RESPONSE TO COMMENTS

In accordance with the provisions of 40 Code of Federal Regulations ("C.F.R.") §124.17, this document presents EPA's responses to comments received on the following draft National Pollutant Discharge Elimination System ("NPDES") permits:

Chelsea Sandwich Terminal (#MA0003280)
Global Petroleum Terminal (#MA0000825)
Gulf Oil Terminal (#MA0001091)
Irving Oil Terminal (#MA0001929)
Sunoco Logistics Terminal (#MA0004006)

The response to comments explains and supports the EPA determinations that form the basis of the final permits. From February 10, 2021 to April 11, 2021 the United States Environmental Protection Agency ("EPA") solicited public comments for the re-issuance of draft NPDES permits for the five terminals identified above. In addition, a public information meeting and public hearing were held virtually for interested members of the community on March 15^{t} and 29, 2021, respectively.

The draft NPDES permits, developed pursuant to individual permit applications submitted by each of the terminals identified above, authorize the discharge of treated stormwater and hydrostatic test water. The Chelsea Sandwich Terminal, Global Petroleum Terminal, and Sunoco Logistics Terminal also discharge treated groundwater. Further, the Chelsea Sandwich Terminal also discharges boiler blowdown/condensate. All of the terminals discharge to the Chelsea River.

EPA received comments on all five permits from the following parties:

Conservation Law Foundation
Environmental Data & Governance Initiative
GreenRoots
Northeastern University – Social Science Environmental Health Research Institute
Mystic River Watershed Association
City of Chelsea

EPA received comments from the permittees on their respective permits:

- Chelsea Sandwich
- Global Petroleum
- Gulf Oil
- Irving
- Sunoco

In addition, EPA received comments from C. J. Livingstone on the Sunoco permit.

Although EPA's decision-making process has benefited from the comments submitted, the information and arguments presented did not raise any substantial new questions concerning the permits that warrants EPA exercising its discretion to reopen the public comment period. EPA did, however, make certain changes in response to the public comments EPA received on the

draft permits, listed in Part I, below. The analyses underlying these changes, which are logical outgrowths of the draft permits and public comments, are explained in the responses to individual comments in subsequent parts. Comments received in writing and/or submitted during the public hearing, along with EPA's responses are organized into three sections: Part II addresses comments submitted which pertain to all five draft NPDES permits, Part III addresses comments submitted which pertain to a specific individual draft permit, and Part IV addresses oral comments made at the public hearing.

Copies of the final permits and this response to comments document will be posted on the EPA Region 1 web site: https://www.epa.gov/npdes-permits/chelsea-river-bulk-petroleum-storage-facilities-npdes-permits.

Copies of the final permits may be also obtained by writing or calling Shauna Little, U.S. EPA, 5 Post Office Square, Suite 100 (Mail Code: 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1989; Email Little.Shauna@epa.gov.

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I. Summary of Changes to the Final Permit

Changes to All Terminal Permits

The maximum daily effluent limit for Fecal Coliform in Part I.A was eliminated and replaced with a reporting requirement. See Responses to Comments F.4, G.4, H.8, I.1, and J.1.

The sample type for PFAS compounds in Part I.A was changed from composite to grab. See Response to Comment J.4.

The Total Iron effluent limitation and monitoring requirement in Part I.A was removed. See Response to Comment F.12.

The language associated with a "qualifying event" in footnote 1 in Part I.A was moved to the footnotes associated with annual pollutant monitoring. Footnotes corresponding to annual monitoring requirements were revised to specify that the annual effluent and ambient monitoring must be completed concurrently during a qualifying event in the month of April. See Responses to Comments F.6, G.6, J.2.

Footnote 3 in Part I.A was clarified to specify that the data qualifier signifying less than the sample minimum level should be reported. See Response to Comment A.3.2.

The footnote in Part I.A associated with minimum levels for PAHs was changed to specify Method 625.1 (low level GC/MS) for Group I PAHs. The expected minimum level (ML) range from 0.05 to 0.1 µg/L depending on the parameter. The compliance level for Group I PAHs was changed such that compliance is assessed as no detection at any sample-specific minimum level above any applicable water quality standard below the ML. See Responses to Comments A.3, F.8, and G.8.

The footnote in Part I.A associated with TRC was revised to replace the requirement to monitor "only discharges that have been previously chlorinated or retain residual chlorine" with an option to request the TRC limit and associated monitoring apply only to such discharges following completion of a source identification study. See Responses to Comments F.9, F.28, G.9, and G.26.

The footnote in Part I.A associated with PFAS was revised to specify that the monitoring requirement takes effect after receiving written notification from EPA of the multi-laboratory validation of analytical test method 1633 and added or revised language authorizing the Permittee to request elimination of PFAS monitoring after a minimum of 12 non-detect samples. Any reference to Part I.D.3 was deleted. See Responses to Comments F.13, G.13, H.5, I.5, and J.4.

The species for toxicity testing in Part I.A were changed from freshwater to marine species (*Americamysis bahia* and *Menidia beryllina*) consistent with Attachment A to the

permit (Marine Acute Toxicity Test Procedure and Protocol). See Response to Comment J.5.

The footnote in Part I.A associated with annual receiving water monitoring was revised to match the minimum levels for effluent monitoring as some MLs were changed based on comments received. See Responses to Comments A.3, F.8, G.8.

Additional BMPs were added at Parts I.C.1.a.11 through 13 to target source controls for bacteria. See Responses to Comments F.4, G.4, H.8, I.1, and J.1.

The reference in Part I.C.1.a was updated for the current 2021 MSGP. The corrective action requirements in Part 5.1.1 of the 2021 MSGP were included in the Final Permit in place of the footnote for clarity. The numbered sections for inspections and corrective actions were updated to match the 2021 MSGP. See Response to Comment D.1.

The discharge practices BMP at Part I.C.1.b.3 was revised. The requirement to discharge stormwater concurrently with groundwater and the requirement to avoid discharging concurrently with other facilities were removed. See Response to Comments F.6, F.7, F.28, G.6, G.7, G.26, H.4, I.7, and J.8.

Part I.C.1.b.6 was revised to provide additional clarification. See Responses to Comments A.2, C.7, F.24, F.25, F.28, G.23, G.24, G.26, H.2, I.8, J.9. EPA has also provided clarification regarding certain provisions in Part II to address several comments that were directly or indirectly related to implementing Part I.C.1.b.6. EPA has not made any changes to the text of the standard conditions but, in order to aid the regulated community as well as the public, clarifies how they inform proper implementation of Part I.C.1.b.6. See Response to Comment I.8

The system integrity BMP at Part I.C.1.b.8 was revised to clarify the timing of implementation and specify which parameters must be monitored and when. See Response to Comment J.10.

The SWPPP documentation requirements at Part I.C.2.d were revised to specify the timing of annual certification and to require that SWPPPs be submitted to EPA for posting on the Region 1 website. See Responses to Comments D.1, J.10.

The requirements for hydrostatic testing water at Part I.C.3.b.1 were revised to eliminate influent testing, clarify that tank water may not be discharged to the river unless pollutant levels meet effluent limits, and allow a single grab sample from small discharges. See Responses to Comments F.9, F.28, G.26, H.6.

The requirement to sample TRC in hydrostatic test water at Part I.C.3.c.13 has been limited to where potable water or a similar source likely to contain TRC is used. See Response to Comment I.11.

The timing for initiating the bioassessment at Part I.C.5 was extended and the timing of the summary report submission at Part I.C. m.e was refined. See Response to Comment J.12.

Minor typographical errors were corrected (e.g., errors in units, incorrect receiving water, incorrect references to internal outfall). See Responses to Comments F.28, G.26, I.10, J.2, J.11.

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Changes to Global MA0000825

Parts I.A.4 (Outfall 004) and I.A.5 (Outfall 005) have been removed from the Final Permit. See Responses to Comments D.1 and F.1.

The proposed effluent limit for chrysene in Part I.A.1 (Outfall 001) was revised to a reporting requirement due to the revisions in the most recent Massachusetts Surface Water Quality Standards. See Response to Comment F.8.

The sampling frequency for MtBE in Part I.A was changed from 1/year to 1/quarter. The effluent limits for MtBE at Part I.A.1 (Outfall 001) was changed to "Report" as a maximum daily value. See Response to Comment F.16.

A maximum daily effluent limit for Total Zinc was added to Part I.A.1 (Outfall 001). See Responses to Comments F.12, F.18, F.20 and F.27.

A warm-water maximum daily effluent limit for Total Ammonia (April 1 to October 31) was added to Parts I.A.1 and A.2 consistent with the maximum daily effluent limit for other outfalls. See Responses to Comments F.11, F.18, F.20 and F.27.

Monitoring for cyanide in Part I.A.1 was changed to total cyanide with a compliance level of 5 µg/L. See Response to Comment H.9.

The sampling frequency for WET testing and ambient monitoring in Part I.A.2 (Outfall 002) was changed to 1/year during the month of April. Footnotes 16 and 20 were revised consistent with this change. In addition, footnote 16 was revised to eliminate the change in sampling frequency after three years. See Response to Comments F.6, F.17.

Footnote 20 in Part I.A.2 was revised to allow results of a single ambient monitoring sample to fulfill the ambient monitoring requirements for Outfalls 001 and 002. See Response to Comment F.28.

Footnote 8 in Part I.A.3 (*Enterococcus*) was deleted. See Response to Comment F.28.

Footnotes 1 and 10 in Part I.A.3 was revised to eliminate references to "qualifying event." See Comment F.6.

Part I.B.2.j was added to prohibit transfer of stormwater from the Terminal drainage area to any drainage area not operated by the Permittee. The Stormwater Transfer provision at Part I.C.5 was eliminated. See Responses to Comments F.18, F.27.

Changes to Irving MA0001929

The effluent limitation for MtBE at Part I.A.1 was changed from a daily maximum to an average monthly limit and the monitoring frequency was changed to quarterly. The effluent limit from the 2014 Permit is being carried forward in accordance with antibacksliding regulations. See Response to Comment F.16.

The refences to groundwater discharges in Part I.C.1.b.3 and 4 have been deleted. See Response to Comment I.10.

Changes to Gulf MA0001091

Footnote 9 in Part I.A.1 associated with *Enterococcus* monitoring was added. See Response to Comment J.2.

The effluent limit for MtBE in Part I.A.1 was changed to "Report" the maximum daily value and the sampling frequency was changed from 1/year to 1/quarter. See Response to Comment F.16, J. 3, and J.10.

The monitoring frequency for all Group I PAHs in Part I.A.1 was changed to monthly and the associated footnotes were updated. See Response to Comment J.2.

The minimum level for total residual chlorine in Part I.A.1 was changed to 30 µg/L. See Responses to Comments F.9, J.2.

Changes to Chelsea Sandwich MA0003280

Monitoring for cyanide in Part I.A.1 was changed to total cyanide with a compliance level of 5 µg/L. See Response to Comment H.9.

The monitoring frequency for WET testing in Part I.A.1 was changed to 1/year. See Response to Comment G.17.

Changes to Sunoco MA0004006

The monitoring frequency for turbidity in Part I.A.1 was changed to 1/month. See Response to Comment H.7.

With the exception of benzo(a)pyrene, the effluent limitations for Group I PAHs in Part I.A.1 were replaced with a reporting requirement. See Response to Comment H.3.

Monitoring for cyanide in Part I.A.1 was changed to total cyanide with a compliance level of 5 µg/L. See Response to Comment H.9.

The monitoring frequency for WET testing at Part I.A.1 was changed from quarterly to annually consistent with the reduction in frequency that occurred under the 2014 Permit, observed LC50s of no less than 100% over the past permit term, and the WET monitoring frequencies in other bulk oil terminal permits. See Response to Comment G.17.

II. Responses to Comments submitted on all five draft permits

Comments are reproduced below as received; they have not been edited.

Comments from Conservation Law Foundation

Comment A.1.

Conservation Law Foundation ("CLF") submits this letter, and attached Declarations of Dr. Wendi Goldsmith and Dr. Robert M. Roseen, in response to the Environmental Protection Agency's ("EPA") February 10, 2021 request for comment on its Draft Permits for the (i) Sunoco East Boston Terminal, Permit # MA0004006; (ii) Irving Oil Revere Terminal, Permit # MA0001929; (iii) Chelsea Sandwich LLC, Permit # MA0003280; (iv) Global Companies LLC, Permit # MA0000825; and (v) Gulf Oil Terminal, Permit # MA0001091 (collectively "Draft Permits").[1] CLF is a nonprofit organization devoted to protecting New England's environment for the benefit of all people. For over half a century, we have used law, science, and the market to create solutions that preserve our natural resources, build healthy communities, and sustain a vibrant economy.

As described in detail herein, Section I.C.1.b.6 of the Draft Permits concerning "minimizing impacts from stormwater discharges from major storm events that cause extreme flooding conditions" improperly limits the permittees' existing duties to design, construct, operate, and maintain their facilities in a manner that avoids flooding and damage from the reasonably anticipated impacts of climate change, as one among other weather driven factors, during the facilities' design life. The currently in-force 2014 permits for the terminal (collectively, "Prior Permits") adopted a "good engineering practices" standard for developing pollution control measures and preparing of the Stormwater Pollution Prevention Plan ("SWPPP"). *See, e.g.,* Prior Permits § I.D.3 ("The SWPPP shall be prepared in accordance with good engineering practices and shall be consistent with the general provisions for SWPPPs included in the most current version of the MSGP"). To comply with these and other provisions of the Draft Permits, permittees must develop enforceable measures to address the risks of flood-induced contaminated stormwater discharges and chemical disasters as a component of their legally binding SWPPP and to prevent violations of other effluent limits as well as water quality standards. As explained below and in the attached Declarations, good engineering standards dictate that durable infrastructure be designed to withstand anticipated weather and climate-related risks, including the risks posed by climate-change-induced severe weather, sea level rise, and storm surge.

EPA should not adopt the proposed language of Section I.C.1.b.6 of the Draft Permits because it appears to unlawfully narrow the scope of necessary consideration of flood risk from the Prior Permits in violation of the Clean Water Act's ("CWA") anti-backsliding provision. Accordingly, the Agency should strengthen the proposed language in Section I.C.1.b.6 by underscoring existing obligations requiring permittees to use good engineering practice, disclose information in their possession, consider all reasonably available data and information, and thoroughly document present-day and future flood risks, such as hurricane storm surge and high tides, extreme precipitation, known and committed sea level rise, and historic flood incidents. EPA

should further underscore that permittees must include specific enforceable design, operation, and maintenance measures in their SWPPPs to fully address identified risks of pollutant discharges.

Further, EPA's updated monitoring requirements for polycyclic aromatic hydrocarbons ("PAHs") are inadequate. As EPA is aware, PAHs are potent carcinogens—or enhance carcinogenic effects of other compounds—that are commonly present in stormwater discharges from petrochemical facilities. *See, e.g.,* Prior Permits, Fact Sheet § 7.3.2. Moreover, PAHs are potent at extremely low concentrations, well below the 0.1 µg/L ML for Group I PAHs included in the Draft Permits. Despite EPA's recognition of the Terminals' role in impairing Chelsea Creek, the Draft Permits still (i) set the Minimum Level ("ML") for Group I PAHs at 0.1 µg/L, (ii) allows permittees to not report concentrations below the ML, and (iii) require only a single sample be taken per reporting period. As described below and in the attached Roseen Declaration, these MLs are orders of magnitude greater than the Water Quality Standards for these PAHs and well-above the minimum detection limit available in standard laboratory testing for PAHs.

The Terminals lie along Chelsea Creek in Chelsea, Revere, and East Boston, surrounded by vibrant environmental justice communities that are already unduly burdened by industrial pollution from the Terminals and other industrial facilities. The changes described herein must be made to the Draft Permits to protect those communities from further pollution and the risk of catastrophic oil releases.

[1] CLF also expressly incorporates as part of this letter all of the sources and materials cited in this letter and attached declarations. A complete list of the sources and materials included herein can be found in the attached Bibliography.

Response to Comment A.1

This comment refers generally to EPA's limitations and requirements that are alleged to be insufficient. In consideration of more detailed comments that follow, EPA has provided detailed responses to each of these aspects below.

Comment A.2 – Climate Change Poses an Imminent and Certainly Impending Threat to the Terminals and the Surrounding Community

Comment A.2.A – Government, Industry, and Engineers Alike Recognize the Risk Posed by Climate Change to Industrial Infrastructure

There is widespread consensus that climate change has already caused dramatic changes in the frequency and severity of precipitation and major storms, including severe tropical storms responsible for storm surges and flooding, has caused and contributed to sea level rise, and has dramatically shifted air, water, and surface temperatures. Increased impacts in the near and long-term are already guaranteed as a result of emissions to-date and will be severely exacerbated by continued reckless emissions of greenhouse gases. It is beyond any reasonable dispute that climate disruption poses severe risks to riverine and coastal infrastructure. The devastation wrought in recent years by Hurricane Harvey and Superstorm Sandy spotlight the dangers to private and public infrastructure throughout the country. For example, among many other

disastrous impacts of the storm, the Arkema facility in Houston caught fire and exploded after flood waters breached the facility during Hurricane Harvey. The Shell facility in Sewaren, New Jersey spilled 378,000 gallons of oil after tidal surge damaged its bulk storage tanks during Superstorm Sandy. The devastation caused by releases of stored petroleum products from the Murphy Oil facility in New Orleans as a result of Hurricane Katrina still resonates as a signal example as well. The risks and costs to industrial and community infrastructure have been brought starkly into the public eye through reports by the Union of Concerned Scientists and by the Center for Climate Integrity as well.[2] These risks have been underscored by industry as well.[3]

The flooding risks to infrastructure are well recognized by the United States government, as detailed in the Goldsmith Declaration at ¶¶ 41-51, 100-104. For example, the Army Corps of Engineers—the preeminent governmental engineering organization in the country—issued a regulation in 2013 entitled "Incorporating Sea Level Change in Civil Works Programs." That regulation states:

> [Sea level change] can cause a number of impacts in coastal and estuarine zones, including changes in shoreline erosion, inundation or exposure of low-lying coastal areas, changes in storm and flood damages, shifts in extent and distribution of wetlands and other coastal habitats, changes to groundwater levels, and alterations to salinity intrusion into estuaries and groundwater systems.

Army Corps of Engineers, Regulation No. 1100-2-8162, at B-1 (Dec. 31, 2013), *available at* https://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/ER_1100-2-8162.pdf. Indeed, the Army Corps of Engineers acknowledges that sea level change is likely to impact coastal projects, and "[a]s a result, managing, planning, engineering, designing, operating, and maintaining for [sea level change] must consider how sensitive and adaptable 1) natural and managed ecosystems and 2) human and engineered systems are to climate change and other related global changes." *Id.* at 2.

The EPA itself has similarly recognized the danger even before drafting the major storm provision in Section I.C.1.b.6. In its Framework for Protecting Public and Private Investment in Clean Water Act Enforcement Remedies (AR-46), EPA stated: "Extreme weather events, such as storms, floods, and droughts, pose significant risks to water infrastructure and water pollution control measures, and these risks are likely to affect the ability of regulated entities to comply with CWA requirements over time" and that, in appropriate circumstances, "EPA will require as part of the remedy that regulated entities implement resilience and adaptation measures based on the results of . . . vulnerability assessments and the expected useful life of the infrastructure in question, as needed to ensure long-term compliance with the CWA." *Id.* at 6. It concludes, "[i]t is important for each regulated entity to assess its own vulnerability and consider a range of options that address its particular obligations and goals as well as resource challenges." *Id.* at 9.

The regulated community similarly recognizes the risks to their infrastructure posed by climate change. Corporations—from oil majors, chemical companies, and Wall Street—have all issued statements describing the threats posed by climate change induced severe weather. *See* Goldsmith Dec. ¶¶ 52-64. Similarly, the engineering profession responsible for designing the

infrastructure has developed specific guidelines for incorporating climate resilience into that infrastructure. *See* Goldsmith Dec. ¶¶ 65-77.

As a result of this consensus, "[a]ny asset/project owner, and by extension any reasonable engineer tasked with design and/or operations of durable infrastructure and other complex facilities, will find it necessary to analyze the potential anticipated climate-change-related threats to the asset throughout its design life." Goldsmith Dec. ¶ 79.

[2] *See generally* The Center for Climate Integrity Resilient Analytics, *High Tide Tax: The Price to Protect Coastal Communities from Rising Seas* (June 2019), *available at* https://climatecosts2040.org/files/ClimateCosts2040_Report.pdf.
[3] *See, e.g., Effectively addressing climate risk through adaptation for the Energy Gulf Coast* (Oct. 2010), *available at* https://www.entergy.com/userfiles/content/our_community/environment/GulfCoastAdaptation/report.pdf

Response to Comment A.2.A

Comment noted. EPA agrees that climate change poses a significant risk to these facilities. EPA, in fact, proposed requirements to implement resilience and adaptation measures in the draft permits based on susceptibility to climate events, such as storms, increased precipitation/floods, storm surge, and sea level rise that pose significant risks to water infrastructure and water pollution control measures at these specific facilities. These measures continue to be required in the final permits.

EPA notes that the "Framework for Protecting Public and Private Investment in Clean Water Act Enforcement Remedies"[1] pertains to enforcement matters. This framework is not a rule or final agency action, nor does it establish any binding legal obligations on EPA or the regulated community. EPA proposed requirements to implement resilience and adaptation measures in the draft permits based on the results of a baseline vulnerability assessment by EPA. While this comment does not request or advocate for any particular change to the draft permits, EPA agrees that, in addition to EPA's evaluation in the Fact Sheet at Section 5, *Special Conditions, Best Management Practices*, each regulated entity must assess its own vulnerability periodically and consider a range of control measures that address its particular risks, objectives, and resource challenges. See responses A.2.E, below.

Finally, while the Army Corps of Engineers, Regulation No. 1100-2-8162, at B-1 (Dec. 31, 2013), referenced in the comment, does not apply to this EPA action, EPA agrees that sea level rise associated with climate change poses a risk to coastal infrastructure.

Comment A.2.B – The Terminals Are at Particular Risk from Severe Weather

The Chelsea Sandwich Terminal is located in Chelsea directly beside the Tobin Bridge, at the confluence of Chelsea Creek and the Mystic River. The Terminal includes nine bulk above-ground storage tanks, two 20,000 gallon above-ground storage tanks with a combined capacity of 28 million gallons holding diesel, No. 2 fuel oil, No. 6 fuel oil, and biofuels, along with smaller

[1] https://www.epa.gov/sites/default/files/2016-12/documents/frameworkforprotectingpublicandprivateinvestment.pdf

tanks holding fuel additives. The Draft Permit states that the entire tank farm is surrounded by a concrete secondary containment wall.

The Sunoco Terminal is located in East Boston, east of the Chelsea Sandwich Terminal, and includes twenty above-ground storage tanks with a combined capacity of 41.7 million gallons of gasoline, diesel, jet fuel, and fuel additives. The Draft Permit states that the tanks are situated in twelve secondary containment areas surrounded by concrete berms. The facility is broken up into five sections by public roads.

The Gulf Terminal is located in Chelsea, northeast of the Sunoco Terminal, and includes eighteen above-ground storage tanks containing gasoline, diesel, kerosene, and No. 2 fuel oil, as well as five fuel additive tanks. The Draft Permit states that each storage tank is surrounded by an earthen secondary containment berm.

The Irving Terminal is located in Revere, northeast of the Gulf Terminal, and includes eleven above ground storage tanks with a combined capacity of 32 million gallons holding petroleum products and ethanol. It also has an additional seven tanks storing fuel additives with a combined capacity of 81 thousand gallons. The Draft Permit states that each storage tank is surrounded by an earthen secondary containment berm.

The Draft Global Permit applies to three terminals located in Revere, directly bordering the Irving Terminal, that were separately permitted in 2014: Global South, Global REVCO, and Global Petroleum. The combined terminal is split by Route 1A. The combined terminal includes 32 bulk above-ground storage tanks with a combined capacity of 89 million gallons holding gasoline, diesel, No. 2 fuel oil, kerosene, and biofuels, as well as various smaller fuel additive tanks. The Draft Permit states that the secondary containment at the Global South and Global Petroleum site includes earthern berms around each above-ground storage tank as well as a perimeter berm around the entire tank farm. The Global REVCO site's secondary containment consists of earthen berms or steel dikes around the above-ground storage tanks.

During the current permit term, the Terminals have reported several substantial discharges of highly toxic chemicals. The Terminals measured discharges of Benzene in excess of 5 µg/L: Gulf (1 exceedance), Irving (5 exceedances), Chelsea Sandwich (1 exceedance), and Global Petroleum (11 exceedances).[4] Also, all of the Terminals reported discharges of Group I PAHs in excess of the 0.018 µg/L limit, as follows:

Terminal	Number of Detections Above 0.018 µg/L for Group I PAHs	Maximum Value Detected
Sunoco	3	0.11 µg/L
Gulf	10	0.104 µg/L
Irving	1	0.159 µg/L
Chelsea Sandwich	26	0.37 µg/L
Global	15	0.118 µg/L

The Terminals are extremely vulnerable to the present and increasing effects of climate change: sea level rise, increased precipitation, increased magnitude and frequency of storm events, and increased magnitude and frequency of storm surges. The risk of climate change to infrastructure has long been recognized by the Commonwealth of Massachusetts:

> "Massachusetts' climate is already changing and will continue to do so over the course of this century—ambient temperature has increased by approximately 1°C (1.8°F) since 1970 and sea surface temperature by 1.3°C (2.3°F) between 1970 and 2002. These warming trends have been associated with other observed changes, including a rise in sea level of 22 centimeters (cms) between 1921 and 2006."[5]
> "Regarding infrastructure, the most significant vulnerability of existing structures stems from the fact that they were built based on historic weather patterns, not taking into account future predicted changes to sea level, precipitation, or flooding. This puts the infrastructure at increased risk of future damage and economic costs."[6]
> "Current rates of sea level rise and projections for accelerated trends are all significant threats to the coastal communities of the state. Sea level rise would increase the height of storm surges and associated coastal flooding frequencies, permanently inundate low-lying coastal areas, and amplify shore line erosion. Extensive development and infrastructure, both public and private, would be affected in these expanding vulnerable areas."[7]
> "The energy sector's three primary climate change concerns are flooding (due to increased precipitation and storm surge), extreme events (such as hurricanes and snow and ice storms), and increased temperature."[8]

The Federal Emergency Management Agency ("FEMA") flood maps indicate that all of the Terminals have a 1% chance of flooding annually,[9] and that portions of the Global, Irving, and Gulf terminals would be inaccessible "dry sockets" surrounded on all side by flood waters. The Sea, Lake, and Overland Surges from Hurricanes ("SLOSH") modeling from the National Oceanic and Atmospheric Administration ("NOAA") shows that all of the Terminals would be flooded in by a Category 1 hurricane.[10]

A 2017 analysis by the City of Chelsea determined that the Chelsea Sandwich Terminal had a 100% chance of flooding in 2030 while portions of the tank farm at the Gulf Terminal have a 10% or greater chance of flooding in 2030.[11] The City of Boston reports that the area surrounding the terminals has an estimated sea level rise of 21 inches for the year 2050 with an annual exceedance probability of ten percent due to coastal flooding.[12] Climate Central also reports an 83% risk of at least one flood over 5 ft taking place between today and 2050 in the Chelsea area, including inundation at several terminal locations.[13] NOAA also maps the areas surrounding the Terminals as low-lying, prone to high tide flooding, and inundated by floodwaters with a five foot rise in sea level.[14]

Visual inspection of the Terminals by Dr. Goldsmith found substantial flood risks at the Terminals. For example, the Sunoco terminal lies on low land with relatively short walls at risk of storm surge impacts from Chelsea Creek. Goldsmith Dec. ¶¶ 16, 18. The Irving and Global terminals face threat of flooding from storm surge arising from the Belle Isle Marsh Inlet. Goldsmith Dec. ¶ 87.

The surrounding communities are also at risk from the Terminals. The Terminals are surrounded on all sides by residential neighborhoods that would be devasted by any major releases. These neighborhoods are already over-burdened by pollution from the Terminals and other industrial communities. EPA has classified these neighborhoods at "environmental justice" communities and conducted a specific environmental justice analysis of them, recognizing that they are "impacted by many environmental burdens." As described in the EJ Analysis, the population residing within the area identifies itself as over 50% Hispanic with 65% of residents speaking a language other than English at home. These residents also reported per capita incomes of about 28% less than the per capita income reported for all Massachusetts residents. Thus, flooding at the Terminals would affect communities that already stand the most to lose from negative environmental impacts.

Flooding at the Terminals would be catastrophic to the surrounding area. As described in the Goldsmith Declaration:

> [T]he conditions and usage patterns along Chelsea Creek have evolved substantially in the past two decades. Consolidation and/or closure of many terminal operations has allowed new uses to take over areas previously incompatible with human or wildlife visitors. Now, the number of tanker docks is reduced, the water frontage converted from terminals to open space has increased, and even continuously operating terminals have leased out former office buildings to various nonpetroleum facilities, many of which include retail activities that bring people to the area. Public parks have been developed, residential infill development and renovation are abundant, and people can be found enjoying accessible waterfront areas during all seasons. Publicly and privately funded habitat restoration measures have been implemented, notably around the Condor Street Park as well as along upper reaches of Sales Creek which is a major tributary. Another unnamed tributary cross-connects Chelsea Creek to the Belle Isle Marsh Inlet. Belle Isle Marsh comprises 275 acres of salt marsh, salt meadow, and tidal flats within the wider 1000-acre Rumney Marshes Area of Critical Environmental Concern (ACEC). This ACEC has been characterized by the US Fish and Wildlife Service as "one of the most biologically significant estuaries in Massachusetts north of Boston." It includes productive saltmarsh, tidal flats, and shallow subtidal channels. In summary, the five Chelsea Creek terminals store, handle, and/or process hydrocarbons in close proximity to residential and recreational areas with heavy public use and high habitat functions. Multiple marinas, small boat access points, playgrounds, athletic fields, community walking paths, and publicly accessible open space on both banks of Chelsea Creek draw people to the area beyond local residents.

Goldsmith Dec. ¶ 10. Dr. Goldsmith explains that "segments of the Chelsea Creek waterfront once used for industrial purposes have been converted for use as small boat marinas, parks, and in-fill housing, athletic fields, playgrounds, etc." *Id.* ¶ 84.

However, the success of the redevelopment of the area surrounding the Terminals greatly increases the consequences resulting from a spill into the environment. *Id.* ¶¶ 84-85. As Dr. Goldsmith concludes, "increasing climate related threats combined with increasing levels of exposure heighten risk of harm to human health and the environment." *Id.* ¶ 10. Dr. Goldsmith

further notes that the development in the surrounding area has, consistent with good engineering practices, taken climate change risks into account. *See* Goldsmith Dec. ¶ 86. However, the Terminals appear not to have taken similar measures. *Id.* ¶ 87.

[4] It is important to note that the Global Petroleum site failed to test its outfall into Chelsea Creek for five years, so it is impossible to know whether additional violations would have been recorded for that site.
[5] Massachusetts Executive Office of Energy and Environmental Affairs, *Massachusetts Climate Change Adaptation Report* (Sept. 2011) at 7.
[6] *Id.* at 7.
[7] *Id.* at 22-23.
[8] *Id.* at 62.
[9] FEMA, *FEMA Flood Map Service Center* (Oct. 2020). https://msc.fema.gov/portal/home.
[10] MassGIS, *Oliver: MassGIS's Online Mapping Tool* *http://maps.massgis.state.ma.us/map_ol/oliver.php* (last accessed March 26, 2021).
[11] City of Chelsea, MA, *Designing Coastal Community Infrastructure for Climate Change* (2017) 4-8, 4-16, *available at* https://www.chelseama.gov/sites/g/files/vyhlif396/f/uploads/20170215_chelsea_va.pdf.
[12] City of Boston, MA, *Climate Ready Boston Map Explorer* (Jan. 8, 2020), *available at* https://www.boston.gov/departments/environment/climate-ready-boston-map-explorer.
[13] Climate Central, *Surging Seas Risk Finder for Chelsea, Massachusetts, USA* https://riskfinder.climatecentral.org/ (Last Accessed March 26, 2021).
[14] NOAA, *Sea Level Rise and Coastal Flooding Impacts,* https://coast.noaa.gov/slr/#/layer/slr (Last accessed March 26, 2021)

Response to Comment A.2.B

Comment noted. EPA proposed requirements to implement resilience and adaptation measures in the draft permits, and, as one example of assessment, reviewed widely accessible and easily reproduceable data from the Federal Emergency Management Agency (FEMA) regarding flood susceptibility at these specific facilities. These measures continue to be required in the final permits. While this comment does not request, or advocate for, any particular change to the draft permits, EPA notes that Part I.C.2.b of the draft permits already specifies that the control measures selected to comply with the requirements of the Major Storm and Flood Events best management practice (BMP) provision "must take future conditions into consideration." *See also* Fact Sheet at 89 and response to comment A.2.E, below.

Comment A.2.C – The Prior Permits Required Permittees to Consider the Elevated Risk of Flooding Posed by Climate Change Impacts

The Prior Permits already require the Terminals to design, maintain, and operate the Terminals in a manner that avoids flooding and damage from the reasonably anticipated impacts of climate change during the facilities' design life by imposing a "good engineering practices" standard to the facilities' control measures and SWPPP preparation.

The Prior Permits state: "The SWPPP shall be prepared in accordance with good engineering practices and shall be consistent with the general provisions for SWPPPs included in the current MSGP." Prior Permits § I.D.3. They also state: "Control measures (including BMP) shall be selected, designed, installed, and implemented at the Terminal to ***minimize the discharge of pollutants*** in stormwater to waters of the United States. At a minimum, these BMPs shall be consistent with the control measures described in the current EPA Multi-Sector General Permit

(MSGP)." Prior Permits § I.C.1 (emphasis added). The 2015 MSGP defined minimize to mean "reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable ***in light of best industry practice***." 2015 MSGP § 2 (emphasis added). The "good engineering practices" standard applies to the description of "all storm water controls, both structural and non-structural." Prior Permits § I.D.3. It also requires the permittee to evaluate and identify all potential sources of pollutants. *See id.*

With these provisions, the Prior Permits expressly incorporated the professional standard of an engineer into the permit's control measures requirements. In light of the scientific consensus on the current and future increasingly severe precipitation and storms, "[b]y requiring the permittees to use 'good engineering practices' to develop and implement control measures, the Prior Permits required the permittees to assess the Terminals' vulnerabilities in light of climate change, develop engineering design plans to adequately address those vulnerabilities, and ultimately implement measures that will protect the Terminals and other surrounding communities from contamination from the Terminals." Goldsmith Dec. ¶ 98.

Response to Comment A.2.C

Comment noted. EPA agrees that the 2014 permits required the permittees' control measures to be adopted in accordance with "good engineering practice." As the commenter recognizes, the draft permits retain this requirement. *See, e.g.*, Goldsmith Decl. ¶ 106 ("The Draft Permits retain the 'good engineering practices' standard, which they must, to avoid impermissible backsliding."). Further, EPA acknowledges through proposed conditions in the draft permits that the evaluation and implementation of control measures in this context requires permittees to consider future risks of major storm and flood events caused or worsened by climate change. *See* Part I.C.2.b ("The SWPPP shall be prepared in accordance with good engineering practices and manufacturer's specifications and *must take future conditions into consideration*." (emphasis added)); 2021 Fact Sheet at 88–89 ("The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications and *must take future conditions into consideration*." (emphasis added)); *cf.* Occupational Health and Safety Administration, *RAGAGEP in Process Safety Management Enforcement* (May 11, 2016) (noting that in the process safety management context, examples of "recognized and generally accepted good engineering practices" can consist of widely adopted codes, consensus documents, non-consensus documents, and internal standards). EPA further proposed the inclusion in the draft permits of the provision contained in Part I.C.1.b.6 as a new requirement—over and above the existing standard contained in the 2014 permits—to specifically ensure that the facilities consider and select the control measures necessary to minimize discharges that result from impacts of major storm and flood events. The 2014 permits did not contain this major storm and flood events provision.

Comment A.2.D – The Permit Conditions and Standards in Section I.C.1.b.6 and Request for Comment of the Draft Permits are Less Stringent and Therefore Unlawful under the Clean Water Act's Anti-Backsliding Prohibitions

The CWA's anti-backsliding provision prohibits permits from having less stringent effluent limitations than the previous permit. *See* 33 U.S.C. § 1342(o). Section 402(o)(3) of the CWA specifically provides an absolute limitation on backsliding:

> This section of the CWA prohibits the relaxation of effluent limitations in all cases if the revised effluent limitation would result in a violation of applicable effluent guidelines or water quality standards, including antidegradation requirements. Thus, even if one or more of the backsliding exceptions outlined in the statute is applicable and met, CWA section 402(o)(3) acts as a floor and restricts the extent to which effluent limitations may be relaxed. The requirement affirms existing provisions of the CWA that require effluent limitations, standards, and conditions to ensure compliance with applicable technology and water quality standards.[15]

The language proposed by EPA in Section I.C.1.b.6 violates Section 402(o) "by narrowing the scope of the control measures to exclude consideration of all of climate change related impacts, including sea-level rise and storm surge, and by basing a facility's risk designation solely on Federal Emergency Management Agency ('FEMA') flood risk assessments." Goldsmith Dec. ¶ 116. As discussed above and in Dr. Goldsmith's declaration, the Prior Permits require consideration of all climate change impacts and require a prospective risk assessment based on good engineering practices. Sole reliance on base flood elevations from often-outdated flood insurance maps not intended for regulatory use and that fail to consider climate change impacts is not consistent with good engineering practice and would simply guarantee disastrous pollutant discharges and public health and safety consequences. Accordingly, the permit conditions and standards in the Draft Permits are less stringent than those in the Prior Permits and adoption of the language proposed in Section I.C.1.b.6 of the Draft Permits is in violation of Section 402(o) of the CWA.

[15] U.S. ENVTL. PROT. AGENCY, *NPDES Permit Writers' Manual*, at 7-4 (Sept. 2010), https://www3.epa.gov/npdes/pubs/pwm_chapt_07.pdf.

The Proposed Use of Temporary Measures To Accommodate Major Storm Events Impermissibly Weakens The Permit Because It Assumes That Facilities Will Flood, Thereby Implying More Permanent Measures Are Unnecessary

As Dr. Goldsmith stated in her Declaration, "Sections I.C.1.b.6.iii-vi weaken the Draft Permits by identifying temporary measures to be taken only in the event of an oncoming storm. Such temporary measures presuppose that i) storms will be infrequent enough to make temporary measures sustainable on a regular basis, ii) facilities will be able to predict in advance and with certainty which storms will pose a flooding risk, and iii) permanent infrastructure (such as warehouses for storing or roads for transporting necessary materials or equipment) is already out of harm's way in the event of a flood." Goldsmith Dec. ¶ 127. As a result, Section I.C.1.b.6

apparently takes for granted that the Terminals will be flooded by severe storms and does not address methods for preventing flooding.

However, building standards based on good engineering practice require permitted facilities be designed to ensure that flood waters cannot enter a facility, *e.g.*, by raising the facility above the anticipated flood level. Engineers designing industrial facilities cannot satisfy their standard of care by assuming that facilities will flood and merely taking efforts to ensure that structures do not float away, especially when those facilities contain substances that are hazardous to human health or the environment. In fact, petrochemical terminals, like the Terminals here, often contain extensive soil contamination or other contaminants that can be mobilized by flood waters if allowed to enter the facility. As was required in the Prior Permits, engineers must design facilities to avoid any reasonably anticipated potential for flooding throughout the design life of the facility. Therefore, to avoid prohibited backsliding, Section I.C.1.b.6 should include a provision for control measures that prevent flood waters from entering the facility for any reasonably anticipated flooding that might occur during the design life of the facility. Failing to do so impermissibly weakens the Permits and violates Section 402(o) of the CWA.

The Manner in Which the Draft Permits Propose to Rely on FEMA Maps Unlawfully Weakens Effluent Limitations by Narrowing The Universe of Flood Date That Must Currently Be Considered Under The Prior Permits

Proposed Section I.C.1.b.6 constrains the flood-risk analysis solely to base flood elevations (BFE) "shown on the Federal Emergency Management Agency's Flood Maps and on the flood profiles, which can be access through https://msc.fema.gov/portal/search." Draft Permits § I.C.1.b.6, n.4. EPA's request for comment on the Major Storm Events provision similarly seems to rely solely on FEMA flood maps to identify whether terminals are exposed to flood risk. *See* Draft Permits, Fact Sheet § 5.3.1. EPA is well aware that FEMA flood hazard designations are insufficient to capture present-day coastal flood risks, which include hurricane storm surge and nuisance or 'sunny-day' tidal flooding, to sites discharging industrial stormwater.[16]

Moreover, the proposed use of the one percent flood level or BFE as calculated by FEMA also ignores Executive Order 11988 ("EO 11988"). EO 11988 applies to among other things, "Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities."[17] It further provides that

> [e]ach agency shall take floodplain management into account when formulating or evaluating any water and land use plans and shall require land and water resources use appropriate to the degree of hazard involved. Agencies shall include adequate provision for the evaluation and consideration of flood hazards in the regulations and operating procedures for the licenses, permits, loan or grants-in-aid programs that they administer. Agencies shall also encourage and provide appropriate guidance to permittees to evaluate the effects of their proposals in floodplains prior to submitting applications for Federal licenses, permits, loans or grants.[18]

The guidance for application of EO 11988 requires floodproofing and planning to at least the 0.2 percent or 500-year flood level for critical actions like permitting facilities that will discharge pollutants harmful to human health and the environment if flooded.[19]

Concerns about potential repercussions from reliance on FEMA designations alone are especially grave given that climate change has resulted in a rise in mean sea level of 8–9 inches "since 1880, with about a third of that coming in just the last two and a half decades."[20] Climate change has also increased the frequency and intensity of severe weather and floods to levels far in excess of historic levels. For example, as Dr. Goldsmith discusses in her Declaration, "Hurricane Harvey was a 500-year storm (in the traditional historic context) that devasted the Houston area, a slow-moving onslaught of rain that caught the city unawares and wreaked havoc on Houston homes and industrial facilities alike. Yet Harvey was not the first such storm to pass through Houston in 500 years. In fact, Harvey was the third such storm in three years to bombard the area, and it was Houston's very reliance on the 1-in-500 year probability that led the city to inadequately prepare, leading to unnecessary and disastrous consequences." Goldsmith Dec. ¶ 118 (citing Dara Lind, *The "500-year" flood: why Houston was so underprepared for Hurricane Harvey*, VOX (Aug. 28, 2017), https://www.vox.com/science-and-health/2017/8/28/16211392/100-500-year-floodmeaning.).[21]

These climate change effects are expected to continue to increase for the foreseeable future. Moreover, as seen with Harvey in Houston, dramatically intensified development of impervious surfaces over the last several decades further confounds simple reliance on the FEMA designations.[22] Moreover, changes (or lack thereof) to a facility may increase the flood risk and cannot be taken into account by a FEMA FIRM. *See* Goldsmith Dec. ¶ 124. As a result, currently applicable spatial flood hazard designations significantly underestimate present-day risk. Indeed, the Army Corps of Engineers' Regulation 1100-2-8162 at B-6 notes that historic data on water levels is insufficient, stating:

> [A]nalysts shall consider what effect changing relative sea level rates could have on design alternatives, economic and environmental evaluation, and risk. The analysis shall include, *as a minimum*, a low rate that shall be based on an extrapolation of the *historical tide gauge rate*, and intermediate and high rates that include future acceleration of [global mean sea level].

Reliance on FEMA BFEs alone in Section I.C.1.b.6 and the request for comment artificially constrains the Prior Permits' requirements and would be arbitrary and unreasonable given current scientific consensus regarding both the insufficiencies of the FEMA maps and the dramatic current and certainly impending effects of climate change.[23]

[16] *See generally*, Highfield, Wesley E., Norman, Sarah A., *et al.*, *Examining the 100-Year Floodplain as a Metric of Risk, Loss, and Household Adjustment*, Risk Anal. (May 22, 2012).
[17] EO 11988, 42 Fed. Reg. 26951 (May 24, 1977) § 1.
[18] *Id.* § 2(c).
[19] *See* FEMA, *Guidelines for Implementing Executive Order 11988, Floodplain Management, and Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, *available at* https://www.fema.gov/medialibrary/assets/documents/110377; FEMA, *Further Advice on Executive Order 11988 Floodplain Management*. 8. https://www.gsa.gov/cdnstatic/Advice_EO11988.pdf.

[20] Lindsey, Rebecca, *Climate Change: Global Sea Level*, NOAA (Nov. 19, 2019), *available at* https://www.climate.gov/news-features/understanding-climate/climate-change-global-sea-level.
[21] *See also* Blake, Eric S. & Zelinsky, David, A., *Tropical Cyclone Report: Hurricane Harvey*, Nat'l Hurricane Ctr. 9 (2018), *available at* https://www.nhc.noaa.gov/data/tcr/AL092017_Harvey.pdf. (stating total damages from Harvey have been difficult to calculate in part because a majority of the residential flood loss claims came from outside the 500-year flood plain).
[22] *See* Satija, Neena & Collier, Kiah, *Boomtown, Flood Town*, TEXAS TRIBUNE & PROPUBLICA (Dec. 7, 2016), *available at* https://projects.propublica.org/houston-cypress/. ("As wetlands have been lost, the amount of impervious surface in Harris County[, Texas] increased by 25 percent from 1996 to 2011," said Sam Brody, a Texas A&M University at Galveston researcher. "And there's no way that engineering projects or flood control regulations have made up for that change, he said.").
[23] This is not to say that FEMA maps serve no purpose whatsoever. CLF is simply highlighting the limited nature of the maps as an engineering tool, especially when used in a vacuum with no additional information. As discussed below, FEMA designations represent basic information that must be considered when identifying present-day flood risks and risk over the design life of a facility.

Response to Comment A.2.D

EPA disagrees that the requirement that operators implement the control measures necessary to minimize discharges caused by impacts from major storm and flood events constitutes backsliding. Anti-backsliding applies only when "a renewed, reissued, or modified permit contains effluent limitations [that are] less stringent than those in the previous permit." *In re City of Tulsa*, 3 E.A.D. 505, 506 (EAB 1991) (citing 33 U.S.C. § 1342(o)); *see also In re City of Ruidoso Downs*, 17 E.A.D. 697, 704, 720 (EAB 2019) (noting that anti-backsliding only applies when new limits are "less stringent" than previous ones). As noted in EPA's response to Comment A.2.C, Part I.C.1.b.6 of the draft permits is a new effluent limitation or condition over and above the ones contained in the previous permits, and as such, Part I.C.1.b.6 does not contain "effluent limitations [that are] less stringent" than the ones in the previous permits, as defined in section 402(o) of the Act and the regulations at 40 CFR 122.44(*l*). *In re City of Tulsa*, 3 E.A.D. at 506. Unlike the previous permits, the draft permits expressly require permittees to consider and implement structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures through Part I.C.1.b.6. In addition, the draft permits require operators to document in their SWPPP any control measures in place that are required by any state, local, or other federal agency. Thus, the draft permits provide conditions that further enhance the protection of water quality standards.

Notwithstanding the inapplicability of anti-backsliding, EPA also disagrees with the commenter's characterizations of Part I.C.1.b.6 of the draft permits. First, Part I.C.1.b.6 does not "narrow[] the scope of the control measures to exclude consideration of all of climate change related impacts, including sea-level rise and storm surge." Goldsmith Decl. ¶ 116. Part I.C.1.b.6 is intended to require permittees to minimize discharges resulting from major storm and flood events, including those caused or worsened by climate change, including flooding tied to both sea-level rise and storm surge. In fact, the Draft Permits already included specific mention of storm surge and flood events in Part I.C.1.b.6. EPA agrees that sea level rise can increase the risk, frequency, and intensity of discharges from major storm and flood events, in part by increasing the relative and absolute sea level, thereby decreasing the buffering capacity for storm surge and other tidal flooding. Such flooding can mobilize pollutants on site (e.g., floating, suspended, settleable solids and pollutants that tend to adsorb, such as metals and petroleum hydrocarbons, as well as dissolved solids), and lead to discharges of these pollutants to waters of

the United States. According to the National Oceanic and Atmospheric Administration, relative sea level in Boston increased by almost one foot from 1921 to 2021.[2] The CWA authorizes the agency to consider and regulate the discharge of pollutants in such waters, i.e., storm water runoff, snow melt runoff, *and surface runoff and drainage*[3] (emphasis added). *See* 40 CFR § 122.26(b)(13). As storm water that would drain and run off surfaces at the facility, discharges associated with flooding caused by storm surge clearly fall within the regulatory definition of stormwater and, hence, the ambit of CWA § 402(p). Discharges of pollutants in runoff associated with dry-weather flooding, such as sunny-day king tides, can also mobilize pollutants on a site and discharge them to waters of the United States, which would constitute a violation of the Act, unless otherwise authorized. *See* CWA §§ 301(a), 402(a)(1); 40 CFR § 122.1(b)(1). While these permits generally regulate stormwater, they can also regulate non-stormwater discharges under CWA §§ 301(a), 402(a)(1); 40 CFR § 122.1(b)(1). There is precedent for doing so in EPA's national Multi-Sector Storm Water Permit. These permits already regulate other non-stormwater discharges, including groundwater remediation effluent and hydrostatic test water. Furthermore, a king tide event could occur simultaneously with a precipitation event and worsen any storm surge or flooding associated with that event. It is reasonable for EPA and permittees to consider that flooding of any kind increases the risk that pollutants will be discharged in surface runoff and drainage to the receiving water—potentially with little or no treatment—and to consider the well-established impacts that climate change is having on rising sea levels and the impact that may have on the increase in the intensity and frequency of flooding events. Accordingly, in response to the commenter's concern, EPA has revised the permits to make clear that Part I.C.1.b.6 of the permits requires permittees to minimize impacts from discharges from "major storm *and flood events.*" Part I.C.1.b.6 (emphasis added). The term "major storm and flood events," in turn, is expressly defined to "refer[] to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding." *Id.* n.3. The permits therefore now explicitly require permittees to account for the risk of both wet- and dry-weather flooding when considering the appropriate control measures to implement. For example, an extreme precipitation event could lead to pluvial (i.e., groundwater) flooding, when the volume and duration causes the water table to rise resulting in the mobilization of pollutants in soil and groundwater. This compares to fluvial flooding, which could be a result of a major storms' storm surge, or higher high tides as a result of sea level rise, causing a river system to overflow its banks and inundate the surrounding lands. Where fluvial flooding occurs in a sudden manner and dissipates relatively quickly (i.e., days), groundwater flooding occurs over a long duration and can remain for prolonged periods (i.e., weeks or months), especially when compared to fluvial flooding (Morris et al., 2008; Cobby et al., 2009).

EPA also disagrees with the commenter's assertion that Part I.C.1.b.6 of the draft permits "bas[es] a facility's risk designation solely on Federal Emergency Management Agency ('FEMA') flood risk assessments." Goldsmith Decl. ¶ 116. Part I.C.1.b.6 of the draft permits instructs permittees to adopt control measures to "minimize discharges that result from impacts of major storm and flood events." In establishing this new requirement, EPA completed an

[2] National Oceanic and Atmospheric Administration, Sea Level Trends, *available at* https://tidesandcurrents.noaa.gov/sltrends/sltrends.shtml; *see also* https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?id=8443970.
[3] "Stormwater"; 2021 MSGP Appendix A - Definitions, Abbreviations, and Acronyms; from 40 CFR 122.26(b)(13).

evaluation of the flood risks posed by impacts from flooding relative to flood hazard information produced in support of the National Flood Insurance Program as one example. EPA then solicited comment as to the specific reference data appropriate for assessment of flood risk at these particular facilities and has taken comments received on this matter, including CLF's, into consideration in the specificity of the Final Permit provision. In sum, each permittee is expected to apply the principles and practices of control measures and pollution prevention (e.g., source control) to assess conditions at the facility that could impact discharge quality using the climate data sources specified, at a minimum, consider and then implement as appropriate, the control measures that minimize discharges of pollutants, and assess the effectiveness of stormwater controls selected and installed to meet the requirements of the permit. Part I.C.1.b.6 lists elevation of semi-stationary structures and temporary storage of materials and waste at or above the relative base flood elevation level as two possible control measures that permittees could take in the appropriate circumstances, but the draft permits do not imply that such steps would be wholly sufficient to "minimize discharges that result from impacts of major storm and flood events" in all cases. *See* Part I.C.1.b.6 ("The Permittee must consider, *at a minimum*, the following control measures: . . . ." (emphasis added)).

EPA agrees that base flood elevation levels provided by FEMA maps,[4] construed *alone*, fail to fully capture the major storm and flood risks that permittees face.[5] To make clear that "[s]ole reliance" on backward-looking base flood elevation levels provided by FEMA maps is not sufficient alone, the permits now include a provision that explicitly instructs permittees to review, at a minimum, the National Climate Assessment, a report that the U.S. Global Change Research Program (USGCRP) delivers to Congress and the President no less frequently than every four years, that: "1) integrates, evaluates, and interprets the findings of the Program . . . ; 2) analyzes the effects of global change on the natural environment, agriculture, energy production and use, land and water resources, transportation, human health and welfare, human social systems, and biological diversity; and 3) analyzes current trends in global change, both human-induced and natural, and projects major trends for the subsequent 25 to 100 years." 15 U.S.C. § 2936. The most recent USGCRP report is the Fourth National Climate Assessment (NCA4), which USGCRP delivered in 2018. The delivery of the next climate assessment report is anticipated in 2023. The USGCRP's indicator platform currently includes 15 representative global and national-level climate indicators, such as heavy precipitation and sea level rise.

Specifically, the Final Permit requires as follows: "To determine the risks at the Facility of discharges from major storm and flood events, you must conduct the evaluation using, at a minimum, the worst-case data relating to changes in precipitation, sea level rise, extreme weather events, coastal flooding, and inland flooding, and relevant to the facility's discharges from: 1)

[4] FEMA defines base flood elevation (BFE) as the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year. This is the regulatory standard also referred to as the "100-year flood." The base flood is the national standard used by the National Flood Insurance Program (NFIP).
[5] *See, e.g.*, Technical Mapping Advisory Council, *2021 Annual Report* at 3-3 (May 5, 2022), *available at* https://www.fema.gov/sites/default/files/documents/fema_2021-technical-mapping-advisory-annual-report.pdf ("Historically and currently, the NFIP does not routinely consider future conditions as part of the assessment and identification of SFHAs on the regulatory FIRMs or in the standard Risk Mapping Assessment and Planning (Risk MAP) non-regulatory suite of flood hazard and flood risk products. However, FEMA, Congress, and other stakeholders have recognized the need for incorporating future conditions information into the NFIP and the Risk MAP Program.").

the data generated by the 13 federal agencies that conduct or use research on global change that contributed to the latest National Climate Assessment produced by the U.S. Global Change Research Program (USGCRP); 2) climate data generated by the Commonwealth of Massachusetts; and 3) resiliency planning completed by the municipality in which a given facility is located (i.e., City of Boston, Revere, and Chelsea) and incorporate the results of the evaluation in a manner that demonstrates that the control measures taken are precautionary and sufficiently protective. Evaluation must be completed by a qualified person on a rolling annual basis considering: 1) historical observations from all years the Permittee has operated the facility prior to this permit's term; 2) all observations of events that occurred in the calendar year; and 3) the 25 to 100 years forward-looking from the review year to assess impacts that are likely to occur."[6] Part I.C.1.b.6 n.4. The 13 federal agencies include EPA, FEMA, NOAA, and USGS, among others. Permittees are also explicitly required to consider *all relevant* reasonably available data for the action area in addition to USGCRP sources, to help determine if their facility may experience an increased frequency of major storm and flood events that could increase the discharge of pollutants. The Final Permit now makes clear that for these facilities, this includes, but is not limited to, "climate data generated by the Commonwealth of Massachusetts; and [] resiliency planning completed by the municipality in which a given facility is located (i.e., City of Boston, Revere, and Chelsea)." Part I.C.1.b.6 n.4; *see* Response to Comment A.2.E for further discussion. Finally, EPA clarifies that where multiple datasets inform a given risk, the most protective dataset must be the determinant data for control measure selection, which is consistent with the precautionary approach generally applicable to NPDES permitting. EPA acknowledges that availability of climate data evolves relatively rapidly. Therefore, at the time of issuance, EPA will ensure ease of access to the data sets and sources referred to above through EPA's website specific to these permits. Further, to maintain archived and current climate data sources, entities may refer to resources provided at EPA Region 1's Dewatering and Remediation General Permit website.

The commenter also asserts that the permits' two references to base flood elevation are problematic because the base flood elevation measures derive from "flood insurance maps [that are] not intended for regulatory use and that fail to consider climate change impacts." *See also* Goldsmith Decl. ¶ 116 (arguing that base flood elevation "is entirely inadequate to inform engineering where life or safety risk is posed to human health or the environment"). However, notwithstanding the commenter's argument to the contrary, the draft permits do not "us[e] BFE as a proxy for 'safe height.'" *Id.* ¶ 119. Indeed, Part I.C.1.b.6 does not require or prescribe specific control measures to be implemented. Part I.C.1.b.6 requires permittees to "minimize discharges that result from impacts of major storm and flood events." Permittees themselves must select the appropriate control measures. Per Part I.C.2.b, permittees must then document in their SWPPPs the considerations made to select and design control measures in order to minimize discharges that result from impacts of major storm and flood events. As noted above, permittees are required to consider FEMA's base flood elevation, a regulatory measure for the National Flood Insurance Program, in tandem with other sources of information in order to determine the risk of discharges that result from impacts of major storm and flood events and implement suitable control measures. In response to the commenter's concern, the draft permit

[6] The USGCRP climate assessment report generally refers to the following scenario intervals: observed historical data for the 1950–2006 period; and the projected rates and magnitudes of change in two future scenarios (RCP4.5 and RCP8.5) from 2006–2100 (i.e., 25–100 review periods).

now further clarifies that elevation of semi-stationary structures and temporary storage of materials must be above the flood elevation level if necessary to minimize discharges that result from impacts of major storm and flood events. Part I.C.1.b.6. BFE is one flood elevation level that must be considered, since it is the flood elevation used in one or more of the required data sources (i.e., FEMA).

To the extent that the commenter argues that permanent, structural control measures are always necessary to minimize discharges that result from impacts of major storm and flood events, EPA does not agree. For some facilities, the effluent limits can be achieved without using highly engineered or complex treatment systems. However, EPA acknowledges that sometimes treatment devices or constructed/installed controls may be necessary, particularly where a facility's discharges might otherwise not meet water quality standards. The permittee must select appropriate control measures; as explained, Part I.C.1.b.6 does not require nor prescribe specific control measures, but it requires permittees to consider a typical set of possible control measures, and document in their SWPPPs the considerations made to select control measures implemented at the facility to minimize discharges that result from major storm and flood events. Further, as noted above, EPA has included a provision in Part I.C.1.b.6 that informs permittees of various data products that must be referenced in the course of determining whether a site is susceptible to an increased frequency of major storm or flood events that could impact the discharge of pollutants.

Similarly, EPA disagrees with the commenter's claim that Part I.C.1.b.6 of the draft permits somehow implies that permanent measures for flood prevention are categorically unnecessary. Part I.C.1.b.6 instructs permittees to take mitigation measures to "minimize discharges that result from impacts of major storm and flood events." Part I.C.1.b.6 lists delayed delivery of materials, temporary storage of materials and waste above the flood elevation level, temporary reduction of or elimination of outdoor storage, and temporary relocation of any mobile vehicles or equipment as possible control measures that must be considered by permittees. The draft permits do not imply that such steps would be sufficient to "minimize discharges that result from impacts of major storm and flood events" in all cases. *See* Part I.C.1.b.6 (" The Permittee must consider, *at a minimum*, the following control measures: . . . ." (emphasis added)). Part I.C.1.b.6 also lists permanent structural improvements such as reinforcement of storage structures to withstand flooding and elevation of semi-stationary structures above the base flood elevation level as control measures to be considered by permittees, and, in any event, Part I.C.1.b.6 makes clear that the list of possible control measures outlined in the provision is not exhaustive. As previously noted, Part I.C.1.b.6 requires permittees to "minimize discharges that result from impacts of major storm and flood events" and the permit applies the good engineering practices standard to decisions made pursuant to that provision. *See* Part I.C.2.b ("The SWPPP shall be prepared in accordance with good engineering practices and manufacturer's specifications and *must take future conditions into consideration*." (emphasis added)); 2021 Fact Sheet at 88–89 ("The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications and *must take future conditions into consideration*." (emphasis added)).

Finally, the commenter cites Executive Order 11988 and accompanying guidance to argue that the permits' use of base flood elevation is inadequate. As an initial matter, Executive Order

11988 itself is silent as to the propriety of the use of relative base flood elevation in administrative actions. And both guidance documents that the commenter cites are nonbinding. *See* FEMA, *Guidelines for Implementing Executive Order 11988, Floodplain Management, and Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input* 3, https://asfpm-library.s3-us-west-2.amazonaws.com/General/Implementing_Guidelines_for_EO11988_13690_08_Oct15_508.pdf ("The Guidelines continue to be advisory. They do not create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States."); FEMA, *Further Advice on Executive Order 11988 Floodplain Management* 8, https://www.gsa.gov/cdnstatic/Advice_EO11988.pdf ("The purpose of this document is to provide guidance by discussing specific and commonly recurring issues and by providing examples that show how to implement the provisions of Executive Order 11988, Floodplain Management; it will not resolve all issues or questions."). More to the point, the commenter argues that the issuance of the permit constitutes a "critical action" under the guidance documents, which renders the use of base flood elevation inadequate. As noted above, however, permittees are required to consider relative base flood elevation in tandem with other sources of information in order to determine the risk of discharge of pollutants and implement their own suitable control measures. To be clear, the Final Permit specifies a 25-100-year recurrence interval for review, relative to the year of review, to ensure both current and future observation is considered.

EPA recognizes that not all of the control measures specified for the major storm and flood events BMP will be applicable to every facility. EPA is not requiring Permittees to implement additional controls if the operator reasonably determines, after fully considering all available information, that the control measures are not necessary to reduce and/or eliminate (i.e., minimize) discharges that result from impacts of major storm or flood events (e.g., no risk is posed at a particular facility by a particular impact of major storm and flood event; or a comparable control measure is already installed and functioning to the extent necessary to meet the permit requirements). Rather, the permittee must assess the risk posed by major storm and flood events at their facility and select and design control measures that reduce these risks to minimize the potential impact of pollutants in discharges. Each of the minimum control measures must be considered relative to these particular risks but may be deemed unnecessary if sufficient rationale explains the reason for exclusion. For example, the facility may already have implemented a control measure effective at mitigating the risk one or more of the listed control measures would duplicate.

Comment A.2.E – Necessary Improvements to Avoid Prohibited Backsliding

Regardless of whether the proposed permit changes substantively impact permittees' duties, CLF appreciates that EPA recognizes the importance of severe weather and flooding risks to industrial infrastructure and is attempting to address the issue expressly in the Draft Permits. However, as discussed *supra*, the proposed changes hinder rather than further that purpose. To make the Draft Permits accord with the CWA's anti-backsliding provision, as well as with good science and engineering practice, below are necessary additions to carry out that purpose.

The changes EPA made in the recently signed, though not yet published, 2021 Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity ("Final 2021 MSGP") made progress in the right direction with several important changes—some of which the Draft Permits adopt.

First, they make clear that the major storm provision applies to "hurricanes, storm surge, extreme/heavy precipitation, and flood events." 2021 MSGP § 2.1.1.8; Draft Permits § 1.C.1.b.6.

Second, they make more explicit that permittees *must* implement structural controls to address the risks of severe weather. 2021 MSGP § 2.1 ("You must select, design, install, and implement stormwater control measures (including best management practices) to minimize pollutant discharges that address the selection and design considerations in Part 2.1.1, [and] meet the non-numeric effluent limits in Part 2.1.2 . . ."); Draft Permits § I.C.1.a ("The Permittee shall design, install, and implement control measures to minimize pollutants discharged from stormwater associated with the Facility operations to the receiving water."). In fact, CLF is pleased that the Draft Permits are even clearer than the 2021 MSGP: "The Permittee shall implement structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation and flood events." Draft Permits § I.C.1.b.6.[24]

The Draft Permits do not incorporate some of the important changes that they should adopt.

First, the MSGP expanded the sources for flood risk information from FEMA firm maps to "all reasonably available data." 2021 MSGP, Fact Sheet at 36 ("Operators are encouraged to consider all reasonably available data and utilize various reference maps, including those published by FEMA, NOAA, and USGS, to help determine if their facility may experience an increased frequency of major storm events that could impact the discharge of pollutants in stormwater."); *see also* 2021 MSGP § 2.1.1.8 n.6. EPA must add this change to the Draft Permits, despite EPA's conclusion that the major storm provision already applies to the terminals because they are all, at least partially, in FEMA flood zones. As described in Section I.D.2 above, FEMA maps are insufficient to determine either the frequency or severity of flood risks to the terminals. The terminals must consult and rely on the most accurate data.

Second, the MSGP clarifies that of "heavy precipitation" as used in the major storm provision applies both to increased total precipitation and precipitation occurring "in more intense and more frequent events." 2021 MSGP § 2.1.1.8 n.5. EPA should incorporate this change into the Draft Permits.

Finally, the MSGP makes clear that permittees must describe in their SWPPPs their reasoning for implementing or not implementing control measures to address major storm impacts. 2021 MSGP § 2.1.1.8 (requiring permittees to "document in [their] SWPPP . . . the considerations made to select and design control measures at [the] facility to minimize pollutants discharged via stormwater."); *id.* § 6.2.4.6 (requiring SWPPP to document, for all control measures, "[h]ow you addressed the selection and design considerations in Part 2.1.1."). While the Draft Permits require SWPPPs to contain the same elements required by Part 6.2.4 of the 2021 MSGP, *see*

Draft Permits § I.C.2.b., EPA should clarify that permittees must describe the reasoning for implementing or not implementing controls measures for severe weather.

While these changes from the 2021 MSGP would be another step in the right direction, they are not enough.

EPA should require the permittees to report identified flood risks, in both their permit application and SWPPP, following consultation with resources and data sets applicable to present and future flood risks as discussed below. As with the prior permit, the Draft Permits require permittees to document their consideration of the design and selection of control measures in their SWPPP (Part I.C.2), which includes consideration of the risks of major storm events and extreme flooding conditions. Consistent with good engineering practice and in order to support meaningful evaluation of an applicant's consideration of potential major storm and flood risk, EPA should make explicit that permittees must identify (1) the specific present-day flood risks and reasonably foreseeable flood risks over the design life of their facilities; (2) all of the information and analysis permittees have in their or their agents' possession relevant to flood risk; and (3) information and analysis relied upon for consideration and implementation of control measures to address identified risks.

EPA should also require the permittees to self-designate exposure to flood risk if *any part* of their facility's footprint is located within a geographic area at risk of flooding based upon the best available flood projection information and models for that area, as described above. This must include consideration of all reasonably available data and information consistent with good engineering practice. For example, the City of Boston's detailed flood modeling found that, by 2030, there was a 10% chance that the Sunoco and Chelsea Sandwich terminals flood every year, and by 2050 portions of all five Terminals would flood.[25] Modeling by the City of Chelsea, meanwhile, determined that the Chelsea Sandwich Terminal had a 100% chance of flooding in 2030 while portions of the tank farm at the Gulf Terminal have a 10% or greater chance of flooding in 2030.[26]

EPA should also make explicit that permittees must self-designate exposure to flood risk if any part of their facility's footprint is located within geographic areas that are projected by NOAA to be exposed to present-day or future risk of dry-weather tidal flooding, including so-called 'king tides,' 'sunny-day,' recurrent, and nuisance flooding. Tidal flooding is already impacting coastal regions, including industrial areas and public infrastructure such as storm sewers and roadways. NOAA has identified coastal areas that are exposed to present-day nuisance flooding, based upon decades of observed data. The risks of coastal nuisance flooding are also increasing due, for example, to observed land subsidence and sea level rise. The coincidence of high tidal conditions with major storms and related flood conditions also has the potential to exacerbate the risk of harm to industrial sites. Therefore, EPA should make clear that permittees must identify a site's risk of exposure to nuisance flooding (in accordance with NOAA modeled projections) and consider accordingly the necessary control measures to account for those risks. For instance, according to NOAA, the Gulf, Irving, and Global terminals are already subject to nuisance flooding now.[27]

The Permits should be explicit that the permittees must consider a range of alternatives when designing, operating, and maintaining the Terminals throughout their design life to prevent discharging pollutants in the event of flooding. The characteristics of the individual Terminals, including their location, the type of pollutants maintained, the amount of impermeable surface nearby, to name but a few, will determine the scope of choices available, from building floodgates for use in heavy storms, to running a facility outside "the rainy" season only, to building a new facility away from coastal and riverine resources to abate the flood risk dramatically. *See* Goldsmith Dec. ¶ 136. The Permits must require the Terminals to develop a resilience plan, using the best data available consistent with good engineering practice, to assess its flood risk and appropriate flood mitigation options in both the near and long-term. In some instances, it must be acknowledged that facilities located in harm's way pose too great a danger to the surrounding area and community and retreat will be necessary in order to meet environmental standards and protect the public health, safety, and welfare. *See id.* Therefore, the Permits must require the permittee to: (1) consider the range of possible floodproofing mechanisms; (2) consider how those mechanisms apply to the facility; and (3) implement those measures in a way that minimizes risk over the permit term but ultimately considers a permanent, climate resilient solution. Additionally, Section I.C.1.b.6 should make clear that the evaluation of risks requires the permittee to consider the quantity and characteristics of pollutants housed at the site when determining the appropriate control measures.

The Permits must also require that the Terminals maintain safe, dry access via a land route throughout flooding events. Ingress and egress to implement emergency measures within the confines of a facility is fundamental to assuring that pollutants will not be discharged during flood events and to protect critical infrastructure. Even if required flood-proofing measures are fully implemented, a lack of dry access to the facility dramatically increases the risk that discharges and releases will occur. For example, a facility located significantly below the relative base flood elevation and hundreds of yards away from the inland extent of a readily anticipated flood event might end up completely surrounded by flood or surge waters with large waves and dangerous currents. While a desktop design exercise might show adequate facility design to "flood proof" the facility, the chaotic reality of such severe events makes it absolutely critical to have safe, dry access to implement response actions during such events to prevent catastrophic pollutant releases.

For example, the City of Boston flood modeling found that by 2030, there was a 1% annual chance that all five terminals either flooded or were surrounded by flood waters.[28]

If EPA adopts the proposed requirements described above in the final permits, as it must to prevent backsliding, then the Agency will have more robust information and analysis with which to deliver compliance assistance and for the purpose of revising future permit requirements responsive to flood risks.

[23] This is not to say that FEMA maps serve no purpose whatsoever. CLF is simply highlighting the limited nature of the maps as an engineering tool, especially when used in a vacuum with no additional information. As discussed below, FEMA designations represent basic information that must be considered when identifying present-day flood risks and risk over the design life of a facility.

[24] *See also, e.g., id.* § I.C.1.a ("At a minimum, the Permittee must implement control measures, both structural controls (e.g., OWS, containment areas, holding tanks) and non-structural (e.g., operational procedures and operator

training) consistent with those described in Part 2.1.2 and of EPA's Multi-Sector General Permit (MSGP)."); Fact Sheet § 5.3.1 ("Major Storm Events BMP: requires the Permittee to implement structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures can help to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation and flood events.").

[25] City of Boston, MA, *Climate Ready Boston Map Explorer* (Jan. 8, 2020), *available at* https://www.boston.gov/departments/environment/climate-ready-boston-map-explorer.

[26] City of Chelsea, MA, Designing Coastal Community Infrastructure for Climate Change (2017) 4-8, 4-16, available at https://www.chelseama.gov/sites/g/files/vyhlif396/f/uploads/20170215_chelsea_va.pdf.

[27] NOAA, *Sea Level Rise and Coastal Flooding Impacts,* https://coast.noaa.gov/slr/#/layer/slr (Last accessed March 26, 2021)

[28] City of Boston, MA, *Climate Ready Boston Map Explorer* (Jan. 8, 2020), *available at* https://www.boston.gov/departments/environment/climate-ready-boston-map-explorer.

Response to Comment A.2.E

As noted in EPA's response to Comment A.2.C, Part I.C.1.b.6 of the permits is a new effluent limitation or condition over and above the ones contained in the previous permits, and as such, Part I.C.1.b.6 does not contain "effluent limitations [that are] less stringent" than the ones in the previous permits, as defined in section 402(o) of the Act and the regulations at 40 CFR 122.44(l). *In re City of Tulsa*, 3 E.A.D. at 506. Unlike the previous permits, the permits expressly require permittees to consider implementing structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures through Part I.C.1.b.6. In addition, the permits require operators to document in their SWPPP any existing stormwater control measures in place if required by state, local, or federal agency. Thus, the permits provide conditions that further enhance the protection of water quality standards. Notwithstanding the inapplicability of anti-backsliding, EPA responds to the commenter's concerns as follows:

First, the commenter argues that the permits should adopt a provision included in the 2021 MSGP that expands the sources for flood risk information beyond FEMA maps in the context of required assessments of possible control measures to minimize discharges of pollutants that result from impacts of major storm and flood events. EPA agrees. EPA specifically requested feedback on the utility of information sources beyond the ones listed in the draft permits. *See* Fact Sheet at 90 ("EPA also invites comment on whether it should consider other data or information and, if so, requests that commenters identify any such data and information with particularity."). The commenter cites NOAA and USGS map products. These data sources provide peer-reviewed and easily accessible climate change data. In order to best ensure that permittees possess a full slate of accurate data in determining which control measures would satisfy the requirements of Part I.C.1.b.6, EPA concludes that these data sources should be included in the permits. Further, as the commenter notes, the inclusion of NOAA and USGS data products as specific data sources that permittees must consult renders the permits more consistent with the MSGP. To further the same goal of ensuring that permittees possess a full slate of accurate data in determining which control measures would satisfy the requirements of Part I.C.1.b.6, EPA concludes that permittees should consult, at a minimum, the most recent USGCRP climate assessment report, which includes 15 representative global and national-level climate indicators, such as heavy precipitation and sea level rise, and draws on climate change-related data supplied by 13 different federal agencies. These agencies include EPA, FEMA, NOAA, and USGS, as the comment requests, among others. The comment further notes that

state agencies and municipalities have also developed relevant information for assessing risks of discharges resulting from major storm and flood events. EPA agrees that these additional data sources are appropriate in assessing localized risks.

In line with the foregoing, the permits now include a footnote that instructs permittees as follows: "To determine the risks at the Facility of discharges from major storm and flood events, you must conduct the evaluation using, at a minimum, the worst-case data relating to changes in precipitation, sea level rise, extreme weather events, coastal flooding, and inland flooding, and relevant to the facility's discharges from: 1) the data generated by the 13 federal agencies that conduct or use research on global change that contributed to the latest National Climate Assessment produced by the U.S. Global Change Research Program (USGCRP); 2) climate data generated by the Commonwealth of Massachusetts; and 3) resiliency planning completed by the municipality in which a given facility is located (i.e., City of Boston, Revere, and Chelsea) and incorporate the results of the evaluation in a manner that demonstrates that the control measures taken are precautionary and sufficiently protective. Evaluation must be completed by a qualified person on a rolling annual basis considering: 1) historical observations from all years the Permittee has operated the facility prior to this permit's term; 2) all observations of events that occurred in the calendar year; and 3) the 25 to 100 years forward-looking from the review year to assess impacts that are likely to occur." Part I.C.1.b.6 n.4.

Second, the commenter argues that the permits should incorporate the definition of "heavy precipitation" supplied by the MSGP, which refers both to increased total precipitation and precipitation occurring "in more intense and more frequent events." 2021 MSGP § 2.1.1.8 n.5. EPA agrees. Both more intense precipitation events and more frequent precipitation events have important implications for potential discharges and the receiving waters. For instance, more intense precipitation events could require permittees to treat larger volumes of stormwater in short timeframes, potentially straining a facility's treatment system design flow capacity. Similarly, more frequent precipitation events could impact facilities' maintenance timelines, storage capacity, and infrastructure. Accordingly, the permits now include the following definition of "extreme/heavy precipitation": "'Extreme/heavy precipitation' refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. 'Extreme/heavy precipitation' does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events." Part I.C.1.b.6 n.3. This change brings the relevant portions of the permits in line with the MSGP provision cited by the commenter. *Compare id. with* 2021 MSGP § 2.1.1.8 n.5.

Third, the commenter argues that EPA should clarify that the permits require permittees to "describe in their SWPPPs their reasoning for implementing or not implementing control measures to address major storm impacts." The permits dictate that the permittees' "SWPPP shall be consistent with the general provisions for SWPPPs included in Part 6 of EPA's MSGP." Part I.C.2.b. Part 6.1 of the MSGP requires the SWPPP to be "developed by a 'qualified person,'" a term expressly defined in the MSGP. 2021 MSGP § 6.1. Part 6.2.4.6 of the MSGP, in turn, indicates that permittees "must [] document, as appropriate: How you addressed the selection and design considerations in Part 2.1.1." *Id.* § 6.2.4.6.a. The MSGP also notes that permittees "must document in [their] SWPPP per Part 6.2.4 the considerations made to select and

design control measures at [their] facility to minimize pollutants discharged via stormwater." *Id.* § 2.1.1.8. Based on the inclusion in the draft permits of the requirement that the permittees' SWPPP be consistent with Part 6 of the MSGP, EPA agrees that permittees must describe the reasoning for implementing or not implementing controls measures related to potential discharges caused by impacts from major storm and flood events. This requirement, in turn, calls upon permittees to memorialize factors like their present and future risks of impacts from major storm and flood events, the information permittees possess that underlies these risks, and the information and factors that the permittees relied on in selecting and designing control measures to minimize discharges of pollutants that result from impacts of major storm and flood events in the face of these assessed risks. *See generally* 33 U.S.C. §§ 1318(a), 1342(a)(2). For ease of reference, and in order to assist permittees in complying with the requirements of the permits by making these requirements more explicit, EPA has revised Part I.C.1.b.6 to include the following language: "For all control measures considered, the Permittee must document in the SWPPP the factual basis (i.e., the maps, data sets and calculations for the analysis), for either implementing or not implementing the measure." As a corollary of the requirement that the SWPPP be developed by a qualified person, and to increase transparency and ensure the SWPPP contains an appropriate level of detail, EPA also revised Part I.C.1.b.6 to clarify that the permittee's "factual basis and analysis must be presented in sufficient detail to allow EPA, the public, or an independent qualified person to evaluate the reasonableness of the decision." This revision also ensures that permittees give the risks, impacts, and appropriate control measures in-depth consideration, memorialize their analysis, and improve upon it iteratively over time in light of individual experiences with major storm and flood events. For example, when evaluating and demonstrating whether the current secondary containment structures are sufficient, the analysis documentation should include the calculations and assumptions for the current volume storage capacity, the volume anticipated by the event (including data source(s)) and the calculations of the containment volume necessary to ensure the control measure is and remains sufficient over time. Any such analysis must be documented in sufficient detail in the SWPPP such that EPA, the State or a qualified person can replicate the analysis. *See also* Response to Comment F.24. In line with the commenter's statement, and depending on the nature of the facility and the control measure under consideration, this should generally include reference to the scope of the "flood risks" and related risks that the facility faces, the relevant "information and analysis" the permittee possesses, and "the information and analysis relied upon for consideration and implementation of control measures to address identified risks."

Fourth, the commenter argues that "EPA should also require the permittees to self-designate exposure to flood risk if *any part* of their facility's footprint is located within a geographic area at risk of flooding." As noted *supra*, Part I.C.1.b.6 requires permittees to "document in [their] SWPPP the factual basis (i.e., the maps, data sets and calculations for the analysis), for either implementing or not implementing" a control measure, for all control measures considered. *See also* 2021 MSGP § 2.1.1.8. Accordingly, in the event that a permittee concludes that some portion of its facility is at risk of flooding, it must document this fact in its SWPPP, and it must also memorialize the corresponding control measures or an explanation of why such control measures are unnecessary "to minimize discharges that result from impacts of major storm and flood events." *See generally* 33 U.S.C. § 1342(a)(2).

Fifth, the commenter argues that the permits should be revised to require permittees to "self-designate exposure to flood risk if any part of their facility's footprint is located within geographic areas that are projected by NOAA to be exposed to present-day or future risk of dry-weather tidal flooding." As described above in response to comment to A.2.D, EPA revised Part I.C.1.b.6 of the permits to require permittees to minimize discharges that result from impacts of "major storm *and flood events.*" Part I.C.1.b.6 (emphasis added). The term "major storm and flood events," in turn, "refers to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding." *Id.* n.3. Accordingly, the permits now expressly require permittees to account for the risk of discharges from dry-weather tidal flooding when considering the appropriate control measures to adopt.

Sixth, the commenter argues that "[t]he Permits should be explicit that the permittees must consider a range of alternatives when designing, operating, and maintaining the Terminals throughout their design life to prevent discharging pollutants in the event of flooding." Part I.C.1.b.6 already requires permittees to implement "enhanced/resilient pollution prevention measures," after considering numerous specific control measures supplied in an expressly non-exhaustive list. The requirement that permittees consider the specific control measures that the permits list and, if they decline to adopt them, record their reasons for doing so, is justified by the fact that EPA has concluded that the permittees are subject to some measure of flood risk, in contradistinction to the MSGP permittees, many of whom are unknown. *E.g.*, 2021 Fact Sheet at 90 ("According to the FEMA map(s) covering the location of the Facility, portions of the Global REVCO portion of the Facility's tank farm and the terminal yard, including the truck loading rack, are within the SFHA and are classified Zone AE."); Gulf 2021 Fact Sheet at 50 ("According to the FEMA map(s) covering the location of the Facility, the terminal yard, including the truck loading rack, as well as the marine vessel dock, are within the SFHA and are classified Zone AE."). As noted *supra*, the permits also mandate that permittees "document in [their] SWPPP the factual basis (i.e., the maps, data sets and calculations for the analysis), for either implementing or not implementing" a control measure, for all control measures considered. *See also* 2021 MSGP § 2.1.1.8. Moreover, the MSGP, incorporated by reference in the permits, states that "[t]he SWPPP is a living document. Facilities must keep their SWPPP up-to-date throughout their permit coverage, such as making revisions and improvements to their stormwater management program based on new information and experiences with major storm events." *Id.* § 6. Further, the Permit also provides that the SWPPP "must take future conditions into consideration." *See* Part I.C.2.b; *see also* Fact Sheet at 88–89. Finally, because the permits require the permittees adopt control measures "to minimize discharges that result from impacts of major storm and flood events," they implicitly require the permittees to account for "the quantity and character of pollutants" located at the relevant facilities. In light of all of the foregoing, an additional requirement that the permittees maintain a "resilience plan" along the lines described by the commenter would be redundant and duplicative.

