RAMBOLL

ENVIRONMENT
& HEALTH

MEMORANDUM

Date: **August 18, 2025**

To: **George Pfeiffer, Honeywell**
Eric Christodoulatos, Honeywell

From: **Jose Sananes, P.E., Ramboll Americas Engineering Solutions**
Bart Bancewicz, Ramboll Americas Engineering Solutions

Subject: **SA-7 Sediment Remedy Long-Term Monitoring**
Summary of Year 11 Monitoring & Proposed Year 12 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.

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 Americas Engineering Solutions, Inc. (Ramboll) during Year 11 of the LTMP and the monitoring activities proposed for Year 12.

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[1]

[1] High Energy Events are defined by the Consent Order as summarized on Tables 1 and 2

(note that no high energy events were identified during the first five years of post-construction monitoring or in Years 6, 7, 9, 10, and 11).[2]

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 11 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 through 11.[3]

The specific scope of inspections and monitoring conducted in Year 11 was 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 11.[4] The inspections were performed at low tide on May 6, September 19, and October 17, 2024[5]. The results of these inspections were documented in summary logs (see **Attachment A**). Inspection of the Cap Area 16[6] long-term monitoring plate location determined that the long-term monitoring plate was not visible, confirming that the plate has remained buried and no observable loss of cap material has occurred. In fact, some deposition of sediment (up to 2.6 inches) was observed over Cap Area 16.

[2] A high energy event occurred on September 1, 2021 (Year 8) caused by the remnants of hurricane Ida.

[3] The Year 6, 7, 8, 9, and 10 inspections and monitoring activities were documented in memoranda dated January 30, 2020; February 26, 2021; May 10, 2022; February 20, 2023; and July 1, 2024, respectively.

[4] Cap Area 22 was not fully exposed at the time of inspection on May 6, September 19, and October 17, 2024 (i.e., low tide was not low enough to fully expose the cap surface).

[5] Dr. Henry Bokuniewicz and Ms. Alicia Alcorn participated in the October 17, 2024 inspection.

[6] The location of the long-term monitoring plate for Cap Area 22 was submerged at the time of inspections and, thus, could not be inspected.

As required by the LTMP, Ramboll monitored hydraulic and hydrodynamic data to identify high energy events which would trigger additional assessment. The results of hydraulic and hydrodynamic monitoring performed during the first (January through March), second (April through June), third (July through September), and fourth (October through December) quarters of 2024 are attached (**Attachment B**). These monitoring data indicate that no high energy events meeting the defined criteria occurred during these monitoring periods.

Consistent with Years 6, 7, 8, 9, and 10, only hydraulic and hydrodynamic monitoring and visual inspections were considered necessary to evaluate the integrity of Cap Areas 16 and 22 in Year 11 given the following factors:

1. The results of ten 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 survey of the entire SA-7 sediment remedy area will be conducted in 2028, (i.e., 15 years after completion of the sediment remedy in 2013). If a second high-energy event does not occur before 2038 (i.e., 25 years after completion of the sediment remedy), bathymetric surveys will also be conducted in 2033 and 2038, (i.e., 20 and 25 years after completion of the sediment remedy). These surveys will include Cap Areas 16 and 22.

PROPOSED ACTIVITIES FOR YEAR 12

Repairs and enhancements to limited portions of the BEP area to address erosional and vegetation damage caused by the remnants of hurricane Ida, initially planned for 2024, will be completed in 2025. The repairs will consist of (a) placing geocells to reinforce the easternmost area of the BEP where surface flow from Kellogg Street currently discharges, (b) placing sandy fill material and planting additional plugs in select low marsh and high marsh areas and potentially fowl exclusion measures, and (c) installing a 1-foot-high stone sill at the edge of the planting zone in the easternmost enhancement area of the BEP. Permit applications were submitted to the New Jersey Department of Environmental Protection (NJDEP) Division of Land Resource Protection (DLRP) and the US Army Corps of Engineers (USACE) on February 1, 2024. On June 12, 2024, NJDEP DLRP authorized the proposed enhancements under a Coastal Zone Management General Permit 24. Similarly, on June 20, 2024, USACE approved the proposed work under a Nationwide General Permit 54.

Consistent with the requirements of the LTMP, in Year 12 (2025), 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 12, 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 through 11, Ramboll will conduct a minimum of three visual inspections of the BEP Area in Year 12 (around May[7], July, and October 2025) 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 12 inspection and monitoring activities.

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

[7] Spring inspection took place on April 28, 2025.

TABLES

Table 1: Summary of Long-Term Monitoring of the Capped Areas

Monitoring Elements for Capped Areas	YEAR							LTMP Section Reference
	1	2	5	6 to 15	20	25	HEV	
Hydraulic and Hydrodynamic Evaluation								
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

HEV: Following all High Energy Events

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.

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.

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)

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.

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.

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.

Table 2: Summary of Long-Term Monitoring of the MNR Areas

Monitoring Elements for MNR Areas	YEAR							LTMP Section Reference
	1	2	5	6 to 15	20	25	HEV	
Hydraulic and Hydrodynamic Evaluation								
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

HEV: Following all High Energy Events

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.

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.

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

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.

ATTACHMENT A
YEAR 11 INSPECTION LOGS

ATTACHMENT A.1
MAY 6, 2024 INSPECTION LOG

SITE INSPECTION LOG

PROJECT NAME:	SA-7 Long-Term Monitoring Year 11	INSPECTION DATE:	May 6, 2024
		WEATHER	SNOWY ☐ RAINY ☐ OVERCAST ☐
PROJECT NUMBER:	1690025609_Conv	CONDITIONS:	PARTLY CLOUDY ☐ SUNNY ☐
PROJECT LOCATION:	SA-7 Droyers Cove BEP	TEMPERATURE (ºF):	63ºF (High 75°F)
	City of Jersey City, Hudson County, NJ	PREVAILING WIND:	0 - 2 mph (E)
INSPECTOR NAME:	Bart Bancewicz/Miles Trumbull	INSPECTOR	
INSPECTOR TITLE:	Consultant 3/Staff Scientist	SIGNATURE(s):	

The inspection was conducted on May 6, 2024 around the predicted low tide at 13:38, when Cap Area 16 and 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. The observations described in the following tables are compared to those made in the spring inspection of May 2023, unless otherwise noted.

TABLE 1. SEDIMENT CAP AREA INSPECTION LOG

CAP AREA	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
16	• Long-term monitoring plate was not observed (i.e., plate remains buried). • Depth to sediment surface measurements taken at 4 of the 12 reference posts installed on May 25, 2022 indicate, on average, no change in sedimentation throughout the cap area (with losses of 0.5 inch in some areas and gains of up to 0.6 inch in others) since the May 2022 baseline measurements[1].	1 to 3	• None
22	• Cap Area was partially exposed at low tide. • The long-term monitoring plate was not accessible. • Sub-aquatic vegetation was visible across portions of the cap area.	4 to 5, 12	• None

[1] Monitoring stake #4 was reset during the May 2023 inspection.

SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG

BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
SHORELINE STABILIZATION	• Shoreline stabilization appeared to be in good condition. • Several areas of exposed geofabric were observed between the BEP fill material and the shoreline stabilization berm west of Outfall A.	6 to 7	• Cut exposed geofabric or cover it with stone.
OUTFALL RIPRAP APRONS	• Outfall A: Appeared in good condition. Siltation within the rip rap apron ranged from approximately 1 to 3 inches. • 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. Outfall D: Appeared in good condition. The previously observed minor flow channel at the discharge of Outfall D continues to be partially filled with displaced stone.	8 to 12	• Monitor drift deposits and debris at the Outfalls; if persistent, arrange for removal.
PLANTING ZONE A – LOW MARSH	• The overall total vegetative coverage in the upper portion of the low marsh area was 70 to 80% (consistent with the May 2023 inspection). Similarly, total vegetative coverage observed within the low marsh zone remained at less than 5% elsewhere, consistent with prior inspections. Vegetation appeared to still be emerging from the dormant season and vegetative cover is expected to increase as the growing season progresses. o 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. o 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. o As noted in the November 2023 inspection, while no uprooted plants were observed in the low marsh plantings of the BEP, some roots of the low marsh plantings were partially exposed in the eastern side of the BEP near Outfall D. o 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 with only a small section of the geogrid exposed. o No invasive species were observed at the time of inspection. o The presence of algae resembling sea lettuce (*Ulva intestinalis*) was observed throughout the mudflats and coating rocks in the low marsh planting zone. While the extent of algae observed has increased since the November 2023 inspection, its coverage is similar to that observed during the May 2023 inspection. • 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 decrease of 0.5 inch (with losses of 1.8 inch in some areas and gains of up to 0.2 inches in others) since the May 2022 baseline measurements.	13 to 18	• Continue monitoring erosional/depositional rates using reference posts during inspections. • Monitor area of exposed roots of the low marsh planting area, primarily in the eastern side of the BEP, for signs of recovery. • 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.

SITE INSPECTION LOG (CONTINUED)

PLANTING ZONE B – HIGH MARSH	• Between Outfalls A and B, primarily in the area of GroSoxxs, total vegetative coverage ranged from 60 to 70% (greater than the 10 to 20% observed during the May 2023 inspection). Elsewhere total vegetative cover ranged from 75 to 85% (greater than the 50 to 60% observed during the May 2023 inspection). Vegetation appeared vibrant and healthy. At the time of the inspection, vegetation appeared to still be emerging from the dormant season, therefore, vegetative cover is expected to increase as the growing season progresses. o 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. o Consistent with the prior inspections, 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 ranged from 75 to 85% total cover. Limited signs of new colonization were observed. o As stated in the previous inspection reports, some of the planted plugs on the eastern most side of the BEP area remain partially uprooted and/or have exposed roots. o Very few high marsh plantings were observed between Outfalls A and B. However, vegetative cover remains high due to colonization from low marsh plantings. • Observations regarding the condition of the GroSoxx, geogrid, and anchors were consistent with those made since October 2019: o Empty GroSoxx sleeves were observed outside of the geogrid. o There were several areas where ripping/holes or loose geogrid were observed. o 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). o Significant shifting of GroSoxx underneath the geogrid occurred, and the third row of GroSoxx (from the bottom) appeared to be mostly missing. o 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. o 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 21. • 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: o 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. o Large cuts/openings were observed in several RockSoxx in the central portion of the BEP area, primarily between Outfalls A and B. • No invasive species were observed at the time of inspection. • Large amounts of debris (e.g., vegetative waste, plastic, trash, consumables) were 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 and the transition from upland to low marsh zone in the easternmost corner of the BEP (see Photo 14). • Depth to sediment surface measurements taken at 5 of the 12 reference posts installed on May 25, 2022 within the high marsh zone indicated, on average, no change in sedimentation (with losses of 1.2 inch in some areas and gains of up to 0.8 inch in others) since the May 2022 baseline.	14, 19 to 22	• Continue monitoring erosional/depositional rates using reference posts during inspections. • Monitor area where plugs were uprooted or lost, primarily in the eroded area on the eastern side of the BEP, for signs of recovery. • Repair or replace the damaged RockSoxx. • Consider planting plugs in the areas with exposed geogrid, where soil has filled in over previously installed GroSoxx to increase rate of colonization. • 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”.

SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG

BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
PLANTING ZONE C – UPLANDS TRANSITION AREA	• Total vegetative cover within the upland portion of the BEP was greater than 95% (greater than the 70 to 80% vegetative cover observed during the May 2023 inspection and consistent with the vegetative cover observed during the November 2023 inspection). GroSoxx, geogrid, and anchors, and the ¾-inch stone strip along the fence line appeared to be in good condition. • Invasive species cover throughout the upland zone ranged from 15 to 20%, which is a significant decrease from the 50 to 60% observed in the May 2023 inspection and lower than observed during the November 2023 inspection (40 to 50%). The highest density of invasive species was observed in the central and western areas of the BEP. The dominant species included common mugwort (*Artemisia vulgaris*), curly dock (*Rumex crispus*), Japanese siltgrass (*Microstegium vimineum*), and hairy vetch (*Vicia villosa*). Additional observed invasive species included beach rose (*Rosa rugosa*) and common groundsel (*Senecio vulgaris*). • With the decrease in invasive species cover, native species make up the predominant vegetative cover within the uplands area. The following notable native species were observed: o Switchgrass (*Panicum virgatum*) o Black locust (*Robinia pseudoacacia*) o Clasping coneflower (*Dracopis amplexicaulis*) o Sage brush (*Artemisia tridentata*)	23 to 28	• Continue to monitor non-native plant density.

SITE INSPECTION LOG (CONTINUED)

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

Photo 2: Central portion of Cap Area 16 (facing west). Note reference posts used to assess sediment surface changes.

SITE INSPECTION LOG (CONTINUED)

Photo 3: Western end of Cap Area 16 (facing east). Note the vibrant and healthy vegetation in the low marsh planting zone and presence of algae in the mudflat area.

Photo 4: Subaquatic vegetation observed within Cap Area 22 (facing west).

SITE INSPECTION LOG (CONTINUED)

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

Photo 6: Central portion of the BEP, between Outfalls A and B (facing southeast). Note presence of algae and early stages of growing season in the low marsh planting zone.

SITE INSPECTION LOG (CONTINUED)

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

Photo 8: Outfall A and surrounding armor stone (facing southwest). Note areas of exposed geogrid and GroSoxx in the high marsh planting zone.

SITE INSPECTION LOG (CONTINUED)

Photo 9: Outfall B and surrounding armor stone (facing southwest). Note the tidal drift deposits and debris in front of the outlet.

Photo 10: Armor stone along the western edge of the apron for Outfalls B and C (facing west). Note the algae present on and behind the apron stone.

SITE INSPECTION LOG (CONTINUED)

Photo 11: Outfall D discharge area where previously observed minor flow channel is overlain by displaced stone (facing east).

Photo 12: Area beyond the shoreline stabilization berm near Outfall D with Cap Area 22 partially exposed in the background (facing north).

SITE INSPECTION LOG (CONTINUED)

Photo 13: Low marsh zone in the eastern corner of the BEP near Outfall D (facing southeast). Note increased presence of tidal drift deposits and debris.

Photo 14: Transition from upland to low marsh zone in the easternmost corner of the BEP area (facing west). Note tidal drift deposits and debris covering the area.

SITE INSPECTION LOG (CONTINUED)

Photo 15: Low marsh planting zone on the eastern side of the BEP (facing west). Note presence of algae in portions of the low marsh planting zone.

Photo 16: Transition area between low marsh planting zone and high marsh planting zone within the eastern side of the BEP (facing southeast). Note the vibrant and healthy vegetation in upper portion of low marsh planting zone, and the presence of tidal drift deposits and debris within high marsh planting zone.

