplands located on the western side of the BEP (facing southeast).

SITE INSPECTION LOG (CONTINUED)



**Photo 23:** Vibrant and healthy vegetation within the high marsh and the upland transition area within Cap Area 16 (facing southwest). Debris present along the drift line and exposed geogrid in the high marsh planting zone.



**Photo 24:** Area of exposed GroSoxx and geogrid with some debris, located east of Outfall A (facing southwest). Note the presence healthy and vibrant vegetation and emergent growth within the GroSoxx area.

SITE INSPECTION LOG (CONTINUED)



**Photo 25:** Punctured RockSoxx east of Outfall A. Note the debris scattered throughout the geogrid.



**Photo 26:** Vibrant and healthy upper low marsh, lower high marsh, and upland vegetation between Outfalls A and B (facing east). Note the exposed GroSoxx and geogrid.

SITE INSPECTION LOG (CONTINUED)



**Photo 27:** Vibrant and healthy upland transitional and high marsh vegetation near Outfall A (facing west). Note the exposed GroSoxx and significant amount of debris.



**Photo 28:** Vibrant and healthy low marsh, high marsh, and uplands west of Outfall A (facing south).

SITE INSPECTION LOG (CONTINUED)



**Photo 29:** Invasive species Hairy Vetch located within the upland transitional planting zone within the BEP.



**Photo 30:** Invasive species Curly Dock located within the upland transitional planting zone of the BEP.

**ATTACHMENT A.2**  
**JULY 14, 2022 INSPECTION LOG**

### SITE INSPECTION LOG

PROJECT NAME:	<u>SA-7 Long-Term Monitoring Year 9</u>	INSPECTION DATE:	<u>July 14, 2022</u>
		WEATHER	<input type="checkbox"/> SNOWY <input type="checkbox"/> RAINY <input type="checkbox"/> OVERCAST <input type="checkbox"/>
PROJECT NUMBER:	<u>1690012529</u>	CONDITIONS:	<input type="checkbox"/> PARTLY CLOUDY <input checked="" type="checkbox"/> SUNNY
PROJECT LOCATION:	<u>SA-7 Droyers Cove BEP</u>	TEMPERATURE (°F):	<u>89 °F (High 93°F)</u>
	<u>City of Jersey City, Hudson County, NJ</u>	PREVAILING WIND:	<u>10 - 13 mph (NNW)</u>
INSPECTOR NAME:	<u>Owen Zalme/Bartłomiej Bancewicz</u>	INSPECTOR	
INSPECTOR TITLE:	<u>Managing Consultant/Consultant 3</u>	SIGNATURE(S):	<u></u>

The inspection was conducted on July 14, 2022 around the predicted low tide at 4:00 pm, when Cap Area 16, the entire BEP area (including the shoreline stabilization berm) were exposed. Cap Area 22 was partially exposed at the time of the inspection.

**Figure 1** presents the location of the as-built BEP and cap areas described in the tables that follow.

TABLE 1. SEDIMENT CAP AREA INSPECTION LOG			
CAP AREA	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
16	<ul style="list-style-type: none"> <li>Long-term monitoring plate was not observed (i.e., plate remains buried).</li> <li>Depth to sediment surface measurements taken at the reference posts installed on May 25, 2022 indicate an average loss of 0.2 inches of sediment throughout the cap area (with losses of 1.2 inches in some areas and gains of up to 0.5 inches in others) since the May 25, 2022 inspection. It should be noted that these are the first measurements made since reference post installation.</li> </ul>	1 to 3	<ul style="list-style-type: none"> <li>None</li> </ul>
22	<ul style="list-style-type: none"> <li>Cap Area was partially exposed at low tide.</li> <li>The long-term monitoring plate was not accessible.</li> <li>Some sedimentation and sub-aquatic vegetation was visible across portions of the cap area.</li> </ul>	4 to 5	<ul style="list-style-type: none"> <li>None</li> </ul>

## SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG			
BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
<b>SHORELINE STABILIZATION</b>	<ul style="list-style-type: none"> <li>Shoreline stabilization appeared to be in good condition and repairs made in March 2022 are stable.</li> <li>Several areas of exposed geofabric were observed between the BEP fill material and the shoreline stabilization stone west of Outfall A.</li> </ul>	6 to 7	<ul style="list-style-type: none"> <li>Cut exposed geofabric or cover it with stone.</li> </ul>
<b>OUTFALL RIPRAP APRONS</b>	<ul style="list-style-type: none"> <li>Outfall A: Appeared in good condition and repairs made in March 2022 are stable. Siltation within the rip rap apron ranged from approximately 1 to 3 inches, especially in the vicinity of the outfall.</li> <li>Outfalls B and C: Appeared in good condition and repairs made in March 2022 are stable. Consistent with prior observations, approximately 1 to 3 inches of siltation was observed throughout the rip rap apron, especially in the vicinity of both outfalls.</li> <li>Outfall D: Appeared in good condition and repairs made in March 2022 are stable.</li> </ul> <p>A minor flow channel connected to Outfall D was observed outside of the BEP area at the time of the inspection. Based on prior observations it appears to naturally fluctuate with the tide.</p>	8 to 14	<ul style="list-style-type: none"> <li>None</li> </ul>
<b>PLANTING ZONE A – LOW MARSH</b>	<ul style="list-style-type: none"> <li>The overall total vegetative coverage in the upper portion of the low marsh area increased from 70% in May 2022 to above 95%. However, total vegetative coverage remained consistent with less than 5% observed elsewhere within the low marsh zone.                             <ul style="list-style-type: none"> <li>Significant new growth was observed on the established specimens present within the low marsh planting zone. Vegetation appeared healthy and vibrant in the highest elevation of the low marsh zone. Lower elevation areas appeared as mudflats with limited to no vegetation.</li> <li>Emergent shoots observed in May 2022 continue to have significant growth along the southern boundary of vegetation located in the upper portion of the low marsh.</li> <li>On the eastern side of the BEP near Outfall D, some of the low marsh plants remain partially uprooted. Consistent with the May 2021 inspection, a gap in low marsh plantings was observed on the easternmost side of the BEP.</li> <li>During the inspection, high density of fiddler crab (<i>Uca pugnax</i>) was observed throughout the mudflat area in the BEP.</li> <li>Consistent with prior observations, approximately 2 to 3 inches of siltation was observed over a small area of GroSoxx (approximately 2 SF) to the west of Outfall A. The GroSoxx in this area are mostly covered by silt.</li> <li>No invasive species were observed at the time of inspection.</li> <li>The presence of algae resembling sea lettuce (<i>Ulva intestinalis</i>) was observed throughout the low marsh planting zone. However, its coverage has significantly reduced by natural means since the May 2022 inspection.</li> </ul> </li> <li>Depth to sediment surface measurements taken at 7 of the 12 reference posts installed on May 25, 2022 within the low marsh zone indicate an average increase in sediment deposition of 0.1 inches (with losses of up to 0.6 inches in some areas and gains of up to 0.8 inch in others) occurred since the May 25, 2022 inspection. It should be noted that these are the first measurements made since reference post installation.</li> </ul>	15 to 19	<ul style="list-style-type: none"> <li>Resume monitoring erosional/depositional rates using reference posts during inspections.</li> <li>Monitor area where planted plugs were uprooted or lost, primarily in the eroded area on the eastern side of the BEP, for signs of recovery.</li> <li>Consider planting additional plugs in the low marsh areas where establishment remains low. In low elevation areas, consider clumping, or using larger plugs for increased stability and to improve resistance to tidal energy.</li> </ul>

**SITE INSPECTION LOG (CONTINUED)**

<p style="text-align: center;"><b>PLANTING ZONE B – HIGH MARSH</b></p>	<ul style="list-style-type: none"> <li>• Between Outfalls A and B, primarily in the area of GroSoxxs, total vegetative coverage ranged from 20 to 30%. Elsewhere, total vegetative cover ranged from 75 to 85% compared to the 50 to 60% observed in May 2022. Vegetation appeared vibrant and healthy.             <ul style="list-style-type: none"> <li>○ Significant new growth was observed on the specimens present within the high marsh planting zone. Vegetation was generally 3 to 4 feet in height throughout. Observations suggest that new colonization occurred since May 2022.</li> <li>○ Consistent with observations since October 2019, an odor typically associated with an anoxic environment (e.g., bog, wetland, swamp, etc.) was noted when stepping on the GroSoxx on the central portion of the BEP area, east of Outfall A. Limited vegetative growth was observed at this location.</li> <li>○ Vegetative growth observed throughout the areas of GroSoxx located at the interface of the uplands transition area and high marsh zone, particularly near the outfalls decreased from prior observations. The fresh shoots observed in May 2022 continue to grow and vegetative cover in this area has increased (75 to 85%). Limited signs of new colonization were observed.</li> <li>○ As stated in the previous inspection, some of the planted plugs on the eastern most side of the BEP area remain uprooted and/or have exposed roots.</li> <li>○ Very few high marsh plantings were observed between Outfalls A and B. However, vegetative cover remains high due to colonization from low marsh plantings.</li> </ul> </li> <li>• Observations regarding the condition of the GroSoxx, geogrid, and anchors were consistent with those made since October 2019:             <ul style="list-style-type: none"> <li>○ Empty GroSoxx sleeves were observed outside of the geogrid.</li> <li>○ There were several areas where ripping/holes or loose geogrid were observed.</li> <li>○ Several anchors (both the Gripple Rock and Terra-Lock™ Earth anchors) were exposed at the time of inspection (possibly due to the deflation of the GroSoxx).</li> <li>○ Significant shifting of GroSoxx underneath the geogrid occurred, and the third row of GroSoxx (from the bottom) appeared to be mostly missing.</li> <li>○ Significant siltation was observed over the GroSoxx located on the western side of Outfall A, with many of the GroSoxx completely buried up to the drift line.</li> <li>○ Significant displacement and lifting of geogrid within the vicinity of Outfalls B and C. Geogrid observed to be hanging over the ledge of the Outfall B structure, as shown in Photo 23.</li> </ul> </li> <li>• Observations regarding the condition of the RockSoxx installed along the interface of the upland transition area and high marsh zone in the central portion of the BEP area (between Outfalls A and B, and just north of Outfall C) were consistent with those made during prior inspections:             <ul style="list-style-type: none"> <li>○ Some of the RockSoxx showed signs of wear and tear, with holes on the surface that could potentially result in loss of the material within.</li> <li>○ Large cuts/openings were observed in several RockSoxx in the central portion of the BEP area, primarily between Outfalls A and B.</li> </ul> </li> <li>• No invasive species were observed at the time of inspection.</li> <li>• Large amounts of debris (e.g., vegetative waste, plastic, trash, consumables) was observed along the drift deposit line (i.e., the transition zone between high marsh and uplands) below the bottom row of GroSoxx, especially on the eastern side of the BEP.</li> <li>• Depth to sediment surface measurements taken at 5 of the 12 reference posts installed on May 25, 2022 within the high marsh zone indicate that an average loss of 0.2 inches of sediment (with losses of up to 1.2 inches and gains of up to 0.5 inches in others) since the May 25, 2022 inspection. It should be noted</li> </ul>	<p style="text-align: center;">20 to 25</p>	<ul style="list-style-type: none"> <li>• Continue monitoring erosional/depositional rates using reference posts during inspections.</li> <li>• Monitor area where plugs were uprooted or lost, primarily in the eroded area on the eastern side of the BEP, for signs of recovery.</li> <li>• Repair or replace the damaged RockSoxx.</li> <li>• Consider planting plugs in the areas with exposed geogrid, where soil has filled in over previously installed GroSoxx to increase rate of colonization.</li> <li>• Consider implementing options to repair the high marsh zone (generally within the drift line) where vegetation is not successfully establishing and the GroSoxx appear to be saturated and in some cases “emptying out”.</li> </ul>
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### SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG			
BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
	that these are the first measurements made since reference post installation.		
<b>PLANTING ZONE C – UPLANDS TRANSITION AREA</b>	<ul style="list-style-type: none"> <li>• Total vegetative cover within the upland transition area remains consistent with May 2022 observations with cover greater than 95% throughout the BEP area. Consistent with prior observations:                             <ul style="list-style-type: none"> <li>○ Many of the emergent shoots of vegetation previously observed are vibrant and healthy. Some leaf burn was observed in the uppermost portion of the uplands transition area, in the western area of the BEP. However, this is to be expected given current drought conditions.</li> <li>○ GroSoxx, geogrid, anchors, and the ¾-inch stone strip appeared to be in good condition, despite the conditions observed in the high marsh zone.</li> </ul> </li> <li>• Invasive species coverage decreased in the uplands planting zone. Invasive cover throughout the upland zone ranges from 35 to 45%, which is lower than the 50 to 60% cover observed in the May 2022 inspection. The highest density of invasive species was observed in the central and western areas of the BEP. The dominant species included curly dock (<i>Rumex crispus</i>), bedstraw (<i>Gallium mollugo</i>), and Japanese stiltgrass (<i>Microstegium vimineum</i>). Hairy vetch (<i>Vicia villosa</i>), observed in May 2022, has experienced significant die back. Consistent with previous inspections, a small amount of common reed (<i>Phragmites australis</i>) was observed on the eastern side of the BEP. However, several new shoots of common reed have become established on the western side of the BEP and east of Outfall C in the GroSoxx; pockets remain small and isolated. Additional observed invasive species included:                             <ul style="list-style-type: none"> <li>○ common mugwort (<i>Artemisia vulgaris</i>)</li> <li>○ Yellow bushclover (<i>Lespedeza cuneata</i>)</li> </ul> </li> <li>• With the increase in invasive species cover, native species no longer make up the predominant vegetative cover within the uplands area. The following notable native species were observed:                             <ul style="list-style-type: none"> <li>○ purpletop grass (<i>Tridens flavus</i>)</li> <li>○ bitter panicgrass (<i>Panicum amarum</i>)</li> <li>○ Creeping saltbush (<i>Atriplex prostrata</i>)</li> <li>○ Switchgrass (<i>Panicum virgatum</i>)</li> <li>○ black-eyed Susan (<i>Rudbeckia hirta</i>)</li> <li>○ several volunteer black locust trees (<i>Robinia pseudoacacia</i>)</li> </ul> </li> </ul>	26 to 30	<ul style="list-style-type: none"> <li>• Continue to monitor non-native plant density.</li> </ul>

Note:

SITE INSPECTION LOG (CONTINUED)



**Photo 1:** Northern end of Cap Area 16. Note vibrant and healthy vegetation present in high marsh planting zone (facing west).



**Photo 2:** Central portion of Cap Area 16. Note significant die back of algae over the low marsh zone (facing southwest).

SITE INSPECTION LOG (CONTINUED)



**Photo 3:** Western end of Cap Area 16. Note the vibrant and healthy vegetation in the high marsh planting zone (facing northeast).



**Photo 4:** Siltation observed within Cap Area 22 (facing west).

SITE INSPECTION LOG (CONTINUED)



**Photo 5:** Cap Area 22 partially exposed during low tide (facing north).



**Photo 6:** Repairs remain stable and in good condition on the eastern side of the BEP, near Outfall D (facing southeast).

SITE INSPECTION LOG (CONTINUED)



**Photo 7:** Exposed geotextile fabric between the shoreline stabilization stone and the BEP fill material west of Outfall A (facing northeast).



**Photo 8:** Outfall B and surrounding armor stone (facing south). Note the leaf burn and dehydrated vegetation within the uplands area.

SITE INSPECTION LOG (CONTINUED)



**Photo 9:** Repairs to the armor stone remain effective along the western edge of the apron for Outfalls B and C (facing west). Note the siltation present on the apron stone.



**Photo 10:** Outfalls B and C (facing southeast). Note the siltation present on the apron stone.

SITE INSPECTION LOG (CONTINUED)



Photo 11: Minor flow channel observed in sediments at the discharge of the Outfall D (facing northeast).



Photo 12: Flow channel observed at the discharge of Outfall D and Cap Area 22 in the background (facing northwest).

SITE INSPECTION LOG (CONTINUED)



Photo 13: Low marsh zone in the eastern corner of the BEP at Outfall D (facing southeast).