Seventh, the commenter argues that "[t]he Permits must also require that the Terminals maintain safe, dry access via a land route throughout flooding events." Part I.C.1.b.6, however, does not mandate that permittees adopt any specific control measures. Under that provision, as outlined *supra*, permittees must adopt control measures "to minimize discharges that result from impacts of major storm and flood events" based on their assessment of their own risks and analyses of

their facilities. If a permittee identifies a risk that it will lack "safe, dry access" to its facility during a flood event and that this lack of access could cause a discharge of pollutants, the permittee must document this fact and it must also memorialize the corresponding control measures or an explanation of why such control measures are unnecessary "to minimize discharges that result from impacts of major storm and flood events." *See generally* 33 U.S.C. § 1342(a)(2).

Eighth, and finally, the commenter argues that BMPs be considered over the design life of the facilities. EPA does not agree that "design life" alone is the appropriate recurrence interval to consider future risks. Namely, while a particular facility can be designed initially for an expected period of operation and the design storm at a given point in time, material changes often occur over time to operate and maintain a facility, thus extending its design life, and with the impacts of climate change, the original design storm may no longer represent likely discharge conditions. For example, while a bulk petroleum storage tank is designed and installed with an industry-specified longevity, tanks are routinely tested for integrity, and replaced if necessary. However, EPA agrees that a forward-looking evaluation of the risks to a facility relative to its current operational state is important to selection and implementation of the control measures necessary to minimize discharges that result from impacts of major storm and flood events. EPA selected a range of evaluation, 25-100 years, that is near-term (i.e., 25 years), and far-term (i.e., 100 years), consistent with time periods commonly used in predictive data sets. In particular, this timeframe underlies the basis of the National Climate Assessment for certain climate indicators. EPA selected this report as the minimum review.

Comment A.3 – The Testing for PAHs Must Be Strengthened

The monitoring requirements for PAHs in the Draft Permits are grossly insufficient to ensure that the Terminals do not discharge PAHs that would cause or contribute to a violation of Massachusetts Water Quality Standards ("WQS").

PAHs are Highly Toxic in Small Concentrations

There is widespread consensus that many PAHs are carcinogenic to humans. EPA has classified several PAHs as probable human carcinogens, including benz[a]anthracene, benzo[b]fluoranthene, benzo[k]-fluoranthene, benzo[a]pyrene, chrysene, dibenz[a,h]anthracene, and indeno[1,2,3-cd]pyrene (the "Group I PAHs").[29] These designations were based on laboratory testing for carcinogenesis in mice and rats.[30] The U.S. Department of Health and Human Services has likewise concluded that there is sufficient evidence to conclude that several PAHs found in crude oil and petroleum products cause cancer in humans, including benzo[a]pyrene, chrysene, benz[a]anthracene, benzo[b]fluoranthene, and dibenz[a,h]anthracene.[31] Similarly, the International Agency for Research on Cancer has evaluated data on the carcinogenicity of several individual PAHs and concluded that multiple Group I PAHs are probable human carcinogens.[32]

While Group I PAHs are potent carcinogens, Roseen Dec. ¶ 20, the remaining PAHs, Group II PAHs, can affect the impact of carcinogenic substances on the human body. *See, e.g.,* Draft Permits, Fact Sheet § 5.2.4.1.

As described in an EPA report from 1989, PAHs "readily pass through cellular membranes," as they are "highly lipid soluble."[33] The nature of these compounds results in distribution throughout the mammalian and human body in fatty tissues.[34] Primary sites of bodily storage include the kidneys, liver, and fat with some accumulation in the spleen, adrenals, and ovaries.[35] Early research found immunosuppression and toxic effects on the lymphoid and hematopoietic systems following exposure to PAHs.[36] Additionally, scientists have known since the 1980s that PAHs are genotoxic, carcinogenic, and teratogenic.[37]

PAH exposure results in many detrimental health effects for humans, depending on the length and route of PAH exposure, the amount of PAH exposure, and specific PAHs or mixture of PAHs. Acute effects include skin irritation, eye irritation, nausea, vomiting, diarrhea, and confusion.[38] Chronic effects include decreased immune function, cataracts, kidney and liver damage, breathing problems, lung function abnormalities, and long-term skin inflammation.[39] Most concerning, as the Center for Disease Control and Prevention states, "several of the PAHs and some specific mixtures of PAHs are considered to be cancer-causing chemicals."[40]

PAHs also pose substantial risks to infants in utero and young children. The Columbia University Center for Children's Environmental Health has conducted extensive research on PAH exposure in mothers and children, documenting various negative health outcomes associated with exposure. Exposure to PAHs can cause adverse fetal development;[41] adverse respiratory problems';[42] and even development of Attention Deficit Hyperactivity Disorder.[43] Additionally, studies have shown that PAHs are known neurodevelopmental toxicants,[44] that exposure can harm fetal neurodevelopment, including verbal IQ,[45] and that prenatal exposure is linked to increased psychiatric risk and may magnify the effects of early life stressors on children.[46]

PAH exposure can be particularly acute in environmental justice communities that are already struggling under disproportionate health burdens. For example, a study of African-American and Dominican mothers and newborns exposed to PAHs and living in the Washington Heights, Central Harlem, and South Bronx neighborhoods of New York City found significant interactions between PAH exposure and certain haplotypes on the umbilical cord.[47]

All of the Terminals have reported quantifiable discharges of Group I PAHs in excess of the 0.018 µg/L water quality based effluent limitations. *See* Section I.B, above.

[29] EPA, Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons (Jul. 1993), *available at* https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=49732.
[30] *Id.*
[31] U.S. Department of Health and Human Services, Toxicology Profile for Polycyclic Aromatic Hydrocarbons (Aug. 1995), *available at* https://www.atsdr.cdc.gov/toxprofiles/tp69.pdf.
[32] Carl-Elis Boström, et al., *Cancer Risk Assessment, Indicators, and Guidelines for Polycyclic Aromatic Hydrocarbons in the Ambient Air*, 110 Environ. Health Perspect. (Suppl. 3) 451 (Jun. 2002); *see also* A. Schulte, et al., *Induction of Squamous Cell Carcinomas in the Mouse Lung After Long-Term Inhalation of Polycyclic Aromatic Hydrocarbon-Rich Exhausts*, 45 Exp. Toxicol. Pathol., 415 (Feb. 1994).
[33] EPA, Drinking Water Criteria Document for Polycyclic Aromatic Hydrocarbons (PAHs) (1989), *available at* https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=344653.
[34] *Id.*

[35] *Id.*
[36] *Id.*
[37] *Id.*
[38] Illinois Department of Public Health, Polycyclic Aromatic Hydrocarbons (PAHs), *available at* http://www.idph.state.il.us/cancer/factsheets/polycyclicaromatichydrocarbons.htm (last accessed Mar. 17, 2021).
[39] *Id.*
[40] Centers for Disease Control and Prevention, Polycyclic Aromatic Hydrocarbons (PAHs) Factsheet (Apr. 17, 2017), *available at* https://www.cdc.gov/biomonitoring/PAHs_FactSheet.html.
[41] Joan Lee, et al., *Prenatal Airborne Polycyclic Aromatic Hydrocarbon Exposure, Line1 Methylation and Child Development in a Chinese Cohort*, 99 Environ. Int., 315 (Feb. 2017).
[42] Kyung Hwa Jung, et al., *Time Trends of Polycyclic Aromatic Hydrocarbon Exposure in New York City from 2001 to 2012: Assessed by Repeat Air and Urine Samples*, 131 Environmental Research, 95 (May 2014).
[43] Frederica Perera, et al., *Early-Life Exposure to Polycyclic Aromatic Hydrocarbons and ADHD Behavior Problems*, 9 PLoS One (Nov. 2014).
[44] Vrinda Kalia, et al., *Environmental Pollutants and Neurodevelopment: Review of Benefits from Closure of a Coal-Burning Power Plant in Tongliang, China*, 4 Glob. Pediatr. Health (Jul. 2017).
[45] Frederica Perera, et al*., Prenatal Exposure to Airborne Polycyclic Aromatic Hydrocarbons and IQ: Estimated Benefit of Pollution Reduction*, 35 J. Public Health Policy, 327 (Aug. 2014).
[46] David Pagliaccio, et al., *Prenatal Exposure to Polycyclic Aromatic Hydrocarbons Modifies the Effects of Early Life Stress on Attention and Thought Problems in Late Childhood*, 61 J. Child Psychol. Psychiatry, 1253 (Nov. 2020).
[47] Shoba Iyer, et al., *Significant Interactions Between Maternal PAH Exposure and Haplotypes in Candidate Genes on B[a]P-DNA Adducts in a NYC Cohort of Non-Smoking African-American and Dominican Mothers and Newborns*, 35 Carcinogenesis, 69 (Jan. 2014).

Response to Comment A.3.A.

These comments refer generally to EPA's selection of the appropriate limitations that are alleged to be insufficient for Group I polycyclic aromatic hydrocarbons (PAHs), specifically: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene; and, generally, Group II PAHs.

In consideration of these concerns as well as more detailed comments that follow containing requests for specific changes in the permits, EPA has examined its assessment of the limitations, compliance levels, and testing and reporting requirements for Group I PAHs. Detailed responses to each of these aspects are found below.

EPA notes that the draft permits proposed numeric water quality-based limits for the protection of human health when a particular Group I PAH compound has been detected at any concentration in a facility's discharge. These numeric limits are derived from risk-based national recommended water quality criteria, calculated with no allowable dilution for PAHs at these specific facilities. Numeric limits consistent with the most recently promulgated water quality standards are required in the final permits.[7] See responses with A.3.B and A.4, below, regarding PAH requirements.

[7] MassDEP promulgated amendments to the surface water quality standards (314 CMR 4.00) on November 12, 2021. EPA approved the majority of the amendments, including for PAHs, on March 31, 2022. https://www.mass.gov/regulations/314-CMR-4-the-massachusetts-surface-water-quality-standards

EPA made the determination that benzo(a)pyrene alone is not a sufficient indicator parameter for the broad class of the more than 100 compounds referred to as polycyclic aromatic hydrocarbons when detections of additional Group I PAHs occurred at a given facility. Specifically, where concentrations of a Group I PAH compound was detected, because this detection exceeds the applicable criteria, EPA "determined that discharges of these priority pollutants cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs" and proposed numeric water quality-based limits for the protection of human health, calculated with no allowable dilution for that Group I PAH. *See* Draft Permits, Fact Sheet § 5.2.4. Each of these Group I PAHs, along with the Group II PAH, naphthalene, represents an indicator parameter for semi-volatile organic compounds in accordance with 40 CFR § 122.44(d)(1)(vi)(A-C).

Comment A.3.1 – The PAH Testing Is Insufficient

The Prior Permits selected benzo(a)pyrene as an indicator pollutant for all Group I PAHs and established "a water quality-based monthly average effluent limit of 0.018 µg/L" for each of the Terminals. *Id.* In addition, the Prior Permits established quarterly monitoring for the remaining Group I PAHs. The Prior Permits established a minimum level ("ML") for testing of Group I PAHs at 0.1 µg/L.

The Draft Permits continue with benzo(a)pyrene as the indicator pollutant for Group I PAHs at the same monthly average effluent limit of 0.018 µg/L. In addition, where monitoring indicated the presence of other Group I PAHs in a terminal's effluent, the Draft Permits establish the same effluent limit for those compounds. The Draft Permits moved in the right direction by establishing effluent limits for additional Group I PAHs where they had been detected in prior testing. However, the remaining provisions for PAH monitoring fall short.

The Minimum Level for Group I PAHs Is Insufficient

The minimum level and compliance level for Group I PAHs is too high. The Draft Permits retained the minimal level and compliance limit of 0.1 µg/L—a level more than 5 ½ times higher than the effluent limit set by the permit (0.018 µg/L) to preserve water quality in Chelsea Creek. EPA has provided no information on how this minimum level was determined, and it is not published in an EPA-approved method. Meanwhile, as described in the Roseen Declaration, labs in the area of the Terminals regularly test samples for PAH levels at substantially lower detection limits than the 0.1 µg/L ML set by the Draft Permits. Roseen Dec ¶ 22. Therefore, Dr. Roseen concludes that the MLs do not meet the requirement that tests be "sufficiently sensitive." *Id.* ¶ 30. Indeed, as explained by Dr. Roseen, the 0.1 µg/L ML for benzo(a)pyrene "would make it impossible to ensure compliance with Massachusetts Water Quality Standards" and the assessment of reasonable potential. *Id.* ¶ 28.

The 0.1 µg/L ML is particularly confusing because the Fact Sheets to the Draft Permits demonstrate that every Terminal has successfully tested for Group I PAHs at levels far below 0.1 µg/L. *See, e.g.,* Draft Global Permit, Fact Sheet at 115-16 (results as low as 0.052); Draft Irving Permit, Fact Sheet at 72 (testing to less than 0.18); Draft Chelsea Sandwich Permit, Fact Sheet at 77 (show results as low as 0.05); Draft Gulf Permit, Fact Sheet at 75-77 (testing to less than 0.02 and results as low as 0.074); Draft Sunoco Permit, Fact Sheet at 72-74 (results as low as 0.05).

Given that the Terminals can clearly test for Group I PAHs at levels far below 0.1 µg/L, there is no justification for setting the ML at 0.1. All the higher ML does is encourage the Terminals to order tests that are less sensitive than the tests available. At a minimum, the Draft Permits should require the Terminals to order the most sensitive test available using an EPA-approved method. Failure to include this requirement creates a strong incentive for the Terminals to shop for the least sensitive test for PAHs that still satisfies the 0.1 µg/L level.

Response to Comment A.3.1.

The comment asserts that the minimum level for the Group I PAHs in the Draft Permit (0.1 µg/L) is not sufficiently stringent and requests that EPA require the terminals to use the most sensitive EPA-approved method available.

The requirements to specify test method and minimum level requirements in the draft permits is based on *The National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting* rule, published in the Federal Register on August 19, 2014, and effective on September 18, 2014. Rule pursuant to the authority of sections 301, 304(h), 308, 402(a), and 501(a) of the CWA [33 U.S.C. 1311, 1314(h), 1316, 1318, 1342(a), 1343, and 1361(a)].

Under the NPDES program, where EPA-approved test methods exist,[8] NPDES permittees must use sufficiently sensitive test methods (hereinafter referred to as SSTM) for analyses of pollutants or pollutant parameters under an NPDES permit. *See* 40 CFR § 122.44(i)(1)(iv). For the purposes of establishing limitations, standards, and other permit conditions (compliance monitoring) under an NPDES permit, a test method is "EPA-approved" under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O. These test methods are "sufficiently sensitive" where:

> The method minimum level (ML) is at or below the level of the effluent limit established in the permit for the measured pollutant or pollutant parameter; or

2. The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

The MLs[9] specified are obtained in several ways and are either:

1. Published in a method;

[8] EPA approved methods refers to methods that have been approved under 40 CFR part 136 or are required under 40 CFR chapter I, subchapter N or O. This includes analytical methods for CWA pollutants developed by EPA, voluntary consensus standards bodies (VCSBs), and other government agencies (such as the U.S. Geological Survey), as well as Alternate Test Procedures (ATPs) developed by commercial method developers for nation-wide use. These methods have been reviewed by EPA and approved for use in compliance monitoring under the CWA. EPA publishes lists of the EPA, VCSB, and other agency methods as well as ATPs that it has found to be acceptable for such use at 40 CFR Part 136, and at 40 CFR Chapter I, subchapters N and O. As a point of clarification, this includes approved ATPs as described in 40 CFR 136.4 and 136.5.

[9] EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level."

2. Sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or
3. Calculated by multiplying the method detection limit (MDL)[10] published in a method or the MDL determined by a lab, by a factor of 3.[11]

The draft permits include requirements in footnote 2 to Part I.A.1, and footnotes specific to individual parameters, if necessary, in accordance with the SSTM rule and corresponding regulations found under 40 CFR § 122.44. EPA explained the basis for these requirements in Section 2.4.1 of the 2021 Fact Sheets. Further, PAH-specific SSTM requirements are discussed in Section 5.2.4 of the Fact Sheets. The permitting authority, in this case EPA, has discretion to determine consistency with the SSTM Rule.[12] In selecting SSTM requirements with respect to Group I PAHs in these permits, EPA relied on the definitions and explanations in 40 CFR Part 136, EPA's rulemaking documents, information provided by EPA Region 1's Laboratory Services and Applied Science Division, and voluntary disclosure by State-certified commercial laboratories in Massachusetts[13] that provide routine analytical services to Massachusetts NPDES permittees.

As EPA described in both the 2014 and 2021 draft permit fact sheets, no EPA-approved test method in 40 CFR Part 136 currently measures at or below the effluent limitations of 0.018 µg/L. EPA specified the EPA test method in 40 CFR Part 136 and corresponding ML appropriate for compliance with the SSTM requirement for the 2014 re-issuance. As explained in the 2014 fact sheets,

> The human health criteria for benzo(a)pyrene as expressed in nanograms per liter, is many times lower than the current [MDLs][14] for determining PAH concentrations in aqueous solutions. Where effluent limits have been established in NPDES permits but compliance cannot be determined using currently approved analytical methods (e.g. if WQBELs are less than the analytical capability of the methods), EPA has considered establishing National Quantitation Limits (NQLs) under 40 CFR Part 136. In the absence of NQLs, EPA's Federal Advisory Committee on Detection and Quantitation report recommends setting compliance limits at the lowest concentration possible using approved analytical methods. This report further recommends permits contain a condition that the [MDL] be at or below the ML and that permits should further specify reporting requirements for results below the ML, or above the [MDL] but below the ML, typically noted on a laboratory report as an "estimated value".

[10] The MDL is defined as the minimum measured concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined using the procedure at 40 CFR Part 136, Appendix B. Note that 40 CFR Part 136 defines an MDL as being distinguishable from the method blank, not zero.
[11] This multiplying factor is specified in 40 CFR Part 136 Section 23 (glossary).
[12] 79 FR 49,004
[13] Individual laboratory disclosure are protected by Confidential Business Information at 40 CFR § 122.7. However, refer to https://www.mass.gov/certified-laboratories for a complete list of State-certified laboratories.
[14] The term "practical quantitation limit (PQL) was used in the 2014 permits, but is referred to in the SSTM Rule and the draft permits as method detection limit (MDL).

> The National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule[15] requires the use of an EPA-approved method that is sufficiently sensitive. Therefore, the Draft Permit requires that the quantitative methodology used for PAH analysis must achieve the ML of ≤0.1 µg/L for each Group I PAH compound and ≤10 µg/L for each Group II PAH compound. The ML will serve as the compliance level for benzo(a)pyrene. These MLs are based on those listed in Appendix VI of EPA's Remediation General Permit and similar facilities in the region. This approach is also consistent with EPA's TSD, page 111, which recommends, "the compliance level be defined in the permit as the minimum level (ML)." The Permittee may use any approved analytical method in CFR Part 136 for which the PQL is at or below the ML.

See 2014 Draft Permits, Fact Sheet § 7.3.2 Polycyclic Aromatic Hydrocarbons (PAHs). For the Draft Permits, EPA proposed carrying forward this minimum level as the compliance level. *See, e.g.*, 2021 Global Fact Sheet p. 41. The comment raises the point that some terminals have routinely reported measured detections and minimum levels lower than 0.1 µg/L over the last permit term. Specifying the lowest minimum level that laboratories in the region can routinely achieve is important because the water quality-based effluent limitation is lower than the method detection limits for PAHs. In response to the comment, EPA reviewed available information to determine if 0.1 µg/L or an alternative ML is the appropriate, sufficiently sensitive level for Group I PAHs.

There are currently two EPA-approved methods for testing PAHs in effluent: Method 610 and Method 625.1. EPA Method 610 is a chromatographic method applicable to the determination of the compounds listed above in municipal and industrial discharges as provided under 40 CFR 136.1. *See* AR-73. This method provides for both high performance liquid chromatographic (HPLC) and gas chromatographic (GC) approaches for the determination of PAHs. The liquid chromatographic approach must be used to adequately resolve certain compounds, including chrysene and benzo(a)anthracene, benzo(b)fluoranthene and benzo(k)fluoranthene, and dibenzo(a,h) anthracene and indeno (1,2,3-cd)pyrene. This method can achieve low MDLs, however, the MDL actually achieved in a given analysis will vary depending on instrument sensitivity and matrix effects.[16] In addition, this method is severely outdated.

Method 625 provides gas chromatograph/mass spectrometer (GC/MS) conditions appropriate for the qualitative and quantitative confirmation of results for a suite of parameters. *See* AR-74. This method is for determination of semivolatile organic pollutants in industrial discharges and other environmental samples by gas chromatography combined with mass spectrometry (GC/MS), as provided under 40 CFR 136.1. Further, EPA has promulgated this method at 40 CFR part 136 for use in wastewater compliance monitoring under the NPDES program. The latest revision promulgated in 2017 is based on the basic revision promulgated October 26, 1984, and on an interlaboratory method validation study. Advances in analytical technology have allowed

[15] Fed. Reg. 49,001 (Aug. 19, 2014).
[16] MDLs are explicitly determined as set forth in 40 CFR Part 136. They are defined as three times the standard deviation of replicate spiked analyses. This represents 99% confidence that the analyte concentration is greater than zero. Reporting either the estimated value or some proportion of the MDL is considered a false violation because the reported values appear greater than the limit, but in fact, have not been quantified.

laboratories to routinely achieve MDLs for the analytes in this method that are 2-10 times lower than those in the version promulgated in 1984. This method is performance-based. It may be modified to improve performance (e.g., to overcome interferences or improve the accuracy of results) provided all performance requirements are met. The MDL for an analyte in a specific wastewater may differ from those listed, depending upon the nature of interferences in the sample matrix.

Based on the most recent Methods Update Rule, which promulgated EPA Method 625.1 for Base/Neutrals and Acids by GC/MS (replacing Method 625) and information available from EPA Region 1's New England Regional Laboratory, which conducted its MDL study for 625.1 in April 2021, the lowest minimum levels routinely achievable for Group I PAHs for the following EPA-approved test methods[17] in 40 CFR Part 136 are currently:

Parameter	610 3 x MDL (GC)	610 3 x MDL (HPLC)	625.1 3 x MDL (GC/MS) (Standard)	625.1 3 x MDL (GC/MS) (Low Level)	625.1 Lowest Calibration Point (GC/MS) (Low Level)
Benzo(a)Anthracene	0.039	0.039	23.4	3 x 0.010= 0.03	0.05
Benzo(a)Pyrene	0.069	0.069	7.5	3 x 0.021= 0.063	0.05
3,4-Benzo-Fluoranthene	0.054	0.054	14.4	3 x 0.019= 0.057	0.05
Benzo(k)Fluoranthene	0.051	0.051	7.5	3 x 0.022= 0.066	0.05
Chrysene	0.45	0.45	7.5	3 x 0.01= 0.03	0.05
Dibenzo(a,h) Anthracene	0.9	0.09	7.5	3 x 0.056= 0.168	0.1
Indeno (1,2,3-cd) Pyrene	1.29	0.129	11.1	3 x 0.056= 0.168	0.1

Note: All units in ug/L.

With respect to the appropriate test methods for monitoring PAHs in Part I.A.1., the most sensitive up to date EPA test method is EPA Method 625.1 based on the lower calibration point in EPA's SOP. The GC/LRMS procedure for PAH analysis based on EPA Method 625.1 can determine all seven Group I PAHs. This method is also capable of measuring groupings of PAH compounds as a function of their number of peaks.

EPA acknowledges that complex matrices exist and provides flexibility and suggestions for ways to mitigate interferences in such instances, often within the published method for a specific pollutant. EPA's experience is that many laboratories find solutions to address difficult matrices and are able to achieve the published minimum level within the required quality assurance specifications. However, applicants have always had the option of calculating a matrix-specific method detection limit (MDL). Extreme matrices may necessitate the use of an elevated sample specific minimum level, in which case the laboratory should be able to show that a reasonable effort (e.g., published cleanup procedures) was attempted to achieve as low a minimum level as possible for those samples. Permittees have the option of providing matrix or sample specific

[17] These minimum levels are based on EPA's Office of Environmental Measurement and Evaluation quality-assurance/quality control samples for 2021 analyses. QA/QC samples include spike and blank analyses.

MLs rather than published levels. In other words, where an applicant or permittee uses a method that would otherwise meet the definition of "sufficiently sensitive" and the analytical results are consistent with the quality assurance/quality control specifications for that method, then the method may be considered adequate even if the published ML is not achieved.[18] 40 CFR Part 136.

Therefore, EPA revised requirements for the Group I PAHs in the Final Permit to mandate Method 625.1. In addition, EPA has included the expected range of minimum levels for target analytes. Finally, EPA is revising the compliance level specifying that the sample result must be non-detect to be considered in compliance with the numeric limit for a given Group I PAH compound. This compliance level will ultimately ensure no detectable PAHs in the discharges, which satisfies the requirements of the CWA and its regulations. EPA concludes that to the maximum extent of currently available technology, the compliance level basis to assess compliance with a water quality based effluent limitation is feasible, more practically achievable, and ensures compliance with Massachusetts WQS.

EPA did not select EPA Method 610 (GC/HPLC), promulgated in 1984,[19] as recommended in the Roseen Declaration (p. 5) given that Method 625.1 (Low Level GC/MS), promulgated in 2016,[20] achieves MLs as low or lower than Method 610 and has also been multi-lab validated more recently. That is, even if Method 610 could routinely achieve the same lowest possible minimum levels, EPA understands that most laboratories, including EPA's New England Regional Laboratory, choose not to use Method 610 for GC/MS analyses for NPDES-compliance analyses, but rather the more up-to-date Method 625.1.[21]

In cases where factors beyond a facility's control render the use of a particular method infeasible, such as geographical isolation, the permitting authority can consider such factors in deciding which method best meets the definition of "sufficiently sensitive*."* EPA is referring to geographic availability of a particular test method for routine and frequent use, in this case. *See, e.g.*, 79 Fed. Reg. 49008. ("other factors such as geographical isolation or unique sample collection constraints might preclude the use of certain available methods." … the availability of laboratories qualified to conduct some of the more sensitive analytical methods, particularly where the state requires applicants and permittees to use laboratories certified by the state to conduct analyses…"). Under the 2014 Permit, certain Permittees have analyzed PAH samples using SW method 8270 (SW-8270 E), which is a similar GC/MS test method for use in waste site characterization in non-CWA regulatory programs, such as under the RCRA and CERCLA programs. EPA has expressly omitted this test method from 40 CFR Part 136 for CWA use on

[18] Where the analytical results are not consistent with the QA/QC specifications for that method, then EPA may determine that the method is not performing adequately and EPA should select a different method from the remaining EPA-approved methods that is sufficiently sensitive with 40 CFR 122(i)(iv)(A).
[19] Appendix A To Part 136 Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater Method 610—Polynuclear Aromatic Hydrocarbons.
[20] Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.
[21] Sixteen laboratories participated in an interlaboratory study conducted to provide precision and accuracy statements for the proposed EPA Method 610 for 16 selected polynuclear aromatic hydrocarbons in 2002. By comparison, validation for Method 625.1 was published in 2016 and a method revision was promulgated in 2021.

the basis that 625.1 is the comparable GC/MS test method for characterization of PAHs in NPDES permitted wastestreams.[22]

Comment A.3.2 The Terminals Should be Required to Report Any Concentrations Detected, Even if They Are Less Than the Minimum Level

The Draft Permits should require the Terminals to report any detected concentration, even if it is below the established ML. The reporting provisions of the Draft Permit as-drafted are vague and open to at least two interpretations.

First, the Draft Permits can be interpreted to require the Terminals to report "< 0.1 µg/L" anytime a Group I PAH test concentration is below the 0.1, regardless of the accuracy or confidence of the detected concentration. *See* Draft Permits § I.A. n.3 ("When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 5 µg/L, if the ML for a parameter is 5 µg/L)." Under this reading, if a Terminal discharged 0.09 µg/L of a Group I PAH—a concentration 5 times higher than the effluent limit—EPA and the public would never know and the waters of Chelsea Creek would become more degraded.

Monitoring reports submitted by the Terminals over the permit term imply that at least some of the Terminals interpret the monitoring requirements this way. For example, the Irving Terminal has reported "<0.1" for every monthly benzo(a)pyrene test since December 2016. *See* Draft Irving Permit, Fact Sheet at 72-73.

If the 0.1 µg/L is intended to be a static reporting level, it contradicts EPA's decision in most of the Draft Permits to establish effluent on Group I PAHs other than benzo(a)pyrene. In the Draft Permits, EPA established numeric water quality based effluent limits for any Group I PAH that a Terminal reported. For example, the Draft Gulf Permit properly established effluent limits of 0.018 µg/L for benzo(b)fluoranthene, benzo(k)fluoranthene, and dibenzo(a,h)anthracene, *see* Draft Gulf Permit at 3, because the Gulf Terminal reported detections of each of those compounds, *see id.*, Fact Sheet at 31. However, the maximum concentrations detected for both benzo(b)fluoranthene (0.074 µg/L) and benzo(k)fluoranthene (0.055 µg/L) were lower than the 0.1 µg/L proposed ML. *See id.* Had Gulf only reported concentrations of "<0.1," EPA would not have known that effluent limitations were necessary for those compounds.

Second, instead of setting a fixed reporting limit of 0.1 µg/L, the Draft Permits could be interpreted as requiring that: (i) the lab testing any given sample must calculate a minimum level

[22] The Roseen Declaration (p. 6) states that Method 8270 is approved for use in the Massachusetts Remediation General Permit and is routinely used for detection of PAHs. Appendix VII of the 2017 RGP classifies Method 8270 as "Other" and footnote 9 explains "Test methods 8260 and 8270 cannot be used for the purpose of analysis under this general permit unless approved from use in accordance with 40 CFR Part 136.5. Specific preparation methods may be required." See RGP Appendix VII p. 7 at https://www3.epa.gov/region1/npdes/remediation/FinalAppendixVII.pdf. This response explains that Permittees may request an Alternate Test Procedure consistent with 40 CFR § 136.5 but none of the Terminals have made such a request. Therefore, Method 8270 is not a valid method for the purposes of these permits.

for that sample, (ii) the minimum level calculated may be no higher than 0.1 µg/L, and (iii) the permittee must report any concentration higher than the lab-calculated minimum level for that particular sample. *See, e.g.,* Draft Gulf Permit § I.A.n.10 ("The ML for analysis for the Polycyclic Aromatic Hydrocarbons (PAHs) shall be ***no greater than . . . 0.1 µg/L***" for Group I PAHs) (emphasis added). In this interpretation, the Terminals would report any concentration that exceeds the lab-calculated minimum level, even if that concentration is less than 0.1 µg/L.

While the second interpretation is preferable because it would allow concentrations below 0.1 ug/L to potential be reported, it is still insufficient. *See* Roseen Dec. ¶¶ 32-40. For example, under either interpretation, the Draft Permit requires the Terminals to treat any concentration below the applicable ML as zero when calculating summary statistics. *See* Draft Permits § I.A. n.3. This results in estimates that are biased low. Data that is biased low would increase the risk of furthering impairment and increasing risk to human health. As Dr. Roseen states: "The substitution of qualified data with a value of zero is scientifically indefensible and well established to be poor practice . . . . Substitution of zero produced estimates of mean and median which were biased low, while substituting the reporting limit resulted in estimates above the true value. As the choice of value to be substituted is essentially arbitrary without some knowledge of instrument readings below the reporting limit, and as large differences may occur in the resulting estimates, simple substitution methods are not defensible." Roseen Dec. ¶ 34 (cleaned up).

The Draft Permits should be changed to require:

1. Permittees must order the most sensitive PAH tests available;
2. Permittees must report the minimum level and method detection limit (MDL) calculated by the lab for each test conducted;
3. Permittees must report any concentration above the method detection limit for the most sensitive test available; and
4. When computing averages of monitoring results that contain results below the MDL, the permittee should be required to use ½ of the MDL as the concentration, not zero.

Response to Comment A.3.2

The comment raises issues with the language in the Draft Permits, suggests that the footnote establishing the minimum and compliance levels for PAHs is unclear, and recommends several changes to the language. To clarify, the draft permits already require reporting of any detected concentration. The comment asserts that, under the Draft Permits Terminals can report "< 0.1 µg/L" anytime a Group I PAH test concentration is below the 0.1, regardless of the accuracy or confidence of the detected concentration. This is not EPA's intent. The Draft Permit Part I.A.1 footnote 3 requires the Permittee to report the data qualifier signifying less than the ML when a parameter is not detected above the ML. This requirement applies even when the laboratory specific ML is less than the ML defined in footnote 11 (i.e., if a Terminal detects a value above the lab specific ML but below the ML of 0.1 µg/L defined in footnote 11, the Permittee must report the detected value) because, in this case, the value is a measured concentration and not a non-detect. However, as the comment points out, this requirement could be made clearer in the permit. The relevant footnotes in the Final Permits were revised to clarify that "When a

parameter is not detected above the **sample** ML…". This change makes clear that any measured detection above either the laboratory- or sample-specific ML should be reported.

The Roseen Declaration (p. 8) states that "the substitution of "<ML" instead of reporting the actual concentration calculated is inconsistent with best practices for data analyses and is not consistent with the literature…[and] reduces the utility of the monitoring data and the ability to assess benchmark monitoring compliance." NPDES permits issued in Region 1 routinely require reporting a non-detect as "<ML".[23] Values above the MDL, but below the ML are estimated values. This occurs when a sample result is between the lowest concentration that can be detected by an instrument (i.e., MDL) with correction for the effects of sample matrix and method-specific parameters such as sample preparation (i.e., ML).

Roseen (p. 8) states that "[d]ata in this range is useable data that is within the calibration range for the method." However, a concentration measured below the sample specific minimum level should not be treated equivalent to a measured concentration. For a specific analytical instrument, the method detection limit is the lowest concentration that can be detected by an instrument without correction for the effects of sample matrix or method-specific parameters such as sample preparation. MDLs are explicitly determined and generally defined as three times the standard deviation of the mean noise level and represent 99% confidence that the signal is not random noise. The MDL for a specific sample may differ from the listed MDL depending on the nature of interferences in the sample matrix and the sensitivity of the instrument. This is because the listed MDL does not include the upward correction necessary to account for the effects of sample matrix (e.g., contaminants that are co-extracted from the sample) or handling/ preparation, (e.g., contaminants in solvents, reagents, glassware, and other sample processing hardware). *See, e.g.*, AR-73. Method 625.1 (AR-74 p. 31) states "Unless specified otherwise by a regulatory authority or in a discharge permit, results for analytes that meet the identification criteria are reported down to the concentration of the ML established by the laboratory through calibration of the instrument…Report a result for each analyte found in each field sample or QC standard below the ML as '<ML,' where ML is the concentration of the analyte at the ML, or as required by the regulatory/control authority or permit." The minimum level refers to a minimum concentration of an analyte that can be measured within specified limits of precision and accuracy. They are generally 5-10 times the detection limit. Concentrations below the quantitation limit may be present and even positively identified; however, the analyte is not present in a sufficient amount to be reliably quantified.

For PAHs at the Terminals, given that the human-health based criteria are below minimum levels, EPA considers any detection above a minimum level sufficient evidence that the discharge has reasonable potential to cause or contribute to an excursion of the water quality criterion and, as such, requires an effluent limitation. The Final Permit was revised to ensure that

[23] The Roseen Declaration (p. 9) asserts that industrial general permits do not report "<ML" for data below the ML and gives an example from the Maryland Industrial General Permit. However, individual and general NPDES permits in Region 1 generally require Permittees to report non-detect values as "<ML." *See, e.g.*, 2017 Massachusetts Remediation General Permit (MAG910000) (p. 34), 2021 Massachusetts Small Wastewater Treatment Facility General Permit (MAG5800000) (p. 9), 2022 Seaman Paper Company NPDES Permit (MA0000469) (p. 5) available on EPA Region 1's website at https://www.epa.gov/npdes-permits/massachusetts-npdes-permits. In addition, Terminals were required to report non-detect values as "<ML" under the 2014 Permits.

Permittees report detections above any laboratory- or sample-specific minimum level for PAHs. EPA expects that this data will accurately capture any measured concentrations above the criterion. NPDES permits in Region 1 do not specify assigning artificial values that cannot be confirmed (e.g., ½ of the MDL) as measured concentrations. While it may be used in the Maryland Industrial General Permit, as the NPDES program implementation is delegated to the State in Maryland, Region 1 considers this practice statistically inappropriate methodology for determining compliance with an effluent limitation. However, estimated values (above the MDL but below the ML) are reported in the DMRs, generally identified with a laboratory QA/QC flag in the comments field EPA may consider these values, along with any reported values above the minimum level, in determining when effluent limitations are required.

Comment A.3.3 The Sampling Provisions for Group I PAHs are Insufficient

The sampling frequency and sampling methodology for PAHs is insufficient to satisfy the Permits' requirement that facilities "must control any pollutant or pollutant parameter . . . which the permitting authority determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to the excursion above any water quality standard." Roseen Dec. ¶ 42. While setting an *average* monthly numeric effluent limitation for benzo(a)pyrene and certain other Group I PAHs, the Draft Permit only requires a single monthly grab sample be taken. Similarly, the Draft Permits require a single annual sample of the remaining PAHs. However, as Dr. Roseen explains, "the Draft Permit sampling frequencies are grossly insufficient to determine average monthly or average annual PAH concentrations for the purpose of assessing the risk of causing or contributing to excursions above water quality criteria." Roseen Dec. ¶ 46. Of additional concern, given the inherent deficiencies in using grab sampling, reliable sampling cannot be based on a single sample; instead, multiple samples are necessary to improve the reliability of the sampling. *See* Roseen Dec. ¶¶ 47-51. Dr. Roseen raises further concerns with respect to "the use of low-quality grab sampling techniques is particularly unacceptable with the advent of low-cost and simple alternatives to more expensive flow-weighted composite sampling methods. These low-cost alternatives include first flush samplers, passive diffusion samplers, and multi parameter sondes, that greatly increase the quality of the data."

Response to Comment A.3.3

EPA disagrees that the monitoring frequency and type for PAHs is insufficient. NPDES permits must specify the monitoring type, intervals, and frequency sufficient to yield data that are representative of the activity. The monitoring requirements in the permits have been established to yield data representative of the Facility's discharges in accordance with CWA Sections 308(a) and 402(a)(2) and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i), and 122.48. *See* Fact Sheets p. 10. [24] Monitoring is performed to determine compliance with effluent limitations established in NPDES permits, establish a basis for enforcement actions, assess treatment efficiency, characterize effluents, and characterize receiving water.

[24] *See also* NPDES Permit Writer's Manual. Chapter 8: Monitoring and Reporting Conditions. United States Environmental Protection Agency. EPA-833-K-10-001, September 2010.

The term "grab sample" refers to an individual sample collected within a short period of time at a particular location. Analysis of a grab sample provides an instantaneous view of stormwater quality at a single point in time and is appropriate for monitoring stormwater discharges from the Terminals for several reasons. The comment alleges that single grab sampling does not yield reliable results and that EPA should require multiple grab samples to improve the reliability of the sampling. For support, the comment relies on several paragraphs in an attachment to the comment (the "Roseen Declaration"). But while the Roseen Declaration repeatedly refers to grab sampling as a "low-quality" technique, the only support provided for that conclusion is a quote from "an industry standard" that "'[t]he results from a single grab sample generally are not sufficient to develop reliable estimates of the event mean concentration (EMC) for the pollutant or pollutant load . . . .'" Roseen Declaration at ¶ 48. The intent of the sampling requirements proposed in the permit, however, is to characterize the worst-case concentrations, not to characterize the average mass load or event mean concentration (EMC) of any particular storm event. Grab sampling collected during the "first flush" of a discharge following a storm often contains the highest pollutant concentrations in a storm runoff event, especially in small catchment areas with mostly impervious surfaces, and in storms with relatively constant rainfall. In such cases, the first flush may carry pollutants that accumulated in the collection system and paved surfaces during the dry period before the storm. For these reasons, single grab samples collected during the first flush of a discharge event provide a reasonable measure of the highest concentrations of PAHs in the discharge without requiring more costly sampling frequencies or types and allow EPA to determine which pollutants, if any, are present above permitted levels.

For some parameters, such as temperature, pH, total residual chlorine, phenols, volatile and semi-volatile organic compounds (VOCs and SVOCs), and bacteria, composite sampling may be less representative of the discharge because they transform or degrade rapidly, which can introduce considerable bias. Accordingly, for instance, grab sampling is the typical sampling method for VOCs because VOCs can be lost through evaporation if samples are exposed to air during compositing. Other pollutants, such as oil and grease and total petroleum hydrocarbons, tend to adhere to sample container surfaces so that transfer between sampling containers must be minimized.

While it is possible to derive mean concentrations of VOCs from a single VOC analysis by collecting representative, discrete water samples and compositing them with a gas-tight syringe, this type of monitoring significantly increases analytical costs and EPA sees no clear objective for the usefulness of this information in determining compliance with effluent limits in the comments.[25] Flow-weighted mean VOC concentrations are generally used to estimate mass loadings in wastewater and urban storm water, and spatially integrated mean VOC concentrations can be used to assess waterbodies. The mean error in a discrete sample due to

[25] Another option would be to collect a series of grab samples at short time intervals over the course of a storm event and analyze each grab sample individually. If the samples are analyzed individually, the results can be used to assess the rise and fall of pollutant concentrations during a storm and to estimate EMCs of pollutants. This approach can be useful if the monitoring objective is to discern peak pollutant concentrations or peak loading rates for assessing short-term water quality impacts, but that is not the case here. Analyzing each grab separately adds significantly to laboratory costs; consequently, this approach is rarely used except when program objectives require detailed information about changes in constituent concentrations over the course of a storm.

compositing is about 2% for most VOC concentrations greater than 0.1 µg/L.[26] These facts are problematic in the case of PAHs at these facilities for several reasons. First, the water quality criteria are concentration, not mass-based. Second, the effluent limitation and compliance level are significantly below 0.1 ug/L such that any compositing error would produce non-representative samples. Third, the receiving water is already impaired for PAHs. As a result, the limitations, to the extent currently analytically possible, require sampling of the worst-case conditions (i.e., the first flush), since any addition has a reasonable potential to cause, or contribute to an excursion of water quality standards.

Finally, concentrations measured at a point in time can be useful for BMP efficiency evaluation in a number of circumstances. Concentrations resulting from samples collected at specific, identical times during a discharge generate a comparable dataset of the concentration of pollutants over long timeframes. The generation of these data facilitates the analysis of temporal variations in concentration, especially to identify the "first-flush" phenomenon for a given discharge.[27] Detailed concentration data is one of the approaches for assessing concentrations of pollutants that have toxic effects during a given event, and chronic effects with repeated events by aggregating these individual acutely toxic effects over longer periods of time and extrapolating intervals to predict effects. These data further enable EPA to require and the facilities to implement BMPs that address reduction of peak effluent concentrations. EPA believes that reducing peak concentrations to levels below detection for compounds such as petroleum hydrocarbons consistently over a long period of time is more beneficial to human health and the environment than characterizing and reducing event mean concentrations for any particular type of storm event. EPA's long-term analysis for limitations based on the protection of human health considers chronic effect over years of exposure, not effects from individual storm events. For accurate statistical analysis of these environmental data, EPA's TSD recommends collection of at least 8 to 12 samples over a minimum of three years for water quality-based toxics control.

For the reasons described above, EPA maintains that monthly sampling for PAHs with effluent limitations is sufficient.[28] This frequency represents an increase for those Group I PAH subject to numeric effluent limitations for the first time in the Final Permits. The monthly monitoring frequency for benzo(a)pyrene is consistent with the 2014 Permits, which was an increase from the quarterly frequency required in the 2005/2006 permits.

Comment A.4 – The Permits Should Not Include A Compliance Schedule for the Major Storm Provision or the PAH Effluent Limitations

[26] Thomas J. Lopes; James D. Fallon; and Terry L. Maluk, United States Geological Survey. *Compositing Water Samples for Analysis of Volatile Organic Compounds*. Journal of Environmental Engineering (2000) 126:8 (769).
[27] Urban Stormwater BMP Performance Monitoring: A Guidance Manual for Meeting the National Stormwater BMP Database Requirements. United States Environmental Protection Agency: EPA-821-B-02-001, April 2002.
[28] To the extent the commenter claims that annual sampling for Group II PAHs is insufficient, EPA notes that naphthalene, which EPA uses as the indicator parameter for Group II PAHs in the permits, is required on a monthly basis. The purpose of the use of the annual scan for the remaining Group II PAHs is to ensure that the indicator pollutant is sufficient to control Group II PAHs.

The permits should not include a compliance schedule for the Major Storm Provision or the PAH effluent limitations.

First, as explained above, the Prior Permits already require the permittees to design, maintain, and operate the Terminals in a manner that avoids flooding and damage from the reasonably anticipated impacts of climate change during the facilities' design life. These companies have had decades to respond to the climate crisis and take the necessary actions to protect their infrastructure. Any failure to do so was already a violation of the Prior Permits, so no compliance schedule is merited.

Similarly, no compliance schedule is appropriate for PAH effluent limitations because the Prior Permits already include a narrative requirement that discharges "not cause a violation of the Massachusetts water quality standards of the receiving water." Prior Permits § I.A.2. The Chelsea Creek was impaired at the time the Prior Permits were issued. *See id.* Fact Sheet, § 3. If the Terminals have been discharging pollutants at concentrations higher than established in the Draft Permit, they have already been violating the Prior Permits. Moreover, many of the Terminals already violated the numeric effluent limits established in the Prior Permits. No further compliance schedule should now be adopted.

Response to Comment A.4

EPA did not propose a compliance schedule in the draft permits. And while EPA requested comment on the need for compliance schedules for any effluent limitations, EPA did not receive any such proposed schedules for PAHs. As a result, the final permits do not contain a compliance schedule for the Major Storm and Flood Events BMP or for the PAH limitations. *See also* Response to Comment F.26.

Comment A.5 – The Permits Should Not Eliminate the Former Global Petroleum Outfall 002 from the Global Permit

The Global Permit should require Global to continue to sample at the Former Global Petroleum Outfall 002 ("Former Outfall 002") to ensure that EPA and the public understand the nature of discharges from the former Global Petroleum facility.

The Former Outfall 002 is an internal outfall located at the end of the oil water separator that treats all stormwater from the site. The outfall was created because the stormwater system at the Global Petroleum site had a history of contaminated groundwater infiltrating the stormwater system. The Former Global Outfall allows monitoring of pollutants coming out of the stormwater treatment system before the stormwater can commingle with any discharges of remediated groundwater from Outfall 003.

The Former Global Outfall is still necessary because that outfall reported the most benzene discharges over the 5 µg/L limit of any of the Terminals. These discharges are particularly troubling because the Former Global Outfall was one of the few outfalls among all the Terminals

with a 5 µg/L effluent limit in its current permit. So, each of these exceedances was a *per se* violation of the permit. The Global Permit should not eliminate an outfall with a significant history of permit violations.

Monitoring at the Former Global Outfall is particularly important because of Global's extensive failure to submit any monitoring data for Outfall 002 (former Global Petroleum Outfall 001) for the majority of the permit term, from December 2014 to December 2019. Moreover, even the monitoring that Global did at the former Global Petroleum Outfall 001 is fundamentally flawed. For example, Global reported that the concentration for all PAHs was *zero* on *every test* it performed throughout the permit term. *See* Draft Global Permit, Fact Sheet at 124-29. Each report of zero for the concentration of a pollutant is another violation of a permit. Permittees are not allowed to report a zero concentration. Instead, the 2014 Global Petroleum permit requires Global to report that the concentration was less than the [practical quantitation limit] for that analyte (i.e. <0.1 µg/L, if the PQL for an analyte is 0.1 µg/L)." EPA and the public have no idea how much of the benzene or PAHs that the Global Petroleum terminal discharged into Chelsea Creek because Global disregarded its monitoring obligations for five years. The only data available is the monitoring from the Former Global Outfall.

Also, the history of benzene violations at Outfall 002 implies that contaminated groundwater may still be entering the stormwater system. The Fact Sheet for the Draft Permit states that "[g]iven that the Draft Permit now . . . requires elimination of any groundwater infiltration contributing pollutants to the stormwater conveyance system, the former Petroleum internal outfall is no longer necessary to ensure infiltration of contaminated groundwater into the stormwater conveyance system no longer impacts the water quality of the discharge." Draft Global Permit at 19. However, the only way for EPA and the public to determine whether Global is satisfying this requirement is to continue requiring Global to monitor at the end of the stormwater pipe—the Former Global Outfall.

Response to Comment A.5

Internal monitoring is the monitoring of wastestreams at a location within the facility before discharge to waters of the United States. The NPDES regulations at § 122.45(h) allow internal monitoring points to be established when needed to determine compliance with a standard and in cases where setting an external monitoring location is not feasible. The permit writer may require internal monitoring to determine compliance with technology-based effluent limitations (TBELs) for a wastestream before commingling with other process or non-process wastestreams. Internal monitoring is generally not appropriate for determining compliance with water quality-based effluent limitations (WQBELs) unless final effluent monitoring is impractical (e.g., the final discharge point is submerged or inaccessible).

Examples of reasons for requiring designation of internal monitoring locations include the following:

Ensuring compliance with effluent guidelines (at non-POTW facilities); this facility is not subject to effluent limitation guidelines.

Ensuring compliance with secondary treatment standards (for POTWs only); this facility is not a publicly-owned treatment works.

> Allowing detection of a pollutant: Instances where the combination of wastewaters result in dilution of a pollutant of concern such that it would not be detectable using approved analytical methods. Internal monitoring would enable characterization of the pollutant before dilution with other wastewaters.

The former Global internal Outfall 002 was established in the 2005 Permit and reflected additional stormwater treatment consisting of a filter bag and granular activated carbon units. A sump pump located in the discharge chamber of the oil/water separator transferred stormwater to the temporary treatment system. Former Outfall 002 was monitored at a location upstream of the concrete vault to ensure the sampling location was representative of the treated stormwater effluent through this system. Further, the former Outfall 002 sampling location ensured this treated stormwater effluent was not comingled with treated groundwater remediation effluent from internal Outfall 003. Outfall 003 was installed to comply with State waste site cleanup requirements for methyl tert-butyl ether (MtBE). Both wastestreams discharged to a concrete vault, and then to the Chelsea River via Outfall 002 (formerly Petroleum Outfall 001). Global discontinued use of the temporary stormwater treatment system in March 2010. Since that time, the monitoring location at former internal Outfall 002 captured the same stormwater treated in the oil/water separator with the stormwater discharged via Outfall 002 (formerly Petroleum Outfall 001). However, the remediation system at current internal Outfall 003 remains in use, and as such, internal Outfall 003 remains necessary to monitor the remediation waste stream. EPA established technology-based effluent limitations (TBELs) based on the use of this temporary treatment system.

As described in the 2021 Fact Sheet, the former Outfall 002 no longer physically exists and, if reestablished after treatment in the oil/water separator, would represent a midpoint in the overall flow configuration. Were EPA to continue to apply technology-based effluent limits (TBELs) at what is now a midpoint sample location, they would not differ from the TBELs included in the Draft Permit for Outfall 002, since the TBELs are based on actual treatment performance across the terminals using a combination of an oil/water separator and stormwater control measures (i.e., BMPs). Further, the outfalls in the Draft Permit will yield monitoring data appropriate for assessing compliance. Because the treated groundwater remediation effluent is monitored separately, were an exceedance of a numeric limitation at Outfall 002 identified, if monitoring results from Outfall 003 do not indicate such an exceedance, the source can easily be traced to the stormwater discharges such that corrective action can be initiated. Lastly, the Permittee indicated to EPA that discharges of the treated groundwater remediation effluent from internal Outfall 003 rarely comingle with the stormwater/hydrostatic test water discharges from the Facility. As a result, the wastewater discharged from Outfall 002 (former Outfall 001) is the sample location representative of discharges from the Facility. Former Outfall 002 would simply be duplicative.

Comment A.6 – Conclusion

For the reasons described above, (i) the proposed Section I.C.1.b.6 improperly narrows the duties imposed on permittees by the "good engineering practice" standard and needs to be revised to avoid impermissible backsliding, (ii) the minimum limits for PAHs are too high to ensure that

water quality standards are not violated, (iii) the sampling frequencies for PAHs are insufficient to evaluate the actual concentrations of PAHs in the Terminals' discharges, (iv) no compliance schedule should be established for new effluent limits, and (v) the former Global Petroleum Outfall 002 should be retained.

Response to Comment A.6

EPA has considered CLF's specific comments and responded in detail above. See Responses to Comments A.1 through A.5.

Comments from the Environmental Data and Governance Initiative (EDGI)

The Environmental Data and Governance Initiative (EDGI) welcomes the opportunity to submit a comment letter pertaining to the Environmental Justice Analysis for Clean Water Act National Pollutant Discharge Elimination System Permits for Chelsea River Bulk Petroleum Storage Facilities. EDGI is a network of technologists, academics, and volunteers who document, analyze, and advocate for the federal provision of environmental data and governance. EDGI's project called Environmental Enforcement Watch (EEW) draws public attention to EPA's enforcement activities, shows how non-enforcement relates to intersecting forms of oppression such as racism and economic inequity, and envisions improved public engagement with environmental data. EEW uses data science tools to analyze the data from EPA's Enforcement and Compliance History Online (ECHO) database in order to meet these goals.

We appreciate that the permits for seven oil facilities are up for review simultaneously as it is an important step toward holistic evaluation of the facilities' influence on the waterway and surrounding communities. However, given our review of EPA's Environmental Justice (EJ) Analysis for these permits, we are concerned first with the accessibility of information about the facilities and their permits to the public, especially EJ communities. Our second concern is that the EJ Analysis does not alter the permits and does not adequately address the full EJ impacts of the permitted facilities

Comment B.1

First, as the EJ Analysis states, Executive Order 12898 requires that EPA "work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public," id. § 5-5(c). It is critical that EPA ensures data accessibility for EJ communities so they have as much information as possible to form meaningful contributions to permitting decisions. However, we found the data and information surrounding the permits and facilities to be largely inaccessible due to lack of summarized changes, data formatting issues, lack of sufficient context, and short period of the comment period given the COVID pandemic. We recommend that EPA 1) Creates a document summarizing permit changes; 2) Releases data in analyzable ways; and 3) Contextualizes data with information on environmental and health impacts.

Response to Comment B.1

EPA responds to the three requests as well as the other specific criticisms in their elaborated versions below. See Responses to Comments B.2-B.4.

Comment B.2

Our team of 13 experienced researchers, including programmers and data and health scientists, worked several hours a week over six weeks to create a fairly basic analysis of the permits. This amount of work would be burdensome for anyone to do — including EJ communities — yet the information we gathered is vital to understand these permits. We strongly recommend that permit

renewals such as this one be accompanied by a summary of changes and an explanation of each change as well as context around potential impacts.

Response to Comment B.2

In accordance with 40 CFR § 124.8, the public notice for each Draft Permit was accompanied by a Fact Sheet that includes the scientific and legal justification for all permit limits and conditions, including any changes from the previous permits and an explanation for each change. In addition, Executive Order 12898 directs EPA to "work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public" and, whenever practicable and appropriate, "translate crucial public documents, notices, and hearings relating to human health or the environment for limited English speaking populations." In this case, given the significant interest in the permits and to better serve the community, versions of our public notice and a concise Community Information Sheet on the Chelsea River Bulk Petroleum Storage Facilities were provided on EPA's webpage in English, Spanish, Portuguese, and Haitian Creole.[29] In addition, EPA held a public meeting on 3/15/2021 to answer any questions from the community on the draft permits. The public meeting also included real time translational service in English, Spanish, Portuguese, and Haitian Creole.

The Information Sheet explained the NPDES permit, generally summarized the Draft Permit conditions, and provided information about how to submit comments on the permits in plain language. While the Information Sheet provides a useful summary of the permitting action and key provisions, it does not include a direct comparison with the 2014 Permits which was instead provided in the Fact Sheet. For the next issuance of these Permits, EPA will consider the commenter's suggestion to provide a more detailed summary of significant changes from the existing permits and will consider expanding the Information Sheet in the future to include a comparison of effluent limitations between the existing and proposed NPDES permits. Section I of this Response to Comment document includes a list of changes from the Draft to the Final Permits and references the response(s) explaining each change in accordance with 40 CFR § 124.17(a)(1).

Comment B.3

Data issues made analyzing these permits time-intensive. We had to fix data formatting issues to analyze facilities' compliance histories and analyze several documents to summarize the permit changes. In order to diminish this burden, we recommend that EPA release permit data such as tables of effluent monitoring requirements in standard formats such as a comma separated value (CSV) file. Data tables in PDF form are difficult to extract and therefore difficult to analyze. For example, data tables from 2014 were organized differently than those in the new permits, which made them difficult to compare directly. Moreover, we had to manually transfer the information from the PDF into a spreadsheet.

Response to Comment B.3

[29] Available at: https://www.epa.gov/npdes-permits/chelsea-river-bulk-petroleum-storage-facilities-npdes-permits and https://www3.epa.gov/region1/npdes/chelseacreekfuelterminals/pdfs/2021/crbot-community-info-sheet.pdf.

Summaries of effluent and ambient data from each Facility are in the fact sheet appendices in PDF format and are intended as a reference for Section 5.0 of the Fact Sheet (Description of Effluent Limitations and Conditions). EPA agrees that the PDF format is not ideal for analyzing effluent data. Effluent data can be accessed in formats suitable for analysis via EPA databases.

In an effort to modernize the CWA reporting program, EPA promulgated the NPDES Electronic Reporting Rule (80 Fed. Reg. 64064, October 22, 2015), which requires electronic reporting and sharing of Clean Water Act NPDES program information. Electronic reporting is intended to improve transparency, inform the public about performance, and ensure the public has access to the information necessary to engage in environmental protection efforts. The Enforcement and Compliance Online (ECHO) system is an integrated compliance tool that compiles electronic monitoring data to be accessed by the public.[30] As a result of electronic reporting, the public, including organizations like EDGI, can access new tools and data download capabilities (including in .csv format) to assist with data analysis. For example, the "Effluent Limitations Exceedances Search" identifies exceedances of NPDES permit effluent limits based on discharge monitoring reports (DMRs).[31] The public can search for effluent limitations exceedances by geographic area, pollutant, industry, or facility and download effluent data as a .csv file. The public can also access data on the ECHO database's homepage, by entering an NPDES Permit Number in the "Facility Id" search field and selecting "View Effluent Charts" under the column labeled "Reports" in the results and selecting "Download All Data" on the Effluent Charts page. EPA recently added a new tool, called "ECHO Notify," that allows members of the public to sign up to receive automatic email notifications of new monitoring results for particular facilities or within geographic areas of their choosing.[32] ECHO has tutorials on its website detailing how to conduct searches, how to sign up for ECHO Notify, and how to use other data exploration techniques,.[33] In addition to tutorials, the ECHO database offers additional training webinars on some of its advanced features.[34] The most recent advanced training webinar for ECHO was offered on August 10, 2021; this recording is archived on the website,[35] in addition to those that were conducted in the past. In response to this and similar comments, EPA prepared a step-by-step guide for two of the most common NPDES data downloads, attached as an Attachment to this Response to Comments and posted on the Region 1 Terminals website.[36]

In addition to tools that allow the public to explore and evaluate effluent data, the ECHO NPDES Monitoring Data Download tool[37] enables the public to download DMR data as an Excel file in an identical format as presented in Appendix A of the Fact Sheets. In response to this comment, EPA Region 1 requested that alternative data format options be made available for downloading data using the Data Download tool. The request was prioritized by ECHO application managers and, as of October 2021, DMR data can also be downloaded as a CSV file.

[30] Available at: https://echo.epa.gov/. See also https://echo.epa.gov/resources/general-info/learn-more-about-echo.
[31] Available at: https://echo.epa.gov/trends/loading-tool/effluent-exceedances-search.
[32] Available at: https://echo.epa.gov/tools/echo-notify.
[33] Available at: https://echo.epa.gov/help/tutorials.
[34] Available at: https://echo.epa.gov/help/training.
[35] Available at: https://echo.epa.gov/help/training.
[36] Available at: https://www.epa.gov/npdes-permits/chelsea-river-bulk-petroleum-storage-facilities-npdes-permits.
[37] Available at: https://echo.epa.gov/trends/loading-tool/get-data/monitoring-data-download.

Comment B.4

Information around the health and environmental impacts of chemicals listed in the permits was also not readily accessible. We recommend EPA point to IRIS assessments of each chemical mentioned in the permits to help members of the public unfamiliar with EPA's tools assess what constitutes a reasonable risk. Community members are entitled to information about what each chemical is, what it might do, and at what concentration it becomes dangerous.

Response to Comment B.4

NPDES permits must ensure that point source discharges are regulated at levels which meet state and federal water quality standards applicable to the designated receiving water, including the beneficial designated uses (e.g., aquatic life use, primary contact recreation), numeric or narrative water quality criteria sufficient to protect designated uses, and antidegradation requirements to ensure that protection of existing designated uses is not degraded. *See* CWA § 303(c)(2)(A); 40 CFR § 131.12. *See also, e.g.*, Global Fact Sheet p. 6. In particular, EPA considers acute and chronic aquatic life criteria and human health criteria when establishing narrative and numeric water quality-based limits in NPDES Permits. *See id*. Finally, the NPDES permits for the Chelsea River Terminals meet Massachusetts' water quality standards as certified by the Massachusetts Department of Environmental Protection. *See, e.g.*, *id.* pp. 8-9. In other words, in accordance with the CWA, NPDES permits must establish limitations and conditions sufficiently protective of human health and the environment.

In particular, IRIS assessments are used in setting effluent limits for certain parameters based on human health criteria (e.g., PAHs). *See* AR-114 p. 40. The national recommended water quality criteria on which the effluent limits are based inherently include an assessment of risk. Any human health criterion for a toxicant is based on at least three interrelated considerations: 1) cancer potency or systemic toxicity; 2) exposure; and 3) risk characterization. National Recommended Water Quality Criteria are derived using risk assessment methodology. Therefore, a human health criterion is the highest concentration of a pollutant in water that is not expected to pose a significant risk to human health based on the toxicity, exposure, and acceptable risk levels as set forth by EPA.

Still, the health and water quality impacts related to the pollutants of concern should be clearly presented to the community. The Fact Sheet for each Draft Permit includes discussions of associated water quality issues, including human health impacts, for all pollutants of concern in the discharges. EPA appreciates the recommendation for improving future fact sheets. IRIS assessments are a valuable resource for providing information on the environmental and human health impacts of regulated chemicals. EPA continues to refine and improve fact sheets and will consider adding information from, and references to, other resources, such as IRIS assessments, to inform the public about pollutants of concern in NPDES permits.

Comment B.5

In terms of accessibility of the public hearing and permitting process, we believe COVID-19 is an obstacle to public participation, especially in Chelsea and East Boston. Chelsea and East

Boston have been particularly hard hit by COVID-19. East Boston has the highest positive test rate of any neighborhood in Boston (19% as of April 7th).[1] Moreover, Chelsea experienced one of the worst COVID-19 outbreaks nationally. In July 2020, there were "2,845 cases of Covid infection, for an astonishing rate of over 7,000 cases per 100,000 residents that is among the highest in the nation".[2] The COVID-19 death rate per capita in Chelsea was more than three times higher than in the neighboring city of Boston.[3] A reasonable expectation is that members of the general public whose health and environment will be influenced by the permits are able to participate in public comment while maintaining their ordinary responsibilities such as full-time work, family obligations, and other commitments during this pandemic. This may not be the case, as evidenced by the lack of input from community members not affiliated with any organizations during the oral comments.

[1] Boston Public Health Commission. (2021, April 7). COVID-19. Retrieved April 07, 2021, from https://www.bphc.org/whatwedo/infectious-diseases/Infectious-Diseases-A-to-Z/covid-19/Pages/default.aspx
[2] Sequist, T. D. (2020, July 6). The disproportionate impact of covid-19 on communities of color. Retrieved April 07, 2021, from https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0370
[3] Ibid.

Response to Comment B.5

EPA took several steps to ensure that public participation in the NPDES permit process would not be significantly affected by the COVID-19 pandemic. Such steps included: (1) identifying and meeting with local environmental justice organizations and community groups early on during the drafting period as partners to reach interested community members; (2) developing a Community Information Sheet to concisely explain the permitting action and opportunity to submit comments remotely; (3) doubling the length of the comment period to 60 days; (4) holding a virtual informational meeting in addition to a virtual public hearing, both with Spanish, Portuguese, and Haitian Creole interpreters, and both scheduled after normal working hours, and (5) working with the community on the release of the draft permits to avoid the holiday season and give interested parties more time to prepare for their release. While not a complete replacement for a public notice process free from the impacts of the pandemic, EPA believes the above measures ensured that the local community had an opportunity to provide input on the draft permits. EPA notes that it received a similar number of comments for these draft permits as the last set issued in 2014.

Comment B.6

In the same vein of accessibility, full disclosure of all public comments is crucial. These comments, made orally or formally, must not be altered in any way as it would interfere with the transparency necessary for the public to assess whether EPA has delivered a substantial response to the data and questions proposed. Without reading the original comment, it is unclear to the public if EPA may have misrepresented a commenter's original argument or failed to respond to a substantial portion of the comment. The 2014 NPDES permits issued by EPA include the Response to Public Comments at the end of the permit, however, it is noted that the public comments, "may be paraphrased," yet there is no indication made to distinguish between what has been paraphrased and what was a direct quote from the submitted comments. Publishing the original comment in full is essential to maintaining the integrity of a public comment. Public

comment should not only be a comment made by a member of the public to the agency but also a comment made available to the public in an unaltered form.

Response to Comment B.6

Comments in this document have been reproduced as received; aside from minor formatting changes, they have not been edited. The original comment documents submitted by the public are part of the administrative record, which can be requested by contacting the permit writer at the contact information found at the beginning of this document.

Comment B.7

Second, we are concerned that EPA's EJ Analysis — which did not adequately address the full EJ impacts of these permits — did not change the permits themselves or preclude repermitting. Because the permit decisions are limited to whether water discharges from the facilities will contribute negatively to water quality standards, the EJ Analysis does not change EPA's proposed permits despite documenting existing environmental injustices in Chelsea, East Boston and Revere.

The EPA EJ Analysis finds that the Chelsea and East Boston communities are overburdened with environmentally-related health impacts, but the permits are not changed based on these findings. Chelsea has a higher percent of low birth weight, as well as higher rates of cancer, hospitalization for heart attack, asthma in-patient hospitalization and emergency room visits for asthma than compared to Massachusetts state averages. The analysis only includes data for Boston as a whole, and specific rates for East Boston are not outlined as it is considered a neighborhood of Boston and not its own entity. Therefore, the data presented is limited in its analysis of East Boston specifically. Nevertheless, Boston, including East Boston, has a higher percent of low birth weight, as well as higher rates of cancer, asthma in-patient hospitalization, emergency room visits for asthma and pediatric asthma prevalence when compared to the Massachusetts state average. From our own research, we found a 2016 Community Needs Assessment conducted by Boston Medical Center.[4] This report shows that in 2013, East Boston experienced a cancer death rate of 188.5 deaths per 100,000 populations, which was higher than the overall Boston average of 186.3 per 100,000. Clearly, the populations surrounding the Chelsea River are experiencing environmentally-related, adverse health outcomes. However, the EPA EJ Analysis does not explore the relationship between these health disparities and the environmental hazards produced by these permitted facilities (see below for further discussion of these relationships).

The EPA EJ Analysis concludes that the permits "will not have a disproportionately high and adverse human health or environmental effect on minority or low-income populations near the permitted facilities," yet there is no evidence in support of this claim. This conclusion is based on the assumption that the water discharge limits in the permits are sufficient to ensure water quality standards are met. This assumes facilities will not exceed effluent permit limits. In actuality, these facilities already regularly exceed their permit limits, which has been further documented in the public comment by the Northeastern University researchers. If EPA's EJ Analysis can not meaningfully change permitting decisions in communities who are harmed by environmental

injustice by EPA's definitions, the EJ review runs the risk of becoming a bureaucratic exercise that does not meaningfully prevent environmental injustice.

[4] Boston Medical Center. (2016). *Boston Medical Center Community Health Needs Assessment Final Report July 2016*(Rep.). doi:https://www.bmc.org/sites/default/files/About_Us/Commitment_to_Our_Community/field_Attachments/BMC-Community-HealthNeedsAssessment-HNA.pdf

Response to Comment B.7

Under Section 301 of the CWA, "the discharge of any pollutant by any person shall be unlawful," unless in compliance with, among other things, a NPDES Permit issued pursuant to Section 402 of the Act. In this action, EPA is re-issuing permits under the NPDES program that authorize the Facilities to discharge certain pollutants to the Chelsea River, subject to particular limits and conditions. Under the final permits, discharges from the Facilities must meet the numeric limits and other requirements derived in accordance with the CWA and the Massachusetts Surface Water Quality Standards.

Executive Order 12898 is not a statute and, therefore, does not provide EPA with additional authority beyond that granted to EPA by the CWA. Rather, EPA is required to implement Executive Order 12898 "consistent with, and to the extent permitted by, existing law." Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Executive Order 12898, 59 Fed. Reg. 7629 (Feb. 16, 1994), § 6-608. Thus, Executive Order 12898 gives EPA discretion to determine how best to implement its mandate within the confines of existing law, which here consists principally of the CWA.

EPA evaluated the impact of reissuing NPDES permits to these Facilities in relation to the status of and potential impacts on the designated uses of the Chelsea River. As such, proposed conditions in the permits focus on technology-based effluent limitations (both numeric and non-numeric, and requirements such as control measures, including best management practices (BMPs), and corrective actions) and water quality impacts (including numeric limitations and narrative requirements) to the designated uses of the Chelsea River.

Compliance with permit limits is discussed further below in this document. EPA addresses this comment regarding exploring the relationship between health disparities and the environmental hazards in the context of cumulative impacts. See Response to Comment B.9, below.

Comment B.8

We would also like to note our concern with the separation of public comment submissions by whether the comments address the draft permits or the EJ Analysis. EPA's Public Notice of Draft NPDES Permits directs "all persons, including applicants, who believe any condition of any of the Draft Permits is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position …"[5] A similar, but separate process is also outlined for the submission of comments regarding the EJ Analysis: "EPA is accepting comments on the EJA during the same time period as accepting comments on the draft permits. All persons wishing to submit comments on the EJA must submit comments as noted above,

with an indication that the comment(s) pertain to the EJA." The submission of such comments as separate entities implies that a comment regarding the EJ Analysis or the NPDES draft permits is mutually exclusive of the other, when in fact these are two heavily interrelated operations for which commentary cannot be easily detached.

[5] United States Environmental Protection Agency - Region 1 (EPA) Water Division (2021). [Public Notice]. https://www3.epa.gov/region1/npdes/chelseacreekfuelterminals/pdfs/2021/crbpsf-pn.pdf

Response to Comment B.8

In the Public Notice document referenced in the comment, EPA noted under a specific heading that it had developed an EJ Analysis to accompany the draft permits. The point of this section of the Public Notice document was to call particular attention to the existence of the EJ Analysis, since most NPDES Permits are not accompanied by one. EPA's intent with its solicitation was for the public to submit comments on the Draft NPDES Permits and the EJ analysis simultaneously, in one document if preferred. Though the commenter interpreted the instructions as pertaining to two separate processes, this was not EPA's intent. Rather, EPA wanted it to be clear that commenters should feel free to share their views on the EJ analysis and the draft permits in the same document—or even within the same comment—which several commenters did. EPA highlighted the process for submitting comments under the EJ Analysis heading simply to emphasize the analysis' existence and to encourage the public to submit comments focused on it.

Comment B.9

Additionally, the EJ Analysis needs to consider the overall environmental and human health impacts of these facilities beyond water contamination. The environmental justice impacts of these facilities extend also to air pollution, their carbon footprint, and EJ issues for the communities surrounding the refineries that supply the petroleum to the Chelsea River facilities.

EPA's EJ Analysis fails to address air pollution associated with these oil terminals that disproportionately impact the health of Chelsea and East Boston residents. Black carbon, carbon dioxide, carbon monoxide, and sulfur dioxide are just a few of the oil combustion by-products that exacerbate respiratory conditions such as asthma, chronic obstructive pulmonary disease, and COVID-19. Many Chelsea and East Boston residents are already predisposed to certain respiratory and overall health conditions, and as mentioned above are especially impacted by COVID-19. According to a study done by members of the Department of Biostatistics at the Harvard T.H. Chan School of Public Health, "long-term exposure to air pollution increases vulnerability to the most severe COVID-19 outcomes".[6] Addressing how these oil combustion facilities have directly influenced Chelsea and East Boston's poor health outcomes is necessary for a comprehensive and impactful EJ Analysis.

For example, combustion byproducts, particularly from Logan International Airport, disproportionately impact the residents surrounding Chelsea River. All of the jet fuel for Logan is stored at the Sunoco Oil storage facility. The most popular Logan runway (15R 33L)[7], which accounts for ¼ of total runway use, is oriented in the direction of Chelsea. Approximately 121 planes fly overhead each day according to the airport's runway use logs.[8] Additionally, planes

taxiing and flying from Logan International Airport emit unregulated, ultrafine particles into Chelsea and East Boston's air. Ultrafine particles enter the bloodstream directly, travel deep into the lungs, and spread to the brain, which can cause strokes and heart attacks.[9] These can be more harmful than the larger EPA-regulated particles.[10] A study measuring ultrafine particle number concentrations (PNS's) in Chelsea found that they were twice as high when winds were coming from the direction of Logan Airport.[11] Exposure to ultrafine particles is linked to asthma. A separate study estimated that children living in the high exposure area (Chelsea) were 3-4 times as likely to have undiagnosed asthma.[12] Permitting the Sunoco facility contributes to disproportionate exposure to ultrafine particle pollution and thereby EJ related health disparities in Chelsea.

The combustion of the oil stored in these facilities will also intensify the effects of climate change in Chelsea and East Boston. The carbon footprint of oil stored on the Chelsea River is enormous, as 256 million tons of oil are contained by these seven oil storage facilities. The greenhouse gas emissions of that amount of oil is equivalent to 55,307,153 cars being driven for one year, which is 24 times the number of cars registered in Massachusetts alone. Currently, Chelsea experiences "heat island" effects and will routinely be 20°–40°F warmer than other Boston suburbs. This is in part due to the lack of open green space in the area, including along the Chelsea River. According to the City of Chelsea, with 60% of Chelsea bordering tidally influenced waterways, Chelsea is extremely vulnerable to coastal flooding.[13] By 2030, approximately 42% of Chelsea will be within a flood risk area. This is also a major issue in East Boston. A report conducted by the Coastal Resilience Solutions for East Boston and Charlestown states that, "out of all Boston neighborhoods, East Boston has the most population, buildings, and land area at risk from coastal flooding, and most of it is residential."[14] Continuing to permit these facilities contributes to increasing climate injustice in Chelsea and East Boston.

[6] Wu, X., Nethery, R. C., Sabath, M. B., Braun, D., & Dominici, F. (2020). Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis. *Science Advances, 6*(45). doi:10.1126/sciadv.abd4049
[7] Massport. (n.d.). Runway Use. Retrieved April 07, 2021, from https://www.massport.com/logan-airport/about-logan/noise-abatement/runway-use/
[8] Ibid
[9] Hudda, N., Simon, M. C., Zamore, W., Brugge, D., & Durant, J. L. (2016). Aviation emissions impact ambient ultrafine particle concentrations in the greater boston area. *Environmental Science & Technology, 50*(16), 8514-8521. doi:10.1021/acs.est.6b01815
[10] Ibid.
[11] Ibid.
[12] Massachusetts Department of Public Health, Bureau of Environmental Health. (2014). *Logan Airport Health Study* (Rep.). doi:https://www.mass.gov/doc/logan-airport-health-study-english-0/download
[13] City of Chelsea, Massachusetts. (2017). *Designing Coastal Community Infrastructure for Climate Change* (Rep.). doi:https://www.chelseama.gov/sites/g/files/vyhlif396/f/uploads/20170215_chelsea_va.pdf
[14] Climate Ready Boston. (2017). *Coastal Resilience Solutions for East Boston and Charlestown Final Report* (Rep.). doi:https://www.boston.gov/sites/default/files/embed/c/climatereadyeastbostoncharlestown_finalreport_web.pdf

Response to Comment B.9

The EJ Analysis produced by EPA considered air pollution when evaluating the results from EJScreen. EPA noted that the study area (eastern Charlestown, western East Boston,

southwestern Everett, the majority of Revere, and the entirety of Chelsea, Massachusetts) is in an area with potential EJ concerns triggering an additional evaluation for various air pollutants.[38] Specifically, diesel particulate matter was highlighted as having ambient air concentrations above the 80th percentile, nationally. Apart from ambient conditions, the EJ analysis also discussed permitted NPDES parameters that may become volatile, such as benzene, benzo(a)pyrene, and other polyaromatic hydrocarbons (PAHs); the risk that the PAHs pose as carcinogens was discussed, in addition to the policy EPA uses to index them.[39]

Health concerns were also considered in the EJ analysis. EPA cited data from the Massachusetts Department of Public Health for lung cancer, lead poisoning, heart attacks, and asthma in the study area.[40] Though a strong correlation seems to exist between the high levels of particulate matter in the area and the elevated rates of heart and lung conditions in nearby residents, EPA cannot definitively conclude that a causal relationship exists between the two. Moreover, EPA would not be able to conclude that one of the permitted facilities is responsible for the health impacts even if a causal relationship was found to exist.

Given the knowledge gap in assessing the overall environmental and public health impacts from these and other facilities in the area with NPDES permits (Logan Airport, Exxon-Mobil Everett, GenOn Power Station, etc.), EPA is developing an initiative to look at cumulative impacts in the Chelsea area and intends to engage with community members to address concerns raised on these permits. EPA's regional contact for this effort is Kristi Rea (rea.kristi@epa.gov, 617 918-1595).

EPA has the authority to draft new permit conditions based on "new information." If this process yields "new information" identifying environmental impacts EPA can address, EPA will consider reopening these permits to propose appropriate modifications. 40 CFR § 122.62(a)(2). The "new information" could also inform permit development upon reissuance of these permits after expiration of their 5-year terms. Beyond the direct, near-term regulatory impact, EPA will use the cumulative impacts study to engage with other appropriate regulatory programs (federal or state) that may have tools to address other environmental problems the study identifies and to initiate a dialogue among EPA, the Commonwealth of Massachusetts, municipalities, non-governmental organizations, and the public on the public policy implications of situating pollution-generating industries in underserved and overburdened communities. EPA will also consider what data would be useful to the community to track progress on any issues identified by the study and will add that data to our website where possible.

Finally, denying a NPDES permit because a permittee's products may be used by a third party in a way that contributes to air pollution is outside of the scope of the NPDES program. Apart from the NPDES program, EPA may have the jurisdiction to mitigate a permittee's direct emissions, depending on the circumstances. However, denying a NPDES permit based on the emissions of a

[38] EPA. 2021. Environmental Justice Analysis for Clean Water Act National Pollutant Discharge Elimination System Permits for Chelsea River Bulk Petroleum Storage Facilities, page 11. January 7, 2021.
[39] EPA. 2021. Environmental Justice Analysis for Clean Water Act National Pollutant Discharge Elimination System Permits for Chelsea River Bulk Petroleum Storage Facilities, page 13. January 7, 2021.
[40] EPA. 2021. Environmental Justice Analysis for Clean Water Act National Pollutant Discharge Elimination System Permits for Chelsea River Bulk Petroleum Storage Facilities, page 12. January 7, 2021.

third party who purchases products from the permittee is well beyond the scope of the permitting action.

Comment B.10

Finally, EPA limits the scope of its EJ assessment to a 1 mile radius around the facility, however, the E.O. calls for "identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States".[15] Assessing only the area directly surrounding these storage facilities neglects the environmental injustices that accumulate along the petroleum supply chain. The reach of these facilities extends far beyond a 1 mile radius around Chelsea River, contributing to environmental injustice in communities elsewhere. For instance, these permits encourage the refining of oil in New Jersey, Canada, and Philadelphia, where mostly low-income, non-white communities are also disproportionately burdened by air and water pollution. A large portion of the petroleum in Boston (about 43%) is delivered by tanker or barge from oil refineries that ship from New York Harbor (PADD 1B which consists of NY, PA, NJ, MD, and DE).

Although we cannot determine exactly how much each oil refinery in PADD 1B delivers specifically to Chelsea and its storage facilities, we can investigate the environmental justice issues around each of the refineries. One refinery that is located in PADD 1B is the Monroe Energy Trainer Refinery in Trainer, PA. This facility borders an EJ community and has been in significant violation of the Clean Air Act since 2018. It has also violated the Clean Water Act in seven of the past 12 quarters (more than half of the past 3 years) with its wastewater discharge indicator placing it in the 99th percentile in the nation, meaning that it discharges more than 99% of facilities. Nearly half of the population within a three mile radius of this facility is considered minority and 40% of the population is considered low-income. Based on this brief assessment of this one upstream refinery, we recommend that EPA investigate the EJ implications for upstream refineries when permitting the Chelsea River facilities that store their oil.

[15] Exec. Order No. 12898, 59 Fed. Reg. 7629 (February 11, 1994).

Response to Comment B.10

Extending the regulatory reach of these NPDES permits to the petroleum supply chain for these permitted facilities is well outside the scope of EPA's authority in this permitting action. While EPA concludes that reissuance of these permits improves the baseline of NPDES water quality discharges, EPA is also beginning to engage in a process that will take a broader view of the cumulative impacts, though with a focus on potential human health impacts in the surrounding area. *See* Responses to Comments B.9, B.11.