SITE INSPECTION LOG (CONTINUED)

Photo 17: Low marsh planting zone within eastern portion of the BEP (facing northeast). Note the vibrant and healthy vegetation as well as algae present throughout the low marsh area.

Photo 18: Low marsh planting zone between Outfalls A and B (facing west). Note the vibrant and healthy vegetation in the higher elevations of the low marsh area.

SITE INSPECTION LOG (CONTINUED)

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

Photo 20: Tidal drift deposits and debris within the low and high marsh zones west of Outfall A (facing southwest). Note the exposed geogrid and absence of GroSoxx at the bottom of the low marsh zone.

SITE INSPECTION LOG (CONTINUED)

Photo 21: Exposed geogrid over and around the Outfall C structure and within the high marsh planting zone (facing south).

Photo 22: Healthy vegetation in the upland transition and low marsh planting zones east of Outfall A (facing east). Note the presence of tidal drift deposits and debris within the high marsh planting zone.

SITE INSPECTION LOG (CONTINUED)

Photo 23: Healthy vegetation in the upland transition area between Outfalls A and B. Note presence of tidal drift deposits and debris covering the interface between the low and high marsh zones (facing southeast).

Photo 24: Healthy vegetation in the upland transitional area and interface between the low and high marsh west of Outfall A (facing southeast). Note the presence of tidal drift deposits and debris within the high marsh areas.

SITE INSPECTION LOG (CONTINUED)

Photo 25: Healthy and vibrant vegetation in the upland transition zone in the western portion of the BEP (facing west).

Photo 26: Invasive species beach rose located within the upland transitional planting zone of the BEP.

SITE INSPECTION LOG (CONTINUED)

Photo 27: Invasive species common groundsel within the upland transition planting zone of the BEP.

Photo 28: Native species sagebrush located within the upland transitional planting zone of the BEP.

ATTACHMENT A.2
SEPTEMBER 19, 2024 INSPECTION LOG

SITE INSPECTION LOG

PROJECT NAME:	SA-7 Long-Term Monitoring Year 11	INSPECTION DATE:	September 19, 2024
		WEATHER	SNOWY ☐ RAINY ☐ OVERCAST ☐
PROJECT NUMBER:	1690025609_Conv	CONDITIONS:	PARTLY CLOUDY ☒ SUNNY ☐
PROJECT LOCATION:	SA-7 Droyers Cove BEP	TEMPERATURE (ºF):	82ºF (High 86°F)
	City of Jersey City, Hudson County, NJ	PREVAILING WIND:	0 - 10 mph (NNE)
INSPECTOR NAME:	Jonathan Hayes/Chris Zuidema	INSPECTOR SIGNATURE(s):	
INSPECTOR TITLE:	Consultant 3/Senior Project Scientist		

The inspection was conducted on September 19, 2024 around the predicted low tide at 16:10, when Cap Area 16 and 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. The observations described in the following tables are compared to those made in the summer inspection of August 2023, unless otherwise noted.

TABLE 1. SEDIMENT CAP AREA INSPECTION LOG

CAP AREA	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
16	• Long-term monitoring plate was not observed (i.e., plate remains buried). • Depth to sediment surface measurements taken at 4 of the 12 reference posts installed on May 25, 2022 indicate, on average, no change in sedimentation throughout the cap area (with losses of 0.4 to 2.6 inches in some areas) since the May 2022 baseline measurements[1].	1 to 3	• None
22	• Cap Area was not exposed at low tide. • The long-term monitoring plate was not accessible. • Consistent with last summer's inspection, water in the Hackensack River was more turbid than during the spring inspection (May 2024); therefore, sub-aquatic vegetation was not visible.	4 to 5, 12	• None

[1] Monitoring stake #4 was reset during the May 2023 inspection.

SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG

BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
SHORELINE STABILIZATION	• Shoreline stabilization appeared to be in good condition. • Several areas of exposed geofabric were observed between the BEP fill material and the shoreline stabilization berm west of Outfall A.	6 to 7	• Cut exposed geofabric or cover it with stone.
OUTFALL RIPRAP APRONS	• Outfall A: Appeared in good condition. Siltation within the rip rap apron ranged from approximately 1 to 3 inches. • 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. Outfall D: Appeared in good condition. The previously observed minor flow channel at the discharge of Outfall D continues to be partially filled with displaced stone.	8 to 12	• None.
PLANTING ZONE A – LOW MARSH	• The overall total vegetative coverage in the upper portion of the low marsh area was greater than 95% (consistent with the August 2023 inspection). Similarly, total vegetative coverage observed within the low marsh zone remained at less than 5%. o 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. o Significant new growth was observed along the southern boundary of vegetation located in the upper portion of the low marsh. Vegetation appeared tall, healthy, and vibrant. o As noted in the November 2023 inspection, while no uprooted plants were observed in the low marsh plantings of the BEP, some roots of the low marsh plantings were partially exposed in the eastern side of the BEP near Outfall D. o 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 with only a small section of the geogrid exposed. o No invasive species were observed at the time of inspection. o Unlike the May 2024 inspection, algae resembling sea lettuce (*Ulva intestinalis*) was not observed during this inspection in the low marsh planting zone. The absence of algae is consistent with last summer's inspection. • 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 decrease of 1.6 inches (with losses of 2.6 to 0.1 inches in some areas) since the May 2022 baseline measurements.	13 to 20	• Continue monitoring erosional/depositional rates using reference posts during inspections. • Monitor area of exposed roots of the low marsh planting area, primarily in the eastern side of the BEP, for signs of recovery. • 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.

SITE INSPECTION LOG (CONTINUED)

PLANTING ZONE B – HIGH MARSH	• Between Outfalls A and B, primarily in the area of GroSoxx, total vegetative coverage ranged from 60 to 70% (an increase from the 50 to 60% observed during the August 2023 inspection). Elsewhere total vegetative cover ranged from 75 to 85% (consistent with the August 2023 inspection). Vegetation appeared vibrant and healthy. o 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. o Consistent with the prior inspections, 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 ranged from 75 to 85% total cover. Limited signs of new colonization were observed. o As stated in the previous inspection reports, some of the planted plugs on the eastern most side of the BEP area remain partially uprooted and/or have exposed roots. o Very few high marsh plantings were observed between Outfalls A and B. However, vegetative cover remains high due to colonization from low marsh plantings. • Observations regarding the condition of the GroSoxx, geogrid, and anchors were consistent with those made since October 2019: o Empty GroSoxx sleeves were observed outside of the geogrid. o There were several areas where ripping/holes or loose geogrid were observed. o 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). o Significant shifting of GroSoxx underneath the geogrid occurred, and the third row of GroSoxx (from the bottom) appeared to be mostly missing. o 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. o 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 21. • 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: o 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. o Large cuts/openings were observed in several RockSoxx in the central portion of the BEP area, primarily between Outfalls A and B. • No invasive species were observed at the time of inspection. • Large amounts of debris (e.g., vegetative waste, plastic, trash, consumables) were 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 and the transition from upland to low marsh zone in the easternmost corner of the BEP (see Photo 14). • Depth to sediment surface measurements taken at 5 of the 12 reference posts installed on May 25, 2022 within the high marsh zone indicated an average decrease in sediment of 0.9 inch (with losses of 4.2 inches in some areas and gains of up to 1.4 inch in others) since the May 2022 baseline.	14, 21 to 23	• Continue monitoring erosional/depositional rates using reference posts during inspections. • Monitor area where plugs were uprooted or lost, primarily in the eroded area on the eastern side of the BEP, for signs of recovery. • Repair or replace the damaged RockSoxx. • Consider planting plugs in the areas with exposed geogrid, where soil has filled in over previously installed GroSoxx to increase rate of colonization. • 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”.

SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG

BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
PLANTING ZONE C – UPLANDS TRANSITION AREA	• Total vegetative cover within the upland portion of the BEP was greater than 95% (consistent with vegetative cover observed during the August 2023 and May 2024 inspections). GroSoxx, geogrid, and anchors, and the ¾-inch stone strip along the fence line appeared to be in good condition. • Invasive species cover observed throughout the upland zone ranged from 10 to 15% (a significant decrease from the 35 to 45% observed during the August 2023 inspection) and lower than observed during the May 2024 inspection (15 to 20%). The highest density of invasive species was observed in the central and western areas of the BEP. The dominant species included common mugwort (*Artemisia vulgaris*), curly dock (*Rumex crispus*), hedge bedstraw (*Gallium mollugo*), creeping saltbrush (*Artiplex prostrata*), and slender leafy spurge (*Euphorbia virgata*). Additional observed invasive species included white mulberry (*Morus alba*) and purple crownvetch (*Securigera varia*). • Native species continue to make up the predominant vegetative cover within the uplands area. The following notable native species were observed: o Annual marsh elder (*Iva annual*) o Deertongue (*Dichanthelium clandestinum*) o Eastern poison ivy (*Toxicodendron radicans*) o False sunflower (*Heliopsis helianthoides*) o Hairy white oldfield aster (*Symphyotrichum pilosum*) o Hemp dogbane (*Apocynum cannabinum*) o Northern seaside goldenrod (*Solidago sempervirens*) o Saltmarsh cordgrass (*Spartina patens*) o Switchgrass (*Panicum virgatum*) o Tussock sedge (*Carex stricta*) o Virginia creeper (*Parthenocissus quinquefolia)* o Virginia wildrye (*Elymus virginicus*)	24 to 26	• Continue to monitor non-native plant density.

SITE INSPECTION LOG (CONTINUED)

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

Photo 2: Central portion of Cap Area 16 (facing west). Note reference posts used to assess sediment surface changes.

SITE INSPECTION LOG (CONTINUED)

Photo 3: Western end of Cap Area 16 (facing east). Note the vibrant and healthy vegetation in the low marsh planting zones.

Photo 4: Subaquatic vegetation not observed within Cap Area 22 (facing west).

SITE INSPECTION LOG (CONTINUED)

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

Photo 6: Central portion of the BEP, between Outfalls A and B (facing southeast). Note healthy and vibrant vegetation in the low marsh planting zone.

SITE INSPECTION LOG (CONTINUED)

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

Photo 8: Outfall A and surrounding armor stone (facing southwest). Note vibrant and healthy vegetation in the high marsh planting zones and areas of exposed geogrid and GroSoxx in the high marsh planting zone.

SITE INSPECTION LOG (CONTINUED)

Photo 9: Outfall B and surrounding armor stone (facing southwest). Note the exposed geogrid and tidal drift deposits near the front of the outlet.

Photo 10: Armor stone along the western edge of the apron for Outfalls B and C (facing southeast).

SITE INSPECTION LOG (CONTINUED)

Photo 11: Outfall D discharge area where previously observed minor flow channel is overlain by displaced stone (facing east).

Photo 12: Area beyond the shoreline stabilization berm near Outfall D with Cap Area 22 partially exposed in the background (facing north).

SITE INSPECTION LOG (CONTINUED)

Photo 13: Low marsh zone in the eastern corner of the BEP near Outfall D (facing southeast). Note stakes demarcating extent of proposed areas BEP enhancement activities.

Photo 14: Transition from upland to low marsh zone in the easternmost corner of the BEP area (facing west). Note tidal drift deposits and debris covering the area.

SITE INSPECTION LOG (CONTINUED)

Photo 15: Low marsh planting zone on the eastern side of the BEP (facing west). Note presence of vibrant and healthy vegetation in upper portion of low marsh planting zone.

Photo 16: Transition area between low marsh planting zone and high marsh planting zone within the eastern side of the BEP (facing southeast). Note the vibrant and healthy vegetation in upper portion of low marsh planting zone.

SITE INSPECTION LOG (CONTINUED)

Photo 17: Low marsh planting zone within eastern portion of the BEP (facing northeast). Note the tall, vibrant, and healthy vegetation.

Photo 18: Low marsh planting zone between Outfalls A and B (facing west). Note the vibrant and healthy vegetation in the higher elevations of the low marsh area.

SITE INSPECTION LOG (CONTINUED)

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

Photo 20: Vibrant and healthy vegetation within the low marsh zones west of Outfall A (facing southwest). Note the exposed geogrid and absence of GroSoxx at the bottom of the low marsh zone.

SITE INSPECTION LOG (CONTINUED)

Photo 21: Exposed geogrid over and around the Outfall C structure and within the high marsh planting zone (facing south).

Photo 22: Healthy vegetation in the upland transition, high marsh, and low marsh planting zones east of Outfall A (facing east).

SITE INSPECTION LOG (CONTINUED)

Photo 23: Healthy vegetation in the upland transition area east of Outfall A. Note presence of tidal drift and debris covering the interface between the low and high marsh zones (facing southeast).

Photo 24: Healthy and vibrant vegetation in the upland transition zone in the western portion of the BEP (facing west).

SITE INSPECTION LOG (CONTINUED)

Photo 25: Healthy and vibrant vegetation in the upland transition zone in the eastern portion of the BEP (facing east).

Photo 26: Native species northern seaside goldenrod located within the upland transitional planting zone of the BEP.

ATTACHMENT A.3
OCTOBER 17, 2024 INSPECTION LOG

SITE INSPECTION LOG

PROJECT NAME:	SA-7 Long-Term Monitoring Year 11	INSPECTION DATE:	October 17, 2024
		WEATHER	SNOWY ☐ RAINY ☐ OVERCAST ☐
PROJECT NUMBER:	1690025609_Conv	CONDITIONS:	PARTLY CLOUDY ☐ SUNNY ☒
PROJECT LOCATION:	SA-7 Droyers Cove BEP	TEMPERATURE (ºF):	61ºF (High 63°F)
	City of Jersey City, Hudson County, NJ	PREVAILING WIND:	13 - 18 mph (WNW)
INSPECTOR NAME:	Kori Golding/Chris Zuidema	INSPECTOR SIGNATURE(s):	
INSPECTOR TITLE:	Consultant/Senior Project Scientist		

The inspection was conducted on October 17, 2024 around the predicted low tide at 15:24, when Cap Area 16 and 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. The observations described in the following tables are compared to those made in the fall inspection of November 2023, unless otherwise noted.

TABLE 1. SEDIMENT CAP AREA INSPECTION LOG

CAP AREA	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
16	• Long-term monitoring plate was not observed (i.e., plate remains buried). • Depth to sediment surface measurements taken at 4 of the 12 reference posts installed on May 25, 2022 indicate an average gain of 0.9 inches of sediment throughout the cap area (with losses of 0.4 inches in some areas and gains of up to 2.6 inches in others) since the May 2022 baseline measurements[1].	1 to 3	• None
22	• Approximately 30 percent of the Cap Area was exposed at low tide. • The long-term monitoring plate was not accessible. • Approximately four (4) inches of sediment accumulated on the armoring of the cap. • Water in the Hackensack River was turbid, but sub-aquatic vegetation, snail shells, and mollusks were visible.	4 to 5	• None

[1] Monitoring stake #4 was reset during the May 2023 inspection.

SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG

BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
SHORELINE STABILIZATION	• Shoreline stabilization appeared to be in good condition. • Several areas of exposed geofabric were observed between the BEP fill material and the shoreline stabilization berm west of Outfall A.	6 to 7	• Cut exposed geofabric or cover it with stone.
OUTFALL RIPRAP APRONS	• Outfall A: Appeared in good condition. Siltation within the rip rap apron ranged from approximately 1 to 3 inches. • 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. • Outfall D: Appeared in good condition. The previously observed minor flow channel at the discharge of Outfall D continues to be partially filled with displaced stone.	8 to 11	• None.
PLANTING ZONE A – LOW MARSH	• The overall total vegetative coverage in the upper portion of the low marsh area was greater than 95% (consistent with the November 2023 inspection). Similarly, total vegetative coverage observed within the low marsh zone remained at less than 5% coverage. o 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. o Vegetation remains tall, healthy, and vibrant along the southern boundary of vegetation located in the upper portion of the low marsh. o As noted in the November 2023 inspection, while no uprooted plants were observed along the southern boundary of vegetation, some roots of the low marsh plantings were partially exposed in the eastern side of the BEP near Outfall D. o 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 with only a small section of the geogrid exposed. o No invasive species were observed at the time of inspection. o Consistent with the September 2024 inspection, algae resembling sea lettuce (*Ulva intestinalis*) was not observed during this inspection. • 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 of 0.6 inch (with losses of 1.1 inches in some areas and gains of up to 2.6 inches in others) since the May 2022 baseline measurements.	13 to 19	• Continue monitoring erosional/depositional rates using reference posts during inspections. • Monitor area of exposed roots of the low marsh planting area, primarily in the eastern side of the BEP, for signs of recovery. • 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.

SITE INSPECTION LOG (CONTINUED)

PLANTING ZONE B – HIGH MARSH	• Between Outfalls A and B, primarily in the area of GroSoxxs, total vegetative coverage ranged from 60 to 70% (greater than the 50 to 60% observed during the November 2023 inspection). Elsewhere, total vegetative cover ranged from 75 to 85% (consistent with the November 2023 inspection). Vegetation appeared vibrant and healthy. o 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. o Consistent with the prior inspections, 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 ranged from 75 to 85% total cover. Limited signs of new colonization were observed. o As stated in the previous inspection reports, some of the planted plugs on the eastern most side of the BEP area remain partially uprooted and/or have exposed roots. o Very few high marsh plantings were observed between Outfalls A and B. However, vegetative cover remains high due to colonization from low marsh plantings. • Observations regarding the condition of the GroSoxx, geogrid, and anchors were consistent with those made since October 2019: o Empty GroSoxx sleeves were observed outside of the geogrid. o There were several areas where ripping/holes or loose geogrid were observed. o 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). o Significant shifting of GroSoxx underneath the geogrid occurred, and the third row of GroSoxx (from the bottom) appeared to be mostly missing. o 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. o 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 21. • 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: o 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. o Large cuts/openings were observed in several RockSoxx in the central portion of the BEP area, primarily between Outfalls A and B. • No invasive species were observed at the time of inspection. • 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. • Depth to sediment surface measurements taken at 5 of the 12 reference posts installed on May 25, 2022 within the high marsh zone indicated an average increase of 1.0 inch of sediment (with losses of 0.2 inches in some areas and gains of up to 2.0 inches in others) since the May 2022 baseline.	20 to 23	• Continue monitoring erosional/depositional rates using reference posts during inspections. • Monitor area where plugs were uprooted or lost, primarily in the eroded area on the eastern side of the BEP, for signs of recovery. • Repair or replace the damaged RockSoxx. • Consider planting plugs in the areas with exposed geogrid, where soil has filled in over previously installed GroSoxx to increase rate of colonization. • 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”.

SITE INSPECTION LOG (CONTINUED)

TABLE 2. BENEFICIAL ENVIRONMENTAL PROJECT AREA INSPECTION LOG

BEP AREA ELEMENT	OBSERVATIONS	PHOTO(S) TAKEN	CORRECTIVE ACTION(S) REQUIRED
PLANTING ZONE C – UPLANDS TRANSITION AREA	• Total vegetative cover within the upland portion of the BEP was greater than 95% (consistent with vegetative cover observed during the November 2023 and September 2024 inspections). GroSoxx, geogrid, and anchors, and the ¾-inch stone strip along the fence line appeared to be in good condition. • Invasive species cover throughout the upland zone ranged from 10 to 15% (a significant decrease from the 40 to 50% observed during the November 2023 inspection) and consistent with the September 2024 inspection. The highest density of invasive species was observed in the central and western areas of the BEP. The dominant species included common mugwort (*Artemisia vulgaris*), curly dock (*Rumex crispus*), hedge bedstraw (*Gallium mollugo*), creeping saltbrush (*Artiplex prostrata*), and slender leafy spurge (*Euphorbia virgata*). Additional observed invasive species included white mulberry (*Morus alba*) and purple crownvetch (*Securigera varia*). • The following notable native species were observed: o Annual marsh elder (*Iva annual*) o Deertongue (*Dichanthelium clandestinum*) o Eastern poison ivy (*Toxicodendron radicans*) o False sunflower (*Heliopsis helianthoides*) o Hairy white oldfield aster (*Symphyotrichum pilosum*) o Hemp dogbane (*Apocynum cannabinum*) o Northern seaside goldenrod (*Solidago sempervirens*) o Saltmarsh cordgrass (*Spartina patens*) o Switchgrass (*Panicum virgatum*) o Tussock sedge (*Carex stricta*) o Virginia creeper (*Parthenocissus quinquefolia)* O Virginia wildrye (*Elymus virginicus*)	24 to 27	• Continue to monitor non-native plant density.

SITE INSPECTION LOG (CONTINUED)

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

Photo 2: Central portion of Cap Area 16 (facing west). Note reference posts used to assess sediment surface changes.

SITE INSPECTION LOG (CONTINUED)

Photo 3: Western end of Cap Area 16 (facing east). Note the vibrant and healthy vegetation in the low and high marsh planting zones.

Photo 4: Subaquatic vegetation and sediment accumulation observed within Cap Area 22 (facing northwest).

SITE INSPECTION LOG (CONTINUED)

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

Photo 6: Central portion of the BEP, between Outfalls A and B (facing east). Note vibrant and healthy vegetation in the low marsh planting zone.

SITE INSPECTION LOG (CONTINUED)

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

Photo 8: Outfall A and surrounding armor stone (facing southwest). Note vibrant and healthy vegetation in the low marsh and high marsh planting zones.

SITE INSPECTION LOG (CONTINUED)

Photo 9: Outfall B and surrounding armor stone (facing south).

Photo 10: Armor stone along the western edge of the apron for Outfalls B and C (facing west). Note the siltation present on the apron stone.

SITE INSPECTION LOG (CONTINUED)

Photo 11: Outfall D discharge area where previously observed minor flow channel is overlain by displaced stone (facing east).

Photo 12: Cap Area 22 partially exposed during low tide (facing north). Note sediment accumulation on armoring.

SITE INSPECTION LOG (CONTINUED)

Photo 13: Low marsh zone in the eastern corner of the BEP near Outfall D (facing southeast). Note vibrant and healthy vegetation throughout the low marsh planting zone.

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

SITE INSPECTION LOG (CONTINUED)

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

Photo 16: Transition area between low marsh planting zone and high marsh planting zone within the eastern side of the BEP (facing southeast). Note the vibrant and healthy low marsh and high marsh vegetation.

SITE INSPECTION LOG (CONTINUED)

Photo 17: Low marsh planting zone within eastern portion of the BEP (facing northeast).

Photo 18: Low marsh planting zone between Outfalls A and B (facing west). Note the vibrant and healthy vegetation in the higher elevations of the low marsh area.

SITE INSPECTION LOG (CONTINUED)

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

Photo 20: Vibrant and healthy low and high marsh zones west of Outfall A (facing southwest). Note the exposed geogrid and absence of GroSoxx at the bottom of the low marsh zone.

SITE INSPECTION LOG (CONTINUED)

Photo 21: Exposed geogrid over and around the Outfall C structure and within the high marsh planting zone (facing south).

Photo 22: Healthy low and high marsh vegetation west of Outfall A (facing east). Note the presence of tidal drift deposits and debris within the high marsh areas.

SITE INSPECTION LOG (CONTINUED)

Photo 23: Healthy vegetation in the upland transition area and interface between the low and high marsh between Outfalls A and B (facing west).

Photo 24: Healthy vegetation in the upland transitional area and interface between the low and high marsh west of Outfall A (facing east).

SITE INSPECTION LOG (CONTINUED)

Photo 25: Previously mowed section of the upland planting area in the western portion of the BEP (facing west).

Photo 26: Native hairy white oldfield aster species located within the upland transitional planting zone of the BEP.

SITE INSPECTION LOG (CONTINUED)

Photo 27: Planted species seaside goldenrod located within the upland transitional planting zone of the BEP.

ATTACHMENT B
YEAR 11 HYDRAULIC AND HYDRODYNAMIC EVALUATION SUMMARIES

ATTACHMENT B.1
Q1 2024 HYDRAULIC AND HYDRODYNAMIC EVALUATION SUMMARIES

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

Monitoring Period: **January 2024**	*Assessment Required?*
Rainfall Event Data: Max Rainfall (in): 2.05 Date: 1/9/2024 50-Year, 24-Hr event? NO	NO
Storm Surge Event Data: Max Increase Above Predicted Normal Tidal Cycling (m): 1.439 Date: 1/10/2024 Time: 5:00 Exceeds event trigger criteria? YES Max Tide Gauge Reading (m): 1.639 Date: 1/13/2024 Time: 15:00 Exceeds event trigger criteria? YES 10-year storm surge event defined as a hurricane? NO (1) While on January 10, 2024 the criteria for the storm surge increase above 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. (2) While on January 13, 2024 the criteria for the storm surge time gauge reading was exceeded, the 10-year storm surge did not meet the definition of a hurricane. Therefore, further assessment was not warranted.	NO
Wind Event Data: Max Wind (mph): 32 Date: 1/14/2024 Exceeds trigger criteria? NO Wind direction over 6-hr period: W OK	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: BB

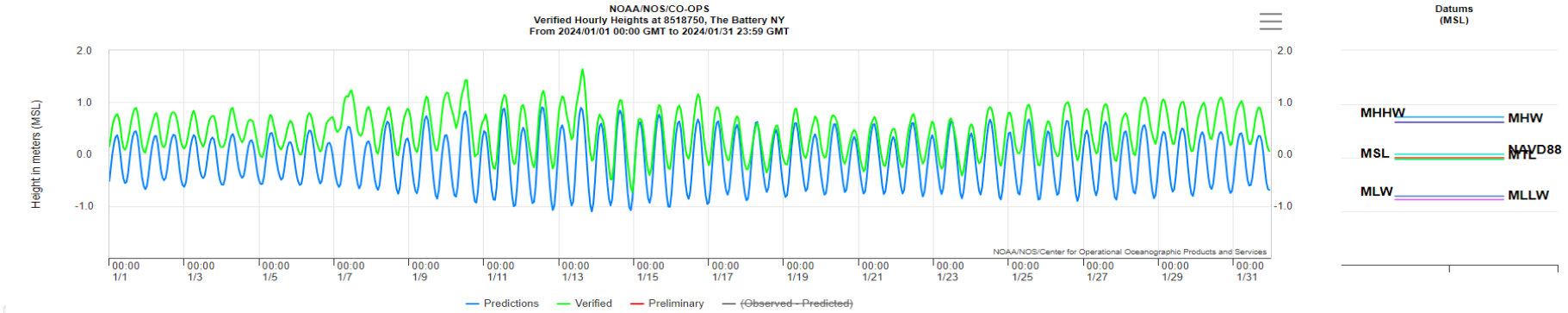
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: JANUARY
YEAR: 2024
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	12Z DPTH	AVG SPD	MX SPD	2MIN DIR	MIN	PSBL	S-S	WX	SPD	DR
1	50	36	43	9	22	0	T	0.0	0	7.4	16	340	M	M	7		21	320
2	45	30	38	4	27	0	0.00	0.0	0	8.4	15	330	M	M	1		20	320
3	47	31	39	5	26	0	0.00	0.0	0	8.1	16	290	M	M	6		20	300
4	48	29	39	5	26	0	0.00	0.0	0	11.7	26	320	M	M	6		36	310
5	40	26	33	-1	32	0	0.00	0.0	0	9.9	18	330	M	M	3		25	290
6	39	25	32	-1	33	0	0.46	0.4	0	8.4	22	40	M	M	8	1	29	40
7	41	35	38	5	27	0	0.17	T	0	12.6	22	30	M	M	9	1	27	20
8	48	35	42	9	23	0	0.00	0.0	0	10.4	24	320	M	M	3		32	310
9	58	31	45	12	20	0	2.05	0.0	0	11.8	32	110	M	M	9	1	44	150
10	59	44	52	19	13	0	0.17	0.0	0	19.7	36	240	M	M	8	1	44	240
11	48	41	45	12	20	0	0.00	0.0	0	12.1	22	260	M	M	7		30	250
12	50	34	42	9	23	0	0.10	0.0	0	8.5	23	90	M	M	6	1	36	100
13	61	36	49	16	16	0	0.82	0.0	0	19.7	38	270	M	M	8	1	49	290
14	45	27	36	4	29	0	T	T	0	17.7	40	260	M	M	3		50	270
15	30	24	27	-5	38	0	0.03	0.4	0	7.3	15	240	M	M	8	1	19	270
16	32	22	27	-5	38	0	0.24	1.7	2	10.7	25	320	M	M	9	146	33	320
17	26	17	22	-10	43	0	0.00	0.0	1	10.2	16	290	M	M	1		22	300
18	34	17	26	-6	39	0	T	T	1	6.7	13	230	M	M	8		23	280
19	33	27	30	-2	35	0	0.01	0.6	1	10.5	22	310	M	M	9	1	28	310
20	27	18	23	-9	42	0	0.00	0.0	1	11.7	21	310	M	M	6		27	290
21	33	21	27	-5	38	0	0.00	0.0	1	11.8	26	310	M	M	2		32	300
22	39	20	30	-2	35	0	0.00	0.0	1	9.0	20	240	M	M	4		26	250
23	41	32	37	5	28	0	0.01	0.0	0	7.0	17	230	M	M	9		23	230
24	46	39	43	11	22	0	0.04	0.0	0	2.4	8	100	M	M	10	18	11	110
25	59	45	52	20	13	0	0.21	0.0	0	5.0	13	100	M	M	10	1	17	100
26	49	42	46	14	19	0	0.25	0.0	0	5.9	16	360	M	M	10	1	19	90
27	48	42	45	13	20	0	T	0.0	0	6.4	13	20	M	M	9	1	16	320
28	44	38	41	9	24	0	0.92	0.0	0	12.5	23	40	M	M	10	1	31	40
29	42	37	40	8	25	0	0.03	0.0	0	13.5	24	330	M	M	9	1	35	330
30	39	35	37	5	28	0	0.01	T	0	6.5	15	10	M	M	10		19	40
31	41	35	38	5	27	0	T	T	0	4.6	9	150	M	M	10		13	150
SM	1342	971		851	0	5.52	3.1		308.1				M		218			
AV	43.3	31.3								9.9	FASTST		M	M	7		MAX(MPH)	
								MISC ---->		40	260						50	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=

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

Monitoring Period: **February 2024**	*Assessment Required?*

Rainfall Event Data:

Max Rainfall (in): 0.58 Date: 2/13/2024
50-Year, 24-Hr event? NO

NO

Storm Surge Event Data:

Max Increase Above Predicted Normal Tidal Cycling (m): 0.902 Date: 2/6/2024 Time: 17:00
Exceeds event trigger criteria? YES

Max Tide Gauge Reading (m): 1.184 Date: 2/9/2024 Time: 12:00
Exceeds event trigger criteria? NO

10-year storm surge event defined as a hurricane? NO

(1) While on February 6, 2024 the criteria for the storm surge increase above 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.