Photo 14: Repaired area located in the easternmost corner of the BEP area remains stable and in good condition (facing northwest).

**SITE INSPECTION LOG (CONTINUED)**



**Photo 15:** Low marsh planting zone on the eastern side of the BEP (facing north).



**Photo 16:** Area where the low marsh planting zone meets the high marsh planting zone within the eastern side of the BEP (facing southwest). Note the low marsh vegetation appears vibrant and healthy.

SITE INSPECTION LOG (CONTINUED)



**Photo 17:** Low marsh planting zone within Cap Area 16 (facing northeast). Note the limited algae cover throughout the lower elevations of the low marsh area, as compared to the May 2022 inspection.



**Photo 18:** Low marsh planting zone between Outfalls A and B (facing west). Note the vibrant and healthy vegetation.

SITE INSPECTION LOG (CONTINUED)



Photo 19: Fiddler crab using the mudflat within Cap Area 16 west of Outfall A.



Photo 20: Vibrant and healthy vegetation in the low and high marsh zones in the eastern BEP area (facing southeast).

**SITE INSPECTION LOG (CONTINUED)**



**Photo 21:** Vibrant and healthy vegetation in the high marsh zone in the area west of Outfall A (facing west).



**Photo 22:** Vibrant and healthy upper low marsh zone, high marsh, and uplands transition area west of Outfall A (facing southwest). Note the exposed geogrid and absence of GroSoxx in the bottom of the low marsh zone.

SITE INSPECTION LOG (CONTINUED)



**Photo 23:** Exposed geogrid over the ledge of the Outfall B structure (facing south).



**Photo 24:** Area of exposed GroSoxx and geogrid with some debris, located east of Outfall A (facing southeast). Note the presence of healthy and vibrant vegetation around the GroSoxx area.

SITE INSPECTION LOG (CONTINUED)



**Photo 25:** Small presence of bitter panicgrass observed in the eastern BEP area (facing south).



**Photo 26:** Vibrant and healthy upper low marsh, lower high marsh, and upland vegetation between Outfalls A and B (facing east). Note the presence of drift deposits from the tidal action in the foreground.

SITE INSPECTION LOG (CONTINUED)



**Photo 27:** Vibrant and healthy upland transitional and high marsh vegetation near Outfall A (facing west). Note the exposed geogrid.



**Photo 28:** Vibrant and healthy low marsh, high marsh, and uplands east of Outfall A (facing southwest).

SITE INSPECTION LOG (CONTINUED)



Photo 29: Native species Black-eyed Susan located within the upland transitional planting zone within the BEP.



Photo 30: Leaf burn on invasive species curly dock and common mugwort located within the upland transitional planting zone of the BEP.

**ATTACHMENT A.3  
NOVEMBER 21, 2022 INSPECTION LOG**

### SITE INSPECTION LOG

PROJECT NAME:	<u>SA-7 Long-Term Monitoring Year 9</u>	INSPECTION DATE:	<u>November 21, 2022</u>
		WEATHER	SNOWY <input type="checkbox"/> RAINY <input type="checkbox"/> OVERCAST <input type="checkbox"/>
PROJECT NUMBER:	<u>1690012529</u>	CONDITIONS:	PARTLY CLOUDY <input type="checkbox"/> SUNNY <input checked="" type="checkbox"/>
PROJECT LOCATION:	<u>SA-7 Droyers Cove BEP</u>	TEMPERATURE (°F):	<u>38 °F (High 43°F)</u>
	<u>City of Jersey City, Hudson County, NJ</u>	PREVAILING WIND:	<u>10 - 13 mph (SSW)</u>
INSPECTOR NAME:	<u>Owen Zalme/Bartłomiej Bancewicz</u>	INSPECTOR	
INSPECTOR TITLE:	<u>Managing Consultant/Consultant 3</u>	SIGNATURE(S):	<u></u>

The inspection was conducted on November 21, 2022 around the predicted low tide at 12:34 pm, when Cap Area 16, the entire BEP area (including the shoreline stabilization berm) were exposed. Cap Area 22 was partially exposed at the time of the inspection. **Figure 1** presents the location of the as-built BEP and cap areas described in the tables that follow.

TABLE 1. SEDIMENT CAP AREA INSPECTION LOG			
CAP AREA	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
16	<ul style="list-style-type: none"> <li>Long-term monitoring plate was not observed (i.e., plate remains buried).</li> <li>Depth to sediment surface measurements taken at the reference posts installed on May 25, 2022 indicate an average loss of 0.4 inches of sediment throughout the cap area (with losses of 2.2 inches in some areas and gains of up to 1.0 inch in others) since the May 2022 baseline measurements.</li> </ul>	1 to 3	<ul style="list-style-type: none"> <li>None</li> </ul>
22	<ul style="list-style-type: none"> <li>Cap Area was partially exposed at low tide.</li> <li>The long-term monitoring plate was not accessible.</li> <li>Approximately 4 to 6 inches of siltation was observed throughout the low-lying areas.</li> <li>Sub-aquatic vegetation was visible across portions of the cap area.</li> </ul>	4 to 5	<ul style="list-style-type: none"> <li>None</li> </ul>

## SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG			
BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
<b>SHORELINE STABILIZATION</b>	<ul style="list-style-type: none"> <li>Shoreline stabilization appeared to be in good condition.</li> <li>Several areas of exposed geofabric were observed between the BEP fill material and the shoreline stabilization stone west of Outfall A.</li> </ul>	6 to 7	<ul style="list-style-type: none"> <li>Cut exposed geofabric or cover it with stone.</li> </ul>
<b>OUTFALL RIPRAP APRONS</b>	<ul style="list-style-type: none"> <li>Outfall A: Appeared in good condition. Siltation within the rip rap apron ranged from approximately 1 to 3 inches, especially in the vicinity of the outfall.</li> <li>Outfalls B and C: Appeared in good condition. Consistent with prior observations, approximately 1 to 3 inches of siltation was observed throughout the rip rap apron, especially in the vicinity of both outfalls.</li> <li>Outfall D: Appeared in good condition.</li> </ul> <p>The previously observed minor flow channel connected to Outfall D was not observed outside of the BEP area.</p>	8 to 14	<ul style="list-style-type: none"> <li>None</li> </ul>
<b>PLANTING ZONE A – LOW MARSH</b>	<ul style="list-style-type: none"> <li>The overall total vegetative coverage in the upper portion of the low marsh area remains consistent with the July 2022 inspection (i.e., above 95%). Similarly, total vegetative coverage observed within the low marsh zone remained consistent with less than 5% coverage.                             <ul style="list-style-type: none"> <li>Significant new growth was observed on the established specimens present within the low marsh planting zone. Vegetation appeared healthy and vibrant in the highest elevation of the low marsh zone. Lower elevation areas appeared as mudflats with limited to no vegetation.</li> <li>Compared to the July 2022 inspection, limited new growth was observed along the southern boundary of vegetation located in the upper portion of the low marsh. Vegetation remains tall, healthy, and vibrant.</li> <li>On the eastern side of the BEP near Outfall D, some of the low marsh plants remain partially uprooted. Consistent with the July 2022 inspection, a gap in low marsh plantings was observed on the easternmost side of the BEP.</li> <li>Consistent with prior observations, approximately 2 to 3 inches of siltation was observed over a small area of GroSoxx (approximately 2 SF) to the west of Outfall A. The GroSoxx in this area are mostly covered by silt.</li> <li>No invasive species were observed at the time of inspection.</li> <li>The presence of algae resembling sea lettuce (<i>Ulva intestinalis</i>) was observed throughout the low marsh planting zone and only slightly increased since the July 2022 inspection. However, its coverage is still significantly less than what was observed during the May 2022 inspection.</li> </ul> </li> <li>Depth to sediment surface measurements taken at 7 of the 12 reference posts installed on May 25, 2022 within the low marsh zone indicate an average increase in sediment deposition of 0.3 inches (with losses of up to 2.2 inches in some areas and gains of up to 1.1 inches in others) occurred since the May 2022 baseline measurements.</li> </ul>	15 to 18	<ul style="list-style-type: none"> <li>Continue monitoring erosional/depositional rates using reference posts during inspections.</li> <li>Monitor area where planted plugs were uprooted or lost, primarily in the eroded area on the eastern side of the BEP, for signs of recovery.</li> <li>Consider planting additional plugs in the low marsh areas where establishment remains low. In low elevation areas, consider clumping, or using larger plugs for increased stability and to improve resistance to tidal energy.</li> </ul>

**SITE INSPECTION LOG (CONTINUED)**

<p style="text-align: center;"><b>PLANTING ZONE B – HIGH MARSH</b></p>	<ul style="list-style-type: none"> <li>• Consistent with the July 2022 inspection, between Outfalls A and B, primarily in the area of GroSoxxs, total vegetative coverage ranged from 20 to 30%. Elsewhere, total vegetative cover ranged from 75 to 85%. Vegetation appeared vibrant and healthy.             <ul style="list-style-type: none"> <li>○ Since the July 2022 inspection, limited evidence of new colonization was observed on the specimens present within the high marsh planting zone. Vegetation was generally 3 to 4 feet in height throughout and the previously observed areas of new colonization appeared to be more established.</li> <li>○ Consistent with observations since October 2019, an odor typically associated with an anoxic environment (e.g., bog, wetland, swamp, etc.) was noted when stepping on the GroSoxx on the central portion of the BEP area, east of Outfall A. Limited vegetative growth was observed at this location.</li> <li>○ Consistent with the July 2022 inspection vegetative growth observed throughout the areas of GroSoxx located at the interface of the uplands transition area and high marsh zone, particularly near the outfalls, ranges from 75 to 85% total cover. Limited signs of new colonization were observed.</li> <li>○ As stated in the previous inspection, some of the planted plugs on the eastern most side of the BEP area remain partially uprooted and/or have exposed roots.</li> <li>○ Very few high marsh plantings were observed between Outfalls A and B. However, vegetative cover remains high due to colonization from low marsh plantings.</li> </ul> </li> <li>• Observations regarding the condition of the GroSoxx, geogrid, and anchors were consistent with those made since October 2019:             <ul style="list-style-type: none"> <li>○ Empty GroSoxx sleeves were observed outside of the geogrid.</li> <li>○ There were several areas where ripping/holes or loose geogrid were observed.</li> <li>○ Several anchors (both the Gripple Rock and Terra-Lock™ Earth anchors) were exposed at the time of inspection (possibly due to the deflation of the underlying GroSoxx).</li> <li>○ Significant shifting of GroSoxx underneath the geogrid occurred, and the third row of GroSoxx (from the bottom) appeared to be mostly missing.</li> <li>○ Significant siltation was observed over the GroSoxx located on the western side of Outfall A, with many of the GroSoxx completely buried up to the drift line.</li> <li>○ Significant displacement and lifting of geogrid within the vicinity of Outfalls B and C. Geogrid observed to be hanging over the ledge of the Outfall B structure, as shown in Photo 22.</li> </ul> </li> <li>• Observations regarding the condition of the RockSoxx installed along the interface of the upland transition area and high marsh zone in the central portion of the BEP area (between Outfalls A and B, and just north of Outfall C) were consistent with those made during prior inspections:             <ul style="list-style-type: none"> <li>○ Some of the RockSoxx showed signs of wear and tear, with holes on the surface that could potentially result in loss of the material within.</li> <li>○ Large cuts/openings were observed in several RockSoxx in the central portion of the BEP area, primarily between Outfalls A and B.</li> </ul> </li> <li>• No invasive species were observed at the time of inspection.</li> <li>• Large amounts of debris (e.g., vegetative waste, plastic, trash, consumables) was observed along the drift deposit line (i.e., the transition zone between high marsh and uplands) below the bottom row of GroSoxx, especially on the eastern side of the BEP.</li> <li>• Depth to sediment surface measurements taken at 5 of the 12 reference posts installed on May 25, 2022 within the high marsh zone indicate that an average loss of 0.3 inches of sediment (with losses of up to 1.4 inches and gains of up to 0.2 inches in others) since the May 2022 baseline.</li> </ul>	<p style="text-align: center;">19 to 25</p>	<ul style="list-style-type: none"> <li>• Continue monitoring erosional/depositional rates using reference posts during inspections.</li> <li>• Monitor area where plugs were uprooted or lost, primarily in the eroded area on the eastern side of the BEP, for signs of recovery.</li> <li>• Repair or replace the damaged RockSoxx.</li> <li>• Consider planting plugs in the areas with exposed geogrid, where soil has filled in over previously installed GroSoxx to increase rate of colonization.</li> <li>• Consider implementing options to repair the high marsh zone (generally within the drift line) where vegetation is not successfully establishing and the GroSoxx appear to be saturated and in some cases “emptying out”.</li> </ul>
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## SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG			
BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
<b>PLANTING ZONE C – UPLANDS TRANSITION AREA</b>	<ul style="list-style-type: none"> <li>• Total vegetative cover within the upland transition area was significantly lower compared to the July 2022 inspection (i.e., &gt;95%) with cover ranging from 55 to 65% throughout the uplands area of the BEP. This was due to mowing of a 5 to 7-ft wide strip in the western portion of the uplands area by the Droyers Point Society Hill community.                             <ul style="list-style-type: none"> <li>○ Vegetative cover in the 5 to 7-ft wide strip was mowed to a height of approximately 1 to 3 inches. However, vegetation remains established and appears healthy, and it is reasonably expected that the vegetation will reestablish/remerge in the spring.</li> <li>○ The upland areas on the eastern side of the BEP were not mowed. Consistent with prior inspections, vegetative cover within this area appears healthy and remains above 95%.</li> <li>○ GroSoxx, geogrid, anchors, and the ¾-inch stone strip appeared to be in good condition, despite the conditions observed in the high marsh zone, where the mowing partially exposed the geogrid.</li> </ul> </li> <li>• Invasive species coverage increased slightly in the uplands planting zone since the July 2022 inspection. Invasive cover throughout the upland zone ranges from 45 to 55% compared to the 35 to 45% cover observed in the July 2022 inspection. The highest density of invasive species was observed in the central and western areas of the BEP. The dominant species included common mugwort (<i>Artemisia vulgaris</i>), crown vetch (<i>Securigara varia</i>), curly dock (<i>Rumex crispus</i>), and bedstraw (<i>Gallium mollugo</i>). Japanese siltgrass (<i>Microstegium vimineum</i>), observed in July 2022, has experienced significant die back. Consistent with previous inspections, a small amount of common reed (<i>Phragmites australis</i>) was observed on the eastern side of the BEP. The shoots of common reed previously observed on the western side of the BEP and east of Outfall C in the GroSoxx were impacted by the mowing activities. Common reed within these areas should be monitored as this species thrives in areas of disturbance. Additional observed invasive species included:                             <ul style="list-style-type: none"> <li>○ White mulberry (<i>Morus alba</i>)</li> </ul> </li> <li>• With the increase in invasive species cover, native species no longer make up the predominant vegetative cover within the uplands area. The following notable native species were observed:                             <ul style="list-style-type: none"> <li>○ Boneset (<i>Eupatorium perfoliatum</i>)</li> <li>○ Roughleaf goldenrod (<i>Solidago rugosa</i>)</li> <li>○ Little bluestem (<i>Schizachyrium scoparium</i>)</li> <li>○ Switchgrass (<i>Panicum virgatum</i>)</li> <li>○ Black locust (<i>Robinia pseudoacacia</i>)</li> </ul> </li> </ul>	26 to 28	<ul style="list-style-type: none"> <li>• Continue to monitor non-native plant density, particularly common reed within the recently mowed area.</li> <li>• Remind the Droyers Point Society Hill community that the uplands area outside the walkway fence is part of the BEP and that the Droyers Point Society Hill community should inform and coordinate any future activities with Honeywell.</li> </ul>

Note:

SITE INSPECTION LOG (CONTINUED)



**Photo 1:** Northern end of Cap Area 16. Note vibrant and healthy vegetation present in high marsh planting zone (facing west).



**Photo 2:** Central portion of Cap Area 16 (facing west).

SITE INSPECTION LOG (CONTINUED)



**Photo 3:** Western end of Cap Area 16. Note the vibrant and healthy vegetation in the high marsh planting zone (facing northeast).