Comment B.11

In conclusion, we would like to reiterate our concerns about the accessibility of data on the permitted facilities for EJ communities and the structure of the EPA EJ Analysis. Permit data should be made available in machine readable format, directly comparable to previous permits with an explanation for why changes are being proposed, and the comment process should be

further lengthened given the COVID pandemic. Additionally, we recommend that the EJ Analysis include all environmental health impacts from these facilities. In particular, the EPA EJ Analysis should consider how the facilities' permits contribute to climate change and air pollution. The EJ analysis should also extend geographically to account for all the EJ communities whose lives are impacted by the permitting of these facilities. Finally, we recognize that Executive Order 12898 does not give the EPA or any other agency any authority or power to change regulatory decisions based on environmental justice concerns. As EPA states, "Executive Order 12898 does not dictate any particular outcome in this permit decision, and the CWA does not appear to provide EPA with any general authority to impose permit conditions based on EJ considerations that are not connected to water quality impacts or technology-based limitations".[16] Until this constraint is addressed, EPA's EJ Analyses will remain an ineffectual exercise that neglects needed changes to prevent and reduce environmental injustice.

[16] Environmental Protection Agency - Region 1 New England. (2021). *Environmental Justice Analysis for Clean Water Act National Pollutant Discharge Elimination System Permits for Chelsea River Bulk Petroleum Storage Facilities*(Rep.). doi:https://www3.epa.gov/region1/npdes/chelseacreekfuelterminals/pdfs/2021/crbpsf-ej-analysis.pdf

Response to Comment B.11

EPA has provided responses on these topics above. *See, e.g.*, Responses to Comments B.3, B.9, B.10. EPA further notes that it is plainly authorized to undertake a more extensive EJ analysis than initially conducted, along the lines proposed by the commenter. *See, e.g.*, CWA § 104. Consistent with the Act and the EJ Executive Order, EPA has discretion not only to assess the relevant variables independently, but to evaluate them within the framework of a more comprehensive cumulative impacts/health impact assessment. EPA has concluded that exercising its discretion to extend the breadth and depth of its environmental justice analysis is warranted in this instance. Doing so will facilitate environmental planning and allow the public and policy makers to establish priorities aimed at reducing the impacts that multiple environmental stressors have historically had, and continue to have, on burdened communities. While EPA has authority to undertake such an analysis in the context of a NPDES permit proceeding, how to sequence that assessment in relation to NPDES permit reissuance is a separate question. Because the reissuance of the NPDES permits will indisputably yield many positive water quality improvements from the current permit requirements, EPA has concluded that permit issuance should not be delayed pending more extensive analysis of environmental impacts on communities with environmental justice concerns, because local residents deserve immediate water quality improvements. If the proposed cumulative impacts study yields "new information" within the meaning of NPDES regulations governing permit modification at 40 CFR § 122.62(a)(2), EPA will consider reopening the permits to propose appropriate modifications. Any "new information" will also inform permit development upon reissuance of these permits after expiration of their 5-year terms.

Of the many environmental stressors burdening these communities, the CWA discharges constitute a comparatively minor part. As noted, EPA is engaging in a process that will take a broader view of the cumulative impacts on residents in the surrounding area. Beyond its direct, near-term regulatory impact, this separate effort will form the basis of a dialogue among EPA, the Commonwealth, municipalities, nonprofit organizations, and the public about policy

implications of situating pollution-generating industries in underserved and overburdened communities and opportunities to address other environmental problems the study identifies. EPA has started initial internal conversations for this effort in Chelsea, East Boston, and Revere and intends to engage with community members to ensure this undertaking is responsive to concerns raised on these permits.

Comments from GreenRoots

GreenRoots is pleased to submit the following comments regarding the Environmental Protection Agency's (EPA) and the Massachusetts Department of Environmental Protection's (MassDEP) request for comments on its draft National Pollutant Discharge Elimination System (NPDES) permits and environmental justice analysis for the petroleum shipping and storage facilities along the Chelsea Creek in the municipalities of Boston, Chelsea and Revere. GreenRoots is an environmental justice non-profit with over 25 years of advocating for the health and well-being of the Chelsea Creek and the communities that surround it. Having been involved in responding to the issuances of past permits and having invested time in attempting to make use of the EPA's Enforcement and Compliance History Online (ECHO) database, we feel we have perspectives worth bringing to bear on the topic.

Comment C.1 Process

First we would like to thank you for the effort put into this permit renewal process in regards to outreach to our organization and receiving feedback from us on the community meeting prior to its hosting and then that meeting itself, the subsequent formal hearing, and this comment period. The challenges of conducting meetings under pandemic conditions, while still accommodating various language access needs, are not insubstantial and we appreciate your efforts at addressing them. We also greatly appreciate the extension of the timeline for this process as both our organization and the communities we serve have been severely overloaded with the burden of the pandemic, as well as a flood of development, planning and regulatory processes in the neighborhood seeking community input. Finally, the addition of an environmental justice analysis (the only of its kind for this kind of permit we are told) is good to see once again incorporated into this process.

All of that being said NPDES permit review remains an extraordinarily complicated process and topic for any member of the community-at-large who would be affected by the results of these permits and their effective enforcement. We do not expect NPDES permitting staff to make average citizens into environmental toxicology specialists, however in the same way that conducting a public meeting all in English to a Spanish-speaking audience would be considered unacceptable, much of the technical detail still needs a degree of interpretation from jargonated industry-speak to plain English (and subsequently to Spanish and any other relevant locally-spoken languages). While this degree of public education may be beyond the scope of the NPDES program, true community-penetration of this information and the return of critical, informed and relevant feedback from the general public, will be impossible until a better understanding of the program is realized.

Response to Comment C.1

EPA appreciates the work of community groups such as GreenRoots to help disseminate the complex technical information contained in NPDES permits. During subsequent permit actions in EJ communities, EPA will continue to reach out to and meet with organizations like GreenRoots and welcomes any specific recommendations for how to improve translating technical information to the public. EPA has included several improvements based on this and other comments on data accessibility and transparency for overburdened communities. These include: (1) creating simplified site maps showing outfall locations; (2) requiring Permittees to submit SWPPPs and related documentation to EPA for posting on the Region's Chelsea Terminals website (see Response to Comment E.5); and (3) adding additional file formats for EPA data downloads and other improvements to ECHO (see Response to Comment B.3). As explained in Response to Comments B.2 and B.4, EPA will also consider these comments to refine and improve NPDES materials and public outreach in future permitting actions, particularly those in communities with environmental justice concerns.

Finally, as explained in Response to Comment B.10, above, EPA will continue to be engaged with community members regarding additional cumulative impacts analysis. In other words, EPA does not view issuance of these permits as the end of dialog with affected residents. Rather, EPA views these comments and our responses as an opportunity for ongoing engagement and constructive problem solving using existing federal authorities and programs.

Comment C.2 The Actual Permits

In light of the above we would defer most of the substantive questions about the content of the permits to our partner organizations who are helping us to understand the technical details, including Conservation Law Foundation (CLF), the Mystic River Watershed Association (MyRWA), the Environmental Data and Governance Initiative (EDGI) and Dr. Sara Wylie.

We can say that we are pleased to see the proposed permits are more stringent for some regulated contaminants and do regulate some new hazardous compounds. Ultimately a simplified summary document for each of the permitted facilities which highlighted the changes from the previous permit to the new one would be helpful. Additionally a simplified map that was somewhere between the current detailed site plan and the water flow schematic would be helpful to have an idea of where the outfall pipes are relative to the facility and what areas of the facility they drain. Other questions we had regarding particular contaminants (the removal of chromium) were answered in the information session.

Response to Comment C.2

As requested, EPA included a simplified site map with the location of each Terminals outfall(s) identified as an Attachment to this Response to Comment. EPA addressed a similar request for a simplified summary of changes in Response to Comment II.B.2. For the next issuance of these Permits, EPA will consider the comment's suggestion to provide a more detailed summary of significant changes from the existing permits and will consider expanding the Community Information Sheet to include a comparison of effluent limitations between the existing and proposed NPDES permits. In addition, Section I of this Response to Comment document

includes a list of changes from the Draft to the Final Permits and references the response(s) explaining each change in accordance with 40 CFR § 124.17(a)(1).

Comment C.3 Monitoring/Data Access/Enforcement

We group these three areas together as they may be beyond the scope of the actual draft permits but are critical to the public's understanding and use of, and trust in the NPDES program. Regarding monitoring we would defer to the comments from MyRWA and CLF. Understanding that the system is based on self-reporting on the part of the facilities, we have to admit when describing that to the community we receive raised eyebrows. As such we would strongly advocate for more frequent inspections and spot monitoring, especially of facilities that have had a past record of exceedances.

Response to Comment C.3

Timely, accurate, and complete self-reporting of data is an integral part of the NPDES program. *See* 40 CFR § 127.14. CWA § 309(c)(4) establishes penalties for "any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this Act or who knowingly falsifies, tampers with, or renders inaccurate any monitoring device or method required to be maintained under this Act…." Every NPDES permit includes Duty to Comply conditions that impose administrative, civil, and/or criminal penalties for non-compliance with the conditions of one's NPDES permit. These include penalties for the falsification of information provided through self-reporting. *See* Standard Conditions Part II.A.1 of the Permits and 40 CFR § 122.41.

As the comment points out, site inspections play an important role in determining and/or ensuring permit compliance, including by verifying the accuracy of information submitted by permittees and by verifying the adequacy of sampling and monitoring conducted by permittees. All of the bulk oil terminals addressed in this permitting action are currently classified as major industrial facilities.[41] Major facilities are classified as such by the Regional Administrator. *See* 40 CFR § 122.2. This rating considers many factors related to the facility and discharge, including, but not limited to, the type of discharge, the toxic pollutant potential, receiving water quality, public health impacts, and conventional pollutants.

EPA inspected the Gulf Oil terminal in Chelsea on September 9, 2021, and the Irving terminal in Revere on November 22, 2021. EPA's inspections did not result in any enforceable issues being identified. Gulf had several TSS violations over the course of 9 months which were due to digging up the inside of the tank farm berms to add new clay to the base. As major facilities and as facilities located in communities with environmental justice concerns, EPA expects that the

[41] The Sunoco Terminal (MA0004006) has been classified as a major industrial facility for many years. Outside of the permitting process and pursuant to its enforcement discretion, EPA more recently classified the other bulk oil terminals (Global MA0000825, Irving MA0001929, Gulf MA0001091, and Chelsea Sandwich MA0001091) as major industrial facilities. The current classifications are documented in EPA's Integrated Compliance Information System (ICIS).

Terminals will be inspected more frequently in the future. *See also* Responses to Comments II.D.1, E.3.

In addition, EPA has provided additional guidance in this Response to Comments and on EPA Region 1's Chelsea Terminals website on how to conduct common NPDES-related searches in ECHO to ensure that the public can access and review discharge monitoring data and compliance information. *See* Response to Comment B.3.

Comment C.4

The ECHO Database is probably a powerful tool in the hands of a cloistered few whose technical prowess has probably resulted in job offers from the oil industry. For the public it may as well be in Sanskrit. Even for those with the technical capacity to understand most of it, extracting useful data out of it is a frustrating chore (we would here refer to the comments submitted by EDGI). Perhaps better training materials would be helpful, or maybe a re-design of the interface, but something must be done to make this tool more useful to the general public.

Response to Comment C.4

The Enforcement and Compliance Online (ECHO) system is an online tool that makes electronic monitoring data available to the public.[42] EPA addressed similar comments on data accessibility and use of ECHO in Response to Comment B.3. Part of the reason for the complexity pointed out by the comment is the sheer number of different features ECHO includes. ECHO has tutorials detailing how to conduct searches, among other data exploration techniques, on its website.[43] In addition to tutorials, the ECHO database offers training webinars on some of its advanced features.[44] Questions and/or feedback on the design of ECHO or its useability can be submitted at any time at the following web address, https://echo.epa.gov/resources/general-info/contact-us. In response to this and similar comments, EPA prepared step-by-step guidance on two common NPDES-related searches for this Response to Comment and to be posted on Region 1's Chelsea Terminals website.[45] EPA has also added new features to ECHO that improve data accessibility, including ECHO Notify and a CSV file download option, which are discussed further in Response to Comment B.3. In addition, specific questions on ECHO data for facilities in Region 1, can be directed to regional permitting staff, https://www3.epa.gov/region1/npdes/permits/NPDESPermittingStaff.pdf.

Comment C.5

Ultimately for the public to have faith in this system it must know that it has an impact on things on the ground. There have been permit violations in the past and corrective measures have occurred. The public is not aware of any of this. Clearly the facilities do not want to advertize these events, but they could just as easily advertize how many quarters they have gone without any exceedances of their permits. We do feel that better publicizing the functioning of the

[42] Available at: https://echo.epa.gov/. *See also* https://echo.epa.gov/resources/general-info/learn-more-about-echo.
[43] Available at: https://echo.epa.gov/help/tutorials.
[44] Available at: https://echo.epa.gov/help/training.
[45] Available at: https://www.epa.gov/npdes-permits/chelsea-river-bulk-petroleum-storage-facilities-npdes-permits.

NPDES permits, from catching a problem in the monitoring data, to the correction of that problem through enhanced BMPs and/or a fine to praising a clean track record of a facility is one way to demonstrate to the public that the system is working. Certainly community-based venues such as the Mystic Steering Committee, MyRWA and GreenRoots are all possible options for partnering on such an effort.

Response to Comment C.5

EPA recognizes that transparent communication of permit compliance and noncompliance is an integral part of managing an environmental permitting program. While the Comment recommends that permittees take on some of this responsibility, such communication largely falls to the regulatory authority as a third party, separate from the permittee and the affected community. The primary communication tool EPA uses to inform the public about permittee compliance is the ECHO tool discussed in several responses above, including in Response to Comment C.4. ECHO hosts all the publicly available enforcement and compliance information for both Clean Water Act and Clean Air Act programs. As stated above, providing specific feedback on ways to improve ECHO to meet the needs of your community is highly encouraged and feedback can be provided at the following web address, https://echo.epa.gov/resources/general-info/contact-us. EPA has addressed similar comments on data accessibility in Response to Comment B.3 and comments on compliance in Response to Comment D.1.

Given the comments received on these draft permits, EPA Region 1 acknowledges that additional, more localized measures could be taken to improve the accessibility of permit compliance information for communities overburdened by pollution such as Chelsea, Massachusetts. EPA has completed or is planning the following actions to meet this need:

(1) EPA developed a step-by-step guide for common NPDES-related data and compliance information in ECHO, which is attached to this Response to Comments document and will be posted on Region 1's Chelsea Terminals website.[46] In addition, EPA added a new tool to ECHO that allows members of the public to sign up for email notifications of new enforcement and compliance data after the comment period closed. Individuals and organizations can use this tool, called ECHO Notify,[47] to receive regular updates of monitoring results at particular facilities or within geographic locations of their choosing. A tutorial for using ECHO Notify is available on EPA's website.[48]

(2) EPA plans to post the Facilities' most recently updated SWPPPs and related documents (e.g., annual certifications) on the Region's Chelsea Terminals website.

See Response to Comment C.3 for information on inspections and compliance.

[46] Available at: https://www.epa.gov/npdes-permits/chelsea-river-bulk-petroleum-storage-facilities-npdes-permits.
[47] https://echo.epa.gov/tools/echo-notify. A tutorial for using ECHO Notify is available at https://echo.epa.gov/help/tutorials#notify.
[48] https://echo.epa.gov/help/tutorials#notify

Comment C.6 Environmental Justice Analysis

While the addition of the environmental justice analysis accompanying the 2014 permit and its continuance with the current set of permits is greatly appreciated, it seems to serve as an expanded, demographic introduction to the study area without much impact on the actual permits. While the analysis assures that the permits will not have disproportionately high or adverse effect on the EJ communities living near the facilities, this is assuming that the facilities do not exceed their permits, which they do.

Within the analysis, community health status indicators and asthma data are provided at the municipal level. Given the size of Boston and the fact that East Boston is geographically separate from it (and disproportionately burdened by Logan Airport) it would make sense to use a finer grain dataset for that neighborhood. Many of these same data are available from the Boston Public Health Commission at the neighborhood level.

Also when looking at compliance and enforcement the analysis helpfully summarizes a list of enforcement records for the facilities in question in regards to Clean Water Act (CWA) violations. Given that the analysis wants to identify and address disproportionately high and adverse human health or environmental effects of the permits on EJ populations, it would make sense for it to include all of the violations happening in this area, including air violations. Violations from Logan Airport are not listed. Additionally the air impacts of the trucks leaving these facilities, as well as surrounding highway infrastructure, all have direct and enormous impacts on all the health statistics analyzed in this study. Taken together all of these violations and sources of contaminants help to paint a more accurate picture of the health burden placed on the host communities by all of these industrial uses, of which the NPDES permits of these facilities play a role.

The assessment of impact of the permits is finally predicated on the Water Quality Assessment Report's (WQAR) status for the various designated uses. While it is convenient to say the Chelsea Creek does not support designated uses for aquatic life, aesthetics, primary contact, secondary contact and fish consumption/shellfishing, the reality is that the Creek is regularly being utilized for some of these uses – from sitting by it, to kayaking, to fishing, all the way to wading along the shore. If the analysis is assuming the degree of public contact with the waterbody is equivalent to no one having primary or secondary contact with it, the analysis is using a flawed assumption. The report actually states that the reason why these uses are not supported is due to the history (some of it fairly recent) of contamination by the oil industry. And while the permits are slightly more stringent than their predecessors, the industry's track record is one of a number of permit exceedances. And the fact that the area has been so despoiled by industry should not be a justification for a continuance thereof, or an allowance for levels of contaminants in accordance with its past.

The analysis lists the permit requirements and conditions in a show of its responsiveness to the concerns of the public. We greatly appreciate the requirements that are being added to the permit and hope to see that the procedural requirements regarding monitoring, testing and management practices are somehow enforced and compliance is effectively overseen. It would be very useful if in between the renewal times a presentation to the public was provided which highlighted how

these requirements were being met, perhaps even with the participation of one or more of the facilities.

The analysis closes with a list of actions taken by the agency in partnership with the community (specifically MyRWA) beyond the scope of NPDES permits. Thanks to MyRWA and the Mystic Steering Committee, we are aware of many of these valuable and much appreciated activities. It is interesting to note that the activities listed include monitoring, MS4 permits and TMDL development that focus on contaminants of importance to the upper watershed, where the river runs through wealthier and whiter neighborhoods. We support these efforts but would also love to see the next EJ Analysis report terminate with a description of a detailed sediment contaminant study done throughout Chelsea Creek, a monitoring buoy tracking petroleum constituents in the Creek in real time and other water quality initiatives relevant for this stretch of the watershed.

Finally, in order to truly say there is not a disproportionate impact, one would have to say disproportionate relative to whom? If we were to take the levels of naphthalene or benzene from a waterway near a wealthy, white community would we expect to see the same levels of this chemical in those waterways as we are permitting in Chelsea Creek? These communities already bear a heavy environmental burden that we are looking to lessen, not to continue. These permits have lowered the levels on some of the contaminants but given the past track record of permit violations are these levels enough? How do we assess that risk and who then explains it to the community that is being put at risk?

Response to Comment C.6

Under the CWA, EPA is authorized to establish discharge limits based on technology standards and state water quality standards, with the objective of restoring and maintaining the chemical, physical, and biological integrity of a waterbody so that it meets its designated uses. In this permit proceeding, EPA is re-issuing Final Permits authorizing discharges of pollutants in stormwater from existing bulk oil terminals on the Chelsea River. The permits set limits on pollutants in those discharges at levels that ensure discharges from the facilities do not cause or contribute to exceedances of water quality standards in the river. (For some pollutants, the limits are technology-based and are more stringent than water quality-based limits would be). Water quality standards, in turn, are developed to protect against adverse effects to human health and the environment. Therefore, EPA expects discharges permitted by the permits will not have a disproportionately high and adverse human health or environmental effect on minority or low-income populations, because they will not have high and adverse human health or environmental effects on any population, including any minority or low-income population. Where new, more stringent effluent limits are included, the re-issued permits should increase the level of human health and environmental protection. In addition, Part II.A.1 of the Final Permits require Permittees to comply with all conditions of the permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action (including criminal, civil, and administrative penalties), permit termination, revocation and reissuance, modification, or denial of a permit renewal application. EPA's analysis is not based on an assumption that facilities will meet the permit limits and conditions but an expectation of compliance. If the facilities exceed the limits, they are subject to enforcement by EPA or by citizen suit. EPA

addresses specific comments about compliance and permit violations in Responses to Comments B.10 and D.1.

EPA addresses similar comments regarding public health concerns and air emissions in Responses to Comments B.9 and B.11. EPA is engaging in a process that will take a broader view of the cumulative impacts on residents in the surrounding area and will consider the commenter's suggestions about the scope and scale of community health and air emissions in its analysis. EPA is in the initial scoping phase and intends to engage with community members to ensure this undertaking is responsive to concerns raised on these permits. Beyond its direct, near-term regulatory impact, this separate effort will form the basis of a dialogue among EPA, the Commonwealth, municipalities, nonprofit organizations, and the public about policy implications of situating pollution-generating industries in underserved and overburdened communities. *See* Response to Comment B.9.

Chelsea River is classified as a Class SB (CSO) water and is designated as habitat for aquatic life and for primary and secondary recreation. *See, e.g.*, Global Fact Sheet p. 24. While Chelsea River does not currently support certain designated uses, including aquatic life, primary contact, and secondary contact recreation, *see id*. p. 25, the water-quality-based permit limitations and conditions are based on the designated uses, not on any assumption that they could be less stringent because certain designated uses are either infrequent or not occurring at all. CWA § 301(b)(1)(C) requires that NPDES permits include effluent limitations as necessary to meet water quality standards applicable to the receiving water, including the designated uses of a waterbody. *See also* 33 USC § 1251(a) ("The objective of [the Clean Water Act] is to *restore* and maintain the chemical, physical, and biological integrity of the Nation's waters) (emphasis added); 40 CFR § 122.44(d)(1); Global Fact Sheet p. 6. The effluent limitations and permit conditions for the Final Permits were developed to ensure the protection of water quality and its designated uses. The goal is for the designated uses to be attained. The effluent limitations in the Final Permits are set at water quality standards (e.g., PAHs, ammonia, metals) or lower (e.g., benzene and naphthalene where technology-based limits are more stringent) and must be met at "end-of-pipe" without dilution. For these permits, EPA determined that a conservative analysis is warranted given the impaired status of the Chelsea River. *See, e.g*., Responses to Comments F.21, G.20.

The commenter expresses interest in "a detailed sediment contaminant study done throughout Chelsea Creek, a monitoring buoy tracking petroleum constituents in the Creek in real time and other water quality initiatives relevant for this stretch of the watershed." EPA recognizes that there are important gaps in environmental data for this segment of the watershed that could be filled by additional ambient monitoring. Such monitoring will improve EPA's understanding of the potential impacts of discharges from these facilities and support EPA's ability to carry out CWA § 402 as it relates to these NPDES permits, including by refining or developing additional permit limits and conditions for the Chelsea Creek Facilities in future permit cycles, where appropriate, to ensure these facilities do not cause or contribute to exceedances of water quality standards. To obtain this data throughout Chelsea Creek, Section I.C.5. of the Final Permits require each facility to complete a bioassessment study, including water quality sampling (water temperature, pH, dissolved oxygen, salinity, turbidity, and current velocity), evaluation of the make-up of the sediment and the contamination present within the benthic habitat, as well as a

sampling effort to determine what fish and benthic organisms are present in the vicinity of the NPDES outfalls. In addition, the permits include effluent and ambient monitoring for a number of petroleum constituents. Similarly, past issuance of the permits included ambient monitoring, the results of which are summarized in the draft permit fact sheets. The public can also access monitoring data on the ECHO database's homepage, by entering an NPDES Permit Number in the "Facility Id" search field and selecting "View Effluent Charts" under the column labeled "Reports" in the results and selecting "Download All Data" on the Effluent Charts page. EPA recently added a new tool, called "ECHO Notify," that allows members of the public to sign up to receive automatic email notifications of new monitoring results for particular facilities or within geographic areas of their choosing.[49] *See* Response to Comment B.3. In addition, EPA's Region 1 Water Division worked with our Regional Lab to collect ambient water quality and benthic data in Chelsea Creek in the summer of 2022. The results of this study are expected to be available sooner than the data collected pursuant to Section I.C.5 of the Final Permit. After appropriate data quality control, EPA will make the results publicly available. EPA expects to use these data to assist the agency to develop appropriate permit limits and conditions in future permit cycles and to support a more comprehensive assessment of cumulative impacts.

Comment C.7 Climate Change Considerations

Briefly, we want to highlight the concerns around climate change along an industrial coastline and would refer you to the comments of CLF on this issue. From our perspective we are already experiencing the effects of climate change when at the astronomical high tide, rising sea levels are bringing seawater up through storm drains and puddling on East Boston streets. We are experiencing climate change when intense, sudden summer rain storms overload storm drains and flood streets and whole squares. We are experiencing climate change when a winter coastal storm sends sea water flowing past our offices and floods the New England Produce Center.

This is all to say that if we are seeing and experiencing it, so are the facilities that are being permitted here. What are the effects of a rising sea level, more intense and more frequent rain events, and coastal storm surge on the stormwater systems of these facilities – not to mention simply their above ground infrastructure? As the EJ Analysis recognizes there is a history of spills and contamination from the industry and much of that history is locked up in the sediments of these properties. Should they flood would this toxic legacy be released into the Creek? Are the current oil/water separators sufficient to handle increased rainfall regimes? The concern is that the best management practices being imposed are the BMPs for a past climate not the one we are experiencing today or possibly tomorrow. If today's BMPs are surpassed by near future conditions will we then be living with a chronic exceedance of permitted levels of contaminant release by many or all of the facilities?

Clearly there are a number of very practical concerns regarding too much water getting onto these facilities and then running off into the Creek or into the surrounding neighborhoods; however this still evades the question of what happens when the water gets on the property and doesn't go away at all? While it is still further off into the future, sea level rise within the next

[49] Available at: https://echo.epa.gov/tools/echo-notify.

100 years will begin to reclaim some of the filled tidelands along the Massachusetts coastline and Chelsea Creek will not be an exception. The 2016 Boston Research Advisory Group (BRAG) Report used for Climate Ready Boston show that high tide by 2070 will be encroaching on most of these facilities, while the 2070 100-year storm will be flooding all of them. Now five years old the results of the BRAG report are now considered overly optimistic. (Needless to say the use of FEMA flood maps in this context is cartographic malpraxis.) With each passing year our knowledge of climate change dynamics grows and our understanding of the impacts deepens. While this may be beyond the scope of a stormwater pollutant discharge monitoring and permitting system, it most definitely has ramifications on the release of pollutants from these facilities into the surrounding environment. As such it should become a topic of conversation and planning.

In conclusion, we wish to thank the EPA and MassDEP staff for their work on these draft permits and their efforts at ensuring an improved community input process under challenging conditions. There is always room for improvements, and those improvements are frequently limited by needed changes that must first occur to the system. We hope we have provided here some useful ideas for changes within the context of the system as it is, as well as some thoughts about larger systemic changes needed to ensure that equity and environmental justice are anticipated outcomes of future work.

Response to Comment C.7

Comment noted. EPA addressed similar comments on climate change in response to the comments in Sections II.A.2 through II.A.2.E. The commenter notes that its comment "may be beyond the scope of a stormwater pollutant discharge monitoring and permitting system." However, the commenter also states that "[t]he concern is that the best management practices being imposed are the BMPs for a past climate not the one we are experiencing today or possibly tomorrow." In response, EPA notes that Part I.C.1.b.6 requires permittees to minimize discharges that result from impacts of climate change (i.e., "major storm and flood events") and to take future conditions into consideration in adopting control measures designed to minimize these discharges. *See* Part I.C.2.b ("The SWPPP shall be prepared in accordance with good engineering practices and manufacturer's specifications and *must take future conditions into consideration*." (emphasis added)); 2021 Fact Sheet at 88–89 ("The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications and *must take future conditions into consideration*." (emphasis added)).

Comments from Northeastern University – Social Science Environmental Health Research Institute

Comment D.1

We write to express our concern about EPA's re-permitting process of the Chelsea Sandwich Petroleum, Gulf Oil, Global REVCO, Global Petroleum, Global South, Sunoco, and Irving oil terminals based on their history of non-compliance with NPDES permits and lax data reporting. As part of a Capstone Research project through Northeastern University's Health Sciences

program (led by Dr. Sara Wylie in collaboration with the Environmental Data Governance Initiative and GreenRoots), the authors analyzed available federal data from EPA's Enforcement and Compliance History Online (ECHO) database for the above bulk oil storage terminals and identified concerning patterns of non-compliance.

Facilities holding a NPDES permit have a "duty to comply." This duty is cited by statute 40 CFR § 122.41 a 1 where it is also explained that any permit noncompliance is a violation of the Clean Water Act (CWA) and is "grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application".[1] All facilities under this permit review have had consistent compliance issues over the past five years, yet EPA is proposing to continue to permit them. When asked about the consideration of compliance in re-permitting these facilities, an EPA representative stated at the public meeting on March 15th, 2021 that the EPA permitting division does "not generally develop permits' limits based on past compliance."[2] Given the requirements laid out above and the fact that Chelsea Creek is already deemed impaired by EPA for all parameters including for fishing and swimming related to the persistent noncompliance of these facilities—particularly the presence of petroleum hydrocarbons,[3] we question why EPA is not considering denying or withholding permits based on non-compliance and the already compromised status of the Creek?

The oil storage facilities all have a history of violating their existing permits. The issue of noncompliance by these oil storage facilities first came to the authors' attention based on a collaborative research project, Chemicals in the Creek, when Dr. Wylie worked with GreenRoots to analyze effluent violations from the oil storage facilities between 2013 and 2017.[4] This research culminated in a public art event where lanterns were released onto the Creek to remind viewers that these numbers represent tangible pollution, which in aggregate contribute to compromising the Creek. The facilities were invited to the event, and we held two follow up meetings to discuss historical non-compliance with them and how they might improve. We were hopeful that the public attention and positive interactions would lead to improved compliance. However, their record of 36 further violations since, belied that hope.

Since the beginning of 2017, there have been 36 further violations across the five companies. Particularly concerning are the recent benzene violations from Global Petroleum considering the fact that benzene is a carcinogen. Between 2013 and 2020, the seven facilities in Chelsea violated their permits at least 100 times collectively (Figure 1), not accounting for data gaps, which will be discussed later. All facilities have continued to violate their permits in the last five years. The most common violations are of total suspended solids (TSS). Global Petroleum facilities have been out of compliance at least once every year for benzene releases with a total of 13 violations for benzene. On two occasions, they exceeded their benzene limit by over 1000 percent. To summarize non-compliance issues, four of these seven facilities under permit review had at least one quarter of known noncompliance with CWA permits, and three of those were in noncompliance more often than in compliance (See Figure 1). This type of historic noncompliance must be considered in the re-permitting process in order to hold terminals accountable for consistent permit violations.

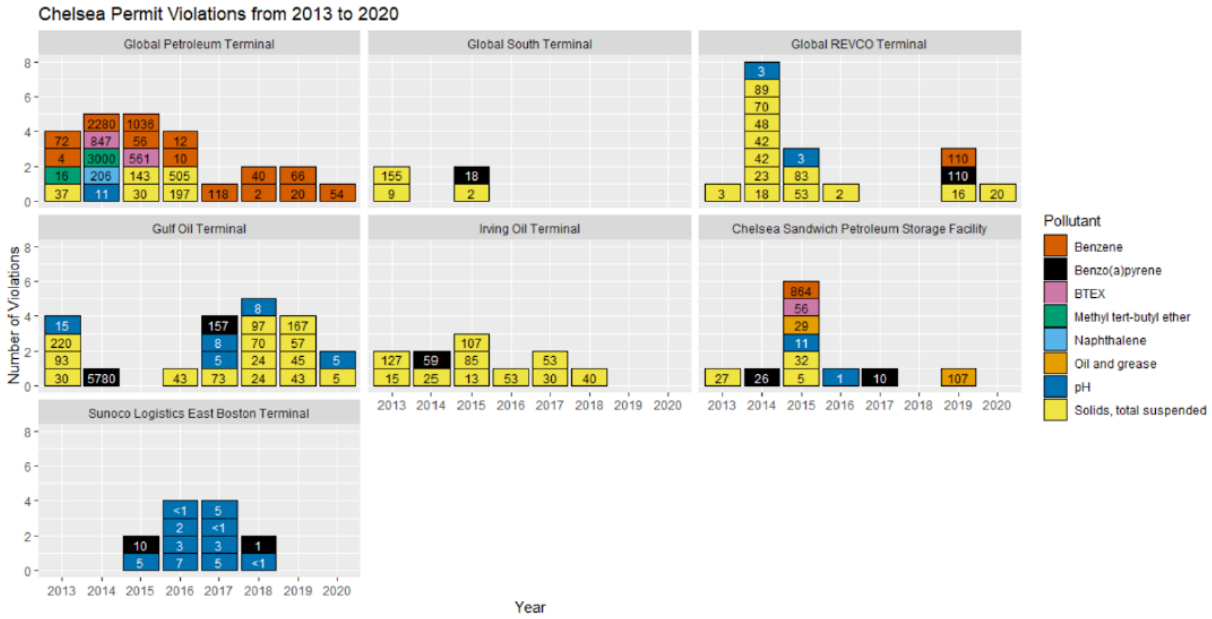

Figure 1. This figure, made with data drawn from EPA Enforcement and Compliance History Online (ECHO) database, shows each time a facility self-reported that it discharged more of a regulated chemical than it was permitted to. Each box refers to one recorded effluent exceedance, color coded by chemical. The number inside each box shows the percent by which they exceed their permitted amount. All facilities have a history of noncompliance with permits.
*Not including 169 late or missing reports between 2016 and 2020

The consolidation of Global's three facilities under one permit is especially concerning given they have had the majority of violations and specifically benzene violations (13 from Global Petroleum alone, as previously mentioned). Between these three facilities, there have been 14 benzene, 21 TSS, 2 methyl tert-butyl ether, 3 pH, 1 naphthalene, 2 benzo(a)pyrene, and 2 BTEX violations between 2013-2020 (see Figure 1). 45 out of the 100 violations occurred between the three Global facilities. When asked about the proposal to consolidate these permits into one, an EPA representative stated at the public meeting on March 15th, 2021 that this is based upon "administrative ease."[5] This is problematic reasoning since combining the facilities' permits may make it harder to identify specific facilities' permit exceedances. What measures will be taken to ensure that these facilities are held accountable for their violations after consolidation under one permit when violations have already gone unanswered as three separate permits?

This question is particularly pressing considering EPA's lack of inspection and enforcement actions. Based on available ECHO data, none of the facilities have faced any enforcement actions in the last five years, and none have been inspected more recently than 2014 for CWA compliance. There have been at least 69 violations since 2014. Notably, there have been at least 18 occasions in which multiple violations occurred at one facility in the same year across the seven facilities. Ultimately, these facilities have not been held accountable for violations and have not undergone inspection prior to being re-permitted.

Additionally, available ECHO data shows many gaps in reporting. Between March 2016 and March 2020 there were 3,515 missing discharge monitoring report (DMR) values out of 14,500 reports (24%). Reasons listed under the no data indicator description (nodi_desc) for missing

DMR values included "Conditional Monitoring - Not Required this Period", "Insufficient Flow for Sampling", "Frozen Conditions", "No Discharge", and "Below Detection Limit/No Detection." 169 reports out of these 3,515 (4.8%) resulted in "DMR Non-Receipt Reporting Violations," in which 13 (7.7%) reports are currently unresolved and 141 (83%) reports have gone unresolved for 2+ years. This creates a gap in data — thus, 100 reported violations means there are 100 violations at a minimum. Where reports are missing, neither EPA nor the public can know how much of each compound those facilities are releasing into the water and when.

[1] Clean Water Act of 1972, 40 CFR § 122.41 a 1 (1972). https://www.law.cornell.edu/cfr/text/40/122.41
[2] https://www.youtube.com/watch?v=NMWbSQJE23Q
[3] United States Environmental Protection Agency (2016). [How's My Waterway Assessment]. https://mywaterway.epa.gov/waterbody-report/MA_DEP/MA71-06/2016
[4] http://datalanterns.com/
[5] https://www.youtube.com/watch?v=NMWbSQJE23Q

Response to Comment D.1

EPA agrees that any violation of an NPDES permit limit is a violation of the CWA for which the Permittee is liable. *See* Appendix A to 40 CFR § 122.41(a).123.45. However, not every violation is necessarily cause for revocation or termination of an NPDES permit, nor does every violation necessarily warrant enforcement action. EPA has discretion to weigh a number of factors when determining whether to pursue enforcement action against Permittees, including, but not limited to, the magnitude and frequency of the exceedances, patterns and likelihood of non-compliance, the severity of the threat to human health and the environment, and available EPA staff resources. The regulations at 40 CFR § 123.45(a)(2) set out the criteria for "Category I Noncompliance," which include violations of enforcement orders, compliance construction violations, permit effluent limit violations, reporting violations, non-numeric effluent limit violations, and other violations of concern. Types of noncompliance that do not meet the criteria for Category I are classified as "Category II Noncompliance." 40 CFR § 123.45(a)(2). Finally, EPA may classify a subset of noncompliance as "significant noncompliance" (SNC). As outlined in EPA's September 21, 1995, Memorandum *Revision of NPDES Significant Noncompliance (SNC) Criteria to Address Violations of Non-Monthly Average Limits*, any effluent violation that causes or has the potential to cause a water quality or human health problem is SNC, as is a failure to submit a discharge monitoring report within 30 days of the deadline. *See* AR-115. SNC is used for violations of sufficient magnitude or duration to be considered a priority for regulatory review and response. *See* AR-116 p. 215-216.

The violations discussed in the comment are generally exceedances of numeric permit limits and reporting requirements, which could be classified as Category I noncompliance and, depending on the potential to cause a water quality or human health problem, could rise to the level of SNC. With the exception of the Gulf Terminal, all of the terminals have been in SNC for at least one quarter due to DMR non-receipt (i.e., a reporting violation). Furthermore, EPA discovered during development of the Draft Permit that Global Petroleum failed to submit DMRs for Outfall 002 (formerly Global Petroleum Outfall 001) during a five-year period from January 2015 through December 2019. *See* Global Fact Sheet, Appendix A. The comment does not provide specific information about the origin of the missing discharge monitoring reports raised in the comment, but it is likely that many of the unresolved monitoring reports can be attributed to

Global Outfall 002. EPA promptly notified the Permittee once the issue was identified and the Permittee has consistently submitted DMRs since January 2020.

As the comment points out, site inspections play an important role in determining and/or ensuring permit compliance, including by verifying the accuracy of information submitted by permittees and by verifying the adequacy of sampling and monitoring conducted by permittees. All of the bulk oil terminals addressed in this permitting action are now classified as major industrial facilities.[50] As major facilities and as facilities located in communities with Environmental Justice concerns, EPA expects that the Terminals will be inspected more frequently in the future, which will enable EPA to routinely verify the accuracy of information submitted by permittees and the adequacy of sampling and monitoring conducted. *See* "Strengthening Enforcement in Communities with Environmental Justice Concerns," EPA Office of Enforcement and Compliance Assurance (April 30, 2021) (AR-117); *see also* Responses to Comments C.3, E.3. More frequent site inspections will improve accountability for the Permittees and will serve to expose compliance issues such as non-reporting violations so that they can be addressed before they become persistent. EPA completed inspections of the Gulf Terminal in September 2021, the Irving Terminal in November 2021, and the Global Terminal in June 2022. Additional inspections are planned.

The comment also identifies a number of exceedances of effluent limits at the Terminals between 2013 and 2020. Appendix A to § 123.45 defines specific criteria for Category I violations of permit effluent limits. Category I violations of monthly average limits are triggered when 1) a sample is equal to or exceeds the Technical Review Criteria (40% for Group I pollutants and 20% for Group II pollutants) during two or more months within a six-month period; or 2) a sample exceeds a monthly average limit in any four or more months in a six-month period. Triggers for non-monthly average limits are the same as the monthly average violations above with the caveat that when a parameter has both a monthly average and a non-monthly average limit, a Facility would only be considered in SNC for the non-monthly limits if the monthly average limit is also violated. *See* AR-115. Additional criteria also exist for other types of permit violations. In most cases, the exceedances identified in Figure 1 occurred once per year and did not trigger Category I Noncompliance of permit effluent limits. The data indicate two areas where Category I Noncompliance may have been triggered by an exceedance of a permit limit: total suspended solids at the Global REVCO and Gulf Terminals and benzene at the Global Petroleum Terminal.

The monthly average and/or daily maximum TSS limit was exceeded seven times at Global REVCO in 2014, with reported concentrations ranging from 35.5 mg/L to 142 mg/L. A Category I violation was triggered because at least two of the exceedances within a six-month period were at least 20% greater than the permit effluent limit (i.e., the Technical Review Criteria for TSS, which is a Group I pollutant). At the same time, the single, monthly TSS sample concentration was less than the daily maximum effluent limit of 100 mg/L in every case except for December

[50] The Sunoco Terminal (MA0004006) has been classified as a major industrial facility for many years. Outside of the permitting process and pursuant to its enforcement discretion, EPA more recently classified the other bulk oil terminals (Global MA0000825, Irving MA0001929, Gulf MA0001091, and Chelsea Sandwich MA0001091) as major industrial facilities. The current classifications are documented in EPA's Integrated Compliance Information System (ICIS).

2014. A single, monthly sample concentration in exceedance of the monthly average limit but in compliance with a daily maximum TSS limit does not necessarily rise to the level of environmental impact that necessitates action by EPA to withhold, revoke, or deny a permit.

From mid-2018 through 2019, the Gulf Terminal had several months of high TSS in its stormwater discharges from Outfall 001. Upon noting this pattern of consistent SNC, EPA planned to conduct an inspection of the Facility; however, the Covid-19 pandemic put that inspection on hold. Subsequently, the Facility has achieved lower TSS discharges. Since the start of 2020, the Facility has reported one violation of its monthly average effluent limit (31.5 mg/L relative to the 30 mg/L limit) with no reported violations of its daily maximum TSS limit. There were no other reported permit limit violations during that reporting period. EPA completed a site inspection at the Gulf Terminal in September 2021 to follow up on this issue.

Turning to benzene, Global Petroleum is authorized to discharge from three outfalls under its 2014 Permit, two of which are internal outfalls (Outfalls 002 and 003). The majority of the violations identified in the comment were exceedances of the technology-based effluent limit of 5 µg/L at Outfall 002. One exceedance was an excursion above the water quality-based effluent limit that applies at the external outfall, which is based on the human health criteria (51 µg/L in the 2014 Permit or 16 µg/L based on the updated lower cancer slope factor value). Benzene human health criteria represent the water concentration that is expected to increase an individual's lifetime risk of cancer from exposure and are based on increased cancer risk from a lifetime of oral exposure to benzene (i.e., eating benzene contaminated fish from the Chelsea River). Given the conservative basis for the criteria (i.e., lifetime of exposure), the intermittent nature of stormwater discharges, and because the effluent concentration at the point of discharge to the receiving water was generally less than the water quality-based effluent limit, EPA does not find that the benzene violations rise to the level to warrant the uncommon remedy of permit revocation at this time.

In EPA's view, the exceedances of permit limits described in the comment instead demonstrate the need for additional oversight of the Terminals to bring them back into consistent compliance with their permits, even if the magnitude and frequency of violations did not yet rise to the level of enforcement action or permit revocation. As explained earlier in this response, as major industrial facilities the Terminals will be inspected more frequently during the next permit term. In addition, prioritizing inspections in overburdened communities is a primary goal of the 2021 Guidance for strengthening enforcement in communities with Environmental Justice concerns from EPA's Office of Enforcement and Compliance Assurance. *See* AR-117. Finally, the Final Permits for the Terminals include more stringent effluent limits for some parameters (e.g., technology-based limits for benzene at external outfalls, water quality-based limits for additional Group I PAHs), establish requirements to assess the extent to which pollutants discharged from the terminals impact the biological community (*e.g.*, Global Permit Part I.C.5: Bioassessment), and include requirements that automatically trigger corrective action from the Permittees when an exceedance of a limit occurs. Part I.C.1.b.1 of the Final Permits requires compliance with the

inspection and corrective action requirements in EPA's 2021 Multi-Sector General Permit.[51] In accordance with Parts 5.1.1 and 5.1.3.1 of the 2021 MSGP, Permittees must take immediate action to review and revise the SWPPP after an unauthorized release, when a discharge violates a numeric effluent limit, when control measures are not stringent enough to meet applicable water quality standards or to meet the non-numeric limits of the Permit, when a required control measure is not being properly operated or maintained, and when visual assessment shows evidence of stormwater pollution. EPA may consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations. *See* AR-27 Part 5.1.4. EPA expects that increased frequency of inspections and the requirement to take immediate corrective action when an effluent limit is exceeded will serve to hold the Terminals accountable for the operation of technology to meet technology-based limits (e.g., TSS and benzene limits that have been exceeded in the past) and water quality-based limits and to come into permit compliance more quickly.

Finally, the comment raises a concern that the proposed consolidation of the three, separate individual Global Terminal permits under a single individual permit for administrative purposes is "problematic reasoning since combining the facilities' permits may make it harder to identify specific facilities' permit exceedances." Appendix A of 40 CFR § 123.45 states that "effluent violations shall be evaluated on a parameter-by-parameter and outfall-by-outfall basis." In other words, compliance at each of Global's outfalls will be assessed independently. As a result, EPA believes that reporting and/or enforcement of violations would not be affected by the proposed change. Noncompliance is automatically flagged in EPA's Integrated Compliance Information System (ICIS), which stores data submitted in Discharge Monitoring Reports (DMRs).

The proposed change from three individual permits to one individual permit originated with a change in the corporate structure of Global Companies and at the request of the Permittee. In early 2022, however, Global informed EPA that it planned to sell the Global South, Petroleum, and REVCO terminal property and would lease back a portion of land encompassing all of Global South and a portion of Global Petroleum (the "Leaseback Terminal"). AR-138. The Global REVCO portion of the terminal and part of the Global Petroleum portion of the terminal would be decommissioned[52] prior to the sale. *See* AR-49. Following the sale, the tanks and terminal infrastructure would be removed and the property redeveloped by the buyer for use as a warehouse and distribution facility. *Id.* In other words, those portions of the property would not be operated as an oil terminal. As a result of these proposed changes, Global submitted a Notice

[51] In reviewing the requirement from the Draft Permit for this response, EPA discovered a typographical error in Part I.C.1.b.1. The Draft Permit proposed that Permittees comply with "the inspection requirements in Part 3.1 and 3.2 of the 2021 MSGP and the corrective action requirements in Part 5.1 through 5.5 of the 2021 MSGP." The corrective action requirements in the 2021 MSGP are listed in Part 5.1 through 5.3. The Final Permit states "the corrective action requirements in Part 5.1 and the corrective action documentation requirements in 5.3 of the 2021 MSGP" which was the intended reference for corrective action. EPA also added the conditions requiring SWPPP review and revision from Part 5.1.1 of the MSGP to the Final Permit to ensure that the conditions which require corrective action are clear.

[52] Global stated that this decommissioning would include "removal of the contents of the tanks (other than those tanks to [be] leased back by Global), cleaning of the tanks including a gas free certification from a tank inspector certified pursuant to API Standard 653; removal of the contents of the piping, conveyances and appurtenances on the Terminal (other than piping, conveyances and appurtenances to be leased back by Global) and draining, flushing and air gapping of such piping, conveyances and appurtenances." AR-49 at 2 n.3.

of Termination for the REVCO NPDES Permit (MA0003298) to EPA on May 18, 2022. *See* AR-49. In addition, Global certified to EPA on June 27, 2022, that the REVCO property was decommissioned. *See* AR-50.

The substantial alteration in the land use and decommissioning of the bulk oil terminal on the REVCO property prior to issuance of a Final Permit critically changes the discharges and authorizations for Outfalls 004 and 005. Stormwater discharges to these outfalls by the named owner and operator ("Revere MA Owner LLC" or "Buyer") are not associated with operation of a bulk oil terminal as authorized by the 2014 Permit. Because the change in ownership results in elimination of the discharges authorized by Permit No. MA0003298 for the Global REVCO Terminal, in accordance with 40 CFR § 122.64(b), EPA terminated the permit by letter dated June 28, 2022. *See* AR-118. Multiple general permits, including EPA's 2021 Multi-Sector General Permit (MSGP), EPA's 2022 Construction General Permit (CGP), and EPA's 2022 Dewatering and Remediation General Permit (DRGP) are appropriate for the authorization to discharge stormwater and allowable non-stormwater discharges from the new property. On June 13, 2022, a Notice of Intent was submitted for NPDES authorization under the CGP for discharges from former REVCO outfalls 001 (named Outfall 004 in the Draft Permit) and 005 on behalf of the Buyer. CGP coverage for NPDES Permit MAR10043I became effective on June 28, 2022. In addition, the Buyer also submitted a No Exposure Certification under EPA's MSGP for the Oceanair Parking Lot (MANOEJ0A7) that became effective on June 27, 2022.

Stormwater and allowable non-stormwater discharges from the Leaseback Terminal are covered under Permit Nos. MA0000825 (Global South Outfall 001) and MA0003425 (Global Petroleum Outfalls 001, 002, and 003), which remain in force until the Final Permit is effective. EPA is issuing a consolidated Final Permit only for the Global South Terminal (authorizing discharges of treated stormwater and hydrostatic test water to the Chelsea River via Outfall 001) and the portion of the Global Petroleum Terminal (authorizing discharges of treated stormwater and hydrostatic test water to the Chelsea River via Outfall 002 and discharges of treated groundwater to Outfall 002 via internal Outfall 003) where Global remains the operator. *See also* Response to Comment F.1.

Comment D.2

In addition to the above concerns about the importance of reviewing facilities' compliance history prior to permitting, we are concerned about EPA's presentation of public comments. EPA's paraphrasing and quoting of comments, rather than publishing comments in full, makes it difficult to meaningfully assess the quality of EPA's response, as the original argument is unavailable. According to the public notice released concerning the draft permits, "the Regional Administrator has determined, pursuant to 40 CFR §124.12, that a significant degree of public interest exists in the proposed permits and that a public hearing should be held in Chelsea, Massachusetts to consider the permits."[6] The Chelsea River Bulk Oil Terminal Community Information Sheet indicates that the EPA "will respond in writing to all significant issues raised during the public comment period."[7] A public hearing provides an opportunity for the residents of Chelsea, East Boston and Revere to both provide and receive insight regarding the draft permits. It is vital that such a hearing allows the communication of information not only between

the public and the EPA but also between the different stakeholders that exist within the public itself.

Full disclosure of all public comments is crucial. These comments, made orally or formally, must not be altered as it interferes with the transparency necessary for the public to judge whether the EPA has delivered a substantial response to the data and questions proposed. Without reading the original comment, it is unclear to the public if EPA may have misrepresented a commenter's original argument or failed to respond to a specific portion of the comment. The 2014 NPDES permits issued by the EPA include a Response to Public Comments section at the end of the permit, however, it is noted that the public comments "may be paraphrased," yet there is no indication made to distinguish between what has been paraphrased and what was a direct quote from the submitted comments. Such paraphrasing interferes with the very purpose of a public hearing. Directly quoting the commenters is essential to maintaining the integrity of a public comment. Public comments should not only be a comment made by a member of the public but also a comment made available to the public in an unaltered form.

[6] United States Environmental Protection Agency - Region 1 (EPA) Water Division (2021). [Public Notice]. https://www3.epa.gov/region1/npdes/chelseacreekfuelterminals/pdfs/2021/crbpsf-pn.pdf
[7] United States Environmental Protection Agency (2021). *Chelsea River Bulk Oil Terminal Community Information Sheet* [Fact Sheet]. https://www3.epa.gov/region1/npdes/chelseacreekfuelterminals/pdfs/2021/crbot-community-info-sheet.pdf

Response to Comment D.2

Comments in this document have been reproduced as received, aside from minor formatting changes. They have not been paraphrased. The original comment-documents submitted by the public and the transcript of the public hearing, which includes comments provided by the public, are also part of the administrative record and can be requested by contacting the permit writer at the contact information found at the beginning of this document. Similarly, public comments submitted during the previous re-issuance of these permits were, and are, available upon request.

Comment D.3

We thank you for the opportunity to comment on the drafted permits for the facilities in question. We are glad to see that the proposed permits are more stringent for already regulated compounds and do regulate some additional chemical hazards. However, we ask that EPA review facilities' compliance histories and conduct inspections prior to re-permitting. Given that the 2014 Memorandum to the CWA National Pollutant Discharge Elimination System Compliance Monitoring Strategy states that "compliance is the cornerstone of the EPA's program to achieve clean water," we believe that omitting compliance from re-permitting processes is undercutting the original purpose of the permits.[8] One of the goals of the CWA is to "achieve water quality that is both 'fishable' and 'swimmable',"[9] however, this process is contributing to further depletion of an already impaired waterway. Continuing to issue permits for facilities with records of consistent permit violation is a trespass on public trust and does not comply with the EPA's own written NPDES guidelines for permit renewal.

[8] Lund, L. (2014, July 21). *Issuance of Clean Water Act National Pollutant Discharge Elimination System*

Compliance Monitoring Strategy [Memorandum]. United States Environmental Protection Agency. https://www.epa.gov/sites/production/files/2013-09/documents/npdescms.pdf

[9] United States Environmental Protection Agency. (n.d.). *Statute and Regulations addressing Impaired Waters and TMDLs.* https://www.epa.gov/tmdl/statute-and-regulations-addressing-impaired-waters-andtmdls

Response to Comment D.3

EPA addressed similar comments regarding compliance histories and inspections in Response to Comment II.D.1, above. In that comment, EPA also explains how past non-compliance informed the effluent limitations and permit conditions in the Final Permits. In EPA's view, rather than "omitting compliance from the re-permitting process," the permit history for each Terminal was appropriately considered when developing conditions for the reissued permits. In particular, the Final Permits for the terminals include more stringent effluent limits for some parameters (e.g., technology-based limits for benzene at external outfalls, water quality-based limits for additional Group I PAHs) and establish requirements to assess the extent to which pollutants discharged from the terminals impact the biological community (*e.g.*, Global Permit Part I.C.5: Bioassessment).

Comments from Mystic River Watershed Association

The Mystic River Watershed Association (MyRWA) is a nonprofit advocacy organization dedicated to the sustainable management and wise use of the Mystic River Watershed, including its tributary, Chelsea Creek. We welcome this opportunity to file comments regarding the above-referenced draft National Pollutant Discharge Elimination System (NPDES) permits to be issued under sections 301 and 402 of the US Clean Water Act as amended and under sections 27 and 43 of the Massachusetts Clean Waters Act, as amended.

The United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) issued a joint public notice of all five draft permits and held a public hearing in which all five permits were presented and discussed. The following comments address all five permits as a group, in keeping with the EPA and DEP's treatment of the draft permits. MyRWA considers these permits particularly important due to the impaired state of Chelsea Creek's sediment and water quality [1], to the adjacency of multiple oil terminals, and to the fact that the bordering communities are state-designated environmental justice communities.

MyRWA would like to register its support for the general improvements made to the discharge permits including new numeric limits on pollutants (e.g., total residual chlorine, copper, zinc, ammonia, fecal coliform), monthly electronic reporting, and addressing the potential impact of simultaneous discharges from multiple facilities. MyRWA requests that EPA and MassDEP consider the following recommendations to further improve the efficacy of the NPDES permits under review:

[1] *Mystic River Watershed and Coastal Drainage Area 2004-2008 Water Quality Assessment Report*. MassDEP Division of Watershed Management, Worcester, Massachusetts; March 2010, Report Number: 71-AC-2. http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/71wqar09.pdf

Comment E.1 Field screening of basic water chemistry parameters prior to discharge.

In reviewing the sampling results from the past five years as provided in the Fact Sheets, in some cases discharges were released to Chelsea Creek with pH values outside of the permitted range. It is recommended that field measurements of pH be required prior to discharge to prevent discharges except if the pH value is between 6.5 and 8.5 SU.

Response to Comment E.1

The Draft Permits for each of the Terminals on the Chelsea River require that the pH of the effluent be within the range of 6.5 to 8.5 standard units (S.U.) at all times. This pH range is consistent with water quality standards. Compliance with this effluent limit is based on monthly pH monitoring and any sample value outside of this range is flagged for non-compliance. EPA does not believe that collecting additional pre-discharge measurements of pH will inform compliance since the water quality standard for pH applies instream. In addition, an effluent pH value outside of the required range is considered an exceedance of a permit limit and triggers the corrective action requirements at Part I.C.1.b.1. Permittees are required to review and potentially revise control measures through corrective action to eliminate exceedances of permit limits.

Since December 2014, stormwater discharges outside of the range of 6.5 to 8.5 S.U. have been reported at Global (1 exceedance of the minimum pH), Chelsea Sandwich (1 exceedance of the maximum pH), Gulf (2 exceedances each of the minimum and maximum pH), and Sunoco (7 exceedances of the minimum pH and 1 exceedance of the maximum pH). All of these exceedances were flagged as non-compliance. In all cases except for Sunoco, the pH sample during the following month was within the acceptable range. The water quality-based effluent limitation will effectively ensure that the water quality of the Chelsea River is protected. Preemptively prohibiting the discharge of stormwater based on certain real-time measurements could potentially impact a Facility's capacity to retain stormwater during subsequent events and could potentially result in circumstances where a Facility's oil/water separator (OWS) is overwhelmed by the stormwater volume and treatment bypassed, leading to higher pollutant loads, including petroleum hydrocarbons.

Comment E.2 Increased frequency of sampling in the event of a reported exceedance.

It is recommended that in the event that a parameter is above or outside of the discharge limitation, the facilities be required to sample and analyze all discharges until the parameter once again meets the permit requirements. These data will help characterize the extent of potential impacts of an exceedance, as well as identify any systemic failures in the SWPP that need to be addressed.

Response to Comment E.2

As the comment points out, detection of a parameter above the permit limit is an indication that the best management practices (BMPs) and control measures documented in the SWPPP should be reviewed. Part I.C.1.b.1 of the Permit requires that the Permittees take immediate action to review and revise the SWPPP in certain circumstances, including when a discharge violates a numeric effluent limit. *See also* Response to Comment D.1. EPA expects that the requirement to take immediate corrective action when an effluent limit is exceeded will contribute to holding the Terminals accountable for the implementation of BMPs and operation of technology. Stormwater discharges at the Terminals are intermittent and volumes are discharged over relatively small timeframes for each event and, in accordance with the discharge-related BMPs at Part I.C.1.b.3, are generally only discharged over a few hours per day. Review of the SWPPP, BMPs, and control measures in response to an exceedance of an effluent limit requires time. Any changes to the BMPs or control measures required to achieve effluent limits will also require time to implement. The Final Permits generally require monthly monitoring of parameters that have numeric effluent limitations. This monitoring frequency is appropriate to ensure that effluent limitations are met and is reasonable to allow time for Permittees to review, plan, and implement any changes to BMPs or operations in the event that an effluent limit is exceeded.

Comment E.3 Increased frequency of EPA and DEP unannounced inspections and enforcement actions.

At least one annual inspection of each petroleum terminal is necessary to review the facility compliance status. The CWA Compliance and Inspection History indicates that the most recent inspections in four of the five facilities were four years ago. Increased inspection frequency and enforcement is a critical tool in protecting local EJ communities surrounding these facilities.

Response to Comment E.3

Compliance monitoring is a cornerstone of the NPDES program. *See* CWA § 308. In addition to self-directed monitoring, routine NPDES compliance inspections are necessary to confirm compliance status with permit limitations and conditions (including BMPs and SWPPP requirements), verify the accuracy of information submitted by permittees, and verify the adequacy of sampling and monitoring conducted by permittees. *See* 40 CFR § 122.41(i). *See also* Part II.C.2 of the Draft Permits ("Inspection and Entry").

All of the bulk oil terminals addressed in this permitting action are currently classified as major industrial facilities, although that has not always been the case. *See* Response to Comment C.3. Major facilities are classified as such by the Regional Administrator. *See* 40 CFR § 122.2. This rating considers many factors related to the facility and discharge, including, but not limited to, the type of discharge, the toxic pollutant potential, receiving water quality, public health impacts, and conventional pollutants. Major facilities are inspected more frequently than minor facilities. In this case, EPA expects that the terminals will be prioritized for inspections based on the potential impacts in overburdened communities. Strengthening enforcement in Environmental Justice communities is a primary goal of the Office of Enforcement and Compliance Assurance's 2021 Environmental Justice Guidance. *See* AR-117. *See also* Response to Comment II.D.1.

Comment E.4 Improved public access to the Discharge Water Quality Data, Discharge Monitoring Reports (DMRs), and Stormwater Pollution Prevention Plans (SWPPPs)

Data on the chemical characteristics of effluent discharges are currently submitted by the permittee to the ECHO (Enforcement and Compliance History Online) database. ECHO is a critical tool for regulators to access data and determine compliance. The provision of the DMRs is as important as access to the data on ECHO. It is critical to see the method of detection, detection limits, and whether an analyte was sampled to be able to interpret the data or identify missing data points.

Response to Comment E.4

EPA addressed comments on the accessibility of DMR data in Response to Comment II.B.3, including providing access to data in alternative formats (i.e., CSV files). All monitoring data for these facilities are available through ECHO and any additional DMR attachments are accessible by requesting them from the permit writer (see the contact information at the beginning of this document). EPA agrees that reporting the method quantitation limit (i.e., minimum level) for non-detect samples is critical. Footnote 3 of the Final Permits requires that they report the minimum level on their DMRs.[53]

[53] See the discussion of method detection limits on the ECHO FAQ page, https://echo.epa.gov/trends/loading-tool/resources/faq.

Comment E.5

That said, the data in the ECHO database are difficult for the general public to access and accurately interpret. Affected communities need to have access to and understand important information to be able to meaningfully participate in the implementation and enforcement of these permits, and to contextualize their findings. MyRWA requests that, as a requirement of the permit, the terminal will annually release a narrative and data/graphical description of the water quality data collected that year that explains any exceedances and missing data. MyRWA requests that the SWPPPs be submitted to EPA for approval, made available electronically upon request, and that the DMRs also be made available electronically upon request.

Response to Comment E.5

EPA addressed comments on the accessibility of DMR data in Response to Comment B.3, including providing step-by-step guides on the most common NPDES-related ECHO searches on EPA Region 1's Chelsea Terminals website and links to training webinars. The many functions available in ECHO make it a powerful multi-faceted tool for understanding permit compliance, but EPA agrees it can be challenging for the average user to navigate. However, the ECHO trainings linked in that response and step-by-step guide will provide a solid basis for users to extract whatever publicly available NPDES permit information they need. In addition, if interested parties have further questions about specific facilities, they are welcome to contact the permitting staff in EPA Region 1. Contact information for permitting staff is available at this webpage, https://www3.epa.gov/region1/npdes/permits/NPDESPermittingStaff.pdf.

Regarding MyRWA's request that the terminals "annually release a narrative and data/graphical description of the water quality data" and any non-compliance for that year, EPA notes that the ECHO tool already contains functionality to do this. For example, the "Effluent Limitations Exceedances Search" identifies exceedances of NPDES permit effluent limits based on discharge monitoring reports (DMRs).[54] An individual can search for effluent limitations exceedances by geographic area, pollutant, industry, or facility and download effluent data as a .csv file. In addition, after the comment period closed, EPA added a new tool, called ECHO Notify,[55] that allows members of the public to sign up to receive automatic email notifications of new monitoring results for particular facilities or within geographic areas of their choosing. The Fact Sheets that accompany public notice of the Draft Permits also contain narrative and graphical descriptions of the data and describe non-compliance. EPA Region 1 currently lacks the resources to update this information more frequently than during permit issuance.

Both the SWPPPs and DMRs for all of the Facilities are available upon request as stipulated in the existing permits. *See* Standard Condition Part II.D.3, Availability of Reports. EPA received a number of comments about compliance, transparency, and accessibility of information during the public notice. *See, e.g.*, Comments submitted by the Environmental Data and Governance Initiative, GreenRoots, Northeastern University Social Science Environmental Health Research

[54] Available at: https://echo.epa.gov/trends/loading-tool/effluent-exceedances-search.
[55] Available at: https://echo.epa.gov/tools/echo-notify. A tutorial for using ECHO Notify is available at https://echo.epa.gov/help/tutorials#notify.

Institute, and by Mystic River Watershed Association. The Final Permits include extensive, narrative permit conditions in the form of BMPs, with which the permittees must document compliance through the SWPPP and annual certifications. Corrective actions implemented in response to exceedances of permit limits must also be documented in the SWPPP. Recognizing the importance of the SWPPPs for documenting compliance, and in response to this comment, the Final Permit was revised to require Permittees to submit the SWPPP, the annual certifications, and any changes to the SWPPP to EPA for posting on Region 1's Chelsea Terminals website.[56] Making the SWPPPs and related documents publicly available will improve transparency and provide critical information to the community impacted by these discharges.

Comment E.6 Avoiding simultaneous discharge from multiple facilities.

MyRWA is glad to see that EPA is considering the cumulative impact of simultaneous discharges from multiple facilities in the permits. We request that the permits specify that the releases be made during the outgoing tide and when possible, discharged during different outgoing tides. Implementing this strategy seems like an opportunity for a voluntary, collaborative effort by the oil terminals to discharge with, e.g., colored dyes (commonly used for tracking sanitary leaks), to track how the tide carries discharges out and inform future best practices for discharging stormwater that minimizes cumulative impacts.

We commend EPA and MassDEP for robust efforts at public engagement and alternative language access for the public hearings. We appreciate this opportunity to comment.

Response to Comment E.6

EPA agrees that the potential for cumulative impacts of the discharges from multiple terminals to the Chelsea River should be addressed. EPA received multiple comments on the infeasibility of requiring terminals to coordinate discharges, however, including that the discharge practices BMP and other operational limitations (e.g., when the Terminal is receiving a shipment) already substantially limit when facilities can discharge stormwater. In addition, because stormwater discharges during a storm event can be difficult to control, a limitation that prevents Terminals from discharging stormwater necessary to maintain the systems could potentially result in unsafe conditions. *See* Comments F.23, G.22, H.4, I.7, J.13. After considering these comments, EPA decided not to include the BMP requiring the Terminals to coordinate all stormwater discharges for a number of reasons, including that it is too broad to be effectively implemented. *See* Responses to Comments F.23, G.22, H.4, I.7, J.13. The effluent limits are sufficiently conservative (i.e., set equal to the water quality standard or human health criteria without considering dilution and subject to certain restrictions on timing of discharges) that the receiving water will be protected even without a requirement to coordinate discharges. EPA agrees that a voluntary effort by the terminals to evaluate mixing and cumulative impacts of the discharges

[56] In addition to the comments received about accessibility and transparency during the public comment period, the Conservation Law Foundation (CLF) submitted "supplemental comments" to EPA after the comment period, dated September 14, 2021, which affirmed the need for enhanced transparency and requested that the Final Permits include a publicly available provision for the SWPPPs. Although EPA is not required to respond to comments submitted after the close of the public comment period, in this case, EPA notes that this addition to the Final Permits also satisfies CLF's request.

could inform the next permit issuance. EPA also notes that the collaborative bioassessment required in the Final Permits will also provide information about the extent of the impacts from these stormwater discharges on the biological community.

The comment also recommends that the permits specify that releases be made during the outgoing tide and when possible, discharged during different outgoing tides. The 2014 Permits included provisions regarding discharging on an outgoing tide in a footnote regarding "qualifying events" and in the discharge practices BMP. The footnote required the terminals to monitor almost all pollutant parameters during a qualifying event, which was defined as a discharge occurring on an outgoing tide during daylight hours at least one hour from both the low and high slack tide. *See, e.g.*, 2014 Sunoco Permit at Part I.A.1 n.1. The 2014 Permits also included a discharge practices BMP to minimize discharges during worst-case conditions (the hour before and after slack tide) and to discharge under the conditions required for a qualifying event (i.e., on an outgoing tide) to the maximum extent practicable. *See, e.g.*, *id.* at Part I.C.3.a. Similar to the 2014 Permits, the Draft Permits also proposed to require sampling for most pollutant parameters during a qualifying event, which they defined similarly to the qualifying event in the 2014 Permits (i.e., as a discharge during daylight hours on an outgoing tide at least one hour from both the low and high slack tide). *See, e.g.*, Sunoco Draft Permit at Part I.A.1. n.1. The Draft Permits also included a discharge practices BMP that would require that terminals avoid discharging during worst-case conditions (the hour before and after slack tide and during periods of lowest receiving water flow) to the maximum extent practicable. Part I.C.1.b.3. In reviewing and responding to this and other comments, EPA realized that the Draft Permits only included the outgoing tide language in the qualifying event footnotes. EPA did not intend for the requirement to discharge on an outgoing tide be eliminated from the discharge practices BMP at Part I.C.1.b.3. Moreover, as a result of comments received, EPA has revised the qualifying event footnotes, such that the conditions for a qualifying event apply only on an annual basis. *See* Response to Comment F.6. Thus, to be consistent with, and avoid backsliding from, the discharge practices BMP in the 2014 Permits and because the conditions for qualifying events will now apply to fewer discharges, EPA has revised Part I.C.1.b.3 of the Final Permits to include the requirement to discharge on the outgoing tide to the maximum extent practicable. In addition, the BMP prioritizes discharging when the tide will carry pollutants downstream and out of the river and thereby minimizes the load to the river from multiple facilities that could adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms. *See also* Response to Comment F.7.

With respect to the request that the permits specify that the facilities discharge on *different* outgoing tides, when possible, EPA concludes that such a provision would suffer from the same problems as the coordinated discharges BMP, but to a greater degree, since the coordinated discharges BMP could theoretically have allowed discharges on the same tide, albeit at different times. For these reasons, EPA has not added a provision requiring the discharges to be on different outgoing tides.

III. Responses to Comments submitted on individual draft permits

Comments are reproduced below as received; they have not been edited.

Comments from Global

Comment F.1

Global Companies LLC (the Facility), a wholly-owned subsidiary of Global Partners LP, respectfully submits the enclosed comments on (1) the draft National Pollutant Discharge Elimination System (NPDES) permit (Draft Permit) issued by the United States Environmental Protection Agency (EPA) on February 10, 2021 and (2) the Massachusetts Permit to Discharge Pollutants to Surface Water issued by the Massachusetts Department of Environmental Protection (MassDEP) on February 10, 2021 for discharges from the Facility. As described herein, due to the inclusion of significant changes to the effluent limitations and conditions provided in the Draft Permit, which are unsupported by EPA's legal authority or technical guidance documents, the Facility developed the detailed comments below in conjunction with its consultants, Kleinfelder and Roux Associates, Inc. (Roux), and its attorneys, Nutter, McClennen and Fish LLP, to provide its full perspective on the Draft Permit prior to finalization by EPA.

As an initial comment, the Facility wants to make clear that many of the new parameters proffered in the Draft Permit apply to contaminants that are not used at the Facility, are not part of any of the limited processes at the Facility and are not a constituent of the products stored at the Facility. As a result, although the Draft Permit is intended to regulate stormwater associated with the industrial activities regulated under the Clean Water Act (CWA), the resulting effluent parameters are more related to the regulation of industrial process discharges and are wholly unrelated to the Facility. It is important from EPA and MassDEP to keep in mind when reviewing the below comments that while the Facility stores petroleum products, the Facility undertakes no processing or other chemical storage. Thus, the vast majority of the discharges regulated by the Draft Permit are stormwater that, while coming into contact with storage tanks and the storage areas within the Facility, have no direct contact with products at the Facility.

Background
Global Companies LLC owns and operates the Facility and its drainage system. The drainage system consists of five outfalls, Outfall 001 through 005. Outfalls 001, 002 and 004, are authorized to discharge stormwater runoff and hydrostatic test water to the Chelsea River. Outfall 003 is authorized to discharge remediated groundwater to the Chelsea River via Outfall 002. Outfall 005 is authorized to discharge stormwater runoff and hydrostatic test water to Sales Creek.

Stormwater at the Facility is collected from the tank farm and terminal yard, located on the either side of Lee Burbank Highway, drained separately and treated prior to discharging to the Chelsea River or Sales Creek via Outfalls 001, 002, 004, and 005. The receiving water for Outfalls 001, 002 and 004, Chelsea River Segment (MA71-06), is classified as Class SB. The Chelsea River is one of eleven Designated Port Areas established by the Massachusetts Office of Coastal Zone Management. Chelsea River is listed in the Massachusetts Year 2016 Integrated List of Waters

(303(d) List) as a Category 5 "Waters Requiring a TMDL". The pollutants and conditions requiring a TMDL are ammonia (un-ionized), fecal coliform, dissolved oxygen, polychlorinated biphenyls (PAHs) in fish tissue, petroleum hydrocarbons, sediment screening value, odor, and turbidity. This segment is also impaired for debris/floatables/trash, but this is considered a non-pollutant and does not require a TMDL. The receiving water for Outfall 005, Sales Creek, discharges to Belle Isle Inlet at Bennington Street. Belle Isle is listed in the Massachusetts Year 2016 Integrated Lists of Waters as a Category 3 water "No uses assessed". It is currently not in Category 5, the 303(d) List "Waters Requiring a TMDL". Sales Creek (MA71-12) is classified as a Class SA OAR (Outstanding Resource Water) waterbody.

Prior to discharging into the Chelsea River (Outfalls 001, 002, and 004) and Sales Creek (Outfall 005), the stormwater sources above pass through a main oil/water separator (OWS) associated with each outfall. Authorized groundwater discharges (Outfall 003) are pretreated through a remediation system, before combining with stormwater from the terminal field, parking areas, building roofs tank farm secondary containment areas, paved roads, and hydrostatic test water from intermittent testing events. These sources comingle and are routed through the OWS. The total maximum design flow rate of OWSs associated with Outfall 001, 002, 004, and 005 is 2105 GPM (700 for Outfall 001, 830 for Outfall 002, 75 for Outfall 004 and 500 for Outfall 005) and a maximum rating of 3.03 million gallons per day (MGD). Note that these design flow rates are based on equipment capacity and continuous operation, rather than actual flow volumes which are typically two orders of magnitude lower than permitted discharge volumes. Outfall 003 is an internal outfall that discharges groundwater from an onsite groundwater remediation system and stormwater runoff accumulated inside the terminal field to the stormwater drainage system upstream of Outfall 002.

The NPDES permit currently in effect was issued on September 24, 2014 with an effective date of November 24, 2014 and expired on or about November 23, 2019 (referred to hereafter as the 2014 Permit). A timely renewal application was submitted by Global Companies LLC, administratively continuing the 2014 Permit until such time as EPA issues a new final permit. When finalized, the Draft Permit will supersede the 2014 NPDES permit.

Response to Comment F.1

This introductory comment presents general concern about the legal and technical bases for unspecified effluent limits and monitoring conditions included in the 2021 Draft Permit, indicating that the Permittee's more specific objections will be raised in its later comments below. As such, where the Permittee identifies specific pollutants and arguments in its later comments, EPA addresses them in the responses below. In addition, while the comment describes the Global facility and operations at the time of public notice of the Draft Permit, changes at the site since that time have substantially altered use of portions of the site and related discharges. In early 2022 (i.e., after the close of the public comment period), the Permittee informed EPA and the State that it intended to sell the entirety of the property encompassing the South, Petroleum, and REVCO terminals and to lease back a portion of the property, encompassing the South Terminal and part of the Petroleum Terminal (the "Leaseback Terminal"). *See* AR-138. The REVCO property, including Outfalls 004 and 005, and a portion of

the Petroleum property would be decommissioned[57] and no longer operated as a bulk oil terminal. *See* AR-49. As a result of these changes, Global submitted a Notice of Termination for the REVCO NPDES Permit (MA0003298) to EPA on May 18, 2022. *See* AR-49.

As a result of the sale, which was completed on June 28, 2022, and the cessation of oil terminal operations on a portion of the property, EPA has revised the proposal to consolidate the Global Permits MA0000825, MA0003425, and MA0003298. *See* AR-118. The substantial alteration in the land use and decommissioning of the bulk oil terminal on the REVCO property prior to issuance of a Final Permit critically changes the discharges and authorizations for Outfalls 004 and 005. Stormwater discharges to these outfalls by the named owner and operator ("Revere MA Owner LLC" or "Buyer") are not associated with operation of a bulk oil terminal as authorized by the 2014 Permit. Because the change in ownership results in elimination of the discharges authorized by Permit No. MA0003298 for the Global REVCO Terminal, in accordance with 40 CFR § 122.64(b), EPA terminated the permit by letter dated June 28, 2022. *See* AR-118; *see also* Response to Comment D.1. Permit Nos. MA0000825 (Global South Outfall 001) and MA0003425 (Global Petroleum Outfalls 001, 002, and 003) remained in force and fully covered stormwater discharges from the Leaseback Terminal.

As the REVCO Terminal property is no longer operated as an oil terminal and stormwater and hydrostatic test water associated with an oil terminal are, therefore, no longer discharged at Outfalls 004 and 005 (as named in the Draft Permit), the effluent limitations and conditions in the Draft Permit applicable to Outfalls 004 and 005 have not been included in the Final Permit. EPA is therefore issuing a consolidated Final Permit for only the Global South Terminal (authorizing discharges of treated stormwater and hydrostatic test water to the Chelsea River via Outfall 001) and the portion of the Global Petroleum Terminal continuing operation as a bulk petroleum storage terminal (authorizing discharges of treated stormwater and hydrostatic test water to the Chelsea River via Outfall 002 and discharges of treated groundwater to Outfall 002 via internal Outfall 003).[58] Below, EPA responds to comments concerning discharges from Outfall 001 for South, and Outfalls 002 and 003 as applicable to the smaller Petroleum terminal.

As previously explained, a Notice of Intent was submitted for NPDES authorization under the CGP for discharges from former REVCO outfalls 001 (named Outfall 004 in the Draft Permit) and 005 on behalf of the Buyer on June 13, 2022. CGP coverage for NPDES Permit MAR10043I became effective on June 28, 2022. In addition, the Buyer also submitted a No Exposure Certification under EPA's MSGP for the Oceanair Parking Lot (MANOEJ0A7) that became effective on June 27, 2022.

[57] Global stated that this decommissioning would include "removal of the contents of the tanks (other than those tanks to [be] leased back by Global), cleaning of the tanks including a gas free certification from a tank inspector certified pursuant to API Standard 653; removal of the contents of the piping, conveyances and appurtenances on the Terminal (other than piping, conveyances and appurtenances to be leased back by Global) and draining, flushing and air gapping of such piping, conveyances and appurtenances." AR-49 at 2 n.3.

[58] EPA understands that Global has decommissioned three tanks at the GPC Terminal—Tank 2, Tank 4, and Tank 6—and that Global has disconnected stormwater collection system components such that stormwater from this area no longer flows to the GPC Terminal stormwater system or discharges from Outfall 002. (Stormwater from this area is directed instead to the former REVCO Terminal outfalls covered by CGP authorization issued to Revere MA Owner, LLC). Thus, the drainage area for the Final Permit does not include these tanks and dike areas.

In general, EPA notes that the Clean Water Act, including sections 101, 301(b), 304, 308, 401, and 402, and its implementing regulations provide the basis for the effluent limitations and other conditions in the permits. EPA evaluates discharges with respect to the requirements of the Act and relevant NPDES regulations to determine the conditions to include in a draft permit. This includes consideration of pollutants or parameters known to be present in a permittee's discharge (for instance, as revealed in discharge monitoring data from the facility), as well as those pollutants or parameters that may reasonably be present depending upon, among other things, the type of facility, pollutant sources, and the type(s) of effluent discharged. Additionally, CWA Section 308(a), 33 U.S.C. § 1318(a), authorizes EPA to require the owner or operator of any point source to provide information as may reasonably be required to:

> carry out the objective of this chapter [of the CWA], including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard . . . or standard of performance . . . ; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, . . . or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 1315, 1321, 1342, 1344 . . .

EPA evaluates discharges to determine compliance with CWA Section 301(b)(1)(C)'s mandate that permits include any more stringent limitations necessary to meet state water quality standards. The regulations at 40 CFR § 122.44(d)(1), which implement section 301(b)(1)(C), require that NPDES permits include limits for all pollutants or parameters which "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Where EPA determined that pollutants or parameters are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, limitations are included in the permit.

Monitoring of pollutants or parameters, without limitations is included in the permits for several reasons. First, when EPA determines additional information collection is appropriate for making this determination, as EPA's Technical Support Document for Water Quality-based Toxics Control recommends, EPA requires the collection of such information, either through a CWA § 308 information request during permit development or by incorporating monitoring requirements into permit conditions. In the case of the Facility's discharges, where EPA was unable to determine if certain parameters had reasonable potential to cause or contribute to an excursion above water quality criteria because of a significant lack of information (e.g., bioassessment), the Draft Permit requires monitoring, without limits.

Second, the permits limit groups of pollutants or parameters present in discharges by use of "indicator parameters" in accordance with 40 CFR § 122.44(d)(1)(vi)(C) (e.g., benzene for petroleum-related volatile organic compounds, naphthalene for group II semi-volatile organic compounds). As a result, the permits include the effluent and ambient monitoring necessary for EPA to confirm that the limitations on the indicator parameters are sufficiently stringent to meet applicable WQSs as required by CWA § 401(a)(2) and 40 CFR § 122.4(d). The majority of this monitoring was also included in the 2014 permits.

Finally, the permits include non-numeric technology-based effluent limits and best management practices (BMPs) where EPA has determined that they are necessary to carry out the purpose and intent of the CWA under § 402(a)(1). The monitoring requirements included in the permits for pollutants or pollutant sources the BMPs are intended to control (e.g., bacteria, methyl tert-butyl ether for contaminated groundwater infiltration), are necessary to ensure the non-numeric effluent limitations are sufficiently stringent and as a means to assess the effectiveness of BMPs the facility selects to meet the non-numeric effluent limitations.