NO

Wind Event Data:

Max Wind (mph): 28 Date: 2/16/2024
Exceeds trigger criteria? NO
Wind direction over 6-hr period: WNW OK

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: BB

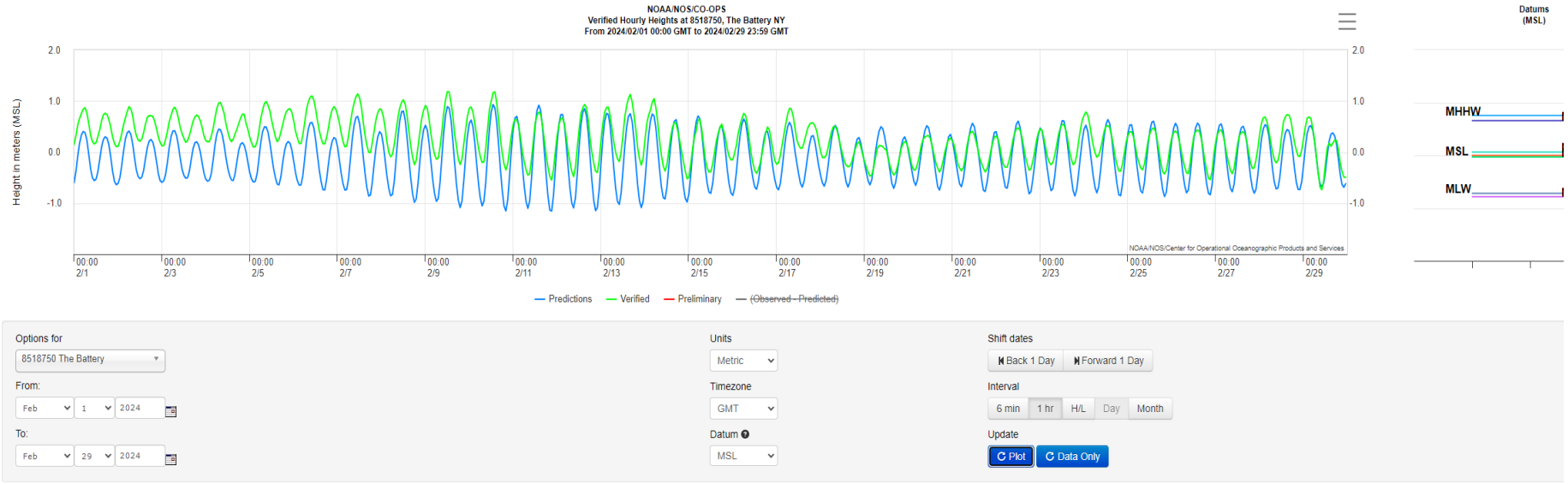
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: FEBRUARY
YEAR: 2024
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	12Z DPTH	AVG SPD	MX SPD	2MIN DIR	MIN	PSBL	S-S	WX	SPD	DR
1	47	32	40	7	25	0	0.00	0.0	0	5.9	15	270	M	M	9		20	260
2	46	39	43	10	22	0	0.20	0.0	0	9.5	21	360	M	M	9	1	26	360
3	47	33	40	7	25	0	0.00	0.0	0	11.1	21	350	M	M	5		25	360
4	50	29	40	7	25	0	0.00	0.0	0	7.5	13	10	M	M	1		18	360
5	48	30	39	6	26	0	0.00	0.0	0	12.8	23	10	M	M	1		28	360
6	45	27	36	3	29	0	0.00	0.0	0	10.2	22	10	M	M	0		25	10
7	50	29	40	6	25	0	0.00	0.0	0	5.8	14	360	M	M	3		17	360
8	54	32	43	9	22	0	0.00	0.0	0	3.3	10	80	M	M	6		13	80
9	56	41	49	15	16	0	0.00	0.0	0	4.4	12	110	M	M	7		17	110
10	60	42	51	17	14	0	0.00	0.0	0	5.9	14	220	M	M	10		17	230
11	52	44	48	14	17	0	0.00	0.0	0	9.3	18	330	M	M	9		23	320
12	49	36	43	9	22	0	T	T	0	6.3	13	40	M	M	9	4	15	30
13	42	33	38	3	27	0	0.58	4.9	1	13.7	25	10	M	M	8	124	29	10
14	39	30	35	0	30	0	0.00	0.0	2	17.7	33	300	M	M	3		41	300
15	39	27	33	-2	32	0	T	T	1	8.4	21	310	M	M	5		30	310
16	45	34	40	5	25	0	T	T	T	15.7	33	290	M	M	5		43	310
17	37	27	32	-4	33	0	0.33	4.2	4	9.2	24	290	M	M	8	1	32	290
18	41	19	30	-6	35	0	0.00	0.0	2	13.8	31	250	M	M	2		41	250
19	43	26	35	-1	30	0	0.00	0.0	T	10.0	26	320	M	M	1		35	320
20	40	24	32	-4	33	0	0.00	0.0	0	4.7	12	10	M	M	2		13	360
21	41	24	33	-3	32	0	0.00	0.0	0	4.4	12	100	M	M	7		15	90
22	46	31	39	2	26	0	0.04	0.0	0	5.8	13	130	M	M	9	1	16	120
23	49	42	46	9	19	0	0.03	0.0	0	5.9	13	340	M	M	9	18	19	310
24	46	29	38	1	27	0	0.00	0.0	0	12.0	22	340	M	M	5		34	310
25	43	21	32	-5	33	0	0.00	0.0	0	7.6	17	350	M	M	1		23	360
26	56	33	45	7	20	0	T	0.0	0	5.8	16	200	M	M	7		20	200
27	58	36	47	9	18	0	0.42	0.0	0	5.8	14	180	M	M	8	18	21	170
28	63	45	54	16	11	0	0.15	0.0	0	12.5	43	280	M	M	10	18	64	270
29	44	32	38	0	27	0	0.00	0.0	0	16.1	33	300	M	M	4		48	290
SM	1376		927		726	0	1.75	9.1		261.1			M		163			
AV	47.4	32.0								9.0	FASTST		M	M	6		MAX(MPH)	
									MISC ---->		43	280					64	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=

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

Monitoring Period: **March** **2024**	*Assessment Required?*

Rainfall Event Data:

Max Rainfall (in): 3.10 Date: 3/23/2024
50-Year, 24-Hr event? NO

NO

Storm Surge Event Data:

Max Increase Above Predicted Normal Tidal Cycling (m): 1.01 Date: 3/10/2024 Time: 3:00
Exceeds event trigger criteria? YES

Max Tide Gauge Reading (m): 1.643 Date: 3/10/2024 Time: 1:00
Exceeds event trigger criteria? YES

10-year storm surge event defined as a hurricane? NO

(1) While on March 10, 2024 the criteria for the storm surge increase above 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.
(2) While on March 10, 2024 the criteria for the storm surge time gauge reading was exceeded, the 10-year storm surge did not meet the definition of a hurricane. Therefore, further assessment was not warranted.

NO

Wind Event Data:

Max Wind (mph): 43 Date: 3/11/2024
Exceeds trigger criteria? YES
Wind direction over 6-hr period: WNW OK

(3) While on March 11, 2024 the criteria for the maximum wind speed was exceeded, the wind direction was not from the south through the west. Therefore, further assessment was not warranted.

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: BB

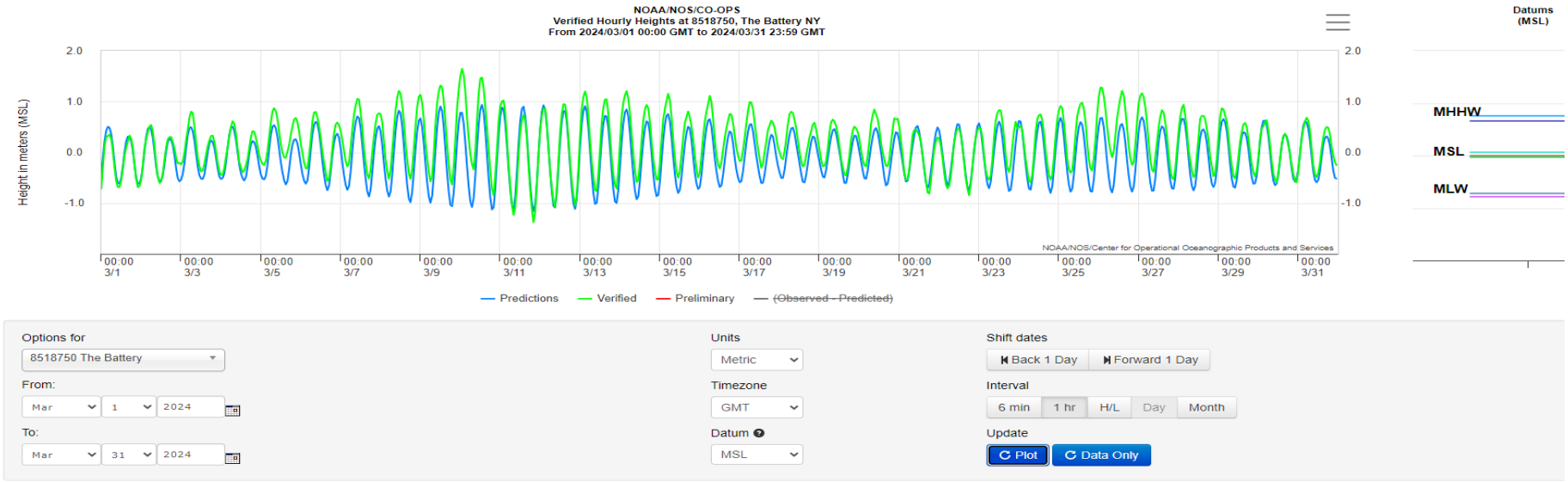
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: MARCH
YEAR: 2024
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	12Z DPTH	AVG SPD	MX 2MIN SPD	DIR	MIN	PSBL	S-S	WX	SPD	DR
1	47	30	39	1	26	0	0.00	0.0	0	7.2	16	130	M	M	4		23	110
2	54	42	48	10	17	0	1.31	0.0	0	5.6	22	90	M	M	10	1	32	80
3	70	48	59	20	6	0	0.00	0.0	0	8.0	16	20	M	M	6		26	300
4	59	45	52	13	13	0	T	0.0	0	8.6	17	120	M	M	8	1	25	120
5	48	44	46	7	19	0	0.54	0.0	0	9.8	18	40	M	M	10	1	27	40
6	51	48	50	10	15	0	1.03	0.0	0	7.3	18	30	M	M	10	1	24	40
7	57	45	51	11	14	0	0.01	0.0	0	17.0	28	360	M	M	9	1	36	350
8	56	38	47	7	18	0	0.00	0.0	0	8.3	18	20	M	M	6		25	30
9	49	42	46	6	19	0	1.43	0.0	0	11.5	25	110	M	M	10	18	40	120
10	53	38	46	5	19	0	0.03	T	0	17.4	29	280	M	M	9	1	42	300
11	55	36	46	5	19	0	T	T	0	22.5	44	290	M	M	4		59	290
12	68	39	54	13	11	0	0.00	0.0	0	11.3	22	290	M	M	3		30	270
13	64	47	56	14	9	0	0.00	0.0	0	3.5	15	150	M	M	6		21	140
14	75	43	59	17	6	0	0.00	0.0	0	4.1	15	150	M	M	6		22	150
15	75	51	63	21	2	0	T	0.0	0	12.2	25	290	M	M	8		46	270
16	62	46	54	12	11	0	0.00	0.0	0	8.9	20	230	M	M	4		28	220
17	64	48	56	13	9	0	T	0.0	0	12.7	29	250	M	M	7		40	300
18	54	38	46	3	19	0	0.00	0.0	0	13.3	23	280	M	M	7		31	270
19	49	34	42	-1	23	0	T	0.0	0	13.5	28	270	M	M	7		39	280
20	59	34	47	3	18	0	0.01	0.0	0	12.2	33	330	M	M	7	3	47	280
21	45	30	38	-6	27	0	0.00	0.0	0	16.2	26	300	M	M	2		42	280
22	45	29	37	-7	28	0	0.00	0.0	0	7.0	15	150	M	M	6		23	300
23	48	35	42	-3	23	0	3.10	0.0	0	15.3	31	330	M	M	9	1	43	320
24	50	32	41	-4	24	0	0.00	0.0	0	13.8	23	340	M	M	1		33	320
25	54	33	44	-1	21	0	0.00	0.0	0	10.5	20	30	M	M	1		27	40
26	54	38	46	0	19	0	T	0.0	0	7.6	18	40	M	M	8		23	30
27	52	43	48	2	17	0	0.07	0.0	0	3.4	15	230	M	M	10	18	19	230
28	51	45	48	2	17	0	0.45	0.0	0	8.7	20	330	M	M	10	1	29	330
29	58	42	50	3	15	0	0.00	0.0	0	20.9	33	290	M	M	5		55	290
30	63	41	52	5	13	0	0.01	0.0	0	14.8	29	250	M	M	7		36	260
31	63	48	56	9	9	0	T	0.0	0	9.4	22	290	M	M	7		32	300
SM	1752	1252		506		0	7.99	T		342.5			M		207			
AV	56.5	40.4								11.0	FASTST		M	M	7		MAX(MPH)	
									MISC ---->	44	290						59	290

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 2024 HYDRAULIC AND HYDRODYNAMIC EVALUATION SUMMARIES

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

Monitoring Period: **April** **2024**	*Assessment Required?*

Rainfall Event Data:

Max Rainfall (in): 1.84 Date: 4/3/2024
50-Year, 24-Hr event? NO

NO

Storm Surge Event Data:

Max Increase Above Predicted Normal Tidal Cycling (m): 1.209 Date: 4/4/2024 Time: 0:00
Exceeds event trigger criteria? YES

Max Tide Gauge Reading (m): 1.434 Date: 4/4/2024 Time: 8:00
Exceeds event trigger criteria? YES

10-year storm surge event defined as a hurricane? NO

(1) While on April 4, 2024 the criteria for the storm surge increase above 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.
(2) While on April 4, 2024 the criteria for the storm surge time gauge reading was exceeded, the 10-year storm surge did not meet the definition of a hurricane. Therefore, further assessment was not warranted.