**Photo 4:** Siltation observed within Cap Area 22.

SITE INSPECTION LOG (CONTINUED)



**Photo 5:** Partially exposed Cap Area 22 during low tide (facing north).



**Photo 6:** Eastern side of the BEP, near Outfall D (facing southeast).

SITE INSPECTION LOG (CONTINUED)



**Photo 7:** Exposed geotextile fabric between the shoreline stabilization stone and the BEP fill material west of Outfall A.



**Photo 8:** Outfall B and surrounding armor stone (facing south).

SITE INSPECTION LOG (CONTINUED)



**Photo 9:** Armor stone along the western edge of the apron for Outfalls B and C (facing west). Note the siltation present on the apron stone.



**Photo 10:** Outfalls B and C (facing southeast). Note the siltation present on the apron stone.

SITE INSPECTION LOG (CONTINUED)



**Photo 11:** Discharge area of the Outfall D, where minor flow channel observed in the July 2022 inspection is no longer visible (facing northeast).



**Photo 12:** Area of former minor flow channel previously observed in the July 2022 inspection. Cap Area 22 in the background (facing northwest).

SITE INSPECTION LOG (CONTINUED)



**Photo 13:** Low marsh zone in the eastern corner of the BEP at Outfall D (facing southeast).



**Photo 14:** Transition from upland to low marsh zone in the easternmost corner of the BEP area (facing northwest).

SITE INSPECTION LOG (CONTINUED)



Photo 15: Low marsh planting zone on the eastern side of the BEP (facing north).



Photo 16: Area where the low marsh planting zone meets the high marsh planting zone within the eastern side of the BEP (facing southwest). Note the low marsh vegetation appears vibrant and healthy.

SITE INSPECTION LOG (CONTINUED)



**Photo 17:** Low marsh planting zone within Cap Area 16 (facing northeast). Note the limited algae cover throughout the lower elevations of the low marsh area compared to the May 2022 inspection.



**Photo 18:** Low marsh planting zone between Outfalls A and B (facing west). Note the vibrant and healthy vegetation.

SITE INSPECTION LOG (CONTINUED)



**Photo 19:** Vibrant and healthy vegetation in the low and high marsh zones in the eastern BEP area (facing southeast).



**Photo 20:** Vibrant and healthy vegetation in the high marsh zone in the area west of Outfall A (facing west).

SITE INSPECTION LOG (CONTINUED)



**Photo 21:** Vibrant and healthy low marsh zone west of Outfall A (facing southwest). Note the exposed geogrid and absence of GroSoxx at the bottom of the low marsh zone.



**Photo 22:** Exposed geogrid over the ledge of the Outfall B structure (facing south).

SITE INSPECTION LOG (CONTINUED)



**Photo 23:** Area of exposed GroSoxx and geogrid with some debris, located east of Outfall A (facing southeast). Note the presence of healthy and vibrant vegetation around the GroSoxx area.



**Photo 24:** Vibrant and healthy upper low marsh, lower high marsh, and upland vegetation between Outfalls A and B (facing east). Note the presence of drift deposits from the tidal action in the foreground.

SITE INSPECTION LOG (CONTINUED)



**Photo 25:** Vibrant and healthy upland transitional and high marsh vegetation near Outfall A (facing west). Note the exposed geogrid.



**Photo 26:** Mowed section of the uplands transition area in the western area of the BEP (facing west).

SITE INSPECTION LOG (CONTINUED)



**Photo 27:** Vibrant and healthy low marsh, high marsh, and uplands transition area west of Outfall A (facing west). Note the presence of native species boneset in the uplands transition area.



**Photo 28:** Vibrant and health low marsh, high marsh, and uplands transition area east of Outfall C (facing southwest).

**ATTACHMENT B  
YEAR 9 HYDRAULIC AND HYDRODYNAMIC  
EVALUATION SUMMARIES**

**ATTACHMENT B.1  
Q1 2022 HYDRAULIC AND HYDRODYNAMIC  
EVALUATION SUMMARIES**

**SA-7 Sediment Remedy**  
 Long-Term Monitoring Program  
 Hydrologic Data Review

<b>Monitoring Period: January 2022</b>	<b>Assessment Required?</b>
<u>Rainfall Event Data:</u> Max Rainfall (in): 1.30      Date: 1/17/2022 50-Year, 24-Hr event? NO	NO
<u>Storm Surge Event Data:</u> Max Increase Above Predicted Normal Tidal Cycling (m): 1.221      Date: 1/17/2022      Time: 9:00 Exceeds event trigger criteria? YES  Max Tide Gauge Reading (m): 1.51      Date: 1/17/2022      Time: 13:00 Exceeds event trigger criteria? YES  10-year storm surge event defined as a hurricane? NO  (1) While on January 17, 2022, both criteria for the storm surge increase above the predicted normal tide cycle and the maximum tidal gauge were exceeded, the 10-year storm surge did not meet the definition of a hurricane, therefore, further assessment was not warranted.	NO
<u>Wind Event Data:</u> Max Wind (mph): 30      Date: 1/14/2022 and 1/29/2022 Exceeds trigger criteria? NO Wind direction over 6-hr period: N      OK  (1) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria for either day.	NO
<p><b>CRITERIA FROM LTMP:</b></p> <p>“Post-High Energy Event Monitoring Activities” will take place promptly following High Energy Events. The Consent Order defines “High Energy Events” as follows:</p> <p>i. “A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport;</p> <ul style="list-style-type: none"> <li>• See <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li> </ul> <p>ii. A 10-year storm surge event defined as a hurricane event (not a “nor’easter”) resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or</p> <ul style="list-style-type: none"> <li>• Note: Hurricane events are defined by NOAA.</li> <li>• See <a href="http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750">http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750</a></li> </ul> <p>iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport.”</p> <ul style="list-style-type: none"> <li>• <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li> </ul> <p style="text-align: right;">CHECKED BY: <u>ORZ</u></p>	

<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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CXUS51 KOKX 061227

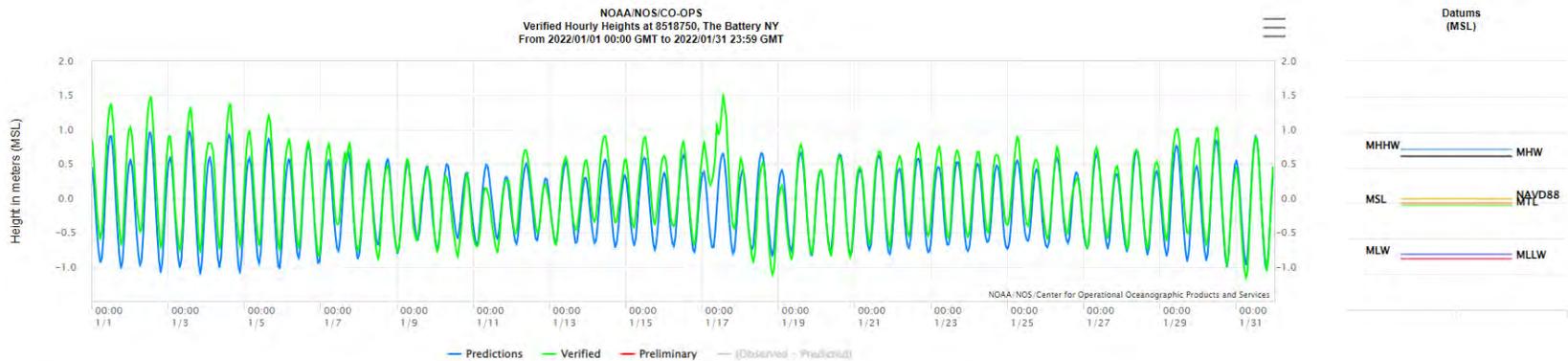
CF6EWR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: JANUARY  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:					:PCPN:			SNOW:			WIND			:SUNSHINE:		SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
					12Z	AVG		MX	2MIN										
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPHT	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
1	55	49	52	18	13	0	0.81	0.0	0	4.8	17	350	M	M	10	1	19	240	
2	59	36	48	14	17	0	0.04	0.0	0	11.3	24	320	M	M	9	1	33	310	
3	36	22	29	-5	36	0	0.00	0.0	0	17.2	30	360	M	M	8		38	360	
4	35	18	27	-7	38	0	0.00	0.0	0	7.6	18	340	M	M	4		23	340	
5	46	25	36	2	29	0	0.14	T	0	6.4	16	230	M	M	8	16	22	190	
6	38	31	35	2	30	0	0.00	0.0	0	9.8	22	270	M	M	8		29	270	
7	33	23	28	-5	37	0	0.27	5.2	5	15.1	29	290	M	M	7	1	35	290	
8	31	19	25	-8	40	0	0.00	0.0	4	7.5	26	300	M	M	1		33	300	
9	38	22	30	-3	35	0	0.08	0.0	2	11.0	22	220	M	M	9	1	28	230	
10	38	22	30	-3	35	0	0.00	0.0	0	15.7	25	300	M	M	6		31	310	
11	23	15	19	-14	46	0	T	T	0	12.6	28	320	M	M	2		39	330	
12	40	17	29	-4	36	0	0.00	0.0	0	8.5	24	230	M	M	6		29	230	
13	47	27	37	4	28	0	0.00	0.0	0	3.2	13	360	M	M	8		15	360	
14	44	21	33	1	32	0	0.00	0.0	0	18.0	32	350	M	M	6		39	360	
15	21	10	16	-16	49	0	0.00	0.0	0	13.4	24	330	M	M	5		29	320	
16	39	6	23	-9	42	0	0.54	1.0	0	11.0	20	50	M	M	6	1	29	70	
17	44	33	39	7	26	0	1.30	T	0	18.0	33	290	M	M	10	1	45	70	
18	38	25	32	0	33	0	0.00	0.0	0	15.0	33	290	M	M	5		42	290	
19	49	24	37	5	28	0	0.00	0.0	0	9.5	23	200	M	M	7		31	230	
20	42	19	31	-1	34	0	0.25	0.1	0	12.6	23	340	M	M	9	1	29	350	
21	23	13	18	-14	47	0	0.00	0.0	0	15.7	23	10	M	M	7		27	350	
22	30	10	20	-12	45	0	0.00	0.0	0	9.3	18	10	M	M	5		23	10	
23	37	16	27	-5	38	0	0.01	0.3	0	7.2	17	270	M	M	8	1	22	260	
24	33	25	29	-3	36	0	0.00	0.0	T	6.6	15	340	M	M	9		21	330	
25	42	26	34	2	31	0	0.00	0.0	0	8.3	20	290	M	M	7		24	290	
26	28	16	22	-10	43	0	0.00	0.0	0	12.4	22	330	M	M	2		30	320	
27	32	11	22	-10	43	0	0.00	0.0	0	6.9	15	180	M	M	3		19	200	
28	32	26	29	-3	36	0	0.10	1.4	0	8.1	21	360	M	M	10	18	27	10	
29	27	10	19	-13	46	0	0.52	6.6	5	20.5	31	350	M	M	9	19	40	10	
30	24	10	17	-15	48	0	0.00	0.0	6	11.7	22	300	M	M	5		30	320	
31	30	11	21	-12	44	0	0.00	0.0	6	4.1	8	20	M	M	5		13	310	
SM	1134	638			1121	0	4.06	14.6		339.0			M		204				
AV	36.6	20.6								10.9	FASTST		M	M	7		MAX(MPH)		
										MISC	---->	# 33 290					45 70		

<https://w2.weather.gov/climate/index.php?wfo=okx>



Options for: 8518750 The Battery, NY

From: Jan 1 2022

To: Jan 31 2022

Units: Metric

Timezone: GMT

Datum: MSL

Shift dates: Back 1 Day Forward 1 Day

Interval: 6 min 1 hr H/L Day Month

Update: Plot Data Only

<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>



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CXUS51 KOKX 011010

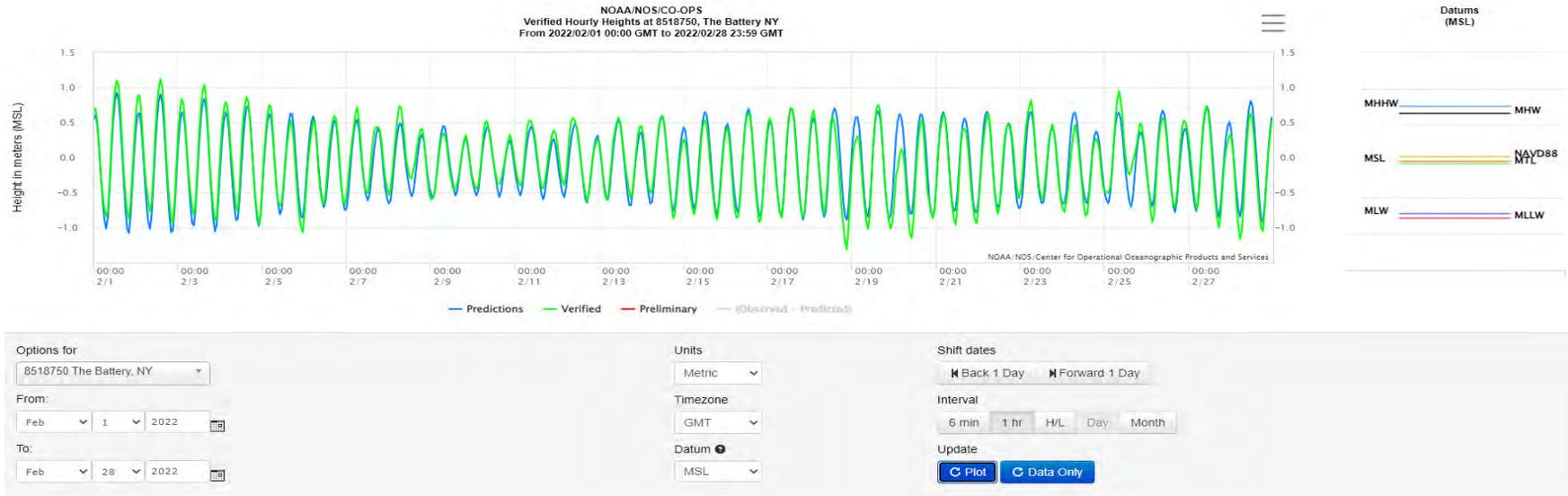
CF6EWR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: FEBRUARY  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	35	13	24	-9	41	0	0.00	0.0	5	6.1	12	30	M	M	4		14	30
2	44	24	34	1	31	0	0.00	0.0	4	3.5	9	120	M	M	9	1	12	100
3	48	36	42	9	23	0	0.43	0.0	2	2.9	8	230	M	M	10	12	10	230
4	55	27	41	8	24	0	0.54	0.1	0	12.5	23	350	M	M	10	146	28	350
5	28	17	23	-10	42	0	T	T	0	16.6	25	310	M	M	5		36	290
6	29	14	22	-11	43	0	0.00	0.0	0	6.6	14	330	M	M	3		17	330
7	37	27	32	-2	33	0	0.11	T	0	8.4	14	10	M	M	10	146	18	320
8	46	30	38	4	27	0	0.05	0.0	0	10.9	24	300	M	M	6	1	31	300
9	45	25	35	1	30	0	0.00	0.0	0	6.2	12	120	M	M	1		16	270
10	55	32	44	10	21	0	0.00	0.0	0	8.4	31	250	M	M	4		40	250
11	60	32	46	12	19	0	0.00	0.0	0	6.9	23	200	M	M	5		29	190
12	60	42	51	17	14	0	0.00	0.0	0	13.1	26	260	M	M	8		36	260
13	42	25	34	-1	31	0	0.17	1.9	1	11.6	22	350	M	M	10	15	28	330
14	26	16	21	-14	44	0	0.00	0.0	1	15.0	29	320	M	M	2		33	320
15	32	16	24	-11	41	0	0.00	0.0	T	8.0	15	280	M	M	1		22	290
16	45	22	34	-1	31	0	0.00	0.0	0	5.4	15	170	M	M	7		19	170
17	69	43	56	20	9	0	0.23	0.0	0	15.6	29	200	M	M	8	1	39	200
18	64	26	45	9	20	0	0.15	0.0	0	19.3	48	260	M	M	6	1	65	270
19	42	22	32	-4	33	0	T	T	0	14.9	37	280	M	M	3		48	280
20	37	19	28	-8	37	0	0.00	0.0	0	11.7	24	330	M	M	2		33	340
21	56	26	41	5	24	0	0.00	0.0	0	5.3	14	200	M	M	2	8	17	230
22	62	34	48	11	17	0	0.13	0.0	0	9.9	23	190	M	M	9	18	32	180
23	70	35	53	16	12	0	0.00	0.0	0	15.3	36	260	M	M	7		43	270
24	35	30	33	-4	32	0	T	T	0	9.7	21	320	M	M	9	4	27	320
25	44	26	35	-2	30	0	0.84	0.3	T	13.3	28	320	M	M	8	146	35	320
26	38	24	31	-7	34	0	0.00	0.0	0	10.6	24	320	M	M	5		30	330
27	49	23	36	-2	29	0	0.00	0.0	0	14.9	30	270	M	M	2		39	270
28	38	27	33	-5	32	0	0.00	0.0	0	11.3	25	320	M	M	4		32	330
SM	1291	733			804	0	2.65	2.3		293.9			M		160			
AV	46.1	26.2								10.5	FASTST		M	M	6		MAX(MPH)	
							MISC	---->		48	260						65	270