Comment F.2 – Reduced Benzene and Naphthalene Limits

Part I.A of the Draft Permit imposes more stringent maximum daily effluent limits of 5 and 20 µg/L for benzene and naphthalene (the 2014 Permit required 51 and 100 µg/L average monthly limits) for stormwater runoff from Outfall 001, 002, and 004. EPA's rationale for the reduced effluent limits for benzene and naphthalene is based on the application of the Remediation General Permit (RGP) and best professional judgement (BPJ). The Facility strongly objects to the new limit as EPA approach is inappropriate and lacks regulatory and technology bases. The details are set forth below:

<u>The majority of the discharges from Outfall 001, 002, and 004 are stormwater runoff:</u>

EPA's application of the RGP is inconsistent with the discharges from the Facility's Outfalls 001, 002 and 004, which are not treated groundwater (in contrast to the onsite remediation system discharge via Outfall 003). The water quality of stormwater runoff from the Facility is already heavily regulated under special condition Part I.C.1. Best Management Practices (BMPs).

Here, EPA's use of BPJ to set effluent limits 5 and 20 µg/L for benzene and naphthalene is unreasonable. EPA's leap, using BPJ, to suggest that stormwater runoff is the same as remedial waste or effluent of a groundwater remediation system is unsupported, arbitrary and does not recognize the nature of the actual discharges from Outfall 001, 002, and 004.

First, discharges from a groundwater remediation system are categorically different from stormwater runoff. EPA's 2004 Technical Support Document for the Effluent Guidelines Program Plan (ELG) has indicated that the stormwater discharges shall be subjected to general (i.e., Multi-Sector General Permit (MSGP)) or individual stormwater permits in accordance with 40 CFR § 122.26 (b)(14)(i)-(xi), which require stormwater discharges associated with 11 categories of industrial activity to be covered under NPDES permits (unless otherwise excluded). In contrast, discharges from groundwater remediation systems are regulated under the RGP, which covers the discharges from eight general remediation activity categories (petroleum-related site remediation, non-petroleum-related site remediation, contaminated site dewatering, pipeline and tank dewatering, aquifer pump testing, well development/rehabilitation, collection structure remediation/dewatering, and dredge-related dewatering).

Second, best available technology (BAT) for groundwater remediation should not be applied to the discharge at the above Outfalls, which are predominantly stormwater runoff. As noted in the

Draft Permit, the discharges through Outfalls 001, 002, and 004 into the Chelsea River consists of three flow sources including:

1) Stormwater collected at the tank farm and terminal yard that are drained separately and treated through the OWS treatment system with an overall design flow rate of 1605 GPM, prior to discharging to the Chelsea River.
2) Hydrostatic test water from intermittent testing events: The hydrostatic test events are very infrequent (on average approximately one test per year and performed only on new tanks and on existing tanks that have had major repairs or alterations). It represents a small fraction of the total discharges from Outfalls 001, 002 and 005 and is separately regulated under the Draft Permit with stringent testing protocols prior to discharge.
3) Remediated groundwater: a treatment system consisting of an OWS (referred to OWS 3 hereafter), a particle filter system, an air stripper unit and two activated carbon units (to remove volatile organic compounds). The design flow rate of the treatment system is 50 GPM (regulated separately under the Draft Permit as Outfall 003).

The discharges from the three (3) sources (predominately stormwater runoff) comingle and are routed through the OWSs, which are physical units operation that separates the liquids with different density by retaining the lighter liquid (oil) while allowing discharge of denser stormwater runoff. It does not remove compounds that are dissolved in the water.

EPA does not have unlimited discretion in applying BPJ when establishing permit effluent limitations. As stated by the Environmental Appeals Board (EAB) in *In Re Arizona Public Service Co.*, "[w]here applicable effluent limitations guidelines have not been established, section 402(a)(1)(B) authorizes the permitting authority to impose conditions representing technology-based standards such as BPT and BAT on a case-by-case basis … Specifically the statute states that the Administrator may impose such conditions as the Administrator determines are necessary to carry out the provisions of the Act." EPA has implemented these statutory provisions in 40 C.F.R. § 125.3(c).

In addition, 40 C.F.R. § 125.3(c) requires that "[t]echnology-based treatment requirements may be imposed [in a NPDES permits] through one of the following three methods:" (1) Application of EPA-promulgated effluent limitations guidelines; (2) a case-by-case determination of the minimum technology-based standards where EPA-promulgated effluent limitations guidelines are inapplicable; or (3) a combination of the first two methods when EPA-promulgated effluent limitations guidelines apply only to certain aspects of a discharger's operation or to some, but not all, discharged pollutants. 40 C.F.R. § 125.3(c), the EPA guidance on determining case-by-case technology-based effluent limitations, reinforces that such permit limits are to be developed only in circumstances "where EPA promulgated effluent guidelines are inapplicable." *See* AR-116 p. 5-45 (Sept. 2010) ("Permit Writers' Manual") (A.R. 3); accord Office of Water, U.S. EPA, EPA-833-B-96-003, NPDES Permit Writers' Manual § 5.1.4, at 68-70 (Dec. 1996).

Where EPA elects to use BPJ, courts apply the same standards as when EPA establishes national effluent limitations: "In the absence of national standards, the Act authorizes the Administrator to issue permits on "such conditions as the Administrator determines are necessary to carry out the provisions of [the Act]." 33 U.S.C.A. § 1342(a)(1)(B). EPA's own regulations implementing

this section enumerate the statutory factors that must be considered in writing permits. See 40 C.F.R. § 125.3(c), (d) (1987). *See also* 51 Fed. Reg. at 24915 ("In developing the BPJ permit conditions, [the EPA] Regions are required to consider a number of factors, enumerated in [33 U.S.C. § 1314(b)]...."). In addition, courts reviewing permits issued on a BPJ basis hold EPA to the same factors that must be considered in establishing the national effluent limitations. *See, e.g., Trustees for Alaska v. EPA*, 749 F.2d 549, 553 (9th Cir.1984) (EPA must consider statutorily enumerated factors in its BPJ determination of effluent limitations); API, 787 F.2d at 972, 976 (applying statutory factors in reviewing effluent limitations in a BPJ permit)." *Nat. Resources Def. Council, Inc. v. U.S. E.P.A.*, 863 F.2d 1420, 1425 (9th Cir. 1988).

Although the discharges from Outfall 001, 002 and 004 consist of stormwater runoff, treated groundwater from a remediation system, and hydrostatic test water, there is no rational basis for EPA to apply BPJ to set the 5 and 20 µg/L Technology Based Effluent Limits (TBEL) for benzene and naphthalene at this Facility. In the Fact Sheet (pages 37 and 42), EPA attempts to support the effluent limit by stating:

EPA finds that discharges from bulk stations and terminals are consistent with the type of discharges considered under the RGP, which include hydrostatic testing discharges from dewatering of pipelines, tanks, and similar structures and appurtenances that store or convey petroleum products, and dewatering and/or remediation discharges from collection structures (e.g., dikes) utilized for collecting miscellaneous sources of water from contaminated or formerly contaminated sites or sources, including when contamination is a result of the infiltration of contaminated groundwater or stormwater.

As the above are not material to the Facility's stormwater discharges, there is no technical or legal support for this interpretation. If EPA chooses without support to use BPJ to find that any industrial operation is consistent with remedial activities because the industrial operations include petroleum conveyances, EPA is bypassing the requirements of the NPDES program. Rather, every discharge from an activity that handles any hazardous material could be required to "remediate" its discharge based on BPJ rather than a benefit to the protection of water quality.

Regardless of the rationale employed by EPA, the discharges from Outfall 001, 002 and 004 are not consistent with an RGP discharge for the following reasons:

> It is an error for EPA to use the RGP as a comparable regulatory reference for Outfalls 001, 002, and 004 based on the unsupported assumption of similar operations, pollutants and/or treatment technologies in use among this and other facilities. The discharges from Outfalls 001, 002, and 004 at this Facility are predominantly stormwater runoff, which should not be regulated under the RGP. The purpose of the RGP regulations is to control the discharges of pollutants from eight general remediation activities (i.e., petroleum-related site remediation, non-petroleum-related site remediation, contaminated site dewatering, pipeline and tank dewatering, aquifer pump testing, well development/rehabilitation, collection structure remediation/dewatering, and dredge-related dewatering), which is functionally different than managing stormwater from industrial activities (i.e., stormwater discharge directly related to manufacturing, processing, or raw material storage areas) conducted at this facility. In addition, the

storage/use of products (Petroleum/BTEX) at the Facility, is also not equivalent to remediation and remedial treatment.

EPA's incorrect assertion that Facility stormwater runoff is comparable to RGP-regulated activities, as mentioned above, leads to a misinterpretation and problematic statement from EPA, which concludes that the treatment technologies and/or control measures (i.e., BMPs) used for Outfalls 001, 001, and 004 are consistent with other facilities under which the 5 and 20 µg/L limits for benzene and naphthalene can be achieved. For treatment of stormwater runoff, OWSs are the typical minimum treatment technology employed by petroleum bulk stations and terminals (PBSTs) as well as this Facility. As is typical for mechanical OWS, the OWSs used by the Facility for Outfalls 001, 002, and 004 do not have carbon treatment technologies (i.e., carbon adsorption units) such as those used for discharges from Outfall 003 or other stormwater BMPs for advanced BTEX removal. As a result, the proposed limits of 5 and 20 µg/L for benzene and naphthalene at these Outfalls are not achievable by simply improving existing technology and/or control measures, as this lacks carbon treatment technologies.

The carbon treatment equipment employed for discharges to Outfall 003 provides higher level treatment/water quality discharge as is typical for groundwater remediation purposes. These methods are not practical or viable options for BTEX removal from the stormwater runoff passing through Outfalls 001, 002, and 004. The remediation system at this Facility is permitted for 50 GPM, which is less than 2.4% of the overall permitted flow capacity from other OWSs.

<u>The EPA clearly erred in identifying reasonable potential for benzene and naphthalene:</u>

In addition to misclassifying the discharge as a remedial discharge, EPA failed to provide the regulatory bases for the requirement to "apply the more stringent of applicable water quality-based effluent limits and technology-based limits" for benzene and naphthalene (pages 37 and 41 of the Fact Sheet). Additionally, the effluent limits for both benzene and naphthalene have been met as described below:

Benzene:

According to the MassDEP's 2016 Integrated List of Waters,1 the receiving water (i.e., Chelsea River) is not impaired by BTEX. The sampling results during the last permit term were either non-detected (Outfall 004) or consistently below the existing permit limit of 51 µg/L established based on the state WQS and EPA's 2002 National Recommended Water Quality Criteria (Outfall 001 and 002).

Naphthalene:

The monitoring data collected during the 2014 Permit term shows that the concentration from Outfall 001, 002, and 004 are either non-detected (Outfall 002) or consistently below the existing permit limit of 100 µg/L (Outfall 001 and 004).

These facts suggest that existing levels of benzene and naphthalene do not show cause or reasonable potential from the Facility to exceed water quality criteria of the receiving water. Given that 1) EPA has failed to identify benzene and naphthalene as pollutants of concern that would cause or contribute to impairments on the receiving water, and 2) the existing permit

limits are consistent with other bulk petroleum storage facilities located in the Boston Harbor Drainage Area, EPA fails to identify any reasonable rationale in its BPJ analysis for the imposition of a more stringent limits for benzene and naphthalene, which will add substantial additional cost to the Facility.

EPA clearly erred in applying the guidelines in the EPA NPDES Permit Writers' Manual to consider BAT and BPT when establishing the case-by-case TBEL for benzene and naphthalene and using BPJ, which violates 40 CFR § 125.3(c)(2) and 40 CFR § 125.3(d):

The NPDES Permit Writer's Manual requires that the development of a case-by-case TBEL include consideration of available technology, process implemented, and/or any other relevant factors (e.g., BPT and BAT requirements). EPA failed to consider BPT and BAT properly when determining the TBELs for benzene and naphthalene. Based on the requirement in EPA's manual, TBEL development should consider both prevalent concentration for stormwater runoff and the removal efficiency from the stormwater BMPs (which are not currently possessed by the Facility, allowing the following analysis example for benzene).

Based on a previous study, the mean concentration of BTEX in stormwater runoff from similar land use areas is in the range of 5,000-22,000 µg/L (James et al., 2010)[2]. The estimated removal efficiency of BTEX in stormwater BMPs is in the range of 80% - 99% (Hsieh and Davis, 2005)[3]. Therefore, the expected benzene concentration in treated stormwater runoff, in a best case, can be estimated as 50 µg/L by multiplying the lowest mean concentration and the highest removal efficiency (5000×(1-0.99)=50). This is consistent with the 51 µg/L limit applied in the 2014 Permit rather than the unsupported EPA proposed limit of 5 µg/L. This result suggests that the effluent limit for benzene could be retained as the newly derived TBEL from the analysis above and is consistent with the WQBEL previously established based on the human health criterion developed in EPA 2002 National Recommended Water Quality Criteria. This is also consistent with the limits to be approved by MassDEP (16 µg/L to 58 µg/L).

More importantly, EPA clearly erred in implementing the 5 and 20 µg/L limits for benzene and naphthalene at Outfall 001 based on the consistency of "monitoring results" for this and other facilities in Region 1 rather than a technology-based analysis following e.g., the analysis performed above or other valid methods.

EPA has failed to maintain equality among facilities:

EPA also attempts to support its BPJ analysis by arguing that the 5 and 20 µg/L limits for benzene and naphthalene are consistent with the typical effluent limits from similar facilities and the sampling results for these facilities in the last permit period. However, EPA refers to incorrect information regarding the effluent limit from other NPDES permits when developing the case-by-case TBEL. The effluent limit for benzene at bulk petroleum storage facilities located in the Boston Harbor drainage area (Table 3 in the Fact Sheet) are either not required or has typically been 51 µg/L. Although EPA notes in the Fact Sheet that some outfalls at these facilities in Boston Harbor have a 5 µg/L limit for benzene, these outfalls are all internal outfalls similar to Outfall 003, serviced by a groundwater remediation system rather than a predominantly stormwater discharge.

The effluent limit for naphthalene at the facilities within the same area (Table 5 in the Fact Sheet) are still 100 µg/L with only two exceptions, which are Outfall 002 in MA0003280 and Outfall 001 in MA0004006. Outfall 002 in MA0003280, is serviced by a groundwater remediation system rather than a predominantly stormwater discharge. Outfall 001 in MA0004006 has a 10 µg/L limit for naphthalene, which is based on an analysis dating back to the 1990 Permit and continued only to meet anti-backsliding requirements. A new TBEL for the Facility should be developed considering both the prevalent concentration for stormwater runoff and the removal efficiency from the stormwater BMPs as mentioned above.

As a result, EPA's use of BPJ to derive effluent limits of 5 and 20 µg/L for benzene and naphthalene established based on the RGP standard and sampling results is inappropriate and clearly not applicable for a stormwater discharge like Outfall 001, 002, and 004. An appropriate TBEL should be developed based on a technology-based analysis with the consideration of intrastate equities and/or up-to-date criteria (e.g., updated human health for carcinogenic effects for benzene).

Request:
As the Chelsea River is not impaired by benzene, the Facility requests that EPA revise the TBEL for benzene to 51 µg/L for Outfalls 001, 002, and 004. This is fully protective of the receiving water body and is (1) supported by EPA's 2015 Updated Water Quality Criteria - Human Health Criteria; (2) consistent with the 2014 Permit; and (3) consistent with MassDEP's proposed standards (16 µg/L to 58 µg/L). For naphthalene, the Facility requests that the effluent limit be retained as 100 µg/L for Outfalls 001, 002, and 004, the same as those imposed in the 2014 Permit.

[1] As noted at page 30 of the Fact Sheet, MassDEP is in the process of promulgating updated surface water quality standards, which adopt the updated federal toxic pollutant criteria. This results in an updated human health for carcinogenic criteria for benzene ranging from 16 µg/L to 58 ug/L.
[2] James, R., P. Wilbon and J. DiVincenzo. 2010. Pervious and impervious urban stormwater runoff in a rapidly urbanizing region: occurrence of fluoranthene and pyrene. Bulletin of Environmental Contamination and Toxicology. 85: 32–36.
[3] Hsieh, C. and A. Davis. 2005. Multiple-event study of bioretention for treatment of urban storm water runoff. Water Science & Technology. 51(3-4): 177-181.

Response to Comment F.2

Global requests that, in the Final Permit, EPA revise the benzene limit in the Draft Permit for outfalls 001, 002, and 004 from 5 µg/L to 51 µg/L and revise the proposed naphthalene limit from 20 µg/L to 100 µg/L, which would maintain the limits at these outfalls at the levels in the 2014 permit. Global presents several arguments in support, which are addressed below. As explained above, due to the sale of the property and decommissioning of the former terminal, Outfall 004, which discharged stormwater from the REVCO Terminal to the Chelsea River, is no longer authorized in the Final Permit. As a result, this response applies only to Outfalls 001 and 002. *See* Responses to Comments D.1, F.1. First, EPA provides some background related to benzene and naphthalene limits for outfalls 001 and 002.

The 2014 permits established water-quality-based limits (WQBELs) for benzene and naphthalene of 51 µg/L and 100 µg/L, respectively. Fact Sheet pp. 36, 39-40. In the proceeding for the current re-issuance, EPA noted that these limits remain protective under Massachusetts' then current approved water quality standards, although EPA noted that, in 2019, the Commonwealth had proposed to adopt EPA's 2015 update to the EPA recommended criteria for benzene. Fact Sheet pp. 36-37. EPA further noted that, if the updated EPA criterion for benzene, 16 µg/L, were approved into Massachusetts' water quality standards prior to issuance of the Final Permit, EPA would consider the applicability of the 16 µg/L criterion in the Final Permit.[59] *Id.* at 37. Next, EPA explained that, when establishing the limits for benzene and naphthalene in the permit, it must also consider the appropriate technology-based limit (TBEL) and choose whichever limit—WQBEL or TBEL—is more stringent.[60]

TBELs represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA to meet best practicable control technology currently available (BPT) for conventional and nonconventional pollutants, best available technology economically available (BAT) for toxic and nonconventional pollutants, and best conventional pollutant control technology (BCT) for conventional pollutants. Fact Sheet p. 10. Benzene and naphthalene are toxic pollutants and are also part of the class of so-called "petroleum hydrocarbons," and thus, serve as indicator pollutants for those other toxic petroleum hydrocarbon compounds, and must meet the BAT standard of control.[61] Because no national technology-based effluent limitation guidelines (ELGs) are applicable for the type of activity or discharge from these facilities, EPA is authorized in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2) to establish BAT on a case-by-case basis using its Best Professional Judgment (BPJ).

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[59] In March 2022, EPA approved the updated criteria for benzene into Massachusetts' water quality standards. AR-139.

[60] The comment asserts that "EPA failed to provide the regulatory bases for the requirement to 'apply the more stringent of applicable water quality-based effluent limits and technology-based limits' for benzene and naphthalene." (citing Fact Sheet p. 37, 41). As EPA noted in the Fact Sheet, however, "[t]echnology-based treatment requirements represent the minimum level of control that must be imposed under CWA §§ 301(b) and 402 to meet" BPT, BCT, and BAT. Fact Sheet p. 6; *see also* 40 CFR § 125.3(a). It is a basic feature of the NPDES permit program under the Act that permits must include the more stringent of the applicable TBELs or WQBELs. *See also* CWA § 301(b)(2)(A) (defining BAT as resulting "in reasonable further progress toward the national goal of *eliminating the discharge of all pollutants*") (emphasis added). EPA's regulations and guidance also reflect that each NPDES permit shall include technology-based limits or any water-quality-based limit more stringent than the applicable TBEL. 40 CFR § 122.44(a)(1), (d); *see also* NPDES Permit Writers' Manual at 5-1 ("TBELs are developed independently of the potential impact of a discharge on the receiving water, which is addressed through water quality standards and [WQBELs]." WQBELs are only "necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water." NPDES Permit Writers' Manual at 5-1. In this case, EPA determined that the applicable WQBELs would not be more stringent and, therefore, that for benzene and naphthalene only TBELs were necessary. FS at 36-37, 41. Thus, the comment is misplaced that the more stringent limits for benzene and naphthalene are erroneous because the WQBELs in the previous permits sufficiently protect water quality. *See also Sw. Elec. Power Co. v. EPA*, 920 F.3d 999, 1005 (5th Cir. 2019) ("SWEPCO") (quoting *Am. Petroleum Inst. v. EPA*, 661 F.2d 340, 344 (5th Cir. 1981) (EPA "must 'require industry, *regardless of a discharge's effect on water quality*, to employ defined levels of technology to meet effluent limitations.'") (emphasis added).

[61] To the extent the comment asserts that the appropriate standard is BPT, the comment is incorrect. BAT applies to discharges of toxic pollutants and has since March 31, 1989. CWA § 301(b)(2)(A), (C), (D), (F); 40 CFR § 125.3(a)(2)(iii), (iv), (v); *see also SWEPCO*, 920 F.3d at 1006.

To determine BAT pursuant to BPJ, EPA considers the following factors: the age of equipment and facilities involved; the process employed; the engineering aspects of the application of various types of control techniques; process changes; the cost of achieving such effluent reduction; and non-water quality environmental impact (including energy requirements). CWA § 304(b); 40 CFR § 125.3(d). EPA has "considerable discretion" in weighing these factors. *Tex. Oil & Gas Ass'n v. EPA*, 161 F.3d 923, 928 (5th Cir. 1998); *NRDC v. EPA*, 863 F.2d 1420, 1426 (9th Cir. 1988). EPA also considers the appropriate technology for the category or class of point sources of which the permittee is a member, based upon all available information, and any unique factors relating to the permittee. 40 CFR § 125.3(c)(2). EPA has not been apprised during the public comment period of any unique factors applicable to any facility that would impact the selection of the BAT in this case. Ultimately, when setting BAT, EPA's consideration of the required factors is governed by a reasonableness standard. *BP Exploration & Oil, Inc. v. EPA*, 66 F.3d 784, 796 (6th Cir. 1995), citing *Am. Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 1051 (3d Cir. 1975), modified in other part, 560 F.2d 589 (3d Cir. 1977).

Further, the Act provides that the application of BAT shall result "in reasonable further progress toward the national goal of eliminating the discharge of all pollutants." CWA § 301(b)(2)(A). Congress designed BAT "to be technology-forcing, meaning it should force agencies and permit applicants to adopt technologies that achieve the greatest reductions in pollution." *NRDC v. EPA*, 808 F.3d 556, 563-64 (DC Cir. 2015); *NRDC v. EPA*, 822 F.2d 104, 123 (D.C. Cir. 1987) ("[T]he most salient characteristic of this statutory scheme, articulated time and again by its architects and embedded in the statutory language, is that it is technology-forcing."). Moreover, for a BAT determination, Congress intended EPA to use "not the average plant, but the optimally operating plant." *Kennecott v. EPA*, 780 F.2d 445, 448, 453 (4th Cir. 1985); *Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 195, 226 (5th Cir. 1989) (explaining that BAT limits must "be based on the performance of the single best-performing plant in an industrial field"); *accord SWEPCO*, 920 F.3d at 1006; *see also In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 541 n.81 (EAB 2006). In establishing BAT, "reliance on technology existing at a plant in a different industry . . . has been found to be reasonable under the CWA." *Brayton Point*, 12 E.A.D. at 544 n.87 (citing *Kennecott*, 780 F.2d at 453; *Reynolds Metal*, 760 F.2d at 562; *Am. Petroleum Inst. v. EPA*, 858 F.2d 261, 265 (5th Cir. 1988) (stating that under BAT, "a process is deemed 'available' even if it is not in use at all")). Once BAT is determined, the NPDES permit does not mandate a specific technology but instead establishes limits based on the best technology, which limits the permittee may meet as it sees fit. *Brayton Point*, 12 E.A.D. at 547.

The BPJ-based, site-specific BAT conditions proposed in the Draft Permit for benzene and naphthalene consist of daily maximum concentration-based limits of 5 µg/L and 20 µg/L, respectively, based on the use of best management practices (BMPs) for minimizing stormwater contact with petroleum product residues through the implementation of a stormwater pollution prevention plan (SWPPP) along with treatment of the stormwater by oil/water separation. *See, e.g.*, Global Fact Sheet, pp. 37-38, 41-43, 74, 77. Best management practices include implementing control measures, both structural controls (e.g., covered loading/unloading areas, containment areas, and holding tanks) and non-structural (e.g., operational procedures and operator training) consistent with those described in Part 2.1.2 and of EPA's Multi-Sector General Permit (MSGP). The current regime of BMPs plus oil/water separators (OWS) has been

in use by the five facilities along the Chelsea River since 2014.[62] None of the facilities have indicated to EPA that operational costs or technological problems have been revealed that undermine this treatment technology's viability for these facilities. EPA maintains that BMPs plus OWSs is the BAT for these facilities and presents a consideration of the BAT factors in support below.

Assessment of BAT based on EPA's BPJ

As noted above, to determine site-specific BAT for benzene and naphthalene, EPA uses its BPJ and considers the following factors: (i) age of the equipment and facilities involved; (ii) process employed; (iii) engineering aspects of the application of various types of control techniques; (iv) process changes; (v) the cost of achieving such effluent reductions; and (vi) non-water quality environmental impacts (including energy requirements). *See* CWA § 304(b)(2); 40 CFR § 125.3(d)(3). In establishing a BAT TBEL for benzene and naphthalene, EPA must determine limits based on use of the most effective pollution control technologies that are technologically and economically achievable, and that will result in reasonable progress toward eliminating discharges of the toxic pollutants. EPA also considers the "appropriate technology for the category or class of point sources of which the applicant is a member, based upon all available information," and also "any unique factors relating to the applicant." 40 CFR § 125.3(c)(2). EPA is reviewing use of the sites' BMPs included in a SWPPP in conjunction with existing oil/water separation treatment technology to determine the best available technology for these facilities, taking into account site-specific information in its consideration of the six BAT factors below. In this case, all five bulk petroleum facilities currently implement BMPs included in a SWPPP and employ oil/water separators, indicating that this control technology is an appropriate technology for these point sources. *See also* AR-22 at 7-88 to 7-89, 7-97, 7-113 (indicating that pollution prevention and oil/water separators are available and widely used at petroleum bulk storage terminals); Global Comment F.2 ("For treatment of stormwater runoff, OWSs are the typical minimum treatment technology employed by petroleum bulk stations and terminals (PBSTs) as well as this Facility."). EPA is also considering that BMPs can be paired with advanced treatment, such as carbon adsorption, although only one facility (Sunoco) currently treats its stormwater using advanced treatment. The BAT determination is a site-specific, case-by-case determination based on the facts at the five terminals and neither applies to nor establishes that this technology is the BAT at any other facility or group of facilities. The BMPs used at the facilities include practices to minimize exposure of petroleum products and other materials to precipitation and flooding, good housekeeping measures in areas that are potential sources of pollutants, maintenance of treatment systems, appurtenances, and supplies, spill prevention and response measures, employee training, and erosion controls. *See generally* AR-29 at 37-45.

1) Age of the equipment and facilities involved

This Facility and the others along the Chelsea River have been in operation as fuel terminals for many decades. EPA has not been apprised during the public comment period of any information indicating exactly when each facility began using oil/water separation treatment technology in

[62] All the facilities use OWSs. Some facilities may use different or additional specific practices. Alternatively, some facilities are likely better performers when it comes to implementing their BMPs.

conjunction with best management practices to treat their stormwater but it is sufficient to note that they have done so for many years.[63] The BMP regime currently in place at each facility was established under the 2014 permits. Neither Global nor any other Chelsea River terminal has indicated to EPA that it cannot continue to operate this technology based on the age of the equipment or the facility. There is nothing about the age of the equipment and facilities involved that would impact, or prevent the ongoing use of, the same or similar technology to minimize discharges of benzene and naphthalene from these sites. EPA does not have information to suggest that the age of the equipment and facilities involved would prevent the use of advanced treatment. For instance, one facility already uses advanced treatment for stormwater, and other facilities have used advanced treatment for contaminated groundwater.

2) Process(es) employed

The facilities are bulk oil terminals involved in the receipt, storage, and distribution of petroleum products. Some blending of petroleum products is also performed. The facilities receive bulk quantities of petroleum products via ship or barge at marine vessel docks on the Chelsea River. Product is transferred to the facilities' tank farms. In addition to vertical bulk above-ground storage tanks (ASTs), the facilities also include horizontal distillate bulk ASTs, additive tanks, secondary containment, product piping networks, stormwater run-off collection catch basins, and underground water collection drains. Final distribution of product is conducted primarily at truck loading racks. Discharges from the sites consist of stormwater, groundwater remediation effluent (at some of the facilities), boiler blowdown/steam condensate (at Chelsea Sandwich), and hydrostatic test water. As noted above, BMPs and oil/water separators have been in place for many years. Thus, continuing to control the discharge of benzene and naphthalene through BMP implementation (documented in the SWPPP) and the use of oil/water separators would not interfere with current processes at the facilities. In addition, EPA has not been provided with any information to suggest that the processes employed at the facilities would prevent the use of BMPs plus advanced treatment.

3) Engineering aspects of the application of various types of control techniques

Region 1 has not been apprised of any engineering aspects of the application of BMPs and oil/water separators that would preclude or significantly restrict their use at the Chelsea terminals. Implementation of the BMPs, which do not include the PAH, site-specific BMPs set forth in Section I.C (e.g., slip-lining or plugging existing pipes), are not likely to entail engineered actions or installation of new infrastructure. BMPs include structural controls (e.g., covered loading/unloading areas, containment areas, holding tanks) and non-structural (e.g., operational procedures and operator training) consistent with those described in Part 2.1.2 and of EPA's Multi-Sector General Permit (MSGP). Source control BMPs can eliminate these pollutants. Free product recovery, air stripping, mechanical pre-treatment, flow equalization, oil/water separation, membrane, and adsorptive media remove benzene. Granular activated carbon, air stripping, flow equalization, oil/water separation, aeration, and membrane remove naphthalene. The process of oil/water separation is a straightforward, low-cost, conventional

[63] For instance, the 2005 permit for Global REVCO indicates that OWSs have been in use at that facility at least since 1998. See Global REVCO Fact Sheet at 8-10 and Attachment A1.

technology applied to treat many types of wastewaters containing oils and many of its constituent compounds, particularly compounds that tend to adsorb, such as naphthalene. The wastewater at these sites is treated using oil/water separation, which has been in place for many years and were installed specifically to enhance discharge treatment. From an engineering standpoint, Global is expected to achieve the effluent limits for benzene and naphthalene in the final permit simply by maintaining the current performance of the treatment technology.". Implementing some of the other treatment technologies listed above would require re-engineering in many cases in the event the Permittee determines that source control measures alone are insufficient to achieve the effluent limitations and additional treatment is necessary.[64]

The continued implementation of BMPs and OWSs is not expected to require the Permittees to install different or additional treatment technology, and as such, does not involve engineering changes that could interfere with use of the site. There is no serious question that OWSs and BMPs are technologically feasible at the present time. All the bulk petroleum storage facilities along Chelsea Creek use OWSs and BMPs. *See NRDC v. EPA*, 863 F.2d 1420, 1426 (9th Cir. 1988).

4) Process changes

As discussed above, the facilities currently control the discharge of benzene and naphthalene in stormwater though the use of BMPs and oil/water separators, which does not appear to interfere with the receipt, storage, blending, or distribution of petroleum products at the facilities. Unlike other technologies that may require process changes, continued implementation of the existing system will not require process changes at the facilities.

5) Cost of achieving effluent reductions

As discussed above, EPA considers the cost of technological alternatives when determining the BAT and associated NPDES permit requirements. Where the BAT standard applies, CWA §§ 301(b)(2) and 304(b)(2) require "EPA to set discharge limits that reflect the amount of pollutant that would be discharged by a point source employing the best available technology that the EPA determines to be economically feasible . . .." *Tex. Oil & Gas*, 161 F.3d at 928. To be an "available" technology, the option in question must be "economically achievable." *See Chem. Mfrs.*, 870 F.2d at 250 (citing 33 U.S.C. § 1311(b)(2)(A)). The United States Supreme Court has interpreted the CWA to mean that the BAT should "represent[] a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges." *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 74 (1980).

Neither the CWA nor EPA regulations dictate precisely how the Agency should consider costs in its technology standards determinations. The CWA only directs EPA to consider whether the costs associated with pollutant discharge reduction are "economically achievable." *Chem. Mfrs.*, 870 F.2d at 250, *citing* 33 U.S.C. § 1311(b)(2)(A). Similarly, CWA § 304(b)(2)(B) requires only that EPA "take into account" cost along with the other BAT factors. *See Pac. Fisheries Ass'n v.*

[64] The Sunoco facility already employs advanced treatment in the form of multimedia sand filters, followed by carbon adsorption units. Sunoco Fact Sheet at 14.

EPA, 615 F.2d 794, 818 (9th Cir. 1980). The courts have made clear that only a reasonable consideration of cost is necessary and precise cost estimates are not required. *See BP Exploration*, 66 F.3d at 803; *NRDC v. EPA*, 863 F.2d at 1426 (EPA need "develop no more than a rough idea of the costs the industry would incur."). Moreover, the BAT standard does not call for consideration of a comparison of costs to benefits. *See, e.g.*, *Crushed Stone*, 449 U.S. at 74; *Tex. Oil & Gas*, 161 F.3d at 936.

Global and the other four facilities have operated the treatment technology for many years and continue to do so. As such, applying BAT limits based on use of the sites' current technology will not result in any new installation costs. EPA expects that there are no additional capital costs and minimal, if any, additional operating costs associated with continuing to operate and maintain the treatment technologies. While the comment asserts that the more stringent benzene and naphthalene limits "will add substantial cost to the Facility," Global neither explains how it arrives at this conclusion nor quantifies any such additional costs.[65] In other words, Global has not shown that there are "substantial" additional capital or operating costs associated with continuing to operate and maintain the treatment technology. By continuing to use this treatment system, Global will be able to comply with the Permit's requirements based on this technology. Therefore, Global will incur no additional costs to comply with the BAT-based requirements in the Permit. Given that the Facility is already employing BMPs and OWSs and meeting the revised TBELs, EPA concludes that implementation of the limits is, without question, "economically achievable." Similarly, the other Chelsea terminals that are currently achieving the benzene and naphthalene limits will not incur additional installation or operating costs.[66] EPA recognizes, however, that one or more facilities may have to improve implementation of BMPs or implement additional BMPs in order to achieve the benzene limits. For such a facility, EPA expects that refining source control BMPs can be achieved at relatively low cost as it is likely to require only relatively minor modifications to existing non-structural or structural controls or infrastructure on an incremental, as-needed basis if limit exceedances occur. *See infra* ("Determination of performance-based BAT limits based on EPA's BPJ").
On the other hand, had EPA established a different treatment technology than the current oil/water separators and BMPs as BAT for benzene and naphthalene, additional and potentially significant installation fees and capital costs would have been considered. Theoretical costs of adding advanced treatment is one of the factors considered in EPA's conclusion that BMPs + OWSs (rather than BMPs plus advanced treatment) is the BAT. Because EPA expects capital costs for source control BMPs rather than end-of-pipe treatment technologies, those facilities that have to improve their BMP implementation, the costs are considered to be reasonably low.

[65] To the extent Global assumes additional treatment technology, such as carbon adsorption, would be required, EPA notes that the limits in the Draft Permits and in the Final Permits are based on the performance of the existing technology over the previous permit term, as explained in the statistical analysis later in this response. That analysis indicates that Global Outfall 001 will meet the benzene and naphthalene limits without any changes to the existing technology. (Former Outfalls 004 and 005 also would have met the limits without any changes). Moreover, Outfall 003 and former Outfall 005 have been subject to limits of 5 µg/L and 20 µg/L for benzene and naphthalene since 2014, and Outfall 003 already employs advanced treatment. Even at Outfall 002, the data collected under the 2014 permit show only one exceedance of the benzene limit and no exceedances of the naphthalene limit. Global Fact Sheet at 124-125.
[66] All of the facilities are already achieving the naphthalene limit.

The numeric limit values themselves, when established in the 2005 RGP, represented use of the treatment technology necessary (but not required) to achieve non-detect. At the time, the estimated routine minimum levels of detection for benzene and naphthalene were approximately 5 µg/L and 20 µg/L, respectively. With regard to carbon treatment technology specifically, the original basis in the RGP, EPA stated that use of "off-the-shelf, economically viable, and proven treatment systems including: 1) phase separation, 2) sedimentation, 3) filtration, 4) air stripping and/or 5) carbon adsorption" and the "most common VOC compounds such as the Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) in petroleum hydrocarbon discharges and the chlorinated solvents such as Trichloroethylene (TCE) and Tetrachloroethylene (PCE) can typically be treated to below laboratory detection levels by these common technologies." AR-119 p. 8-9. The RGP further refers to these "*typical treatment systems*, if operating properly, will produce an effluent quality at lower concentration than the currently accepted laboratory quantification levels for benzene, which are 0.5 - 2.0 ug/L or lower than the most conservative standard." *Id*. p. 47, emphasis added. Finally, for discharges of benzene not generated as a result of groundwater remediation (e.g., hydrostatic test water), the RGP explained that EPA "has typically required these dischargers to implement "best management practices" (BMPs)." *Id*. While the Permittee asserts that addition of carbon treatment is necessary to achieve benzene and naphthalene TBELs, the one facility that currently employs carbon for its final effluent, Sunoco Logistics, is not the best performer. *See* Response to Comment I.2.

6) Non-water quality environmental impacts (including energy requirements)

Finally, EPA considers the non-water quality environmental impacts associated with the treatment of wastewater, including energy consumption, air emissions, noise, and visual impacts. Global and the other facilities have used BMPs and OWSs as the treatment technology for many years. Thus, EPA, based on the record, has no reason to expect any significant increase in energy usage, air emissions, noise, or visual impacts associated with continuing to operate and maintain this treatment system.

Based on consideration of the appropriate factors above and its best professional judgment, EPA confirms that implementation of BMPs in conjunction with oil/water separators is BAT for treatment of benzene and naphthalene at the Chelsea River facilities. This technology is the same technology identified as BAT in the Draft Permit and is already in place at each of the facilities. Compared with advanced treatment, it will not require process changes or new engineering and comes with little to no additional cost or non-water-quality impacts. In response to the comment, EPA reviewed the maximum daily benzene and naphthalene TBELs as compared to the site-specific performance of the BAT at the Chelsea Terminals and additional local Bulk Terminals, described in more detail below. EPA confirms that the performance of the current treatment system for the discharge of benzene and naphthalene from these sites is generally consistent with the proposed effluent limitations, as described later.

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The BMPs in use at the facilities are generally consistent with BMPs for addressing stormwater discharges under EPA's 2021 MSGP and groundwater, stormwater, and potable water (i.e., hydrostatic test water) discharges under EPA's 2017 RGP. While Global's discharges of

stormwater, groundwater and potable water are not covered by either of these general permits, the presence of benzene and naphthalene in Global's discharges as well as Global's existing treatment technology is similar to the technology and type of discharges evaluated in these permits.

In proposing technology-based limitations in the Draft Permit for benzene and naphthalene, EPA considered technology-based requirements in EPA's 2017 RGP, which established numeric TBELs for these pollutants at 5 µg/L and 20 µg/L, respectively. EPA found, in part, that discharges from the terminals are consistent with the type of discharges considered under the RGP. Specifically, authorized discharges from the facility are consistent with the following subject discharges generally eligible for coverage under the 2017 RGP:

> Intermittent discharges of stormwater from Outfalls 001, 002, 004, and 005 that is referred to as *dewatering* "of structures utilized for collecting miscellaneous sources of water from contaminated or formerly contaminated sites or sources (e.g., sumps and dikes), including when contamination is naturally occurring or a result of the infiltration of contaminated groundwater or storm water." *See* 2017 Final Permit MAG910000 at Part 1.1.7.
>
> Discharges of potable water during hydrostatic testing from Outfalls 002 and 005 that is referred to as *dewatering* "of pipelines, tanks, and similar structures and appurtenances that store or convey petroleum products, non-petroleum products, potable water, groundwater, and certain surface waters during construction of new structures or repair or maintenance of existing structures." *See* 2017 Final Permit MAG910000 at Part 1.1.4.
>
> Batch discharges of groundwater remediation effluent from Outfall 003 that is referred to as *remediation* "of groundwater contaminated by petroleum products (e.g., gasoline, fuel oil, jet fuel, fuel additives and oxygenates, waste oil) and related activities." *See* 2017 Final Permit MAG910000 at Part 1.1.1.

The comment objects to the description of these discharges in the Fact Sheet, asserting that discharges at RGP sites are different and are a result of contaminated groundwater treatment systems, whereas discharges from the Global Facility are predominately stormwater discharges with relatively small contributions of remediated groundwater and hydrostatic test water. EPA recognizes that the terminals may differ from *some* RGP sites, namely those engaged in: "contaminated site dewatering" that generally consists of stormwater and groundwater discharges generated during construction activities at contaminated sites (*see* 2017 Final Permit MAG910000 at Part 1.1.3); "aquifer pump testing" that generally consists of groundwater discharges generated during testing of a distinct contaminated aquifer (*see* 2017 Final Permit MAG910000 at Part 1.1.5); "well development/rehabilitation" that generally consists of groundwater discharges generated during the development or rehabilitation of groundwater monitoring, groundwater extraction, and water supply wells at contaminated sites; and "dredge-related dewatering" that generally consists of surface water discharges generated during activities such as a pilot study or similar activity associated with dredging, dredge material dewatering, including drain back waters and dewatering of contaminated solids (*see* 2017 Final

Permit MAG910000 at Part 1.1.8). However, it is incorrect that the type of discharges authorized from the facility are not eligible discharges under the RGP.

The comment also asserts that RGP sites use more advanced treatment technology than an OWS—in particular, carbon treatment technologies. As a result, the comment argues, Global is different enough from an RGP site that the TBELs in the RGP should not be directly applied to Global, although the comment does not present comparable data. Our expanded analysis of the monitoring results from the facilities—presented later in this response—confirms that the limits proposed for the Terminals in the Draft Permits align.[67] This is not unexpected, based on the similarities of conditions at the terminals and at RGP sites—including the occurrence of benzene and naphthalene in the discharges, a degree of overlap in the types of discharges (i.e., stormwater, groundwater, and potable water), the means by which the discharges come into contact with these pollutants (by exposure to soils or surfaces with petroleum products or residues present via previous leaks or spills), and the use of a combination of best management practices and treatment technologies (including, in some cases, OWSs) to control pollutant discharges—that provide a useful point of comparison and lend additional support to EPA's conclusion in the Fact Sheet that TBELs would represent a more stringent level of control than current WQBELs at the terminals.

The commenter also objects to EPA reliance in the Fact Sheet that the proposed limits for benzene and naphthalene are consistently achievable at the terminals according to monitoring results from this and other facilities in Region 1 with similar activities and discharges. Fact Sheet, pp. 36, 38. The commenter asserts that EPA should develop performance-based TBELs by comparing the "prevalent concentration" of benzene and naphthalene in stormwater runoff and "the removal efficiency from the stormwater BMPs." Global presents two studies, which it asserts support a finding that the benzene TBEL should be 51 µg/L,[68] which is equal to the WQBEL for benzene under the 2014 permit. For the reasons discussed below, EPA does not agree with the comment. As discussed in detail elsewhere in this response, EPA has expanded its analysis of the monitoring results from the terminals on the Chelsea River and other similar facilities in the Boston area that discharge stormwater and currently employ the BAT, to compare them to the limits proposed in the Draft Permits.

First, while a method based on removal efficiency is an acceptable method for developing a TBEL, it is not the only method EPA may use. For one, site-specific influent concentration data from the terminals are not available in the present situation, as the comment readily concedes. Thus, EPA must rely on another reasonable approach. Moreover, many of the BMPs in place at these facilities focus on prevention, which minimizes exposure of pollutants to stormwater and thereby is not conducive to the concept of comparing influent concentrations to effluent concentrations. In addition, the comment does not point to any provision in the statute or

[67] In addition, the analysis omits data from Terminal outfalls that receive advanced treatment, thus eliminating any differences in performance potentially attributable to advanced treatment. In other words, our analysis shows that the limits proposed in the Draft Permits do not require the use of advanced treatment that some RGP sites may use.
[68] Global presents no analysis to support its comment that the TBEL for naphthalene should be equivalent to the naphthalene WQBEL in the 2014 permit (100 µg/L). Notably, none of the terminals have recorded sampling results anywhere near that high and the vast majority have been below 20 µg/L. *See* Global Fact Sheet at 42-43 & Table 5. Thus, Global's request for such a naphthalene TBEL is baseless.

regulations that limits EPA to a single method for developing a TBEL.[69] In fact, the comment recognizes that there are "other valid methods" for developing TBELs, though it does not elaborate. The CWA, the regulations, and the NPDES Permit Writers' Manual provide that a permit writer will select a treatment technology (based on the considerations at CWA § 304(b) and 40 CFR § 125.3(c)(2) and (d)) and derive effluent limitations on the basis of the performance of that treatment technology. Here, EPA has selected the treatment technology of BMPs and OWSs as the BAT in consideration of the appropriate factors, as described above, and derived appropriate limits based on the performance of that treatment technology at this and other facilities.

Second, the two studies offered by Global do not support the comment's claim of a more appropriate TBEL for benzene. For instance, the comment claims that James *et al*. evaluates BTEX (notably not benzene, which is the parameter at issue in this comment), yet the study makes no mention of BTEX (or benzene), instead focusing on oil & grease and total petroleum hydrocarbons. Similarly, there is no support for the comment's claim that James *et al.* examined "similar land use areas" as petroleum bulk storage facilities, since the study reports only that the authors collected grab samples of "urban stormwater runoff" from "asphalt and concrete lots and . . . grassy areas or drainage ditches." AR-57 pp. 32-33. Likewise, the study by Hsieh and Davis measured the efficiency of bioretention to remove TSS, oil & grease, total phosphorus, nitrate, ammonia, and lead in urban stormwater runoff. *See* AR-53. In other words, the study focusses on a BMP that is not in use here (or at any of these terminals), for controlling pollutants not at issue in this comment, in stormwater unrelated to bulk oil terminals. As a result, this study is irrelevant to setting TBELs for these terminals based on the existing technology in use there. In short, the terminal-specific data are representative of the actual performance of BMPs and OWSs to control benzene discharges at these facilities whereas these two studies offered by Global are not.

Global also objects to the benzene and naphthalene limits on the basis that they differ from limits for these pollutants in permits issued to "other bulk petroleum storage facilities located in the Boston Harbor Drainage Area." First, EPA is setting the TBELs for Global at the same levels as the TBELs for the other four bulk petroleum storage facilities. Thus, the Global facility is not the only bulk petroleum storage facility in this area receiving these limits. Second, the CWA is technology-forcing and provides that the application of BAT shall result "in reasonable further progress toward the national goal of eliminating the discharge of all pollutants." CWA § 301(b)(2)(A). Congress envisioned that, as permits are re-issued, limits become more stringent. *NRDC v. EPA*, 822 F.2d 104, 123 (D.C. Cir. 1987) (stating that 'the most salient characteristic of this [CWA] statutory scheme, articulated time and again by its architects and embedded in the statutory language, is that it is technology-forcing'); *see also Kennecott v. EPA*, 780 F.2d 445, 448, 453 (4th Cir. 1985) (explaining that, for a BAT determination, Congress intended EPA to use the 'optimally operating plant,' thus pushing industries quickly toward the no-discharge goal and, in fact, the 'model technology may exist at a plant not within the [relevant] industry'). As a result, facilities with recently re-issued permits may have more stringent limits than facilities with older permits. EPA will assess the applicability of comparable limits for such facilities as

[69] Similarly, the comment does not provide a citation to the NPDES Permit Writers' Manual or other guidance document. Moreover, guidance documents cannot establish "requirements"; only statutes and regulations can.

necessary as it re-issues those permits. To the extent limits developed in future permitting actions differ from those established in this permitting action, EPA issues permits on an individual basis and may take into account individual differences where appropriate. *See, e.g.*, 40 CFR § 125.3(c)(2)(ii) (requiring consideration of "[a]ny unique factors relating to the [permittee]").

Determination of performance-based BAT limits based on EPA's BPJ

The Draft Permit proposed TBELs for benzene and naphthalene based in part on comparison to the conditions at RGP sites and the limitations established in the 2017 RGP and supported by a review of monitoring results from the terminals over the current permit term. Global Fact Sheet at 37, 42. The benzene limit in the RGP is based on BMPs (flow controls, preventative maintenance, site management, pollutant minimization, administrative controls, quality control and material management) and, in some cases, advanced treatment technologies (i.e., beyond separation, sedimentation, and filtration), including air stripping, liquid phase carbon adsorption, dual phase extraction, bioslurping, air sparging, and free product recovery. *Id*. at 37; *see also* AR-121 p. 88; AR-119 pp. 54-55. The Terminals universally employ similar BMPs in combination with oil/water separators to control volatile and semi-volatile organic compounds, including benzene and naphthalene. Some Terminals also use advanced treatment for the stormwater and/or groundwater discharges (e.g., Sunoco Oil Terminal and Global Oil Terminal Outfall 003). As such, TBELs based on the performance of BMPs, which are used at all Terminals, are appropriate for these facilities.

As explained above, the BAT for benzene and naphthalene at the Bulk Oil Terminals on the Chelsea River, after considering the appropriate factors at 40 CFR § 125.3(d), is BMPs in combination with an oil/water separator. The 2014 Permit established a suite of narrative, technology-based BMPs to control the addition of benzene and naphthalene (among other constituents) in stormwater for the first time.[70] In addition to these narrative limits, EPA established water quality-based effluent limits for benzene and naphthalene. When the 2014 Permits were issued there were insufficient data to assess the efficacy of the new and existing BMPs; however, the terminals have been monitoring benzene and naphthalene on a monthly basis under the 2014 Permit and every facility, at a minimum, operates using the BAT (BMPs plus an oil/water separator). As such, there are now sufficient monitoring data to evaluate the performance of the BAT and to set a numeric TBEL.

To respond to Global's comment that EPA erred in its method of relying on monitoring results from the Terminals to establish the numeric TBELs in the Draft Permit, EPA looked to established methodology the agency has used to evaluate performance of technology in the context of Effluent Limitations Guidelines. The NPDES Permit Writers' Manual (AR-116 p. 5-47) indicates that such an approach is appropriate for case-by-case limits based on BPJ. EPA follows the methodology described in Section 13 and Appendix B of the 2015 *Technical Development Document for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category* (EPA-821-R-15-007) (AR-122). *See also* AR-116 pp. 5-19 to 20, 5-47. Under this methodology, a daily maximum limit is calculated by

[70] The 2005 Permits required development of a SWPPP, including certain BMPs to reduce the addition of TSS. However, the 2014 Permits expanded the list of site-specific BMPs including preventative maintenance and spill response procedures.

multiplying a long-term average achievable by implementation of the model technology by a daily variability factor determined from the statistical properties of a lognormal distribution. The daily variability factor is defined as the ratio of the estimated 99th percentile of a distribution of daily values divided by the mean of the distribution. A modified delta-lognormal distribution was fit to concentration data for each outfall. The modified delta-lognormal distribution models the data as a mixture of measured values and observations recorded as values less than the detectable level. This distribution was selected because all facilities reported a mix of measured benzene and naphthalene concentrations and results below the detectable level. The modified delta-lognormal distribution assumes that all non-detected results have a value equal to the detection limitations and that the detected values follow a lognormal distribution. EPA adapted this methodology to evaluate the long-term average and variability factor representative of the BAT at each facility in comparison to the case-by-case TBELs proposed in the Draft Permit and the water quality criteria.[71]

Data Selection and Exclusions

In February 2021, EPA noticed Draft Permits for the five Terminals on the Chelsea River addressed in this Response to Comment. EPA also noticed Draft Permits for the Sprague Quincy (MA0020869) and Twin Rivers Terminals (MA0028037) in December 2020. Each Terminal operates an oil/water separator and has implemented specific BMPs for pollution prevention over the previous permit term. In addition, each facility has monitored benzene and naphthalene in the stormwater effluent on a routine basis. This monitoring data can be used to calculate long-term averages and variability factors. EPA evaluated the data based on two criteria: the data are from a Facility that employs the model technology (BMPs plus an oil/water separator) and represent stormwater from truck loading racks and tank farms at bulk oil terminals. Certain facilities and outfalls were excluded from the analysis because the treatment was not consistent with BAT or because the stormwater effluent comingled with contaminated groundwater that received advanced treatment. By omitting these data, EPA's analysis controls for the comment's criticism that facilities with greater proportions of stormwater than remediated groundwater or hydrostatic test water should not be held to a standard applicable to sites with NPDES coverage under the RGP that may discharge more groundwater, employ advanced treatment, or both.

- The stormwater at the Sunoco Terminal (MA0004006) is treated with a series of sand filters followed by carbon adsorption. *See* Sunoco Fact Sheet at 14. This advanced treatment is different from the BAT employed by the other Terminals, and the data from this terminal were not included in the analysis.

[71] The comment requests that EPA revise the TBELs to 51 µg/L for benzene and 100 µg/L for naphthalene as these are "fully protective of the receiving water." Both values are based on human health criteria applicable when the 2014 Permit was issued and do not necessarily reflect the most updated WQBELs. Further, a TBEL is based on use of the most effective pollution control technologies that are technologically and economically achievable, and that will result in reasonable progress toward eliminating discharges of the toxic pollutants. As explained in this Response, NPDES permits include technology-based limits or any water-quality-based limit more stringent than the applicable TBEL. 40 CFR § 122.44(a)(1), (d). WQBELs are only "necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water." NPDES Permit Writers' Manual at 5-1. In this case, the WQBELs from the 2014 Permit would be appropriate only where the case-by-case, BPJ-based TBEL is less stringent.

- Global Outfall 002 (MA0000825, formerly Global Petroleum Outfall 001) discharges both stormwater and treated groundwater. Groundwater remediation effluent receives advanced treatment and is subject to maximum daily benzene and naphthalene limits at internal Outfall 003, which as the comment notes, is treatment typical of groundwater remediation systems. This effluent can comingle with stormwater in the vault adjacent to the oil/water separator. *See* Global Fact Sheet p. 19. Because the effluent can comingle, the data for Outfall 002 may not be comparable to other outfalls that discharge only stormwater treated with BMPs and an oil/water separator, and the data from Global Outfall 002 were not included in the analysis.

- Chelsea Sandwich Outfall 001 (MA0003280) also discharges stormwater comingled with treated groundwater effluent. The groundwater remediation effluent is treated with advanced treatment and is subject to a maximum daily benzene limit at internal Outfall 002. *See* Chelsea Sandwich Fact Sheet p. 16. Because the effluent can comingle, the data for Outfall 001 may not be comparable to other outfalls that discharge only stormwater treated with BMPs and an oil/water separator. Data for the Chelsea Sandwich Terminal were not included in the analysis.

- EPA also noticed a Draft Permit for the Citgo Terminal (MA0004782) in October 2020. The current permit for the Citgo Terminal, issued in 2008, does not impose specific BMPs for pollution prevention or spill control. In other words, the existing technology at the Citgo Terminal may not be equivalent to the BAT. In addition, Outfall 001 discharges stormwater comingled with treated groundwater. The groundwater remediation effluent is treated with advanced treatment and is subject to a maximum daily benzene limit at internal Outfall 002. See Citgo Fact Sheet p. 14. Because the current Citgo permit does not impose BMPs and because the stormwater and groundwater effluent can comingle, the data for Outfall 001 may not be comparable to other outfalls that discharge only stormwater treated with BMPs and an oil/water separator. Data for the Citgo Terminal were not included in the analysis.

When selecting data for establishing effluent limitations guidelines EPA commonly evaluates influent data to ensure the pollutants are present in the effluent at sufficient concentrations to evaluate treatment technology effectiveness. *See* AR-122 p. 13-2. In this case, the model technology is primarily implementation of BMPs that minimize the potential for benzene and naphthalene to be exposed to stormwater effluent at the truck loading racks and tank farms. In other words, rather than strictly removing the pollutants, the BAT achieves the benzene and naphthalene limits by operating in a manner that minimizes the addition of pollutants to the stormwater runoff. The statistical analysis demonstrates that advanced treatment is not necessary to meet the limits and responds to the comment that criticizes EPA's reliance on monitoring results as an additional basis for the proposed effluent limits in the Draft Permit. EPA evaluated the benzene and naphthalene data for each of the outfalls for the remaining facilities: Irving

(MA0001929), Gulf (MA0001091), Global South (MA0000825) and Global REVCO (MA0003298)[72] to assess performance of the BAT.

Analysis

EPA followed the methodology described in Appendix B of the 2015 *Technical Development Document for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category* (EPA-821-R-15-007) (AR-122). Benzene and naphthalene concentrations reported during monitoring at the selected facilities over the past permit terms are a mixture of measured (detected) and non-detected values.[73] The modified delta-lognormal distribution is appropriate for such datasets because it models the data for the detected measurements following a lognormal distribution and the non-detect measurements that occur with a certain probability. The modified delta-lognormal distribution allows for multiple detection limits, which occurs at some of the outfalls.

For this analysis, EPA used the minimum levels reported by each facility. The Global facilities (Outfalls 001, 004, and 005) reported a value of "0" instead of the minimum levels in the discharge monitoring reports. EPA reviewed the reported concentrations and assumed a minimum level of 1 µg/L for benzene and 0.1 µg/L for naphthalene for the analysis, which are consistent with the minimum levels for these parameters at other terminals. In certain cases, a facility may report a measured concentration below the minimum level. For these values, EPA substituted a baseline value at the minimum level and classified the value as non-detect. This substitution is intended to avoid establishing an effluent limitation that is biased toward a lower concentration than facilities can reliably demonstrate compliance with. In other words, although a single laboratory may achieve a sufficiently low quantitation level for a particular analysis, the effluent limits apply to all terminals in a particular geographic area, which may use more than one laboratory for sample analysis. Reported measured values below the reported minimum levels typically accounted for 0-5% of the values at each outfall. The relatively few occurrences limited the influence of the assumption on the daily limitation.

EPA evaluated the performance of the existing technology in use at the Global Terminals and other terminals on the Chelsea River by calculating site-specific long-term averages and daily variability factors (based on the 99th percentile of the distribution) for benzene and naphthalene using data reported over the last permit term. See AR-123. EPA calculated these values using the same methodology used to establish effluent limitations guidelines as described above. The long-term averages and variability factors account for reasonable variation in the performance of the technology at a particular terminal over time and reflect a level of performance consistent with the BAT. EPA establishes a daily maximum value in effluent limitations guidelines by

[72] As explained above and in Responses to Comments D.1 and F.1, Global is no longer the owner or operator of the REVCO Terminal and the property has been decommissioned, resulting in revocation of NPDES Permit No. MA0003298. However, the effluent data analyzed in this response were collected when the facility was operating as a bulk oil terminal and are representative of the performance of the BAT at issue here. For this reason, they are relevant to determining the appropriate TBELs for benzene and naphthalene.

[73] The term "detected" refers to analytical results measured and reported above the sample-specific quantitation limit. "Non-detect" are those values below the method detection limit and measured values between the method detection limit and the quantitation limit.

multiplying the long-term average by the daily variability factor. This daily value recognizes that plants targeting the technology's performance to meet the long-term average may, at times, discharge at higher (or lower) concentrations.

Results and Conclusion

The long-term average (LTA), daily variability factor (DVF), and maximum daily value (MDV) (equal to the long-term average multiplied by the daily variability factor) for benzene and naphthalene for each of the outfalls in the analysis are provided in the Table below. The performance analysis confirms that the BMPs and oil/water separator will control naphthalene to concentrations less than the proposed maximum daily TBEL of 20 µg/L at all of the Terminals without any changes to the existing technology. EPA maintains that the proposed, BPJ-based TBEL for naphthalene is appropriate and achievable at bulk oil terminals on the Chelsea River. Based on the continued performance of the BAT EPA may consider setting a lower site-specific TBEL for naphthalene in future permitting actions.

For benzene, all of the Terminals' long-term averages are below 5 µg/L, which suggests the performance of the technology is already targeting values that will meet the proposed effluent limit. After considering the daily variability, the performance of the three Global outfalls will meet the proposed maximum daily benzene limit of 5 µg/L without any changes to the existing technology.[74]

Outfall	Benzene (µg/L)			Naphthalene (µg/L)		
	LTA	DVF	MDV	LTA	DVF	MDV
Global 001	1.23	3.92	4.80	0.13	6.22	0.79
Global 004	---	---	---	0.11	2.91	0.31
Global 005	1.23	3.92	4.80	0.15	5.09	0.79
Gulf	1.60	9.68	15.49	1.26	11.00	13.88
Irving	3.84	9.25	35.46	4.28	3.91	16.74

The maximum daily values for the other two Terminals (Gulf and Irving) are above the proposed benzene limit of 5 µg/L. Gulf reported six detections of benzene during the last permit term: five at 2.5 µg/L or less and one at 64 µg/L. This single, unusually high benzene concentration could have resulted from a spill or other event and would be indicative of a failure to properly implement the BAT rather than of its performance. If the single high value is eliminated (as not representative of the BAT), the maximum daily value is 2.02 µg/L which will meet the proposed maximum daily limit. The long-term average performance of the BAT at Irving is consistent with the proposed benzene limit; however, Irving experiences high variability and has observed some detections greater than 5 µg/L (8 of 82 observations). Two of these detections were relatively high (56.4 and 58.7 µg/L) and, similar to the Gulf Terminal, may indicate a failure to

[74] No benzene values were calculated for Global Outfall 004 because there were no detections of benzene over the minimum level during the last permit term, which suggests that the performance of the BAT at this outfall can meet an effluent limit of 5 µg/L. Similarly, benzene was detected at or below the ML of 1 µg/L in all monitoring periods at the two Terminals on the Weymouth Fore River (MA0020869 and MA0028037). Statistical analysis could not be completed based on the datasets but in both cases the Terminals could meet the proposed TBEL without any changes to existing technology.

properly implement the technology rather than being representative of its performance. Eliminating these two high values (as not representative of the BAT) results in a maximum benzene value of 13.76 µg/L, which is substantially less than 35 µg/L but still exceeds the proposed daily effluent limit.

The statistical methodology used to evaluate the performance of the BAT is robust and indicates that proper implementation of the technology will routinely achieve concentrations lower than the effluent limitations proposed in the Draft Permit. In this case, the BAT for these facilities includes BMPs that target pollution prevention and spill controls. In other words, if the technology is properly implemented, the influent concentration of benzene and naphthalene should be non-detect because the technology is designed to minimize the exposure of stormwater to benzene and naphthalene through source controls.[75] In addition, benzene and naphthalene are highly volatile. Retaining stormwater in a storage area (such as dikes), as Global does, allows time for volatilization and can reduce effluent concentrations. This BMP may also be a component of the BAT. The high proportion of non-detects at the terminals reflects the successful implementation of the BMPs. As explained above, TBELs are meant to be technology-forcing and should reflect the optimally operating, or best performing, facility. In establishing a BAT TBEL for benzene and naphthalene, EPA must determine limits based on use of the most effective pollution control technologies that are technologically and economically achievable, and that will result in reasonable progress toward eliminating discharges of the toxic pollutants. The existing technology at the three Global outfalls consistently achieves benzene concentrations below 5 µg/L, as does the Gulf outfall with a single exception. EPA maintains that the best performing facilities can achieve the proposed, BPJ-based TBEL for benzene without the addition of advanced treatment (e.g., carbon adsorption). For some outfalls or terminals, certain improvements to the overall technologies (i.e., BMP selection and implementation) may be necessary. EPA expects that refining source control BMPs to meet effluent limitations can be achieved at relatively low cost as it is likely to necessitate relatively minor modifications to existing non-structural or structural controls or infrastructure on an incremental, as-needed basis if limit exceedances occur.

As explained above, the BAT for benzene and naphthalene for bulk oil terminals on the Chelsea River is a combination of BMPs (primarily source controls) and oil/water separation. EPA evaluated the performance data from the previous permit term following the statistical methodology used for setting effluent limitations guidelines and described in the TSD. This analysis confirms that Global can achieve the maximum daily effluent limits proposed in the Draft Permit without additional treatment. In fact, the analysis indicates that Global Outfalls 001, 004, and 005 were the highest performing outfalls during the past permit term with respect to benzene and naphthalene. In addition, the case-by-case, BPJ-based TBELs are more stringent than the water quality-based limits for benzene and naphthalene in the 2014 Permit and are more stringent than a WQBEL (16 µg/L) based on the recently approved human health criterion for benzene. *See* Fact Sheet p. 37; AR-139. EPA has made a reasonable determination, based on BPJ and after evaluation of the performance of the BAT at these facilities, that maximum daily TBELs of 5 µg/L for benzene and 20 µg/L for naphthalene are appropriate for the bulk oil

[75] Oil/water separators may offer additional removal of benzene and naphthalene to the extent that the operation of this technology facilitates settling of solids to which these pollutants adsorb and/or removes the non-dissolved forms of the pollutants.

terminals on the Chelsea River. The Final Permits retain the maximum daily, technology-based effluent limitations for benzene and naphthalene proposed in the Draft Permits.

Comment F.3 – New Monitoring Requirement for Bioassessment

In Part I.C.6 of the Draft Permit, EPA imposes a bioassessment monitoring requirement for the first time with the rationale for characterizing the extent to which, if any, pollutants discharged from the Facility to the receiving water affect the benthic morphology, substrate, and/or biota. The Facility strongly objects to the new monitoring requirement for the reasons below:

<u>The special conditions should not put a burden on the permittee to develop control strategies (i.e., TMDLs) by requesting the permittee to perform a bioassessment study:</u>

Under CWA § 303(d), states are required to develop lists of impaired waters. The law requires that those jurisdictions establish priority rankings for waters on their CWA section 303(d) list and develop pollutant control strategies (i.e., TMDLs) for those waters. While a bioassessment study is one of the key components in the TMDL development process, the NPDES program is a subsequent step for implementing the TMDLs by regulating the point and nonpoint source discharges from the permittees/stakeholders within the river section/watershed. The Facility, again, is willing to provide additional monitoring data, relevant to stormwater discharges (e.g., water column monitoring), to support the bioassessment study. However, other monitoring requirements (i.e., benthic morphology, substrate characterization, benthic pollutant analysis, and qualitative biological monitoring) and the preparation of a summary report that includes e.g., literature review of environmental information, discussion of overall bioassessment results, and the coordination with other PBST facilities along the Chelsea River are out of the scope of the NPDES permit and beyond the ability and responsibility of the permittee.

Although EPA has broad discretion to regulate a permittee's compliance with a permit, here, the bioassessment is not intended for this purpose (see e.g. 33 USC 1342(a)(2)). For example, although 40 CFR 122.41, 40 CFR 122.44 and 40 CFR 122.48 all contain requirements to ensure that monitoring activities result in representative data to allow for a determination that facility's sampling program is representative of the regulated discharge and that the discharge is in compliance with the established effluent limits in a permit, the bioassessment is unrelated to the Facility's compliance with established effluent limitations.

Here, the requirement to conduct the bioassessment program supplants EPA or the MassDEP's obligation under CWA § 303(d) to conduct watershed-wide studies to implement TMDLs and merely seeks sampling data of impacts that are not attributable to any single point source or the Facility's compliance with any specific effluent limitation. As EPA and MassDEP are aware, Chelsea Creek has been home to industrial activity for over a century, and any accumulated impacts are not attributable to a single point source, of which there are many (municipal outfalls, multiple petroleum facilities, other commercial and industrial runoff). The bioassessment program's assessment of the receiving water body is more focused on the impacts of the industrial history of the water body rather than the Facility's discharge and effluent limitations. As discussed in more detail below, nothing in the bioassessment program supports EPA's

authority to implement monitoring requirements necessary to ensure compliance with the permit requirements.

EPA clearly erred in adding the monitoring burden on the permittee for parameters that are irrelevant to effluent discharges via special conditions under the NPDES program.

EPA's rationale for imposing the bioassessment requirement in the Draft Permit is based on Section 9.1.1 of EPA's Permit Writer's Manual, as noted in page 96 of the Fact Sheet. The listed parameters in the monitoring requirement for bioassessment, as noted by EPA, is largely based on EPA's *Estuarine and Coastal Marine Waters: Bioassessment and Biocriteria Technical Guidance*. The guidance states that a bioassessment study can be applied to support the NPDES program for "[d]eveloping protocols that demonstrate the relationship of biological metrics to effluent characteristics".

Although the Permit Writer's Manual states that additional monitoring requirements can be included in a NPDES permit to support future permit requirements, this fact should not be interpreted as or equivalent to the responsibility of any permittee for conducting a bioassessment study. EPA clearly erred in referring to the guidance by inferring that the permittee is responsible for taking all the monitoring burden for a bioassessment study even if the parameters are irrelevant to the stormwater discharges regulated under the NPDES program (e.g., benthic morphology).

Moreover, EPA misinterprets the scope of special conditions covered by Section 9.1.1 of the EPA's Permit Writer's Manual. EPA does not have unlimited discretion in requesting NPDES permittees to solely conduct and complete a bioassessment study for the entire waterbody. A bioassessment study should be a watershed-wide collaborative effort that includes multiple parties and led by agencies. The Facility has no objections to provide additional monitoring data to support the water column characterization required in the bioassessment study, if necessary. However, the additional monitoring and special studies, listed in Section 9.1.1, should not include the parameters that are irrelevant to the stormwater discharges to the receiving water, in this case, all the parameters required for benthic morphology characterization, substrate characterization, benthic pollutant analysis, and qualitative biological monitoring.

More importantly, the responsibility of conducting biological monitoring and surveys should be on the agencies, as indicated in, for example, the previous Boston Harbor 1999 Water Quality Assessment Report, which notes that "The EOEA4 Watershed Team should work with state and federal agencies (e.g., DEP5, CZM6, USGS7, ACOE8) to conduct biological monitoring (e.g. benthic macroinvertebrates, fish population) to determine if the effect(s) of NPDES discharge(s) and habitat quality negatively impact the aquatic life in this segment of the Chelsea River."

A watershed-scale bioassessment study of an area should be a collaborative work that involves all the stakeholders across the waterbody/watershed:

Impairment of a waterbody or river segment is usually a result of long-term contamination contributed by various sources (point and non-point). The effluent discharge monitoring report required for the Facility by the 2014 Permit and the Draft Permit provide adequate data for the

discharges from this Facility, and there is a lack of evidence that links the Facility's discharge to the impairment of the waterbody as a whole. Hence, there is no reason to put the monitoring burden on a single Facility, especially when an area, such as the Chelsea River in this case, has been influenced by many point and non-point sources for a long term period. The impairment(s) could be caused by historic discharges from point sources that no longer exist.

Therefore, if EPA would like to perform a bioassessment study to be used as a basis of regulating permittee discharges, it should be a watershed-wide study completed by EPA or MassDEP through a collaboration with a group of stakeholders (e.g., other PBST facilities within the Mystic River Watershed, municipalities, etc.), and/or third-party contractors, whenever feasible.

<u>The request for a comparative analysis that includes hydrodynamic modeling conducted by the Permittee is unreasonable and unrealistic:</u>

On page 97 of the Fact Sheet, EPA requests a comparative analysis that includes hydrodynamic modeling to be conducted by the Permittee. This is inappropriate and impractical for the following reasons:

- Applying this type of modeling approach to a short section of river will yield erroneous results due to insufficient data resolution. In this case, the receiving water (i.e., Chelsea River) only has three transects in the hydrodynamic model. A hydrodynamic model with spatially coarse data resolution could produce seriously biased model results due to poor model calibration and validation. The issue of insufficient data may be resolved by 1) increasing the data density by adding more monitoring stations within the river segment (not increased monitoring frequency) through a comprehensive assessment rather than a facility by facility approach, or 2) expand the model by including more river segments to have more comprehensive data from upstream to downstream. The two solutions are, however, far beyond the Facility's or any permittee's responsibility.
- The model results reported by different permittees are expected to be highly inconsistent as the required inputs and parameters among models could differ largely (i.e., discharge monitoring data and/or other data collected for the required model inputs and parameters).
- To perform hydrodynamic modeling, it requires model parameters and inputs that are additional and irrelevant to the stormwater discharge monitoring regulated under the NPDES permit (e.g., precipitation, wind speed, wind direction, relative humidity, …etc.). Requesting the permittee to acquire these data to perform a hydrodynamic model analysis is impractical and beyond the responsibility of any permittee regulated under the NPDES program.

Based on these facts, the Facility suggests that the comparative analysis using a hydrodynamic modeling approach should include the entire river reach or watershed (e.g., Mystic River Watershed) and EPA should take the responsibility to perform the analysis by consolidating the data collected not only from the discharge monitoring data from permittees but other data sources (e.g., National Weather Service). Such an area-wide study, led by EPA in conjunction with interested and necessary stakeholders to determine the overall health and impacts to the

waterbody, should be a separate endeavor from the regulation of the Facility's discharge under the Draft Permit.

Request:

The Facility requests that EPA removes the special condition of bioassessment requirements from the Draft Permit.

[4] Executive Office of Environmental Affairs
[5] MA Department of Environmental Protection
[6] Massachusetts Office of Coastal Zone Management
[7] United States Geological Survey
[8] United States Army Corps of Engineers

Response to Comment F.3

The comment requests that EPA remove the bioassessment requirements in Part I.C of the Draft Permit and asserts that certain requirements are "out of the scope of the NPDES permit and beyond the ability and responsibility of the permittee." These requirements include, according to the commenter, the benthic morphology monitoring, substrate characterization, benthic pollutant analysis, qualitative biological monitoring, the preparation of a summary report (literature review of environmental information and discussion of overall bioassessment results), and the coordination with other PBST facilities along the Chelsea River. EPA has reexamined the monitoring and reporting aspects of the bioassessment in light of this comment.

EPA has broad discretion to require monitoring in NPDES permits. CWA Section 308(a), which EPA highlighted in the Fact Sheet, states:

> Whenever required to carry out the objective of this chapter, including but not limited to (1) *developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard*, pretreatment standard, or standard of performance under this chapter; (2) *determining whether any person is in violation of any such effluent limitation, or other or other limitation, prohibition, or effluent standard*, pretreatment standard, or standard of performance under this chapter; (3) any requirement established under this section; or (4) *carrying out sections* 1315, 1321, *1342*, 1344 (relating to State permit programs), 1345, and 1364 of this title – (A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) *make such reports*, (iii) *install, use, and maintain such monitoring equipment or methods* (including where appropriate, *biological monitoring methods*), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Administrator shall prescribe), and (v) *provide such other information as he may reasonably require*

(emphases added). EPA explains in the Fact Sheet (p. 96) that the proposed bioassessment is necessary and appropriate to carry out the provisions of the CWA and ensure compliance with applicable water quality standards as required by CWA § 402(a)(2) and 40 CFR § 122.44(d).

Massachusetts State WQSs at 314 CMR 4.05(5)(b) include narrative criteria for bottom pollutants or alterations, which state, "[a]ll surface waters shall be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms." State WQSs at 314 CMR 4.05(5)(e)(2)(a) also contain narrative criteria for accumulation of pollutants applicable to all classes, which state, "[w]here appropriate the Department shall use an additional margin of safety when establishing water quality based effluent limits to assure that pollutants do not persist in the environment or accumulate in organisms to levels that: i. are toxic to humans, wildlife or aquatic life; or ii. result in unacceptable concentrations in edible portions of marketable fish or shellfish or for the recreational use of fish, shellfish, other aquatic life or wildlife for human consumption."

The comment acknowledges EPA's broad discretion to require monitoring to ensure compliance with a permit under 33 U.S.C. 1342(a)(2) but asserts that the bioassessment is not intended for this purpose and that EPA lacks authority to require monitoring for any purpose other than to ensure compliance with existing permit limits. First, the comment ignores EPA's authority under CWA § 308(a) to require information necessary for developing or assisting in the development of effluent limitations in support of future permitting. For a permittee to show that "a monitoring requirement exceeds the Agency's authority under CWA section 308(a), [the permittee] must cite evidence sufficient to support a finding that there is no basis for the Agency to require information in the first place." *In re Springfield Water & Sewer Comm'n*, 18 E.A.D. 430, 484 (EAB 2021) (citing *In re City of Port St. Joe & Fla. Coast Paper Co.*, 7 E.A.D. 275, 310 (EAB 1997)); *see also In re Avon Custom Mixing Servs., Inc.*, 10 E.A.D. 700, 709 (EAB 2002) ("Sections 308 and 402 of the CWA bestow upon the Administrator broad authority to require owners and operators of point sources to establish, inter alia, monitoring methods and to prescribe permit conditions for data collection and reporting."). While the comment claims that that "there is a lack of evidence that links the Facility's discharge to the impairment of the waterbody as a whole," EPA found, based on monitoring data, reasonable potential for numerous pollutants discharged by the permittee to cause or contribute to water quality standards exceedances, as described in the Fact Sheet and throughout this RTC. Moreover, the Commonwealth has identified the Terminals as among the sources of the impairments to the river. Global Fact Sheet at 26. Thus, there is ample evidence that links the discharge to the impairments of the river, including to the Aquatic Life designated use.

Second, EPA disagrees that the bioassessment will not ensure compliance with current permit limits and conditions. The bioassessment provision serves more than one purpose. As EPA noted in the Fact Sheet (p. 95), MassDEP has determined that the Aquatic Life designated use in the Chelsea River is not supported due to sediment screening value and that contaminated sediments and the activities at the Terminals are among the sources of the impairment of this designated use. MassDEP has also listed contaminated sediments as one of the sources of the impairment of the Fish Consumption designated use of the river. The Fact Sheet (p. 95) further notes a 2005 USGS study identifying pollutant concentrations in sediment high enough to pose a threat to benthic organisms in the river. EPA considered this information—and that the Facilities discharge sediment/solids and pollutants that exhibit physical and chemical characteristics that can accumulate in sediments—to propose that sediment and benthic organisms be assessed to

understand the extent of impacts to the designated uses, the ways in which the discharges from the Facilities may cause or contribute to these impairments, the impact of current permit limits and conditions in mitigating any such contribution, and, if necessary, whether and what sort of limits or conditions may be appropriate in future permitting actions for these Facilities. The Fact Sheet (pp. 95-97) clearly states the purpose of the bioassessment in the Chelsea River in the vicinity of Global's outfalls is to evaluate the extent to which the Facility's discharges cause or contribute to excursions above state water quality standards (including the narrative criteria and designated uses mentioned above) in the receiving waterbody and to assess whether permit limits are sufficient to protect them:

> These data will enable EPA to complete a comparative analysis during subsequent permit development regarding the extent to which discharges from the Facility cause, or have a reasonable potential to cause or contribute, to excursions above State WQSs. These data will further inform whether the numeric and non-numeric effluent limitations (e.g., BMPs) in the Draft Permit result in measurable improvement in the habitat and whether additional limitations are necessary. Therefore, the proposed effluent monitoring requirements are necessary and appropriate to carry out the provisions of the CWA and ensure compliance with applicable WQSs as required by CWA § 402(a)(2) and 40 CFR § 122.4(d). See CWA §308(a), 33 U.S.C. §1318(a). *Fact Sheet* (p. 96)

The proposed monitoring of the substrate in the vicinity of Global's outfalls is designed to evaluate compliance with, and the effectiveness of, the limits and conditions in the permit, including the Final Permit's narrative requirements, to ensure that the limitations are sufficiently protective of water quality standards. *See, e.g.*, Part I.A.6 ("The discharge shall not cause a violation of the water quality standards of the receiving water") and Part I.A.8 ("The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom").

The comment asserts that the bioassessment is beyond the ability of the Permittee. However, the comment provides no explanation nor example to support its statement that it does not have the ability to complete the required monitoring. According to the comment, the bioassessment includes parameters (e.g., benthic morphology) that are irrelevant to the stormwater discharges regulated under the NPDES program. EPA maintains that water column monitoring, benthic morphology, substrate characterization, benthic pollutant analysis and qualitative biological monitoring are needed to provide relevant data to ensure that the designated uses and water quality standards of the Chelsea River are protected and that the terminal does not imperil them. The Chelsea River is impaired for, and listed as not supporting, the Aquatic Life designated use due to the sediment screening value which is a risk assessment benchmark for aquatic life and human health. Contaminated sediments are explicitly noted as one of the sources of this cause, and activities at the Terminals are listed among the sources of the impairment to the Aquatic Life designated use. In addition, the Chelsea River is impaired for the Fish Consumption designated use, and while the cause of the impairment is noted as "other," contaminated sediments are also identified as a source. As noted previously, state water quality standards include narrative criteria for bottom pollutants or alterations and for pollutant persistence and accumulation.

The comment does not object to the water column monitoring but indicates that the other requirements are irrelevant to the stormwater discharges. In fact, the required monitoring will provide information about habitat type, bottom characteristics, sediment contamination, and biological assemblages, which collectively will assist EPA in evaluating the impacts of the Facility's discharge on aquatic life in the vicinity of the outfalls to ensure that permit limits are adequately protective of water quality standards—including 314 CMR 4.05(5)(b), which is directly concerned with effects to the physical and chemical nature of the bottom, the propagation of fish and shellfish, and populations of benthic organisms—and designated uses. The very nature of stormwater discharge from an industrial site has the potential to introduce a variety of pollutants to the receiving water and surrounding benthic sediment. For example, suspended solids, which are regulated in the Final Permit, provide a medium for the transport of other adsorbed pollutants present in the facility's discharge, such as PAHs and metals, which may persist in the environment, accumulate in settled deposits, degrade benthic habitat, and negatively impact aquatic life. These pollutants associated with the sediment can have a long-term impact on the benthic habitat as well as the water column through cycles of re-suspension. The need for bioassessment information is warranted in this instance given that the Chelsea River and its sediment are already impaired for parameters related to the stormwater discharges at the Facility (e.g., ammonia, petroleum hydrocarbon). An analysis of the bioassessment data will be one avenue to assist EPA in considering whether new limits and conditions should be contemplated in future permitting cycles and, if so, provide EPA with information to develop them (e.g., metals or PAHs,). In addition, several of the parameters monitored or limited at the terminals have water quality standards set below the minimum analytical detection levels (TRC, PAHs, cyanide). Where water quality-based limits are below analytical detection levels, EPA's Technical Support Document for Water Quality-based Toxics Control recommends special conditions to ensure that limits are being met and that excursions above water quality standards are not occurring. *See* AR-114 p. 112. In this case, the additional biological monitoring and sediment characterization will ensure that water quality standards are met in the river even where the minimum compliance levels for effluent monitoring are above the numeric permit limits.