NO

Wind Event Data:

Max Wind (mph): 30 Date: 4/13/2024
Exceeds trigger criteria? NO
Wind direction over 6-hr period: W OK

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: BB

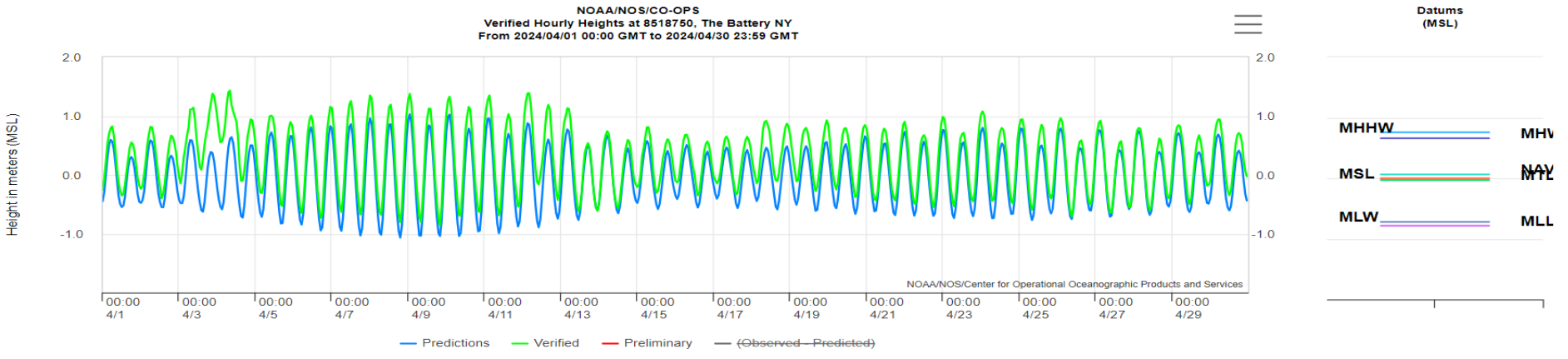
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: APRIL
YEAR: 2024
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	55	49	52	4	13	0	0.04	0.0	0	4.8	15	360	M	M	9		21	340
2	50	45	48	0	17	0	1.03	0.0	0	7.6	17	70	M	M	10	1	25	60
3	45	42	44	-5	21	0	1.84	0.0	0	14.4	28	50	M	M	10	138	45	50
4	51	38	45	-4	20	0	0.19	0.0	0	11.9	26	50	M	M	9	1	43	40
5	52	39	46	-3	19	0	T	0.0	0	13.7	25	290	M	M	7		33	280
6	56	41	49	-1	16	0	T	0.0	0	15.9	25	330	M	M	7		40	330
7	61	43	52	2	13	0	0.00	0.0	0	9.7	21	360	M	M	5		33	320
8	69	39	54	4	11	0	0.00	0.0	0	4.0	14	160	M	M	5		18	160
9	77	50	64	13	1	0	0.00	0.0	0	4.9	12	140	M	M	7		18	130
10	65	52	59	8	6	0	0.00	0.0	0	6.4	12	80	M	M	9		19	90
11	63	51	57	5	8	0	0.22	0.0	0	8.9	20	150	M	M	10	18	32	170
12	68	55	62	10	3	0	0.27	0.0	0	15.2	35	280	M	M	8	13	46	280
13	57	49	53	1	12	0	T	0.0	0	20.2	37	260	M	M	8		56	260
14	76	46	61	8	4	0	0.04	0.0	0	14.1	29	220	M	M	6	3	39	220
15	83	55	69	16	0	4	0.00	0.0	0	10.8	28	260	M	M	5		38	280
16	74	54	64	10	1	0	0.00	0.0	0	10.0	21	300	M	M	3		35	290
17	61	51	56	2	9	0	0.02	0.0	0	8.2	15	110	M	M	8		23	70
18	51	47	49	-5	16	0	T	0.0	0	11.8	21	50	M	M	10	1	29	40
19	55	44	50	-5	15	0	T	0.0	0	7.5	14	170	M	M	9		21	150
20	72	48	60	5	5	0	0.05	0.0	0	13.1	29	250	M	M	7	1	42	260
21	54	42	48	-8	17	0	0.00	0.0	0	10.0	20	260	M	M	7		29	250
22	64	40	52	-4	13	0	0.00	0.0	0	8.7	21	330	M	M	2		33	290
23	61	42	52	-4	13	0	0.00	0.0	0	8.1	21	140	M	M	4		31	110
24	74	50	62	5	3	0	T	0.0	0	11.9	26	340	M	M	8	3	37	310
25	57	42	50	-7	15	0	0.00	0.0	0	9.6	24	20	M	M	5		30	30
26	61	38	50	-7	15	0	0.00	0.0	0	7.3	16	130	M	M	2		21	130
27	62	44	53	-5	12	0	T	0.0	0	8.4	21	150	M	M	8		28	140
28	80	50	65	7	0	0	0.11	0.0	0	5.1	13	240	M	M	8	1	17	180
29	86	60	73	15	0	8	0.02	0.0	0	6.1	16	100	M	M	6	138	23	100
30	68	54	61	2	4	0	0.02	0.0	0	7.5	15	10	M	M	9	138	19	10
SM	1908	1400		302	12	3.85	0.0		295.8				M		211			
AV	63.6	46.7								9.9	FASTST		M	M	7		MAX(MPH)	
							MISC ---->			37	260						56	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=

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

Monitoring Period: **May** **2024**	*Assessment Required?*

Rainfall Event Data:

Max Rainfall (in): 0.63 Date: 5/23/2024
50-Year, 24-Hr event? NO

NO

Storm Surge Event Data:

Max Increase Above Predicted Normal Tidal Cycling (m): 0.589 Date: 5/10/2024 Time: 10:00
Exceeds event trigger criteria? NO

Max Tide Gauge Reading (m): 1.374 Date: 5/11/2024 Time: 3:00
Exceeds event trigger criteria? NO

10-year storm surge event defined as a hurricane? NO

NO

Wind Event Data:

Max Wind (mph): 26 Date: 5/29/2024
Exceeds trigger criteria? NO
Wind direction over 6-hr period: S OK

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: BB

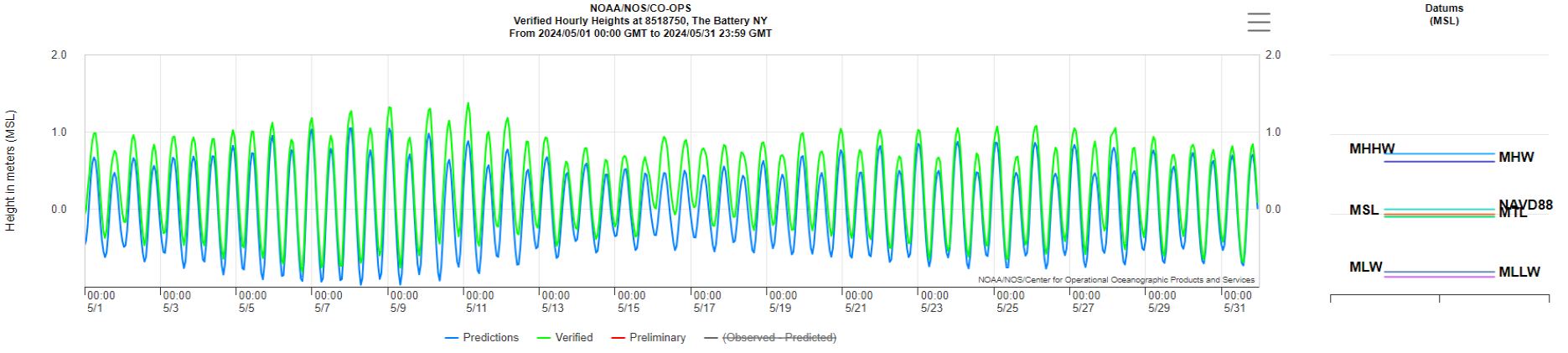
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: MAY
YEAR: 2024
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	12Z DPTH	AVG SPD	MX SPD	2MIN DIR	MIN	PSBL	S-S	WX	SPD	DR
1	79	55	67	8	0	2	0.01	0.0	0	6.2	17	60	M	M	7	18	23	110
2	90	54	72	13	0	7	0.00	0.0	0	10.0	23	30	M	M	6	18	32	40
3	66	51	59	-1	6	0	0.00	0.0	0	7.3	15	160	M	M	7		24	160
4	62	50	56	-4	9	0	T	0.0	0	7.2	15	110	M	M	9		21	100
5	54	50	52	-8	13	0	0.31	0.0	0	7.8	14	130	M	M	10	1	22	130
6	76	53	65	5	0	0	T	0.0	0	5.7	13	250	M	M	9	18	18	250
7	83	60	72	11	0	7	0.00	0.0	0	7.9	16	160	M	M	5		23	260
8	89	67	78	17	0	13	0.05	0.0	0	12.8	28	230	M	M	8	13	39	290
9	73	56	65	4	0	0	T	0.0	0	8.5	18	110	M	M	8		27	330
10	57	50	54	-8	11	0	0.33	0.0	0	8.1	18	60	M	M	10	1	26	70
11	64	46	55	-7	10	0	T	0.0	0	8.3	16	130	M	M	8	1	22	140
12	56	48	52	-10	13	0	0.38	0.0	0	5.7	12	200	M	M	9	1	15	200
13	68	46	57	-5	8	0	0.00	0.0	0	6.2	16	230	M	M	7		23	230
14	74	54	64	1	1	0	0.04	0.0	0	5.4	14	180	M	M	9		19	190
15	66	60	63	0	2	0	0.34	0.0	0	9.7	22	10	M	M	10	18	32	30
16	68	60	64	1	1	0	0.04	0.0	0	17.2	25	10	M	M	10	1	36	10
17	75	59	67	3	0	2	T	0.0	0	8.2	18	50	M	M	9	18	26	40
18	72	59	66	2	0	1	0.04	0.0	0	4.4	10	40	M	M	9		15	340
19	78	56	67	3	0	2	0.00	0.0	0	7.8	16	40	M	M	7		23	340
20	75	56	66	2	0	1	0.00	0.0	0	5.7	12	130	M	M	6		19	110
21	87	58	73	8	0	8	0.00	0.0	0	7.7	15	230	M	M	7		24	250
22	87	64	76	11	0	11	0.00	0.0	0	9.2	17	210	M	M	5		24	200
23	82	69	76	11	0	11	0.63	0.0	0	8.2	24	270	M	M	8	13	30	270
24	88	65	77	11	0	12	0.00	0.0	0	7.6	20	250	M	M	4		26	320
25	81	63	72	6	0	7	T	0.0	0	6.1	13	160	M	M	6		20	170
26	84	66	75	9	0	10	T	0.0	0	6.4	17	140	M	M	8	1	25	140
27	78	66	72	6	0	7	0.33	0.0	0	6.9	17	150	M	M	10	1	26	160
28	84	65	75	8	0	10	0.00	0.0	0	13.1	29	250	M	M	3		38	270
29	80	62	71	4	0	6	0.22	0.0	0	6.7	35	240	M	M	5	13	48	250
30	75	59	67	0	0	2	0.07	0.0	0	10.7	18	330	M	M	6	1	30	310
31	79	60	70	2	0	5	T	0.0	0	11.5	21	330	M	M	5		36	270
SM	2330	1787			74	124	2.79	0.0		254.2			M		230			
AV	75.2	57.6								8.2	FASTST		M	M	7		MAX(MPH)	
								MISC ---->			35	240					48	250

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

Monitoring Period: **June** **2024**	*Assessment Required?*
Rainfall Event Data: Max Rainfall (in): 0.45 Date: 6/6/2024 50-Year, 24-Hr event? NO	NO
Storm Surge Event Data: Max Increase Above Predicted Normal Tidal Cycling (m): 0.391 Date: 6/7/2024 Time: 23:00 Exceeds event trigger criteria? NO Max Tide Gauge Reading (m): 1.268 Date: 6/7/2024 Time: 1:00 Exceeds event trigger criteria? NO 10-year storm surge event defined as a hurricane? NO	NO
Wind Event Data: Max Wind (mph): 36 Date: 6/14/2024 Exceeds trigger criteria? NO Wind direction over 6-hr period: NW OK	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: BB