<https://w2.weather.gov/climate/index.php?wfo=okx>



**SA-7 Sediment Remedy**

Long-Term Monitoring Program  
Hydrologic Data Review

<b>Monitoring Period:</b> <b>March</b> <b>2022</b>	<b>Assessment Required?</b>
<b>Rainfall Event Data:</b> Max Rainfall (in):    0.31        Date: 3/12/2022 50-Year, 24-Hr event?    NO	NO
<b>Storm Surge Event Data:</b> Max Increase Above Predicted Normal Tidal Cycling (m):    0.53        Date: 3/24/2022        Time: 8:00 Exceeds event trigger criteria?    NO  Max Tide Gauge Reading (m):    1.199        Date: 3/24/2022        Time: 6:00 Exceeds event trigger criteria?    NO  10-year storm surge event defined as a hurricane?    NO	NO
<b>Wind Event Data:</b> Max Wind (mph):    29        Date: 3/28/2022 Exceeds trigger criteria?    NO Wind direction over 6-hr period:    WNW        OK  (1) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria.	NO
<b>CRITERIA FROM LTMP:</b>  "Post-High Energy Event Monitoring Activities" will take place promptly following High Energy Events. The Consent Order defines "High Energy Events" as follows:  i. "A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport; <ul style="list-style-type: none"><li>• See <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li></ul> ii. A 10-year storm surge event defined as a hurricane event (not a "nor'easter") resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or <ul style="list-style-type: none"><li>• Note: Hurricane events are defined by NOAA.</li><li>• See <a href="http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750">http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750</a></li></ul> iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport." <ul style="list-style-type: none"><li>• <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li></ul>	
CHECKED BY: <u>ORZ</u>	

<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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CXUS51 KOKX 010910

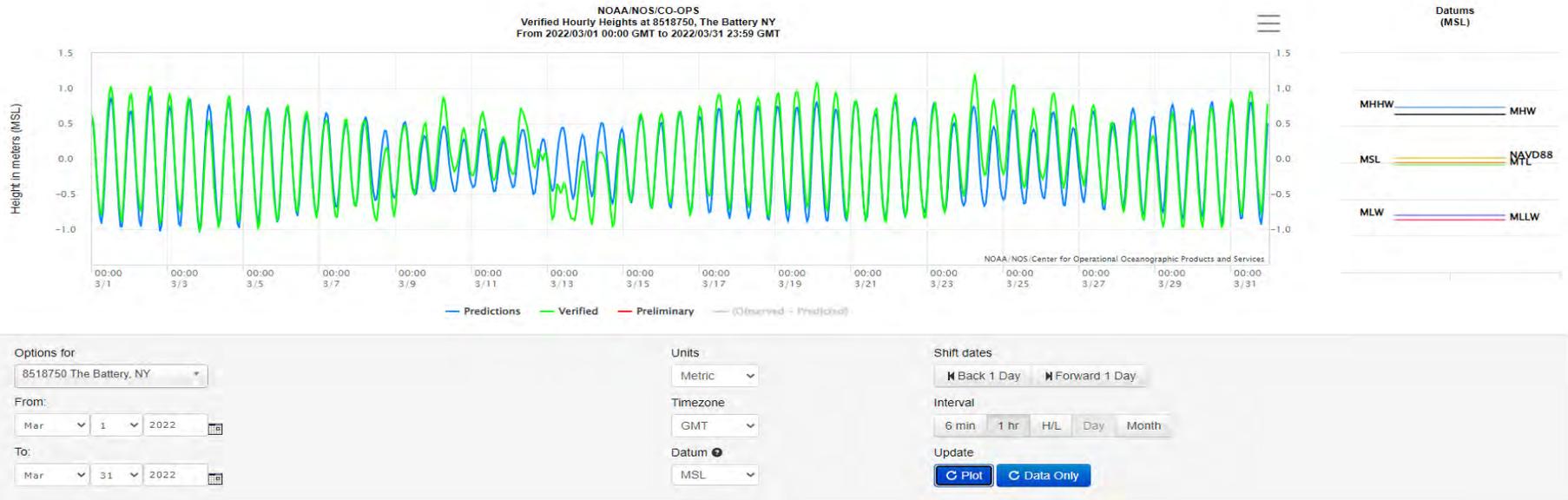
CF6EWR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: MARCH  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:																	:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND		
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	12Z		AVG	MX	2MIN	MIN	PSBL	S-S	WX	SPD	DR
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR											
1	48	30	39	1	26	0	T	0.0	0	5.3	13	160	M	M	9		18	200											
2	54	40	47	9	18	0	0.00	0.0	0	9.5	17	270	M	M	5		24	290											
3	46	25	36	-3	29	0	0.06	0.0	0	16.3	26	330	M	M	6		35	300											
4	39	20	30	-9	35	0	0.00	0.0	0	8.6	22	340	M	M	2		28	280											
5	46	26	36	-3	29	0	0.00	0.0	0	5.3	16	170	M	M	8		22	160											
6	69	44	57	17	8	0	0.04	0.0	0	10.6	26	230	M	M	9	1	35	230											
7	76	50	63	23	2	0	0.01	0.0	0	16.6	44	270	M	M	10		60	300											
8	50	38	44	4	21	0	0.00	0.0	0	16.6	31	300	M	M	8		44	290											
9	42	33	38	-2	27	0	0.60	0.5	0	8.2	15	360	M	M	10	14	19	130											
10	50	30	40	-1	25	0	0.00	0.0	0	3.9	9	140	M	M	7	128	12	140											
11	54	35	45	4	20	0	0.00	0.0	0	5.2	16	130	M	M	6		22	130											
12	46	23	35	-6	30	0	0.31	0.3	0	16.4	39	320	M	M	10	14	53	320											
13	35	21	28	-14	37	0	T	T	T	15.0	35	280	M	M	7		41	270											
14	58	31	45	3	20	0	0.00	0.0	0	10.7	20	220	M	M	7		27	260											
15	69	38	54	12	11	0	T	0.0	0	7.7	20	290	M	M	7		26	310											
16	66	47	57	15	8	0	0.00	0.0	0	6.7	15	140	M	M	4		21	140											
17	55	45	50	7	15	0	0.09	0.0	0	8.9	16	20	M	M	10	12	18	20											
18	74	48	61	18	4	0	0.00	0.0	0	6.6	15	130	M	M	7	1	19	150											
19	71	47	59	16	6	0	0.15	0.0	0	7.2	24	220	M	M	8	13	31	220											
20	60	47	54	10	11	0	0.00	0.0	0	15.7	28	310	M	M	7		35	300											
21	65	44	55	11	10	0	0.00	0.0	0	13.7	29	270	M	M	3		37	270											
22	61	44	53	9	12	0	0.00	0.0	0	13.6	24	300	M	M	7		31	300											
23	47	39	43	-2	22	0	0.11	0.0	0	10.4	17	20	M	M	9		23	60											
24	47	40	44	-1	21	0	0.88	0.0	0	12.3	21	40	M	M	10	1	28	30											
25	60	44	52	7	13	0	0.02	0.0	0	11.4	25	260	M	M	8	1	35	260											
26	56	41	49	3	16	0	T	0.0	0	14.3	26	280	M	M	8	3	34	280											
27	48	28	38	-8	27	0	T	T	0	17.4	33	280	M	M	7		40	270											
28	35	23	29	-17	36	0	T	T	0	21.6	31	330	M	M	5	8	41	300											
29	40	24	32	-15	33	0	0.00	0.0	0	17.1	28	320	M	M	5		36	310											
30	48	29	39	-8	26	0	0.00	0.0	0	6.7	13	140	M	M	6		17	280											
31	71	44	58	11	7	0	0.11	0.0	0	11.2	29	200	M	M	10	138	37	200											
SM	1686	1118			605	0	2.38	0.8		350.7			M		225														
AV	54.4	36.1								11.3	FASTST		M	M	7		MAX(MPH)												
								MISC	---->	44	270						60	300											

<https://w2.weather.gov/climate/index.php?wfo=okx>



<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>

**ATTACHMENT B.2  
Q2 2022 HYDRAULIC AND HYDRODYNAMIC  
EVALUATION SUMMARIES**

**SA-7 Sediment Remedy**  
 Long-Term Monitoring Program  
 Hydrologic Data Review

<u>Monitoring Period:</u> <b>April</b> <b>2022</b>	<i>Assessment Required?</i>
<p><u>Rainfall Event Data:</u>            Max Rainfall (in): 1.10      Date: 4/7/2022            50-Year, 24-Hr event? NO</p>	NO
<p><u>Storm Surge Event Data:</u>            Max Increase Above Predicted Normal Tidal Cycling (m): 1.011      Date: 4/19/2022      Time: 7:00            Exceeds event trigger criteria? YES             Max Tide Gauge Reading (m): 1.503      Date: 4/19/2022      Time: 3:00            Exceeds event trigger criteria? YES             10-year storm surge event defined as a hurricane? NO</p> <p>(1) While on April 19, 2022, both criteria for the storm surge increase above the predicted normal tide cycle and the maximum tidal gauge were exceeded, the 10-year storm surge did not meet the definition of a hurricane, therefore, further assessment was not warranted.</p>	NO
<p><u>Wind Event Data:</u>            Max Wind (mph): 32      Date: 4/19/2022            Exceeds trigger criteria? NO            Wind direction over 6-hr period: WSW      OK</p> <p>(1) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria.</p>	NO

**CRITERIA FROM LTMP:**

“Post-High Energy Event Monitoring Activities” will take place promptly following High Energy Events. The Consent Order defines “High Energy Events” as follows:

- i. “A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport;
  - See <https://w2.weather.gov/climate/index.php?wfo=okx>
- ii. A 10-year storm surge event defined as a hurricane event (not a “nor’easter”) resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or
  - Note: Hurricane events are defined by NOAA.
  - See <http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750>
- iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport.”
  - <https://w2.weather.gov/climate/index.php?wfo=okx>

CHECKED BY: ORZ

<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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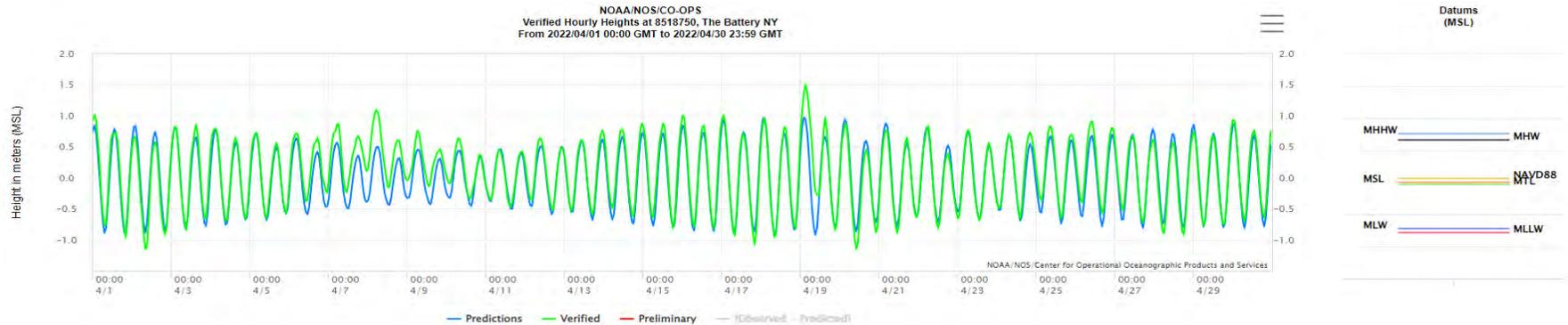
CF6EWR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: APRIL  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
								12Z		AVG MX		2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	60	43	52	4	13	0	0.21	0.0	0	17.3	36	260	M	M	8	1	43	290
2	55	39	47	-1	18	0	0.00	0.0	0	11.5	29	290	M	M	7		37	300
3	48	40	44	-5	21	0	0.13	0.0	0	7.3	24	300	M	M	9	1	32	290
4	54	39	47	-2	18	0	0.00	0.0	0	11.0	21	290	M	M	5		28	300
5	54	42	48	-1	17	0	0.07	0.0	0	5.3	13	100	M	M	9	1	17	140
6	53	45	49	-1	16	0	0.67	0.0	0	12.8	24	40	M	M	10	1	35	30
7	53	46	50	0	15	0	1.10	0.0	0	11.9	32	110	M	M	10	13	45	110
8	64	49	57	7	8	0	0.01	0.0	0	12.2	23	240	M	M	5	1	29	250
9	58	47	53	2	12	0	0.13	0.0	0	8.2	30	240	M	M	9	3	36	240
10	53	43	48	-3	17	0	T	0.0	0	16.9	29	320	M	M	8		39	320
11	62	40	51	-1	14	0	0.00	0.0	0	8.1	16	330	M	M	5		22	360
12	73	49	61	9	4	0	0.04	0.0	0	7.3	20	330	M	M	6		34	340
13	67	50	59	7	6	0	0.00	0.0	0	5.4	16	140	M	M	7		22	110
14	88	56	72	19	0	7	0.06	0.0	0	11.3	30	290	M	M	7	38	40	290
15	71	51	61	8	4	0	0.00	0.0	0	11.8	24	200	M	M	4		33	210
16	73	46	60	6	5	0	0.12	0.0	0	12.0	28	350	M	M	8	3	35	320
17	54	42	48	-6	17	0	0.00	0.0	0	14.5	26	320	M	M	5		36	330
18	53	36	45	-9	20	0	0.88	0.0	0	11.3	25	70	M	M	7	1	36	50
19	53	40	47	-8	18	0	0.93	0.0	0	19.6	44	270	M	M	8	1	53	280
20	62	43	53	-2	12	0	0.00	0.0	0	10.6	23	320	M	M	4		33	280
21	64	47	56	0	9	0	T	0.0	0	8.2	20	160	M	M	7		25	150
22	72	48	60	4	5	0	0.00	0.0	0	12.8	24	330	M	M	4		30	300
23	64	49	57	1	8	0	0.00	0.0	0	6.9	13	10	M	M	8		16	150
24	63	50	57	0	8	0	0.00	0.0	0	8.0	20	140	M	M	6		25	130
25	58	50	54	-3	11	0	0.00	0.0	0	6.8	12	120	M	M	9		16	130
26	66	54	60	3	5	0	0.01	0.0	0	5.8	14	270	M	M	10		16	270
27	60	42	51	-7	14	0	0.00	0.0	0	18.0	30	310	M	M	7		38	310
28	60	41	51	-7	14	0	0.00	0.0	0	19.3	32	310	M	M	3		43	310
29	66	42	54	-4	11	0	0.00	0.0	0	16.8	30	330	M	M	1		37	320
30	70	45	58	-1	7	0	0.00	0.0	0	8.6	20	320	M	M	1		28	310
SM	1851	1354			347	7	4.36	0.0		337.5			M		197			
AV	61.7	45.1								11.2	FASTST		M	M	7		MAX(MPH)	
								MISC	---->	44	270						53	280