In addition to the monitoring requirements, the comment asserts that the preparation of a summary report that includes literature review, discussion of overall results, and coordination with other facilities is beyond the ability of the Permittee. Turning first to the discussion of results, the summary report described in Part I.C.6.f.3 of the Draft Permit is a synthesis of the results of the study, including a description of the sampling locations and tabulation of the water column, benthic morphology, substrate, pollutant analysis, and biological monitoring. The commenter offers no explanation as to why it believes providing the results of the data is beyond its ability and no justification for removing this requirement. However, in response to the comment EPA has reconsidered the need to conduct a literature review and coordinate with other facilities. A literature review summarizing recent data collected in the vicinity of the water quality monitoring station, while useful, is not critical to the evaluation of permit limits in this case. The monitoring requirements in Part I.C.5 will serve this purpose without additional literature review by the Permittee in this case. EPA has removed this requirement from the Final Permit. In addition, the requirement to coordinate submission of summary reports in Part I.C.6.f.2 of the Draft Permit is not necessary. EPA encourages the terminals to consider whether there may be benefits (including benefits to the commenter) to coordinating aspects of its

bioassessment with other terminals; however, the requirement to coordinate submission of reports has been removed from the Final Permit.

Finally, turning to the responsibility of the permittee to carry out site-specific monitoring, EPA maintains that the bioassessment is reasonable and warranted for the assessment of existing permit limits and development of any additional limits that may be warranted to ensure water quality standards are met at the Facility's outfalls. The comment attempts to characterize the bioassessment as a "watershed-wide study" but this is not the case. The Permit establishes a limited number of monitoring stations in close proximity to each of the Facility's outfalls bounded by the zone of influence of the discharge upstream and downstream. These monitoring stations are not positioned or intended to provide data on a watershed-wide basis. The focused bioassessment monitoring is designed to evaluate whether the current permit limits are sufficiently protective of water quality and that the discharges are in compliance with the permit requirements.[76]

Moreover, EPA is not requiring the permittee to use bioassessment data to develop a total maximum daily load (TMDL) nor do the Fact Sheet or Draft Permit assert that the bioassessment is intended for such a purpose. The comments that the requirement to conduct a bioassessment "supplants" the Agencies' obligation to conduct watershed-wide studies for TMDL development are conclusory and offered without support, save for a general reference to CWA § 303(d). While section 303(d) requires states to identify impaired waters within their borders and submit for EPA approval TMDLs to address those impairments, nothing in section 303(d) limits responsibility for collecting the information required in the permit's bioassessment provision to a state or EPA or indicates that it is "out of scope of [a] NPDES permit" or "beyond the responsibility of a permittee." As discussed above, sections 308(a) and 402(a)(2) grant EPA broad authority to include permit conditions for data collection and reporting to determine whether a permittee is in violation of any permit limit or condition or to develop permit limits and conditions—both of which are purposes of the bioassessment provision. The comments regarding TMDL development also misinterpret EPA's intent. EPA agrees that Chelsea Creek has been home to industrial activity for over a century; and the current impairments in the waterbody are not attributable to a single point source but are likely the result of the multiple combined sewer overflows (CSOs), multiple petroleum facilities, and other commercial and industrial discharges. As explained above, the monitoring requirements proposed in Part I.C.6 of the Draft Permit are not a "watershed-wide study" but are limited spatially (to the area in the vicinity of the Facility's outfalls) and temporally (during the first and fifth year of the permit term). The bioassessment program is not designed to determine which historical entities contributed to the pollutants currently in the receiving water body sediment or to determine if any single point source is a cause of the impairments in Chelsea River, but to improve understanding of the current impact of the facilities' discharges on water quality standards and how to address any continuing impact. The bioassessment is necessary to gather data to determine whether the discharges from the Facility have the potential to cause or contribute to an excursion of water quality standards, including the narrative standards for bottom pollutants, in

[76] While the bioassessment provision in this case is focused on the area(s) in the vicinity of each terminal's outfall(s), an assessment of conditions and effects further afield is not outside EPA's authority to include in a NPDES Permit. *See Alyeska Seafoods*, slip op. at 18-25 (denying a challenge to a permit provision requiring a permittee to "conduct a far-field sediment survey one kilometer outside the outfall").

the vicinity of Global's outfalls. A more robust monitoring effort is warranted for this permit given the Chelsea River's existing impairments and the potential that the effluent may contribute to these impairments. EPA notes also that the bioassessment requirements are included in the permits for each bulk oil terminal on the Chelsea River; each terminal has a responsibility to complete a bioassessment for its outfalls—thus, it is not solely the responsibility of any single Permittee.

Additional monitoring, including sediment and/or biological monitoring, is not uncommon in NPDES permits and is well within EPA's authority to require. For example, the West Springfield Station[77], the 2001 Gloucester Water Pollution Control Facility[78] and the Swansea Desalination Facility[79] NPDES permits include requirements to conduct benthic sampling . Further, support for EPA's authority to require sediment analysis and monitoring in an NPDES permit has been confirmed by the Environmental Appeals Board in *In re Alyeska Seafoods, Inc.*, NPDES Permit Appeal No. 03-03 (EAB Apr. 14, 2004), Order Denying Review.[80] In *Alyeska Seafoods*, the Board denied a challenge to permit conditions requiring a permittee to conduct seafloor and sediment analysis and monitoring to verify assumptions made in developing permit limits regarding receiving water conditions, evaluate potential effects of the discharge, and assess the effectiveness of permit limits. Here, as has been noted, the bioassessment is intended to evaluate the potential effects of discharges of pollutants (including solids, metals, ammonia, petroleum hydrocarbons) from the terminals to the benthos of an already impaired waterbody, particularly in light of the Commonwealth's water quality standard at 314 CMR 4.05(5)(b) requiring that surface waters "be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms."

The permittee states that a watershed-scale bioassessment study of an area should be a collaborative work that involves all the stakeholders across the waterbody/watershed. As noted previously, the small-scale Global Facility bioassessment in this case is decidedly not a watershed-scale study.[81] The monitoring is not directly related to the development of a TMDL, for example. Rather, it is to assess existing permit limits and to inform the development of any additional limits that may be warranted to ensure water quality standards are met. The cause of the impairment is not part of the biomonitoring evaluation. EPA has designed the bioassessment

[77] West Springfield Station Permit No. MA0004707; page 10 https://www3.epa.gov/region1/npdes/permits/2004/ma0004707permit.pdf.
[78] https://www3.epa.gov/region1/npdes/permits/2022/finalma0100625permit2.pdf; RTC 10, 16
[79] Swansea Water District Desalination Facility benthic monitoring https://www3.epa.gov/region1/npdes/permits/2017/finalma0103390permit.pdf.
[80] *available at* https://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Verity%20View/29CB0575FEF110D58525706C004BF589/$File/alyeska.pdf
[81] EPA notes, in addition, that the statement from the Boston Harbor 1999 Water Quality Assessment Report quoted in the comment does not conflict with the bioassessment provision in this permit. The quote merely recommends that the Massachusetts Executive Office of Environmental Affairs work with state and federal agencies to conduct biological monitoring to determine if the discharges and habitat quality negatively impact aquatic life—it does not foreclose EPA from including permit requirements for biological monitoring in the vicinity of the facility's discharges. As noted earlier, CWA § 308(a) explicitly authorizes EPA to require a permittee to use such biological monitoring methods as EPA may reasonably require to develop limits, prohibitions, or standards or to determine whether a permittee is in violation of any limit, prohibition or standard. *See also* 40 CFR § 122.48(a).

to ensure that the effluent limits in the permit will be protective, given the current state of the water body's benthic habitat.

The permittee responds to EPA's specific request for comment on whether a comparative analysis should include hydrodynamic modeling conducted by the permittee by commenting that such modeling would be unreasonable, unrealistic, inappropriate, and impractical. Information provided from the development of a hydrodynamic model would be useful to characterize mixing, dilution and behavior of the stormwater discharges from Global Facility outfalls under various receiving water conditions. EPA recognizes that a hydrodynamic model, while potentially useful in interpreting bioassessment data, is not essential at this point. That is why EPA included the proposal for a comparative analysis that includes hydrodynamic modeling as one of five topics in the Fact Sheet (p. 97) as a way to generate comments from the permittee and the public. Based in part on the comments from Global concerning the hydrodynamic modeling, the Final Permit does not include a requirement to complete hydrodynamic modeling.

The comment states that EPA should perform the monitoring analysis by consolidating the data collected not only from the discharge monitoring data from permittees but other data sources (e.g., National Weather Service), in conjunction with interested and necessary stakeholders to determine the overall health and impacts to the waterbody. Again, EPA disputes the characterization of the bioassessment monitoring as providing information on the overall health of the waterbody/watershed. This is a focused data collection requirement that targets the benthic habitat and water column in the vicinity of the Global outfalls. Requiring the permittee, rather than EPA, to collect supporting environmental data from other sources that are publicly available (storm event information, for example[82, 83, 84]) is not uncommon in NPDES permit monitoring requirements and is retained in the bioassessment monitoring.

In summary, the bioassessment provision is not focused on laying blame on any one facility for the current impaired state of the river. Rather, the purpose is to improve understanding of the state of the waterbody in the vicinity of each terminal's outfalls to help verify that existing NPDES permit limits and conditions are being met and are sufficiently protective of state water quality standards or whether new limits and conditions should be contemplated in future permitting cycles and, if so, to provide EPA with information to assist in developing appropriate new limits and conditions. EPA's decision to include the bioassessment provisions is based on factual evidence suggesting further investigation is warranted. These facilities discharge pollutants to a waterbody that the Commonwealth has determined does not currently meet two uses for which it has been designated—Aquatic Life and Fish Consumption—and which are tied at least in part to sediment conditions. Moreover, the facilities are a suspected source for the listed impairments and continue to discharge pollutants that potentially affect these impairments,

[82] NPDES Construction General Permit; page 29 and footnotes 69 and 70 https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-permit.pdf.
[83] Chicopee Final Permit, NPDES Permit No. MA0101508; page 22 https://www3.epa.gov/region1/npdes/permits/2021/finalma0101508permit.pdf
[84] Multi-Sector General Permit; page 19, footnote 6 https://www.epa.gov/sites/default/files/2021-01/documents/2021_msgp_-_permit_parts_1-7.pdf.

including solids, metals, ammonia, and petroleum hydrocarbons.[85] While the Final Permit includes numeric limits, compliance levels for some pollutants are necessarily higher than the actual limits, and the bioassessment provision therefore provides an additional means to ensure that the terminals do not cause or contribute to exceedances of water quality standards and an additional margin of safety to ensure that they do not persist in the environment in violation of Massachusetts water quality standards. 314 CMR 4.05(5)(e). Massachusetts water quality standards further require that all surface waters "be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms." 314 CMR 4.05(5)(b). In addition to understanding the types and levels of pollutants in the discharge, EPA must, therefore, have a sufficient understanding of ambient conditions in the river, which in this case includes not just the ambient water column information that the comment agrees is within EPA's authority to require, but also the ambient sediment and biological information related to the above-mentioned water quality criteria and designated uses. The comment does not provide any principled justification for why the former is within EPA's authority while the latter are not. The bioassessment provision requires the permittee to characterize the benthic conditions, contaminants, and biota in the nearfield of their outfall. Global Final Permit at Part I.C.5. EPA maintains that these monitoring requirements are reasonable because the discharges from the Facilities are a suspected source of the listed impairments to the Chelsea River and additional data are necessary for EPA to ensure compliance with permit limits and make informed decisions about whether further conditions or limits will be necessary to ensure that the Facility does not cause or contribute to exceedances of the water quality standards, particularly those related to benthic conditions. *See* 40 CFR § 122.44(d)(1) (requiring NPDES permits to include "any requirements . . . necessary to . . . [a]chieve water quality standards"). The bioassessment will provide EPA with information to assist in this process. In short, the bioassessment provision is an information gathering requirement that fits squarely within EPA's authority under CWA §§ 308(a) and 402(a)(2) to require the owner or operator of any point source to "(i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as [EPA] may reasonably require" whenever necessary to carry out the objective of the CWA, including but not limited to developing or assisting in the development of any limit, prohibition, or standard; determining whether any person is in violation of any such limit, prohibition or standard; and carrying out CWA § 402. 33 USC §§ 1318(a), 1342(a)(2). EPA reaffirms that it has the necessary justification and authority to retain the bioassessment monitoring in the Global Final Permit, with only minor modifications, as described above and Response to Comment J.12.

[85] While the comment takes the position that it is the sole responsibility of EPA and MassDEP to conduct a bioassessment, it is the permittees—not the agencies—that discharge pollutants to the Chelsea River and that are suspected sources for the impairments. Nor does the comment cite to any statutory or regulatory provision to support its broad claim. EPA is authorized to require the owner or operator of any point source to provide any information EPA may reasonably require to carry out the objective of the Clean Water Act, which is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a); 33 USC § 1251(a).

Comment F.4 – New Limit for Fecal Coliform

Part I.A of the Draft Permit requires compliance with a Fecal Coliform limit (average monthly limit of 88 Most Probable Number (MPN)/100 ml and a maximum daily limit of 100 MPN/100 ml for the first time. The Facility objects to the new compliance requirements for Fecal Coliform. The Facility takes exception to the new requirement for the following reasons:

The Facility does not engage in any processes and activities related to bacteria production and/or discharge:

EPA specifically states in the Fact Sheet that (1) "[t]he Facility does not engage in activities that would be expected to generate large sources of bacteria, stormwater runoff can readily transport bacteria from surfaces susceptible to the waste products of warm-blooded animals or pathogens". This fact, which includes that there are no sanitary discharge connections to any of the stormwater outfalls at the Facility, suggest that the bacteria from this Facility is likely from the stormwater runoff transportation of surface wildlife waste products, which is however, considered a natural condition and not controllable in terms of the stormwater treatment processes.

The discharges through external outfalls are not categorized as any primary sources for bacteria listed in the MS4 permit:

According to the MassDEP's 2016 Integrated List of Waters, Enterococcus is not listed as an impairment for the Chelsea River. Although MassDEP released the Final Pathogen TMDL for the Boston Harbor, Weymouth-Weir, and Mystic Watersheds in October 2018, which includes specific water quality targets for Enterococcus in the Mystic River sub-basin, including the Chelsea River, EPA has failed to identify the source of bacteria resulting from industrial activities at the Facility and there is no evidence to suggest that the Facility is or has been a source. In addition, stormwater discharges from Municipal Separate Storm Sewer System (MS4) outfalls constitute the majority of point source stormwater flow to the Chelsea River and are the likely source of bacteria. EPA has determined, as represented by the NPDES Massachusetts Small MS4 General Permit, that BMPs suitable for managing and ultimately reducing bacteria/pathogens involve primarily non-structural means such as public education and outreach and enhanced illicit discharge detection and elimination. There are no analytical samplings, monitoring or reporting requirements for bacteria/pathogens in the MS4 general permit for MS4 operators discharging to TMDL-regulated or impaired receiving waters.

As noted, bacteria are neither an input nor product of industrial activities at the Facility. This Facility is not a source of pet waste or poorly managed septic systems, which are the primary sources for bacteria in stormwater cited in the MS4 permit. The Facility has confirmed that only the three sources listed previously are discharged through the four external outfalls (i.e. there are no illicit discharges). Consequently, requiring the Facility to monitor and report on bacteria provides little or no value, as it is an unlikely source, and it is a significant burden not otherwise imposed upon more likely contributing sources.

As the Facility (1) does not have any process related source that would contribute Enterococcus; (2) does not have operations/treatment available or feasible to remove bacteria from birds/wildlife; and (3) EPA has failed to establish that the Facility is or has been a source for Enterococcus that impacts or could impact the receiving water body, the Facility objects to the additional monitoring for Enterococcus as it lacks an adequate and defensible regulatory basis. More importantly, the bacteria in the discharges contributed by wildlife (e.g., birds congregate at terminals in the containment areas where water ponds) is clearly irrelevant to any industrial activities (i.e., discharges directly related to manufacturing, processing or raw materials storage areas at an industrial plant), which shall not be regulated under NPDES in accordance with 40 CFR § 122.26 (b)(14).

Request:
The Facility requests that EPA eliminates the monthly monitoring requirements for Enterococcus for the four external outfalls (i.e., Outfall 001, 002, 004, and 005) from the Draft Permit.

The Facility requests that should EPA elect to impose the effluent limit for fecal coliform, the compliance shall be evaluated under the MPN calculated based on the geometric mean of samples instead of colony forming units (cfu) per 100 mL, which was used by EPA for identify the detections.

Response to Comment F.4

The comment objects to the numeric limits for fecal coliform and the monitoring requirements for *Enterococcus* proposed in the Draft Permit. The commenter generally asserts that the effluent limitation and monitoring requirements are not necessary because the Facility is not a source of bacteria, the source of bacteria is wildlife, which is "irrelevant to any industrial activities," and because operations or treatment are not available or feasible to remove bacteria that, while present in the facility's discharge, ultimately come from wildlife. As explained below, stormwater discharges from the Facility's outfalls (i.e., point sources) contribute bacteria to the Chelsea River. The impairment of the primary and secondary recreation designated uses in the Chelsea River are caused, in part, by pathogens and there is an EPA-approved TMDL to address pathogens in the Chelsea River. EPA must ensure that the conditions and limitations of the NPDES permit will protect the water quality of the Chelsea River, including with respect to bacteria.

As explained in the Fact Sheet (p. 5), the goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this goal, the CWA provides that the discharge of any pollutant from a point source into waters of the United States shall be unlawful, except as authorized by specific sections of the CWA, one of which is § 402 (the NPDES program). *See* CWA §§ 301(a), 402(a). In 1987, Congress amended the CWA to provide a moratorium on the issuance of NPDES permits for discharges composed entirely of stormwater. CWA § 402(p)(1). The moratorium, however, contained several exceptions, including discharges with respect to which a permit had been issued before the date of enactment of the amendment (i.e., February 4, 1987). CWA § 402(p)(2)(A). This and the other bulk terminal facilities that discharge to Chelsea River were first issued NPDES permits authorizing the discharge of stormwater prior to February 4, 1987. As such, EPA

continues to require authorization for stormwater discharges from these industrial point sources under CWA § 402(p)(2)(A). *See also* 40 CFR § 122.26(a)(1)(i); 55 Fed. Reg. 4,157 (Feb. 12, 1988).

A NPDES permit for this industrial point source discharge must comply with the applicable requirements of the CWA, including Sections 402 and 301 (i.e., technology-based and water quality-based requirements). CWA §§ 301(a), 402(a); *see also* FS at 5-6. Technology-based requirements represent the minimum level of control that must be imposed under CWA §§ 301(b) and 402. *See* 40 CFR §§ 122.44(a)(1), 125.3(a). Under CWA Section 301(b)(1)(C), discharges are subject to water quality-based effluent limitations when more stringent limits are necessary to maintain or achieve federal or state water quality standards. *See also* 40 CFR §§ 122.4(d), 122.44(d)(1). In addition, where a total maximum daily load (TMDL) has been approved, NPDES permits must contain effluent limits and conditions consistent with the requirements and assumptions of the wasteload allocations in the TMDL. 40 CFR § 122.44(d)(1)(vii)(B). At issue here is the discharge of bacteria in stormwater runoff from an industrial point source to a waterbody that is impaired for that pollutant and for which there is an EPA-approved TMDL. *See* AR-31. Federal regulations prohibit the issuance of an NPDES permit when conditions of the permit do not provide for compliance with the applicable requirements of the CWA or regulations promulgated under the CWA.[86] *See* 40 CFR § 122.4(a), (d).

The comment objects to the Draft Permit's proposed numeric limits for fecal coliform set at the water quality criteria[87] and asserts that it should not be subject to effluent limits or monitoring requirements because the Facility is not a source of bacteria. As explained in the Fact Sheet (p. 34-5), EPA determined that the Facility "has the potential to discharge levels of bacteria in excess of water quality standards" and the numeric, water quality-based limit for fecal coliform was proposed "[g]iven the pathogen levels in the effluent and the requirements of the TMDL." Monitoring data over the past permit term demonstrate that fecal coliform is routinely present in the effluent discharge from point sources operated by all three Global facilities, including, at times, at levels well above the levels identified in the water quality standards (e.g., 350 to 16,000 cfu/100 mL). *See* Global Fact Sheet Appendix A and pp. 34, 59, and 72. The Facility discharges

[86] Although the stormwater discharges from the bulk petroleum terminals on the Chelsea River are regulated as point source discharges under CWA §§ 301(a) and 402(a) because these discharges were authorized under an NPDES permit issued prior to February 4, 1987, *see* CWA § 402(p)(2)(A), industrial stormwater discharges as regulated under CWA § 402(p)(3)(A) are also required to comply with all applicable standards of 402 and 301. The regulation of industrial stormwater is distinct, however, from that of municipal discharges from MS4s, which are held to a different standard under CWA § 402(p)(3)(B)(iii) ("shall require controls to reduce the discharge of pollutants to the maximum extent practicable…"). *See also, e.g.*, 40 CFR § 122.34. The stormwater discharges from Global's outfalls are not municipal discharges and, as such, the regulation of municipal sources under CWA §402(p) is not applicable in this case.

[87] The Massachusetts surface water quality standards for Class SB waters state that fecal coliform shall not exceed a geometric mean MPN (most probable number) of 88 organisms per 100 mL and not more than 10% of the samples exceeding an MPN of 260 organisms per 100 mL. 314 CMR 4.05(4)(b)(4); *see also* 2020 Fact Sheet at 34, 59, 72. The maximum daily fecal coliform effluent limitation of 100 MPN/100 mL proposed in the Draft Permit was an error. The Fact Sheet (p. 35) correctly identifies a maximum daily limit of 260 MPN/100 mL in accordance with the water quality standards. Consistent with the water quality standards, fecal coliform in the Draft and Final Permit is reported as MPN, as the comment requests.

fecal coliform at levels that have the reasonable potential to cause or contribute to an excursion of water quality standards.[88]

The comment also objects to the Draft Permit's monitoring requirements for *Enterococcus*. There are currently no monitoring data for *Enterococcus* at the Facility, which is the indicator bacteria for primary contact recreation in Class SB waters. The comment asserts that there would be "little or no value" to monitoring because the Facility is not a source of bacteria. First, there are no *Enterococcus* data on which to base the comment's claim that the Facility is not a source of *Enterococcus*, which is one of the reasons the Draft Permit proposed monitoring. Second, there *are* monitoring data demonstrating that fecal coliform, another microorganism used as an indicator of fecal contamination, is present in the Facility's stormwater discharge at levels that have the reasonable potential to cause or contribute to exceedances. It is reasonable then, to require monitoring for *Enterococcus* to determine the level of *Enterococcus* in the discharge and to enable EPA to assess whether the discharge will be protective of the primary and secondary contact recreational uses of the receiving water. *See* Response to Comment F.5. Section 308(a) of the CWA provides broad authority to impose monitoring requirements, including, but not limited to, "developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard." Monitoring is warranted to assist EPA in determining whether there is reasonable potential for the Facility's discharge to cause or contribute to an excursion above water quality criteria and, if so, in developing appropriate limits. EPA recognizes that there are other sources of bacteria to the Chelsea River, including combined sewer overflows (CSO), Municipal Separate Storm Sewer System (MS4) stormwater discharges, and nonpoint sources. There are other mechanisms in place to control these sources, including individual and general NPDES permits. *See*, e.g., City of Chelsea 2013 NPDES Permit MA0101877 and 2016 Massachusetts Small MS4 General Permit.[89] The existence of other sources of bacteria in the watershed does not exempt the Facility from addressing pollutants in its own discharge nor does it relieve EPA from its duty to ensure that the permit provides for compliance with the applicable requirements of the CWA and implementing regulations.

The comment asserts that the Facility does not have operations/treatment available or feasible to remove bacteria from birds/wildlife and that wildlife sources are "not controllable in terms of the stormwater treatment processes." The comment also asserts that the Facility should not be subject to effluent limits or monitoring requirements, because bacteria in stormwater discharges are from "wildlife waste products" which is "a natural condition." As explained in the Fact Sheet

[88] An NPDES permit must contain a water quality-based effluent limit where the analysis shows a discharge has reasonable potential to cause or contribute to an excursion of water quality standards for that pollutant. 40 CFR § 122.44(d)(1)(i)-(iv). EPA is afforded significant flexibility within the bounds of the CWA in determining whether a discharge has reasonable potential to cause an excursion. *See In re Upper Blackstone Water Pollution Abatement Dist*., 14 E.A.D. 577, 599 & n.29 (EAB 2010). Moreover, worst-case conditions must underlie the analysis. *Id.*at 599; *see also In re Wash. Aqueduct Water Supply Syst*., 11 E.A.D. 565, 584 (EAB 2004). In this case, given that the receiving water is impaired for fecal coliform, has an approved TMDL for pathogens, and fecal coliform counts in the facility's discharge have, at times, exceeded 300 cfu/100 mL (compared to the water quality single sample maximum of 260 organisms/100 mL), EPA has taken a conservative, protective approach in determining reasonable potential.

[89] MA0101877 available at https://www3.epa.gov/region1/npdes/permits/2013/finalma0101877permit.pdf and MA MS4 available at https://www.epa.gov/npdes-permits/massachusetts-small-ms4-general-permit

and in this Response, controlling bacteria is necessary to achieve water quality standards.[90] The Clean Water Act requires that water quality-based limits be established when necessary to attain water quality criteria—feasibility is not to be factored into that analysis. *See Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 33 (1st Cir. 2012); *In re City of Taunton*, 17 E.A.D. 105, 190 (EAB 2016); *In re City of Moscow*, 10 E.A.D. 135, 168 (EAB 2001); *In re City of Fayetteville, Ark.*, 2 E.A.D. 594, 600-601 (CJO 1988) (Section 301(b)(1)(C) "requires unequivocal compliance with applicable water quality standards and does not make any exceptions for cost or technological feasibility."). Second, according to the Boston Harbor Pathogen TMDL, potential sources of bacteria in the Chelsea River are "CSO, urban runoff/storm sewers, industrial point sources, spills," as well as "wildlife, including birds." *See* AR-31 pp. 62-63. Fecal coliform and Enterococci bacteria are found in the intestinal track of warm-blooded animals. They are used as indicators for the presence of pathogenic (i.e., disease-causing) bacteria, viruses, and protozoans that are also found in human and animal digestive systems. Pathogens impact humans through ingestion of, and contact with, recreational waters (primary and secondary contact recreation) and through consumption of shellfish. That the Facilities do not engage in the type of activities that would be expected to generate large sources of bacteria does not obviate the need for permit conditions that ensure that the discharge will not cause or contribute to an excursion from Massachusetts water quality standards.

The record at this and other Terminals supports EPA's determination that, at times, the bacteria levels in the stormwater discharges exceed water quality standards for fecal coliform. This and similar comments on the proposed bacteria limits from the Terminals (see Comments G.4, H.8, I.1 (requesting EPA to consider a BMP approach without numeric limits), and J.1), however, led EPA to reconsider the bacteria limits for the Final Permit, including whether a numeric effluent limit for fecal coliform is the best, or most practical, approach to provide for the attainment of water quality standards. First, the volume, frequency, and magnitude of stormwater discharges are highly variable. This variability can also extend to the levels of pollutants in the discharge – in this case, levels of bacteria ranged from non-detect (13 of 34 samples) to higher than the maximum daily fecal coliform standard of 260 colonies per 100 mL (7 of 34 samples). The intermittent nature and the high variability of bacteria may not be well-suited for technology such as disinfection, which is designed for a continuous discharge like that from a wastewater treatment plant. The addition of pollutants for disinfection, such as total residual chlorine, may introduce new complexities for which the current stormwater management systems are not

[90] EPA disagrees that the discharge to the River of fecal matter from wildlife attracted to the facilities would be a "natural condition" in the context of water quality standards and is not controllable. While Massachusetts water quality standards allow that excursions from criteria due to solely natural conditions shall not be interpreted as violations of standards and shall not affect water use classifications adopted by the Department, 314 CMR 4.03(5), the comment presents no evidence that fecal coliform discharges from the Facility are due to solely natural conditions. The accumulation and discharge of bacteria due to congregations of birds or other wildlife attracted to structures and operations at a Facility or due to conditions that encourage bacterial growth in its stormwater system do not appear to be "natural conditions." *See also* AR-31 p. xvii ("[B]acteria from wildlife would be considered a natural condition *unless some form of human inducement*, such as feeding, *is causing congregation of wild birds or animals*.") (emphases added); AR-29 pp. 113-14 (indicating that natural background would be determined by comparison to a site not impacted by human activity). Nor does the comment provide any explanation or regulatory citation to support its assertion that such discharges are not controllable. As explained in this response, there are management practices that can be implemented to control these sources of bacteria.

designed (e.g., the impact of chlorinated water on wildlife in the area, the potential need to hold stormwater for longer periods to allow for dechlorination). Numeric bacteria limits for stormwater based on the relatively few, and infrequent, monitoring samples, may result in overly stringent permit requirements and implementation of expensive controls not necessary to assure the attainment of water quality standards and could divert funds available to address other permit conditions, such as the new requirements for major storm events. BMPs may be expressly incorporated into a permit on a case-by-case basis in specific circumstances, including where, as here, they are reasonably necessary to carry out the purpose and intent of the CWA, including to ensure compliance with water quality standards. *See* 40 CFR § 122.44(k)(4). Considering the available data, the potential sources of bacteria in the stormwater, and the variability of the discharges, EPA concludes that implementation of BMPs that target the sources of bacteria in the stormwater will provide for the attainment of water quality standards in order to carry out the purpose and intent of the CWA. Indeed, BMPs are commonly used to control pollutants in stormwater discharges in lieu of numeric limits due to the inherent variability in stormwater discharges. *See Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits*, 61 Fed. Reg. 43,761 (Aug. 26, 1996), revised in 61 Fed. Reg. 57425 (Nov. 6, 1996). Implementation of BMPs is consistent with the Region's NPDES permitting approach to address stormwater from other industrial sources and from municipal sources. *See*, *e.g.*, EPA's 2021 MSGP (AR-27, AR-28), MA and NH small MS4 permits, the Mystic River Alternative TMDL, Great Bay Total Nitrogen General Permit.[91] Implementation of BMPs is also consistent with the Boston Harbor Pathogen TMDL's recommendations about implementation. *See* AR-31 p. 92. The increased monitoring of both fecal coliform and enterococci in the Final Permit will ensure that BMPs are implemented and maintained such that water quality standards are met.

The comment suggests that the source of the bacteria that discharges from point sources operated by Global is not attributable to human sanitary wastes but may be caused by wildlife (e.g., birds). First, the comment offers no specific evidence to eliminate human sources or to verify that the only source is wildlife. But nonhuman sources of fecal contamination are still associated with potential human health risks as they may carry zoonotic viruses. *See* AR-37 p. 36-8, AR-40. EPA's 2012 Recreational Water Quality Criteria (AR-37) plainly consider both human and nonhuman sources of fecal contamination, which suggests that contributions from nonhuman sources would be considered excursions of water quality criteria. Wildlife is commonly identified as a pervasive source of bacterial contamination and many sources employ best management practices to control wildlife sources, including reducing the attractiveness of drainage areas to wildlife. *See* AR-38, AR-40. Moreover, if the source is wildlife, the process by which bacteria accumulate and are discharged may be induced and exacerbated by the industrial conditions at the Facility. The comment acknowledges that the management of stormwater at the Facility creates conditions attractive to congregations of birds. Other wildlife potentially drawn to practices at the Facility could also be sources of bacteria (e.g., rodents, raccoons). Fecal matter from wildlife is often transported to surface waters via overland flow during wet weather. Under natural conditions, the transport of pathogens would be minimized by the natural filtering

[91] Mystic River Alternative TMDL Final Report available at https://www.mass.gov/doc/mystic-river-watershed-alternative-tmdl-development-for-phosphorus-management-final-report/download#:~:text=Alternative%20TMDL%20Process&text=allows%20states%20to%20adopt%20strategies,standards%20than%20a%20traditional%20TMDL. EPA Great Bay Total Nitrogen General Permit available at https://www.epa.gov/npdes-permits/great-bay-total-nitrogen-general-permit

capacity provided by vegetative cover and soils. The loss of natural attenuation resulting from high levels of impervious surface at the Facility can, at times, result in the discharge of high levels of bacteria, as demonstrated in the fecal coliform monitoring over the last permit term. *See* Fact Sheet Appendix A. In addition, the catch basins, drain inlets, and stormwater pipes and sewers in the stormwater drainage system itself can harbor sources of bacteria (e.g., biofilms, animal waste, organic matter). *See* AR-40. The discharge of bacteria from the industrial point sources operated by the Permittee to the Chelsea River, which has an EPA-approved TMDL to address a pathogen impairment, is directly related to the activities and stormwater management practices at the site and, as such, must be addressed by the permit.

Additional measures (e.g., best management practices (BMPs)) to reduce bacteria discharges from point sources are available. Reducing runoff volume and source controls are among the most effective options for reducing bacteria loads to receiving waters from stormwater. See AR-40. Given potential sources of bacteria at this Facility (e.g., wildlife and/or sources within the drainage system as explained above), pollution prevention via BMPs such as restricting wildlife access, minimizing conditions that attract nuisance wildlife, and improving site and drainage system maintenance will effectively prevent or reduce contributions of bacteria in stormwater by eliminating the sources of bacteria. In this case, EPA determined that water quality-based, non-numeric limitations are appropriate in lieu of numeric fecal coliform limits to carry out the purposes and intent of the CWA to ensure compliance with water quality standards. The Boston Harbor Pathogen TMDL similarly contemplates implementation of BMPs as the primary means to address pathogens in stormwater runoff. *See* AR-31 p. 92. The non-numeric limitations in the Final Permit are consistent with the assumptions and requirements of the TMDL. In this case, EPA concludes that non-numeric BMPs targeting bacteria source control at the site are a reasonable approach to ensure compliance with Massachusetts water quality standards.

Part I.C.1 of the Final Permit establishes non-numeric effluent limits (i.e., non-structural BMPs) to minimize pollutants in stormwater, some of which target source controls and, when properly implemented, will reduce the levels of pathogens in the effluent, including the following:

(2) Design good housekeeping measures to maintain areas that are potential sources of pollutants;
(3) Implement preventative maintenance programs to avoid leaks, spills, and other releases of pollutants to stormwater that is discharged to receiving waters;
(6) Utilize runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
(9) Evaluate for the presence of non-stormwater discharges and require the elimination of any non-stormwater discharges not explicitly authorized in this permit or covered by another NPDES permit;

Good housekeeping measures and preventative maintenance programs to eliminate or reduce potential overland sources of pathogens (i.e., runoff picking up bacteria as it flows over impervious surfaces) include sweeping, cleaning catch basins, drains, and pipes, eliminating trash and debris, managing animal waste, and modifying drain inlets to exclude wildlife access, as well as practices to divert, infiltrate, reuse, and reduce stormwater runoff). Part I.C.1.a of the

Final Permit also includes several additional BMPs to target reductions in bacteria loads including:

(11) Demonstrate that no illicit discharges exist, including, but not limited to, sanitary sewer cross connections. If any illicit discharge is detected, the Permittee shall locate, identify, and eliminate the illicit discharge as expeditiously as possible.
(12) Use known, available, and reasonable methods to prevent rodents, birds, and other animals from feeding/nesting/roosting at the Facility. Known, available, and reasonable methods do not include methods that would be construed as allowing violations of any applicable federal, state, or local statutes, ordinances, or regulations including the Migratory Bird Act.
(13) Implement practices to minimize bacteria from known sources (e.g., dumpsters, food waste, animal waste).

Similar non-structural BMPs targeting source controls have been shown to reduce bacteria levels in urban, rural, and agricultural settings. *See* AR-40. EPA expects that the Facility will examine the existing BMPs as documented in the Stormwater Pollution Prevention Plan (SWPPP) and explore additional BMPs to address source controls for bacteria. Several other commenters have also suggested a BMP-based approach for controlling bacteria. *See*, *e.g.*, Comment I.1. In addition, the Final Permit at Part I.C.1.b.8 includes a provision requiring the permittee to complete a cross-connection evaluation with respect to MS4s.

Pathogens are causing water quality problems in Chelsea River and contributing to the impairment of primary and secondary contact recreation designated uses as well as shellfishing. The Fact Sheet and this Response to Comments establish that the point sources operated by the Permittee contribute bacteria to the receiving water. EPA is obligated to regulate discharges that have the reasonable potential to cause or contribute to an excursion above water quality standards. 40 CFR § 122.44(d)(1)(i)-(iii). In addition, EPA must ensure that the level of water quality to be achieved by water quality-based effluent limitations is derived from, and complies with, applicable water quality standards and that the limits are consistent with the assumptions and requirements of any available wasteload allocation. *Id.* § 122.44(d)(1)(vii). Implementing the BMPs proposed in the Draft Permit, coupled with the additional, water-quality based non-numeric limits described above will reduce sources of bacteria in the stormwater runoff and will ensure compliance with water quality standards in accordance with 40 CFR § 122.44(d)(1)(vii)(A) and (B). Given the intermittent nature of the discharge and because the source of bacteria in the effluent is likely from runoff or from the stormwater drainage system itself, BMPs that eliminate or minimize sources are the most direct method of controlling pollutants to meet water quality standards. EPA concludes that the non-numeric limits targeting bacteria, coupled with monitoring and requirements to assess and improve BMPs as necessary to maintain bacteria levels will ensure that the discharge does not exceed water quality standards such that a separate, numeric fecal coliform limit is not necessary. Monthly monitoring is required for fecal coliform and enterococci to ensure that the BMPs continue to be implemented effectively to protect the designated uses of the receiving water. EPA maintains that the fecal coliform and *Enterococcus* monitoring requirements are supported by the record and are necessary to ensure that water quality standards are met.

Comment F.5 – New Monitoring Requirement for Enterococcus

Part I.A of the Draft Permit requires a monitoring and reporting requirement for Enterococcus for the first time.

EPA has failed to provide a quantitative analysis for identifying the contribution of Enterococcus from the Facility's industrial activities. As indicated in the Fact Sheet (page 34), the Facility does not engage in activities that would be expected to generate large sources of bacteria and currently does not have any process related source for bacteria. Bacteria is neither an input nor product of industrial activities at the Facility. This Facility is also not the primary sources for bacteria in stormwater cited in the MS4 permit (see details in the response of Enterococcus above). These facts suggest that the bacteria discharge from this Facility, if any, is likely from the stormwater runoff transportation of surface wildlife waste products. Further, the bacteria in the stormwater contributed by wildlife waste products, again, does not fall into any industrial categories or relate to any industrial activities as mentioned above, which then shall not be under NPDES regulations (40 CFR § 122.26 (b)(14)).

Request:
The Facility requests that EPA eliminate the monthly monitoring and reporting requirement for Enterococcus.

Response to Comment F.5

The comment objects to the monitoring requirements for *Enterococcus* proposed in the Draft Permit. EPA has addressed similar comments about bacteria in Response to Comment F.4, including demonstrating that the Facility is a source of bacteria based on site-specific data in the Facility's Discharge Monitoring Reports. EPA also explains in that response that this Facility's discharge is permitted pursuant to 40 CFR § 122.26(a)(1)(i), not 40 CFR § 122.26(b)(14). Section 308(a) of the CWA provides broad authority to impose monitoring requirements, including, but not limited to, "developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard." CWA § 308(a)(1)(A), 33 U.S.C. § 1318(a)(1)(A); *see also* CWA § 402(a)(2), 33 U.S.C. § 1342(a)(2) (authorizing EPA to include "conditions on data and information collection, reporting, and such other requirements as [the Administrator] deems appropriate."); *In re Town of Concord*, 16 E.A.D. 514, 541-42 (EAB 2014) (citing cases). The proposed *Enterococcus* monitoring will enable EPA to ensure that water quality standards are met, including the primary and secondary contact recreation designated uses. *See* 314 CMR 4.05(4)(b).

The comment asserts that the monitoring requirements are improper because EPA did not "provide a quantitative analysis for identifying the contribution of Enterococcus" from the Facility. First, the comment does not demonstrate that the Clean Water Act requires such a quantitative analysis. In fact, because the Facility has never sampled for *Enterococcus* there are no *Enterococcus* data from the Facility on which to conduct such an analysis, which supports the need for *Enterococcus* monitoring. Second, EPA's decision to require *Enterococcus* monitoring is based on factual evidence suggesting further investigation is warranted. Sampling data

collected over the last permit term demonstrate that the stormwater discharges from the Facility's outfalls do contain fecal coliform. Both fecal coliform and *Enterococcus* are found in the intestinal tracks of warm-blooded animals and are used as indicators of fecal contamination. In marine waters, *Enterococcus* is used as the indicator for recreational uses because it is linked to rates of gastrointestinal illness, but the two indicator bacteria are commonly found together. *See* AR-37. In addition, *Enterococcus* is present in stormwater discharges at other bulk oil terminals in the area. *See, e.g.,* 2020 Citgo Terminal Fact Sheet.[92] It is reasonable to expect, based on the presence of fecal coliform in the Facility's discharges and the presence of *Enterococcus* in discharges from similar facilities in the area, that these discharges may also contain *Enterococcus*. *See In re City of Port St. Joe*, 7 E.A.D. 275, 310 (EAB 1997) ("[F]or a petitioner to raise a material issue of fact as to whether an information gathering requirement in a permit is unreasonable and therefore exceeds the Agency's authority under Section 308(a), a petitioner must cite evidence sufficient to support a finding that there is no basis in fact for the Agency to require information gathering in the first place."). EPA maintains that the monitoring requirements are reasonable because the discharges from this Facility and others are a known source of bacteria to Chelsea Creek, *see* Response to Comment F.4, and *Enterococcus* data are necessary to make an informed decision about whether additional conditions or limits will be necessary to ensure that the Facility does not cause or contribute to exceedances of the water quality standards, including for primary and secondary contact recreation, *see* 40 CFR § 122.44(d) (requiring NPDES permits to include "any requirements . . . necessary to . . . [a]chieve water quality standards").

Comment F.6 – Slack Tide and Sampling Requirements

Footnote 1 to Part I.A of the Draft Permit provides significant detail as to the requirements for sampling during a "qualifying event" including that the "discharge occurs during daylight hours on an outgoing tide at least one hour from both the low and high slack tide." However, these limitations make it exceedingly difficult for the discharge to be considered a qualifying event as on multiple days each month, the above period will either not occur during daylight hours or for such a short duration as to make sampling impractical. Although the Facility has some ability to detain or control the discharge timing for stormwater at the Facility, this detention is limited and may not be sufficient in all situations, requiring a discharge during slack tides. Furthermore, the requirement to collect a sample within 15-60 minutes of "the initiation of the discharge" significantly reduces the likelihood that a "qualifying event" will begin within the already restrictive low to high slack tide period. For an extreme case, if all the storm events within a month occur during nighttime and produce discharges during the slack tide periods, it will result in a dilemma of sampling for that month as all the discharges in this case would not meet the "qualifying event" requirement.

Also, the Facility is unaware of any specific requirements or guideline regarding the timing of estuary monitoring (e.g., EPA 2006 Volunteer Estuary Monitoring: A Methods Manual, Second Edition; EPA 2010 Permit Writer's Manual; EPA 2015 Water Quality Standards Handbook; EPA 2004 Technical Support Document for Effluent Guideline Program Plan; EPA 1991

[92] Available at https://www.epa.gov/ma/public-notice-draft-permit-citgo-braintree-terminal-east-braintree-ma-ma0004782

Guidance Manual for the Preparation of NPDES Permit Applications for Stormwater Discharges Associated with Industrial Activity).

Request:
The Facility requests to delete requirement of sampling during qualifying event and that Footnote 1 be revised as the followings.

"Grab samples for Outfall 001 shall be collected at the discharge point from the Facility's treatment system. Samples shall be collected after treatment through the stormwater treatment system and free from tidal influence."

In the alternative, should EPA retain this provision, the Facility requests that EPA provide clarification in the permit as to the reporting and sampling requirements should a "qualifying event" not occur in a given month (i.e. should the Facility not report a discharge or sample a so-called non-qualifying event).

Response to Comment F.6

Part I.A Footnote 1 of the Draft Permit requires sampling of a discharge that occurs during daylight hours on an outgoing tide at least one hour from low and high slack tides. This requirement is identical to the existing requirement in Part I.A. Footnote 1 of the 2014 Final Permits for Global REVCO (MA0003298), Global Petroleum (MA0003425) and Global South (MA0000825). *See also*, *e.g.*, Global Petroleum 2014 Permit Part I.C.3 ("The Permittee shall implement a discharge practice BMP that…meets the requirements of a qualifying event specified in Part I.A.1…"). The Permittee has consistently reported monthly effluent sampling data under the current 2014 Permits, which have presumably met the "qualifying event" sampling requirement. The comment offers no evidence from sampling efforts over the past 6 years to support its claims that the requirement has made monitoring "exceedingly difficult" or "impractical."[93] Still, in response to the comment, EPA has reviewed the sampling and discharge requirements.

The "qualifying event" sampling requirement was added in response to a comment on the 2014 Draft Permits from Mystic River Watershed Association (MyRWA). *See* 2014 Response to Public Comments for the Chelsea River Bulk Oil Terminals pp. 5-6.[94] The purpose of defining a "qualifying event" for monitoring was to ensure that effluent and receiving water pollutant scan samples would be collected concurrently during an outgoing tide to reflect the water quality of Chelsea Creek rather than the inflow from Boston Harbor. Collecting these samples concurrently ensures that the ambient data used to evaluate the water quality of the receiving water and in the analysis of reasonable potential are representative of the receiving water quality when discharges

[93] EPA notes that the 2014 Final Permits included a provision, at Part I.C.3.e, which allowed the Permittee to provide an evaluation and explanation that any portion of the BMP at Part I.C.3, including timing the discharge to meet the requirements of a qualifying event, is impracticable and to document the demonstration in its Stormwater Pollution Prevention Plan (SWPPP). To EPA's knowledge, no evaluation or explanation that sampling is impracticable was ever documented in the SWPPP or provided in the comment.
[94] Available at https://www.epa.gov/npdes-permits/chelsea-river-bulk-petroleum-storage-facilities-npdes-permits#2014PermitDocs

of stormwater are occurring. The effluent and receiving water pollutant scans are monitored on a quarterly to annual basis, depending on the outfall. The Draft Permits propose monitoring stormwater discharges for pollutants limited by numeric, water quality-based or technology-based effluent limits on a more frequent basis (monthly to quarterly) than the annual pollutant scans. The timing of the stormwater discharges is directed by certain best management practices (BMPs) and monitoring representative of effluent quality is necessary to ensure that limitations are met. *See*, *e.g*., Responses to Comments F.7, F.23.

In accordance with 40 C.F.R. § 122.41(j), § 122.44(i), and § 122.48, sampling of effluent discharges must yield data representative of the monitored activity. Sampling during a "qualifying event" is not necessary to obtain a representative sample of stormwater because the effluent is sampled prior to comingling with the receiving water. Similarly, a "qualifying event" requirement is not necessary for Internal Outfall 003 because this location is not representative of the discharge to the receiving water. EPA revised Part I.A.3 of the Final Permit to remove references to "qualifying event" monitoring for Outfall 003. When ambient pollutant monitoring is also required, the effluent and receiving water should be collected concurrently to ensure that the samples are representative of water quality in Chelsea River at the time of discharge. As the commenter points out, the Draft Permit is not clear whether and how monitoring should proceed if stormwater is being discharged but the conditions for monitoring a "qualifying event" are not met. As explained in Response to Comment F.7, there are certain times (*e.g*., emergency situations or heavy rainfall) when stormwater discharges outside of the conditions specified in Part I.C.1.b.3 (and consistent with a "qualifying event") cannot be avoided. Taken together, the provisions in footnote 1 in Parts I.A.1 and I.A.2 and Part I.C.1.b.3 of the Draft Permit could result in a scenario where stormwater is discharged (because a discharge could not be avoided) but not monitored during a calendar month (because the "qualifying event" conditions were not met). To ensure that stormwater sampling is conducted at the appropriate frequency whenever the Facility is discharging, EPA has revised the footnote in the Final Permit to clarify that the "qualifying event" sampling conditions apply only to concurrent monitoring of certain pollutants in the effluent and receiving water. Part I.A.1 (Footnotes 1, 10, and 20) and Part I.A.2 (Footnotes (Footnotes 1, 11, and 20) in the Global Final Permit have been revised to clarify that stormwater sampling must occur when discharging stormwater even if the Discharge BMPs at Part I.C.1.3.b are not met. The Final Permit was revised to clarify that annual WET and ambient sampling occur during the month of April (consistent with footnote 19 in the Draft Permit) to ensure that annual monitoring is concurrent and consistent with the requirements of a "qualifying event." Finally, EPA clarified Footnote 20 to explain that the ambient sampling results for Global Outfall 001 can be used to satisfy the sampling requirements for Outfalls 002 where duplicative given the proximity of the two outfalls. *See* Response to Comment F.17.

EPA expects that limiting the monitoring required to meet the "qualifying event" conditions to those parameters that will be sampled concurrently in the effluent and receiving water will ensure that stormwater is monitored at the appropriate frequency. The Permittee must meet the conditions for discharging at Part I.C.b.3 to the maximum extent practicable, but EPA understands that there may be situations when discharges cannot be avoided. Monitoring for all other parameters should be conducted at the specified frequency when the Facility is discharging. As explained above and in Responses to Comments F.7 and F.23, the Part I.C of the Final Permit retains certain BMPs specifying the conditions under which stormwater discharges should occur.

See Final Permit Part I.C.b.3. In the event that the Facility does not discharge during a calendar month, the appropriate NODI code should be reported.

Comment F.7 – Avoidance of Discharge During Slack Tide.

Part I.C.1.b(3) of the Draft Permit requires that the Facility "shall avoid discharging stormwater" during slack tide. However, because the Facility does not have the means to control or store all of the stormwater that falls at the Facility, it is limited on the ability to control the timing of a discharge, especially during periods of high rainfall. At such times, the Facility cannot avoid discharge of its uncontrolled stormwater during slack tide. EPA has provided no evidence that the discharge from Facility outfalls during slack tide would somehow impair the receiving waterbody.

Further, the Facility does not recognize any regulatory bases associated with the control of stormwater discharge associated with tides (e.g., EPA 2010 Permit Writer's Manual; EPA 2015 Water Quality Standards Handbook; EPA 2004 Technical Support Document for Effluent Guideline Program Plan; EPA 1991 Guidance Manual for the Preparation of NPDES Permit Applications for Stormwater Discharges Associated with Industrial Activity; EPA 1991 Technical Support Document for Water Quality-based Toxics Control).

Request:
The Facility requests that the prohibition in Part I.C.1.b(3) regarding discharging stormwater during slack tide be deleted from the Draft Permit.

Response to Comment F.7

Part I.C.1.b.3 of the Draft Permit states:

> The Permittee shall avoid discharging stormwater, hydrostatic test water, and groundwater during worst-case conditions (i.e., the hour before and after slack tide and during the periods of lowest receiving water flow) and further avoid discharging concurrently with other facilities located along Chelsea River to the maximum extent practicable.

The conditions of this BMP are consistent with the slack tide provisions in the existing BMP at Part I.C.3 of the 2014 Permits for Global REVCO (MA0003298), Global Petroleum (MA0003425) and Global South (MA0000825). Under the 2014 Permits (Part I.C.3), Facilities were required to "minimize the extent to which discharges from the Terminal occur under worst-case conditions," which included "one hour before and after slack tides," and to document the process for meeting this condition in the SWPPP. *See also* 2014 Permits Part I.C.3.e.

Neither the 2014 Permits nor the Draft Permit prohibit the Facility from discharging during slack tide. EPA understood that stormwater discharges can be unpredictable and that there may be times when the Facility cannot control the timing of the stormwater discharge (i.e., during periods of high rainfall). This BMP was written specifically to indicate that discharges during slack tide should be *avoided*, which is consistent with the requirement in the 2014 Permit to

"minimize" discharges during slack tide. *See also* 2014 Permits Part I.C.3.a (requiring the BMP to include a "detailed process for the initiation of discharge which identifies . . . the methods for *avoiding* worst-case conditions") (emphasis added). In both permits, the Permittee should implement measures to reasonably avoid discharging during worst-case conditions and to document these measures in its SWPPP.[95] However, to clarify that this BMP in the re-issued permit is carried forward from the 2014 Permits and does not impose new restrictions on the Facilities, EPA has revised the Final Permit to mirror more closely the language from the 2014 Permits. Part I.C.1.b.3. now states: "The Permittee shall minimize, to the maximum extent practicable, discharging stormwater, hydrostatic test water, and groundwater during worst-case conditions (i.e., the hour before and after slack tide and during the periods of lowest receiving water flow). The Permittee shall, to the maximum extent practicable, discharge stormwater, hydrostatic test water, and groundwater on an outgoing tide."[96] *See also* Responses to Comments E.6 and H.4. The discharge of stormwater during slack tide is not prohibited if the Facility has operated in accordance with the BMPs as documented in its SWPPP and a discharge could not otherwise be avoided. *See* Final Permits Part I.C.2.b ("The SWPPP must . . . document the implementation of non-numeric technology based effluent limitations in Part I.C.1 that will be used to reduce the pollutants and assure compliance with this Permit . . . .").

EPA is authorized to impose BMPs to control or abate the discharge of pollutants under CWA Section 402 as reasonably necessary to achieve effluent limitations and standards and to carry out the purposes and intent of the CWA. *See* 40 CFR § 122.44(k)(2), (4). BMPs, by definition, include schedules of activities and other management practices to prevent or reduce the pollution of waters of the U.S. *Id.* § 122.2. A BMP that requires a Permittee to avoid discharging at certain times in order to control pollutants in the receiving water is clearly within the regulatory basis of BMPs in accordance with 40 CFR §§ 122.2 and 122.44(k)(2). In this case, discharges from multiple outfalls at multiple bulk oil terminals along the Chelsea River present a threat of cumulative impacts to a receiving water that is already severely impaired for multiple pollutants. Even though EPA has conservatively established effluent limitations with no dilution, the pollutants present in the stormwater discharges (petroleum hydrocarbons, including PAHs) are persistent, will strongly adsorb to suspended particulates and can accumulate in the water, in the sediments, and in fish and shellfish. By discharging (to the extent practicable) when the tide will carry pollutants downstream and out of the river, the BMP is reasonably constructed to promote efforts to minimize the load to the river from multiple facilities that could adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms, while recognizing that the BMP may not be practicable to achieve in every case. The Final Permit retains conditions for the timing of the discharge to control the addition of pollutants to an impaired waterbody. The intent of the BMP is to minimize the potential for the Facility to discharge pollutants to the

[95] EPA again notes that the Permittee has not provided any evaluation or explanation that minimizing discharges during low tide is impracticable or that such a claim was documented in its SWPPP in accordance with Part I.C.3.e of the 2014 Permits.

[96] The "qualifying event" provisions in the Final Permit were revised in response to comments received such that it no longer applies to all discharges of stormwater. *See* Response to Comment F.6. Partly as a result of this revision, EPA moved the requirement to discharge stormwater on an outgoing tide from footnote 1 to the discharge practices BMP at Part I.C.1.b.3. Including the outgoing tide requirement with the discharge practices BMP is also consistent with the discharge practices BMP at Parts I.A footnote 1 and I.C.3.a of the 2014 Permits. *See* Response to Comment E.6.

receiving water under worst-case conditions. Conditions that promote discharging on an outgoing tide at least one hour from slack tide will further protect water quality because these conditions are optimal for transporting pollutants in the stormwater, hydrostatic water, and groundwater discharges out of the Chelsea River.[97]

Comment F.8 – New Limits for Group I Polycyclic Aromatic Hydrocarbons (PAHs)

EPA imposes an effluent limit of 0.018 µg/L for all or some of the six of seven Group I PAHs (i.e., benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene) for the four external outfalls and one internal outfall (i.e., Outfalls 001, 002, 003, 004, and 005) for the first time in Part I.A of the Draft Permit. The implementations of new compliance requirements for each substance at each outfall are listed in the table below.

Effluent Limit Implementation Status in the Draft Permit for the six Group I PAHs (except Benzo(a)pyrene)

Substance	Outfall 001	Outfall 002	Outfall 004	Outfall 005
benzo(a)anthrancene				
benzo(b)fluoranthene				
benzo(k)fluoranthene				
Chrysene				
dibenzo(a,h)anthracene				
Indeno(1,2,3-cd)pyrene)				

The Facility takes exception to offsetting a new compliance requirement for the reasons below:

<u>EPA clearly erred by violating applicable regulatory procedures for establishing WQBELs for PAHs:</u>

EPA has established clear regulatory procedures for establishing WQBELs in NPDES permits. Federal regulations, as well as EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), set forth the procedures to calculate a WQBEL consistent with applicable water quality standards (WQS) and waste load allocations (WLAs) contained in applicable TMDLs. EPA abandons those procedures and imposes the WQBEL for the six PAHs using the value of 0.018 µg/L directly from the human health water quality criteria. EPA's failure to follow established procedures in imposing effluent limits for the six PAHs for the Facility constitutes a clear error and is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii).

<u>Infeasible compliance level for the PAHs:</u>

Part I.A of the Draft Permit requires that the effluent limit for the six PAHs be set at 0.018 µg/L at all the four external outfalls, if proposed. However, Footnotes of the Draft Permit (e.g.,

[97] EPA emphasizes that the Draft Permit's proposed requirements on the timing of the discharge (on an outgoing tide at least one hour before or after slack tide) are substantially the same as the requirements of the 2014 Permit and do not impose new restrictions on the Facilities. *See* CWA § 402(o); 40 CFR § 122.44(*l*).

Footnote 11 for Outfall 001) acknowledges that the method minimum level (ML) for all Group I PAHs is specified as 0.1 µg/L, which is two orders of magnitude greater than the effluent limit. Notwithstanding, as discussed above, that the effluent limit imposed by EPA is contrary to EPA's regulations and authority, EPA has failed to consider the present laboratory detection limits when determining the effluent limits. The Facility is concerned that although Footnote 11 indicates that the ML of 0.1 µg/L "shall represent the compliance level", the actual effluent limit set below the detection limit/ML will be impractical and will lead to difficulties in execution for the compliance as the concentration of all the Group I PAHs in the collected samples will all likely be non-detect.

Request:
The Facility requests that the EPA remove all the proposed effluent limitation of the six PAHs from the Draft Permit for Outfall 001, 003, 004, and 005.

Response to Comment F.8

The commenter objects to new limits in the Draft Permit for six Group I PAHs—namely, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene.[98]

The Fact Sheet (pp. 39-43; 61- 63; 75-79) explains EPA's rationale for the new PAH limits. Group I PAHs are known animal carcinogens and probable human carcinogens. Fact Sheet p. 39; *see also, e.g.*, EPA, Update of Human Health Ambient Water Quality Criteria: Benzo(b)fluoranthene, at 12 (June 2015). Moreover, PAHs are listed in 40 CFR § 401.15 as toxic pollutants pursuant to CWA § 307(a)(1). The Massachusetts' water quality standards at 314 CMR 4.05(5)(e), require that "all surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife." Further, the state water quality standards provide criteria applicable to the Group I PAHs.[99] *Id.* 4.05(5)(e)(1), Table 29. EPA reviewed the data following the most recent update to Massachusetts water quality standards. The current laboratory minimum levels for most PAHs remain above the corresponding human health criteria listed in Massachusetts' approved water quality standards, meaning that a detection is an exceedance of a criterion (with the exception of chrysene). Five of the Group I PAHs, in addition to benzo(a)pyrene, were detected above laboratory minimum levels in one or more Global outfalls. *See* Fact Sheet pp. 40, 75-76, 78 and Appendix A. The updated water quality standard for chrysene is 0.13 µg/L, which is less stringent than the applicable standard at

[98] Due to the sale and decommissioning of the oil terminal at the REVCO property, and subsequent authorization under General Permit and termination of the NPDES Permit No. MA0003298, the Final Permit does not authorize Global to discharge any pollutants via Outfalls 004 and 005 and, as a result, does not include the above-referenced effluent limits for the Group I PAHs for these two outfalls. *See* Responses to Comments D.1, F.1.

[99] EPA derived the limits in the Draft Permits from EPA's *National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002*, pursuant to then-existing Massachusetts WQS. On January 7, 2022, MassDEP submitted WQS revisions to EPA affecting Group I PAHs, and, on March 31, 2022, EPA approved them. Consequently, the Final Permits include limits for the Group I PAHs based on the now current criteria. 40 CFR § 131.21(c)(2); *see also In re City of Keene*, 18 E.A.D. 720, 750-51 (EAB 2022) (observing that EPA must calculate limits based on a state's EPA-approved water quality standards); *In re Dominion Energy Brayton Point, L.L.C.*, 12 E.A.D. 490, 616 (EAB 2006) (requiring EPA to "apply the CWA statute and implementing regulations in effect at the time the final permit decision is made").

the time of the Draft Permit (0.018 µg/L). Chrysene was not observed at concentrations above the updated water quality standard and the estimated 95th percentile (based on observed data) did not exceed the water quality standard. As such, there is not reasonable potential to cause or contribute to an excursion for chrysene. The Final Permit includes a reporting requirement for this constituent. In addition to monitoring data indicating the presence of Group I PAHs above the human health water quality criteria, the designated uses for Aquatic Life, Aesthetics, Primary Contact, and Secondary Contact Recreation in Chelsea River are all listed as impaired due to petroleum hydrocarbons. *See* Fact Sheet pp. 25, 40.

The comment does not dispute EPA's determination that "reasonable potential" exists and that effluent limits are, therefore, required pursuant to 40 CFR § 122.44(d)(1)(i). Rather, the comment asserts that EPA failed to follow procedures in its regulations and guidance to calculate the WQBELs "consistent with applicable water quality standards (WQS) and waste load allocations (WLAs) contained in applicable TMDLs." The comment does not, however, point to any specific procedures in EPA guidance or otherwise explain what EPA should have done differently in calculating the limits. And while the comment asserts without elaboration that EPA's derivation of limits for these pollutants "is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii)," this unexplained claim does not withstand scrutiny. The regulations at 40 CFR § 122.44(d)(1)(vii) do not prescribe detailed procedures for setting effluent limitations, as EPA explained in the preamble to these regulations. 54 Fed Reg. 23,868, 23,879 (June 2, 1989). "Rather, the regulation prescribes minimum requirements for developing water quality-based effluent limits, and at the same time, gives the permitting authority the flexibility to determine the appropriate procedures for developing water quality-based effluent limits." *Id.* Subparagraph (vii) only provides that, when developing WQBELs under § 122.44(d), "the permitting authority shall ensure that: (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; and (B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7." As explained above and in Sections 5.2.4.1, 5.3.4.1, and 5.4.4.1 of the Fact Sheet, the effluent limits for these pollutants are derived from Massachusetts' water quality standards at 314 CMR 4.05(5)(e) to ensure a level of water quality that complies with those standards, thus satisfying subparagraph (A). As for subparagraph (B), the state has not prepared, and EPA has not approved, a TMDL for PAHs. Thus, paragraph (B) does not impose requirements on EPA when deriving PAH limits for these outfalls. For these reasons, EPA's derivation of the limits is consistent with 40 CFR § 122.44(d)(1)(vii).

To calculate the PAH limits, EPA follows guidance in the *Technical Support Document for Water Quality-based Toxics Control.* AR-114 pp. 36-41. EPA applied the "organism only" human health criterion for PAHs expressed as a monthly average given exposure expected over a lifetime to Class SA and SB waters based on the designated uses. *See* Fact Sheet pp. 41, 79. *See also* 2014 Global REVCO Fact Sheet p. 21. EPA applied the human health water quality criterion at the outfalls because a dilution factor of 1 is appropriate for these waterbodies. *See* Fact Sheet p. 28 and Response to Comment F.21.

The comment states that EPA did not consider present laboratory detection limits when determining the effluent limits for PAHs because the minimum level of available methods are greater than the effluent limitation. In fact, EPA must impose effluent limitations it determines to be necessary to protect WQSs, in this case the human health criteria values for Group I PAHs. According to the NPDES Permit Writers' Manual (AR-116 p. 8-13), the limitation in the permit must be included as calculated "regardless of whether current analytical methods are available to detect and quantify the parameter at the concentration of the calculated limitation." Where effluent limits have been established in NPDES permits but compliance cannot be determined using currently approved analytical methods (i.e., if WQBELs are less than the analytical capability of the methods), EPA's Technical Support Document for Water Quality based Toxics Control (TSD) EPA 505/2-90-001 (p. 111) recommends, "the compliance level be defined in the permit as the minimum level (ML)." This minimum level is based on the method that has the lowest minimum level of the analytical methods approved under 40 CFR Part 136 and is geographically available.[100] The comment indicates some confusion over which value – the compliance level or the effluent limit – has precedence when determining compliance. The compliance level has precedence. The footnotes for the PAH requirements (Footnote 11 in Part I.A.1. of the Final Permit) explain that, for the purposes of the Permit, the compliance level for Group I PAHs is non-detect at a sample-specific minimum level above the applicable water quality criterion for each individual compound, and 5 µg/L for Group II PAHs. *See also* Response to Comment A.3.

Comment F.9 – New Limit for Total Residual Chlorine (TRC)

In Part I.A of the Draft Permit, EPA imposes an effluent limit of 13 µg/L with an associated ML of 30 µg/L as a compliance level for TRC for all the four external outfalls (i.e., Outfall 001, 002, 004, and 005) for the first time. The Facility objects to the new compliance requirements for the reasons listed below:

<u>The facility does not engage in any processes and activities related to TRC production and/or discharge.</u>

EPA must have a rational basis for determining a Facility's discharge limits and sampling parameters. The establishment of WQBELs should not encompass potential substances that have no connection to the discharge, have not been detected at a Facility, are not in use at or in processes at a Facility, or which are not under the control of a permitted operator. TRC is not actually present, used or stored at the Facility and the Facility does not engage in activities that would be expected to generate significant sources of TRC.

More importantly, TRC is not named as a cause of impairment for the Chelsea River in accordance with the MassDEP's 2016 Integrated List of Waters. As EPA has failed to identify that the Facility is or has been a source, the Facility objects to the new compliance limit for TRC.

<u>The hydrostatic test events are very infrequent:</u>

[100] *The National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*. Fed. Reg. 49,001 (Aug. 19, 2014).

The EPA's rationale for imposing the TRC limit, described in e.g., page 43 of Fact Sheet for Outfall 001, is that "*The Facility uses potable water for hydrostatic test water and washdown water. Potable water sources are typically chlorinated to minimize or eliminate pathogens."* However, the hydrostatic test events are typically performed only when a tank is modified or repaired (this is infrequent and on the order of one tank per year tested). Thus, the hydrostatic discharge source represents a small fraction of the total discharges from Facility outfalls. Hydrostatic discharges are separately regulated for TRC under the Draft Permit requirements.

EPA clearly erred by violating applicable regulatory procedures for establishing WQBELs:

EPA has failed to follow the established regulatory procedures, described in EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), for establishing WQBELs in NPDES permits. A WQBEL should be consistent with applicable WQS and WLAs contained in applicable TMDLs. EPA abandons those procedures and imposes the WQBEL for TRC by imposing the 13 µg/L directly from the EPA 2002 National Recommended Water Quality Criteria. EPA's failure to follow established procedures in imposing effluent limits constitutes a clear error and is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii).

A ML set close to the MDL is inconsistent with the definition and determination of ML stated in 40 CFR Part 136 and will lead to difficulties of verifying the accuracy of analysis results.

The footnotes in the draft permit (e.g., Footnote 12 for Outfall 001, page 9 of the Draft Permit) require the minimum level (ML) for total residual chlorine (TRC) as 30 µg/L (0.03 mg/L). Footnotes 38 for Outfall 001 in the Fact Sheet (page 44) further states that the propose ML is based on the method that has the lowest method detection limit (MDL) of the analytical methods approved under 40 CFR Part 136 (i.e., Standard Method 4500-CL-E, low-level amperometric titration method). The Facility has the following concerns regarding the proposed ML of 30 µg/L:

> Even though the low-level amperometric titration method theoretically can measure chlorine concentration down to the level of 20 µg/L, a ML for TRC cannot be established in this low level range. The minimum reporting level must be set to a concentration at or above the lowest standard used in the analysis according to Standard Methods. More specifically, the "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the detection limit in accordance with 40 CFR Part 136 (Appendix A). Typically, MLs are three to five times the MDL. The proposed limit of 30 µg/L is clearly underestimated. Additionally, minimum detectable concentration at the level of 20 µg/L is usually under ideal conditions. Normal working detection limits typically are higher.
> Attempting to verify the accuracy of a standard made at 30 µg/L (0.03 mg/L) within the required ± 10% of the actual value is impossible. As the meter only reports values in ±0.01 mg/L increments, any value between 0.027 mg/L and 0.033 mg/L (or ± 25% of the actual value) would result in a reported value of 0.03 mg/L. To properly verify the accuracy, one must use a standard of 0.10 mg/L (which would result in an acceptable range of 0.09 to 0.11 mg/L).

In accordance with the Federal Sufficiently Sensitive Test Method Rule, CWA at 40 CFR Parts 122 and 136, "*An applicant can demonstrate that, despite a good faith effort to use a method that would otherwise meet the definition of 'sufficiently sensitive' the analytical results are not consistent with the QA/QC specifications for that method, then the Director may determine that the method is not performing adequately and the applicant should select a different method from the remaining EPA approved methods*."
The Facility is aware of laboratories that have attempted to confirm the reproducibility of this method in the 0.02 mg/l range. Significant issues were identified in obtaining reproducible results, and in fact, so much difficulty was observed in New Jersey that New Jersey Department of Environmental Protection is not requiring this method.

Request:
The Facility requests that EPA remove the effluent limitation of TRC from the Draft Permit.

In the alternative, the Facility requests that should EPA elect to include a TRC limit, the ML for TRC be modified to 0.1 mg/L to avoid concern over the ability of accurately reading results at lower concentrations.

With respect to TRC testing of hydrostatic test water, specifically in reference to Part C(3)(b)(1)(ii), the Facility should be allowed to treat (or treat in combination with other measures) TRC through the storage of hydrostatic test water in dike areas prior to release through the Outfall(s). As currently drafted, TRC would need to meet any discharge limit before being released from a tank undergoing testing. TRC naturally degrades with time in the presence of sunlight, and allowing levels to decrease below effluent limits through release to dike areas should be allowed. The Facility requests that this measure meets the definition of "treatment" in this subsection and should be reflected as such.

Response to Comment F.9

The comment begins by stating that "EPA must have a rational basis for determining a Facility's discharge limits and sampling parameters." The Fact Sheet (pp. 43-44, 63, and 79-80) explains that the TRC requirements in the Draft Permit were proposed because the analysis of effluent data for Outfalls 001, 002, 004, and 005 demonstrated reasonable potential to cause or contribute to excursions of the acute criterion for TRC.[101] Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements that are necessary to achieve water quality standards established under CWA § 303. Regardless of whether a waterbody is listed by the state as specifically impaired for a pollutant, the permit must contain WQBELs for any pollutants or pollutant parameters that the permitting authority determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an

[101] As explained above and in Responses to Comments D.1 and F.1, Global is no longer the owner or operator of the REVCO Terminal and the property has been decommissioned, resulting in termination of NPDES Permit No. MA0003298. However, the data for Outfalls 004 and 005 were collected when the facility was operating as a bulk oil terminal and are representative of TRC concentrations in the stormwater discharges at the Global facilities. For this reason, it is relevant to determining the appropriate effluent limitations for TRC at Outfalls 001 and 002.

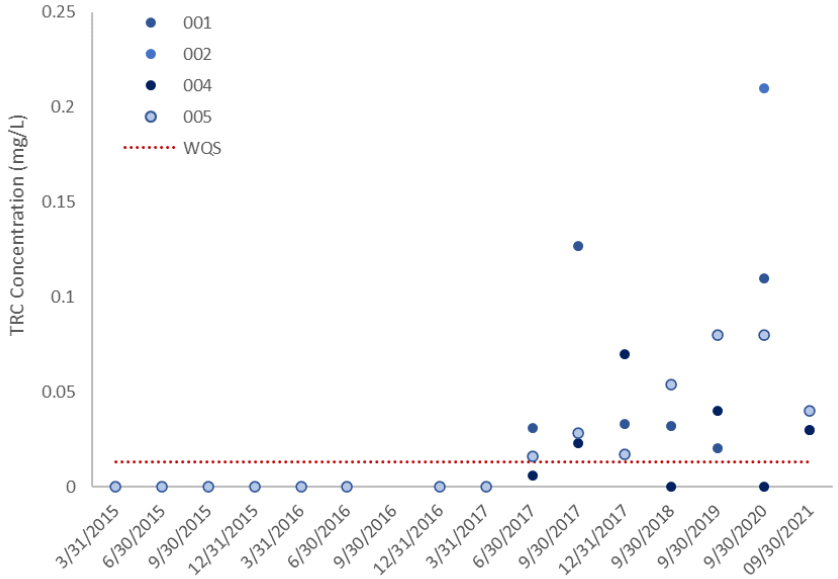
excursion above WQSs.[102] *See* 40 CFR 122.44(d)(1)(i). As in Comment F.8, above, this comment also asserts that EPA "failed to follow the established regulatory procedures, described in EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), for establishing WQBELs in NPDES permits" and "is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii)" but fails to provide any citation to where the commenter believes such procedures are described. EPA has responded fully to this comment in Response to Comment F.8.

The comment asserts that limits should not be set where pollutants "have not been detected at a Facility" and further argues that "TRC is not actually present, used or stored at the Facility." In fact, TRC was detected in whole effluent toxicity effluent samples at concentrations at or above the criterion at all four Facility outfalls multiple times during the last permit term (Fact Sheet Appendix A and Figure F.9 below). Sufficient evidence exists based on the detected values to find reasonable potential for discharges of chlorine at each of the four outfalls to cause or contribute to an exceedance of the acute TRC water quality standard.[103]

[102] Nothing in the Act or the NPDES regulations constrains EPA from establishing a water quality-based limit for a pollutant that the state has not listed as a cause of the impairment in its 303(d) list. *See In re City of Taunton*, 17 E.A.D. 105, 142-43 (EAB 2016) (citing 40 CFR § 122.44(d)(1)(i)). Not only do NPDES regulations require a precautionary approach to avoid exceedances of WQS, but EPA has an independent obligation under CWA § 301(b)(1)(C) to include an effluent limit if the Region reasonably believes it is necessary to achieve a state water quality standard. *In re Town of Newmarket*, 16 E.A.D. 182, 229 (EAB 2013); *In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 631-33 (EAB 2006).

[103] EPA is afforded significant flexibility within the bounds of the CWA in determining whether a discharge has reasonable potential to cause an excursion. *See In re Upper Blackstone Water Pollution Abatement Dist*., 14 E.A.D. 577, 599 & n.29 (EAB 2010). Moreover, worst-case conditions must underlie the analysis. *Id.*at 599; *see also In re Wash. Aqueduct Water Supply Syst*., 11 E.A.D. 565, 584 (EAB 2004). In this case, given that, when detected, the TRC effluent concentration is, on average, 4 times the acute water quality criterion and the maximum reported concentration is 16 times the acute criterion, EPA has taken a conservative, protective approach in determining reasonable potential.

Figure F.9. TRC concentrations at Global Outfalls from March 2015 through September 2021 based on Whole Effluent Toxicity Effluent Data



In response to this comment and comment F.20, EPA verified reasonable potential for TRC by calculating a 95th percentile "upper bound" effluent concentration consistent with the statistical approach outlined in the *Technical Support Document for Water-quality Based Toxics Control* (TSD) (AR-114) and explained in Appendix C of the Fact Sheet. For this analysis EPA aggregated the effluent data over the Facility's four outfalls,[104] based on the Permittee's request in Comment F.18 "that for the same type of outfall within a Facility, the reasonable potential and effluent limits should be implemented facility-wide rather than applied separately for individual outfalls." EPA understands how having the same parameters and limits applicable to all external outfalls would be less confusing for the Permittee. *See* Comment F.18. Furthermore, EPA agrees that the stormwater discharges are exposed to the same industrial processes and materials and receive identical treatment before discharge and, therefore, that it is reasonable to analyze reasonable potential and calculate limits facility wide in this case. *See* Comment F.27. Because EPA was recalculating the reasonable potential, EPA also updated the data through November 2021 so that the analysis reflected the most up-to-date conditions at the Facility. The analysis assumed no available dilution. *See* Response to Comment F.21. The 95th percentile effluent value based on a delta-lognormal distribution (appropriate for datasets with non-detect values) is 106 µg/L. Where there is not dilution, the projected downstream concentration is equal to the effluent concentration. *See* Response Comment F.20. The projected value is well above the 13 µg/L (0.013 mg/L) saltwater acute TRC criterion and demonstrate reasonable potential for the Facility's discharges to cause or contribute to an exceedance of water quality standards.

[104] Outfall 005 discharges to Sales Creek and Outfalls 001, 002, and 004 discharge to Chelsea River. The classification of Sales Creek (Class SA) is different from Chelsea River (Class SB), but this difference does not impact the RPA for TRC because the acute water quality criterion is the same for both classifications.

According to the comment, the Facility "does not engage in activities that would be expected to generate significant sources of TRC." EPA agrees that the source of TRC in the effluent is unclear. As the comment points out, TRC is not used in the industrial processes at the site. However, effluent data (as shown in Figure F.9) plainly show that TRC is present in the effluent and, in particular, indicate that TRC is consistently detected beginning in 2017. Potable water is one possible source of TRC in the effluent but, as the comment points out, hydrostatic testing (a known source of potable water) is infrequent and unlikely to cause the consistent, observed values. It is possible that operational changes introduced in 2017 (e.g., a change in use of potable water for washing down structures) may have resulted in the increase in detections.[105] At a minimum, EPA recommends that the Permittee complete a source identification program to investigate the likely sources of TRC to the effluent and implementation of operational controls or other BMPs to minimize discharges of TRC to ensure the protection of water quality. The identification and control of sources of pollutants, including TRC, is consistent with Part I.C.1.a. of the Final Permit (as proposed in the Draft Permit), which establishes BMPs to minimize pollutant discharges, including: good housekeeping measures, preventative maintenance, handing procedures for materials used for snow and ice control, and evaluation and elimination of unauthorized, non-stormwater discharges.

The Draft Permit included a maximum daily TRC limit of 13 µg/L (0.013 mg/L) at Outfalls 001 and 002. The limit is based on EPA's acute saltwater criterion referenced in State WQS.[106] *See* 314 CMR 4.05(5)(e). The Draft Permit proposed that this limit and associated monitoring would be required only for discharges that have been previously chlorinated or that contain residual chlorine. *See* Draft Permit Part I.A.1 Footnote 12 in the Draft Permit. Discharges that contain residual chlorine generally refer to potable water sources that have been disinfected prior to distribution. Any waters that contain potable water and waters to which chlorine or chlorine-containing chemicals and/or additives have been added would be considered to have been previously chlorinated. However, the effluent data supporting EPA's reasonable potential analysis were collected for Whole Effluent Toxicity monitoring and were not necessarily limited to effluent known to be previously chlorinated or contain residual chlorine, nor were the sampling events concurrent with hydrostatic testing which, as the comment points out, is infrequent. In addition, Comment F.28 suggests that the Permittee may not at this time be able to identify discharges that have previously been chlorinated (e.g., discharge of potable water). In response to this and Comment F.28, based on the available data and understanding of potential sources of TRC at the Facility, the Final Permit establishes a water quality-based limit for TRC at Outfalls 001 and 002 that applies in all cases. However, the Final Permit allows the Permittee to request a change to apply the limit and monitoring only to discharges that have been previously chlorinated or contain residual chlorine based on the results of the source identification. *See also* Response to Comment F.28. For example, during the source identification study, the Permittee may find that the presence of TRC is associated with the use of potable water to wash structures and equipment. Based on this information, the Permittee could request that the TRC limit apply only when potable wash down water is being discharged.

[105] The Fact Sheet states that "The Facility uses potable water for . . . washdown water," Global Fact Sheet at 43, which the comment notes but does not address.
[106] EPA, *Quality Criteria for Water 1986*, "Gold Book". EPA 440/5-86-001. Available at: https://www.epa.gov/wqc/quality-criteria-water-gold-book.

The Comment also raises several concerns about the proposed minimum level (ML), which serves as the compliance level for TRC, and requests that this value be changed to 0.1 mg/L. The ML specified in the permit was established in accordance with *The National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting* rule, published in the Federal Register on August 19, 2014, and effective on September 18, 2014. The corresponding regulations at 40 CFR § 122.44(i)(1)(iv)(A) state that a method is sufficiently sensitive when (1) the method ML is at or below the level of the effluent limit or (2) the method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O. See also 40 CFR § 136.1(c) (applicability). In this case, the compliance level is based on (2), the most sensitive TRC test method, SM 4500-Cl E, Low-Level Amperometric Titration Method because the effluent limit is established below the limit of analytical detection. The ML established as the compliance level in the permit also complies with the derivation requirements of the SSTM, which states, "Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor." Specifically, the required test method achieves a method detection limit (MDL) of 10 µg/L, which is published in the method.[107,108] Estimated and actual performance data published by Hach Company further confirm the capability of this method, as well as 4500 CL E method publication: "Detection and quantification of chlorine residuals below 0.2 mg/L require special modifications to the amperometric titration procedure. With these modifications chlorine concentrations at the 10-ug/L level can be measured." *See* AR-52. The analysis range, published detection or quantification limits, estimated precision, and actual performance evaluation of the methods in the lab and the field meters verify that this ML can be achieved. *See* AR-52. In a recent toxicity report for Global Revere (MA0003425) Outfall 001 (submitted as an attachment to the Facility's DMR; *see* AR-124) the Reporting Limit (synonymous with the ML) for TRC was 20 µg/L, which meets the compliance level of 30 µg/L proposed in the Draft Permit. Finally, the ML is a multiple of the published MDL, as required in 40 CFR Part 136, as 30 µg/L is equivalent to the MDL, 10 µg/L, multiplied by a factor of 3, the multiplying factor specified in 40 CFR Part 136 *Glossary*. The commenter has provided no factual basis for the requested ML value, 100 µg/L, which appears to refer to the upper calibration point for Standard Method 4500-CL-G, nor explained how this ML satisfies the regulatory requirements for sufficiently sensitive test methods, as SM 4500-CL-G is a less sensitive test method than 4500-CL-E. Given all this information, the Final Permit retains the compliance level at the proposed ML of 30 µg/L. EPA notes that good faith effort may be demonstrated in the future based on actual compliance and performance. However, EPA expects most measurement issues encountered will be related to quality control issues of the instrumentation.