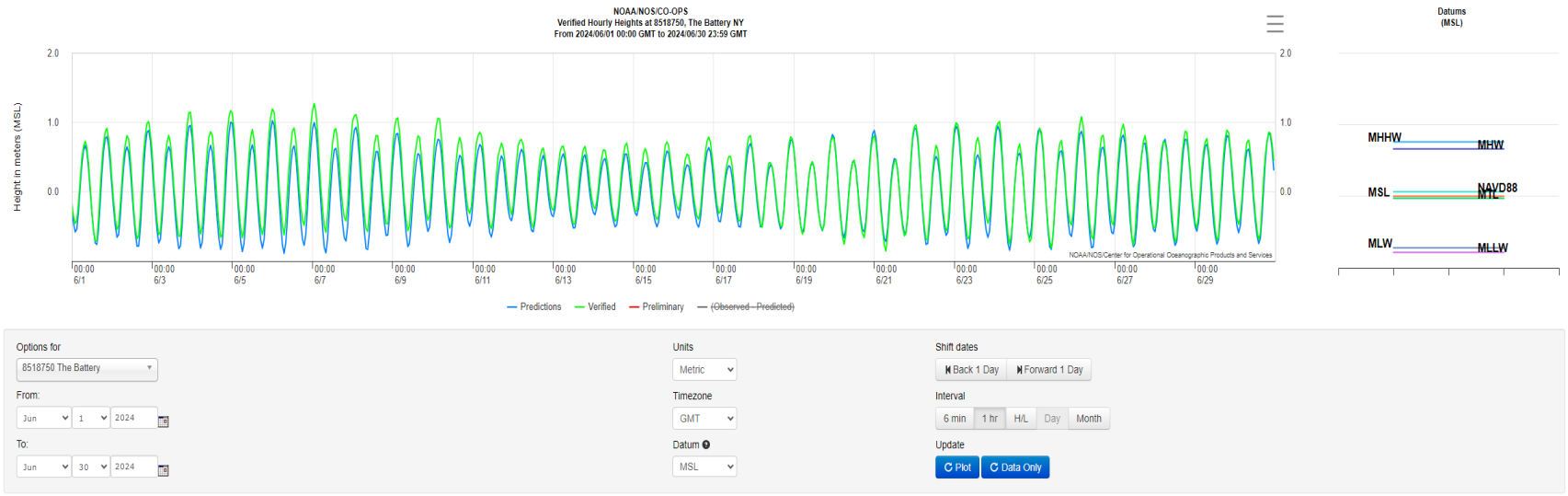
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: JUNE
YEAR: 2024
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	87	58	73	5	0	8	0.00	0.0	0	9.1	17	250	M	M	3		27	320
2	86	62	74	6	0	9	T	0.0	0	7.4	20	230	M	M	8		25	230
3	89	71	80	11	0	15	T	0.0	0	5.5	14	30	M	M	7		18	90
4	82	67	75	6	0	10	0.00	0.0	0	5.9	13	120	M	M	6		19	170
5	81	65	73	4	0	8	0.10	0.0	0	6.6	16	150	M	M	8	18	25	160
6	87	70	79	9	0	14	0.45	0.0	0	8.3	25	340	M	M	8	13	34	350
7	88	68	78	8	0	13	0.00	0.0	0	9.7	26	330	M	M	5		36	320
8	83	63	73	3	0	8	0.00	0.0	0	12.9	25	250	M	M	3		37	260
9	80	65	73	2	0	8	T	0.0	0	10.6	23	290	M	M	6		32	290
10	78	63	71	0	0	6	0.00	0.0	0	11.1	18	290	M	M	6		26	310
11	76	60	68	-3	0	3	0.00	0.0	0	7.6	15	350	M	M	7		18	280
12	81	61	71	-1	0	6	0.00	0.0	0	7.5	14	270	M	M	5		19	280
13	89	61	75	3	0	10	0.00	0.0	0	8.7	20	200	M	M	3		25	200
14	91	67	79	7	0	14	0.21	0.0	0	7.6	36	340	M	M	6	138	47	340
15	85	67	76	3	0	11	0.00	0.0	0	11.3	22	360	M	M	4		33	310
16	77	62	70	-3	0	5	0.00	0.0	0	9.1	15	170	M	M	6		21	130
17	92	67	80	7	0	15	0.00	0.0	0	9.7	17	180	M	M	5		25	240
18	91	72	82	8	0	17	0.00	0.0	0	10.1	18	230	M	M	5		24	220
19	93	72	83	9	0	18	0.00	0.0	0	8.1	16	170	M	M	6		22	140
20	97	71	84	10	0	19	0.00	0.0	0	8.9	15	230	M	M	6		29	270
21	100	77	89	14	0	24	0.00	0.0	0	9.2	25	30	M	M	5		31	30
22	95	77	86	11	0	21	0.04	0.0	0	6.3	22	220	M	M	8	3	31	210
23	99	75	87	12	0	22	T	0.0	0	11.4	26	230	M	M	8		39	240
24	84	73	79	4	0	14	T	0.0	0	18.5	35	320	M	M	7		59	300
25	94	66	80	4	0	15	0.00	0.0	0	11.8	22	260	M	M	5		37	230
26	98	72	85	9	0	20	0.27	0.0	0	11.2	43	280	M	M	8	3	56	290
27	88	70	79	3	0	14	0.29	0.0	0	11.2	23	340	M	M	6	13	37	320
28	79	63	71	-5	0	6	0.00	0.0	0	8.8	17	360	M	M	4		23	150
29	85	67	76	-1	0	11	0.08	0.0	0	9.6	18	170	M	M	8	1	30	160
30	91	71	81	4	0	16	0.31	0.0	0	12.5	29	290	M	M	9	13	43	270
SM	2626	2023			0	380	1.75	0.0		286.2			M		181			
AV	87.5	67.4								9.5	FASTST		M	M	6		MAX(MPH)	
									MISC ---->		43	280					59	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.3
Q3 2024 HYDRAULIC AND HYDRODYNAMIC EVALUATION SUMMARIES

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

Monitoring Period: **July** **2024**	*Assessment Required?*

Rainfall Event Data:

Max Rainfall (in): 1.28 Date: 7/13/2024
50-Year, 24-Hr event? NO

NO

Storm Surge Event Data:

Max Increase Above Predicted Normal Tidal Cycling (m): 0.285 Date: 7/11/2024 Time: 2:00
Exceeds event trigger criteria? NO

Max Tide Gauge Reading (m): 1.151 Date: 7/24/2024 Time: 3:00
Exceeds event trigger criteria? NO

10-year storm surge event defined as a hurricane? NO

NO

Wind Event Data:

Max Wind (mph): 19 Date: 7/16/2024
Exceeds trigger criteria? NO
Wind direction over 6-hr period: S OK

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: BB

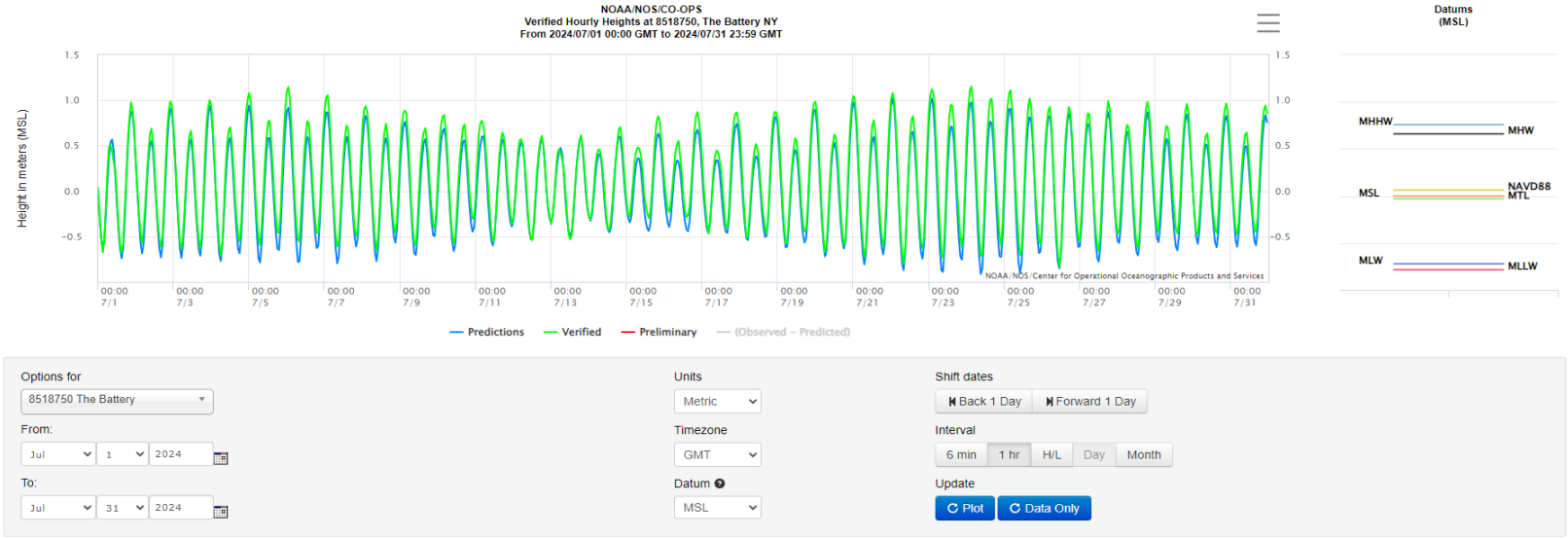
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: JULY
YEAR: 2024
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	84	65	75	-2	0	10	0.00	0.0	0	14.7	23	360	M	M	3		38	310
2	85	64	75	-2	0	10	0.00	0.0	0	7.8	14	170	M	M	5		23	180
3	83	67	75	-2	0	10	0.00	0.0	0	9.5	21	200	M	M	7		26	210
4	89	70	80	2	0	15	0.16	0.0	0	7.1	15	200	M	M	8	18	21	190
5	91	77	84	6	0	19	0.53	0.0	0	5.4	14	230	M	M	8	138	22	100
6	93	74	84	6	0	19	0.08	0.0	0	5.4	16	150	M	M	7	13	23	160
7	94	79	87	9	0	22	T	0.0	0	7.0	17	10	M	M	7		22	360
8	94	77	86	8	0	21	0.00	0.0	0	5.3	14	180	M	M	6		20	130
9	93	76	85	7	0	20	T	0.0	0	6.3	15	200	M	M	7		21	120
10	94	79	87	9	0	22	0.01	0.0	0	10.8	24	180	M	M	6		35	190
11	93	76	85	7	0	20	0.03	0.0	0	11.3	21	260	M	M	6		29	230
12	85	72	79	1	0	14	0.43	0.0	0	6.8	16	190	M	M	8	138	22	200
13	89	73	81	3	0	16	1.28	0.0	0	5.0	15	250	M	M	8	1	20	250
14	90	76	83	5	0	18	0.26	0.0	0	7.0	20	240	M	M	5	13	26	250
15	98	76	87	9	0	22	0.11	0.0	0	8.2	24	200	M	M	6	3	32	200
16	99	78	89	11	0	24	T	0.0	0	11.1	40	230	M	M	5	3	53	230
17	94	74	84	6	0	19	0.51	0.0	0	8.1	33	320	M	M	7	13	44	320
18	88	73	81	3	0	16	0.00	0.0	0	9.8	20	350	M	M	8		29	300
19	87	68	78	0	0	13	0.00	0.0	0	7.3	20	360	M	M	3		25	360
20	87	67	77	-1	0	12	0.00	0.0	0	8.9	18	200	M	M	9		25	190
21	89	75	82	4	0	17	0.01	0.0	0	6.0	13	170	M	M	7		17	170
22	85	74	80	2	0	15	0.02	0.0	0	6.4	15	140	M	M	9	3	23	150
23	86	72	79	1	0	14	0.05	0.0	0	5.7	15	20	M	M	9	1	18	20
24	85	75	80	2	0	15	T	0.0	0	5.8	12	180	M	M	9	18	16	160
25	87	74	81	3	0	16	0.00	0.0	0	9.2	20	290	M	M	8		26	290
26	86	68	77	-1	0	12	0.00	0.0	0	9.1	21	340	M	M	5		31	320
27	88	66	77	-1	0	12	0.00	0.0	0	5.6	12	140	M	M	5		20	140
28	90	69	80	2	0	15	0.00	0.0	0	6.2	15	130	M	M	5		22	140
29	89	72	81	3	0	16	T	0.0	0	6.2	14	200	M	M	8		21	90
30	92	74	83	5	0	18	0.00	0.0	0	9.5	20	200	M	M	8	1	28	200
31	94	77	86	8	0	21	0.11	0.0	0	9.8	26	330	M	M	8	13	37	340
SM	2781	2257			0	513	3.59	0.0		242.3			M		210			
AV	89.7	72.8								7.8	FASTST		M	M	7		MAX(MPH)	
									MISC ---->		40	230					53	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=

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

Monitoring Period: **August** **2024**	*Assessment Required?*
Rainfall Event Data: Max Rainfall (in): 1.68 8/6/2024 50-Year, 24-Hr event? NO	NO
Storm Surge Event Data: Max Increase Above Predicted Normal Tidal Cycling (m): 0.358 Date: 8/18/2024 Time: 22:00 Exceeds event trigger criteria? NO Max Tide Gauge Reading (m): 1.34 Date: 8/20/2024 Time: 1:00 Exceeds event trigger criteria? NO 10-year storm surge event defined as a hurricane? NO	NO
Wind Event Data: Max Wind (mph): 10 Date: 8/26/2024 Exceeds trigger criteria? NO Wind direction over 6-hr period: S OK	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://www.weather.gov/wrh/Climate?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://www.weather.gov/wrh/Climate?wfo=okx

CHECKED BY: BB

National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: AUGUST
YEAR: 2024
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	100	73	87	9	0	22	0.00	0.0	0	6.3	16	300	M	M	4		24	260
2	96	76	86	8	0	21	0.74	0.0	0	5.7	33	300	M	M	7	13	44	290
3	94	74	84	6	0	19	0.84	0.0	0	7.5	26	360	M	M	8	138	37	270
4	86	73	80	2	0	15	0.24	0.0	0	7.7	22	320	M	M	8	13	29	310
5	92	72	82	4	0	17	0.00	0.0	0	5.7	17	220	M	M	5		24	230
6	94	73	84	6	0	19	1.68	0.0	0	7.3	16	170	M	M	8	13	24	170
7	75	66	71	-6	0	6	0.13	0.0	0	7.9	17	30	M	M	10	1	22	20
8	73	67	70	-7	0	5	0.71	0.0	0	6.9	13	60	M	M	10	1	18	60
9	85	73	79	2	0	14	0.34	0.0	0	13.5	26	170	M	M	10	128	39	180
10	89	74	82	5	0	17	0.00	0.0	0	10.2	20	280	M	M	5		31	300
11	85	70	78	1	0	13	0.00	0.0	0	7.1	17	260	M	M	7		23	250
12	86	64	75	-2	0	10	T	0.0	0	9.0	22	330	M	M	5		29	280
13	84	67	76	-1	0	11	0.00	0.0	0	8.5	16	270	M	M	3		27	270
14	88	68	78	1	0	13	0.00	0.0	0	7.6	17	330	M	M	5		25	350
15	90	68	79	2	0	14	T	0.0	0	6.0	15	330	M	M	5		19	300
16	89	72	81	5	0	16	0.00	0.0	0	6.0	14	130	M	M	5		20	140
17	82	71	77	1	0	12	0.09	0.0	0	7.7	14	160	M	M	9	18	24	130
18	86	71	79	3	0	14	1.03	0.0	0	8.6	25	300	M	M	9	13	33	300
19	87	70	79	3	0	14	0.03	0.0	0	9.0	23	260	M	M	7	3	33	300
20	75	62	69	-7	0	4	T	0.0	0	13.8	23	320	M	M	6		36	290
21	76	57	67	-9	0	2	0.00	0.0	0	11.3	22	270	M	M	3		36	270
22	80	56	68	-8	0	3	0.00	0.0	0	8.6	18	290	M	M	4		25	290
23	84	59	72	-4	0	7	0.00	0.0	0	5.2	14	250	M	M	2		20	270
24	86	63	75	0	0	10	0.00	0.0	0	5.2	14	280	M	M	4		22	280
25	88	64	76	1	0	11	0.00	0.0	0	6.0	14	230	M	M	6		23	290
26	89	67	78	3	0	13	0.39	0.0	0	7.0	33	360	M	M	4	3	40	350
27	87	67	77	2	0	12	0.00	0.0	0	6.7	14	220	M	M	2		20	230
28	95	73	84	9	0	19	0.03	0.0	0	9.7	23	270	M	M	6	3	36	280
29	81	71	76	2	0	11	0.08	0.0	0	8.3	15	160	M	M	10		22	160
30	76	65	71	-3	0	6	0.36	0.0	0	6.8	13	110	M	M	9	1	19	90
31	79	68	74	0	0	9	0.00	0.0	0	5.4	12	150	M	M	9		16	130
SM	2657	2114		0	379	6.69	0.0		242.2				M		195			
AV	85.7	68.2								7.8	FASTST		M	M	6		MAX(MPH)	
									MISC ---->	# 33 300							44 290	

https://www.weather.gov/wrh/Climate?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