<https://w2.weather.gov/climate/index.php?wfo=okx>



Datums (MSL)

MHW MHW

MSL NAVD88  
MTL

MLW MLLW

Options for: 8518750 The Battery, NY

From: Apr 1 2022

To: Apr 30 2022

Units: Metric

Timezone: GMT

Datum: MSL

Shift dates: Back 1 Day Forward 1 Day

Interval: 6 min 1 hr H/L Day Month

Update:

<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>

**SA-7 Sediment Remedy**  
 Long-Term Monitoring Program  
 Hydrologic Data Review

<b>Monitoring Period: May 2022</b>	<b>Assessment Required?</b>
<u>Rainfall Event Data:</u> Max Rainfall (in): 1.21      Date: 5/7/2022 50-Year, 24-Hr event? NO	NO
<u>Storm Surge Event Data:</u> Max Increase Above Predicted Normal Tidal Cycling (m): 0.681      Date: 5/8/2022      Time: 22:00 Exceeds event trigger criteria? YES  Max Tide Gauge Reading (m): 1.296      Date: 5/17/2022      Time: 2:00 Exceeds event trigger criteria? NO  10-year storm surge event defined as a hurricane? NO  (1) While on May 8, 2022, one criteria for the storm surge increase above the predicted normal tide cycle were exceeded, the 10-year storm surge did not meet the definition of a hurricane, therefore, further assessment was not warranted.	NO
<u>Wind Event Data:</u> Max Wind (mph): 28      Date: 5/17/2022 Exceeds trigger criteria? NO Wind direction over 6-hr period: W      OK  (1) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria.	NO
<p><b><u>CRITERIA FROM LTMP:</u></b></p> <p>“Post-High Energy Event Monitoring Activities” will take place promptly following High Energy Events. The Consent Order defines “High Energy Events” as follows:</p> <p>i. “A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport;</p> <ul style="list-style-type: none"> <li>• See <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li> </ul> <p>ii. A 10-year storm surge event defined as a hurricane event (not a “nor’easter”) resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or</p> <ul style="list-style-type: none"> <li>• Note: Hurricane events are defined by NOAA.</li> <li>• See <a href="http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750">http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750</a></li> </ul> <p>iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport.”</p> <ul style="list-style-type: none"> <li>• <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li> </ul> <p style="text-align: right;">CHECKED BY: <u>ORZ</u></p>	

<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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 CXUS51 KOKX 010910  
 CF6EWR  
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: MAY  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	69	43	56	-3	9	0	T	0.0	0	7.1	16	120	M	M	6		19	120
2	58	53	56	-3	9	0	0.22	0.0	0	7.6	20	130	M	M	10	138	28	130
3	65	51	58	-2	7	0	T	0.0	0	9.6	17	20	M	M	8	1	21	130
4	68	51	60	0	5	0	0.15	0.0	0	5.7	14	260	M	M	9	18	19	250
5	75	58	67	7	0	2	0.00	0.0	0	8.6	17	360	M	M	8		21	360
6	61	51	56	-4	9	0	0.94	0.0	0	5.7	14	50	M	M	10	1	18	50
7	54	47	51	-10	14	0	1.21	0.0	0	15.0	25	40	M	M	10	1	34	70
8	62	46	54	-7	11	0	T	0.0	0	15.4	30	40	M	M	9		37	40
9	72	46	59	-2	6	0	0.00	0.0	0	15.5	29	40	M	M	3		41	30
10	75	50	63	1	2	0	0.00	0.0	0	12.2	22	30	M	M	3		30	40
11	78	53	66	4	0	1	0.00	0.0	0	10.3	22	20	M	M	6		27	30
12	76	57	67	5	0	2	T	0.0	0	5.8	13	30	M	M	7	1	18	30
13	75	59	67	5	0	2	0.17	0.0	0	5.0	13	30	M	M	10	18	16	40
14	71	60	66	3	0	1	0.29	0.0	0	3.4	13	140	M	M	10	1	19	150
15	80	60	70	7	0	5	0.21	0.0	0	4.9	14	150	M	M	9	12	18	150
16	83	63	73	10	0	8	0.11	0.0	0	9.9	25	270	M	M	8	38	34	290
17	81	57	69	5	0	4	0.00	0.0	0	15.7	31	260	M	M	2		40	270
18	76	57	67	3	0	2	T	0.0	M	9.9	20	330	M	M	6		26	320
19	70	56	63	-1	2	0	0.91	0.0	0	5.3	12	230	M	M	8	1	16	130
20	70	57	64	0	1	0	0.32	0.0	0	5.3	15	90	M	M	9	138	20	110
21	95	63	79	14	0	14	0.00	0.0	0	7.3	20	230	M	M	5	18	24	240
22	95	73	84	19	0	19	0.00	0.0	0	11.3	22	240	M	M	6	3	28	250
23	78	63	71	6	0	6	T	0.0	0	11.0	23	320	M	M	8		27	310
24	69	60	65	-1	0	0	T	0.0	0	7.5	13	160	M	M	9		17	40
25	71	56	64	-2	1	0	0.00	0.0	0	6.3	13	150	M	M	7		18	170
26	71	58	65	-1	0	0	0.00	0.0	0	7.2	14	140	M	M	8		20	150
27	84	67	76	10	0	11	0.46	0.0	0	7.9	24	220	M	M	9	138	32	210
28	79	66	73	6	0	8	0.24	0.0	0	9.0	35	270	M	M	7	135	44	280
29	80	62	71	4	0	6	0.00	0.0	0	5.0	13	330	M	M	4		18	290
30	91	62	77	10	0	12	0.00	0.0	0	8.1	17	250	M	M	3		22	250
31	98	70	84	16	0	19	0.00	0.0	0	10.7	20	320	M	M	6	3	30	330
SM	2330	1775			76	122	5.23	0.0		269.2			M		223			
AV	75.2	57.3								8.7	FASTST		M	M	7		MAX((MPH)	
								MISC	---->	35	270						44	280

<https://w2.weather.gov/climate/index.php?wfo=okx>



<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>

**SA-7 Sediment Remedy**

Long-Term Monitoring Program  
Hydrologic Data Review

<u>Monitoring Period:</u> <b>June</b> <b>2022</b>	<i>Assessment Required?</i>
<p><u>Rainfall Event Data:</u></p> <p>Max Rainfall (in): 0.78        Date: 6/9/2022</p> <p>50-Year, 24-Hr event? <b>NO</b></p>	<b>NO</b>
<p><u>Storm Surge Event Data:</u></p> <p>Max Increase Above Predicted Normal Tidal Cycling (m): 0.366        Date: 6/1/2022        Time: 10:00</p> <p>Exceeds event trigger criteria? <b>NO</b></p> <p>Max Tide Gauge Reading (m): 1.341        Date: 6/15/2022        Time: 1:00</p> <p>Exceeds event trigger criteria? <b>NO</b></p> <p>10-year storm surge event defined as a hurricane? <b>NO</b></p>	<b>NO</b>
<p><u>Wind Event Data:</u></p> <p>Max Wind (mph): 25        Date: 6/18/2022</p> <p>Exceeds trigger criteria? <b>NO</b></p> <p>Wind direction over 6-hr period: NNW        OK</p> <p>(1) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria.</p>	<b>NO</b>
<p><b><u>CRITERIA FROM LTMP:</u></b></p> <p>“Post-High Energy Event Monitoring Activities” will take place promptly following High Energy Events. The Consent Order defines “High Energy Events” as follows:</p> <p>i. “A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport;</p> <ul style="list-style-type: none"><li>• See <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li></ul> <p>ii. A 10-year storm surge event defined as a hurricane event (not a “nor’easter”) resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or</p> <ul style="list-style-type: none"><li>• Note: Hurricane events are defined by NOAA.</li><li>• See <a href="http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750">http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750</a></li></ul> <p>iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport.”</p> <ul style="list-style-type: none"><li>• <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li></ul> <p style="text-align: right;">CHECKED BY: <u>ORZ</u></p>	

<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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CF6EWR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: JUNE  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
=====																		
12Z AVG MX 2MIN																		
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
=====																		
1	71	62	67	-1	0	2	0.54	0.0	0	7.7	18	20	M	M	9	13	22	20
2	86	64	75	7	0	10	0.15	0.0	0	7.7	24	350	M	M	8	18	28	330
3	80	68	74	5	0	9	T	0.0	0	6.1	14	300	M	M	8	18	17	310
4	87	62	75	6	0	10	0.00	0.0	0	7.9	21	250	M	M	2		28	270
5	80	58	69	0	0	4	0.00	0.0	0	6.3	14	160	M	M	5		18	160
6	85	60	73	3	0	8	0.00	0.0	0	7.8	17	200	M	M	3		24	170
7	83	61	72	2	0	7	0.05	0.0	0	10.7	21	170	M	M	8	8	28	170
8	87	70	79	9	0	14	0.02	0.0	0	9.7	18	270	M	M	8		26	270
9	87	68	78	7	0	13	0.78	0.0	0	14.9	32	260	M	M	8	13	40	270
10	83	63	73	2	0	8	0.00	0.0	0	9.9	20	270	M	M	6		26	280
11	80	66	73	2	0	8	T	0.0	0	7.0	14	220	M	M	8		19	220
12	76	64	70	-2	0	5	0.06	0.0	0	6.8	16	150	M	M	8	1	21	160
13	92	69	81	9	0	16	0.00	0.0	0	7.1	17	360	M	M	7		26	310
14	87	69	78	6	0	13	T	0.0	0	8.2	15	360	M	M	7		25	320
15	83	67	75	2	0	10	0.00	0.0	0	7.5	17	130	M	M	5		23	130
16	77	66	72	-1	0	7	0.39	0.0	0	9.4	18	200	M	M	9	13	22	170
17	95	71	83	10	0	18	0.00	0.0	0	13.7	33	260	M	M	5		43	270
18	78	60	69	-5	0	4	0.00	0.0	0	17.1	31	320	M	M	5		40	320
19	78	56	67	-7	0	2	0.00	0.0	0	17.2	30	300	M	M	4		37	300
20	83	58	71	-3	0	6	0.00	0.0	0	8.7	18	310	M	M	6		26	310
21	82	62	72	-3	0	7	0.05	0.0	0	4.1	12	90	M	M	9		17	100
22	71	64	68	-7	0	3	0.07	0.0	0	7.7	16	130	M	M	10	18	23	130
23	76	65	71	-4	0	6	T	0.0	0	6.4	15	100	M	M	8		20	110
24	88	66	77	2	0	12	0.00	0.0	0	6.1	14	240	M	M	5		18	250
25	96	67	82	6	0	17	0.00	0.0	0	5.7	14	300	M	M	2		21	300
26	94	72	83	7	0	18	0.00	0.0	0	10.3	18	200	M	M	6		25	250
27	81	71	76	0	0	11	0.29	0.0	0	9.7	22	280	M	M	9		29	200
28	84	69	77	1	0	12	0.00	0.0	0	9.4	18	360	M	M	7		25	330
29	90	64	77	0	0	12	0.00	0.0	0	7.7	15	160	M	M	4		26	210
30	92	68	80	3	0	15	0.00	0.0	0	9.0	18	310	M	M	4		27	230
=====																		
SM	2512	1950			0	287	2.40	0.0		267.5			M		193			
=====																		
AV	83.7	65.0								8.9	FASTST		M	M	6		MAX(MPH)	
											MISC	---->					43	270
=====																		

<https://w2.weather.gov/climate/index.php?wfo=okx>



<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>

**ATTACHMENT B.3  
Q3 2022 HYDRAULIC AND HYDRODYNAMIC  
EVALUATION SUMMARIES**

**SA-7 Sediment Remedy**

Long-Term Monitoring Program

Hydrologic Data Review

<i>Monitoring Period:</i> <b>July</b> <b>2022</b>	<i>Assessment Required?</i>
<u>Rainfall Event Data:</u> Max Rainfall (in): 0.12        Date: 7/8/2022        and        7/28/2022 50-Year, 24-Hr event? NO	NO
<u>Storm Surge Event Data:</u> Max Increase Above Predicted Normal Tidal Cycling (m): 0.309        Date: 7/21/2022        Time: 16:00 & 17:00 Exceeds event trigger criteria? NO  Max Tide Gauge Reading (m): 1.257        Date: 7/14/2022        Time: 1:00 Exceeds event trigger criteria? NO  10-year storm surge event defined as a hurricane? NO	NO
<u>Wind Event Data:</u> Max Wind (mph): 32        Date: 7/1/2022 Exceeds trigger criteria? NO Wind direction over 6-hr period: SW        OK  (1) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria.	NO
<p><b><u>CRITERIA FROM LTMP:</u></b></p> <p>“Post-High Energy Event Monitoring Activities” will take place promptly following High Energy Events. The Consent Order defines “High Energy Events” as follows:</p> <p>i. “A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport;</p> <ul style="list-style-type: none"> <li>• See <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li> </ul> <p>ii. A 10-year storm surge event defined as a hurricane event (not a “nor’easter”) resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or</p> <ul style="list-style-type: none"> <li>• Note: Hurricane events are defined by NOAA.</li> <li>• See <a href="http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750">http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750</a></li> </ul> <p>iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport.”</p> <ul style="list-style-type: none"> <li>• <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li> </ul> <p style="text-align: right;">CHECKED BY: _____ ORZ _____</p>	

<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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CXUS51 KOKX 010910