As the commenter correctly notes, 40 CFR Parts 122 and 136 allow that, "*An applicant can demonstrate that, despite a good faith effort to use a method that would otherwise meet the definition of 'sufficiently sensitive' the analytical results are not consistent with the QA/QC*

[107] See "4500-CL Chlorine (Residual)", *Standard Methods for the Examination of Water and Wastewater*. DOI: 10.2105/SMWW.2882.078.
[108] Brooks, A. S. & G. L. Seegert. 1979. Low-level chlorine analysis by amperometric titration. *Journal Water Pollution Control Federation.* 51:2636.

specifications for that method, then the Director may determine that the method is not performing adequately and the applicant should select a different method from the remaining EPA approved methods." The Permittee can request their contract laboratory/laboratories submit a request for approval of an Alternate Test Procedure to EPA Region 1's laboratory. The Clean Water Act Alternate Test Procedure (ATP) program is described at 40 CFR 136.4 and 136.5. This program provides a mechanism for submission and review of an application for nationwide use or limited use of an ATP for measurement of a pollutant as an alternative to the methods approved at 40 CFR Part 136. An ATP may fall into one of two categories:

> A method using a determinative technique (e.g., a pollutant detector) different from that in an existing Part 136 method (for method validation and evaluation purposes this type of method is referred to as a new method), or
> A modification to a Part 136 method that falls outside the scope of the modification flexibility described in the Part 136 method, or at 40 CFR 136.6 (for validation and evaluation purposes this type of method is referred to as an ATP).

A method developer may apply for review of a method modification or a new method through the ATP program. However, the Permittee should review its use of field measurement equipment, as well as the manufacturer's recommendation for cleaning, calibration, repair, and replacement if the test method results are not performing as expected. For example, bench and field evaluations of Hach Company's CL17 analyzers conducted by Water and Wastewater Instrumentation Testing Association "indicated one of the lowest detectable concentration levels of all analyzers tested at 0.013 mg/L Cl_2." AR-52.

Lastly, EPA agrees that TRC can degrade with time in the presence of sunlight, and such degradation may be considered adequate treatment if this best management practice decreases concentrations of TRC below effluent limits. Part I.C.3.b.ii does not prescribe nor prohibit a specific type of treatment should the in-process sample(s) indicate concentrations exceed the numeric effluent limits. The Draft Permit provision states "the operator shall not discharge the tank water unless treatment will reduce the pollutant levels below the effluent levels established in this permit." In the comment, the Permittee states "TRC would need to meet any discharge limit before being released from a tank undergoing testing." EPA did not intend to prohibit draining the tank unless the effluent limits are met; rather, the provision is intended to prevent discharge of tank water to the river unless treatment will reduce pollutant levels to meet the limitations in the permit. EPA notes that Part I.C.3.b.ii reference to sampling tank water "before *draining*" is distinct from "shall not *discharge* the tank water" (emphasis added). EPA revised the Final Permit to state "the operator shall not discharge the tank water *to the river* unless treatment will reduce the pollutant levels below the effluent levels established in this permit." EPA believes that this revision addresses the comment and clarifies that the Permittee may drain the tank water for treatment on the property, including release to dike areas to allow for degradation of TRC. *See also* Response to Comment F.28.

Comment F.10 – New Monitoring Requirement for Free Cyanide

Part I of the Draft Permit incorporates new monitoring requirements for cyanide and are imposed for Outfall 003 for the first time. The additional monitoring is unreasonable and unnecessary as

cyanide is not named as a cause of impairment for the Chelsea River in accordance with the MassDEP's 2016 Integrated List of Waters.

The proposed discharge limits and sample parameters must be related to the discharge reasonably expected from a Facility:

EPA must have a rational basis for determining a Facility's discharge limits and sampling parameters. EPA improperly relies upon Section 308 of the Clean Water Act to provide authority to require reporting of information necessary to establish appropriate discharge limits. EPA, through reporting requirements, seeks to determine if discharge limitations are necessary in the future. However, the basis for establishing reporting requirements should be to limit and treat the constituents known to exist in the groundwater, soil and other surficial areas at a Facility or the discharge from that Facility that may impact the receiving waterbody. The sampling parameters and frequency should not encompass potential substances that have no connection to the discharge, have not been detected at a Facility, are not in use at or in processes at a Facility, or which are not under the control of a permitted operator. The following changes should be made to the final permits. Cyanide is not actually present, used or stored at the Facility. Cyanide is generally emitted by coating or plating processes. The Facility is unaware of any historic process at the Facility that used these constituents, or of any sample data that suggests these constituents are present in the stormwater discharge from the Facility.

More importantly, cyanide is not named as a cause of impairment for the Chelsea River in accordance with the MassDEP's 2016 Integrated List of Waters. As EPA has failed to identify that the Facility is or has been a source at the Facility, the Facility objects to the new compliance for cyanide.

Request:
The Facility requests that the EPA removes the monitoring requirements for cyanide from the Draft Permit.

In the alternative, the Facility requests that should EPA elect to not adopt the Facility's above approach, sampling for cyanide be conducted in the first year, but for each constituent that is not detected above background levels, no further testing be required thereafter.

Response to Comment F.10

To start, EPA does not "improperly" rely on its authority under CWA § 308 of the Clean Water Act to require reporting necessary to establish appropriate discharge limits. To the contrary, CWA § 308(a), 33 U.S.C. §1318(a), authorizes EPA to require the owner or operator of any point source to provide information as may reasonably be required to:

> ... carry out the objectives of ... [the Clean Water Act], including but not limited to: (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition ... or standard of performance under [the Clean Water Act] ...; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, ... or standard of performance; (3) any requirement

> established under this section; or (4) carrying out section ... 1342 ... of [the Clean Water Act] ... (emphasis added)

See also In re Town of Ashland Wastewater Treatment Facility, 9 E.A.D. 661, 671-72 (EAB 2001); *In re City of Port St. Joe & Fla. Coast Paper Co*., 7 E.A.D. at 310 (observing that "an obvious purpose behind Section 308(a) . . . is to enable EPA to require dischargers to gather data so that EPA can make informed regulatory decisions"). Section 308(a) is "subject only to a reasonableness standard." *In re Simpson Paper Co.*, 3 E.A.D. 541, 549 (CJO 1991); *accord In re Arecibo & Aguadilla Regional Wastewater Treatment Plants*, 12 E.A.D. 97, 135 & n.68 (EAB 2005); *Town of Ashland*, 9 E.A.D. at 672 n.14. In addition, section 402(a)(2) authorizes EPA to include in NPDES permits "conditions on data and information collection, reporting, and such other requirements as [the Administrator] deems appropriate." 33 U.S.C. § 1342(a)(2). As the Environmental Appeals Board has held, sections 308 and 402 confer on the Agency broad authority to impose monitoring requirements. *In re City of Springfield Water & Sewer Comm'n*, 18 E.A.D. 430, 484 (EAB 2021); *In re Avon Custom Mixing Servs., Inc.*, 10 E.A.D. 700, 709 (EAB 2002). For a permittee to show that "a monitoring requirement exceeds the Agency's authority under CWA section 308(a), [the permittee] must cite evidence sufficient to support a finding that there is *no* basis for the Agency to require information in the first place." *City of Springfield*, 18 E.A.D. at 484 (citing *In re City of Port St. Joe & Fla. Coast Paper Co.*, 7 E.A.D. 275, 310 (EAB 1997)).

The Draft Permit proposed a monitoring requirement for cyanide for the treated groundwater effluent from Outfall 003. NPDES permits require routine sampling requirements to provide ongoing, representative information in order to characterize the discharge and to determine whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. *See also* AR-116 p. 8-2, 8-5). In this case, the presence of cyanide is potentially expected in the discharge given that it is historically measured in groundwater and is supported by observations of cyanide at other bulk petroleum storage facilities that discharge, or historically discharged, groundwater remediation effluent. *See* Chelsea Sandwich Fact Sheet pp. 41-42 and Appendix A; Sunoco Fact Sheet pp. 40-41 and Appendix A. Because Outfall 003 may include comingled treated groundwater remediation effluent, consistent with the type and history of discharges at other sites that have documented the presence of cyanide, monitoring is reasonable for this outfall. *See* Global Fact Sheet p. 18.

In addition, MassDEP's records for this facility under the Massachusetts Contingency Plan identified historical uses of the site including bulk coal storage (coal gasification uses), and bulk petroleum storage and distribution (petroleum combustion sources). Cyanide can occur as a byproduct like hydrogen cyanide (HCN),one example of a cyanide compound commonly present in emissions from coal and petroleum combustion. Most of the Chelsea Creek shoreline in East Boston and Revere also contain artificial fill. In general, the fill layer consists of loose to very dense sand, gravelly sand, or sandy gravel intermixed with varying amounts of silt, clay, cobbles, boulders, and miscellaneous materials such as brick, ***ash***, rubble, trash, or other foreign materials

(Ty, 1987; Woodhouse et al., 1991) *emphasis* added.[109] Similarly, EPA Region 1's Remediation General Permit (RGP), which authorizes discharges from remediation and dewatering activities requires, at a minimum, cyanide monitoring for all petroleum-related site remediation, because cyanide is strongly associated with metals at contaminated or formerly contaminated sites, as it readily forms complexes with transition metals like iron, commonly present in groundwater. See Part III.A.1 of EPA Region 1's Remediation General Permit Fact Sheet, 2016. EPA also revisited review of former operations at the facility that may have impacted soil or groundwater and the nature of process discharges. In this review, EPA identified cyanide as a pollutant of concern related to identical types of discharges, including contaminated groundwater, covered under either individual NPDES permits (e.g., Sunoco and Exxon Mobil terminals), and EPA's Remediation General Permit. Cyanide has not been previously monitored under the NPDES permit at the facility and the commenter has not submitted any quantitative data demonstrating that this pollutant is not present at the facility. EPA cannot assume cyanide is absent, given the types of materials stored at the facility (e.g., petroleum), historical uses at the facility (e.g., coal and petroleum storage), and processes at the facility (e.g., groundwater remediation), given the presence of cyanide in discharges from other facilities.

The Final Permit requires cyanide monitoring at Outfall 003 to ensure the continued discharge of groundwater does not impact the water quality of the Chelsea River or pose a risk to human health or the environment. EPA's ability to exercise its legitimate regulatory authority granted in Section 308 to gather information in order to determine the concentrations of pollutants discharging into the Chelsea River at the facility is of paramount importance to human health and the environment. EPA's decision to include industry-specific, site-specific and/or receiving water-specific parameters in the permit is reasonable and consistent with its responsibilities under the Act, particularly given the highly urbanized nature of the watershed above the discharge and the nature of impairments in the receiving water.

Comment F.11 – New Limit for Total Ammonia (as N) (April – October)

In Part I.A of the Draft Permit, EPA imposes an effluent limit of 1.8 mg/L total ammonia for Outfall 004 for the first time. The Facility takes exception to the new compliance requirement for the following reasons:

<u>The proposed discharge limits and sample parameters must be related to the discharge reasonably expected from a Facility:</u>

EPA must have a rational basis for determining a Facility's discharge limits and sampling parameters. The establishment of WQBELs should not encompass potential substances that have no connection to the discharge, have not been detected at a Facility, are not in use at or in processes at a Facility, or which are not under the control of a permitted operator. Ammonia is not actually present, used or stored at the Facility. The Facility is unaware of any historic process at the Facility that used or produced ammonia. EPA has failed to identify the source of ammonia resulting from industrial activities at the Facility and there is no evidence to suggest that the

[109] Brankman, Charles & Baise, Laurie. (2008). Liquefaction Susceptibility Mapping in Boston, Massachusetts. Environmental & Engineering Geoscience - ENVIRON ENG GEOSCI. 14. 1-16. 10.2113/gseegeosci.14.1.1.

Facility is or has been a source. Therefore, the Facility objects to the new compliance for ammonia.

EPA clearly erred by violating applicable regulatory procedures for establishing WQBELs:

EPA has failed to follow the established regulatory procedures, described in EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), for establishing WQBELs in NPDES permits. On page 44 of the Fact Sheet, EPA directly applied a limit of 1.8 mg/L based on, however, the EPA 1989 Ambient Aquatic Life Water Quality Criteria for Ammonia, rather than a quantitative analysis based on applicable WQS and WLAs. This application, which constitutes a clear error, is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii).

Incorrect equation was applied to the reasonable potential analysis when calculating downstream effluent concentration:

The mass balance equation applied by EPA in the reasonable potential analysis (Appendix C) is apparently inaccurate as it uses mismatched units among each term (see details in the Comment of Reasonable Potential Analysis).

Request:
The Facility requests that EPA removes the effluent limitation of ammonia for Outfall 004 from the Draft Permit.

In the alternative, the Facility requests that should EPA elect to include an ammonia limit, the reasonable potential must be re-evaluated, prior to imposing the effluent limits for the pollutant listed in this section, by applying the correct formula and taking the dilution allowance into account.

Response to Comment F.11

This comment repeats comments made elsewhere about the applicable regulatory procedures for determining water quality-based effluent limits, this time applying them to ammonia. EPA has addressed nearly identical comments on this issue with respect to other pollutants in Responses to Comments F.8 and F.9, above.[110] The comment specifically addresses the ammonia effluent limit at Outfall 004. EPA explained in other responses that the Final Permit does not authorize stormwater discharges from outfall 004 due to Global's decommissioning and subsequent sale of the REVCO oil terminal. See, e.g., Responses to Comments D.1, F.1, F.2, and F.9. As such, the ammonia limit Global objects to in the comment is no longer in the Final Permit. Nonetheless, EPA addresses the substance of the comment because the Final Permit includes ammonia limits at outfalls 001 and 002 for reasons discussed below and in Responses to Comment F.18 and F.27.

[110] In short, EPA's derivation of the limits is consistent with 40 CFR § 122.44(d)(1)(vii)(A) and (B). First, the effluent limit for ammonia was derived from Massachusetts' WQS at 314 CMR 4.05(5)(e) to ensure a level of water quality that complies with those standards. Further, the state has not prepared, and EPA has not approved, a TMDL for total ammonia for the Chelsea River or Sales Creek. *See* Response to Comment F.8.

The comment's claim that ammonia has "not been detected" at the Facility is contradicted by effluent monitoring data from the Facility. As EPA noted in the Fact Sheet, ammonia has been detected in discharges from outfalls 001, 002, 004, and 005.[111] *See* Global Fact Sheet at 53, 67, 84. The Fact Sheet also notes that ammonia is listed by the Commonwealth as a cause of the aquatic life impairment of the Chelsea River. *Id.* at 25. EPA further explained that the Draft Permit proposed ammonia limits because analysis of the data for Outfall 004 demonstrated reasonable potential to cause or contribute to excursions of the saltwater, warm weather acute criterion for ammonia.[112] *Id*. at 83-84. Contrary to the suggestion in the comment, there is no statutory or regulatory requirement for EPA to "identify the source of ammonia resulting from industrial activities at the Facility" before establishing a limit. Rather, pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements necessary to achieve water quality standards established under CWA § 303 and must contain WQBELs for any pollutants or pollutant parameters that the permitting authority determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above State WQSs.

Nevertheless, in response to this comment and comment F.20, EPA re-evaluated reasonable potential for ammonia by calculating a 95th percentile "upper bound" effluent concentration consistent with the statistical approach outlined in the *Technical Support Document for Water-quality Based Toxics Control* (TSD) (AR-114) and explained in Appendix C of the Fact Sheet. For this analysis, EPA aggregated the effluent data over the Facility's four external outfalls,[113] based on the Permittee's request in Comment F.18 "that for the same type of outfall within a Facility, the reasonable potential and effluent limits should be implemented facility-wide rather than applied separately for individual outfalls." EPA understands how having the same parameters and limits applicable to all external outfalls would be less confusing for the Permittee. *See* Comment F.18. Furthermore, EPA agrees that stormwater discharges at the Facility are exposed to the same industrial processes and materials and receive identical treatment before discharge and, therefore, that it is reasonable to analyze reasonable potential and calculate limits facility wide in this case. *See* Comment F.27. Because EPA was recalculating the reasonable potential, EPA also updated the data through November 2021 so that the analysis reflected the most up-to-date conditions at the Facility. EPA maintains zero dilution for stormwater discharges is a conservative, but reasonable, decision both because there is not sufficient information to account for dilution and due to the overall impairment to the water quality of the Chelsea River, which currently does not support designated uses and is listed as impaired for ammonia, is located in an area overburdened by pollution, and receives multiple stormwater discharges from the bulk oil terminals. *See* Response to Comment F.21. The 95th

[111] While these Final Permits no longer authorize stormwater discharges from outfalls 004 and 005, the data collected over the previous permit term are representative of stormwater discharges at the bulk oil terminal operated by Global and, as such, are relevant to the analyses herein.
[112] EPA also determined reasonable potential to cause or contribute to an exceedance of the warm water, ammonia criterion and proposed effluent limitations at each of the other four bulk oil terminals on the Chelsea River. In other words, monitoring data at each of the terminals over the past permit term suggests that ammonia is routinely present at concentrations that could cause or contribute to the current impairment in the Chelsea River.
[113] Outfall 005 discharges to Sales Creek and Outfalls 001, 002, and 004 discharge to Chelsea River. While the classification of Sales Creek (Class SA) is different from Chelsea River (Class SB), this difference does not impact the RPA for ammonia because the acute water quality criteria are the same for both classifications.

percentile effluent value based on a delta-lognormal distribution (appropriate for datasets with non-detect values) is 1.92 mg/L for warm water and 0.52 mg/L for cold water. Where there is not dilution, the projected downstream concentration is equal to the effluent concentration. *See* Response to Comment F.20.[114] The projected value of 1.92 mg/L for ammonia during warm weather is above the saltwater acute criterion of 1.8 mg/L and demonstrates reasonable potential to cause or contribute to an exceedance of the water quality standard.[115] The projected value of 0.52 mg/L for cold water is below the saltwater acute criterion of 9.4 mg/L (*see* Fact Sheet p. 53) and does not demonstrate reasonable potential to cause or contribute to an exceedance of the water quality standard. Based on the analysis of aggregated reasonable potential analysis, which was requested by the Permittee to alleviate confusion and ensure consistency of limits and requirements throughout the Facility, *see* Comment F.18, the Final Permit establishes a warm water, water quality-based effluent limitation for ammonia at Outfalls 001 and 002.

Comment F.12 – New Limits for Metals (Copper, Zinc, and Iron)

In Part I.A of the Draft Permit, EPA imposes new effluent limits for three metals (copper, zinc, and iron) for the first time. The implementation at each outfall is listed as the table below.

New Effluent Implementation Status for Copper, Zinc, and Iron

Substance	Outfall 001	Outfall 002	Outfall 003	Outfall 004	Outfall 005
Copper	•	•		•	
Zinc		•		•	
Iron	•	•	•		•

The Facility objects to the new compliance requirements for the reasons listed below:

The proposed discharge limits and sample parameters must be related to the discharge reasonably expected from a Facility:

EPA must have a rational basis for determining a Facility's discharge limits and sampling parameters. The establishment of WQBELs should not encompass potential substances that have no connection to the discharge, have not been detected at a Facility, are not in use at or in processes at a Facility, or which are not under the control of a permitted operator. Metals are not actually present, used or stored at the Facility. The Facility is unaware of any historic process at the Facility that used these constituents.

More importantly, the three metals are not named as a cause of impairment for the Chelsea River in accordance with the MassDEP's 2016 Integrated List of Waters. As EPA has failed to identify that the Facility is or has been a source at the Facility, the Facility objects to the new compliance for these substances.

[114] Note that Response to Comment F.20 responds to the comment above that the mass balance equation EPA applied in the reasonable potential analysis in Appendix C is inaccurate.
[115] The three Global Terminals reported total ammonia as part of the Whole Effluent Toxicity protocol at all outfalls and also as part of the pollutant scan at Outfalls 001 and 004. Due to quality control issues associated with the pollutant scan data and because the pollutant scan data are not available for all outfalls, EPA used the ammonia data only from WET testing in the RPA for this response.

EPA clearly erred by violating applicable regulatory procedures for establishing WQBELs:

EPA has failed to follow the established regulatory procedures, described in EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), for establishing WQBELs in NPDES permits for the pollutants discussed in this section. A WQBEL should be consistent with applicable WQS and WLAs contained in applicable TMDLs. EPA abandons those procedures and imposes the WQBEL for the pollutants discussed in this section by imposing, however, the values directly from the EPA 2002 National Recommended Water Quality Criteria. EPA's failure to follow established procedures in imposing effluent limits constitutes a clear error and is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii).

Further, the proposed iron standard is based on a taste and staining drinking water standard. As the Facility discharges to a saline water body, the water body is not used as a drinking water source and the above standard is inappropriate in determining a limit.

Incorrect equation was applied to the reasonable potential analysis when calculating downstream effluent concentration:

The mass balance equation applied by EPA in the reasonable potential analysis (Appendix C) is apparently inaccurate by the mismatched units among each term (see details in the Comment of Reasonable Potential Analysis).

Request:
The Facility requests that EPA removes the effluent limitations for the three metals from the Draft Permit.

In the alternative, the Facility requests that should EPA elect to include limits for copper, zinc, and iron, the reasonable potential must be re-evaluated, prior to imposing the effluent limits for the pollutant listed in this section, by applying the correct formula and taking the dilution allowance into account.

Response to Comment F.12

The comment restates earlier comments about a "rational basis" for determining effluent limits and that EPA "failed to follow the established regulatory procedures" for establishing water quality-based effluent limits. EPA has addressed both issues above. *See, e.g.*, Responses to Comments F.8, F.9. The Fact Sheet (pp. 50-52, 65-66, 82-3 and Appendix A) explains that the requirements in the Draft Permit were proposed because the analysis of effluent data for all four outfalls demonstrated reasonable potential to cause or contribute to excursions of the acute criteria for these metals. Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements that are necessary to achieve water quality standards established under CWA § 303 and must contain WQBELs for any pollutants or pollutant parameters that the permitting authority determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above WQSs.

The comment asserts that limits should not be set where pollutants "have not been detected at a Facility" and further argues that "metals are not actually present, used or stored at the Facility." Monitoring data associated with whole effluent toxicity effluent samples, however, demonstrated the presence of metals, which, at times, exceed aquatic life criteria, during the last permit term (Fact Sheet Appendix A and Figure F.9 below). There are any number of potential metals sources at bulk storage terminals: industrial machinery, vehicles, and building structures could all leach off aluminum, copper, or zinc during rain events. Regardless of whether a waterbody is listed by the state as impaired for a particular pollutant, the permit must contain WQBELs for that pollutant if the permitting authority determines it is or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above WQSs. *See* 40 CFR § 122.44(d)(1); Response to Comment F.9.

In response to this comment and comment F.20, EPA re-evaluated reasonable potential for these metals by calculating a 95th percentile "upper bound" effluent concentration consistent with the statistical approach outlined in the *Technical Support Document for Water-quality Based Toxics Control* (TSD) (AR-114) and explained in Appendix C of the Fact Sheet. For this analysis EPA aggregated the effluent data over the Facility's four outfalls,[116] based on the Permittee's request in Comment F.18 "that for the same type of outfall within a Facility, the reasonable potential and effluent limits should be implemented facility-wide rather than applied separately for individual outfalls." EPA understands how having the same parameters and limits applicable to all external outfalls would be less confusing for the Permittee. *See* Comment F.18. Furthermore, EPA agrees that the stormwater discharges at the Facility are exposed to the same industrial processes and materials and receive identical treatment before discharge and, therefore, that it is reasonable to analyze reasonable potential and calculate limits facility wide in this case. *See* Comment F.27. Because EPA was recalculating the reasonable potential, EPA also updated the data through November 2021 so that the analysis reflected the most up-to-date conditions at the Facility. EPA maintains zero dilution for stormwater discharges is a conservative, but reasonable, decision both because there is not sufficient information to account for dilution and due to the overall impairment to the water quality of the Chelsea River, which currently does not support designated uses and is listed as impaired for multiple pollutants, is located in an area overburdened by pollution, and receives multiple stormwater discharges from the bulk oil terminals. *See* Response to Comment F.21. The 95th percentile effluent value based on a delta-lognormal distribution (appropriate for datasets with non-detect values) are summarized in the Table below. Where there is not dilution, the projected downstream concentration is equal to the effluent concentration. *See* Response to Comment F.20. [117] The Draft Permit proposed effluent limits for copper at all outfalls and for zinc at Outfall 002 based on the reasonable potential analysis. *See* Fact Sheet Appendix C. Based on the analysis of aggregated reasonable potential

[116] While these Final Permits no longer authorize stormwater discharges from outfalls 004 and 005 (due to the decommissioning and subsequent sale of the property), the data collected over the previous permit term are representative of stormwater discharges at bulk oil terminals operated by Global and, as such, are relevant to the analyses herein. See Responses to Comments F.1, F.2, F.9, and F.11. Outfall 005 discharges to Sales Creek and Outfalls 001, 002, and 004 discharge to Chelsea River. The classification of Sales Creek (Class SA) is different from Chelsea River (Class SB), but this difference does not impact the RPA for metals because the acute water quality criteria are the same for both classifications. Outfall 003 is an internal outfall that discharges to Outfall 002 and is not addressed in this response.

[117] Note that Response to Comment F.20 responds to the comment above that the mass balance equation EPA applied in the reasonable potential analysis in Appendix C is inaccurate.

analysis, which was requested by the Permittee to alleviate confusion and ensure consistency of limits and requirements throughout the Facility, *see* Comment F.18, the projected values for copper and zinc are well above the saltwater acute criteria and demonstrate reasonable potential for the Facility's discharges to cause or contribute to an exceedance of water quality standards. The Final Permit includes water quality-based effluent limitations for copper and zinc at outfalls 001 and 002.[118]

Summary of Metals Monitoring Data and Reasonable Potential Analysis Results.

Pollutant	Acute Criteria (µg/L)	95th Percentile Effluent Concentration (µg/L)	Reasonable Potential
Copper	5.78	10.9	Y
Zinc	95.1	108.9	Y
Lead	220.8	17.3	N
Nickel	74.8	13.5	N

[1] This value represents the 95th percentile effluent concentration calculated based on a lognormal or delta-lognormal distribution (for datasets with non-detect values), following the procedure outlined in the TSD. Since the State has not afforded the Facility any dilution, this value is equal to the downstream mixed effluent-receiving water concentration.

The comment also asserts that an iron limit based on an organoleptic effect is inappropriate for Chelsea River because it is a saline waterbody and, therefore, not used as a drinking water source. EPA re-evaluated the basis for applying an organoleptic effect criterion of 0.3 mg/L, considering the existing impairments of the Chelsea River for taste and odor. The taste and odor WQS for Class SB waters in Massachusetts (Chelsea River) states, "None in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life." *See* 314 CMR 4.05(4)(b)(8). The taste and odor WQS for Class SA waters in Massachusetts (Sales Creek) states, "None other than of natural origin." *See* 314 CMR 4.05(4)(a)(8). The *Massachusetts 2016 303(d) List of Impaired Waters* lists the Chelsea River (segment ID MA71-06) as impaired for Odor. In addition, the *Mystic River Watershed and Coastal Drainage Area 2004-2008 Water Quality Assessment Report* (AR-75), which informs the 303(d) List, includes taste, odor, and color as impairments. However, the only listed cause of the aesthetics and recreation designated uses is petroleum. EPA agrees that Chelsea River is not a drinking water source and that an organoleptic criterion based on objectionable taste of drinking water is not applicable to this waterbody. Nor is there sufficient evidence in the record that iron is the cause of the odor impairment of Chelsea River. For these reasons, EPA has removed the iron limits and monitoring requirements from the permit.

Comment F.13 – New Monitoring Requirements for PFAS

[118] EPA explains in response to other comments that permit limits and conditions applicable to outfalls 004 and 005 have been removed from the Final Permits. *See*, *e.g.*, Responses to Comments F.1, F.9, F.11.

The Draft Permit and MassDEP Permit includes quarterly monitoring and reporting requirements for Per- and polyfluoroalkyl substances (PFAS) for the four external outfalls (i.e., Outfall 001, 002, 004, and 005) including the followings:

- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorononanoic acid (PFNA)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorooctanoic acid (PFOA)
- Perfluorodecanoic acid (PFDA)

In the Fact Sheet, EPA states that the purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this Facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a Facility-specific basis. The Facility objects to the proposed monitoring and reporting requirements for the following reasons:

Requiring PFAS monitoring is premature:

The Permit Fact Sheet cited Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) as "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife." However, neither MassDEP nor EPA have established toxicity risk level of PFAS in the surface water for human, aquatic life or wildlife. Even though Massachusetts passed a revision to 310 CMR 22.00: Drinking Water Regulation that set a new PFAS Maximum Contaminant Level (MCL) of 20 ppt (ng/L) for the sum of the concentrations of six PFAS compounds, we believe that requiring monitoring of PFAS is premature at this time.

Approved standard sampling and analyzing method not available:

In the Draft Permit, EPA imposes sampling requirements for PFAS compounds in the discharges from the Facility. EPA has not yet approved any analytical methods for PFAS in those media. Therefore, EPA provides a compliance schedule, so that the testing requirements do not apply until "6 months after EPA's multi-lab validated method for wastewater and biosolids is made available to the public on EPA's CWA methods program website." This requirement is problematic as it is not tied to actual formal EPA approval of the analytical methods. The act of EPA making a method "available to the public" on its website is not sufficient to make that method legally enforceable. The Agency needs to issue a formal proposal to approve the method under 40 CFR Part 136, take public comments, and then make a considered decision as to whether that method should be approved as having met all of the requirements of 40 CFR Part 136. Until that process has been completed, the Agency cannot require the permittee to start monitoring, using an unapproved method.

EPA tries to justify this requirement by citing a provision in its regulations that allows EPA to require monitoring using a method specified in the permit. That provision applies when the Agency actually specifies a specific method in the permit. It does not apply to this case as the

Draft Permit does not specify a particular method given that there is no approved method ready to implement in permits. EPA cannot, after the permit is issued, announce a method on its website and then claim that that method was somehow incorporated in the permit that was issued earlier. To address this issue, EPA should simply amend the Draft Permit to clarify that the PFAS sampling and analyzing requirements will not become effective until after EPA has formally approved applicable methods under 40 CFR Part 136.

In addition, MassDEP requires in its permit that although PFAS sampling is suspended pending issuance of an EPA approved method, if the method is not available by two (2) years from the effective date of the NPDES permit, the Facility shall conduct monitoring of the effluent for PFAS compounds using a method specified by MassDEP. If no EPA method is approved within twenty (20) months after the effective date of the NPDES permit, the Facility must contact MassDEP (massdep.npdes@mass.gov) for guidance on an appropriate analytical method. Again, this requirement places an unnecessary burden on the permittee to monitor when EPA releases a method on its website, rather than notice by the agencies to all permit holders of the necessary next steps.

Request:
The Facility requests that EPA delete quarterly monitoring and reporting for PFAS effluent from the Facility (Outfall 001) until six (6) months after EPA has formally approved applicable test methods under 40 CFR Part 136.

The Facility also requests that MassDEP delete the quarterly monitoring and reporting for PFAS effluent from the Facility (Outfall 001) until six (6) months after EPA has formally approved applicable test methods under 40 CFR Part 136.

In the alternative, the Facility requests that the Draft Permit and MassDEP Permit be amended to include that EPA and MassDEP will issue written notice to the permit holder upon approval of the sampling method for PFAS effluent and the compliance schedule to implement such testing.

Response to Comment F.13

The Comment asserts that PFAS monitoring is premature since there are no established toxicity risk levels for PFAS in surface water. However, the toxicity of PFAS compounds is not in doubt. EPA and the Centers for Disease Control and Prevention (CDC) have comprehensive summaries of the health effects of PFAS. See *Our Current Understanding of the Human Health and Environmental Risks of PFAS* https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas (updated November 3, 2021) and *What are the Health Effects of PFAS* at https://www.atsdr.cdc.gov/pfas/health-effects/index.html (updated June 24, 2020). Some of the exposure pathways listed on both websites include drinking contaminated municipal water, accidentally swallowing contaminated soil or dust, breathing air containing PFAS, and eating fish caught from water contaminated by PFAS. Research has also probed the negative impacts to aquatic life, and EPA is developing aquatic life criteria and benchmarks. *See generally* AR-125. Therefore, establishing monitoring requirements to characterize the prevalence of PFAS in the discharges from the Facility is not premature. As stated in the Fact Sheet (pp. 48-50), CWA § 308(a) grants EPA the authority to include monitoring requirements it

deems necessary to develop effluent limitations and determine if a facility is violating effluent limitations (such as the narrative standard quoted by the commenter and included in the draft and final permits). *See also* Response to Comment F.10. The rapid pace of research into the environmental fate and health effects of PFAS, coupled with the known toxicity of these compounds, necessitates understanding the extent of PFAS discharges from the Facility. EPA's Strategic Roadmap states "EPA will seek to proactively use existing NPDES authorities to reduce discharges of PFAS at the source and obtain more comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources." AR-81 p. 14.

The comment requests a change in the Draft Permit language regarding the analytical method for PFAS. The comment asserts that EPA must issue an approved method under 40 CFR part 136 before requiring monitoring in an NPDES permit. As the Fact Sheet (p. 50) explains, a part 136-approved method is not a pre-requisite for monitoring in an NPDES permit. 40 CFR § 122.44(i)(1)(iv)(B) states "[i]n the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants and parameters." EPA clearly may require monitoring for parameters for which there is not an EPA-approved method under part 136. *See also* 79 Fed. Reg. 49,006.

The comment also asserts that 40 CFR § 122.44(i)(1)(iv)(B) does not apply here because the Draft Permits did not specify a method. At the time of public notice, there was no analytical method for PFAS in wastewater. The Draft Permit proposed to delay the effective date of the monitoring requirement until six months after EPA's multi-laboratory validated analytical test method for wastewater becomes available. Since the close of the public comment period, EPA's Office of Water has published a single-laboratory validated analytical method (EPA Draft Method 1633) for the analysis of 40 PFAS in wastewater, including the six compounds required in the Draft Permit. [119] EPA's PFAS Strategic Roadmap includes new guidance recommending PFAS monitoring in both state-issued and federally-issued NPDES permits using EPA's recently published analytical method 1633. *See* AR-81 p. 14. Further, EPA expects a multi-laboratory validation of Method 1633 to be completed in Fall 2022, at which time EPA will initiate a rulemaking to propose the promulgation of the method under Part 136. Consistent with this guidance and the regulations, the Final Permit requires Permittees to begin monitoring for PFAS using Method 1633 within six months of multi-lab validation. Given that oil terminals use, or have used, PFAS-containing fire-fighting foams and that PFAS has toxic health effects on humans, establishing monitoring requirements in the Final Permit ensures that monitoring will begin in a timely manner following validation of the method, rather than delay the start of monitoring until after promulgation of a Final Method under 40 CFR part 136. EPA modified the Final Permit to specify that EPA will notify the Permittee that an EPA multi-lab validated method for wastewater is available. The change to the Final Permit is consistent with the Permittee's request that EPA issue written notice to the permit holder. EPA will notify the Permittee when Method 1633 is available and that monitoring must begin during the first full

[119] CWA Analytical Methods for Per- and Polyfluorinated Alkyl Substances (PFAS). https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas.

calendar quarter within six months after the notification date. Finally, while EPA does not agree with the Permittee's comment that PFAS monitoring should not be included at all, *see supra*, EPA notes that it has—to be consistent with the Draft Permits noticed for the Gulf and Sunoco terminals—added a condition which allows Permittees to request to remove PFAS monitoring requirements after one year if all samples are non-detect for all six compounds. *See* 2020 Gulf Oil Terminal Draft Permit (MA0001091).

The comment also requests that "MassDEP delete the quarterly monitoring and reporting for PFAS effluent from the Facility (Outfall 001) until six (6) months after EPA has formally approved applicable test methods under 40 CFR Part 136." The comment refers to a condition included in the separate draft permit MassDEP issued to Global pursuant to state law shortly after EPA issued the federal Draft Permits—namely, the Massachusetts Surface Water Discharge Permit issued pursuant to the Massachusetts Clean Waters Act. The federal NPDES Draft Permit did not include this permit condition. That said, on May 11, 2021, pursuant to CWA § 401, MassDEP provided EPA with Massachusetts' Water Quality Certification ("401 Certification") for the NPDES Permit for the Global facility. In the 401 Certification, MassDEP indicated that an identical condition was necessary to assure compliance with applicable requirements of the CWA and appropriate State law. Therefore, EPA is including in the NPDES Final Permit the condition specified in the Commonwealth's certification. 40 CFR § 124.55(a)(2). The commenter requests in the alternative that the NPDES Permit be amended to include that EPA "will issue written notice to the permit holder upon approval of the sampling method for PFAS." As noted above, EPA has revised the Final Permit to provide for written notice to the permittee once the method is available.

Comment F.14 – New Monitoring Requirements for Turbidity

Part I.A of the Draft Permit requires monitoring and reporting requirements for turbidity for the four external outfalls (i.e., Outfall 001, 002, 004, and 005) for the first time. The Facility takes exception to the new requirements. The discharges from the four outfalls are predominantly stormwater runoff rather than from industrial activities. Additionally, as noted in page 31 of the Fact Sheet, total suspended solids (TSS) may be used as an indicator of the turbidity (i.e., turbidity increases as the TSS increases). The Facility has complied with the monitoring and requirements for total suspended solids (TSS) and EPA has determined that "[o]perations at the Facility remain consistent with the conditions under which the technology guidelines promulgated at 40 CFR § 423 can be achieved" as stated in pages 31 of the Fact Sheet. The Facility fails to understand EPA's rationale for adding turbidity monitoring given that existing effluent data of TSS from the Facility is more than sufficient, and routinely below permit limits regarding both daily maximum and monthly average.

In addition, stormwater discharges from Municipal Separate Storm Sewer System (MS4) outfalls constitute the majority of point source stormwater flow to the Chelsea River. Based on these facts, the Facility requests that the monitoring requirement for turbidity to be removed from the Draft Permit and keep using TSS monitoring to determine if discharges of turbidity from the Facility cause, or have the reasonable potential to cause, or contribute to an excursion above State WQSs.

Request:
The Facility requests that EPA removes the new monitoring requirements for turbidity for Outfall 001, 002, 004, and 005.

Response to Comment F.14

EPA has responded to similar comments objecting to new monitoring requirements. See, for example, Responses to Comment F.5 and F.10. While the Facility correctly notes that total suspended solids (TSS) may be used as an indicator of turbidity in the effluent discharge, TSS measurements do not fully capture potential turbidity impairments from other sources (i.e. spills, leaks, or chemical runoff). Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column but may not be the full source of turbidity impairments. TSS is a quantitative measure of the number of solids per volume of water, while turbidity is a quantitative measure of light penetration through the water. These measurements do overlap in their ability to detect silt, sediments, non-settled solids, clay, bacteria, or algae, but do offer complementary measurements that assist in a full evaluation of water quality. Turbidity is impacted by water coloration, dissolved colored organic materials, and chemicals (i.e. dyes or acids). These factors will not cause an increase in TSS which detects only settleable solids.

As EPA stated in the Fact Sheet, turbidity is considered in narrative State WQSs for color and turbidity at 314 CMR 4.05(4)(b)6, for aesthetics at 314 CMR 4.05(5)(a) and for bottom pollutants or alterations at 314 CMR 4.05(5)(b). The Commonwealth has specifically listed turbidity as a cause of the aesthetics and primary and secondary contact impairments in the Chelsea River and determined that it is a pollutant requiring a TMDL. Global Fact Sheet p. 25. In addition, the Facility operation involves the treatment of solids and has on multiple occasions exceeded the technology-based TSS limit. Global Fact Sheet Appendix A.[120] Turbidity has not been previously monitored for any outfall at this facility; the data will be used to determine if discharges of turbidity from the Facility cause, or have the reasonable potential to cause, or contribute to an excursion above the State WQSs impacted by turbidity, including the dissolved oxygen impairment, in accordance with 40 CFR § 122.44(d)(1)(ii). In addition, the comment does not explain the significance of the claims that the Facility's discharges "are predominantly stormwater runoff rather than from industrial activities" or that "stormwater discharges from Municipal Separate Storm Sewer System (MS4) outfalls constitute the majority of point source stormwater flow to the Chelsea River." Stormwater discharges have potential to impact turbidity as the comment seems to recognize by its suggestion that the MS4s are more responsible for the turbidity impairment. Further, even if the majority of stormwater discharges to the Chelsea River come from MS4s, it is still reasonable for EPA to assess the facility's contribution to the impairment. And in the event EPA determined that discharges from the Facility contribute to an excursion above a state water quality standard, EPA would still be required to establish water quality-based limits for the facility. 40 CFR § 122.44(d)(1). Finally, EPA expects that turbidity

[120] It is not clear to EPA what point the comment is trying to make by quoting the statement on page 31 of the Fact Sheet that "operations at the Facility remain consistent with the conditions under which the technology guidelines promulgated at 40 CFR § 423 can be achieved." *See In re Town of Westborough*, 10 E.A.D. 297, 304 (EAB 2002) (EPA is not required to "guess the meaning behind imprecise comments."). EPA notes that the quoted statement was made in the context of supporting the appropriateness of the technology-based TSS limits in the permit.

monitoring is a reasonable condition because turbidity is a simple field measurement collected using a turbidity meter and can be a useful indicator of the effectiveness of BMPs. *See* 2022 Proposed Construction General Permit.[121]

As turbidity is listed as an impairment to the receiving water body, a pollutant of concern under State WQS, and has not been previously monitored, EPA has reasonably included twice monthly monitoring of effluent turbidity at outfalls 001 and 002 to adequately assess the Facility's impact on the turbidity of the receiving water body.[122]

Comment F.15 – New Monitoring Requirements for Chemical Oxygen Demand (COD)

Part I.A of the Draft Permit requires a monitoring and reporting requirement for COD for Outfall 001, 002, 004, and 005 for the first time. The Facility takes exception to the new monitoring requirements. The discharges from these outfalls are predominantly stormwater runoff rather than from industrial system (MS4) outfalls constitute the majority of point source stormwater flow to the Chelsea River. As EPA has failed to identify that the impairment of dissolved oxygen on the receiving water results from industrial activities at the Facility and there is no evidence to suggest that the Facility is or has been a source, the Facility fails to recognize any reasonable rationale and regulatory bases for the imposition of new monitoring requirement for COD.

Request:
The Facility requests that EPA removes the new monitoring requirements for COD for Outfall 001, 002, 004, and 005 from the Draft Permit.

Response to Comment F.15

EPA has responded to similar comments that object to new monitoring requirements and raise some of the same issues, including the applicable standard. See, for example, Responses to Comments F.5, F.10, and F.14. To the extent the commenter asserts that EPA may only establish a new monitoring requirement by showing that industrial activities at the Facility *cause* the particular impairment, EPA disagrees. EPA is authorized to require a facility to provide information to enable EPA to determine whether an effluent limitation may be necessary, *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 671-72 (EAB 2001); *In re City of Port St. Joe & Fla. Coast Paper Co*., 7 E.A.D. at 310 (observing that "an obvious purpose behind Section 308(a) . . . is to enable EPA to require dischargers to gather data so that EPA can make informed regulatory decisions"), "subject only to a reasonableness standard," *In re Simpson Paper Co.*, 3 E.A.D. 541, 549 (CJO 1991); *accord In re Arecibo & Aguadilla Regional*

[121] Available at https://www.epa.gov/npdes/2022-construction-general-permit-cgp
[122] EPA explained in other responses that these Final Permits no longer authorize stormwater discharges from outfalls 004 and 005 due to the decommissioning and subsequent sale of the REVCO terminal. *See*, *e.g.*, Responses to Comments D.1, F.1, F.2, F.9.

Wastewater Treatment Plants, 12 E.A.D. 97, 135 & n.68 (EAB 2005); *Town of Ashland*, 9 E.A.D. at 672 n.14.[123]

According to the Massachusetts Year 2016 Integrated List of Waters, dissolved oxygen is a cause of the impairment to the aquatic life designated use in the Chelsea River. Massachusetts water quality standards provide that DO in the Chelsea River "[s]hall not be less than 5.0 mg/l." 314 CMR 4.05(4)(b)(1). As EPA explained in the Fact Sheets, dissolved oxygen in rivers and streams is directly affected by oxygen demand. *See, e.g.*, Global FS at 33. The greater the oxygen demand (i.e., the higher the concentration of BOD and/or COD), the more rapidly oxygen is depleted in the stream. *Id.* Depletion of in-stream oxygen levels causes aquatic organisms to become stressed, suffocate, and die. *Id.* Indirect indicators commonly used to measure the oxygen demand in wastewater include biological oxygen demand (BOD) and chemical oxygen demand (COD). *Id.* at 32. BOD measures the amount of oxygen consumed by microorganisms in decomposing organic matter in water. *Id.* at 32-33. COD is defined as the amount of dissolved oxygen that must be present in a water system to oxidize chemical organic materials. *Id.* at 33. COD is a surrogate measure of organic pollutants and high levels can be indicative of oil and hydrocarbons. Monitoring provides a baseline understanding of the quality of industrial stormwater. *See* AR-126.

EPA did not require monitoring for BOD or COD in the Facility's discharges during the previous permit cycle, but the three previously individually permitted Global Facilities (Global Revco, Global South, or Global Lee Burbank) have provided sample results for BOD and COD in permit renewal applications, indicating that BOD was not detected but measuring maximum daily values of COD at 49 mg/L, 25 mg/L, and 25 mg/L, respectively. This limited set of samples indicates that a liter of wastewater consumed 25 to 49 mg of oxygen in the waterbody over a five-day period. While these three datapoints are not inordinately high measures of COD, they do indicate that the facility's discharges consume oxygen in a river the Commonwealth has determined is impaired due to already low levels of dissolved oxygen. As a result, they may have a higher level of influence due to the existing impairment and history of industrial use. As noted earlier, COD has not been regularly monitored at the Global Facilities or in other similar facilities along the Chelsea River. Thus, the only recent COD data available to EPA to assess the facility's impact on dissolved oxygen levels are the three one-time measurements reproduced above. Moreover, seasonal variations in temperature can also impact COD; as only one sample was taken at one timepoint for reapplication there are currently no COD data to assess how discharges from the facility impact DO in the Chelsea River throughout the year. In addition, stormwater is often quite variable both in the magnitude discharged and the pollutant load in a given discharge. As such, the limited set of samples provides an incomplete picture and may not fully or accurately reflect COD effluent discharges from the facility and their effect on the waterbodies. Additional and consistent monitoring across multiple months is necessary for EPA to fully assess potential water quality implications of COD from Global's effluent.

[123] Nor is "cause-and-effect proof" required at the later stage of determining whether effluent limits are required, *In re City of Taunton*, 17 EAD 105, 151 (EAB 2016) (*citing In re Town of Newmarket*, 16 E.A.D. 182, 223 n.23 (EAB 2013)), which further supports the position that it is not required at the earlier step of simply establishing monitoring requirements.

Because the Chelsea River is already impaired due to low DO, COD has not been regularly monitored in the facility's discharges, and the limited available monitoring data are insufficient for EPA to make a definitive determination, EPA determined further monitoring is necessary to evaluate the potential for the effluent from the Facility to cause or contribute to receiving water conditions below the DO criteria. EPA is requiring the facility to gather more data to ensure that its discharges do not impact the water quality of the Chelsea River or aquatic life. The additional monitoring requirements are included for specific regulatory use in carrying out the Clean Water Act. EPA's ability to exercise its legitimate regulatory authority granted in Sections 308 and 402 to gather information to determine the concentrations of pollutants the facility discharges is of paramount importance to protection of the environment. EPA's decision to include COD monitoring at outfalls 001 and 002 is reasonable and consistent with its responsibilities under the Act, particularly given the highly urbanized nature of the watershed above the discharges, the materials handled at the facility, and that the Chelsea River is already impaired due to low DO.[124]

Comment F.16 – New Limit for Methyl tert-butyl ether (MtBE)

In Part I.A of the Draft Permit, the EPA imposes an effluent limit of 20 µg/L for MtBE for Outfall 001 and 004 for the first time. The Facility takes exception to the new requirement for the following reasons:

Existing levels of MtBE from the Facility do not show cause or reasonable potential to exceed the proposed water quality established based on the EPA's health advisory:

According to the MassDEP's 2016 Integrated List of Waters, MTBE is not listed as impaired for the Chelsea River. The sampling results from the past five years did not exceed the proposed permit limit of 20 µg/L developed based on the EPA's health advisory, as noted in page 47 of the Fact Sheet. These results show no cause or reasonable potential for MtBE from the Facility to exceed the proposed water quality criteria. As EPA has failed to identify MtBE as a pollutant of concern that would cause or contribute to impairments on the receiving water, further operation expenditures and additional monitoring requirement for MtBE are not warranted.

EPA clearly erred in applying the guidelines in the EPA NPDES Permit Writers' Manual to consider BAT and BPT when establishing the case-by-case TBEL for MtBE and using BPJ, which violates 40 CFR § 125.3(c)(2) and 40 CFR § 125.3(d):

According to the NPDES Permit Writer's Manual, the development of a case-by-case TBEL requires a consideration of available technology, process implemented, and/or any other relevant factors (e.g., BPT and BAT requirements). EPA has failed to consider BPT and BAT properly when determining the TBEL for MtBE. Based on the requirement in EPA's manual, a TBEL development should consider both prevalent concentration for stormwater runoff and the removal efficiency from the stormwater BMPs (see Comment #1 for an example of analysis for benzene).

[124] EPA explained in other responses that the Final Permit no longer authorizes stormwater discharges from outfalls 004 and 005 due to the decommissioning and subsequent sale of the REVCO facility. *See*, *e.g.*, Responses to Comments D.1, F.1, F.2, and F.9

More importantly, the EPA clearly erred in implementing the 20 µg/L limits for MtBE based on the consistency of "monitoring results" for this and other facilities in Region 1 rather than a technology-based analysis following any valid analysis.

Request:
The Facility requests that EPA removes the limit for MtBE for Outfall 001 and 004 from the Draft Permit.

Response to Comment F.16

The Permittee requests that EPA eliminate the technology-based MtBE limits proposed in the Draft Permit at Outfalls 001.[125] As EPA explains in the Fact Sheet (p. 45), MtBE serves as an indicator parameter of the infiltration of contaminated groundwater and has been detected in significant concentrations in groundwater impacted by releases of petroleum fuels, including at the Global Terminals. MtBE should not be present in the effluent unless migration pathways between groundwater and stormwater exist. *Id.* Part I.C.1.b.8 of the Permit requires the Permittee to implement a stormwater system BMP that ensures the integrity of the conveyance system to eliminate infiltration of contaminated groundwater. This requirement is consistent with, and a continuation of, the existing BMP in Part I.C.5 of the 2014 Permit. This requirement is also linked to the permit provision prohibiting the discharge of contaminated groundwater not otherwise expressly authorized under the Permit (i.e., internal Outfall 003) and to a Permittee's duty to properly operate and maintain its treatment facilities, systems, and related appurtenances. *See* Final Permit Part I.B.2.h, Part II.B.1; Fact Sheet at 99-100. MtBE monitoring is necessary to demonstrate that the infiltration and discharge of contaminated groundwater has been eliminated and that stormwater conveyance systems are being properly operated and maintained.

As the comment points out, EPA did not find reasonable potential to cause or contribute to an excursion of water quality standards at Outfall 001. *See* Fact Sheet p. 47. EPA found, however, that the BMPs and treatment at the Facility have achieved MtBE concentrations much lower than the water quality criterion of 20 µg/L and proposed using this standard as a technology-based maximum daily limit in the Draft Permit on that basis. *See id*. However, the stormwater system integrity BMP at Part I.C.1.b.8 and the unauthorized discharge provision at Part I.B.2.h, which require the Permittee to eliminate infiltration and discharge of contaminated groundwater, are already designed to prevent the discharge of groundwater contaminants at the outfalls. In addition, the Permittee has a duty to properly operate and maintain its treatment systems and appurtenances. In fact, if properly implemented the BMP should result in levels of MtBE far below the proposed limit at the outfalls. For this reason, a numeric MtBE limit at Outfalls 001 is unnecessary. EPA revised the Final Permit to eliminate the new MtBE effluent limitation at Outfall 001, as requested in the comment, and require monitoring on a quarterly basis as confirmation that the Permittee has and continues to maintain the stormwater system integrity so

[125] EPA notes that the Permittee does not comment on the water quality-based effluent limits at Outfalls 002 or 003, which are retained in the Final Permit. As to the comment's request for removal of the limit at Outfall 004, EPA explained in other responses that the Final Permit no longer authorizes stormwater discharges from Outfall 004 due to the decommissioning and subsequent sale of the REVCO facility. *See*, *e.g*., Responses to Comments D.1, F.1, F.2, and F.9. As such, the Final Permit does not include any limits (or authorize any discharge) for Outfall 004.

as to eliminate infiltration and discharge of contaminated groundwater. *See also* Response to Comments J.3, J.10. For consistency, EPA has revised the Final Permits for the other terminals to eliminate any new MtBE technology-based limits and require quarterly monitoring. EPA retained MtBE effluent limitations for any facility with a limit in its 2014 Permit in accordance with antibacksliding.

Comment F.17 – Ambient Characteristic (WET) Testing for Additional Parameters

Part I of the Draft Permit incorporates new monitoring and testing requirements for additional parameters (i.e., salinity, ammonia nitrogen, total cadmium, total copper, total nickel, total lead, total zinc, pH, and temperature) in the receiving water body. Although the Facility understands EPA's goal of acquiring additional information regarding the water body, the parameters are unrelated to the Facility's discharge.

Request:
The Facility requests that if, following the first required WET Test, it is shown that the discharge from the Facility has the same or greater survivability of the target species than that of the Receiving Water, the proposed quarterly testing should be changed to require testing only annually.

Response to Comment F.17

The ambient monitoring requirements described in the comment (salinity, ammonia nitrogen, total cadmium, total copper, total nickel, total lead, total zinc, pH) are not new and were a requirement of the 2014 Permits. See "Whole Effluent Toxicity, Receiving Water Chemical Analysis" in MA0000825 Part I.A.1 (footnote 17), MA0003425 Part I.A.1 (footnote 17), and MA0003298 Parts I.A.1 (footnote 16) and I.A.2 (footnote 17). These parameters are the standard chemical analysis in the Marine Acute Toxicity Test Procedure and Protocol. *See* Attachment A to the 2014 Permits and Draft Permit (p. 8). Temperature monitoring is also part of the receiving water chemical analysis in the WET protocol. As such, while the Draft Permit proposes that the Permittee begin reporting the receiving water temperature, the monitoring requirement itself is not new.

Continuing to require Permittees to report the results of the receiving water chemical analysis in the DMR is standard practice in Region 1 NPDES permits and ensures that the data are transparent and readily available to EPA, the State, and the public. EPA does not believe reporting the results of the receiving water chemical analysis required under the WET protocol in the DMR is unreasonable. The chemical analysis of the receiving water is required to more accurately determine "background" or ambient concentrations and informs EPA's analysis as to whether the effluent has reasonable potential to cause or contribute to an exceedance of Massachusetts' Surface Water Quality Standards in accordance with 40 C.F.R. §122.44(d)(1)(i). In addition, because some water quality criteria are affected by temperature and pH (e.g., ammonia), the Draft Permit proposed reporting these parameters.

However, in response to Global's Comments F.18 and F.27, EPA has reconsidered the frequency of WET monitoring at the Global Terminals' outfalls. The Draft Permit already proposed annual

WET testing (as requested in the comment) for Outfall 001.[126] The Draft Permit proposed quarterly WET testing at Outfall 002 because the Permittee did not submit monitoring data at this Outfall from January 2015 through December 2019. However, in response to the Permittee's requests for consistent limits and requirements among its outfalls and for more flexibility with respect to transfers between the Global South and Petroleum facilities, and given that sampling data at multiple outfalls may be pooled as representative of stormwater quality at the site, EPA has revised the monitoring frequency for WET testing at Outfall 002 from quarterly to annual. As a result, the Final Permit includes annual monitoring for whole effluent toxicity and receiving water sampling at Outfalls 001 and 002.

Comment F.18 – Inconsistent Monitoring Requirements of and Effluent Limitation Implementation Status Among External Outfalls

In Part 1.A of the Draft Permit, the implementation status of monitoring requirement and effluent limits between the four external outfalls (i.e., Outfall 001, 002, 004, 005), in terms of the list of regulated substance, are different. For example, the new effluent limit for Group I PAHs were implemented to all the six substances for Outfall 001, only five substances for Outfall 004, and four substances for Outfall 005. Outfall 002 does not have any effluent limit imposed for the Group I PAHs. As another example, the implementation status of metals (i.e., copper, zinc, and iron) differ largely among outfalls (see the table in Comment #9). The effluent limit for copper were imposed for Outfall 001, 002, and 004, while that for Zinc were implemented for Outfall 002 and 004 only. In the case of iron, the effluent limit was proposed for Outfall 001, 003, and 005 but not Outfall 004.

Applying different compliance standards to the same type of outfall within a facility will lead to confusion for a permittee regarding the compliance. One example is provided below:

> Outfall 001 has an effluent limit 100 µg/L for substance A
> Outfall 002 does not have an effluent limit imposed for substance A

Under this implementation, if substance A is detected multiple times at Outfall 002 with a concentration which is consistently lower than the effluent limit imposed for Outfall 001 (e.g., 10 µg/L), the permittee would not know if, for example, the treatment system needs to further upgrade given that the applicable existing limit has been met.

Request:
Consequently, we suggest that for the same type of outfall within a Facility, the reasonable potential and effluent limits should be implemented facility-wide rather than applied separately for individual outfalls.

[126] EPA explained in other responses that the Final Permit does not authorize stormwater discharges from outfalls 004 and 005 due to the decommissioning and subsequent sale of the REVCO facility. *See*, *e.g.*, Responses to Comments D.1, F.1, F.2, and F.9. As such, the Final Permit does not include any limits or conditions pertaining to outfalls 004 and 005.
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Response to Comment F.18

The commenter asserts that effluent limits should be implemented facility-wide rather than applied separately for individual outfalls. For the Draft Permit, EPA considered water quality-based effluent limitations at each outfall based on the classification and quality of the receiving water and the effluent data provided for each individual outfall over the last permit term. In some cases, the variability and availability of the effluent data led to differences in effluent limitations. In other cases, differences in the water quality-based limits are a result of the different classification of Chelsea River (Class SB(CSO)) and Sales Creek (Class SA).

Stormwater at the Global Facilities, however, is exposed to substantially similar conditions and, as the comment notes, there are benefits to making the effluent limitations consistent among outfalls. As the Permittee points out in Comment F.27, stormwater discharged from all outfalls at the Global Facility at the time the data were collected "receives identical treatment before discharge" and [t]he same bulk materials (distillate and gasoline) are stored in each tank farm resulting in similar contaminants of concern."[127] In response to comments F.9, F.11, and F.12, EPA re-evaluated reasonable potential for TRC, metals, and ammonia using data aggregated over the four outfalls. Using all available data as representative of stormwater quality at the site captures the variability in the discharges and results in consistent permit limits and monitoring requirements among the remaining regulated outfalls. *See* Responses to Comments F.9, F.11, and F.12. If EPA considers the stormwater monitoring data collected at one outfall as representative of stormwater quality at the Facility, as the Permittee suggests, it is reasonable to establish numeric, water quality-based limits based on demonstrated reasonable potential for the remaining regulated outfalls (001 and 002). The Final Permit establishes consistent, water quality-based numeric limits for Group I PAHs, copper, zinc, and ammonia (from April 1 to October 30) at Outfalls 001 and 002 based on demonstrated reasonable potential to cause or contribute to an exceedance of water quality criteria. In addition, the monitoring frequency at Outfall 002 was revised to be consistent with the monitoring frequency for Outfall 001.

Finally, imposing consistent water quality-based effluent limitations for all of the Facility's outfalls will also ensure that stormwater transfers are not used as a means to bypass treatment or otherwise avoid a limit and will provide more flexibility for the Permittee to transfer stormwater among areas of its Facility while ensuring protection of water quality. In particular, the Draft

[127] The Draft Permit proposed consolidating the three Global Terminals (REVCO MA0003298, Petroleum MA0003425, and South MA0000825) under a single individual NPDES permit (MA0000825). However, since the close of the public comment period, the entire Global property was sold to a new owner and the REVCO Terminal (including outfalls 004 and 005) was decommissioned and is no longer a petroleum bulk storage terminal. Global continues to operate a terminal that includes the South Terminal (including Outfall 001) and a portion of the Petroleum Terminal (including Outfalls 002 and 003). EPA is issuing a Final Permit to Global (MA0000825) authorizing discharges of treated stormwater and hydrostatic test water to the Chelsea River via Outfall 001 and Outfall 002, and discharges of treated groundwater via internal Outfall 003. All of the effluent limitations and conditions applicable to outfalls 004 and 005 have been removed from the Final Permit. See Responses to Comments D.1 and F.1. At the same time, EPA continues to consider all of the available data for outfalls 001, 002, 004, and 005 for the purposes of evaluating the quality of stormwater discharges at the Global Terminals. While discharges from outfalls 004 and 005 are not authorized under these permits and are no longer associated with stormwater from a bulk oil terminal, the data were collected when the site was a functioning terminal and, as such, are representative of the discharges.

Permit includes provisions (at Part I.C.5) that authorize the transfer of stormwater among outfalls subject to certain provisions and conditions. The Permittee has requested increased flexibility in the ability to transfer stormwater to outfalls that discharge to Chelsea River and to allow the Permittee to transfer hydrostatic test water. *See* Comment F.27. These provisions are unique to the Global Facility because, while several terminals operate internal outfalls, Global is the only bulk oil terminal on the Chelsea River that operates multiple outfalls discharging to the receiving water. Variable effluent limitations and monitoring requirements among outfalls increases the risk that a numeric effluent limitation could be avoided by transferring stormwater to an outfall with less stringent limits. Because water quality-based limits and monitoring requirements for the Chelsea River outfalls are identical, the Final Permit eliminates the provisions limiting the transfer of stormwater to any of the Chelsea River outfalls.

Comment F.19 – Sample Frequency

As the Draft Permit includes new or additional monitoring requirements (e.g., Chemical Oxygen Demand, Temperature, PAHs, TRC, Copper, Zinc, Iron, Free Cyanide, Total Ammonia) the Facility requests that if the frequency of any monthly or sub-monthly (e.g., twice monthly for turbidity) sample parameter reported by the analyzing laboratory as not detected in the discharge over a twelve (12) month sampling period, such parameter should be automatically amended to require only quarterly sampling.

Response to Comment F.19

The comment requests that the permit include an automatic reduction in frequency of sampling of "any monthly or sub-monthly" parameter if it is "reported by the analyzing laboratory as not detected in the discharge over a twelve (12) month sampling period." The comment does not explain why such an automatic reduction is appropriate or required under the Act. The Fact Sheet (p. 10) explains that the monitoring requirements included in the permit are established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2). *See also* 40 CFR §§ 122.41(j), 122.43(a), 122.44(i), 122.48. Routine sampling is required to assess the characteristics of the Facility's effluent, to ensure discharges comply with permit limits, and to determine if different permit conditions are warranted in the future. Monthly monitoring is required where numeric, water quality-based limits apply to ensure compliance with the permit, including PAHs, TRC, copper, zinc, and total ammonia. In addition, monthly monitoring is warranted due to the intermittent and variable nature of stormwater discharges. Where there is insufficient information to determine during this permit cycle whether a discharge will contribute to an excursion above water quality standards, the data obtained under the more frequent monitoring schedule will be of greater value to EPA in guiding future permitting decisions.

The request for monitoring reduction based on numerous "non-detect" values in the discharge is also inconsistent with the current standards and effluent limitations for some of the "monthly or sub-monthly" parameters. For instance, temperature and pH data cannot be assigned a value of non-detect. As noted in the permit, the compliance limit for most PAHs is determined to be the minimum detection level, however, the effluent limitation is actually below the minimum detection level. Therefore a value of non-detect does not necessarily mean that the water quality-

based effluent limitation for PAH discharge is being met. Additionally, it's possible that the minimum detection level could shift to lower values over time as methods improve, which counsels against reductions based on "non-detect." Moreover, the location of the discharge to an impaired waterbody in an overburdened community also counsels against an automatic reduction.

Where the comment generally seeks a reduction in monitoring, the frequency of monitoring at Outfall 002 has been reduced from quarterly to once per year for some parameters (e.g., BTEX, Group II PAHs with reporting requirements, WET testing) based on the decision to aggregate monitoring data and apply numeric limits where appropriate to all outfalls. *See* Responses to Comments F.18, F.27.

Comment F.20 – Reasonable Potential Analysis

The mass balance equation used by EPA in the reasonable potential analysis for calculating downstream effluent concentration is inaccurate. In Appendix C, the equation was expressed as below:

$$(DF - 1) + C_e = C_d(DF) \qquad (1)$$

where C_d is downstream effluent concentration; C_e is estimated 95th percentile of effluent concentration; *DF* is dilution factor.

Equation (1) is apparently incorrect by the mismatched unit among each term. Ce and Cd have a unit of concentration (e.g., µg/L or other concentration units), while *DF* is a ratio between total flow and effluent flow and is unitless. The correct equation, which has been provided in multiple EPA documents (e.g., EPA 2010 NPDES Permit Writers' Manual and EPA 1991 Technical Support Document for Water Quality-based Toxics Control), is as follow:

$$C_d = C_a + \frac{C_e - C_a}{DF} \qquad (2)$$

where C_a is ambient concentration. If there is no available dilution (i.e., DF = 1), the receiving water concentration downstream of the discharge (C_d) is equal to the effluent concentration (C_e), as stated in Appendix C (page 102 of the Fact Sheet). Although using the incorrect Equation (1) does not affect the calculation of downstream concentration presented in page 104 of the Fact Sheet as the two equations yield the same results (i.e., mathematically equivalent) if and only if DF equals to one, Equation (1) is basically invalid due to the mismatch of unit as mentioned above. After a careful investigation, it was found that Equation (1) can be derived from Equation (2) by assigning C_a equal to 1. However, EPA has failed to provide further details of this derivation if it is the case. Regardless, applying Equation (1) to any conditions with dilution allowance (i.e., DF > 1), which is one essential request from the Facility (see comments above), will certainly leads to seriously biased estimates on downstream concentrations.

Request:

The Facility requests that the reasonable potential analysis be re-evaluated prior to imposing the effluent limits for the pollutant listed in this section, by taking the dilution allowance into account.

Response to Comment F.20

The comment is correct that the mixing equation in Appendix C, page 186 of the Fact Sheet is incomplete. The first term is missing a multiplier representing the ambient concentration (Ca). The correct equation is:

$$C_d\ DF = C_a\ (DF - 1) + C_e$$

Which, when rearranged, is equivalent to equation 2 from the comment.

$$C_d = \frac{C_a\ DF - C_a + C_e}{DF}$$

$$C_d = C_a + \frac{C_e - C_a}{DF}$$

Given that no dilution has been afforded the discharge from any outfall (DF = 1), the above equation reduces to $C_d = C_e$. In other words, the projected downstream concentration is equal to the effluent concentration. As seen in the remaining tables in Appendix C, EPA did correctly equate C_d and C_e. In this case, because dilution is equal to 1, EPA's reasonable potential analysis in the Fact Sheet is unaffected by the clarification in the first equation and does not need to be re-evaluated based on the incomplete equation in Appendix C. The comment recognizes that the error did not result in a mathematical difference in the calculation of Reasonable Potential where, as here, dilution has been set equal to one. EPA addresses comments on the dilution factor (DF = 1) in Response to Comment F.21. Finally, where appropriate, EPA has addressed reasonable potential as it pertains to new permit limits in response to comments above. *See* Responses to Comments F.9, F.11, F.12. F.18.

Comment F.21 – Dilution Factor

In Section 4.3 of the Fact Sheet EPA erroneously stated that the State of Massachusetts determined that the dilution factor for the Facility is zero and applied the zero-dilution scenario in the reasonable potential analysis (Appendix C of the Draft Permit, (i.e. dilution factor (DF) equals to 1). EPA's rationale for applying zero dilution to the Facility's discharge is based on Section 4.3 of the Fact Sheet in accordance with State's WQSs (i.e., 314 CMR 4.03(3)(c) and 314 CMR 4.03(3)(d)).

However, EPA misinterpreted the State's approach to establish quantitative derivation of WQBELs. Although the State may determine WQBELs to be at least equivalent to that provided for rivers and streams, this only applies to parameters with WQBELs based on human health-based criteria. In the Draft Permit, the WQSs applied to derive WQBELs for the pollutants

discussed in this section are water quality criteria for aquatic life in saltwater (i.e., EPA 2002 National Recommended Water Quality Criteria and 1989 Ambient Aquatic Life Water Quality Criteria for Ammonia – Saltwater). This suggests that a dilution factor should apply. See 314 CMR 4.03 (a) "*For rivers and streams, the lowest flow condition at and above which aquatic life criteria must be applied is the lowest mean flow for seven consecutive days to be expected once in ten years. When records are not sufficient to determine this condition, the flow may be estimated using methods approved by the Department.*"

Request:
The Facility requests that EPA establish dilution factors when determining reasonable potential for parameters with WQBELs based on aquatic life criteria.

Response to Comment F.21

The comment asserts that Massachusetts' water quality standards at 314 CMR 4.03(3)(a) suggest that EPA should apply a dilution factor greater than one when determining reasonable potential and establishing WQBELs using aquatic life criteria. The comment is limited to WQBELs based on aquatic life criteria in Appendix C of the Fact Sheet and does not dispute the use of a dilution factor of one for determining reasonable potential and WQBELs based on human health criteria. 314 CMR 4.05(3)(d). Therefore, EPA addresses the issue of a dilution factor for determining reasonable potential and establishing WQBELs based on aquatic life criteria.

Massachusetts WQSs at 314 CMR 4.03(3) state that MassDEP "will determine the most severe hydrologic condition at which water quality criteria must be applied" and provide additional information on determining such condition based on waterbody type and whether human health or aquatic life criteria are being applied. *See* 314 CMR 4.03(3)(a) through (d). The WQS also state that MassDEP "may determine that criteria should be applied at flows lower than those specified in order to prevent adverse impacts of discharges on existing and designated uses." 314 CMR 4.03(3). For rivers and streams, the WQS generally provide for the use of the 7Q10 low flow (the lowest mean flow for seven consecutive days to be expected once in ten years) to estimate dilution. 314 CMR 4.03(3)(a).[128] The hydrologic condition for rivers and streams defined in 314 CMR 4.03(3)(a), however, is not applicable to Chelsea River, because the river is saline and tidally influenced. As such, and contrary to the suggestion in the comment, the applicable hydrologic condition is that for coastal and marine waters[129] as provided in 4.03(3)(c): "*In coastal and marine waters and for lakes and ponds, the Department will establish extreme hydrologic conditions at which aquatic life criteria must be applied on a case-by-case basis. In*

[128] In fact, EPA calculated and applied a dilution factor in accordance with 314 CMR 4.03(3)(a) for Sales Creek based on the critical flow for rivers and streams. *See* Fact Sheet at 28. Although Sales Creek is currently classified as an SA water, it is separated from Belle Isle Inlet by a tide gate and, unlike the Chelsea River, does not function as a tidal system. *Id*. at 26. For the Draft Permit, EPA estimated and applied a dilution factor of 1 based on a 7Q10 flow of 0.33 cubic feet per second (cfs) (using USGS StreamStats) and a design flow of 500 gpm. The Final Permit does not include effluent limits or conditions for Outfall 005, however, because this outfall is no longer authorized or regulated under these permits.
[129] Coastal and Marine waters are defined at 314 CMR 4.02 as: "*The Atlantic Ocean and all contiguous saline bays, inlets and harbors within the jurisdiction of the Commonwealth including areas where fresh and salt waters mix and tidal effects are evident or any partially enclosed coastal body of water where the tide meets the current of a stream or river.*"

all cases existing uses shall be protected and the selection shall not interfere with the attainment of designated uses." *See* Fact Sheet pp. 27-28.

314 CMR 4.03(3)(c) does not establish a particular level of dilution to be used. It provides that dilution is to be established on a case-by-case basis—which is what has been done here—and that dilution must be set at a level that protects existing uses and does not interfere with the attainment of designated uses. As noted above, 4.03(3)(a) is not applicable to the Chelsea River. Moreover, the general provisions at 314 CMR 4.03(3) also provide that the Commonwealth "may determine that criteria should be applied at flows *lower than those specified* in order to prevent adverse impacts of discharges on existing and designated uses," (emphasis added), suggesting that, even if 314 CMR 4.03(3)(a) were applicable, it would not require the use of a dilution factor greater than one.

For the 2014 Permit, EPA and MassDEP provided no dilution allowance at any of Global Facilities' outfalls and set WQBELs at criteria. No new information was provided in the Permittee's renewal application to indicate that this conclusion was no longer valid or to support a different determination, and neither agency found additional information through its own investigations. In addition, multiple reasons exist for conservatively setting effluent limits at end-of-pipe without dilution (i.e., conservatively applying criteria in order to prevent adverse impacts of discharges on existing and designated uses):

> None of the designated uses in the Chelsea River are being attained and the causes of the impairments include multiple pollutants found in the Facility's stormwater discharges, including ammonia, petroleum hydrocarbons, and turbidity (since the Facility discharges suspended solids).[130] *See Massachusetts Year 2016 Integrated List of Waters*.[131]
> There are multiple Facilities that discharge pollutants across a relatively small segment of the Chelsea River increasing the risk that multiple dischargers will simultaneously contribute pollutants at or above water quality criteria.
> Stormwater is highly variable in both the magnitude of water discharged and the pollutant load from a given discharge, making the determination of dilution factors that would be protective of WQS technically complex and highly uncertain.
> Given the tidal influence of the Chelsea River, discharges at slack tide (the worst-case condition for tidal flows) are less likely to result in complete mixing of the effluent in the receiving waterbody. In addition, certain pollutants present in the stormwater discharges (petroleum hydrocarbons, including PAHs) are persistent, will strongly adsorb to suspended particulates, and can accumulate in the water, in the sediments, and in fish and shellfish. *See* 314 CMR 4.05(5)(e)(2) (encouraging "use [of] an additional margin of

[130] As noted in the Fact Sheet, Massachusetts has identified the sources of the impairments as "aboveground storage tank leaks (from tank farms), [and] accidental releases/spills and/or cargo loading/unloading associated with bulk petroleum terminals," among others. Fact Sheet p. 26. In the case of the Aquatic Life and Aesthetics uses, MassDEP's Water Quality Assessment Report "notes contamination of groundwater as a result of petroleum releases." *Id*. Further, "[p]ollutants related to materials currently and/or historically present at the Facility are explicitly listed as the cause of these impairments, and the sources of these pollutants have been attributed to one or more current and/or historic activities at the Facility." *Id.*

[131] Available at: https://www.mass.gov/lists/integrated-lists-of-waters-related-reports#2016-integrated-list-of-waters-
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safety when establishing water quality based effluent limits to assure that pollutants do not persist in the environment or accumulate in organisms . . .").

As stated in Section 4.3 of the Fact Sheet, the State maintained that no dilution should be granted. Furthermore, the State implicitly reiterated its approval of the dilution factor of one through its CWA Section 401 water quality certification of the Draft Permit: "*To meet the requirements of Massachusetts laws, each of the conditions cited in the draft permit and this certification shall not be made less stringent unless new data or other information is presented and MassDEP determines modification of this certification is appropriate in consideration of the relevant water quality considerations*." AR-127. For the reasons above, including that the comment does not provide any new information justifying a different dilution determination, the Final Permit has not changed the dilution factor.

Comment F.22 – Reopener Provision

As the Draft Permit incorporates provisions to re-open the final permit to allow modification at any time pursuant to 40 CFR § 122.62. Section 122.62 provides wide-ranging authority to reopen a permit for modification, including among other things substantial alteration to a facility, new information regarding operations, promulgation of new standards or regulations, judicial decision and detection of non-limited pollutants above levels that can be achieved by appropriate technology-based treatment methods. A modification can be either minor, which does not require a new draft permit or public comment period upon the consent of the permittee, or require the more burdensome issuance of a new draft permit if the modification does not qualify as minor under 40 CFR § 122.63. Section 122.62 also allows reopening in limited circumstances, such as noncompliance, for revocation or reissuance. As Section 122.62 provides wide discretion for EPA to reopen the permits for a wide variety of reasons, the final permit should contain a provision that EPA will notify a permit holder prior to reopening a permit, allowing for discussion and comments on the rationale for reopening, the nature of proposed revisions and the potential to resolve a proposed revision as a minor modification, prior to a decision to issue a draft permit.

Response to Comment F.22

The Reopener Clause included in the Draft Permit is a standard condition in NPDES permits issued by EPA Region 1, and is identical to the Reopener Clause included in each of the current permits for the three Global Terminals.[132] The comment does not present a compelling legal argument for making the requested revision to this standard provision. Section § 122.62 authorizes a permitting authority to determine upon review of the permit file whether cause for modification of a permit exists and, if so, to modify the permit. It does not require the type of pre-draft modification notice described in the comment. Similarly, 40 CFR § 124.5(a) authorizes the permitting authority to modify, revoke and reissue, or terminate a permit *upon the permitting authority's own initiative*, which further supports the point that the type of notice requested in the comment is not required by the regulations. Nor does 40 CFR § 122.44(d)(vi)(C)(4) require the

[132] Apart from two typographical errors, which have been corrected in the Final Permit.

revisions requested in the comment. Consequently, EPA has not made the requested revisions to this provision.

This is not to say that EPA would never notify a permittee prior to modifying a permit. Indeed, in most cases, EPA likely would contact the permittee prior to initiating modification, for instance to gather information relevant to any modification. *See also* 40 CFR § 124.5(c)(1) (authorizing EPA to "require the submission of an updated application"). Further, a minor modification may only proceed "[u]pon the consent of the permittee." *Id.* § 122.63. And in other cases, a modification is likely to be initiated by the permittee itself, *see. e.g.*, *id.* § 122.62(a)(1), (3), (4), (5), (8)(i), (16), thus obviating the need for pre-draft notification by EPA. But the regulations for modifications do not require pre-draft notice in every case,[133] and EPA cannot at this time foresee every factual scenario that might necessitate a modification. EPA therefore declines the invitation to add the requested, but not required, language.

Comment F.23 – Watershed Based NPDES Approach

Section 5.5.1 of the Fact Sheet discusses the institution of BMPs necessary to achieve effluent limitations. At page 89 of the Fact Sheet, EPA request comment on the option to require the Facility to coordinate its discharge with other similar facilities in the vicinity. The Facility does not believe that this type of coordination is practical or provides a water quality benefit to the receiving water body.

First, the Facility does not recognize any regulatory bases associated with the control of stormwater discharge associated with tides (e.g., EPA 2010 Permit Writer's Manual; EPA 2015 Water Quality Standards Handbook; EPA 2004 Technical Support Document for Effluent Guideline Program Plan; EPA 1991 Guidance Manual for the Preparation of NPDES Permit Applications for Stormwater Discharges Associated with Industrial Activity; EPA 1991 Technical Support Document for Water Quality-based Toxics Control).

Second, while the Facility has some ability to retain stormwater runoff generated from small storm events prior to discharge, this ability is not absolute, especially during large storms exceeding retention facilities' storage capacity, thus it is not practical to always stagger discharges. In the events of large storm with long duration, facilities may need to discharge for multiple days following such an event. Delays necessary to stagger discharges could result in unsafe quantities of stormwater being retained at a facility should another significant storm occur. Further, as there are multiple facilities discharging to the Chelsea River, it is not clear how a coordinated system could be practically implemented that would allow for discharges from each facility in manner that is safe for operations. Taken with previous Comments #5 and #6 above, the requirement to avoid discharges during periods of slack tide and coordination of discharges with other facilities makes the ability to discharge the required volumes of stormwater virtually impossible

[133] EPA notes that a non-minor modification is subject to public participation procedures. 40 CFR § 122.62. Thus, the permittee would not be deprived of notice of, and the opportunity to comment on, a proposed modification even in the unlikely event that EPA did not contact the permittee prior to issuing a draft modification.

Third, it is not clear that stagging stormwater discharge would provide any meaningful environmental benefit as the impairments are related to long-term cumulative effects as well as historical discharges. There is no clear correlation between water quality degradation in the receiving water and wet weather discharges from the facilities along the Chelsea River. In addition, the State determined the dilution factor is zero based on the human health-based criteria. This basically means there is no environmental benefit by stagging the discharge as the receiving water quality will be the same as the discharges.

Request:
The Facility requests that the prohibition in Part I.C.1.b(3) regarding coordination of discharges be deleted from the Draft Permit.

Response to Comment F.23

In the Fact Sheets for the Draft Permits, EPA specifically requested comment on whether it is appropriate for the Final Permits to require the facilities "to avoid discharging at the same time as the other petroleum bulk storage facilities along Chelsea River and/or whether it would be best to require a permittee to sequence its discharge starting from the uppermost Facility (i.e., Global Companies, LLC) and progressing downstream (i.e., (i.e. Irving Oil Terminals, Inc., Gulf Oil Limited Partnership, Sunoco Partners Marketing and Terminals L.P.) to the confluence with Boston Inner Harbor (i.e., Chelsea Sandwich, LLC)." *See, e.g.*, Global Fact Sheet at 89. EPA noted in the Fact Sheets that this type of control could reduce the potential for cumulative impacts. *Id.* As a result, the Draft Permits included a condition to "avoid discharging concurrently with the other facilities located along Chelsea River to the maximum extent practicable." Draft Permits at Part I.C.1.b.3. This comment states that this permit condition is impractical, will have no meaningful environmental benefit, and could potentially result in unsafe conditions.[134] Other facilities raised similar comments. *See* Comments G.22, H.4, I.7, J.13.