Monitoring Period: **September 2024**	*Assessment Required?*
Rainfall Event Data: Max Rainfall (in): 0.40 9/28/2024 50-Year, 24-Hr event? NO	NO
Storm Surge Event Data: Max Increase Above Predicted Normal Tidal Cycling (m): 0.598 Date: 9/23/2024 Time: 0:00 Exceeds event trigger criteria? NO Max Tide Gauge Reading (m): 1.468 Date: 9/20/2024 Time: 15:00 Exceeds event trigger criteria? YES 10-year storm surge event defined as a hurricane? NO (1) While on September 20, 2024 the criteria for the storm surge maximum tide gauge reading was exceeded, the 10-year storm surge did not meet the definition of a hurricane. Therefore, further assessment was not warranted.	NO
Wind Event Data: Max Wind (mph): 23 Date: 9/7/2024 Exceeds trigger criteria? NO Wind direction over 6-hr period: SE OK	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://www.weather.gov/wrh/Climate?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://www.weather.gov/wrh/Climate?wfo=okx

CHECKED BY: BB

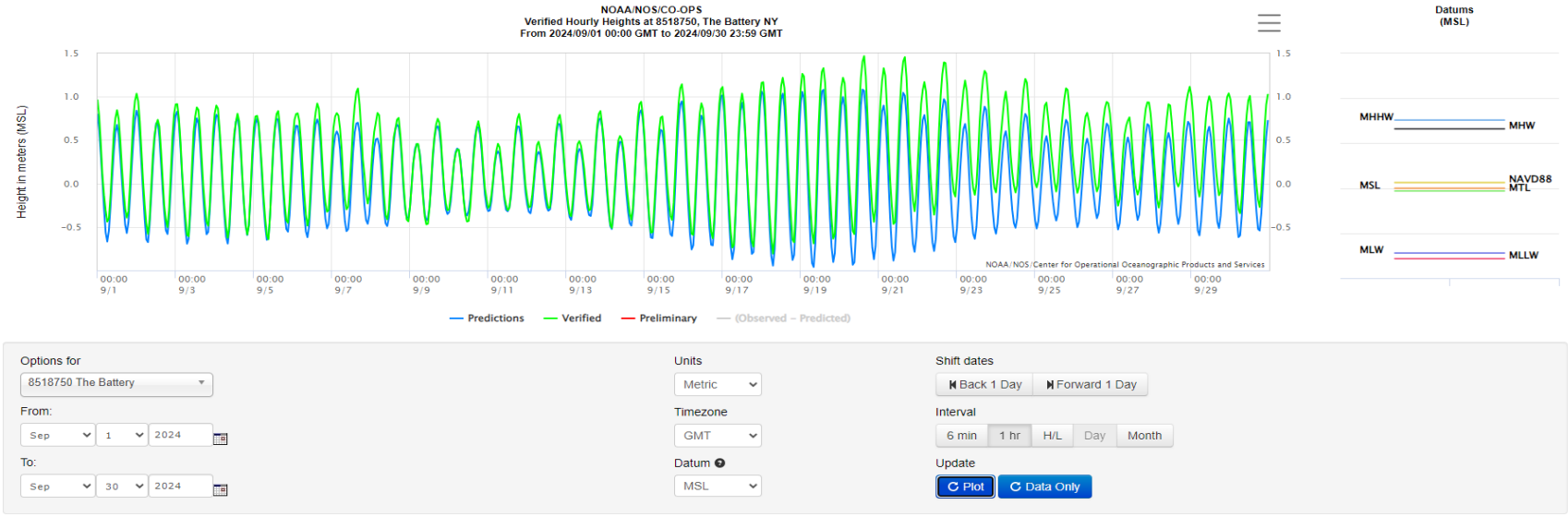
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: SEPTEMBER
YEAR: 2024
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	86	72	79	5	0	14	T	0.0	0	7.4	16	310	M	M	8		22	310
2	82	63	73	-1	0	8	0.00	0.0	0	13.3	21	320	M	M	4		36	300
3	76	55	66	-7	0	1	0.00	0.0	0	7.0	17	20	M	M	2		23	300
4	79	56	68	-5	0	3	0.00	0.0	0	4.2	12	130	M	M	3		17	120
5	79	57	68	-5	0	3	0.00	0.0	0	6.9	14	180	M	M	2		21	180
6	80	62	71	-1	0	6	0.00	0.0	0	6.9	14	150	M	M	8		21	170
7	80	60	70	-2	0	5	0.08	0.0	0	7.4	25	290	M	M	8	18	33	280
8	73	55	64	-8	1	0	0.00	0.0	0	11.3	22	270	M	M	3		32	250
9	80	51	66	-6	0	1	0.00	0.0	0	9.9	22	260	M	M	4		29	280
10	82	61	72	1	0	7	T	0.0	0	7.8	15	330	M	M	2		26	310
11	81	57	69	-2	0	4	0.00	0.0	0	5.1	13	170	M	M	3		18	170
12	82	59	71	0	0	6	0.00	0.0	0	3.8	14	150	M	M	6	18	20	170
13	84	60	72	2	0	7	0.00	0.0	0	3.6	12	170	M	M	2		15	170
14	87	63	75	5	0	10	0.00	0.0	0	5.6	14	130	M	M	1		20	40
15	81	64	73	3	0	8	0.00	0.0	0	7.1	15	150	M	M	4		20	160
16	78	58	68	-1	0	3	0.00	0.0	0	6.3	12	20	M	M	7		17	180
17	81	65	73	4	0	8	0.00	0.0	0	6.7	13	10	M	M	8		18	160
18	78	67	73	5	0	8	0.00	0.0	0	10.3	15	40	M	M	9		20	50
19	87	67	77	9	0	12	0.00	0.0	0	9.6	16	20	M	M	8		31	330
20	84	67	76	8	0	11	0.00	0.0	0	11.3	18	20	M	M	6		24	30
21	83	62	73	6	0	8	0.00	0.0	0	9.8	16	20	M	M	5		22	360
22	77	61	69	2	0	4	0.00	0.0	0	9.2	16	70	M	M	6		21	70
23	69	60	65	-2	0	0	0.01	0.0	0	8.1	13	50	M	M	9		23	30
24	71	61	66	0	0	1	T	0.0	0	8.1	15	100	M	M	8		25	100
25	69	64	67	1	0	2	T	0.0	M	9.1	16	100	M	M	10		25	110
26	77	66	72	7	0	7	0.05	0.0	0	4.4	9	150	M	M	10	18	14	110
27	74	65	70	5	0	5	0.01	0.0	0	6.5	17	20	M	M	10	1	22	10
28	68	62	65	1	0	0	0.40	0.0	0	9.4	16	40	M	M	10	1	23	30
29	65	61	63	-1	2	0	0.34	0.0	0	8.2	17	70	M	M	10	1	24	60
30	75	61	68	4	0	3	0.00	0.0	0	8.0	14	30	M	M	8		22	20
SM	2348	1842			3	155	0.89	0.0		232.3			M		184			
AV	78.3	61.4								7.7	FASTST		M	M	6		MAX(MPH)	
									MISC ---->		25	290					36	300

https://www.weather.gov/wrh/Climate?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 2024 HYDRAULIC AND HYDRODYNAMIC EVALUATION SUMMARIES

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

Monitoring Period: **October 2024**	*Assessment Required?*
Rainfall Event Data: Max Rainfall (in): 0.00 50-Year, 24-Hr event? NO (1) There was no precipitation during the month of October 2024.	NO
Storm Surge Event Data: Max Increase Above Predicted Normal Tidal Cycling (m): 0.507 Date: 10/2/2024 Time: 6:00 Exceeds event trigger criteria? NO Max Tide Gauge Reading (m): 1.368 Date: 10/18/2024 Time: 13:00 Exceeds event trigger criteria? NO 10-year storm surge event defined as a hurricane? NO	NO
Wind Event Data: Max Wind (mph): 28 Date: 10/14/2024 Exceeds trigger criteria? NO Wind direction over 6-hr period: W OK	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://www.weather.gov/wrh/Climate?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://www.weather.gov/wrh/Climate?wfo=okx

CHECKED BY: BB

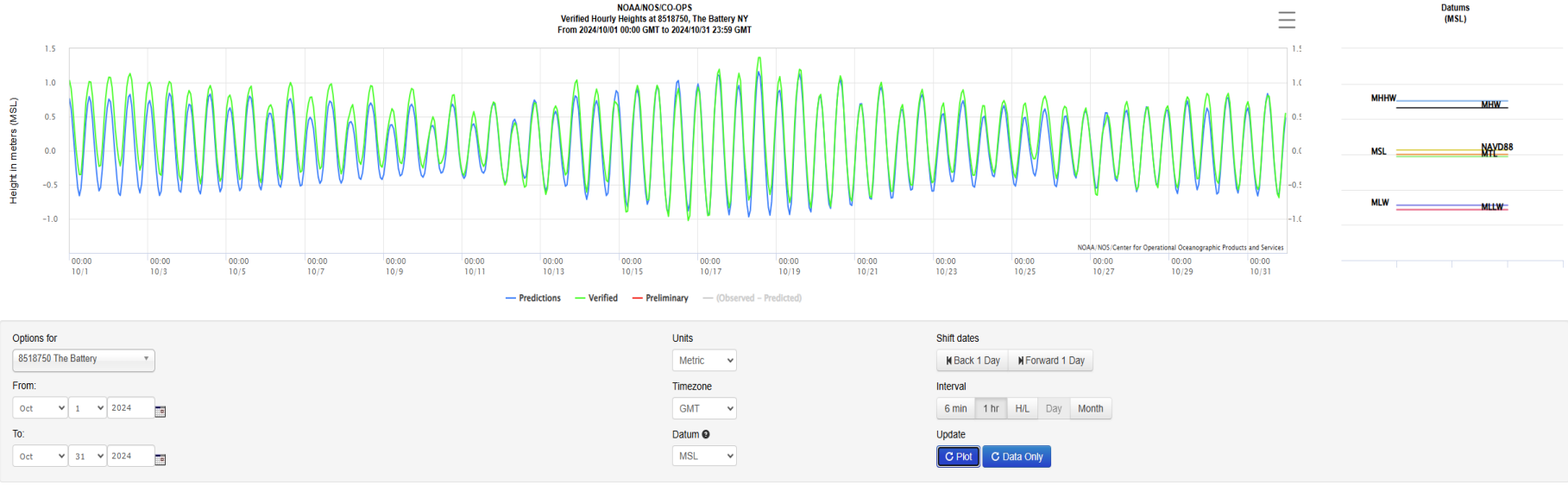
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: OCTOBER
YEAR: 2024
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	72	61	67	4	0	2	0.00	0.0	0	8.2	15	30	M	M	8		20	20
2	70	59	65	2	0	0	0.00	0.0	0	5.9	13	20	M	M	8		17	350
3	73	59	66	4	0	1	0.00	0.0	0	3.8	10	140	M	M	7		16	170
4	75	58	67	5	0	2	T	0.0	0	4.5	14	140	M	M	7		20	150
5	79	59	69	7	0	4	0.00	0.0	0	8.0	17	10	M	M	3		24	10
6	72	53	63	2	2	0	0.00	0.0	0	7.3	14	190	M	M	2		20	170
7	79	57	68	7	0	3	0.00	0.0	0	11.3	21	340	M	M	6		32	310
8	72	54	63	3	2	0	0.00	0.0	0	9.0	17	280	M	M	4		24	280
9	73	50	62	2	3	0	0.00	0.0	0	7.6	22	320	M	M	5	8	32	310
10	64	49	57	-3	8	0	0.00	0.0	0	12.5	21	330	M	M	2		32	300
11	72	45	59	0	6	0	0.00	0.0	0	10.1	18	270	M	M	1		34	250
12	78	53	66	7	0	1	0.00	0.0	0	9.7	24	300	M	M	4		34	300
13	74	55	65	7	0	0	0.00	0.0	0	3.9	9	360	M	M	8		9	360
14	70	47	59	1	6	0	0.00	0.0	0	12.7	36	290	M	M	6		50	260
15	60	45	53	-5	12	0	0.00	0.0	0	9.7	17	290	M	M	5		33	300
16	62	43	53	-4	12	0	0.00	0.0	0	11.6	20	350	M	M	2		31	300
17	63	41	52	-5	13	0	0.00	0.0	0	10.5	21	350	M	M	3		29	330
18	70	43	57	0	8	0	0.00	0.0	0	9.0	18	10	M	M	1		25	30
19	73	46	60	4	5	0	0.00	0.0	0	5.5	10	30	M	M	1		13	350
20	79	44	62	6	3	0	0.00	0.0	0	4.6	14	250	M	M	1		17	270
21	84	46	65	9	0	0	0.00	0.0	0	6.2	16	250	M	M	1		22	220
22	83	59	71	16	0	6	0.00	0.0	0	3.1	10	160	M	M	1		15	140
23	82	55	69	14	0	4	0.00	0.0	0	7.3	20	180	M	M	2		28	200
24	72	55	64	10	1	0	0.00	0.0	0	13.7	24	350	M	M	3		32	350
25	66	48	57	3	8	0	0.00	0.0	0	5.1	10	360	M	M	3		16	240
26	66	50	58	4	7	0	0.00	0.0	0	7.7	18	320	M	M	5		28	320
27	61	43	52	-1	13	0	0.00	0.0	0	5.3	8	210	M	M	4		8	210
28	61	42	52	-1	13	0	0.00	0.0	0	3.0	8	120	M	M	6		8	120
29	66	47	57	4	8	0	T	0.0	0	4.8	12	150	M	M	8		12	150
30	79	56	68	16	0	3	0.00	0.0	0	7.2	14	230	M	M	6	12	14	230
31	83	60	72	20	0	7	0.00	0.0	0	9.3	15	240	M	M	7		25	230
SM	2233	1582		130	33		T	0.0		238.1			M		130			
AV	72.0	51.0								7.7	FASTST		M	M	4		MAX(MPH)	
									MISC ---->		36	290					50	260

https://www.weather.gov/wrh/Climate?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