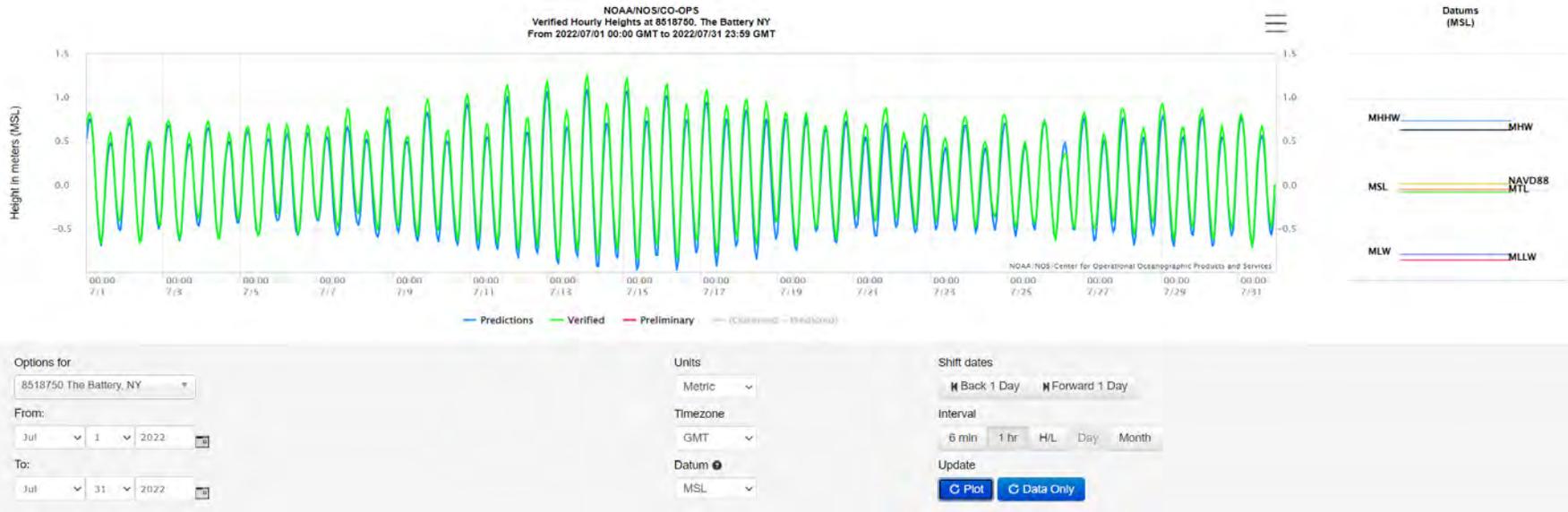
CF6EWR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: JULY  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	99	71	85	8	0	20	T	0.0	0	12.4	35	230	M	M	6	3	43	220
2	96	79	88	11	0	23	0.00	0.0	0	11.7	21	230	M	M	8		28	230
3	93	77	85	8	0	20	0.00	0.0	0	11.0	21	340	M	M	6		28	310
4	91	64	78	0	0	13	0.00	0.0	0	7.4	17	240	M	M	5		23	280
5	91	71	81	3	0	16	0.04	0.0	0	10.3	20	180	M	M	8		25	180
6	91	77	84	6	0	19	0.00	0.0	0	11.9	20	310	M	M	8		30	290
7	84	71	78	0	0	13	0.00	0.0	0	8.1	14	140	M	M	8		20	170
8	91	70	81	3	0	16	0.12	0.0	0	4.3	17	230	M	M	8		24	230
9	89	74	82	4	0	17	0.00	0.0	0	7.5	16	30	M	M	8		26	30
10	85	67	76	-2	0	11	0.00	0.0	0	7.9	17	10	M	M	4		22	360
11	88	66	77	-1	0	12	0.00	0.0	0	9.9	18	150	M	M	4		25	170
12	98	70	84	6	0	19	0.00	0.0	0	14.0	25	240	M	M	5	3	31	240
13	96	76	86	8	0	21	0.00	0.0	0	8.6	16	260	M	M	7		28	270
14	94	73	84	6	0	19	0.00	0.0	0	9.9	18	310	M	M	7		31	300
15	86	73	80	2	0	15	0.00	0.0	0	8.1	15	10	M	M	7		21	150
16	83	72	78	0	0	13	0.09	0.0	0	4.9	14	130	M	M	8		19	110
17	85	70	78	0	0	13	0.06	0.0	0	5.8	18	230	M	M	9		23	240
18	93	74	84	6	0	19	0.07	0.0	0	6.8	24	210	M	M	9	138	32	210
19	94	74	84	6	0	19	0.00	0.0	0	11.7	21	250	M	M	5		27	280
20	100	74	87	9	0	22	0.00	0.0	0	8.5	21	230	M	M	3		28	220
21	100	78	89	11	0	24	0.01	0.0	0	11.6	25	250	M	M	4	3	31	240
22	100	79	90	12	0	25	0.00	0.0	0	7.4	25	360	M	M	4		42	20
23	101	78	90	12	0	25	0.00	0.0	0	5.6	15	250	M	M	4		22	170
24	102	77	90	12	0	25	0.00	0.0	0	12.7	23	220	M	M	7		33	230
25	92	79	86	8	0	21	0.03	0.0	0	12.1	22	340	M	M	8	3	31	230
26	86	71	79	1	0	14	0.00	0.0	0	8.6	21	20	M	M	7		26	280
27	87	69	78	0	0	13	0.00	0.0	0	6.5	14	150	M	M	7		21	150
28	92	74	83	5	0	18	0.12	0.0	0	7.8	24	260	M	M	8	13	31	280
29	89	74	82	4	0	17	0.01	0.0	0	8.2	20	300	M	M	8		25	290
30	91	75	83	5	0	18	T	0.0	0	11.4	21	330	M	M	5		30	300
31	87	68	78	0	0	13	T	0.0	0	6.8	14	160	M	M	6		19	150
SM	2854	2265			0	553	0.55	0.0		279.4			M		201			
AV	92.1	73.1								9.0	FASTST		M	M	6		MAX(MPH)	
										MISC	---->	35 230						43 220

<https://w2.weather.gov/climate/index.php?wfo=okx>



<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>

**SA-7 Sediment Remedy**

Long-Term Monitoring Program  
Hydrologic Data Review

<u>Monitoring Period:</u> <b>August</b> <b>2022</b>	Assessment Required?
<p><u>Rainfall Event Data:</u></p> <p>Max Rainfall (in): 0.75      Date: 8/30/2022 50-Year, 24-Hr event? NO</p>	NO
<p><u>Storm Surge Event Data:</u></p> <p>Max Increase Above Predicted Normal Tidal Cycling (m): 1.187      Date: 8/17/2022      Time: 2:00 Exceeds event trigger criteria? YES</p> <p>Max Tide Gauge Reading (m): 6.79      Date: 8/12/2022      Time: 1:00 Exceeds event trigger criteria? YES</p> <p>10-year storm surge event defined as a hurricane? NO</p> <p>(1) While on August 17, 2022, both criteria for the storm surge increase above the predicted normal tide cycle and max tide gauge readings were exceeded, the 10-year storm surge did not meet the definition of a hurricane, therefore, further assessment was not warranted.</p>	NO
<p><u>Wind Event Data:</u></p> <p>Max Wind (mph): 28      Date: 8/7/2022 Exceeds trigger criteria? NO Wind direction over 6-hr period: SW      OK</p> <p>(1) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria.</p>	NO
<p><b><u>CRITERIA FROM LTMP:</u></b></p> <p>“Post-High Energy Event Monitoring Activities” will take place promptly following High Energy Events. The Consent Order defines “High Energy Events” as follows:</p> <p>i. “A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport;</p> <ul style="list-style-type: none"><li>• See <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li></ul> <p>ii. A 10-year storm surge event defined as a hurricane event (not a “nor’easter”) resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or</p> <ul style="list-style-type: none"><li>• Note: Hurricane events are defined by NOAA.</li><li>• See <a href="http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750">http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750</a></li></ul> <p>iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport.”</p> <ul style="list-style-type: none"><li>• <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li></ul> <p style="text-align: right;">CHECKED BY: <u>ORZ</u></p>	

<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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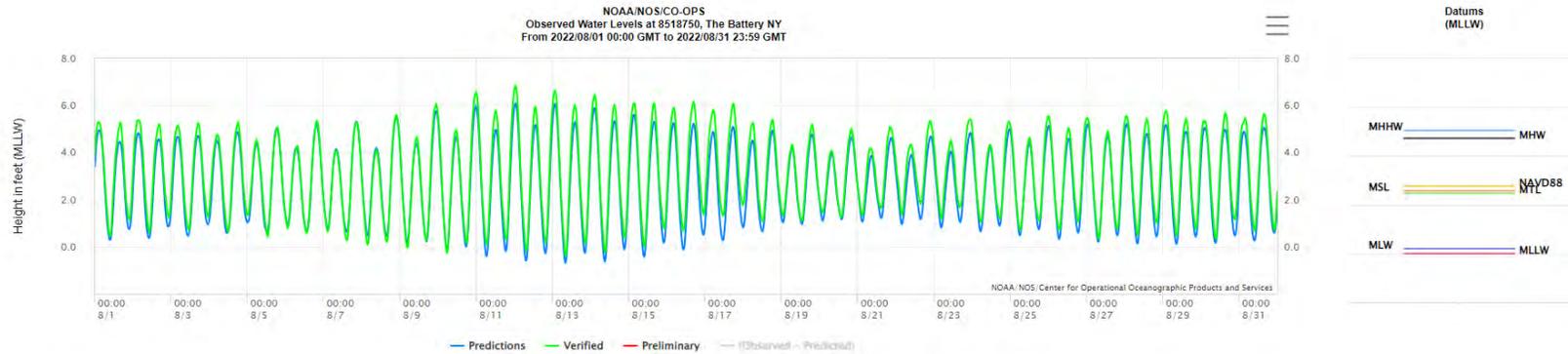
CXUS51 KOKX 010910  
CF6EWR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
MONTH: AUGUST  
YEAR: 2022  
LATITUDE: 40 42 N  
LONGITUDE: 74 10 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	78	68	73	-5	0	8	0.43	0.0	0	6.5	15	350	M	M	8	1	17	350
2	95	69	82	4	0	17	0.00	0.0	0	9.3	18	340	M	M	6		30	280
3	94	73	84	6	0	19	0.00	0.0	0	6.9	16	240	M	M	2		20	260
4	98	74	86	8	0	21	T	0.0	0	8.0	21	340	M	M	4	3	25	340
5	92	77	85	7	0	20	T	0.0	0	8.8	17	240	M	M	8	3	22	260
6	96	74	85	7	0	20	0.00	0.0	0	10.5	22	220	M	M	7		29	230
7	96	79	88	11	0	23	0.04	0.0	0	15.0	37	230	M	M	7	3	47	220
8	99	78	89	12	0	24	0.00	0.0	0	14.0	23	240	M	M	6		29	240
9	101	81	91	14	0	26	T	0.0	0	12.3	23	310	M	M	6	3	31	260
10	90	75	83	6	0	18	0.00	0.0	0	8.4	16	360	M	M	7		21	280
11	92	72	82	5	0	17	0.15	0.0	0	6.9	22	350	M	M	8	1	28	320
12	88	71	80	3	0	15	0.00	0.0	0	12.2	21	360	M	M	5		27	330
13	82	66	74	-3	0	9	0.00	0.0	0	9.6	18	10	M	M	3		32	360
14	82	63	73	-4	0	8	0.00	0.0	0	6.8	18	140	M	M	6		23	140
15	83	68	76	-1	0	11	0.00	0.0	0	4.6	14	150	M	M	6		21	110
16	84	65	75	-1	0	10	0.00	0.0	0	8.4	22	40	M	M	7		29	20
17	82	65	74	-2	0	9	0.11	0.0	0	5.8	22	10	M	M	8		25	10
18	91	65	78	2	0	13	0.00	0.0	0	8.9	20	230	M	M	4		26	250
19	94	66	80	4	0	15	0.00	0.0	0	6.9	17	140	M	M	4		23	130
20	90	72	81	5	0	16	0.00	0.0	0	6.8	18	140	M	M	7		25	140
21	83	71	77	1	0	12	0.00	0.0	0	6.8	15	140	M	M	8		21	150
22	82	72	77	1	0	12	0.75	0.0	0	3.9	18	360	M	M	9	13	21	360
23	89	71	80	4	0	15	0.00	0.0	0	8.1	21	320	M	M	6	1	27	310
24	92	68	80	5	0	15	0.00	0.0	0	7.8	17	260	M	M	2		22	270
25	93	69	81	6	0	16	0.00	0.0	0	5.3	15	180	M	M	4		19	150
26	93	73	83	8	0	18	T	0.0	0	8.0	20	250	M	M	7	3	30	250
27	91	75	83	8	0	18	0.00	0.0	0	5.8	13	140	M	M	7		22	270
28	82	75	79	4	0	14	T	0.0	0	8.0	14	150	M	M	8		19	130
29	87	75	81	7	0	16	0.01	0.0	0	8.0	17	130	M	M	5		22	150
30	90	73	82	8	0	17	0.43	0.0	0	10.2	31	250	M	M	7	13	37	250
31	87	70	79	5	0	14	T	0.0	0	10.4	20	260	M	M	4		26	270
SM	2776	2213				0	486	1.92	0.0	258.9			M		186			
AV	89.5	71.4								8.4	FASTST		M	M	6		MAX(MPH)	
										MISC	---->	37 230						47 220

<https://w2.weather.gov/climate/index.php?wfo=okx>



Options for 8518750 The Battery, NY	Units Standard	Shift dates Back 1 Day Forward 1 Day
From: Aug 1 2022	Timezone GMT	Interval 6 min 1 hr H/L Day Month
To: Aug 31 2022	Datum MLLW	Update Plot Data Only

<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>

**SA-7 Sediment Remedy**

Long-Term Monitoring Program  
Hydrologic Data Review

<u>Monitoring Period:</u> <b>September 2022</b>	<i>Assessment Required?</i>
<p><u>Rainfall Event Data:</u></p> <p>Max Rainfall (in): 1.44      Date: 9/25/2022 50-Year, 24-Hr event? NO</p>	NO
<p><u>Storm Surge Event Data:</u></p> <p>Max Increase Above Predicted Normal Tidal Cycling (m): 0.434      Date: 9/13/2022      Time: 11:00 Exceeds event trigger criteria? NO</p> <p>Max Tide Gauge Reading (m): 1.352      Date: 9/9/2022      Time: 0:00 Exceeds event trigger criteria? NO</p> <p>10-year storm surge event defined as a hurricane? NO</p>	NO
<p><u>Wind Event Data:</u></p> <p>Max Wind (mph): 25      Date: 9/23/2022 Exceeds trigger criteria? NO Wind direction over 6-hr period: NW      OK</p> <p>(1) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria.</p>	NO

**CRITERIA FROM LTMP:**

“Post-High Energy Event Monitoring Activities” will take place promptly following High Energy Events. The Consent Order defines “High Energy Events” as follows:

- i. “A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport;
  - See <https://w2.weather.gov/climate/index.php?wfo=okx>
- ii. A 10-year storm surge event defined as a hurricane event (not a “nor’easter”) resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or
  - Note: Hurricane events are defined by NOAA.
  - See <http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750>
- iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport.”
  - <https://w2.weather.gov/climate/index.php?wfo=okx>

CHECKED BY: ORZ

<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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CXUS51 KOKX 010910