Stormwater discharges are unpredictable and tied closely to precipitation events. During a storm, depending on the capacity of the system, a Facility may have to discharge to avoid flooding at the site, including during slack tide or an incoming tide and concurrently with other Terminals. EPA addressed additional comments about the timing of discharges in Responses to Comments F.6 and F.7. The proposed BMP at Part I.C.1.b.3 was intended to be implemented to the maximum extent practicable but was not meant to prohibit concurrent discharges during storm

[134] In Response to Comment F.7, EPA addressed the additional comment repeated here that "the Facility does not recognize any regulatory bases associated with the control of stormwater discharge associated with tides." The provisions for timing discharges in relation to the tidal stage (to the extent practicable) are best management practices (BMPs) which are actions and procedures designed to reduce or prevent the discharge of pollution to waters of the U.S. EPA is authorized to impose BMPs to control or abate the discharge of pollutants under CWA Section 402 as reasonably necessary to achieve effluent limitations and standards and to carry out the purposes and intent of the CWA. *See* 40 CFR § 122.44(k)(2) and (4). BMPs, by definition, include schedules of activities and other management practices to prevent or reduce the pollution of waters of the U.S. 40 CFR § 122.2. A BMP that requires a Permittee to avoid discharging at certain tidal stages addresses potential cumulative impacts of pollutants from these facilities that are persistent and can accumulate in the water and in the sediments. 40 CFR §§ 122.2, 122.44(k)(2).

events that exceed the storage capacity or result in unsafe conditions. EPA acknowledges that a BMP to avoid concurrent discharges from all of the Terminals along Chelsea Creek is potentially too broad to effectively implement. At the same time, EPA disagrees that there would be no water quality benefit to minimizing concurrent stormwater discharges from the terminals located along Chelsea River. As explained elsewhere in this Response to Comments, stormwater discharges from these facilities contain pollutants that can be persistent and bioaccumulative and multiple, concurrent stormwater discharges could present a risk of cumulative impacts to the waterbody. *See, e.g.*, Responses to Comments F.6, F.7, F.8.

EPA maintains that potential for cumulative impacts, particularly to the benthos, from multiple stormwater discharges to Chelsea River should be addressed in the NPDES permit. However, in response to this and the other similar comments from the Terminals, EPA has decided not to include the requirement to coordinate discharges. Global and the other Terminals raise concerns about the practicality and logistics of attempting to coordinate discharges among the Terminals. The intermittent nature of stormwater discharges, coupled with the other discharge-related BMPs (e.g., must discharge on an outgoing tide, at least an hour from slack tide) and certain processes implemented by the facilities themselves (e.g., not discharging when receiving a delivery), already restrict when the Terminals can discharge. Imposing the additional restriction to coordinate discharges among multiple, separate outfalls operated by several different permittees significantly narrows the window for discharge and presents new logistical challenges that may not be reasonable, where other, more attainable permit measures to reduce or prevent pollutants from being discharged are expected to be more protective. For instance, the Final Permits include more stringent technology- and water quality-based effluent limitations and BMPs to discharge on outgoing tides when pollutants will be carried out of the Chelsea River, which minimizes the potential load to the river. *See also* Response to Comment F.7. Finally, requiring the Terminals to coordinate discharges could force facilities to retain stormwater for longer periods of time, which could cause unsafe conditions, impact the design capacity of the treatment systems, create conditions that encourage congregations of birds resulting in higher bacteria counts in the discharges, and interfere with the Terminals' ability to prepare for, or treat discharges associated with, major storm or flood events.

For the above reasons, EPA has not included in the Final Permit the requirement to avoid discharging concurrently with other facilities located along the Chelsea River.

Comment F.24 – Major Storm Events

Section 5.5.1 of the Fact Sheet requests comment on whether it is appropriate for the Draft Permit to require implementation of enhanced controls to minimize impacts from stormwater discharges from major storm events. Notwithstanding that it is unclear what would constitute a major storm event, the Draft Permit provides substantial requirements for the control and treatment of stormwater. Further, the Facility maintains a Spill Prevention and Control Plan (SPCC) and is required to maintain a Stormwater Pollution Prevision Plan (SWPPP – Section 5.5.2 of the Fact Sheet) which provides for, among other things, operations and preparations before and during storm events. The requirement for the SPCC and SWPPP Plans provide for the necessary planning and controls during the term of Draft Permit.

For example, at Outfall 001, two flow control valves, installed in series at the western end of the collection drain, allow stormwater from the collection drain to flow by gravity under the Lee Burbank Highway to Lift Station 1, when opened. There are two pumps located within each lift station. The maximum pumping rate of each of the manually operated pumps at Lift Station 1 is 125 gallons per minute (GPM). The maximum pumping rate of each of the manually operated pumps at Lift Station 2 is 350 GPM. Under normal weather conditions, only one pump in each lift station operates. However, both pumps may operate simultaneously to manage larger volumes of accumulated water. At Outfall 002, there are two pumps located within the lift station, each with a pumping capacity of 450 gallons per minute (GPM). Under normal conditions, only one pump is operated. However, under flood conditions both pumps can be operated simultaneously.

Further, the Facility includes a number of operational requirements for storm events, including the isolation of chemical supplies (containers 55 gal or smaller) by placing them inside enclose roofed areas or sea containers having built in secondary containment, isolation of hazardous waste storage areas by placing waste in sea- containers having built in spill containment and prompt attention to any minor spills and/or leaks, which are cleaned promptly using dry methods (e.g. speedy dry or absorbents pads).

In the event of a potential storm event, the Facility also takes the following actions:

- Monitor the National Weather Service and Local TV/Radio stations on the internet or radio or TV to identify potential events.
- If flooding conditions are predicted, discharge all standing water in containment structures, if possible.
- Inspect all OWSs for the presence of oil; remove if present (note: oil is rarely present in any of the OWS structures).
- Inspect the terminal yard for any containers/structures that could become dislodged during a flooding event and secure or remove.
- If the loading/unloading areas become flooded, all loading/unloading operations should be suspended.
- Notification to customers not to send trucks or vessels to the facility until they receive confirmation that flooding has abated, as appropriate.

There is minimal environmental benefit to control the discharge during major storm events as minor volumes of pollutants (if any) are typically washed off during storm's first-flash (runoff generated from either during first hour of the storm event or first inch of the total rainfall). The major events often have a long duration and/or greater total rainfall volume.

The runoff water quality after the first flush typically contain less pollutants and often dilute or flush the potentially more-impacted first flush downstream.

With little or no environmental benefit , the requirement for extremely complex operational and coordination requirements necessary to implement additional controls, the Facility does not believe that further controls differentiating major storm events is necessary in light of the preparations provided in the SPCC and SWPPP Plans.

Response to Comment F.24

First, the commenter indicates that "it is unclear what would constitute a major storm event." In response, EPA has revised Part I.C.1.b.6 of the draft permits, in part to provide more clarity. The Final Permits require permittees to adopt control measures to "minimize discharges that result from impacts of *major storm and flood events*," Part I.C.1.b.6 (emphasis added), and now include the following explicit definition of that term: "'Major storm and flood events' refers to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding. 'Extreme/heavy precipitation' refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. 'Extreme/heavy precipitation' does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events." *Id.* n.3; *see also Climate Change Indicators: Heavy Precipitation*, Environmental Protection Agency (Apr. 2021), https://www.epa.gov/climate-indicators/climate-change-indicators-heavy-precipitation ("Heavy precipitation" refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season.").

As discussed *supra* in EPA's response to Comment A.2.D, under this definition, the permits now expressly require permittees to account for the risk of discharges from dry-weather tidal flooding when considering the appropriate control measures to adopt. The application of Part I.C.1.b.6 to dry-weather tidal flooding, such as high-tide flooding, is appropriate both because it poses a potential risk that pollutants will be discharged to the river and because its frequency and impact are increasing, as it is tied to sea-level rise associated with climate change. *See, e.g.*, *Climate Change Indicators: Coastal Flooding*, Environmental Protection Agency (Apr. 2021), https://www.epa.gov/climate-indicators/climate-change-indicators-coastal-flooding#ref5 (explaining that "coastal cities have defined 'nuisance' flooding (also referred to as high tide flooding) thresholds" and indicating that "[s]ince 2011, Boston, Massachusetts, has exceeded the flood threshold most often—an average of 13 days per year"); *see also* CWA §§ 301(a), 402(a)(1); 40 CFR §§ 122.1(b)(1), 122.26(b)(13).

Second, the comment explains that the commenter has already undertaken numerous steps to minimize discharges that result from impacts of major storm and flood events, including maintaining a "Spill Prevention and Control Plan," maintaining a SWPPP, using flow control valves and pumps near both outfalls at its facility, and incorporating numerous operational requirements for storm events. EPA commends the commenter for considering the risks of major storm and flood events and proactively taking these steps. However, the permittee's actions in this area do not render Part I.C.1.b.6 of the permits inappropriate. For instance, it is not clear from the comment whether the facility's current practice takes into account how major storm and flood events may change over time (i.e., whether the permittee's selection, design, installation, implementation and maintenance of control measures takes future conditions into consideration). Part I.C.1.b.6 makes explicit the requirement that the facility (and the other facilities) prospectively considers the heightened risk of discharges from major storm and flood events

caused by climate change. *See* 2021 Fact Sheet at 88–89 ("The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications and *must take future conditions into consideration*." (emphasis added)). Moreover, the terms of Part I.C.1.b.6 dictate not only that permittees consider the appropriate control measures, but consider them in the context of the SWPPP, include them in the SWPPP, and document their rationale for adopting particular control measures and not others in sufficient detail to allow EPA, the public, or an independent qualified person to evaluate the reasonableness of the relevant decisions. This requirement, in turn, ensures that permittees give the risks, impacts, and appropriate control measures in-depth consideration, memorialize their analysis, and improve upon it iteratively over time in light of individual experiences with major storm and flood events. This analysis must be completed by a qualified person, as defined in Appendix A of EPA's 2021 MSGP[135] and incorporated by reference in the draft and final permit.

Third, EPA disagrees with the commenter's contention that "[t]here is minimal environmental benefit to control the discharge during major storm events as minor volumes of pollutants (if any) are typically washed off during storm's first-flash." The pollutant load discharged over time in the course of a major storm or flood event depends on numerous factors, but the "first flush phenomenon" represents "the condition, often occurring in storm-sewer discharges and CSOs, in which a disproportionately high [pollutant] load is carried to the first portion of the discharge or overflow." *Vocabulary Catalogue*, Office of Research and Development/National Risk Management Research Laboratory (Aug. 13, 2009), https://sor.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&vocabName=Urban%20Watershed%20Terminology#formTop; *see* Maestre & Pitt, *The National Stormwater Quality Database, Version 1.1: A Compilation and Analysis of NPDES Stormwater Monitoring Information* 143 (Sept. 4, 2005), http://unix.eng.ua.edu/~rpitt/Publications/Stormwater%20Characteristics/NSQD%20EPA.pdf ("First flush refers to an assumed elevated load of pollutants discharged during the beginning of a runoff event."). Intense rainfall or flooding—which are among the types of discharge events targeted by the major storm and flood events provision—may result in scouring that releases higher concentrations or volumes of pollutants, including solids and other pollutants. Such events may also be more likely to bring increased amounts of storm and flood waters into extended contact with materials stored at the facilities or contamination in soil or groundwater from historical and/or current activities and result in their discharge (see Response to Comment A.2.D). Permittees should also consider how major storm and flood events could affect existing procedures and controls (for instance, reducing maintenance intervals on OWSs or other controls). In addition, depending on the facts for each facility (e.g., no backflow prevention component installed in outfall infrastructure), permittees could consider the risk of flooding or storm surge entering an outfall and inundating a facility's treatment system, potentially affecting treatment effectiveness or mobilizing tank bottom water, sludge, and/or bottom deposits (and any adsorbed pollutants) in the system, and result in release of these prohibited discharges and associated pollutants to Chelsea Creek. EPA concludes that there is an environmental benefit to

[135] Note: A "qualified person," as defined in Appendix A, is a person knowledgeable in the principles and practices of industrial stormwater controls and pollution prevention, and possesses the education and ability to assess conditions at the industrial facility that could impact stormwater quality, and the education and ability to assess the effectiveness of stormwater controls selected and installed to meet the requirements of the permit.

requiring the systematic consideration and assessment of the likelihood and impacts of such events, the selection and analysis of potential methods of minimizing any discharges related to them, and the implementation of appropriate control measures.[136]

Finally, EPA notes that Part I.C.1.b.6 of the permits does not necessarily mandate "extremely complex operational and coordination requirements" for permittees. As noted *supra*, Part I.C.1.b.6 does not require or prescribe specific control measure to be implemented. Permittees themselves must select the appropriate control measures, but per Part I.C.2.b, they must evaluate the current and predicted risks at a particular facility from climate change, consider each of the minimum BMPs relative to this risk, and document in their SWPPPs the considerations made to select and design control measures that satisfy the requirement to minimize pollutants discharged as a result of impacts from major storm and flood events.

Comment F.25 – Using 100 Year Flood as base Flood Elevation

In addition to the above, Section 5.5.1 of the Fact Sheet (page 89) requests comment on whether it is appropriate to use the FEMA "Special Flood Hazard Area" (i.e. the 100-Year Flood) as the base flood elevation (BFE). Notwithstanding that no additional requirements are necessary for major storms as discussed above, the Facility does not object to the identification of the BFE using the 100-year storm and requiring the SWPPP Plans to identify measures taken or to be taken in these areas of the Facilities.

Response to Comment F.25

The 100-year base flood elevation is the relative measure for the base flood elevation used in the FEMA maps, one source EPA referenced in determining one approach to risk calculus. Refer to Response A.2.D, above.

Comment F.26 – Compliance Schedule

The Draft Permit requires new limitations for among other parameters, Fecal Coliform, Enterococcus, Benzene, PAHs, metals and TRC. Notwithstanding comments elsewhere in this document where the Facility provides the basis for removal/modification of the limitations for these parameters, in the event that EPA continues to include new limitations, the Facility requests that EPA develop, with the Facility, a compliance schedule for each parameter that takes

[136] "Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992); *see also* 40 CFR §§ 122.4(d), 122.44(d)(1), and 122.44(d)(5). In line with this discretion, Part I.C.1.b.6 can be justified as both a technology-based effluent limit and a water quality-based effluent limitation. *See* 33 U.S.C. §§ 1311, 1314(b), 1342(a)(1)(B); 40 CFR §§ 122, 125, 131. Indeed, the requirements of Part I.C.1.b.6 "are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA." 40 CFR § 122.44(k). Under Part I.C.1.b.6, permittees must assess the risks of discharges from its facility caused or exacerbated by major storm and flood events, analyze potential methods to minimize the occurrence and impact of such discharges, implement control methods as appropriate, and, consistent with authority granted pursuant to CWA §§ 308(a) and 402(a)(2), report all of that information to EPA by documenting it in the facility's SWPPP. These measures help ensure both that permittees comply with the non-numeric technology-based effluent limits in the permits and that water quality standards are met in the receiving water.

into account aspects such as engagement of engineering services, conducting studies to support engineering design, performing necessary engineering designs, contracting for the upgrades and construction.

Response to Comment F.26

The comment requests that, where the Final Permit establishes new effluent limitations, EPA work with the Permittee to develop a compliance schedule for each new limitation. The comment specifically lists "Fecal Coliform, Enterococcus, Benzene, PAHs, metals, and TRC." To the extent the permittee cannot comply with a particular limit in the Final Permit upon the permit's effective date, EPA is willing to consider appropriate schedules, provided they bring the permittee into compliance with the limit as soon as possible. The comment does not specifically request that any such schedule be included in the Final Permit, and EPA notes that there are several reasons why such schedules are more appropriately considered in the context of an Administrative Order instead.

First, the statutory deadline for compliance with the BAT standard for technology-based effluent limitations (TBELs) under the CWA has already passed and cannot be extended by a permit. *See* 33 U.S.C. §§ 1311(b)(1)(C), (b)(2)(F); 40 C.F.R. §§ 122.47(a), 125.3(a)(2)(v)(B). Therefore, the Final Permit cannot include a compliance schedule for the effluent limitation for benzene (or the limit for naphthalene). *See* Responses to Comments A.2, A.4, F.2, F.23. Furthermore, in this case, EPA's case-by-case determinations of BAT for benzene and naphthalene are based on the performance of the existing technology at this Facility and, as such, EPA expects that the Permittee will be able to meet the numeric limits. *See* Response to Comment F.2.

Second, the comment does not provide any detail regarding the time the permittee believes it needs to meet each new limit and a specific justification therefor. Compliance schedules may be appropriate where, for instance, a Facility will have to install new treatment to meet new numeric water quality-based limits (WQBELs) established in a Final Permit. The Final Permit establishes new WQBELs for PAHs, TRC, ammonia, and metals, and Massachusetts Water Quality Standards at 314 CMR 4.03(1)(b) allow for schedules in permits leading to compliance with one or more requirements or limitations based on water quality standards. But the comment does not propose any particular schedules for EPA's consideration or provide EPA with any information necessary for EPA to develop schedules of actions that bring the permittee into compliance with the limits "as soon as possible." 40 CFR § 122.47(a)(1).

Third, the Final Permit imposes a narrative approach for controlling bacteria in lieu of the numeric fecal coliform limit proposed in the Draft Permit. As such, EPA is not convinced that a compliance schedule is warranted to meet the non-numeric limit for fecal coliform. *See* Response to Comment F.4. In addition, EPA did not propose an effluent limitation for *Enterococcus* as the comment suggests. Both the Draft and Final Permits require monitoring only for *Enterococcus*. *See* Response to Comment F.5.

At the same time, while the comment does not make the specific case for inclusion of a particular compliance schedule(s) in the Final Permit, EPA appreciates that one or more of these new limits may require the Permittee to adjust or implement best management practices in order to achieve

compliance. The selection, design, and installation of control measures, including BMPs, is documented in the Stormwater Pollution Prevention Plan (SWPPP), which must be submitted within 90 days of the effective date of the permit. At present, EPA expects that, if additional time is warranted, a schedule to comply with a new limit could be established through the issuance of an administrative order rather than in the permit. *See* CWA Section 309(a). EPA anticipates such an order could include interim planning, design, and/or construction milestones, if warranted.

Comment F.27 – Transfers Between Tank Farm Areas

Stormwater being discharged from any of Global's secondary containment systems through Outfalls 001, 002 and 004 receives identical treatment before discharge, and in general, discharge effluent limitations for the outfalls to Chelsea Creek are similar. The same bulk materials (distillate and gasoline) are stored in each tank farm resulting in similar contaminants of concern to be monitored through effluent sampling. Based on this, Global believes that stormwater transfers between 001 and 002, and 005 to 002 (only one direction due to the sensitivity of the 005 receiving water) should be allowed under reasonable requirements.

The Draft Permit as written does allow for stormwater transfer between Chelsea River outfalls (Outfalls 001, 002 and 005); however, Global does not believe listed conditions to do so are reasonable as discussed below:
Transfer are allowed only under limited scenarios that have not historically occurred ("….in the event storage capacity and/or treatment capacity of one or more systems will be exceeded). This should be less restrictive, with transfers allowed for any reason as long as the listed prohibitions are not triggered;
The Draft Permit requires that effluent sampling when a transfer takes place must include all parameters listed in Part I.A.1. As written, this would require testing to include every annual-only parameter, ambient water parameters and WET testing parameters, etc.. We agree with the requirement to test, and agree that the analyte list should come from both the contributing and receiving outfall list, but believe reasonableness would be testing for the monthly analytes on both the contributing and receiving outfall list. In this case, the lowest effluent limit for the Chelsea River for the tested analyte must be met (note that as proposed we would not be transferring to discharge through the one outfall to Sales Creek, 005).
Hydrotest water should be allowed to be transferred also, as long as the hydrotest water testing results (specified in the permit) meet the effluent limits of the outfall through which it discharges.

Response to Comment F.27

Part 9.E.5 of the Draft Permit, which authorizes the Permittee to transfer stormwater from the secondary containment areas within the Facility, is consistent with the provisions under which stormwater is transferred between Global Petroleum and Global South in Part E.1 of the 2014 Permits (MA0003425 and MA0000825). The 2014 Permit states that stormwater may be transferred from Global Petroleum's Terminal "in the event the storage capacity and/or treatment capacity of Global Petroleum Corporation's systems will be exceeded" subject to certain conditions as described in Part E.1 of the 2014 Permit. According to the 2014 Fact Sheet (p. 12), stormwater transfer from Global Petroleum's secondary containment area to Global South was

initially authorized "due to the more limited rate at which stormwater could be treated and processed" at Global Petroleum. In 2014, EPA continued to authorize the transfer of stormwater from the tank farm area at Global Petroleum to Global South in order to prevent extended storage of stormwater at Global Petroleum.

The comment requests that transfers be allowed from all areas of the site to the outfalls that discharge to the Chelsea River provided the transfers do not trigger any of the prohibitions listed in Part I.C.5.b. The requirements, including additional monitoring, for stormwater transfers were intended to eliminate the possibility that lower quality stormwater would be transferred and discharged from an outfall subject to less stringent limits than the outfall serving the drainage area. Part I.C.5 of the Draft Permit proposed monitoring the stormwater before and after treatment and required that the effluent limitations for both the outfall that the flow is being transferred from and the outfall that the flow is being transferred to are met. Under the Draft Permit, transfers would be allowed in the most stringent effluent limitations applicable to the receiving and transfer outfalls are met.

EPA maintains that, if the technology- and water quality-based effluent limitations are met, the transfer of stormwater between the Global South and Petroleum properties would not result in a meaningful difference in discharges to the receiving water. At the same time, the logistics of when, where, and how to sampling the transfer volume before and after treatment to ensure that the most stringent limits are met may be hindered by the possibility that the transferred volume is diluted by stormwater already in the system or by uncertainty in the amount of time it takes for the transferred volume to be discharged. As the comment points out, the stormwater at the Facility is exposed to "[t]he same bulk materials (distillate and gasoline)…resulting in similar contaminants of concern to be monitored through effluent sampling." In addition, the Permittee requested that the Final Permit apply consistent effluent limitations and monitoring requirements across outfalls. *See* Comment F.18. In response to that comment and considering the complexity of the proposed monitoring requirements for stormwater transfers, EPA made the effluent limitations and monitoring requirements consistent for Outfalls 001 and 002.[137] With consistent limitations, stormwater volumes from the drainage areas of the two outfalls are subject to equivalent limits and conditions and, as such, stormwater can be transferred without the additional requirements included in the Draft Permit. Providing additional flexibility to transfer stormwater between outfalls that discharge to Chelsea River may also assist the Permittee to implement best management practices. For example, allowing more stormwater transfers may allow the Permittee to optimize the system to meet the conditions for discharging stormwater and to prepare for major storm events.

[137] As explained in these Responses to Comments, Global sold the entire Terminal property in June 2022 and decommissioned the REVCO Terminal and a portion of the Petroleum Terminal such that they are no longer controlled by Global or used for petroleum bulk storage. See Responses to Comments D.1, F.1, and F.18. As a result, the effluent limits and conditions that pertained to outfalls 004 and 005, including stormwater transfers, have been removed from the Final Permits. Global leased back and continues to operate the South Terminal and a portion of the Petroleum Terminal, and stormwater associated with that area is still discharged to the Chelsea River from Outfalls 001 and 002. In addition, EPA understands that Global has disconnected stormwater infrastructure connections between the area it continues to operate and the area it does not. Stormwater transfers from the leaseback area to the redeveloped area are prohibited by the Final Permit.

Finally, the comment requests that transfers apply to hydrostatic test water in addition to stormwater. As the Fact Sheet (pp. 93-94) explains, the tanks and/or pipes used for storage and conveyance of petroleum products require routine maintenance. A component of this maintenance is hydrostatic testing, which entails filling the pipes or vessels after cleaning with water and ensuring the system maintains constant pressure (e.g., no leaking). The hydrostatic test water is treated and discharged from the Facility's outfalls. All discharges of hydrostatic test water are subject to the numeric and non-numeric effluent limitations and conditions of the Permit. Provided that these conditions are met, the Final Permit does not restrict the discharge of hydrostatic test water between Outfalls 001 and 002 provided the requirements associated with hydrostatic testing water are met regardless of whether it originates from the Global South or Petroleum Terminals.

Comment F.28 – Other Comments and Requested Clarifications

CLARIFICATION NEEDED: Page 9, Footnote 12 – Total Residual Chlorine (TRC) sampling is only required for discharges that have previously been chlorinated or "that contain residual chlorine". Notwithstanding other comments in this response, please clarify how a Permittee is to know whether a discharge of non-chlorinated water contains residual chlorine necessitating the sampling.
CLARIFICATION NEEDED: Also with respect to Footnote 12 for Outfalls 001, 002, 004 and 005, the Method Limit provided for TRC in Appendix A needs to be updated to be consistent with the level listed in this footnote.
COMMENT: Page 10, Footnote 20 – The footnote specifies that the ambient sampling of the Chelsea River for select parameters be conducted "outside of the Outfall 001's zone of influence at a reasonably accessible location." Outfall 001 and 002 discharge to the Chelsea River within very close proximity to each other (approximately 250 feet); sampling the Chelsea River for ambient characteristics at both locations is duplicative and provides no value at an increased cost to the Permittee. Global requests that a location on the northern dock be chosen as the ambient sampling location with results used for both Outfall 001 and 002.
CLARIFICATION: Page 20, Footnote 20 – Refers to Outfall 001, but the footnote is related to Outfall 002. Is this intentional or should it be corrected to list Outfall 002.
CORRECTION: Page 25, Footnote 8 – This footnote pertains to bacteria sampling; however, bacteria sampling is not a requirement for this outfall (Outfall 003). Footnote should be removed.
CORRECTION: Page 40, Footnote 1 – The footnote contains requirements for sampling relative to tidal cycle schedule, however, the tributary to Sales Creek is not tidally influenced. Global requests this language be removed – sampling should be allowed independent of tidal cycles.
CORRECTION: Page 42, Footnote 8 - The footnote appears to incorrectly list the wrong units for the oil and grease Method Limit (ML). The footnote lists the ML for oil and grease as 5 ug/L, as opposed to the 5 mg/L that is listed in the 40 CFR Part 136 method for 1664B.
CORRECTION: Page 43, Footnote 17 - The footnote references conducting a pollutant scan on the Chelsea River. Outfall 005 discharges to a tributary to Sales Creek.
CLARIFICATION: Page 47, C(1)(b)(3) – Global does not understand what is meant by "the Permittee shall discharge groundwater concurrent with stormwater." The only groundwater discharged is after treatment through Outfall 003. If the purpose of this requirement is that Outfall 003 can only discharge when Outfall 002 is discharging, then that is not feasible. Outfall 003 is a system that operates with automatic floats set to pump when water levels in the pipe

tunnel warrant pumping and treatment. This process is completely independent of the timing and frequency of when stormwater needs to be discharged from Outfall 002. Outfall 003 has treatment-based effluent limits that are as or more stringent than Outfall 002 effluent limits. Global requests that this requirement be modified to excluded Outfall 003 activity.
CLARIFICATION: Page 47, C(1)(b)(5) – The Facility does not understand the inclusion of ethanol in this requirement. The requirement appears to be stating a BMP is required for treatment of ethanol and fire-fighting foam used in spill and fire control. Ethanol is not used for fire control. The Facility requests that ethanol be removed from this requirement.
COMMENT: Page 47, C(1)(b)(6) – The term "Materials" is too general and will create issues when conducting activities related to flood resiliency. We request that "Materials" be defined as oil and/or hazardous materials.
COMMENT: Page 47, C(1)(b)(6)(iii) – The term "storm" is too general a term to be used in a requirement that attempts to prevent deliveries of materials to the facility, a vital activity for Facility operation. The Facility requests that in this subpart the term be defined as : 1) a hurricane; or 2) storm surge/flood event that will impact the area of delivery. "Extreme/heavy precipitation" should be removed, as deliveries can occur safely during periods of heavy precipitation where delivery areas are not flooded. The Facility believes the intent of this section of the permit is to prevent releases from damages caused by major storm events that contain a flooding component. The Facility additionally asks that the 48 hours be reduced to 12 hours; this still achieves the purpose of this section of the permit and reduces the impact of the section on business operations.
COMMENT: Page 47, C(1)(b)(6) – Sections (iv) – (vi) use the term "temporarily" without any detail regarding the length of time considered. These sections should be modified to reflect the listed measures are to be considered/addressed when flooding of an area is anticipated.
COMMENT: Page 47, C(1)(b)(6)(iv) – This allows the BMP to address flood impacts to semi-stationary structures through securing of the structures or elevating them above Base Flood Elevation (BFE). Section (iv) conversely indicates the BMP must indicated that materials and waste must be "temporarily" stored above the BFE level (assumed during a flood event). This section should be modified to recognize that securing of structures is an acceptable BMP practice.
COMMENT: Page 50, C(3)(b)(1)(i) – The Facility does not understand why testing of the fill source water is required if the source is potable municipal water. Furthermore, if required, and the fill source water sample is found to be above permit effluent levels, the Facility asks for clarification whether discharging of hydrotest water at concentrations at or below this "background" level is allowed?
COMMENT: Page 50, C(3)(b)(1)(ii) – Permittees should be allowed to treat (or treat in combination with other measures) Total Residual Chlorine (TRC) through the storage of the water in dike areas prior to release through the Outfall(s). TRC naturally degrades with time in the presence of sunlight, and allowing levels to decrease below effluent limits through release to dike areas should be allowed. Global requests that this measure meets the definition of "treatment" in this subsection and should be reflected as such.
COMMENT: Page 50, C(3)(b)(1)(iv) - This requirement that three samples be collected from the discharge of hydrostatic test water is excessive for smaller above-ground storage tanks. The Facility requests that one sample is sufficiently representative for smaller tanks, and requests that this section allow one sample for tanks of 50,000 gallons or less.

COMMENT: Page 51, C(3)(c) – The Facility does not understand the rationale for requiring cadmium, copper, lead nickel and zinc for hydrotest water characterization, when the majority are not contaminants of concern for petroleum fuels used in the tanks/pipelines (or especially in tanks/pipelines that have not been put into service yet). TPH and BTEX are sufficient analytes to assess the quality of the hydrotest water being discharged.

Response to Comment F.28

The comment lists a number of clarifications and comments on various parts of the Draft Permit. EPA addresses each of these comments below.

Page 9, Footnote 12 – Total Residual Chlorine (TRC) sampling for discharges that have previously been chlorinated generally refers to waters to which chlorine or chlorine-containing chemicals and/or additives have been added. For instance, discharges that contain potable water may contain residual chlorine. EPA has removed the opening sentence from footnote 12 and provides further clarification regarding the TRC effluent limitations and monitoring requirements in Response to Comment F.9.

The minimum level for TRC is specified in the permit to comply with *The National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting* rule, published in the Federal Register on August 19, 2014 and effective on September 18, 2014 (hereinafter referred to as SSTM). The ML, 30 µg/L is equal to the method detection limit for Standard Method 4500-CL E (low-level amperometric direct method) multiplied by a factor of 3, defined in 40 CFR Part 136. *See* Response to Comment F.9. Attachment A to the Draft Permit is the standard NPDES permit attachment for the Revised Marine Acute Toxicity Test Procedure and Protocol. This revised Marine Acute Toxicity Test Procedure and Protocol became effective July 2012. Because this standard attachment pre-dates the SSTM rule, the MLs specified in Part I of the permit supersede any duplicative parameters.

Page 10, Footnote 20 – EPA agrees that the ambient sampling of the Chelsea River for select parameters may be conducted by collecting one sample from one location as described for both Outfall 001 and 002 given the very close proximity to each other (approximately 250 feet); The intent of this sampling is to provide ongoing data regarding the ambient characteristics of the Chelsea River to ensure the permit is sufficiently stringent to meet State WQSs, confirm the use of indicator parameters is appropriate in accordance with 40 CFR § 122.44(d)(1)(vi)(C), and to provide diluent for the required Whole Effluent toxicity testing. EPA agrees that the consolidated sampling location proposed provides this necessary information and removes duplicative sampling that yields reduced costs to the Permittee. Specifically, EPA has added the following allowance to Outfall 002: The ambient sample results from the sampling location for Outfall 001 may be used to satisfy the required ambient sample and sampling location for Outfall 002 where duplicative.

Page 20, Footnote 20 – EPA has corrected this footnote to list Outfall 002.

Page 25, Footnote 8, EPA has removed this footnote because bacteria sampling is not a requirement for Outfall 003.

Comments on Page 40, Footnote 1, Page 42, Footnote 8, and Page 43, Footnote 17 pertain to Outfall 005 in the Draft Permit. As explained elsewhere in this Response to Comment, the effluent limits and conditions for Outfall 005 were removed from the Final Permit as this outfall and the discharges from it are not authorized by the Final Permit. *See*, *e.g.*, Responses to Comments D.1, F.1, F.18.

Page 47, C(1)(b)(3) – EPA has removed "the Permittee shall discharge groundwater concurrent with stormwater." Because the only groundwater discharge authorized in the permit is through internal Outfall 003 following treatment through an automatic, float-activated treatment system independent of stormwater, EPA agrees that discharges of groundwater concurrently with stormwater is likely not feasible. Further, Outfall 003 is subject to effluent limits that are as stringent or more stringent than Outfall 002 effluent limits. *See also* Response to Comment H.4.

Page 47, C(1)(b)(5) –This BMP requirement is not meant to suggest that ethanol is used for fire control. Indeed, EPA is well aware that ethanol is highly flammable. Rather, the BMP requires the permittees to design and implement response and treatment procedures should a release of ethanol occur and enter the stormwater conveyance system. The BMP also requires treatment to remove pollutants introduced in fire-fighting foam used in spill and fire control, especially the aqueous film-forming foams generally used to control ethanol fires. This BMP requirement is substantially similar to the BMP included in Part I.C.1 of the 2014 permits, which requires, "Proper handling procedures for ethanol storage and response procedures for releases of ethanol or materials that are used for ethanol spill or fire control. This must include specific provisions for the treatment of ethanol, should release occur…"

Page 47, C(1)(b)(6) – This provision of the permit comes from EPA's 2021 *Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated With Industrial Activity*. The request that "Materials" be defined as oil and/or hazardous materials is too narrow and fails to capture the intended breadth of this term used in the MSGP; water quality can be negatively impacted by the discharge of materials other than oil or hazardous materials. We note that the term "significant materials," as used in EPA regulations, includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges. *See* 40 CFR § 122.26(b)(12). This response serves as clarification and the use of the term in the final permit remains unchanged.

Page 47, C(1)(b)(6)(iii) and Page 47, C(1)(b)(6) – Sections (iv) – (vi) incorporate the terms and conditions for this provision in EPA's 2021 *MSGP.* This requirement does not prevent deliveries of materials to the facility. If deliveries can occur safely during periods of storm surge, flood events and/or heavy precipitation where delivery areas are not impacted, the Permittee may document in the SWPPP how the requirements of this permit provision are met.

While this section of the permit is intended to prevent discharges resulting from damages caused by major storm events that contain a flooding component, storm damage is not exclusively caused by flooding. The Facility must also consider long duration storms such as hurricanes. As in EPA's MSGP, a Storm Event is a precipitation event that results in a measurable amount of precipitation as opposed to "major storm events such as hurricanes, storm surge, extreme/heavy precipitation, and flood events." *See* EPA's 2021 MSGP, Appendix A. Examples of major storm events are already listed in the permit. Further, extreme/heavy precipitation is already defined in a footnote to this condition, and, as also defined in the MSGP, refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. Heavy precipitation does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events. Footnote 5 (Part 2.1.1.8)

Page 47, C(1)(b)(6)(iv) – Although the commenter does not cite Part 1.C.1.b.6.ii, the commenter appears to refer to both Parts 1.C.1.b.6.ii and iv. Part I.C.1.b.6 instructs permittees to evaluate and implement control measures in order to "minimize discharges that result from impacts of major storm and flood events." Part I.C.1.b.6 lists the two control measures cited by the commenter—elevating or securing semi-stationary structures, and temporarily storing materials and waste above the base flood elevation level—as possible control measures that permittees "must consider." These control measures seek to minimize discharges by addressing different potential vulnerabilities at the facilities: the former aims to prevent damage to, and any resulting discharge from, "semi-stationary structures," while the latter aims to prevent any discharge of "materials and waste." These control measures may or may not overlap in their execution, but "semi-stationary structures" are different from "materials and waste." Thus, the control measures are not inconsistent.

In any event, Part I.C.1.b.6 does not require or prescribe specific control measures to be implemented. Part I.C.1.b.6 requires permittees to "minimize discharges that result from impacts of major storm and flood events," and Permittees themselves must select the appropriate control measures. Per Part I.C.2.b, permittees must then document in their SWPPPs the considerations made to select and design control measures in order to minimize discharges that result from impacts of major storm and flood events. The Final Permit now further clarifies that elevation or securing of semi-stationary structures and temporary storage of materials are merely two possible control measures that permittees "must *consider*" as a means of minimizing discharges that result from impacts of major storm and flood events. Part I.C.1.b.6 (emphasis added). The extent to which these specific control measures constitute "acceptable BMP practice[s]" for achieving that minimization depends on, *inter alia*, the nature of the facility, the risk assessment conducted by the permittee, and the existence of other control measures at the facility.

Page 50, C(3)(b)(1)(i) –EPA agrees that the sampling requirement for the influent (fill source) is duplicative of the in-process samples, since any pollutants present in the influent would remain present from the fill to the testing phase, prior to discharge. In response to this comment, EPA eliminated the requirement to collect a grab sample of the influent and retained the in-process sampling requirements. Regardless of the fill source, the hydrostatic test water must meet the

effluent limitations in this permit. *See* Final Permit Part I.C.3.b.iii. Concentrations of pollutants in potable water are not considered "background" of the Chelsea River and may not be added if the discharge of any such pollutants exceed applicable water quality standards.

Page 50, C(3)(b)(1)(ii) – EPA agrees that TRC can degrade with time in the presence of sunlight, and such degradation may be considered adequate treatment if this best management practice decreases concentrations of TRC below effluent limits. Part I.C.3.b.ii does not prescribe nor prohibit a specific type of treatment should the in-process sample(s) indicate concentrations exceed the numeric effluent limits. EPA has revised the Final Permit to clarify that tank water shall not be discharged *to the river* unless effluent limits are met. Permittees may continue to select the appropriate treatment (or treatment in combination with other measures) for Total Residual Chlorine (TRC) depending on the facts of a particular situation, which may include the storage of the water in dike areas prior to release through the Outfall(s). *See also* Response to Comment F.9.

Page 50, C(3)(b)(1)(iv) – EPA agrees that for a relatively small volume of hydrostatic test water (e.g., a tank less than or equal to 50,000 gallons described in the comment), three effluent samples is not necessary. Given the small volume, grab samples from the first 10%, midpoint, and last 10% (as proposed in Part I.C.3.b.iv) are likely to be substantially similar. In response to the comment, EPA revised the Final Permit to add that one effluent sample from the first 10% of the discharge of hydrostatic test water is sufficient for tanks of 50,000 gallons or less.

Page 51, C(3)(c) – The requirement to sample hydrostatic testing water for cadmium, copper, lead, nickel and zinc is identical to the requirement in Part I.A.17 of the 2014 permit. These metals are priority pollutants under the CWA (see Appendix A to 40 CFR Part 423). These metals can be present in both petroleum products stored in the tanks/pipelines at the facility, and especially in the raw materials used to construct tanks/pipelines that have not been put into service. Further, discharges from the facility are subject to numeric effluent limits for several of these metals. Therefore, the monitoring requirements for metals in hydrostatic test water discharges are specifically included to ensure compliance with numeric effluent.

Comments from Chelsea Sandwich

Comment G.1

Chelsea Sandwich LLC (the Facility), a wholly-owned subsidiary of Global Partners LP, respectfully submits the enclosed comments on (1) the draft National Pollutant Discharge Elimination System (NPDES) permit (Draft Permit) issued by the United States Environmental Protection Agency (EPA) on February 10, 2021 and (2) the Massachusetts Permit to Discharge Pollutants to Surface Water issued by the Massachusetts Department of Environmental Protection (MassDEP) on February 10, 2021 for discharges from the Facility. As described herein, due to the inclusion of significant changes to the effluent limitations and conditions provided in the Draft Permit, which are unsupported by EPA's legal authority or technical guidance documents, the Facility developed the detailed comments below in conjunction with its consultants, Kleinfelder and Roux Associates, Inc. (Roux), and its attorneys, Nutter, McClennen and Fish LLP, to provide its full perspective on the Draft Permit prior to finalization by EPA.

As an initial comment, the Facility wants to make clear that many of the new parameters proffered in the Draft Permit apply to contaminants that are not used at the Facility, are not part of any of the limited processes at the Facility and are not a constituent of the products stored at the Facility. As a result, although the Draft Permit is intended to regulate stormwater associated with the industrial activities regulated under the Clean Water Act (CWA), the resulting effluent parameters are more related to the regulation of industrial process discharges and are wholly unrelated to the Facility. It is important from EPA and MassDEP to keep in mind when reviewing the below comments that while the Facility stores petroleum products, the Facility undertakes no processing or other chemical storage. Thus, the vast majority of the discharges regulated by the Draft Permit are stormwater that, while coming into contact with storage tanks and the storage areas within the Facility, have no direct contact with products at the Facility.

The Facility welcomes and appreciates any opportunity to work with EPA and the MassDEP to resolve the questions and issues identified in these comments prior to the issuance of the final permit. As provided in the following comments, the Facility requests that EPA and MassDEP incorporate the revisions provided by the Facility.

Background
Chelsea Sandwich LLC is the owner and operator of the Facility and its drainage system. The drainage system consists of two outfalls, Outfall 001 and Outfall 002. Outfall 001 is authorized to discharge stormwater runoff, hydrostatic test water, boiler blowdown, and remediated groundwater to the Chelsea River. Stormwater is collected at the marine vessel dock, terminal yard (i.e., tank farm area, parking lot, and paved area), and terminal field (west side of the Facility property). Stormwater runoff from each of these areas is visually inspected, drained separately and treated prior to discharging to the Chelsea River via Outfall 001. Outfall 001 is adjacent to the approximately 300-foot marine vessel dock. The receiving water, Chelsea River Segment (MA71-06), is classified as Class SB. The Chelsea River is one of eleven Designated Port Areas established by the Massachusetts Office of Coastal Zone Management. Chelsea River is listed in the Massachusetts Year 2016 Integrated List of Waters (303(d) List) as a Category 5 "Waters Requiring a TMDL". The pollutants and conditions requiring a TMDL are ammonia

(un-ionized), fecal coliform, dissolved oxygen, polychlorinated biphenyls (PAHs) in fish tissue, petroleum hydrocarbons, sediment screening value, odor, and turbidity. This segment is also impaired for debris/floatables/trash, but this is considered a non-pollutant, and does not require a TMDL.

Prior to discharging through Outfall 001 into the Chelsea River, the stormwater sources above pass through a main oil/water separator (OWS), referred to herein as OWS 1. In addition, remediated groundwater (internal Outfall 002) is pretreated through a remediation system, before combining with stormwater from the terminal field, parking areas, building roofs, tank farm secondary containment areas, paved roads, hydrostatic test water from intermittent testing events, and intermittent boiler blowdown discharges (i.e. the sources cited above authorized to discharge from Outfall 001). These sources comingle and are routed through OWS 1. OWS 1 is an open underground steel wall structure having two chambers. The first chamber is for stormwater collection and treatment, and the second chamber is a pumping station. OWS 1 has a design flow rate of 700 gallons per minute (GPM) and a maximum rating of 1.008 million gallons per day (MGD). Note that these design flow rates are based on equipment capacity and continuous operation, rather than actual flow volumes which are typically two orders of magnitude lower than permitted discharge volumes. Outfall 002 is an internal outfall that discharges groundwater from an onsite groundwater remediation system to the stormwater drainage system upstream of Outfall 001 and OWS 1.

The NPDES permit currently in effect was issued on September 24, 2014 with an effective date of November 24, 2014 and expired on or about November 23, 2019 (referred to hereafter as the 2014 Permit). A timely renewal application was submitted by Chelsea Sandwich LLC, administratively continuing the 2014 Permit until such time as EPA issues a new final permit. When finalized, the Draft Permit will supersede the 2014 Permit.

Chelsea Sandwich LLC offers the following comments and proposed resolutions on the Draft Permit, which covers the discharges from Outfall 001:

Response to Comment G.1

EPA addressed similar comments, including the general concern about the legal and technical bases for unspecified effluent limits and monitoring conditions included in the 2021 Draft Permit in Response to Comment F.1. The comment indicates that the Permittee's more specific objections are raised in the comments below. As such, where the Permittee identifies specific pollutants and arguments in its later comments, EPA addresses them in the responses below.

Comment G.2 – Reduced Benzene and Naphthalene Limits

Part I.A of the Draft Permit imposes more stringent maximum daily effluent limits of 5 and 20 µg/L for benzene and naphthalene (the 2014 Permit required 51 and 100 µg/L average monthly limits) for stormwater runoff from Outfall 001, respectively. EPA's rationale for the reduced effluent limits for benzene and naphthalene is based on the application of the Remediation General Permit (RGP) and best professional judgement (BPJ). The Facility strongly objects to

the new limits as EPA's approach is inappropriate and lacks regulatory and technology bases. The details are set forth below:

The majority of the discharge from Outfall 001 is stormwater runoff:

EPA's application of the RGP is inconsistent with the discharges from the Facility's Outfall 001, which is not treated groundwater (in contrast to the onsite remediation system discharge via Outfall 002). The water quality of stormwater runoff from the Facility is already heavily regulated under special condition Part I.C.1. Best Management Practices (BMPs).

Here, EPA's use of BPJ to set effluent limits 5 and 20 μg/L for benzene and naphthalene is unreasonable. EPA's leap, using BPJ, to suggest that stormwater runoff is the same as remedial waste or effluent of a groundwater remediation system is unsupported, arbitrary and does not recognize the nature of the actual discharge from Outfall 001.

First, discharges from a groundwater remediation system are categorically different from stormwater runoff. EPA's 2004 Technical Support Document for the Effluent Guidelines Program Plan (ELG) has indicated that the stormwater discharges shall be subjected to general (i.e., Multi-Sector General Permit (MSGP)) or individual stormwater permits in accordance with 40 CFR § 122.26 (b)(14)(i)-(xi), which require stormwater discharges associated with 11 categories of industrial activity to be covered under NPDES permits (unless otherwise excluded). In contrast, discharges from groundwater remediation systems are regulated under the RGP, which covers the discharges from eight general remediation activity categories (petroleum-related site remediation, non-petroleum-related site remediation, contaminated site dewatering, pipeline and tank dewatering, aquifer pump testing, well development/rehabilitation, collection structure remediation/dewatering, and dredge-related dewatering).

Second, best available technology (BAT) for groundwater remediation should not be applied to the discharge at Outfall 001, which is predominantly stormwater runoff. As noted in the Draft Permit, the discharges through Outfall into the Chelsea River consists of four flow sources including:

> Stormwater collected at the marine vessel dock, terminal yard (i.e., tank farm area, parking lot, and paved area), and terminal field (west side of the Terminal property) that are drained separately and treated through the OWS treatment system (the previously referenced OWS 1) with a maximum design flow rate of 700 GPM, prior to discharging to the Chelsea River.
> Hydrostatic test water from intermittent testing events: The hydrostatic test events are very infrequent (tested typically in relation to a modification or repair, with years between individual tests). It represents a small fraction of the total discharges from Outfall 001 and is separately regulated under the Draft Permit with stringent testing protocols prior to discharge.
> Boiler blowdown water from the two boilers that generate steam primarily used to heat #6 oil product lines at the Terminal. Typically, a small volume of water is withdrawn from the boilers on a daily basis as part of the required operation and maintenance. In addition, a small volume of steam condensate is generated. The terminal discharges have

been minuscule with approximately one-half gallon per day of boiler blowdown into the stormwater collection system, which is less than 0.02% of the total flow at Outfall 001. Remediated groundwater: a treatment system consisting of an OWS (referred to OWS 2 hereafter), a cartridge filter bag system, and two 1,000-pound granulated activated carbon (GAC) units in series. The design flow rate of the treatment system is 25 GPM (regulated separately under the Draft Permit as Outfall 002).

The discharges from the four (4) sources, which consist predominately of stormwater runoff, comingle and are routed through OWS 1, which is a physical unit operation that separates the liquids with different density by retaining the lighter liquid (oil) while allowing discharge of denser stormwater runoff. It does not remove compounds that are dissolved in the water.

EPA does not have unlimited discretion in applying BPJ when establishing permit effluent limitations. As stated by the Environmental Appeals Board (EAB) in *In Re Arizona Public Service Co.*, "[w]here applicable effluent limitations guidelines have not been established, section 402(a)(1)(B) authorizes the permitting authority to impose conditions representing technology-based standards such as BPT and BAT on a case-by-case basis … Specifically the statute states that the Administrator may impose such conditions as the Administrator determines are necessary to carry out the provisions of the Act." EPA has implemented these statutory provisions in 40 C.F.R. § 125.3(c).

In addition, 40 C.F.R. § 125.3(c) requires that "[t]echnology-based treatment requirements may be imposed [in a NPDES permits] through one of the following three methods:" (1) Application of EPA-promulgated effluent limitations guidelines; (2) a case-by-case determination of the minimum technology-based standards where EPA-promulgated effluent limitations guidelines are inapplicable; or (3) a combination of the first two methods when EPA-promulgated effluent limitations guidelines apply only to certain aspects of a discharger's operation or to some, but not all, discharged pollutants. 40 C.F.R. § 125.3(c), the EPA guidance on determining case-by-case technology-based effluent limitations, reinforces that such permit limits are to be developed only in circumstances "where EPA promulgated effluent guidelines are inapplicable." *See* Office of Water, U.S. EPA, EPA-833-K-10-001, NPDES Permit Writers' Manual § 5.2.3.2, at 5-45 (Sept. 2010) ("Permit Writers' Manual") (A.R. 3); accord Office of Water, U.S. EPA, EPA-833-B-96-003, NPDES Permit Writers' Manual § 5.1.4, at 68-70 (Dec. 1996).

Where EPA elects to use BPJ, courts apply the same standards as when EPA establishes national effluent limitations: "In the absence of national standards, the Act authorizes the Administrator to issue permits on "such conditions as the Administrator determines are necessary to carry out the provisions of [the Act]." 33 U.S.C.A. § 1342(a)(1)(B). EPA's own regulations implementing this section enumerate the statutory factors that must be considered in writing permits. See 40 C.F.R. § 125.3(c), (d) (1987). See also 51 Fed.Reg. at 24915 ("In developing the BPJ permit conditions, [the EPA] Regions are required to consider a number of factors, enumerated in [33 U.S.C. § 1314(b)]...."). In addition, courts reviewing permits issued on a BPJ basis hold EPA to the same factors that must be considered in establishing the national effluent limitations. *See, e.g., Trustees for Alaska v. EPA*, 749 F.2d 549, 553 (9th Cir.1984) (EPA must consider statutorily enumerated factors in its BPJ determination of effluent limitations); API, 787 F.2d at

972, 976 (applying statutory factors in reviewing effluent limitations in a BPJ permit)." *Nat. Resources Def. Council, Inc. v. U.S. E.P.A.*, 863 F.2d 1420, 1425 (9th Cir. 1988).

Although the discharges from Outfall 001 consist of stormwater runoff, treated groundwater from a remediation system, and hydrostatic test water, there is no rational basis for EPA to apply BPJ to set the 5 and 20 µg/L Technology Based Effluent Limits (TBEL) for benzene and naphthalene at this Facility. In the Fact Sheet (pages 31 and 36), EPA attempts to support the effluent limit by stating:

> EPA finds that discharges from bulk stations and terminals are consistent with the type of discharges considered under the RGP, which include hydrostatic testing discharges from dewatering of pipelines, tanks, and similar structures and appurtenances that store or convey petroleum products, and dewatering and/or remediation discharges from collection structures (e.g., dikes) utilized for collecting miscellaneous sources of water from contaminated or formerly contaminated sites or sources, including when contamination is a result of the infiltration of contaminated groundwater or stormwater.

Here, as none of these sources are material to the Facility's stormwater discharge, there is no technical or legal support for this interpretation. If EPA chooses without support to use BPJ to find that any industrial operation is consistent with remedial activities because the industrial operations include petroleum conveyances, EPA is bypassing the requirements of the NPDES program. Rather, every discharge from an activity that handles any hazardous material could be required to "remediate" its discharge based on BPJ rather than a benefit to the protection of water quality.

Regardless of the rationale employed by EPA, the discharges from Outfall 001 is not consistent with an RGP discharge for the following reasons:

> It is an error for EPA to use the RGP as a comparable regulatory reference for Outfall 001 based on the unsupported assumption of similar operations, pollutants and/or treatment technologies in use among this and other facilities. The discharge from Outfall 001 at this Facility is predominantly stormwater runoff (>95%), which should not be regulated under RGP. The purpose of the RGP regulations are to control the discharges of pollutants from eight general remediation activities (i.e., petroleum-related site remediation, non-petroleum-related site remediation, contaminated site dewatering, pipeline and tank dewatering, aquifer pump testing, well development/rehabilitation, collection structure remediation/dewatering, and dredge-related dewatering), which is functionally different than managing stormwater from industrial activities (i.e., stormwater discharge directly related to manufacturing, processing, or raw material storage areas) conducted at this facility. In addition, the storage/use of products (Petroleum/BTEX) at the Facility, is also not equivalent to remediation and remedial treatment.
> EPA's incorrect assertion that Facility stormwater runoff is comparable to RGP-regulated activities, as mentioned above, leads to a misinterpretation and problematic statement from EPA, which concludes that the treatment technologies and/or control measures (i.e., BMPs) used for Outfall 001 is consistent with other facilities under which the 5 and 20

µg/L limits for benzene and naphthalene can be achieved. For treatment of stormwater runoff, OWSs are the typical minimum treatment technology employed by petroleum bulk stations and terminals (PBSTs) as well as this Facility. As is typical for mechanical OWS, OWS 1 used by the Facility for Outfall 001 does not have carbon treatment technologies (i.e., carbon adsorption units) such as those used for discharges to Outfall 002 or other stormwater BMPs for advanced BTEX removal. As a result, the proposed limits of 5 and 20 µg/L for benzene and naphthalene at Outfall 001 are not achievable by simply improving existing technology and/or control measures, as this lacks carbon treatment technologies.
The carbon treatment equipment employed at OWS 2 for discharges to Outfall 002 provides higher level treatment/water quality discharge as is typical for groundwater remediation purposes. These methods are not practical or viable options for BTEX removal from the stormwater runoff passing through Outfall 001. The remediation system at this Facility is permitted for 25 GPM, which is less than 3.6% of the OWS 1 permitted flow capacity.

<u>EPA clearly erred in identifying reasonable potential for benzene and naphthalene:</u>

In addition to misclassifying the discharge as a remedial discharge, EPA failed to provide the regulatory bases for the requirement to "apply the more stringent of applicable water quality-based effluent limits and technology-based limits" for benzene and naphthalene (pages 30 and 35 of the Fact Sheet). Additionally, the effluent limits for both benzene and naphthalene have been met as described below:

Benzene:
According to the MassDEP's 2016 Integrated List of Waters,[1] the receiving water (i.e., Chelsea River) is not impaired by BTEX. The sampling results during the last permit term was all non-detection for benzene. The effluent limit of 51 µg/L for Outfall 001 in the 2014 Permit, established based on the state WQS and EPA's 2002 National Recommended Water Quality Criteria, has been consistently met.

Naphthalene:
The monitoring data collected during the 2014 Permit term shows that there are only two detections since 2015 with the most recent detection of 0.094 µg/L on January 2018. The two detections, with the effluent concentration of 3.87 and 0.094 µg/L, are both lower than the 100 µg/L effluent limit set in the 2014 Permit.

These facts suggest that existing levels of benzene and naphthalene do not show cause or reasonable potential from the Facility to exceed water quality criteria of the receiving water. Given that 1) EPA has failed to identify benzene and naphthalene as pollutants of concern that would cause or contribute to impairments on the receiving water, and 2) the existing permit limits are consistent with other bulk petroleum storage facilities located in the Boston Harbor Drainage Area, EPA fails to identify any reasonable rationale in its BPJ analysis for the imposition of a more stringent limits for benzene and naphthalene, which will add substantial additional cost to the Facility.

EPA clearly erred in applying the guidelines in the EPA NPDES Permit Writers' Manual to consider BAT and BPT when establishing the case-by-case TBEL for benzene and naphthalene and using BPJ, which violates 40 CFR § 125.3(c)(2) and 40 CFR § 125.3(d):

The NPDES Permit Writer's Manual requires that the development of a case-by-case TBEL include consideration of available technology, process implemented, and/or any other relevant factors (e.g., BPT and BAT requirements). EPA failed to consider BPT and BAT properly when determining the TBELs for benzene and naphthalene. Based on the requirement in EPA's manual, TBEL development should consider both prevalent concentration for stormwater runoff and the removal efficiency from the stormwater BMPs (which are not currently possessed by the Facility, allowing the following analysis example for benzene).

Based on a previous study, the mean concentration of BTEX in stormwater runoff from similar land use areas is in the range of 5,000-22,000 µg/L (James et al., 2010)[2]. The estimated removal efficiency of BTEX in stormwater BMPs is in the range of 80% - 99% (Hsieh and Davis, 2005)[3]. Therefore, the expected benzene concentration in treated stormwater runoff, in a best case, can be estimated as 50 µg/L by multiplying the lowest mean concentration and the highest removal efficiency (5000×(1-0.99)=50). This is consistent with the 51 µg/L limit applied in the 2014 Permit rather than the unsupported EPA proposed limit of 5 µg/L. This result suggests that the effluent limit for benzene could be retained as the newly derived TBEL from the analysis above and is consistent with the WQBEL previously established based on the human health criterion developed in EPA 2002 National Recommended Water Quality Criteria. This is also consistent with the limits to be approved by MassDEP (16 µg/L to 58 µg/L).

More importantly, EPA clearly erred in implementing the 5 and 20 µg/L limits for benzene and naphthalene at Outfall 001 based on the consistency of "monitoring results" for this and other facilities in Region 1 rather than a technology-based analysis following e.g., the analysis performed above or other valid methods.

EPA has failed to maintain equality among facilities:

EPA also attempts to support its BPJ analysis by arguing that the 5 and 20 µg/L limits for benzene and naphthalene are consistent with the typical effluent limits from similar facilities and the sampling results for these facilities in the last permit period. However, EPA refers to incorrect information regarding the effluent limit from other NPDES permits when developing the case-by-case TBEL. The effluent limit for benzene at bulk petroleum storage facilities located in the Boston Harbor drainage area (Table 2 in the Fact Sheet) are either not required or has typically been 51 µg/L. Although EPA notes in the Fact Sheet that some outfalls at these facilities in Boston Harbor have a 5 µg/L limit for benzene, these outfalls are all internal outfalls similar to Outfall 002, serviced by a groundwater remediation system rather than a predominantly stormwater discharge.

The effluent limit for naphthalene at the facilities within the same area (Table 4 in the Fact Sheet) are still 100 µg/L with only two exceptions, which are Outfall 002 in MA0003280 and Outfall 001 in MA0004006. Outfall 002 in MA0003280, is serviced by a groundwater remediation system rather than a predominantly stormwater discharge. Outfall 001 in

MA0004006 has a 10 µg/L limit for naphthalene, which is based on an analysis dating back to the 1990 Permit and continued only to meet anti-backsliding requirements. A new TBEL for the Facility should be developed considering both the prevalent concentration for stormwater runoff and the removal efficiency from the stormwater BMPs as mentioned above.

As a result, EPA's use of BPJ to derive effluent limits of 5 and 20 µg/L for benzene and naphthalene established based on the RGP standard and sampling results is inappropriate and clearly not applicable for a stormwater discharge like Outfall 001. An appropriate TBEL should be developed based on a technology-based analysis with the consideration of intrastate equities and/or up-to-date criteria (e.g., updated human health for carcinogenic effects for benzene).

Request:
As the Chelsea River is not impaired by benzene, the Facility requests that EPA revise the TBEL for benzene to 51 µg/L, which is fully protective of the receiving water body and is (1) supported by EPA's 2015 Updated Water Quality Criteria - Human Health Criteria; (2) consistent with the 2014 Permit; and (3) consistent with MassDEP's proposed standards (16 µg/L to 58 µg/L). For naphthalene, the Facility requests that the effluent limit be retained as 100 µg/L, the same as those imposed in the 2014 Permit.

[1] As noted at page 30 of the Fact Sheet, MassDEP is in the process of promulgating updated surface water quality standards, which adopt the updated federal toxic pollutant criteria. This results in an updated human health for carcinogenic criteria for benzene ranging from 16 µg/L to 58 ug/L.
[2] James, R., P. Wilbon and J. DiVincenzo. 2010. Pervious and impervious urban stormwater runoff in a rapidly urbanizing region: occurrence of fluoranthene and pyrene. Bulletin of Environmental Contamination and Toxicology. 85: 32–36.
[3] Hsieh, C. and A. Davis. 2005. Multiple-event study of bioretention for treatment of urban storm water runoff. Water Science & Technology. 51(3-4): 177-181.

Response to Comment G.2

EPA has addressed comments on the benzene and naphthalene effluent limitations in Response to Comment F.2. The Final Permit retains the proposed effluent limitations for benzene and naphthalene. The analysis and underlying justification are explained in Response to Comment F.2. In addition, as the Fact Sheet notes, monitoring data for Chelsea Sandwich from December 2014 through October 2020 indicate that the Facility did not detect benzene in any samples from Outfall 001.[138] Chelsea Sandwich Fact Sheet pp. 31-32, 72-74, 79-80. Further, the monitoring data for that period include only two detections of naphthalene at Outfall 001, one below the minimum level of 0.1 µg/L and the second (3.9 µg/L) well below the 20 µg/L technology-based limit proposed in the Draft Permit and retained in the Final Permit. *Id.* at 34, 75-78, 81-82. Thus, the commenter's claim that these limits are not currently achievable is flatly contradicted by the facility's monitoring data. These data also indicate that the new TBELs are, without question, economically achievable by the Facility.

Comment G.3 – New Monitoring Requirement for Bioassessment

[138] Outfall 002, which the comment does not address, is already subject to a benzene limit of 5 µg/L.

In Part I.C.6 of the Draft Permit, EPA imposes a bioassessment monitoring requirement for the first time with the rationale for characterizing the extent to which, if any, pollutants discharged from the Facility to the receiving water affect the benthic morphology, substrate, and/or biota. The Facility strongly objects to the new monitoring requirement for the reasons below:

The special conditions should not put a burden on the permittee to develop control strategies (i.e., TMDLs) by requesting the permittee to perform a bioassessment study:

Under CWA § 303(d), states are required to develop lists of impaired waters. The law requires that those jurisdictions establish priority rankings for waters on their CWA section 303(d) list and develop pollutant control strategies (i.e., TMDLs) for those waters. While a bioassessment study is one of the key components in the TMDL development process, the NPDES program is a subsequent step for implementing the TMDLs by regulating the point and nonpoint source discharges from the permittees/stakeholders within the river section/watershed. The Facility, again, is willing to provide additional monitoring data, relevant to stormwater discharges (e.g., water column monitoring), to support the bioassessment study. However, other monitoring requirements (i.e., benthic morphology, substrate characterization, benthic pollutant analysis, and qualitative biological monitoring) and the preparation of a summary report that includes e.g., literature review of environmental information, discussion of overall bioassessment results, and the coordination with other PBST facilities along the Chelsea River are out of the scope of the NPDES permit and beyond the ability and responsibility of the permittee.

Although EPA has broad discretion to regulate a permittee's compliance with a permit, here, the bioassessment is not intended for this purpose (see e.g. 33 USC 1342(a)(2)). For example, although 40 CFR 122.41, 40 CFR 122.44 and 40 CFR 122.48 all contain requirements to ensure that monitoring activities result in representative data to allow for a determination that facility's sampling program is representative of the regulated discharge and that the discharge is in compliance with the established effluent limits in a permit, the bioassessment is unrelated to the Facility's compliance with established effluent limitations.

Here, the requirement to conduct the bioassessment program supplants EPA or the MassDEP's obligation under CWA § 303(d) to conduct watershed-wide studies to implement TMDLs and merely seeks sampling data of impacts that are not attributable to any single point source or the Facility's compliance with any specific effluent limitation. As EPA and MassDEP are aware, Chelsea Creek has been home to industrial activity for over a century, and any accumulated impacts are not attributable to a single point source, of which there are many (municipal outfalls, multiple petroleum facilities, other commercial and industrial runoff). The bioassessment program's assessment of the receiving water body is more focused on the impacts of the industrial history of the water body rather than the Facility's discharge and effluent limitations. As discussed in more detail below, nothing in the bioassessment program supports EPA's authority to implement monitoring requirements necessary to ensure compliance with the permit requirements.

EPA clearly erred in adding the monitoring burden on the permittee for parameters that are irrelevant to effluent discharges via special conditions under the NPDES program.

EPA's rationale for imposing the bioassessment requirement in the Draft Permit is based on Section 9.1.1 of EPA's Permit Writer's Manual, as noted in page 58 of the Fact Sheet. The listed parameters in the monitoring requirement for bioassessment, as noted by EPA, is largely based on EPA's *Estuarine and Coastal Marine Waters: Bioassessment and Biocriteria Technical Guidance*. The guidance states that a bioassessment study can be applied to support the NPDES program for "[d]eveloping protocols that demonstrate the relationship of biological metrics to effluent characteristics".

Although the Permit Writer's Manual states that additional monitoring requirements can be included in a NPDES permit to support future permit requirements, this fact should not be interpreted as or equivalent to the responsibility of any permittee for conducting a bioassessment study. EPA clearly erred in referring to the guidance by inferring that the permittee is responsible for taking all the monitoring burden for a bioassessment study even if the parameters are irrelevant to the stormwater discharges regulated under the NPDES program (e.g., benthic morphology).

Moreover, EPA misinterprets the scope of special conditions covered by Section 9.1.1 of the EPA's Permit Writer's Manual. EPA does not have unlimited discretion in requesting NPDES permittees to solely conduct and complete a bioassessment study for the entire waterbody. A bioassessment study should be a watershed-wide collaborative effort that includes multiple parties and led by agencies. The Facility has no objections to provide additional monitoring data to support the water column characterization required in the bioassessment study, if necessary. However, the additional monitoring and special studies, listed in Section 9.1.1, should not include the parameters that are irrelevant to the stormwater discharges to the receiving water, in this case, all the parameters required for benthic morphology characterization, substrate characterization, benthic pollutant analysis, and qualitative biological monitoring.

More importantly, the responsibility of conducting biological monitoring and surveys should be on the agencies, as indicated in, for example, the previous Boston Harbor 1999 Water Quality Assessment Report, which notes that "The EOEA[4] Watershed Team should work with state and federal agencies (e.g., DEP[5], CZM[6], USGS[7], ACOE[8]) to conduct biological monitoring (e.g. benthic macroinvertebrates, fish population) to determine if the effect(s) of NPDES discharge(s) and habitat quality negatively impact the aquatic life in this segment of the Chelsea River."

<u>A watershed-scale bioassessment study of an area should be a collaborative work that involves all the stakeholders across the waterbody/watershed:</u>

Impairment of a waterbody or river segment is usually a result of long-term contamination contributed by various sources (point and non-point). The effluent discharge monitoring report required for the Facility by the 2014 Permit and the Draft Permit provide adequate data for the discharges from this Facility, and there is a lack of evidence that links the Facility's discharge to the impairment of the waterbody as a whole. Hence, there is no reason to put the monitoring burden on a single Facility, especially when an area, such as the Chelsea River in this case, has been influenced by many point and non-point sources for a long term period. The impairment(s) could be caused by historic discharges from point sources that no longer exist.

Therefore, if EPA would like to perform a bioassessment study to be used as a basis of regulating permittee discharges, it should be a watershed-wide study completed by EPA or MassDEP through a collaboration with a group of stakeholders (e.g., other PBST facilities within the Mystic River Watershed, municipalities, etc.), and/or third-party contractors, whenever feasible.

The request for a comparative analysis that includes hydrodynamic modeling conducted by the Permittee is unreasonable and unrealistic:

On page 58 of the Fact Sheet, EPA requests a comparative analysis that includes hydrodynamic modeling to be conducted by the Permittee. This is inappropriate and impractical for the following reasons:

- Applying this type of modeling approach to a short section of river will yield erroneous results due to insufficient data resolution. In this case, the receiving water (i.e., Chelsea River) only has three transects in the hydrodynamic model. A hydrodynamic model with spatially coarse data resolution could produce seriously biased model results due to poor model calibration and validation. The issue of insufficient data may be resolved by 1) increasing the data density by adding more monitoring stations within the river segment (not increased monitoring frequency) through a comprehensive assessment rather than a facility by facility approach, or 2) expand the model by including more river segments to have more comprehensive data from upstream to downstream. The two solutions are, however, far beyond the Facility's or any permittee's responsibility.
- The model results reported by different permittees are expected to be highly inconsistent as the required inputs and parameters among models could differ largely (i.e., discharge monitoring data and/or other data collected for the required model inputs and parameters).
- To perform hydrodynamic modeling, it requires model parameters and inputs that are additional and irrelevant to the stormwater discharge monitoring regulated under the NPDES permit (e.g., precipitation, wind speed, wind direction, relative humidity, …etc.). Requesting the permittee to acquire these data to perform a hydrodynamic model analysis is impractical and beyond the responsibility of any permittee regulated under the NPDES program.

Based on these facts, the Facility suggests that the comparative analysis using a hydrodynamic modeling approach should include the entire river reach or watershed (e.g., Mystic River Watershed) and EPA should take the responsibility to perform the analysis by consolidating the data collected not only from the discharge monitoring data from permittees but other data sources (e.g., National Weather Service). Such an area-wide study, led by EPA in conjunction with interested and necessary stakeholders to determine the overall health and impacts to the waterbody, should be a separate endeavor from the regulation of the Facility's discharge under the Draft Permit.

Request:

The Facility requests that EPA removes the special condition of bioassessment requirements from the Draft Permit.

[4] Executive Office of Environmental Affairs
[5] MA Department of Environmental Protection
[6] Massachusetts Office of Coastal Zone Management
[7] United States Geological Survey
[8] United States Army Corps of Engineers

Response to Comment G.3

EPA has addressed nearly identical comments on the bioassessment in Response to Comment F.3. The Final Permit retains the proposed bioassessment with a few modifications. The analysis and underlying justification are explained in Response to Comment F.3.

Comment G.4 – New Limit for Fecal Coliform

Part I.A of the Draft Permit requires compliance with a Fecal Coliform limit (average monthly limit of 88 Most Probable Number (MPN)/100 ml and a maximum daily limit of 100 MPN/100 ml for the first time. The Facility objects to the new compliance requirements for Fecal Coliform. The Facility takes exception to the new requirement for the following reasons:

<u>The Facility does not engage in any processes and activities related to bacteria production and/or discharge:</u>

EPA specifically states in the Fact Sheet that (1) "[t]he Facility does not engage in activities that would be expected to generate large sources of bacteria, stormwater runoff can readily transport bacteria from surfaces susceptible to the waste products of warm-blooded animals or pathogens". This fact, which includes that there are no sanitary discharge connections to any of the stormwater outfalls at the Facility, suggest that the bacteria from this Facility is likely from the stormwater runoff transportation of surface wildlife waste products, which is however, considered a natural condition and not controllable in terms of the stormwater treatment processes.

<u>The discharges through Outfall 001 are not categorized as any primary sources for bacteria listed in the MS4 permit:</u>

According to the MassDEP's 2016 Integrated List of Waters, Enterococcus is not listed as an impairment for the Chelsea River. Although MassDEP released the Final Pathogen TMDL for the Boston Harbor, Weymouth-Weir, and Mystic Watersheds in October 2018, which includes specific water quality targets for Enterococcus in the Mystic River sub-basin, including the Chelsea River, EPA has failed to identify the source of bacteria resulting from industrial activities at the Facility and there is no evidence to suggest that the Facility operations are or has been a source. In addition, stormwater discharges from MS4 outfalls constitute the majority of point source stormwater flow to the Chelsea River and are the likely source of bacteria. EPA has determined, as represented by the NPDES Massachusetts Small MS4 General Permit, that BMPs suitable for managing and ultimately reducing bacteria/pathogens involve primarily non-structural means such as public education and outreach and enhanced illicit discharge detection and elimination. There are no analytical sampling, monitoring or reporting requirements for

bacteria/pathogens in the MS4 general permit for MS4 operators discharging to TMDL-regulated or impaired receiving waters.

As noted, bacteria are neither an input nor product of industrial activities at the Facility. This Facility is not a source of pet waste or poorly managed septic systems, which are the primary sources for bacteria in stormwater cited in the MS4 permit. The Facility has confirmed that only the four sources listed previously are discharged through the Outfall 001 (i.e. there are no illicit discharges). Consequently, requiring the Facility to monitor and report on bacteria provides little or no value, as it is an unlikely source, and it is a significant burden not otherwise imposed upon more likely contributing sources.

As the Facility (1) does not have any process related source that would contribute fecal coliform; (2) does not have operations/treatment available or feasible to remove bacteria from birds/wildlife; and (3) EPA has failed to establish that the Facility is or has been a source for fecal coliform that impacts or could impact the receiving water body, the Facility objects to the additional monitoring for fecal coliform as it lacks an adequate and defensible regulatory basis. More importantly, the bacteria in the discharges contributed by wildlife (e.g., birds congregate at terminals in the containment areas where water ponds) is clearly irrelevant to any industrial activities (i.e., discharges directly related to manufacturing, processing or raw materials storage areas at an industrial plant), which shall not be regulated under NPDES in accordance with 40 CFR § 122.26 (b)(14).

Request:
The Facility requests that EPA eliminate effluent limit for Fecal Coliform from the Draft Permit.

The Facility requests that should EPA elect to impose the effluent limit for fecal coliform, the compliance shall be evaluated under the MPN calculated based on the geometric mean of samples instead of colony forming units (cfu) per 100 mL, which was used by EPA for identify the detections.

Response to Comment G.4

EPA addressed comments on the fecal coliform effluent limitations and the *Enterococcus* monitoring requirements in the Draft Permits in Responses to Comments F.4 above, which is nearly identical to the comment above. Data collected over the last permit term demonstrate that the stormwater discharges from Chelsea Sandwich can contain high levels of fecal coliform, including levels that exceed water quality criteria (e.g., 9900 cfu/100 mL). *See* Fact Sheet p. 26-27 and Appendix A. Requirements to control fecal coliform are warranted based on monitoring data for the Facility's stormwater discharges that indicate that the Facility has the potential to cause or contribute to an excursion of water quality standards in a receiving water already impaired for fecal coliform and subject to the requirements of a TMDL. *See* 40 CFR § 122.44(d)(1).

As explained in Response to Comment F.4, EPA determined that water quality-based, non-numeric limitations are appropriate in lieu of numeric fecal coliform limits to carry out the purposes and intent of the CWA to ensure compliance with water quality standards.

Implementing the BMPs proposed in the Draft Permit, coupled with the additional, water-quality based non-numeric limits targeting bacteria sources (described in Response to Comment F.4) reduce sources of bacteria in the stormwater runoff and will ensure compliance with water quality standards in accordance with 40 CFR § 122.44(d)(1)(vii)(A) and (B). Given the intermittent nature of the discharge and because the source of bacteria in the effluent is likely from runoff or from the stormwater drainage system itself, BMPs that eliminate or minimize sources are the most direct method of controlling pollutants to meet water quality standards. EPA concludes that the non-numeric limits targeting bacteria, coupled with monitoring and requirements to assess and improve BMPs as necessary to maintain bacteria levels, will ensure that the discharge does not exceed water quality standards such that a separate, numeric fecal coliform limit is not necessary. Monthly monitoring is required for fecal coliform and enterococci to ensure that the BMPs continue to be implemented effectively to protect the designated uses of the receiving water. EPA maintains that the fecal coliform and *Enterococcus* monitoring requirements are supported by the record and are necessary to ensure that water quality standards are met.

Comment G.5 – New Monitoring Requirement for Enterococcus

Part I.A of the Draft Permit requires a monitoring and reporting requirement for Enterococcus for the first time.

EPA has failed to provide a quantitative analysis for identifying the contribution of Enterococcus from the Facility's industrial activities. As indicated in the Fact Sheet (page 26), the Facility does not engage in activities that would be expected to generate large sources of bacteria and currently does not have any process related source for bacteria. Bacteria is neither an input nor product of industrial activities at the Facility. This Facility is also not the primary sources for bacteria in stormwater cited in the MS4 permit (see details in the response of Enterococcus above). These facts suggest that the bacteria discharge from this Facility, if any, is likely from the stormwater runoff transportation of surface wildlife waste products. Further, the bacteria in the stormwater contributed by wildlife waste products, again, does not fall into any industrial categories or relate to any industrial activities as mentioned above, which then shall not be under NPDES regulations (40 CFR § 122.26 (b)(14)).

Request:
The Facility requests that EPA eliminate the monthly monitoring and reporting requirement for Enterococcus.

Response to Comment G.5

EPA addressed comments on the *Enterococcus* monitoring requirements in the Draft Permits in Response to Comment F.5 which is nearly identical to the comment above.

Comment G.6 – Slack Tide and Sampling Requirements

Footnote 1 to Part I.A of the Draft Permit provides significant detail as to the requirements for sampling during a "qualifying event" including that the "discharge occurs during daylight hours

on an outgoing tide at least one hour from both the low and high slack tide." However, these limitations make it exceedingly difficult for the discharge to be considered a qualifying event as on multiple days each month, the above period will either not occur during daylight hours or for such a short duration as to make sampling impractical. Although the Facility has some ability to detain or control the discharge timing for stormwater at the Facility, this detention is limited and may not be sufficient in all situations, requiring a discharge during slack tides. Furthermore, the requirement to collect a sample within 15-60 minutes of "the initiation of the discharge" significantly reduces the likelihood that a "qualifying event" will begin within the already restrictive low to high slack tide period. For an extreme case, if all the storm events within a month occur during nighttime and produce discharges during the slack tide periods, it will result in a dilemma of sampling for that month as all the discharges in this case would not meet the "qualifying event" requirement.

Also, the Facility is unaware of any specific requirements or guideline regarding the timing of estuary monitoring (e.g., EPA 2006 Volunteer Estuary Monitoring: A Methods Manual, Second Edition; EPA 2010 Permit Writer's Manual; EPA 2015 Water Quality Standards Handbook; EPA 2004 Technical Support Document for Effluent Guideline Program Plan; EPA 1991 Guidance Manual for the Preparation of NPDES Permit Applications for Stormwater Discharges Associated with Industrial Activity).

Request:
The Facility requests to delete requirement of sampling during qualifying event and that Footnote 1 be revised as the followings.

"Grab samples for Outfall 001 shall be collected at the discharge point from the Facility's treatment system. Samples shall be collected after treatment through the stormwater treatment system and free from tidal influence."

In the alternative, should EPA retain this provision, the Facility requests that EPA provide clarification in the permit as to the reporting and sampling requirements should a "qualifying event" not occur in a given month (i.e. should the Facility not report a discharge or sample a so-called non-qualifying event).

Response to Comment G.6

EPA has addressed comments on the requirement to sample during a qualifying event in Response to Comment F.6. EPA notes that the qualifying event requirement is carried forward from the 2014 Permits and does not impose new limitations on the Facilities. However, in response to the comments received, EPA revised the Final Permit to clarify certain aspects of the qualifying event provision. The revision and underlying justification are explained in Response to Comment F.6.

Comment G.7 – Avoidance of Discharge During Slack Tide.

Part I.C.1.b(3) of the Draft Permit requires that the Facility "shall avoid discharging stormwater" during slack tide. However, because the Facility does not have the means to control or store all

of the stormwater that falls at the Facility, it is limited on the ability to control the timing of a discharge, especially during periods of high rainfall. At such times, the Facility cannot avoid discharge of its uncontrolled stormwater during slack tide. EPA has provided no evidence that the discharge from Outfall 001 during slack tide would somehow impair the receiving waterbody.

Further, the Facility does not recognize any regulatory bases associated with the control of stormwater discharge associated with tides (e.g., EPA 2010 Permit Writer's Manual; EPA 2015 Water Quality Standards Handbook; EPA 2004 Technical Support Document for Effluent Guideline Program Plan; EPA 1991 Guidance Manual for the Preparation of NPDES Permit Applications for Stormwater Discharges Associated with Industrial Activity; EPA 1991 Technical Support Document for Water Quality-based Toxics Control).

Request:
The Facility requests that the prohibition in Part I.C.1.b(3) regarding discharging stormwater during slack tide be deleted from the Draft Permit.

Response to Comment G.7

EPA has addressed comments about the requirement to avoid discharging during slack tide in Response to Comment F.7. The conditions on the timing of the discharges are carried forward from the 2014 Permits and do not impose new limitations on the Facilities. EPA also notes that neither the 2014 Permit nor the Draft Permit prohibit the Facility from discharging during slack tide. However, to clarify that this BMP in the re-issued permit is carried forward from the 2014 Permit and does not impose new restrictions, EPA has revised the Final Permit to mirror more closely the language from the 2014 Permit. Part I.C.1.b.3. now states: "The Permittee shall minimize, to the maximum extent practicable, discharging stormwater, hydrostatic test water, and groundwater during worst-case conditions (i.e., the hour before and after slack tide and during the periods of lowest receiving water flow). The Permittee shall, to the maximum extent practicable, discharge stormwater, hydrostatic test water, and groundwater on an outgoing tide."[139] *See also* Responses to Comments E.6 and H.4.

Comment G.8 – New Limits for Group I Polycyclic Aromatic Hydrocarbons (PAHs)

EPA imposes an effluent limit of 0.018 µg/L for the six of seven Group I PAHs (i.e., benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene) for the first time in Part I.A.1 of the Draft Permit. The Facility takes exception to offsetting a new compliance requirement for the reasons below:

[139] The "qualifying event" provisions in the Final Permit were revised in response to comments received such that it no longer applies to all discharges of stormwater. *See* Response to Comment F.6. Partly as a result of this revision, EPA moved the requirement to discharge stormwater on an outgoing tide from footnote 1 to the discharge practices BMP at Part I.C.1.b.3. Including the outgoing tide requirement with the discharge practices BMP is also consistent with the discharge practices BMP at Parts I.A footnote 1 and I.C.3.a of the 2014 Permits. *See* Response to Comment E.6.