Monitoring Period: **November 2024**	*Assessment Required?*
Rainfall Event Data: Max Rainfall (in): 1.43 11/21/2024 50-Year, 24-Hr event? NO	NO
Storm Surge Event Data: Max Increase Above Predicted Normal Tidal Cycling (m): 0.689 Date: 11/21/2024 Time: 14:00 Exceeds event trigger criteria? YES Max Tide Gauge Reading (m): 1.449 Date: 11/15/2024 Time: 13:00 Exceeds event trigger criteria? YES 10-year storm surge event defined as a hurricane? NO (1) While on November 15, 2024 the criteria for the storm surge maximum tide gauge reading was exceeded, the 10-year storm surge did not meet the definition of a hurricane. Therefore, further assessment was not warranted.	NO
Wind Event Data: Max Wind (mph): 30 Date: 11/23/2024 Exceeds trigger criteria? NO Wind direction over 6-hr period: WNW OK	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://www.weather.gov/wrh/Climate?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://www.weather.gov/wrh/Climate?wfo=okx

CHECKED BY: BB

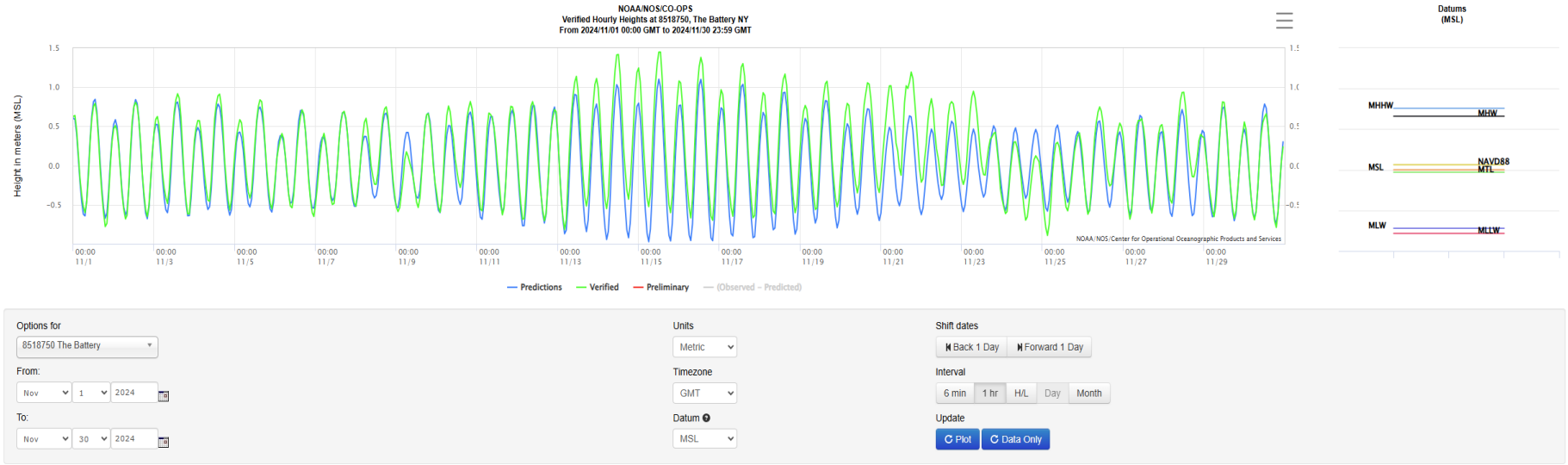
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: NOVEMBER
YEAR: 2024
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	82	58	70	18	0	5	0.00	0.0	0	13.7	31	260	M	M	5		39	270	
2	63	47	55	4	10	0	0.00	0.0	0	9.8	20	330	M	M	2		32	290	
3	58	40	49	-2	16	0	0.00	0.0	0	8.7	15	10	M	M	2		20	10	
4	59	38	49	-2	16	0	0.00	0.0	M	6.6	15	130	M	M	6		22	130	
5	76	51	64	14	1	0	0.00	0.0	0	9.6	20	210	M	M	5	18	28	210	
6	83	63	73	23	0	8	0.00	0.0	0	11.7	22	260	M	M	6		30	250	
7	78	54	66	16	0	1	0.00	0.0	0	10.5	20	320	M	M	5		34	290	
8	72	45	59	10	6	0	0.00	0.0	0	12.1	30	290	M	M	1		39	280	
9	57	43	50	1	15	0	0.00	0.0	0	11.5	31	350	M	M	2		48	310	
10	59	37	48	-1	17	0	0.07	0.0	0	6.6	18	240	M	M	8	1	24	240	
11	70	54	62	14	3	0	0.12	0.0	0	13.0	25	250	M	M	5	1	34	250	
12	56	41	49	1	16	0	0.00	0.0	0	16.7	30	340	M	M	2		50	330	
13	52	36	44	-4	21	0	0.00	0.0	0	11.8	20	20	M	M	1		27	20	
14	48	34	41	-6	24	0	0.00	0.0	0	7.3	15	20	M	M	7		19	330	
15	61	40	51	4	14	0	0.00	0.0	0	9.2	16	290	M	M	5		34	280	
16	65	45	55	8	10	0	0.00	0.0	0	12.6	23	310	M	M	1		40	310	
17	66	42	54	8	11	0	0.00	0.0	0	6.7	14	320	M	M	5		20	310	
18	70	43	57	11	8	0	0.00	0.0	0	9.8	22	320	M	M	5		34	310	
19	64	47	56	10	9	0	T	0.0	0	4.7	10	200	M	M	6		19	340	
20	60	53	57	11	8	0	T	0.0	0	5.8	18	80	M	M	10		27	80	
21	56	39	48	3	17	0	1.43	0.0	0	13.1	22	270	M	M	10	18	36	280	
22	41	37	39	-6	26	0	0.30	0.0	0	15.0	31	230	M	M	10	1	49	250	
23	52	37	45	1	20	0	0.01	0.0	0	15.5	33	280	M	M	6		50	280	
24	57	43	50	6	15	0	T	0.0	0	13.4	30	290	M	M	6		41	290	
25	57	40	49	5	16	0	0.00	0.0	0	6.3	12	270	M	M	6		19	260	
26	62	43	53	9	12	0	0.15	0.0	0	8.3	22	290	M	M	6	1	32	290	
27	54	37	46	3	19	0	0.00	0.0	0	7.8	18	260	M	M	7		24	270	
28	49	42	46	3	19	0	0.83	0.0	0	10.0	30	290	M	M	8	1	39	270	
29	49	34	42	-1	23	0	0.01	0.0	0	10.8	23	250	M	M	5		31	230	
30	41	30	36	-6	29	0	0.00	0.0	0	11.9	21	260	M	M	1		30	260	
SM	1817	1293		401	14	2.92	0.0		310.5				M		154				
AV	60.6	43.1								10.3	FASTST		M	M	5		MAX(MPH)		
								MISC ---->		33	280						# 50	330	

https://www.weather.gov/wrh/Climate?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

Monitoring Period: **December 2024**	*Assessment Required?*
Rainfall Event Data: Max Rainfall (in): 0.86 12/16/2024 50-Year, 24-Hr event? NO	NO
Storm Surge Event Data: Max Increase Above Predicted Normal Tidal Cycling (m): 0.565 Date: 12/21/2024 Time: 6:00 Exceeds event trigger criteria? NO Max Tide Gauge Reading (m): 1.15 Date: 12/16/2024 Time: 14:00 Exceeds event trigger criteria? NO 10-year storm surge event defined as a hurricane? NO	NO
Wind Event Data: Max Wind (mph): 33 Date: 12/5/2024 Exceeds trigger criteria? NO Wind direction over 6-hr period: SW OK	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://www.weather.gov/wrh/Climate?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://www.weather.gov/wrh/Climate?wfo=okx

CHECKED BY: BB

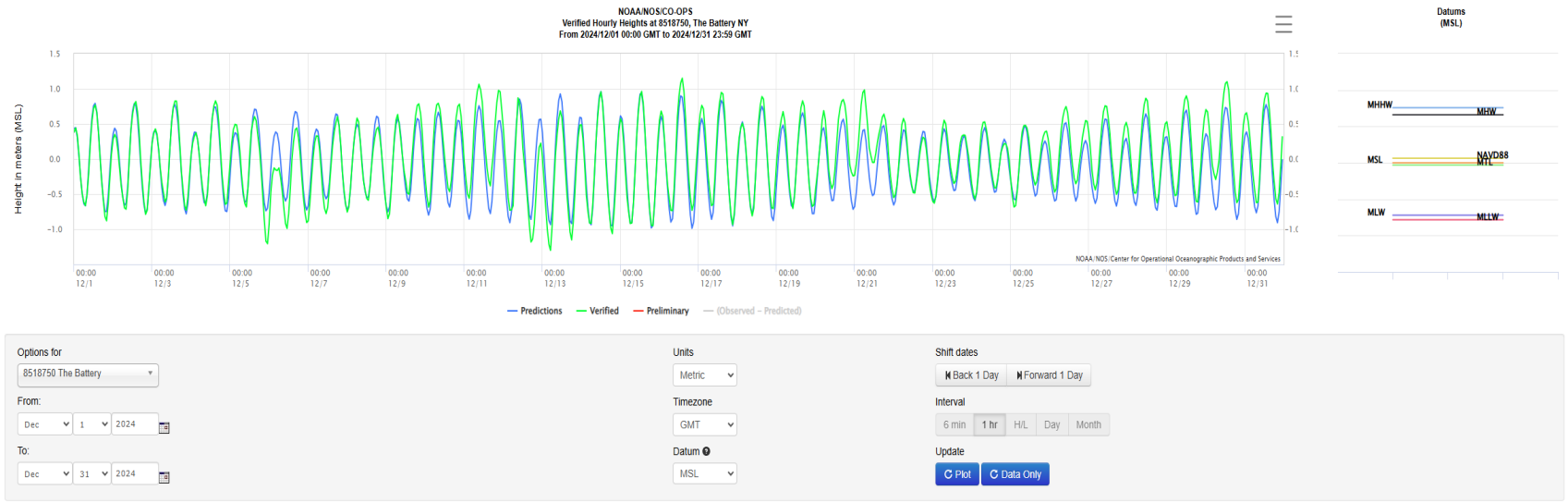
National Weather Service - Climate Data - Microsoft Edge

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

STATION: NEWARK NJ
MONTH: DECEMBER
YEAR: 2024
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	39	24	32	-10	33	0	0.00	0.0	0	10.1	22	260	M	M	5		31	250
2	42	25	34	-8	31	0	0.00	0.0	0	8.2	18	280	M	M	4		29	330
3	44	32	38	-3	27	0	T	T	0	9.9	20	280	M	M	7		31	290
4	42	24	33	-8	32	0	0.01	T	0	10.5	30	200	M	M	6		45	210
5	41	31	36	-5	29	0	0.06	T	0	17.9	36	270	M	M	6	1	49	260
6	37	30	34	-7	31	0	0.00	0.0	0	14.6	24	330	M	M	6		44	280
7	44	31	38	-2	27	0	0.00	0.0	0	13.0	20	270	M	M	8		26	280
8	57	37	47	7	18	0	0.00	0.0	0	11.4	29	270	M	M	8		37	260
9	54	36	45	5	20	0	0.20	0.0	0	4.1	12	10	M	M	8	18	15	90
10	54	46	50	10	15	0	0.16	0.0	0	4.8	10	10	M	M	10	18	14	80
11	63	42	53	14	12	0	0.76	0.0	0	10.6	29	310	M	M	10	1	42	300
12	42	29	36	-3	29	0	0.00	0.0	0	17.3	32	250	M	M	3		43	230
13	36	25	31	-8	34	0	0.00	0.0	0	10.4	18	290	M	M	4		34	310
14	36	20	28	-10	37	0	0.00	0.0	0	6.8	15	10	M	M	2		19	30
15	40	22	31	-7	34	0	0.03	0.0	0	7.1	12	360	M	M	7		18	350
16	52	38	45	7	20	0	0.86	0.0	0	6.0	13	60	M	M	10	1	18	60
17	61	46	54	16	11	0	0.02	0.0	0	11.7	20	270	M	M	8	1	32	260
18	55	39	47	10	18	0	0.23	0.0	0	3.9	12	300	M	M	7	1	21	290
19	47	36	42	5	23	0	0.04	0.0	0	12.3	23	340	M	M	7	1	33	310
20	39	33	36	-1	29	0	0.05	0.3	0	12.1	18	20	M	M	10	1	24	10
21	33	20	27	-10	38	0	0.08	2.2	2	15.1	30	320	M	M	7	18	44	290
22	23	13	18	-18	47	0	0.00	0.0	1	12.3	21	340	M	M	2		35	320
23	29	11	20	-16	45	0	0.00	0.0	1	6.1	13	10	M	M	5		17	360
24	41	26	34	-2	31	0	0.07	1.0	T	8.5	16	340	M	M	8	18	25	310
25	36	27	32	-4	33	0	0.00	0.0	T	6.9	15	320	M	M	6		28	310
26	39	22	31	-5	34	0	0.00	0.0	0	6.9	15	360	M	M	3		19	360
27	44	22	33	-2	32	0	0.00	0.0	0	3.4	8	200	M	M	6		11	200
28	48	38	43	8	22	0	0.71	0.0	0	2.2	8	30	M	M	10	1	10	30
29	65	46	56	21	9	0	0.19	0.0	0	6.1	22	170	M	M	9	1	31	160
30	59	44	52	17	13	0	0.21	0.0	0	13.7	30	260	M	M	7	1	41	260
31	54	38	46	12	19	0	0.71	0.0	0	6.5	17	20	M	M	5	13	22	30
SM	1396	953			833	0	4.39	3.5		290.4			M		204			
AV	45.0	30.7								9.4	FASTST		M	M	7		MAX(MPH)	
									MISC ---->		36	270					49	260

https://www.weather.gov/wrh/Climate?wfo=okx



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