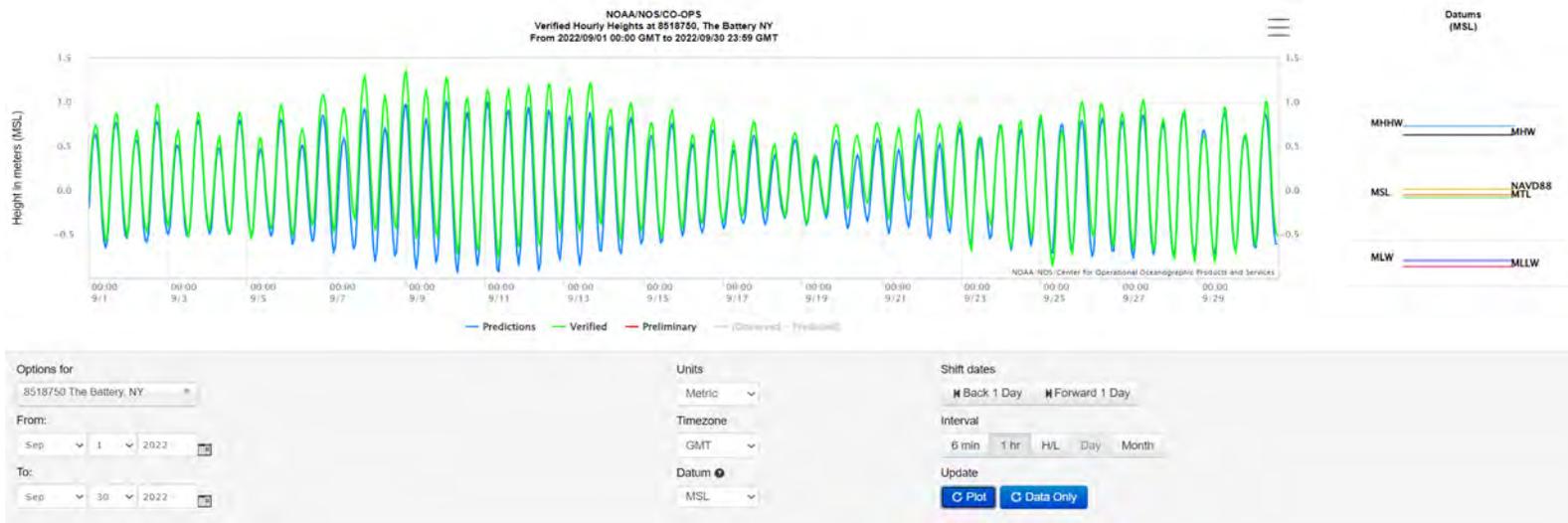
CF6EWR

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: SEPTEMBER  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:		:PCPN:		SNOW:		WIND		:SUNSHINE:		SKY		:PK WND						
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
								12Z		AVG MX		2MIN						
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	88	67	78	4	0	13	0.00	0.0	0	12.3	22	260	M	M	2		28	260
2	78	61	70	-4	0	5	0.00	0.0	0	7.9	15	30	M	M	3		20	30
3	81	63	72	-1	0	7	0.00	0.0	0	6.2	13	140	M	M	8		17	130
4	93	70	82	9	0	17	0.01	0.0	0	6.5	14	30	M	M	8	3	19	30
5	87	73	80	7	0	15	0.01	0.0	0	6.7	14	150	M	M	9		19	140
6	75	68	72	0	0	7	0.61	0.0	0	7.1	16	60	M	M	10	1	22	60
7	73	65	69	-3	0	4	0.01	0.0	0	11.6	16	30	M	M	9	1	21	20
8	80	64	72	0	0	7	0.00	0.0	0	7.5	16	20	M	M	5		21	360
9	82	62	72	0	0	7	0.00	0.0	0	6.6	13	20	M	M	2		18	40
10	87	61	74	3	0	9	0.00	0.0	0	4.1	12	150	M	M	5		12	150
11	75	69	72	1	0	7	0.35	0.0	0	4.4	8	240	M	M	10	1	8	240
12	85	68	77	6	0	12	0.53	0.0	0	5.2	12	160	M	M	9	13	16	280
13	85	68	77	7	0	12	0.35	0.0	0	7.6	23	240	M	M	7	13	28	240
14	83	61	72	2	0	7	0.00	0.0	0	9.9	22	300	M	M	2		26	270
15	75	62	69	-1	0	4	0.00	0.0	0	11.0	20	330	M	M	2		29	330
16	78	53	66	-3	0	1	0.00	0.0	0	6.6	16	300	M	M	5		19	300
17	76	64	70	1	0	5	0.00	0.0	0	7.4	14	20	M	M	7		16	150
18	85	63	74	6	0	9	0.00	0.0	0	11.5	22	240	M	M	5		34	270
19	88	67	78	10	0	13	0.08	0.0	0	10.1	36	260	M	M	6	38	43	260
20	81	67	74	6	0	9	0.00	0.0	0	10.4	20	300	M	M	4		28	290
21	83	61	72	5	0	7	0.00	0.0	0	7.3	17	230	M	M	4		26	240
22	78	56	67	0	0	2	0.34	0.0	0	13.0	30	320	M	M	6	138	36	340
23	64	50	57	-10	8	0	0.00	0.0	0	15.1	29	330	M	M	1		37	320
24	72	47	60	-6	5	0	0.00	0.0	0	7.4	12	250	M	M	3		17	320
25	76	58	67	1	0	2	1.44	0.0	0	7.2	14	250	M	M	9	13	20	260
26	75	58	67	2	0	2	0.00	0.0	0	9.5	24	240	M	M	5		31	240
27	69	53	61	-4	4	0	0.00	0.0	0	10.2	21	260	M	M	5		28	260
28	71	49	60	-4	5	0	0.00	0.0	0	11.0	17	350	M	M	4		25	330
29	68	50	59	-5	6	0	0.00	0.0	0	11.6	21	20	M	M	5		26	20
30	62	50	56	-8	9	0	T	0.0	0	11.0	16	30	M	M	9		20	20
SM	2353	1828			37	183	3.73	0.0		263.9			M		169			
AV	78.4	60.9								8.8	FASTST		M	M	6		MAX(MPH)	
										MISC	---->	36	260				43	260

<https://w2.weather.gov/climate/index.php?wfo=okx>



<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>

**ATTACHMENT B.4  
Q4 2022 HYDRAULIC AND HYDRODYNAMIC  
EVALUATION SUMMARIES**

**SA-7 Sediment Remedy**

Long-Term Monitoring Program  
Hydrologic Data Review

<u>Monitoring Period:</u> <b>October    2022</b>	<i>Assessment Required?</i>
<p><u>Rainfall Event Data:</u> Max Rainfall (in): 1.77      Date: 10/4/2022 50-Year, 24-Hr event? NO</p>	NO
<p><u>Storm Surge Event Data:</u> Max Increase Above Predicted Normal Tidal Cycling (m): 0.711      Date: 10/3/2022      Time: 7:00 Exceeds event trigger criteria? YES  Max Tide Gauge Reading (m): 1.349      Date: 10/3/2022      Time: 19:00 Exceeds event trigger criteria? NO  10-year storm surge event defined as a hurricane? NO</p> <p>(1) While on October 3, 2022 the criteria for the storm surge increase above the predicted normal tide cycle was exceeded, the 10-year storm surge did not meet the definition of a hurricane. Therefore, further assessment was not warranted.</p>	NO
<p><u>Wind Event Data:</u> Max Wind (mph): 31      Date: 10/2/2022 Exceeds trigger criteria? NO Wind direction over 6-hr period: NE      OK</p> <p>(2) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria.</p>	NO
<p><b><u>CRITERIA FROM LTMP:</u></b></p> <p>“Post-High Energy Event Monitoring Activities” will take place promptly following High Energy Events. The Consent Order defines “High Energy Events” as follows:</p> <p>i. “A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport;</p> <ul style="list-style-type: none"><li>• See <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li></ul> <p>ii. A 10-year storm surge event defined as a hurricane event (not a “nor’easter”) resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or</p> <ul style="list-style-type: none"><li>• Note: Hurricane events are defined by NOAA.</li><li>• See <a href="http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750">http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750</a></li></ul> <p>iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport.”</p> <ul style="list-style-type: none"><li>• <a href="https://w2.weather.gov/climate/index.php?wfo=okx">https://w2.weather.gov/climate/index.php?wfo=okx</a></li></ul> <p style="text-align: right;">CHECKED BY: <u>ORZ</u></p>	

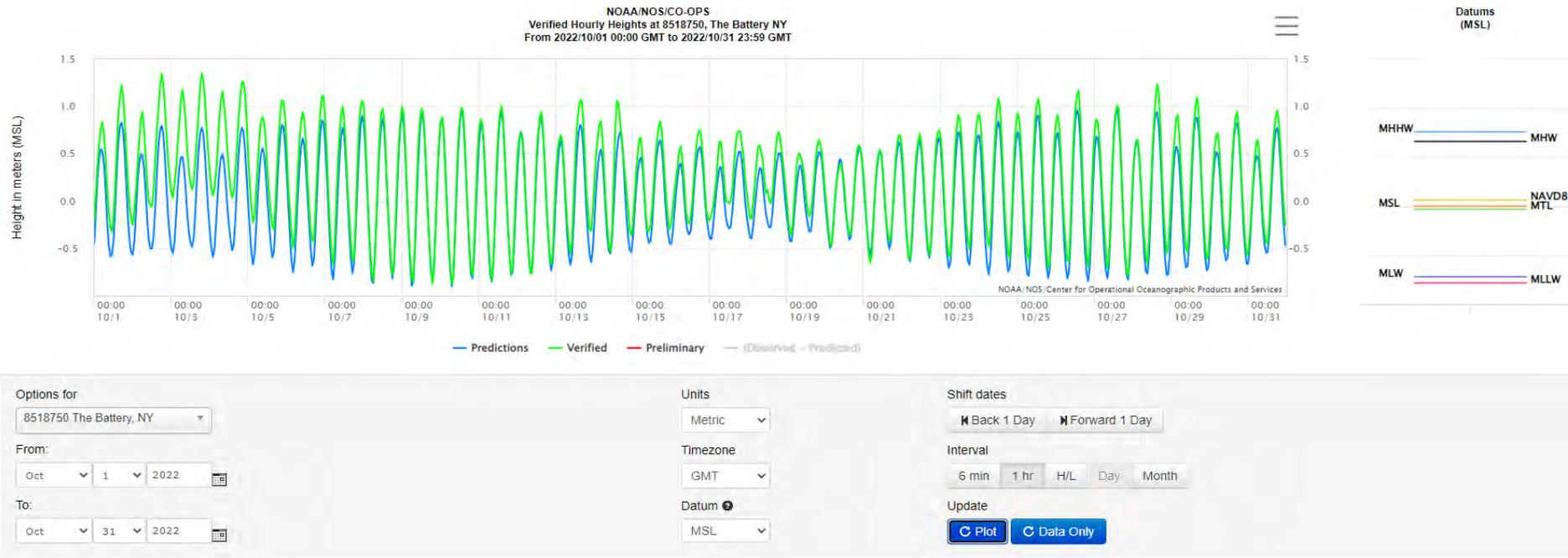
<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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 CXUS51 KOKX 010910  
 CF6EWR  
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: OCTOBER  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:					:PCPN:			SNOW:	WIND			:SUNSHINE:		SKY		:PK WND		
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18
								12Z	AVG MX 2MIN									
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	58	50	54	-9	11	0	0.62	0.0	0	14.6	25	30	M	M	10	1	33	30
2	60	49	55	-8	10	0	0.50	0.0	0	19.1	30	30	M	M	10	1	39	30
3	52	46	49	-13	16	0	0.60	0.0	0	17.2	25	30	M	M	10	1	35	30
4	51	43	47	-15	18	0	1.77	0.0	0	16.2	22	360	M	M	10	13	27	360
5	59	51	55	-7	10	0	0.31	0.0	0	11.3	22	10	M	M	9	1	24	10
6	75	49	62	1	3	0	0.00	0.0	0	4.0	10	250	M	M	5		14	260
7	76	51	64	3	1	0	T	0.0	0	9.7	17	270	M	M	5		23	270
8	58	43	51	-9	14	0	0.02	0.0	0	10.8	23	340	M	M	5		27	340
9	61	37	49	-11	16	0	0.00	0.0	0	9.8	22	240	M	M	1		31	250
10	67	42	55	-5	10	0	0.00	0.0	0	7.8	18	240	M	M	4		25	240
11	71	43	57	-2	8	0	0.00	0.0	0	5.3	16	250	M	M	1		19	250
12	68	47	58	-1	7	0	0.00	0.0	0	6.4	16	190	M	M	5		23	140
13	67	51	59	1	6	0	0.38	0.0	0	8.6	22	340	M	M	9	1	26	330
14	70	50	60	2	5	0	0.01	0.0	0	8.1	15	290	M	M	5	1	26	290
15	71	47	59	1	6	0	0.00	0.0	0	6.6	17	130	M	M	2		21	140
16	69	51	60	3	5	0	0.00	0.0	0	4.7	14	250	M	M	6		18	240
17	69	54	62	5	3	0	0.29	0.0	0	6.8	18	250	M	M	9	18	28	280
18	60	45	53	-4	12	0	0.00	0.0	0	10.0	20	280	M	M	5		26	280
19	57	37	47	-9	18	0	0.00	0.0	0	10.6	22	230	M	M	4		29	260
20	61	40	51	-5	14	0	0.00	0.0	0	10.9	24	230	M	M	2	8	31	250
21	67	41	54	-2	11	0	0.00	0.0	0	3.5	13	160	M	M	1		16	160
22	69	42	56	1	9	0	0.00	0.0	0	3.2	13	140	M	M	3		18	120
23	63	52	58	3	7	0	0.11	0.0	0	10.4	17	30	M	M	9		23	30
24	62	55	59	5	6	0	1.20	0.0	0	10.3	17	30	M	M	10	12	20	30
25	74	62	68	14	0	3	0.06	0.0	0	4.1	9	110	M	M	10	12	12	30
26	75	59	67	13	0	2	T	0.0	0	5.1	17	230	M	M	8	128	23	230
27	68	50	59	6	6	0	0.00	0.0	0	12.7	25	330	M	M	1		31	340
28	60	44	52	-1	13	0	0.00	0.0	0	9.8	21	10	M	M	5		24	360
29	62	41	52	-1	13	0	0.00	0.0	0	5.5	14	10	M	M	2		15	360
30	65	37	51	-1	14	0	0.00	0.0	0	3.1	8	270	M	M	5		15	290
31	67	47	57	5	8	0	0.10	0.0	0	5.7	16	240	M	M	8	1	19	230
SM	2012	1456			280	5	5.97	0.0		271.9			M		179			
AV	64.9	47.0								8.8	FASTST		M	M	6		MAX(MPH)	
								MISC	---->	30	30						39	30

<https://w2.weather.gov/climate/index.php?wfo=okx>



<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>

**SA-7 Sediment Remedy**

Long-Term Monitoring Program  
Hydrologic Data Review

<u>Monitoring Period:</u> <b>November 2022</b>	<i>Assessment Required?</i>
<p><u>Rainfall Event Data:</u></p> <p>Max Rainfall (in): 0.77      Date: 11/11/2022</p> <p>50-Year, 24-Hr event? NO</p>	NO
<p><u>Storm Surge Event Data:</u></p> <p>Max Increase Above Predicted Normal Tidal Cycling (m): 0.69      Date: 11/16/2022      Time: 9:00</p> <p>Exceeds event trigger criteria? YES</p> <p>Max Tide Gauge Reading (m): 1.206      Date: 11/25/2022      Time: 14:00</p> <p>Exceeds event trigger criteria? NO</p> <p>10-year storm surge event defined as a hurricane? NO</p> <p>(1) While on November 16, 2022 the criteria for the storm surge increase above the predicted normal tide cycle was exceeded, the 10-year storm surge did not meet the definition of a hurricane. Therefore, further assessment was not warranted.</p>	NO
<p><u>Wind Event Data:</u></p> <p>Max Wind (mph): 29      Date: 11/30/2022</p> <p>Exceeds trigger criteria? NO</p> <p>Wind direction over 6-hr period: SW      OK</p> <p>(2) The averaged wind speed for the 6-hour period during which the maximum wind speed was recorded does not exceed the threshold criteria.</p>	NO

**CRITERIA FROM LTMP:**

“Post-High Energy Event Monitoring Activities” will take place promptly following High Energy Events. The Consent Order defines “High Energy Events” as follows:

i. “A 50-year rainfall event defined by the National Weather Service as a 24-hour period of rainfall exceeding the maximum 50-year/24-hour accumulation (i.e., 7.2 inches of rainfall over a 24-hour period), as recorded at Newark Airport;

- See <https://w2.weather.gov/climate/index.php?wfo=okx>

ii. A 10-year storm surge event defined as a hurricane event (not a “nor’easter”) resulting in an increase in ocean level of either 0.64 meters above normal tidal cycling at the Battery Park tide gauge or 1.40 meters above mean sea level (MSL); or

- Note: Hurricane events are defined by NOAA.
- See <http://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750>

iii. A wind event achieving 34 to 40 knots (39.13 to 46.03 mph), coming from the south through the west, averaged over 6 hours, as recorded at Newark Airport.”

- <https://w2.weather.gov/climate/index.php?wfo=okx>

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<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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 CXUS51 KOKX 011010  
 CF6EWR  
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: NOVEMBER  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:					:PCPN:			SNOW:			WIND			:SUNSHINE:			SKY		:PK WND	
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18		
				DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR		
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR		
1	72	60	66	14	0	1	0.07	0.0	0	8.1	15	290	M	M	7	1	19	290		
2	73	53	63	12	2	0	0.00	0.0	0	5.6	18	30	M	M	2		22	10		
3	69	47	58	7	7	0	0.00	0.0	0	3.7	10	110	M	M	1		14	150		
4	73	49	61	10	4	0	0.00	0.0	0	4.3	15	230	M	M	6	18	21	200		
5	79	61	70	20	0	5	0.00	0.0	0	7.6	20	180	M	M	8		26	200		
6	77	66	72	22	0	7	T	0.0	0	7.6	21	200	M	M	8		26	200		
7	81	56	69	19	0	4	0.01	0.0	0	14.0	25	340	M	M	4		31	330		
8	62	46	54	5	11	0	0.00	0.0	0	13.7	24	350	M	M	3		29	350		
9	55	38	47	-2	18	0	0.00	0.0	0	7.2	18	20	M	M	1		22	10		
10	70	42	56	7	9	0	0.00	0.0	0	5.2	15	240	M	M	3		17	250		
11	71	56	64	16	1	0	0.77	0.0	0	6.8	20	190	M	M	10	18	26	190		
12	74	62	68	20	0	3	0.04	0.0	0	11.5	26	280	M	M	7	1	35	270		
13	63	42	53	5	12	0	0.04	0.0	0	13.8	26	280	M	M	7		32	290		
14	48	35	42	-5	23	0	0.00	0.0	0	11.5	22	320	M	M	2		28	310		
15	47	33	40	-7	25	0	0.58	0.0	0	11.4	22	20	M	M	8	1	27	30		
16	53	40	47	0	18	0	0.24	0.0	0	14.4	25	280	M	M	8	1	31	270		
17	48	36	42	-4	23	0	0.00	0.0	0	14.6	29	270	M	M	6		36	280		
18	46	32	39	-7	26	0	T	T	0	13.7	26	230	M	M	4		36	250		
19	42	27	35	-11	30	0	0.00	0.0	0	11.0	24	230	M	M	1		31	230		
20	39	27	33	-13	32	0	0.00	0.0	0	14.7	30	290	M	M	3		41	300		
21	44	24	34	-11	31	0	0.00	0.0	0	10.6	21	220	M	M	2		28	230		
22	53	31	42	-3	23	0	0.00	0.0	0	8.5	14	240	M	M	2		21	260		
23	58	33	46	2	19	0	0.00	0.0	0	7.6	15	290	M	M	0		22	290		
24	57	32	45	1	20	0	0.00	0.0	0	4.5	12	200	M	M	4		15	200		
25	58	41	50	6	15	0	0.01	0.0	0	12.4	33	320	M	M	8	18	44	320		
26	60	42	51	7	14	0	0.00	0.0	0	10.9	26	300	M	M	3		36	300		
27	60	42	51	8	14	0	0.52	0.0	0	7.5	21	250	M	M	9	1	28	240		
28	56	42	49	6	16	0	T	0.0	0	14.6	24	330	M	M	4		37	330		
29	45	33	39	-4	26	0	0.00	0.0	0	4.4	12	340	M	M	6		15	330		
30	60	36	48	6	17	0	0.49	0.0	0	12.4	31	250	M	M	8	1	45	230		
SM	1793	1264			436	20	2.77	T		293.8				M		145				
AV	59.8	42.1								9.8	FASTST			M	M	5		MAX(MPH)		
								MISC	---->		33	320						45	230	

<https://w2.weather.gov/climate/index.php?wfo=okx>



<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>



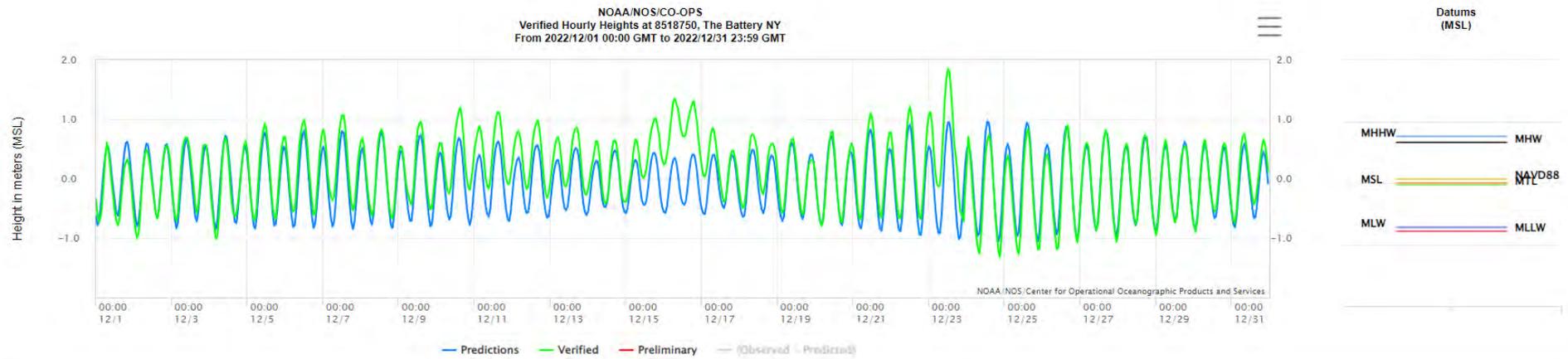
<https://w2.weather.gov/climate/getclimate.php?wfo=okx>

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 CXUS51 KOKX 011010  
 CF6EWR  
 PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

STATION: NEWARK NJ  
 MONTH: DECEMBER  
 YEAR: 2022  
 LATITUDE: 40 42 N  
 LONGITUDE: 74 10 W

TEMPERATURE IN F:					:PCPN:			SNOW:	WIND			:SUNSHINE:			SKY	:PK WND			
1	2	3	4	5	6A	6B	7	8	9	10	11	12	13	14	15	16	17	18	
								12Z	AVG MX 2MIN										
DY	MAX	MIN	AVG	DEP	HDD	CDD	WTR	SNW	DPTH	SPD	SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR	
1	45	34	40	-2	25	0	0.00	0.0	0	14.3	25	280	M	M	3		33	270	
2	46	29	38	-4	27	0	0.00	0.0	0	4.7	10	180	M	M	3		20	280	
3	59	44	52	11	13	0	0.39	0.0	0	12.1	28	220	M	M	8	1	38	220	
4	48	33	41	0	24	0	0.00	0.0	0	8.1	18	320	M	M	3		33	310	
5	49	29	39	-2	26	0	0.00	0.0	0	3.9	10	190	M	M	4		13	200	
6	58	34	46	5	19	0	0.64	0.0	0	6.5	13	150	M	M	9	1	18	140	
7	60	54	57	17	8	0	0.21	0.0	0	7.1	15	230	M	M	10	1	19	240	
8	55	43	49	9	16	0	0.00	0.0	0	11.9	21	330	M	M	7		28	310	
9	48	33	41	1	24	0	0.00	0.0	0	12.1	18	10	M	M	1		25	10	
10	42	29	36	-4	29	0	T	T	0	8.7	17	20	M	M	4		20	30	
11	41	34	38	-1	27	0	0.30	0.1	0	10.0	16	10	M	M	10	14	20	10	
12	39	29	34	-5	31	0	T	T	T	12.6	20	360	M	M	6	1	23	340	
13	43	24	34	-5	31	0	0.00	0.0	0	9.0	16	360	M	M	1		20	340	
14	42	30	36	-2	29	0	0.00	0.0	0	12.1	23	330	M	M	4		29	320	
15	44	32	38	0	27	0	0.68	0.0	0	12.0	24	50	M	M	10	1	37	40	
16	46	40	43	5	22	0	0.51	0.0	0	15.7	24	30	M	M	10	1	34	30	
17	47	36	42	4	23	0	0.00	0.0	0	12.3	22	280	M	M	5		32	280	
18	43	31	37	0	28	0	0.00	0.0	0	11.2	21	290	M	M	5		27	260	
19	42	30	36	-1	29	0	0.00	0.0	0	13.0	24	300	M	M	3		34	270	
20	42	30	36	-1	29	0	0.00	0.0	0	10.2	18	320	M	M	3		23	310	
21	43	24	34	-3	31	0	0.00	0.0	0	4.1	9	20	M	M	5		14	350	
22	52	29	41	5	24	0	0.28	0.0	0	9.7	17	60	M	M	9	1	23	50	
23	58	9	34	-2	31	0	1.26	T	0	21.7	43	270	M	M	8	13	53	240	
24	17	8	13	-23	52	0	0.00	0.0	0	20.2	32	260	M	M	3		41	270	
25	30	14	22	-14	43	0	0.00	0.0	0	15.8	23	240	M	M	3		30	240	
26	31	18	25	-11	40	0	0.00	0.0	0	11.3	22	270	M	M	4		28	270	
27	36	28	32	-3	33	0	0.00	0.0	0	9.3	14	270	M	M	9		20	260	
28	49	28	39	4	26	0	0.00	0.0	0	8.1	20	230	M	M	7		26	230	
29	52	32	42	7	23	0	0.00	0.0	0	6.3	14	230	M	M	6		17	230	
30	62	39	51	16	14	0	0.00	0.0	0	4.4	12	210	M	M	6		14	240	
31	54	45	50	16	15	0	0.26	0.0	0	1.8	10	240	M	M	10	128	13	240	
SM	1423	952			819	0	4.53	0.1		320.2			M		179				
AV	45.9	30.7								10.3	FASTST	M	M	6		MAX(MPH)			
								MISC	----	43	270					53	240		

<https://w2.weather.gov/climate/index.php?wfo=okx>



Options for: 8518750 The Battery, NY

From: Dec 1 2022

To: Dec 31 2022

Units: Metric

Timezone: GMT

Datum: MSL

Shift dates: Back 1 Day Forward 1 Day

Interval: 6 min 1 hr H/L Day Month

Update: Plot Data Only

<https://tidesandcurrents.noaa.gov/waterlevels.html?id=8518750&units=metric&bdate=20210701&edate=20210801&timezone=GMT&datum=MSL&interval=h&action=>

**ATTACHMENT C  
MARCH 2022 BEP REPAIRS PERFORMED BY  
AERCON LTD AND OVERSEEN BY WOOD PLC**



EXPOSED GEOFABRIC TO BE COVERED WITH STONE ASTM #1

EXPOSED GEOFABRIC TO BE COVERED WITH STONE ASTM #1

EXPOSED GEOFABRIC TO BE COVERED WITH STONE ASTM #1

MISSING ARMOR STONE ALONG OUTFALL APRON 1.5" STONE AND GABION STONE (20 LF)(3 CUBIC YARDS)

MISSING ARMOR STONE ALONG OUTFALL APRON 1.5" STONE AND GABION STONE (15 LF)(2 CUBIC YARDS)

MISSING ARMOR STONE ALONG OUTFALL APRON 1.5" STONE AND GABION STONE (20 LF) (3 CUBIC YARDS)

SCOURING PRESENT ALONG THE WESTERN EDGE OF OUTFALL A. ADD ARMOR STONE 1.5" STONE (8 LF)(0.5 CUBIC YARDS)

EXPOSED GEOFABRIC TO BE TRIMMED

SHORELINE STABILIZATION ASTM #1 (3.5") (60 LF) (22 CUBIC YARDS)

AREA OF EROSION (APPROX. 75% OF 1,750 SF) (27 CUBIC YARDS)

ERODED AREA APPROXIMATELY 4 FT DEEP ASTM #57 (0.75") (20 SF)

1. Yellow - 6-12" stone armoring was placed
2. Magenta - mix of 6-12" stone and 2.5" stone armoring
3. Orange - 2.5" stone place along shoreline stabilization berm
3. exposed fabric covered with 2.5" stone



**PROPOSED PHASE 1 REPAIRS TO BEP**

HONEYWELL SA-7  
BENEFICIAL ENVIRONMENTAL PROJECT  
CITY OF JERSEY CITY  
HUDSON COUNTY, NEW JERSEY

**RAMBOLL**

PREPARED BY: JS	DATE: 03/02/2022	<b>DRAWING</b>  <b>1</b>
DRAFTED BY: MSB	SCALE: AS SHOWN	
APPROVED BY: JS/JMN	PROJECT: 1690009685	

MBLE 3/2/22 F:\1690009685\_DRAWINGS-COVEL BEP REPAIR - BEP REPAIR >



\*41841374\*

DISPATCH: 258555  
 CUSTOMER: 85273 Arecon Ltd  
 SALES ORDER: Q800850  
 PURCHASE ORDER:  
 TRUCK: 5888  
 HAULER: 232099 SEASONS ENTERPRISE, LLC  
 DELIVERY METHOD: Delivered ZONE CODE 16006-1  
 ITEM CODE: 1036006  
 DESCRIPTION: CORE STONE

*Drop Point*

DELIVERY ADDRESS:  
 JERSEY CITY, 80 KELLOG STREET/ HONEYWELL  
 8X 12" CORE 9AM -2PM

INSTRUCTIONS:  
 DINO 609-915-7388  
 DINO 609-915-7388

OFF JOB TIME <input type="text"/>	GROSS	79,680 lb	39.84 UT
	TARE	29,660 lb	14.83 UT
	NET	50,020 lb	25.01 UT

ON JOB TIME <input type="text"/>	# OF LOADS	US TONS TODAY	METRIC TONS TODAY
	1	25.01	22.69

TICKET: 41841374 26.40  
660.26  
 DATE: 3/8/2022 216.34  
 TIME: 09:21 58.07  
934.67

DRIVER SIGNATURE

CUSTOMER SIGNATURE

LOCATION: 00418 Mt. Hope Agg  
 SOURCE: 8-32R FACILITY ID: 133631  
 SCALE: 4 WEIGHMASTER: Chris Dillon

TILCON NEW YORK, INC. ISSUES THIS RECEIPT SOLELY FOR THE PURPOSE OF ESTABLISHING WEIGHT. OPERATION OF THIS VEHICLE IN EXCESS OF ALLOWABLE LEGAL PERMITS MAY RESULT IN DELAY OF THE VEHICLE AND/OR ARREST OF ITS OPERATOR. WE ARE NOT RESPONSIBLE FOR DAMAGE WHEN



\*41841340\*

DISPATCH: 258554  
 CUSTOMER: 85273 Arecon Ltd  
 SALES ORDER: Q800850  
 PURCHASE ORDER:  
 TRUCK: 3629  
 HAULER: 222604 OMAR OLARTE  
 DELIVERY METHOD: Delivered ZONE CODE 16006-1  
 ITEM CODE: 1040003  
 DESCRIPTION: AASHTO #1/ ASTM #1

*Oliver Point*

DELIVERY ADDRESS:  
 JERSEY CITY, 80 KELLOG STREET/HONEYWELL  
 830 AM -2PM

INSTRUCTIONS:  
 DINO 609-915-7388  
 DINO 609-915-7388

OFF JOB TIME <input type="text"/>	GROSS	79,260 lb	39.63 UT
	TARE	26,200 lb	13.10 UT
	NET	53,060 lb	26.53 UT

ON JOB TIME <input type="text"/>	# OF LOADS	US TONS TODAY	METRIC TONS TODAY
	2	51.77	46.97

TICKET: 41841340 22.48  
 596.39  
 DATE: 3/8/2022 229.48  
 TIME: 08:16 54.71  
 880.58

DRIVER SIGNATURE

CUSTOMER SIGNATURE

LOCATION: 00418 Mt. Hope Agg  
 SOURCE: 8-32R FACILITY ID: 133631  
 SCALE: 4 WEIGHMASTER: Chris Dillon

TILCON NEW YORK, INC. ISSUES THIS RECEIPT SOLELY FOR THE PURPOSE OF  
 ESTABLISHING WEIGHT. OPERATION OF THIS VEHICLE IN EXCESS OF  
 ALLOWABLE LEGAL PERMITS MAY RESULT IN DELAY OF THE VEHICLE AND/OR  
 ARREST OF ITS OPERATOR. WE ARE NOT RESPONSIBLE FOR DAMAGE WHEN



\*41841336\*

DISPATCH: 258554  
 CUSTOMER: 85273 Arecon Ltd  
 SALES ORDER: Q800850  
 PURCHASE ORDER:  
 TRUCK: 2410  
 HAULER: 240024 TJA ENTERPRISES, LLC  
 DELIVERY METHOD: Delivered ZONE CODE 16006-1  
 ITEM CODE: 1040003  
 DESCRIPTION: AASHTO #1/ ASTM #1

*Oliver Point*

DELIVERY ADDRESS:  
 JERSEY CITY, 80 KELLOG STREET/HONEYWELL  
 830 AM -2PM

INSTRUCTIONS:  
 DINO 609-915-7388  
 DINO 609-915-7388

OFF JOB TIME <input type="text"/>	GROSS	76,060 lb	38.03 UT
	TARE	25,580 lb	12.79 UT
	NET	50,480 lb	25.24 UT

ON JOB TIME <input type="text"/>	# OF LOADS	US TONS TODAY	METRIC TONS TODAY
	1	25.24	22.90

TICKET: 41841336 22.48  
 567.40  
 DATE: 3/8/2022 218.33  
 TIME: 08:09 52.05  
 837.78

DRIVER SIGNATURE

CUSTOMER SIGNATURE

LOCATION: 00418 Mt. Hope Agg  
 SOURCE: 8-32R FACILITY ID: 133631  
 SCALE: 4 WEIGHMASTER: Chris Dillon

TILCON NEW YORK, INC. ISSUES THIS RECEIPT SOLELY FOR THE PURPOSE OF  
 ESTABLISHING WEIGHT. OPERATION OF THIS VEHICLE IN EXCESS OF  
 ALLOWABLE LEGAL PERMITS MAY RESULT IN DELAY OF THE VEHICLE AND/OR  
 ARREST OF ITS OPERATOR. WE ARE NOT RESPONSIBLE FOR DAMAGE WHEN