EPA clearly erred by violating applicable regulatory procedures for establishing WQBELs for PAHs:

EPA has established clear regulatory procedures for establishing WQBELs in NPDES permits. Federal regulations, as well as EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), set forth the procedures to calculate a WQBEL consistent with applicable water quality standards (WQS) and waste load allocations (WLAs) contained in applicable TMDLs. EPA abandons those procedures and imposes the WQBEL for the six PAHs using the value of 0.018 µg/L directly from the human health water quality criteria. EPA's failure to follow established procedures in imposing effluent limits for the six PAHs for the Facility constitutes a clear error and is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii).

Infeasible compliance level for the PAHs:

Page 3 of the Draft Permit requires that the effluent limit for the six PAHs be set at 0.018 µg/L. However, Footnote 12 of the Draft Permit acknowledges that the method minimum level (ML) for all Group I PAHs is specified as 0.1 µg/L, which is two orders of magnitude greater than the effluent limit. Notwithstanding, as discussed above, that the effluent limit imposed by EPA is contrary to EPA's regulations and authority, EPA has failed to consider the present laboratory detection limits when determining the effluent limits. The Facility is concerned that although Footnote 12 indicates that the ML of 0.1 µg/L "shall represent the compliance level", the actual effluent limit set below the detection limit/ML will be impractical and will lead to difficulties in execution for the compliance as the concentration of all the Group I PAHs in the collected samples will all likely be non-detect.

Request:
The Facility requests that EPA remove the effluent limitation for the six PAHs from the Draft Permit.

Response to Comment G.8

EPA has addressed substantially similar comments about the new PAH limits and compliance levels in Response to Comment F.8. For most PAHs, the current laboratory minimum levels are above the corresponding human health criteria listed in 314 CMR 4.05(5)(e)(1), Table 29, meaning that a detection is an exceedance of a criterion. All six of the Group I PAHs, in addition to benzo(a)pyrene, were detected above laboratory minimum levels at Outfall 001. *See* Fact Sheet p. 34 and Appendix A. In addition to monitoring data indicating the presence of Group I PAHs above the human health water quality criteria, the designated uses for Aquatic Life, Aesthetics, Primary Contact, and Secondary Contact Recreation in Chelsea River are all listed as impaired due to petroleum hydrocarbons. *See* Fact Sheet pp. 18; 34. Part I.A.1 Footnote 12 of the Final Permit explains that, for the purposes of the Permit, the compliance level for Group I PAHs is non-detect at any sample-specific ML above the applicable water quality-based effluent limit and 5 µg/L for Group II PAHs. *See also* Responses to Comments A.3.A, G.26.

Comment G.9 – New Limit for Total Residual Chlorine (TRC)

In Part I.A.1 of the Draft Permit, EPA imposes an effluent limit of 13 µg/L with an associated ML of 30 µg/L as a compliance level for TRC for the first time. The Facility objects to the new compliance requirements for the reasons listed below:

The facility does not engage in any processes and activities related to TRC production and/or discharge.

EPA must have a rational basis for determining a Facility's discharge limits and sampling parameters. The establishment of WQBELs should not encompass potential substances that have no connection to the discharge, have not been detected at a Facility, are not in use at or in processes at a Facility, or which are not under the control of a permitted operator. TRC is not actually present, used or stored at the Facility and the Facility does not engage in activities that would be expected to generate significant sources of TRC.

More importantly, TRC is not named as a cause of impairment for the Chelsea River in accordance with the MassDEP's 2016 Integrated List of Waters. As EPA has failed to identify that the Facility is or has been a source, the Facility objects to the new compliance limit for TRC.

The hydrostatic test events are very infrequent:

EPA's rationale for imposing the TRC limit, described in page 37 of Fact Sheet, is that "*The Facility uses potable water for hydrostatic test water and washdown water. Potable water sources are typically chlorinated to minimize or eliminate pathogens."* However, the hydrostatic test events are typically performed only when a tank is modified or repaired (this is infrequent and on the order of years between tests). Thus, the hydrostatic discharge source represents a small fraction of the total discharges from Outfall 001. Hydrostatic discharges are separately regulated for TRC under the Draft Permit requirements.

EPA clearly erred by violating applicable regulatory procedures for establishing WQBELs:

EPA has failed to follow the established regulatory procedures, described in EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), for establishing WQBELs in NPDES permits. A WQBEL should be consistent with applicable WQS and WLAs contained in applicable TMDLs. EPA abandons those procedures and imposes the WQBEL for TRC by imposing the 13 µg/L directly from the EPA 2002 National Recommended Water Quality Criteria. EPA's failure to follow established procedures in imposing effluent limits constitutes a clear error and is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii).

A ML set close to the MDL is inconsistent with the definition and determination of ML stated in 40 CFR Part 136 and will lead to difficulties of verifying the accuracy of analysis results.

The Draft Permit, page 10 of 30, footnote 13 requires the minimum level (ML) for total residual chlorine (TRC) as 30 µg/L (0.03 mg/L). Page 38 of the Fact Sheet, footnote 41 further states that the propose ML is based on the method that has the lowest method detection limit (MDL) of the analytical methods approved under 40 CFR Part 136 (i.e., Standard Method 4500-CL-E, low-

level amperometric titration method). The Facility has the following concerns regarding the proposed ML of 30 µg/L:

> Even though the low-level amperometric titration method theoretically can measure chlorine concentration down to the level of 20 µg/L, a ML for TRC cannot be established in this low level range. The minimum reporting level must be set to a concentration at or above the lowest standard used in the analysis according to Standard Methods. More specifically, the "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the detection limit in accordance with 40 CFR Part 136 (Appendix A). Typically, MLs are three to five times the MDL. The proposed limit of 30 µg/L is clearly underestimated. Additionally, minimum detectable concentration at the level of 20 µg/L is usually under ideal conditions. Normal working detection limits typically are higher.
> Attempting to verify the accuracy of a standard made at 0.03 mg/L within the required ± 10% of the actual value is impossible. As the meter only reports values in ±0.01 mg/L increments, any value between 0.027 mg/L and 0.033 mg/L (or ± 25% of the actual value) would result in a reported value of 0.03 mg/L. To properly verify the accuracy, one must use a standard of 0.10 mg/L (which would result in an acceptable range of 0.09 to 0.11 mg/L).
> In accordance with the Federal Sufficiently Sensitive Test Method Rule, CWA at 40 CFR Parts 122 and 136, "*An applicant can demonstrate that, despite a good faith effort to use a method that would otherwise meet the definition of 'sufficiently sensitive' the analytical results are not consistent with the QA/QC specifications for that method, then the Director may determine that the method is not performing adequately and the applicant should select a different method from the remaining EPA approved methods*."
> The Facility is aware of laboratories that have attempted to confirm the reproducibility of this method in the 0.02 mg/l range. Significant issues were identified in obtaining reproducible results, and in fact, so much difficulty was observed in New Jersey that New Jersey Department of Environmental Protection is not requiring this method.

Request:
The Facility requests that EPA remove the effluent limitation of TRC from the Draft Permit.

In the alternative, the Facility requests that should EPA elect to include a TRC limit, the ML for TRC be modified to 0.1 mg/L to avoid concern over the ability of accurately reading results at lower concentrations.

With respect to TRC testing of hydrostatic test water, specifically in reference to Part C(3)(b)(1)(ii), the Facility should be allowed to treat (or treat in combination with other measures) TRC through the storage of hydrostatic test water in dike areas prior to release through the Outfall(s). As currently drafted, TRC would need to meet any discharge limit before being released from a tank undergoing testing. TRC naturally degrades with time in the presence of sunlight, and allowing levels to decrease below effluent limits through release to dike areas should be allowed. The Facility requests that this measure meets the definition of "treatment" in this subsection and should be reflected as such.

Response to Comment G.9

EPA has addressed nearly identical comments about the new TRC limit, compliance level, and hydrostatic testing in Response to Comment F.9. *See also* Response to Comment F.28. EPA also addressed nearly identical comments about the applicable regulatory procedures for setting water quality-based effluent limits in Responses to Comments F.8 and F.9. In this case, the Fact Sheet (pp. 37-38) explains that the Draft Permit established a maximum daily TRC limit of 13 µg/L (0.013 mg/L) at Outfall 001 because effluent data demonstrated reasonable potential to cause or contribute to excursions of the acute criterion. The comment asserts that limits should not be set where pollutants "have not been detected at a Facility" and further argues that "TRC is not actually present, used or stored at the Facility." In fact, TRC was detected in whole effluent toxicity effluent samples at concentrations at or above the criterion (Fact Sheet Appendix A). Sufficient evidence exists based on the detected values to find reasonable potential for discharges of chlorine to cause or contribute to an exceedance of the acute TRC water quality standard.[140] Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements that are necessary to achieve water quality standards established under CWA § 303 and must contain WQBELs for any pollutants or pollutant parameters that the permitting authority determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above WQSs. *See* 40 CFR 122.44(d)(1)(i), 122.44(d)(1)(vii). EPA applied the acute salt water quality criterion at Outfall 001 because a dilution factor of 1 is appropriate for the Chelsea River. *See* Responses to Comments F.21, G.20.

Comment G.10 – New Limit for Free Cyanide

In Part I.A.1 of the Draft Permit, EPA imposes an effluent limit of 1 µg/L for free cyanide for the first time. The Facility takes exception to the new requirement for the following reason:

<u>The proposed discharge limits and sample parameters must be related to the discharge reasonably expected from a Facility:</u>

EPA must have a rational basis for determining a Facility's discharge limits and sampling parameters. The establishment of WQBELs should not encompass potential substances that have no connection to the discharge, have not been detected at a Facility, are not in use at or in processes at a Facility, or which are not under the control of a permitted operator. Cyanide is not actually present, used or stored at the Facility. Cyanide is generally emitted by coating or plating processes. The Facility is unaware of any historic process at the Facility that used cyanide.

More importantly, cyanide is not named as a cause of impairment for the Chelsea River in accordance with the MassDEP's 2016 Integrated List of Waters. As EPA has failed to identify

[140] EPA is afforded significant flexibility within the bounds of the CWA in determining whether a discharge has reasonable potential to cause an excursion. *See In re Upper Blackstone Water Pollution Abatement Dist*., 14 E.A.D. 577, 599 & n.29 (EAB 2010). Moreover, worst-case conditions must underlie the analysis. *Id.*at 599; *see also In re Wash. Aqueduct Water Supply Syst*., 11 E.A.D. 565, 584 (EAB 2004). In this case, given that, when detected, the TRC effluent concentration is, on average, 4 times the acute water quality criterion and the maximum reported concentration is 16 times the acute criterion, EPA has taken a conservative, protective approach in determining reasonable potential.

that the Facility is or has been a source at the Facility, the Facility objects to the new compliance for cyanide.

EPA clearly erred by violating applicable regulatory procedures for establishing WQBELs:

EPA has failed to follow the established regulatory procedures, described in EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), for establishing WQBELs in NPDES permits. A WQBEL should be consistent with applicable WQS and WLAs contained in applicable TMDLs. EPA abandons those procedures and imposes the WQBEL for cyanide, however, using the 1 µg/L directly from the EPA 2002 National Recommended Water Quality Criteria. EPA's failure to follow established procedures in imposing effluent limits constitutes a clear error and is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii).

An incorrect equation was applied to the reasonable potential analysis when calculating downstream effluent concentration:

The mass balance equation applied by EPA in the reasonable potential analysis (Appendix C) is apparently inaccurate by the mismatched units among each term (see details in the Comment of Reasonable Potential Analysis).

Request:
The Facility requests that EPA removes the effluent limitation of cyanide from the Draft Permit.

In the alternative, the Facility requests that should EPA elect to include a cyanide limit, the reasonable potential for cyanide must be re-evaluated, prior to imposing the effluent limits for the pollutant listed in this section, by applying the correct formula and taking the dilution allowance into account.

Response to Comment G.10

The requirement to measure cyanide in the 2014 Permit was included because of historical operations at the Terminal that have included handling, storage of and/or power generation with coal. EPA addressed similar comments about the presence of cyanide in Response to Comment F.10. EPA addressed nearly identical comments about the applicable regulatory procedures for setting water quality-based effluent limits in Responses to Comments F.8 and F.9. While the comment claims EPA clearly erred in setting the WQBEL for cyanide, it does not actually identify what the error was. Total Cyanide was reported twice, at concentrations of 7.62 and 23 µg/L, in monitoring data from March 2015 through November 2021. The criterion EPA used to evaluate reasonable potential was the acute saltwater criterion for free cyanide (1 µg/L). State WQSs contain minimum criteria applicable to all surface waters for toxic pollutants, which requires the use of this criterion. *See* 314 CMR 4.05(5)(e)(1). The 1.0 µg/L acute saltwater criterion is expressed as free cyanide. However, there are limitations for analyzing free cyanide and methods for analyzing total cyanide are more widely available. The compliance level in the Final Permit is 5 µg/L based on the minimum level for total cyanide. *See* Response to Comment H.9.

Based on the reported detections and saltwater criterion, EPA maintains that there is reasonable potential for cyanide in the discharge to cause or contribute to an exceedance of water quality standards. Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements that are necessary to achieve water quality standards established under CWA § 303 and must contain WQBELs for any pollutants or pollutant parameters that the permitting authority determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above WQSs. *See* 40 CFR 122.44(d)(1)(i), 122.44(d)(1)(vii). EPA applied the acute salt water quality criterion for free cyanide at Outfall 001 because a dilution factor of 1 is appropriate for the Chelsea River. *See* Responses to Comments F.21, G.20.

Comment G.11 – New Limit for Total Ammonia (as N) (April – October)

In Part I.A.1 of the Draft Permit, EPA imposes an effluent limit of 1.8 mg/L total ammonia for the first time. The Facility takes exception to the new requirement for the following reasons:

The proposed discharge limits and sample parameters must be related to the discharge reasonably expected from a Facility:

EPA must have a rational basis for determining a Facility's discharge limits and sampling parameters. The establishment of WQBELs should not encompass potential substances that have no connection to the discharge, have not been detected at a Facility, are not in use at or in processes at a Facility, or which are not under the control of a permitted operator. Ammonia is not actually present, used or stored at the Facility. The Facility is unaware of any historic process at the Facility that used or produced ammonia. EPA has failed to identify the source of ammonia resulting from industrial activities at the Facility and there is no evidence to suggest that the Facility is or has been a source. Therefore, the Facility objects to the new compliance for ammonia.

EPA clearly erred by violating applicable regulatory procedures for establishing WQBELs:

EPA has failed to follow the established regulatory procedures described in EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), for establishing WQBELs in NPDES permits. On page 44 of the Fact Sheet, EPA directly applied a limit of 1.8 mg/L based on the EPA 1989 Ambient Aquatic Life Water Quality Criteria for Ammonia, rather than a quantitative analysis based on applicable WQS and WLAs. This application, which constitutes a clear error and is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii).

An incorrect equation was applied to the reasonable potential analysis when calculating downstream effluent concentration:

The mass balance equation applied by EPA in the reasonable potential analysis (Appendix C) is inaccurate as it uses mismatched units among each term (see details in the Comment of Reasonable Potential Analysis).

Request:

The Facility requests that EPA removes the effluent limitation of ammonia from the Draft Permit.

In the alternative, the Facility requests that should EPA elect to include an ammonia limit, the reasonable potential must be re-evaluated, prior to imposing the effluent limits for the pollutant listed in this section, by applying the correct formula and taking the dilution allowance into account.

Response to Comment G.11

The comment objects to the total ammonia effluent limitation in the Draft Permit. EPA addressed nearly identical comments about ammonia in Response to Comment F.11. *See also* Responses to Comments F.8, F.9, F.20.

The Fact Sheet (pp. 43-44) explains that the Commonwealth lists ammonia as a cause of the aquatic life impairment of the Chelsea River, that monitoring data from the Facility show the presence of ammonia in the discharge, and that the ammonia limit was based on EPA's finding that the Facility has reasonable potential to cause or contribute to an exceedance of the water quality standard during warm weather (April through October). EPA evaluated reasonable potential for total ammonia by calculating a 95th percentile "upper bound" effluent concentration consistent with the statistical approach outlined in the *Technical Support Document for Water-quality Based Toxics Control* (TSD) (AR-114) and explained in Appendix C of the Fact Sheet. The projected warm water concentration was 34 mg/L and the projected cold water concentration was 1.7 mg/L. *See* Appendix C. The 2014 Chelsea Sandwich Permit required total ammonia monitoring quarterly as part of the effluent pollutant scan and whole effluent toxicity (WET) testing.

EPA reviewed the reasonable potential analysis performed for the Draft Permit in response to this comment and discovered that the analysis in Appendix C only included data from the pollutant scan (i.e., WET testing data were not included). For some quarters, the Permittee reported the same value for the pollutant scan and WET but there are two separate values reported in other quarters. When the monitoring frequency for both tests was reduced to annual (in 2018), the pollutant scan was conducted in April and the WET testing was conducted in September. In sum, there is a more comprehensive dataset available for analysis. EPA has compared the projected 95th percentile effluent concentrations using the pollutant scan data only, WET data only, and the full dataset (after deleting any duplicate values from a single date) and updated the dataset to include the 2021 reported values. The results are summarized in Table G.11, below.

Table G.11 – Outfall 001 Total Ammonia Nitrogen monitoring data

Dataset	Warm Water (April – October)		Cold Water (November – March)	
	Projected 95th Percentile (mg/L)	Maximum Reported Concentration (mg/L)	Projected 95th Percentile (mg/L)	Maximum Reported Concentration (mg/L)

Pollutant Scan Only	34.02	18.9	1.8	0.21
WET Only	2.34	2.16	3.93	1.87
Scan and WET combined	17.09	18.9	3.37	1.87

EPA determined the applicable ammonia criterion based on EPA's *National Recommended Water Quality Criteria: 2002*. Ammonia criteria are pH, temperature, and salinity dependent; values of 8.5 S.U., 24.7°C, and 30 ppt were chosen (see Fact Sheet explanation) which resulted in an acute ammonia criterion of 1.8 mg/L for warm water and 9.4 mg/L for cold water. Based on all three permutations of the data, there is reasonable potential to cause or contribute to an exceedance of the warm water ammonia criterion. While including the maximum effluent concentration of 18.9 mg/L reported in the quarterly pollutant scan in April 2018 results in a higher projected concentration, eliminating this single high value does not change the conclusion that there is reasonable potential. Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements that are necessary to achieve water quality standards established under CWA § 303 and must contain WQBELs for any pollutants or pollutant parameters that the permitting authority determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above WQSs. EPA applied the acute salt water quality criterion total ammonia at Outfall 001 because a dilution factor of 1 is appropriate for the Chelsea River. *See* Responses to Comments F.21, G.20. For this reason, the Final Permit retains a warm water, water quality-based effluent limitation for ammonia at Outfall 001.

Comment G.12 – New Limits Metals (Copper, Zinc, and Iron)

In Part I.A.1 of the Draft Permit, EPA imposes effluent limits for three metals (copper, zinc, and iron) for the first time. The Facility objects to the new compliance requirements for the reasons listed below:

<u>The proposed discharge limits and sample parameters must be related to the discharge reasonably expected from a Facility:</u>

EPA must have a rational basis for determining a Facility's discharge limits and sampling parameters. The establishment of WQBELs should not encompass potential substances that have no connection to the discharge, have not been detected at a Facility, are not in use at or in processes at a Facility, or which are not under the control of a permitted operator. Metals are not actually present, used or stored at the Facility. The Facility is unaware of any historic process at the Facility that used these constituents.

More importantly, the three metals are not named as a cause of impairment for the Chelsea River in accordance with the MassDEP's 2016 Integrated List of Waters. As EPA has failed to identify that the Facility is or has been a source at the Facility, the Facility objects to the new compliance for these substances.

<u>EPA clearly erred by violating applicable regulatory procedures for establishing WQBELs:</u>

EPA has failed to follow the established regulatory procedures, described in EPA's NPDES Permit Writers' Manual (2010) and Water Quality Standards Handbook (2015), for establishing WQBELs in NPDES permits for the pollutants discussed in this section. A WQBEL should be consistent with applicable WQS and WLAs contained in applicable TMDLs. EPA abandons those procedures and imposes the WQBEL for the pollutants discussed in this section by imposing, however, the values directly from the EPA 2002 National Recommended Water Quality Criteria. EPA's failure to follow established procedures in imposing effluent limits constitutes a clear error and is contrary to the requirements of 40 CFR § 122.44(d)(1)(vii).

Further, the proposed iron standard is based on a taste and staining drinking water standard. As the Facility discharges to a saline water body, the water body is not used as a drinking water source and the above standard is inappropriate in determining a limit.

Incorrect equation was applied to the reasonable potential analysis when calculating downstream effluent concentration:

The mass balance equation applied by EPA in the reasonable potential analysis (Appendix C) is apparently inaccurate by the mismatched units among each term (see details in the Comment of Reasonable Potential Analysis).

Request:
The Facility requests that EPA removes the effluent limitations for the three metals from the Draft Permit.

In the alternative, the Facility requests that should EPA elect to include limits for copper, zinc, and iron, the reasonable potential must be re-evaluated, prior to imposing the effluent limits for the pollutant listed in this section, by applying the correct formula and taking the dilution allowance into account.

Response to Comment G.12

The comment objects to the metals effluent limitations in the Draft Permit. EPA addressed nearly identical comments about metals in Response to Comment F.12. EPA also addressed nearly identical comments about the applicable regulatory procedures for setting water quality-based effluent limits in Responses to Comments F.8 and F.9.

The Commenter objects to the new metals limits because they claim the pollutants are not related to their discharge. During the last permit term, however, monitoring data associated with whole effluent toxicity effluent samples show that the Facility's discharge contains metals, at times above aquatic life criteria (Fact Sheet Appendix A). In addition, metals are one of the most common pollutants found in stormwater, and any number of potential sources at bulk storage terminals could leach copper or zinc during rain events, including industrial machinery, vehicles, and building structures. The Fact Sheet (pp. 39-41) explains that the effluent limits for copper, zinc, and iron were based on EPA's finding that the Facility has reasonable potential to cause or contribute to an exceedance of water quality standards—a finding that does not depend on whether the Commonwealth has listed the Chelsea River as impaired for metals. *See* 40 CFR

§ 122.44(d)(1); Response to Comment F.9. EPA evaluated reasonable potential for metals by calculating a 95th percentile "upper bound" effluent concentration consistent with the statistical approach outlined in the *Technical Support Document for Water-quality Based Toxics Control* (TSD) (AR-114) and explained in Appendix C of the Fact Sheet. The projected concentration was 24.7 µg/L for copper, 141.3 µg/L for zinc, and 4.17 mg/L for iron. *See* Appendix C.

EPA reviewed the reasonable potential analysis performed for the Draft Permit in response to this comment and discovered that the dataset included several "0" values where an NODI code had been entered.[141] EPA compared the projected 95th percentile effluent concentrations without the erroneous "0" values and including the most recent WET results from September 2021. This resulted in slightly increased projected values and, therefore, did not change EPA's conclusion that the discharges of copper and zinc from the Facility have reasonable potential to cause or contribute to an exceedance of water quality standards. Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements that are necessary to achieve water quality standards established under CWA § 303 and must contain WQBELs for any pollutants or pollutant parameters that the permitting authority determines are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above WQSs. *See* 40 CFR § 122.44(d)(1)(i). EPA applied the acute salt water quality criteria for copper and zinc at Outfall 001 because a dilution factor of 1 is appropriate for the Chelsea River. *See* Responses to Comments F.21, G.20. For this reason, the Final Permit retains the water quality-based effluent limitation for copper and zinc at Outfall 001.

EPA received identical comments on the applicability of the iron acute criterion, *see* Comment F.12, and has removed the iron limits from the Final Permit for the reasons discussed in Response to Comment F.12. Since iron continues to be a pollutant of concern based on the potential for the discharge of iron-contaminated groundwater and the presence of high (albeit, non-toxic) concentrations of iron, the numeric limit was replaced with a monitoring requirement in the Final Permit. The Final Permit aims to control iron discharges through the prohibition of contaminated groundwater and BMPs. Specifically, Part I.B.2.h. prohibits the discharge of contaminated groundwater and the BMP at Part I.C.1.a.(9) requires the Permittee to evaluate for the presence of non-stormwater discharges (e.g. contaminated groundwater) and eliminate them. EPA finds that proper implementation of this BMP will protect WQSs.

Comment G.13 – New Monitoring Requirements for PFAS

The Draft Permit and MassDEP Permit includes quarterly monitoring and reporting requirements for Per- and polyfluoroalkyl substances (PFAS) for Outfall 001 including the followings:

- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorononanoic acid (PFNA)

[141] A No Discharge Indicator (or NODI) Code indicates that there was no discharge from the outfall (for example, due to frozen conditions) while a "0" value would indicate that there was a discharge and the concentration was 0. Including zero values for sample dates when there was no discharge underestimates the 95th percentile concentration based on observed values.

- Perfluorooctanesulfonic acid (PFOS)
- Perfluorooctanoic acid (PFOA)
- Perfluorodecanoic acid (PFDA)

In the Fact Sheet, EPA states that the purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this Facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a Facility-specific basis. The Facility objects to the proposed monitoring and reporting requirements for the following reasons:

Requiring PFAS monitoring is premature:

The Permit Fact Sheet cited Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) as "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife." However, neither MassDEP nor EPA have established toxicity risk level of PFAS in the surface water for human, aquatic life or wildlife. Even though Massachusetts passed a revision to 310 CMR 22.00: Drinking Water Regulation that set a new PFAS Maximum Contaminant Level (MCL) of 20 ppt (ng/L) for the sum of the concentrations of six PFAS compounds, we believe that requiring monitoring of PFAS is premature at this time.

Approved standard sampling and analyzing method not available:

In the Draft Permit, EPA imposes sampling requirements for PFAS compounds in the discharges from the Facility. EPA has not yet approved any analytical methods for PFAS in those media. Therefore, EPA provides a compliance schedule, so that the testing requirements do not apply until "6 months after EPA's multi-lab validated method for wastewater and biosolids is made available to the public on EPA's CWA methods program website." This requirement is problematic as it is not tied to actual formal EPA approval of the analytical methods. The act of EPA making a method "available to the public" on its website is not sufficient to make that method legally enforceable. The Agency needs to issue a formal proposal to approve the method under 40 CFR Part 136, take public comments, and then make a considered decision as to whether that method should be approved as having met all of the requirements of 40 CFR Part 136. Until that process has been completed, the Agency cannot require the permittee to start monitoring, using an unapproved method.

EPA tries to justify this requirement by citing a provision in its regulations that allows EPA to require monitoring using a method specified in the permit. That provision applies when the Agency actually specifies a specific method in the permit. It does not apply to this case as the Draft Permit does not specify a particular method given that there is no approved method ready to implement in permits. EPA cannot, after the permit is issued, announce a method on its website and then claim that that method was somehow incorporated in the permit that was issued earlier. To address this issue, EPA should simply amend the Draft Permit to clarify that the PFAS sampling and analyzing requirements will not become effective until after EPA has formally approved applicable methods under 40 CFR Part 136.

In addition, MassDEP requires in its permit that although PFAS sampling is suspended pending issuance of an EPA approved method, if the method is not available by two (2) years from the effective date of the NPDES permit, the Facility shall conduct monitoring of the effluent for PFAS compounds using a method specified by MassDEP. If no EPA method is approved within twenty (20) months after the effective date of the NPDES permit, the Facility must contact MassDEP (massdep.npdes@mass.gov) for guidance on an appropriate analytical method. Again, this requirement places an unnecessary burden on the permittee to monitor when EPA releases a method on its website, rather than notice by the agencies to all permit holders of the necessary next steps.

Request:
The Facility requests that EPA delete quarterly monitoring and reporting for PFAS effluent from the Facility (Outfall 001) until six (6) months after EPA has formally approved applicable test methods under 40 CFR Part 136.

The Facility also requests that MassDEP delete the quarterly monitoring and reporting for PFAS effluent from the Facility (Outfall 001) until six (6) months after EPA has formally approved applicable test methods under 40 CFR Part 136.

In the alternative, the Facility requests that the Draft Permit and MassDEP Permit be amended to include that EPA and MassDEP will issue written notice to the permit holder upon approval of the sampling method for PFAS effluent and the compliance schedule to implement such testing.

Response to Comment G.13

The comment objects to the PFAS monitoring requirements in the Draft Permit. EPA addressed identical comments in Response to Comment F.13.

Comment G.14 – New Monitoring Requirements for Turbidity

Part I.A of the Draft Permit requires monitoring and reporting requirements for turbidity for the first time. The Facility takes exception to the new requirements. The discharges from Outfall 001 are predominantly stormwater runoff rather than from industrial activities. Additionally, as noted in page 23 of the Fact Sheet, total suspended solids (TSS) may be used as an indicator of the turbidity (i.e., turbidity increases as the TSS increases). The Facility has complied with the monitoring and requirements for total suspended solids (TSS) and EPA has determined that "[o]perations at the Facility remain consistent with the conditions under which the technology guidelines promulgated at 40 CFR § 423 can be achieved" as stated in pages 22-23 of the Fact Sheet. The Facility fails to understand EPA's rationale for adding turbidity monitoring given that existing effluent data of TSS from the Facility is more than sufficient, and routinely below permit limits regarding both daily maximum and monthly average.

In addition, stormwater discharges from Municipal Separate Storm Sewer System (MS4) outfalls constitute the majority of point source stormwater flow, including TSS, to the Chelsea River. Based on these facts, the Facility requests that the monitoring requirement for turbidity be removed from the Draft Permit and keep using TSS monitoring to determine if discharges of

turbidity from the Facility cause, or have the reasonable potential to cause, or contribute to an excursion above State WQSs.

Request:
The Facility requests that EPA removes the new monitoring requirements for turbidity from [sic].

Response to Comment G.14

EPA has responded to similar comments objecting to turbidity monitoring and reporting requirements. See Response to Comment F.14. EPA has also responded to similar comments objecting to new monitoring requirements for other parameters, see Responses to Comments F.5, F.10, and F.15.

As EPA stated in the Fact Sheet, turbidity is a pollutant of concern under State WQSs for color and turbidity at 314 CMR 4.05(4)(b)6, for aesthetics at 314 CMR 4.05(5)(a) and for bottom pollutants or alterations at 314 CMR 4.05(5)(b). The Commonwealth has specifically listed turbidity as a cause of the aesthetics and primary and secondary contact impairments in the Chelsea River and determined that it is a pollutant requiring a TMDL. In addition, the Facility operation involves the treatment of solids and has previously exceeded the TSS limit, see Fact Sheet, Appendix A, which is a technology-based limit.[142] Turbidity has not been previously monitored for any outfall at this facility; collection of turbidity monitoring data will be used to determine if discharges of pollutants from the Facility cause, or have the reasonable potential to cause, or contribute to an excursion above the State WQSs impacted by turbidity, in accordance with 40 CFR § 122.44(d)(1)(ii).

Comment G.15 – New Monitoring Requirements for Chemical Oxygen Demand (COD)

Part I.A of the Draft Permit requires a monitoring and reporting requirement for COD for the first time. The Facility takes exception to the new monitoring requirements. The discharges from Outfall 001 are predominantly stormwater runoff rather than from industrial operations. Municipal Separate Storm System (MS4) outfalls constitute the majority of point source stormwater flow to the Chelsea River. As EPA has failed to identify that the impairment of dissolved oxygen on the receiving water results from industrial activities at the Facility and there is no evidence to suggest that the Facility is or has been a source, the Facility fails to recognize any reasonable rationale and regulatory bases for the imposition of new monitoring requirement for COD.

Request:
The Facility requests that EPA removes the new monitoring requirements for COD from the Draft Permit.

[142] It is not clear to EPA what point the comment is trying to make by quoting the statement on page 31 of the Fact Sheet that "operations at the Facility remain consistent with the conditions under which the technology guidelines promulgated at 40 CFR § 423 can be achieved." *See In re Town of Westborough*, 10 E.A.D. 297, 304 (EAB 2002) (EPA is not required to "guess the meaning behind imprecise comments."). EPA notes that the quoted statement was made in the context of supporting the appropriateness of the technology-based TSS limits in the permit.

Response to Comment G.15

EPA has responded to similar comments objecting to the chemical oxygen demand monitoring requirements in Response to Comment F.15. Dissolved oxygen is a cause of impairment in the Chelsea River requiring a TMDL. Based on the Chelsea Sandwich Application, COD in the effluent was measured at 34 mg/L. The facility has not otherwise collected and provided data on COD in the effluent discharge. Further monitoring is necessary to evaluate the potential for the effluent from the Facility to cause or contribute to receiving water conditions below the DO criteria. *See also* Responses to Comments F.5, F.10, F.14.

Comment G.16 – New Monitoring Requirement for Temperature

New monitoring and reporting requirements for temperature were imposed in Part I.A.1 of the Draft Permit for the first time. The Facility objects to the newly added monitoring and reporting requirement for the following reason:

Reasonable potential does not exist for thermal impacts on the receiving water:

Temperature was not named as a cause of impairment for the Chelsea River in accordance with the MassDEP's 2016 Integrated List of Waters. As noted in page 28 of the Fact Sheet, EPA has determined that there is no measurable thermal effluent discharged to the Chelsea River from the Facility. All the previous EPA analyses, based on either additional temperature monitoring data to evaluate actual conditions or critical low flow conditions when calculating instream temperature to obtain maximized potential thermal impact on the Chelsea River, has demonstrated that the blowdown generated by the two boilers with the temperature ranging from 100 to 170 degrees Fahrenheit has negligible effects on the temperature of comingled effluent in the OWS. The effluent temperature is between 74.40 and 76.46 Fahrenheit, which does not exceed 85 degrees Fahrenheit and will not raise the temperature of the Chelsea River 1.5 degrees Fahrenheit or more, as stated in page 28 of the Draft Permit. Given that it is merely possible to have thermal impact on the receiving water from the Facility, even under extremely overestimated scenarios, the permittee fails to recognize any imperative needs for an increase of monitoring and reporting requirement, which requires additional cost and effort from which there is no commensurate water quality benefit. There is no basis for EPA, in conjunction with the sources of information discussed above, to further expand investigation of the thermal impacts on the receiving water – particularly one in which temperature is not impacting the designated uses.

Request:
The Facility requests that EPA eliminate the monthly monitoring and reporting requirement for temperature from the Draft Permit.

Response to Comment G.16

The Fact Sheet (p. 21) explains that the Facility discharges a small volume of boiler blowdown and steam condensate, necessitated by the storage of No. 6 fuel oil, the viscosity of which can be affected by ambient temperatures. The boiler blowdown and steam condensate discharge enters the stormwater conveyance system, comingles with stormwater and groundwater remediation effluent, and receives treatment through the oil/water separator prior to entering the Chelsea River. EPA explained that the comingling of the relatively small volume of boiler blowdown (typically 55 gallons per day) with the stormwater prior to entering the oil/water separator reduces the temperature of the effluent. *See* Fact Sheet pp. 28-29. EPA determined that even under worst-case conditions (e.g., maximum volume of 200 gallons and temperature of 170°F) the boiler blowdown will not result in an exceedance of the water quality standards. *Id*. p. 29. For these reasons, and in consideration of the comment, EPA has determined that temperature monitoring is not necessary at this time. The Final Permit eliminates temperature monitoring.

Comment G.17 – Ambient Characteristic (WET) Testing for Additional Parameters

Part I of the Draft Permit incorporates new monitoring and testing requirements for additional parameters (i.e., salinity, ammonia nitrogen, total cadmium, total copper, total nickel, total lead, total zinc, pH, and temperature) in the receiving water body. Although the Facility understands EPA's goal of acquiring additional information regarding the water body, the parameters are unrelated to the Facility's discharge.

Request:
The Facility requests that if, following the first required WET Test, it is shown that the discharge from the Facility has the same or greater survivability of the target species than that of the Receiving Water, the proposed quarterly testing should be changed to require testing only annually.

Response to Comment G.17

EPA addressed the issue of "new monitoring and testing requirements" associated with ambient monitoring in Response to Comment F.17, which is identical to the comment above. Briefly, the parameters listed in the comment are the standard chemical analysis in the Marine Acute Toxicity Test Procedure and Protocol and were requirements of the 2014 Permit. *See* Attachment A to the 2014 Permit and Draft Permit (p. 8).

The comment also requests that the monitoring frequency for WET testing be changed from quarterly to annually. The 2014 Permit required quarterly, acute WET testing for the first three years of the permit followed by annual monitoring. *See* 2014 Permit Part I.A.1 fn 13. Monitoring data collected under the 2014 Permit indicate that the LC50 was equal to or greater than 100% in each of the tests completed for both species. *See* 2021 Fact Sheet p. 44 and Appendix A. Given that there has been no toxicity and because the monitoring frequency during the last permit term was reduced to an annual basis, EPA does not see a reason to increase the monitoring frequency to quarterly in this permit. Annual WET testing is also consistent with the requirements for the other bulk oil terminals located on the Chelsea River. EPA has revised the Final Permit to require WET testing at Outfall 001 on an annual basis.

Comment G.18 – Sample Frequency

As the Draft Permit includes new or additional monitoring requirements (e.g., Chemical Oxygen Demand, Temperature, PAHs, TRC, Copper, Zinc, Iron, Free Cyanide, Total Ammonia), the Facility requests that if the frequency of any monthly or sub-monthly (e.g., twice monthly for turbidity) sample parameter reported by the analyzing laboratory as not detected in the discharge over a twelve (12) month sampling period, such parameter should be automatically amended to require only quarterly sampling.

Response to Comment G.18

EPA addressed the issue of sample frequency in Response to Comment F.19, which is nearly identical to the comment above.

Comment G.19 – Reasonable Potential Analysis

The mass balance equation used by EPA in the reasonable potential analysis for calculating downstream effluent concentration is inaccurate. In Appendix C, the equation was expressed as below:

$(DF-1) + C_e = C_d(DF)$ (1)

where C_d is downstream effluent concentration; C_e is estimated 95th percentile of effluent concentration; *DF* is dilution factor.

Equation (1) is apparently incorrect by the mismatched unit among each term. C_e and C_d have a unit of concentration (e.g., µg/L or other concentration units), while *D*F is a ratio between total flow and effluent flow and is unitless. The correct equation, which has been provided in multiple EPA documents (e.g., EPA 2010 NPDES Permit Writers' Manual and EPA 1991 Technical Support Document for Water Quality-based Toxics Control), is as follow:

$C_d = C_a + (C_e - C_a)/DF$ (2)

where C_a is ambient concentration. If there is no available dilution (i.e., DF=1), the receiving water concentration downstream of the discharge (C_d) is equal to the effluent concentration (C_e), as stated in Appendix C (page 102 of the Fact Sheet). Although using the incorrect Equation (1) does not affect the calculation of downstream concentration presented in page 104 of the Fact Sheet as the two equations yield the same results (i.e., mathematically equivalent) if and only if DF equals to one, Equation (1) is basically invalid due to the mismatch of unit as mentioned above. After a careful investigation, it was found that Equation (1) can be derived from Equation (2) by assigning C_a equal to 1. However, EPA has failed to provide further details of this derivation if it is the case. Regardless, applying Equation (1) to any conditions with dilution allowance (i.e., DF>1), which is one essential request from the Facility (see comments above), will certainly leads to seriously biased estimates on downstream concentrations.

Request:

The Facility requests that the reasonable potential analysis be re-evaluated prior to imposing the effluent limits for the pollutant listed in this section, by taking the dilution allowance into account.

Response to Comment G.19

EPA addressed the issue of reasonable potential in Response to Comment F.20, which is nearly identical to the comment above.

Comment G.20 – Dilution Factor

In Section 4.3 of the Fact Sheet, EPA erroneously stated that the State of Massachusetts determined that the dilution factor for the Facility is zero and applied the zero-dilution scenario in the reasonable potential analysis (Appendix C of the Draft Permit, (i.e. dilution factor ($DDDD$) equals to 1). EPA's rationale for applying zero dilution to the Facility's discharge is based on Section 4.3 of the Fact Sheet in accordance with the State's WQSs (i.e., 314 CMR 4.03(3)(c) and 314 CMR 4.03(3)(d)).

However, EPA misinterpreted the State's approach to establish quantitative derivation of WQBELs. Although the State may determine WQBELs to be at least equivalent to that provided for rivers and streams, this only applies to parameters with WQBELs based on human health-based criteria. In the Draft Permit, the WQSs applied to derive WQBELs for the pollutants discussed in this section are water quality criteria for aquatic life in saltwater (i.e., EPA 2002 National Recommended Water Quality Criteria and 1989 Ambient Aquatic Life Water Quality Criteria for Ammonia – Saltwater). This suggests that a dilution factor should apply. See 314 CMR 4.03 (a) "*For rivers and streams, the lowest flow condition at and above which aquatic life criteria must be applied is the lowest mean flow for seven consecutive days to be expected once in ten years. When records are not sufficient to determine this condition, the flow may be estimated using methods approved by the Department.*"

Request:
The Facility requests that EPA establish dilution factors when determining reasonable potential for parameters with WQBELs based on aquatic life criteria.

Response to Comment G.20

EPA addressed the issue of the dilution factor in Response to Comment F.21, which is nearly identical to the comment above.

Comment G.21 – Reopener Provision

As the Draft Permit incorporates provisions to re-open the final permit to allow modification at any time pursuant to 40 CFR § 122.62. Section 122.62 provides wide-ranging authority to reopen a permit for modification, including among other things substantial alteration to a facility, new information regarding operations, promulgation of new standards or regulations, judicial decision and detection of non-limited pollutants above levels that can be achieved by appropriate

technology-based treatment methods. A modification can be either minor, which does not require a new draft permit or public comment period upon the consent of the permittee, or require the more burdensome issuance of a new draft permit if the modification does not qualify as minor under 40 CFR § 122.63. Section 122.62 also allows reopening in limited circumstances, such as noncompliance, for revocation or reissuance. As Section 122.62 provides wide discretion for EPA to reopen the permits for a wide variety of reasons, the final permit should contain a provision that EPA will notify a permit holder prior to reopening a permit, allowing for discussion and comments on the rationale for reopening, the nature of proposed revisions and the potential to resolve a proposed revision as a minor modification, prior to a decision to issue a draft permit.

Response to Comment G.21

EPA addressed the issue of the reopener provision in Response to Comment F.22, which is nearly identical to the comment above.

Comment G.22 – Watershed Based NPDES Approach

Part I.C.1.b(3) of the Draft Permit and Section 5.3.1 of the Fact Sheet discusses the institution of BMPs necessary to achieve effluent limitations. At page 50 of the Fact Sheet, EPA request comment on the option to require the Facility to coordinate its discharge with other similar facilities in the vicinity. The Facility does not believe that this type of coordination is practical or provides a water quality benefit to the receiving water body.

First, the Facility does not recognize any regulatory bases associated with the control of stormwater discharge associated with tides (e.g., EPA 2010 Permit Writer's Manual; EPA 2015 Water Quality Standards Handbook; EPA 2004 Technical Support Document for Effluent Guideline Program Plan; EPA 1991 Guidance Manual for the Preparation of NPDES Permit Applications for Stormwater Discharges Associated with Industrial Activity; EPA 1991 Technical Support Document for Water Quality-based Toxics Control).

Second, while the Facility has some ability to retain stormwater runoff generated from small storm events prior to discharge, this ability is not absolute, especially during large storms exceeding retention facilities' storage capacity, thus it is not practical to always stagger discharges. In the events of large storm with long duration, facilities may need to discharge for multiple days following such an event. Delays necessary to stagger discharges could result in unsafe quantities of stormwater being retained at a facility should another significant storm occur. Further, as there are multiple facilities discharging to the Chelsea River, it is not clear how a coordinated system could be practically implemented that would allow for discharges from each facility in manner that is safe for operations. Taken with previous Comments #5 and #6 above, the requirement to avoid discharges during periods of slack tide and coordination of discharges with other facilities makes the ability to discharge the required volumes of stormwater virtually impossible.

Third, it is not clear that staggering stormwater discharge would provide any meaningful environmental benefit as the impairments are related to long-term cumulative effects as well as

historical discharges. There is no clear correlation between water quality degradation in the receiving water and wet weather discharges from the facilities along the Chelsea River. In addition, the State determined the dilution factor is zero based on the human health based criteria. This basically means there is no environmental benefit by stagging the discharge as the receiving water quality will be the same as the discharges.

Fourth, this facility's outfall discharges to the river bank abutting the Vessel Dock which is located at the confluence of the Mystic River, Boston Harbor and Chelsea River. The discharge is downstream of the Chelsea River's last hydraulic restriction point at Andrew McArdle Bridge. At this location, there is minimum hydraulic impact from the upstream discharge from other facilities.

Request:
The Facility requests that the prohibition in Part I.C.1.b(3) regarding coordination of discharges be deleted from the Draft Permit.

Response to Comment G.22

EPA has addressed similar comments about coordinating discharges from multiple facilities on Chelsea River in Response to Comment F.23. EPA explains in that response that the requirement to coordinate discharges with other facilities has been removed in the Final Permit.

Comment G.23 – Major Storm Events

Section 5.3.1 of the Fact Sheet requests comment on whether it is appropriate for the Draft Permit to require implementation of enhanced controls to minimize impacts from stormwater discharges from major storm events. Notwithstanding that it is unclear what would constitute a major storm event, the Draft Permit provides substantial requirements for the control and treatment of stormwater. Further, the Facility maintains a Spill Prevention and Control Plan (SPCC) and is required to maintain a Stormwater Pollution Prevision Plan (SWPPP – Section 5.3.2 of the Fact Sheet) which provides for, among other things, operations and preparations before and during storm events. The requirement for the SPCC and SWPPP Plans provide for the necessary planning and controls during the term of Draft Permit.

As described in Section 3.2 of the Fact Sheet, the Facility is already equipped with four additional tanks in the terminal yard constructed with individual containment structures. Each is equipped with a floor drain plug or control valve that can be manually operated to gravity drain stormwater to the OWS. Stormwater collected on the parking lot and paved area of the terminal yard can be, if necessary, stored in nearby catch basins by closing an independent gate valve leading to the OWS. Two of the seven truck pump-off stations in the terminal yard are equipped with a concrete containment structure designed to collect minor leaks that may occur during fuel transfer. Stormwater collected in the concrete containment structure of one of these stations is confined inside the secondary containment and has no drainage provisions. The remaining stations are associated with individual tanks and are rarely used. Stormwater runoff from the paved truck loading rack area (approximately ½ acre) flows to a perimeter drain that encompasses approximately two-thirds of the loading area. A canopy roof covering the truck

loading rack directs precipitation away from loading equipment towards and into the perimeter drains. Stormwater runoff that is not captured by the perimeter drain travels toward lower elevation catch basins located in the vicinity of the loading area. The stormwater runoff collected by the perimeter drain enters the underground stormwater conveyance system via a manway located near the entrance of the foam house. This man way also acts as an isolation point for the perimeter drains.

Further, the Facility includes a number of operational requirements for storm events, including the isolation of chemical supplies (containers 55 gal or smaller) by placing them inside enclose roofed areas or sea containers having built in secondary containment, isolation of hazardous waste storage areas by placing waste in sea- containers having built in spill containment and prompt attention to any minor spills and/or leaks, which are cleaned promptly using dry methods (e.g. speedy dry or absorbents pads).

In the event of a potential storm event, the Facility also takes the following actions:

- Monitor the National Weather Service and Local TV/Radio stations on the internet or radio or TV to identify potential events.
- If flooding conditions are predicted, discharge all standing water in containment structures, if possible.
- Inspect the OWS for the presence of oil; remove if present (note: oil is rarely present in any of the OWS structures).
- Inspect the terminal yard for any containers/structures that could become dislodged during a flooding event and secure or remove.
- If the loading/unloading areas become flooded, all loading/unloading operations should be suspended.
- Notification to customers not to send trucks or vessels to the facility until they receive confirmation that flooding has abated, as appropriate.

There is minimal environmental benefit to control the discharge during major storm events as minor volumes of pollutants (if any) are typically washed off during storm's first-flash (runoff generated from either during first hour of the storm event or first inch of the total rainfall). The major events often have a long duration and/or greater total rainfall volume. The runoff water quality after the first flush typically contain less pollutants and often dilute or flush the potentially more-impacted first flush downstream.

With little or no environmental benefit, the requirement for extremely complex operational and coordination requirements necessary to implement additional controls, the Facility does not believe that further controls differentiating major storm events is necessary in light of the preparations provided in the SPCC and SWPPP Plans.

Response to Comment G.23

EPA addressed the issue of major storm events in Response to Comment F.24, which is nearly identical to the comment above. *See also* Responses to Comments in A.2. The permittee is required to document the control measures that meet the requirements of the major storm and

flood events BMP and may include existing planning and controls that satisfy relevant portions of this provision.

Comment G.24 – Using 100 year flood as base flood elevation

In addition to the above, Section 5.3.1 of the Fact Sheet (page 51) requests comment on whether it is appropriate to use the FEMA "Special Flood Hazard Area" (i.e. the 100-Year Flood) as the base flood elevation (BFE). Notwithstanding that no additional requirements are necessary for major storms as discussed above, the Facility does not object to the identification of the BFE using the 100-year storm and requiring the SWPPP Plans to identify measures taken or to be taken in these areas of the Facilities.

Response to Comment G.24

EPA addressed the issue of relative base flood elevation in Response to Comment F.26, which is nearly identical to the comment above. *See also* Responses to Comments A.2.C, A.2.D.

Comment G.25 – Compliance Schedules

The Draft Permit requires new limitations for among other parameters, Fecal Coliform, Enterococcus, Benzene, PAHs, metals and TRC. Notwithstanding comments elsewhere in this document where the Facility provides the basis for removal/modification of the limitations for these parameters, in the event that EPA continues to include new limitations, the Facility requests that EPA develop, with the Facility, a compliance schedule for each parameter that takes into account aspects such as engagement of engineering services, conducting studies to support engineering design, performing necessary engineering designs, contracting for the upgrades and construction.

Response to Comment G.25

EPA addressed the issue of compliance schedules in Response to Comment F.26, which is identical to the comment above.

Comment G.26 – Other comments and requested clarifications

> CORRECTION NEEDED: Page 10, Footnote 12. Outfall 001 has multiple PAH compounds with an effluent level (0.018 ug/L) lower than the Method Limit (ML) of 0.1 ug/L. The corresponding footnote for Outfall 001 indicates the Compliance Limit (CL) for benzo(a)pyrene is the ML; however, the footnote omits similar language for the other PAH compounds. The Facility requests the footnote by updated to reflect the CL for all PAHs is the ML.
> CLARIFICATION NEEDED: Page 10, Footnote 13 – Total Residual Chlorine (TRC) sampling is only required for discharges that have previously been chlorinated or "that contain residual chlorine". Notwithstanding other comments in this response, please clarify how a Permittee is to know whether a discharge of non-chlorinated water contains residual chlorine necessitating the sampling.

CLARIFICATION NEEDED: Also, with respect to Footnote 13 for Outfall 001, the Method Limit provided for TRC in Appendix A needs to be updated to be consisted with the level listed in this footnote.
CORRECTION: C(1)(b)(8) – The first paragraph references an internal Outfall 003 instead of the correct Outfall 002.
CLARIFICATION: C(1)(b)(5) – The Facility does not understand the inclusion of ethanol in this requirement. The requirement appears to be stating a Best Management Practice (BMP) is required for treatment of ethanol and fire-fighting foam used in spill and fire control. Ethanol is not used for fire control. The Facility requests that ethanol be removed from this requirement.
COMMENT: C(1)(b)(6) – The term "Materials" is too general and will create issues when conducting activities related to flood resiliency. We request that "Materials" be defined as oil and/or hazardous materials.
COMMENT: C(1)(b)(6)(iii) – The term "storm" is too general a term to be used in a requirement that attempts to prevent deliveries of materials to the facility, a vital activity for Facility operation. The Facility requests that in this subpart the term be defined as : 1) a hurricane; or 2) storm surge/flood event that will impact the area of delivery. "Extreme/heavy precipitation" should be removed, as deliveries can occur safely during periods of heavy precipitation where delivery areas are not flooded. The Facility believes the intent of this section of the permit is to prevent releases from damages caused by major storm events that contain a flooding component. The Facility additionally asks that the 48 hours be reduced to 12 hours; this still achieves the purpose of this section of the permit and reduces the impact of the section on business operations.
COMMENT: C(1)(b)(6)(iv) – Sections (iv) – (vi) use the term "temporarily" without any detail regarding the length of time considered. These sections should be modified to reflect the listed measures are to be considered/addressed when flooding of an area is anticipated.
COMMENT: C(1)(b)(6)(iv) – Section (ii) allows the BMP to address flood impacts to semi-stationary structures through securing of the structures or elevating them above Base Flood Elevation (BFE). Section (iv) conversely indicates the BMP must indicated that materials and waste must be "temporarily" stored above the BFE level (assumed during a flood event). This section should be modified to recognize that securing of structures is an acceptable BMP practice.
COMMENT: C(3) – Remove reference to "Outfall 05 to Sales Creek" as this language appears to be a typographical error (carryover text from Revere Terminals draft permit).
COMMENT: C(3)(b)(1)(i) – The Facility does not understand why testing of the fill source water is required if the source is potable municipal water. Furthermore, if required, and the fill source water sample is found to be above permit effluent levels, the Facility asks for clarification whether discharging of hydrotest water at concentrations at or below this "background" level is allowed?
COMMENT: C(3)(b)(1)(iv) - This requirement that three samples be collected from the discharge of hydrostatic test water is excessive for smaller above-ground storage tanks. The Facility requests that one sample is sufficiently representative for smaller tanks, and requests that this section allow one sample for tanks of 50,000 gallons or less.
COMMENT: C(3)(c) – The Facility does not understand the rationale for requiring cadmium, copper, lead nickel and zinc for hydrotest water characterization, when the

majority are not contaminants of concern for petroleum fuels used in the tanks/pipelines (or especially in tanks/pipelines that have not been put into service yet). TPH and BTEX are sufficient analytes to assess the quality of the hydrotest water being discharged. COMMENT: C(5) – Stormwater transfers are not applicable at this facility (text should be removed).

As requested above, the Facility believes that EPA and MassDEP should revise the Draft Permit. The Facility looks forward to working with EPA and MassDEP to resolve the above issues and develop a final permit that is protective of the Chelsea Creek and sustainable for the Facility.

Response to Comment G.26

EPA addressed the terms cited by the commenter in Response to Comment F.28, which is nearly identical to the comment above. In response to this comment, EPA addresses the unique points of correction and clarification applicable to the Draft Permit for Chelsea Sandwich.

Page 10, Footnote 12 – EPA received many comments about the appropriate Minimum Level (ML) and compliance levels for PAHs. The compliance level for all PAHs has been revised in response to this and other comments. See Responses to Comments A.3, F.8, G.8, H.3, and J.10.

Part I.C.1.b.8 – The Final Permit was revised to correct the error referencing internal Outfall 003.

Part I.C.3 –The Final Permit was revised to omit the reference to Sales Creek and Outfall 005. As the comment points out, this reference was made in error.

Part I.C.5 – The Final Permit was revised to omit the requirements for stormwater transfers. As the comment points out, these requirements do not apply to this Facility.

Comments from Sunoco Partners Marketing and Terminals L.P. (Sunoco)

Comment H.1 - Bioassessment

The Draft Permit requires Sunoco to "design and implement a bioassessment to characterize the extent to which, if any, pollutants discharged from the Facility to the receiving water affect the benthic morphology, substrate, and/or biota."[1] That bioassessment consists of (1) water column characterization, (2) benthic morphology characterization, (3) substrate characterization, (4) benthic pollutant analysis, and (5) qualitative biological monitoring, followed by preparation of a summary report. This requirement exceeds the Agency's information gathering authority under Section 308 of the CWA.[2]

The Fact Sheet begins its discussion of EPA's authority to include a bioassessment requirement in the Draft Permit by noting that the state has designated the Chelsea River as a Category 5 water requiring a Total Maximum Daily Load (TMDL).[3] The company applauds that commitment and appreciates that a bioassessment of the kind included in the Draft Permit, which characterizes existing conditions regardless of the source of any particular impairment, likely will be an important component of that effort. Sunoco looks forward to providing input into that effort when it begins.

A TMDL, however, is not an "effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance under this Act" as those terms are defined by the statute and used in Section 308. Therefore, information gathering solely in support of TMDL development is not an activity that is authorized by Section 308(a)(1).

The Fact Sheet suggests another basis, referencing various state water quality standards related to benthic conditions. These include the narrative criterion for bottom pollutants or alterations that appears at 314 CMR 4.05(5)(b), and the narrative criterion related to the accumulation of pollutants that appears at 314 CMR 4.05(5)(e)(3). Part I.A.2 of the Draft Permit applies these water quality standards to the company's discharge as effluent limitations.

Sunoco agrees that, in appropriate circumstances, the presence in a permit of effluent limitations relating to the condition of sediment or the benthic community can be the basis for EPA to impose sediment study requirements whose purpose is to determine whether the permittee "is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; . . .."[4] This, however, is not such a case. The condition of sediment and the benthic community in the portion of the Chelsea River abutting the Company's outfall is a function of many influences beyond the facility's discharge. These include contemporary discharges from other industrial sources as well as historic discharges from upstream sources. Importantly, existing upstream sources include three other petroleum product terminals, the constituents of whose discharges likely are effectively indistinguishable from the constituents of the discharge from Sunoco's facility. The existence and long operation of these effectively identical upstream dischargers within one river mile of Sunoco's outfall will confound the ability of the proposed bioassessment to discern whether Sunoco itself, the subject of the Draft Permit, is or is not in violation of the narrative criteria cited in the Fact Sheet. The confounding influence of these upstream dischargers is not remedied

by the repeat bioassessment in Year Four, as any changes in the condition of the sediment or the benthic community between the first and the second assessment are equally subject to influence by upstream sources.

Given the existence of these confounding factors, the purpose of the bioassessment cannot accurately be described as to determine whether Sunoco is in violation of its effluent limitations, including those narrative criteria cited in the Fact Sheet. As a result, Section 309(a)(2) cannot provide authority for the bioassessment provision in the Draft Permit and that provision should be removed from the final permit.[5]

[1] Draft Permit at Part I.C.5.
[2] 33 U.S.C. 1318.
[3] *Massachusetts Year 2016 Integrated List of Waters*. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; December 2019. https://www.mass.gov/lists/integrated-lists-of-waters-related-reports#2016-integrated-list-of-waters-
[4] 33 U.S.C. 1318(a)(2).
[5] No other authority for the bioassessment provision in the Draft Permit is provided in the Fact Sheet. If there are other grounds that the Agency would cite, 40 CFR 124.56 requires that they be described in the Fact Sheet. In such a situation, the permit should be re-noticed so that Sunoco has an opportunity to comment on those other assertions of authority.

Response to Comment H.1

The comment first asserts that CWA § 308 does not authorize EPA to require a permittee to gather information "solely in support of TMDL development" because a TMDL is not an "effluent limitation or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance" as those terms are used in section 308. Consequently, reasons the commenter, the bioassessment provision exceeds EPA's authority. The comment's emphasis on TMDL development is misplaced. The permit provision is not focused on TMDL development. Rather, as EPA has explained, its purposes are to determine whether a permittee is in violation of any existing permit limit or condition; to assist in the development of any future permit limits or conditions; and to carry out CWA § 402, all of which fit squarely within the authority granted to EPA in § 308. 33 USC §§ 1318(a), 1342(a)(2); Sunoco Fact Sheet at 53-55; Response to Comment F.3.[143]

Conceding that § 308 does authorize EPA "to impose sediment study requirements whose purpose is to determine whether the permittee 'is in violation of'" limits or conditions "relating to the condition of sediment or the benthic community," the commenter next asserts that confounding factors will prevent EPA from using the bioassessment results to determine whether Sunoco "is or is not in violation of the narrative criteria cited in the Fact Sheet." As an initial matter, this comment fails to address an additional basis for including information gathering requirements in NPDES permits that Section 308(a) provides to EPA—that is, "to develop[] or assist[] in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance." As noted in Response to Comment F.3, the bioassessment provision will assist EPA in considering whether new limits and

[143] In addition, we note that wasteload allocations—which, along with load allocations, make up a TMDL—are "a type of water quality-based effluent limitation." 40 CFR § 130.2(h).

conditions should be contemplated for regulated pollutants (e.g., metals or PAHs) in future permitting cycles and, if so, provide EPA with information to develop them.

Furthermore, EPA does not agree that the bioassessment provision will not provide EPA with information to determine whether existing permit limits or conditions are being violated. The permittee points to the fact that the condition of sediment and the benthic community in the portion of the Chelsea River abutting the Company's outfall is a function of many influences beyond the facility's discharge. EPA agrees that the condition of the sediment is likely influenced by a range of factors. Through the design of the bioassessment monitoring program and the location of monitoring stations in the proximity of the Sunoco outfall, EPA's objective is to minimize the collection of bioassessment data that may exclude the influence of the Facility's discharge and instead collect information focused on the potential ongoing impacts to the sediment in place from Sunoco's stormwater discharge. In general, monitoring in the vicinity of a facility's outfall is routinely used in NPDES permits to determine whether the discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom, or shall be free from settleable solids in concentrations or combinations that would impair any use assigned to the receiving water. Response to Comment F.3 lists NPDES permit requirements for three facilities that incorporate benthic monitoring in the vicinity of the outfall to ensure the discharge is not violating water quality standards.

In a dynamic estuarine environment like the Chelsea River, which has been subjected to anthropogenic environmental stress for over 100 years, EPA understands that it is unlikely to isolate only the impacts to the existing sediment from the Sunoco outfall. The bioassessment program, as stated above, is designed to monitor sediment in the zone most likely influenced by the Facility's discharge. However, it is not EPA's intent to determine historical sources of the pollutants in the sediment or water column. Rather their contribution in the receiving water and sediment cannot be ignored and will inform EPA as to whether there are ongoing impacts from the Facility and whether the permit limits require modification for this specific Class SB receiving water. This is also discussed in Response F.3

Comment H.2 – Flooding

The Draft Permit contains a general requirement for the permittee to "implement structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation and flood events."[6] The Draft Permit then establishes a separate requirement that facilities design and install or implement eight additional enumerated control measures if the facility "may be exposed to or has previously experienced such major storm events."[7] These terms are problematic for a number of reasons.

Inconsistency with Other Current Agency Positions

These provisions of the Draft Permit could be read to require facilities to make structural improvements to protect stormwater against even catastrophic damage to the facility. Structural damage from major climatological events, however, is not a proper subject for control under a

stormwater permit and NPDES stormwater permits do not contemplate damage to capital assets as a source of pollution. The 2021 Multi-Sector General Permit (MSGP) and most state analogues, for example, provide for a Conditional Exclusion for No Exposure in lieu of permit coverage where pollutant sources are contained within a building or otherwise under cover of a "storm resistant structure" such that they are not expected to come into contact with stormwater.[8] Destruction of the building is not an eventuality addressed by these certifications. Note also that the regulations make a no-exposure certification available even without a "storm resistant structure" for materials kept in "tanks" of the kind present at the Sunoco terminal.[9]
Any stormwater permit that expands effluent limitations (BMPs, in this case) to address the release of pollutants as a result of the destruction of buildings, tanks and other coverings by elemental forces would be inherently inconsistent with such no-exposure certifications. We recommend, therefore, that the Agency square the extreme weather provisions appearing at Section I.C.b.6 of the Draft Permit with other current Agency positions by expressly excluding the release of pollutants as a result of property damage from the sources of pollutants required to be evaluated and addressed pursuant to the permit.

Failure to Define Key Terms

The Draft Permit provides no definitions or other guidance with respect to the meanings of key terms that trigger the application of these provisions. In the absence of definitions of terms including "major storm events," "storm surge," "extreme/heavy precipitation," and "flood events," the permit does not provide meaningful direction with respect to the conditions that trigger obligations under this provision. Similarly, the term "minimize" is not defined, making a permittee's obligation both subjective and untestable.[10] Without greater clarity on these points it is not possible to determine with certainty whether and when a facility is subject to those obligations. Thus, even if EPA elects to move forward with an extreme weather provision after providing the necessary record support, the extreme weather provision here should be withheld from the final permit until and unless definitions of these jurisdictional terms are provided to the public for comment.

Use of FEMA Maps to Define Applicability of Provision

EPA requests comment on the use of the Federal Emergency Management Agency's (FEMA) Flood Map Service Center to make some or all determinations of the applicability of Section I.C.b.6 to individual facilities or portions of facilities. Sunoco believes that FEMA maps could be a valid point of departure for making these determinations. We have two specific comments on this point.

First, the manner in which FEMA maps and their designations of flood risk would be used (including, without limitation, the thresholds for action under the permit and the specific obligations under the permit that would be triggered at each threshold) is not described in the Fact Sheet.[11] This information is critical to Sunoco's ability to evaluate the proposed use of those maps and to provide comment on that proposed use. An opportunity to comment on the manner in which FEMA maps would be employed is therefore a critical next step before permit issuance.

Second, we note that NPDES permits have a maximum term of five years,[12] making maps based on historical data (such as FEMA maps) entirely sufficient to inform BMP selection during the limited life of a permit. We recognize that longer-term trends in climate science provide many diverse predictions of climatic conditions decades in the future. While such predictive tools may be appropriate to guide choices of long-term policy, their accuracy and predictive power is essentially unknown and unknowable. In the context of NDPES permitting, therefore, flood and other climate risk resources such as FEMA maps are sufficient and preferable for use in informing the BMPs necessary to accommodate conditions over discrete, successive 5-year periods.

Drafting Issue

The general requirement should be modified to avoid the implication that every facility will need all three forms of control (structural improvements, added BMPs, and other mitigation measures) in order to adequately address impacts on stormwater from the named conditions. There is no evidence in the Fact Sheet or otherwise identified by the Fact Sheet in the record to support such a conclusion. Sunoco proposes that the final permit avoid this unfounded obligation by modifying the general requirement as follows:

> " . . . implement structural improvements, enhanced/resilient pollution prevention measures, and/or other mitigation measures to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation and flood events."

[6] Draft Permit, at Section I.C.b.6.
[7] *Id.*
[8] 2021 MSGP at Section 1.5. See also 40 CFR 122.26(g).
[9] 40 CFR 122.26(g)(2)(i) (storm resistant shelter not required for drums, barrels, tanks). Note also that the SPCC program requires inspection and integrity testing, as well as establishing containment requirements for oil storage tanks. That program and its statutory mandate are far more directly focused on spill prevention measures than is the NPDES program.
[10] With respect to this term, the definition contained in the 2021 MSGP should be considered for inclusion in the final permit here. That definition appears in Appendix A of the 2021 MSGP and is as follows.
"Minimize – for the purposes of this permit, minimize means to reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practices."
[11] Fact Sheet at 48.
[12] 33 U.S.C. 1342(b)(1)(B).

Response to Comment H.2

As an initial matter, EPA notes that the commenter incorrectly characterizes Part I.C.1.b.6 of the permits at the outset of the comment. Specifically, the commenter states that "[t]he Draft Permit [] establishes a separate requirement that facilities design and install or implement eight additional enumerated control measures if the facility 'may be exposed to or has previously experienced such major storm events.'" However, as EPA has revised the permits to make clear, the listed control measures must be evaluated as a means of minimizing discharges that result from impacts of major storm and flood events. The permits thus do not "establish[] a separate requirement that facilities design and install or implement" each of the listed control measures in

all cases. But as discussed *supra*, under Part I.C.2.b, permittees must document in their SWPPPs the considerations made to select and design control measures that minimize discharges that result from impacts of major storm and flood events and must have included consideration of the eight specific control measures.

As a corollary of the foregoing, the permits do not necessarily "require facilities to make structural improvements to protect stormwater against even catastrophic damage to the facility." If a permittee documents, for instance, that "all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff," as would be required to qualify for the conditional no exposure certification of industrial activities and materials to storm water under 40 C.F.R. § 122.26(g),[144] this would provide a possible basis for determining that the requirements of Part I.C.1.b.6 are met.

However, EPA clearly defines "no exposure" and "storm-resistant shelters" in defining "No Exposure." In addition, EPA's *Guidance Manual for Conditional Exclusion from Stormwater Permitting Based on "No Exposure" of Industrial Activities to Stormwater* states that the permitting authority may determine that materials sheltered from precipitation can still be deemed exposed if the materials can be mobilized by wind in a manner that can result in a discharge. To the extent that a permittee can anticipate that a major storm or flood event is likely to destroy a storm-resistant shelter, the conditional determination of no exposure ceases to apply. *See* EPA, Stormwater Phase II Final Rule Fact Sheet 4.0: Conditional No Exposure Exclusion for Industrial Activity 3 (rev. Dec. 2005), https://www.epa.gov/sites/default/files/2015-11/documents/fact4-0-2.pdf ("Where a facility operator determines that exposure is likely to occur in the future due to some anticipated change at the facility, the operator should submit an application and acquire stormwater permit coverage prior to the exposed discharge to avoid such [CWA] penalties."). Accordingly, the requirement that permittees consider the impacts of anticipated major storm and flood events and devise appropriate control measures under Part I.C.1.b.6 is not in tension with the existence of the conditional no exposure exclusion.[145]

Next, the commenter argues that the draft permits' use of the terms "major storm events," "storm surge," "extreme/heavy precipitation," and "flood events" is vague. As noted *supra*, and in response to other public comments, EPA has revised the permits to make clear that Part I.C.1.b.6 of the permits requires permittees to minimize discharges that result from impacts of "major storm and flood events." Part I.C.1.b.6. The term "major storm and flood events," in turn, "refers to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding." *Id.* n.3. Further, the permits now include the following definition of "extreme/heavy precipitation," in line with the MSGP: "'Extreme/heavy precipitation' refers to instances during

[144] Per the relevant guidance manual, "[s]torm-resistant shelters include completely roofed and walled buildings or structures, as well as structures with only a top cover but no side coverings, provided material under the structure is not otherwise subject to any run-on and subsequent runoff of storm water." EPA, Guidance Manual for Conditional Exclusion from Storm Water Permitting Based On "No Exposure" of Industrial Activities to Storm Water 4 (June 2000), https://www.epa.gov/sites/default/files/2016-02/documents/noxguide.pdf.

[145] The same logic applies to the conditional no exposure exclusion's applicability to drums, barrels, tanks, and similar containers. (And note that as an initial matter, the exclusion only extends to containers that are "tightly sealed" and that are "without operational taps or valves," which is a requirement that not all of the containers on the Sunoco terminal meet.)

which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. 'Extreme/heavy precipitation' does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events." *Id.* Finally, as to the definition of "minimize," EPA agrees with the commenter that the definition that EPA outlined in the MSGP should be included in the permits. The explicit inclusion of this definition has the virtue of ensuring consistency across permits and the definition strikes the appropriate balance between discharge elimination and flexibility. EPA declines to reopen the public comment period in connection with these definitional clarifications. The definitions do not meaningfully change the permits, they were adopted specifically in response to public comment, EPA has explained its rationale for adopting the definitions, and adding further delay to the permitting process would not be warranted here. *See In re Town of Concord Dep't of Pub. Works*, 16 E.A.D. 514, 532 (EAB 2014) (outlining relevant factors).

Third, EPA appreciates the commenter's feedback on the use of FEMA maps in the draft permits. The commenter agrees that the "FEMA maps could be a valid point of departure" for making determinations about the flood risk facilities face. However, the commenter also suggests that "the manner in which FEMA maps and their designations of flood risk would be used" in the permits is unclear, which, according to the commenter, necessitates the opportunity for further comment. As the draft permits indicated, however, EPA sought comment on "whether it should use the FEMA maps to identify areas for which the Major Storm Events BMP should apply and, if so, which classifications EPA should use and why." 2021 Fact Sheet at 90. Although the commenter cites a need for further information about "thresholds for action under the permit and the specific obligations under the permit that would be triggered at each threshold," there are no such thresholds embedded in the permits. Indeed, EPA opted to pursue a less rigid approach to Part I.C.1.b.6 in order to afford the permittees flexibility based on the unique risks posed by climate change at each individual facility. As outlined in response to Comment A.2.E, Part I.C.1.b.6 does not require or prescribe specific control measure to be implemented at discrete risk thresholds. Instead, permittees themselves must analyze and select the appropriate control measures, following consideration and assessment of the likelihood of, and potential impact from, discharges from major storm and flood events. Per Part I.C.2, the permittees themselves must then document in their SWPPPs the considerations made to select and design control measures in order to minimize impacts of pollutants discharged through major storm and flood events. For this reason, and because the permittees themselves must assess their risk based in part on the FEMA maps, EPA declines to seek further public comment on this issue.

Fourth, as noted in response to Comment A.2.E, in order to ensure that the permittees have access to the most accurate data, the permits now include a provision that instructs permittees as follows: "To determine the risks at the Facility of discharges from major storm and flood events, you must conduct the evaluation using, at a minimum, the worst-case data relating to changes in precipitation, sea level rise, extreme weather events, coastal flooding, and inland flooding, and relevant to the facility's discharges from: 1) the data generated by the 13 federal agencies that conduct or use research on global change that contributed to the latest National Climate Assessment produced by the U.S. Global Change Research Program (USGCRP); 2) climate data generated by the Commonwealth of Massachusetts; and 3) resiliency planning completed by the municipality in which a given facility is located (i.e., City of Boston, Revere, and Chelsea) and

incorporate the results of the evaluation in a manner that demonstrates that the control measures taken are precautionary and sufficiently protective. Evaluation must be completed by a qualified person on a rolling annual basis considering: 1) historical observations from all years the Permittee has operated the facility prior to this permit's term; 2) all observations of events that occurred in the calendar year; and 3) the 25 to 100 years forward-looking from the review year to assess impacts that are likely to occur." Part I.C.1.b.6 n.4. This change provides the primary sources of multi-validated data from the agencies/departments that directly inform the USGCRP's National Climate Assessment. The commenter asserts that "maps based on historical data (such as FEMA maps) [are] entirely sufficient to inform BMP selection during the limited life of a [NPDES] permit." As the commenter appears to recognize, FEMA maps can provide a useful initial data set when analyzing the flood risk a facility faces. However, that data set is also limited in certain respects. For instance, FEMA maps may fail to fully account for the risk of tidal flooding, which poses a potential discharge issue for the permittees in light of the location of the facilities. *See, e.g.*, Climate Change Indicators: Coastal Flooding, Environmental Protection Agency (Apr. 2021), https://www.epa.gov/climate-indicators/climate-change-indicators-coastal-flooding#ref5 (explaining that "coastal cities have defined 'nuisance' flooding (also referred to as high tide flooding) thresholds" and indicating that "[s]ince 2011, Boston, Massachusetts, has exceeded the flood threshold most often—an average of 13 days per year"). Thus, the inclusion of additional map/data products for consideration ensures that permittees have access to the most granular and accurate information possible about all of the discharge risks posed by major storm and flood events.

Fifth, and finally, EPA agrees that the permits should be modified to avoid the implication that permittees are automatically required to adopt structural improvements, enhanced/resilient pollution prevention measures, *and* other mitigation measures in all cases. As EPA has explained, Part I.C.1.b.6 does not require or prescribe specific control measure to be implemented. That is, where a particular finding requires a control measure, EPA does not prescribe that control measure. Permittees themselves must select the appropriate control measures, but per Part I.C.2, they must document in their SWPPPs the considerations made to select and design control measures in order to minimize pollutants discharged through major storm and flood events. *See e.g.*, Response to Comment A.2.E. Accordingly, in line with the commenter's suggestion, EPA has revised the permits to require that permittees to "implement structural improvements, enhanced/resilient pollution prevention measures, *and/or* other mitigation measures," as appropriate. Part I.C.1.b.6 (emphasis added). Ultimately, the duty to comply rests with the Permittee. So, for example, if FEMA maps show that based on historic data, the truck rack area of the facility is likely to flood in a 500-year event, and this is the most protective forward-looking dataset, what control measure addresses this specific risk must be specific to the Facility. EPA will continue to provide resources, such as data, guidance and/or policy as available and applicable to these permits, but Permittees are encouraged to contact EPA for technical assistance where questions arise.

Comment H.3 – PAH Monitoring Frequency

The Draft Permit imposes an effluent limitation on seven Group I polycyclic aromatic hydrocarbons ("PAHs") – benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. *See* Draft

Permit, at 3. The Draft Permit requires monthly monitoring of these PAHs, an increase from the quarterly monitoring required in the 2014 Permit (automatically reduced to annual monitoring after three years). Of this group, only benzo(a)pyrene was subject to an effluent limitation and monthly monitoring in the 2014 Permit. Instead, in the 2014 Permit, benzo(a)pyrene was used as an indicator parameter for the other six Group I PAHs.

Neither the Draft Permit nor the associated Fact Sheet justifies the application of an effluent limit and monthly monitoring to the six Group I PAHs other than benzo(a)pyrene. In order to impose such a limitation, EPA must determine that these six pollutants "are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." 40 C.F.R. § 122.44(d)(1)(i). *See also* NPDES Permit Writers Guide, at § 6.3.1 ("reasonable potential analysis" required "to determine whether a discharge, alone or in combination with other sources of pollutants to a waterbody and under a set of conditions arrived at by making a series of reasonable assumptions, could lead to an excursion above an applicable water quality standard."). No such "reasonable potential analysis" appears in the Draft Permit or the Fact Sheet.

To the contrary, the Fact Sheet advances the opposite argument: that the use of benzo(a)pyrene as an indicator parameter – without an effluent limit or monthly monitoring requirement for the other six Group I PAHs – is sufficient to meet State water quality standards. "EPA has determined that the use of benzo(a)pyrene as an indicator parameter and the effluent limitations imposed meet State WQSs." Draft Permit, at 30. According to the Fact Sheet, this is so because "[r]elative to other Group I PAHs, [benzo(a)pyrene] is strongly carcinogenic" and "poses high calculable risk relative to other PAHs." *Id.* at 29. For these reasons, any "reasonable potential analysis" about the six PAHs in Group 1 other than benzo(a)pyrene – even if such an analysis did appear in the Draft Permit or the Fact Sheet – would conclude that discharges from the Facility could not lead to excursions of PAH water quality standards. Per the Fact Sheet, benzo(a)pyrene itself has not been detected in monthly monitoring of effluent from the Facility since November 2016. *Id.* at 72-74. And "monitoring results indicate that the concentrations of other Group I PAHs were not detected above minimum levels[.]" *Id.* at 30.13

Sunoco requests that EPA conform the Draft Permit to the reasoning in the Fact Sheet, and maintain benzo(a)pyrene as an indicator parameter, such that the other six Group I PAHs remain subject to annual (not monthly) monitoring, with no effluent limitation.

[13] The Fact Sheet itself is inconsistent with the Draft Permit. While the Draft Permit imposes an effluent limit and monthly monitoring on the six non-benzo(a)pyrene Group I PAHs, the Fact Sheet asserts that the Draft Permit "requires annual monitoring" of these six pollutants "to ensure these compounds remain undetected in the discharges from the Facility[.]" Fact Sheet, at 30 (emphasis added).

Response to Comment H.3

The comment requests that the effluent limitations for Group I PAHs be eliminated from the permit, with the exception of the existing limit for the indicator parameter benzo(a)pyrene, to be consistent with the analysis in the Fact Sheet (pp. 29-30). In response to this comment, EPA reviewed the effluent data and Fact Sheet. The Fact Sheet accurately characterizes the

stormwater monitoring results at Outfall 001 with respect to PAHs. As shown in Table 3 (Fact Sheet p. 30), benzo(a)pyrene was detected on one occasion. No other detections of Group I PAHs were observed.[146] Sunoco's advanced level of treatment, including carbon, is likely to effectively treat the Facility's stormwater such that Group I PAHs are not detected. The most recent annual pollutant scan (from April 2021) also reported non-detect for all Group I PAHs.

Based on this review, EPA determined that including the effluent limits for Group I PAHs in the Draft Permit, with the exception of the limit for the indicator pollutant benzo(a)pyrene, was an error. Consequently, EPA has revised the Final Permit to carry forward the water quality-based limit for benzo(a)pyrene as an indicator parameter, monitored monthly, and to retain annual monitoring for the other Group I PAHs.

Comment H.4 – Slack Tide Sampling

The Draft Permit states that the permittee "shall avoid discharging stormwater, hydrostatic test water and groundwater during worst-case conditions (i.e., the hour before and after slack tide and during periods of lowest receiving water flow) and further avoid discharging concurrently with the other facilities located along Chelsea River to the maximum extent practicable. . . .."[14] This provision would expand inappropriately on the provisions in Section 1.C.3.a of the existing permit. There are two aspects of this expansion that are problematic.

a. Standard for Initiating Discharge

First, while the 2014 Permit reasonably requires "[a] detailed process for the initiation of discharge . . ., and the methods for avoiding worst-case conditions (i.e., approximately one hour before and after slack tides)," the language of the Draft Permit particularizes the period (it moves from "approximately" to *precisely* the enumerated time period) and provides no standard by which to determine whether the sufficient care has been taken to "avoid" discharging during that window.

There is no reference in the Fact Sheet that supports the particularization of "worst-case" conditions to precisely the interval stated. For lack of support, that change is arbitrary and should be deleted.

Without a standard by which to determine whether adequate care has been taken to avoid discharges during that period, or clarity as to whether the Draft Permit means to categorically prohibit such discharges, the Draft Permit does not enable Sunoco to know when it may or may not be in compliance. To avoid these defects, Sunoco respectfully requests that the language at Section I.C.3.a of the 2014 Permit, which provides a clear standard for compliant behavior, be retained in the new permit.

[146] Appendix C of the Fact Sheet lists values for Group I PAHs for the quarterly monitoring periods ending 03/31/2015, 06/30/2015, and 09/30/2015. All of the listed values for the 03/2015 and 06/2015 periods (for Group I and II PAHs) are the detection level (0.05, 0.051, or 0.1 depending on the parameter), and EPA determined that the Permittee failed to include the qualifier (<=) in the DMR. The values should be reported as non-detect. For the 09/2015 period, the reported value for all pollutants is "9" which indicates that the Permittee incorrectly entered a value instead of an NODI code.

b. Coordination with Other Dischargers

Sunoco's second concern with the proposed language relates to the requirement to ". . . avoid discharging concurrently with the other facilities located along Chelsea River to the maximum extent practicable." This newly-added concept is impracticable, requiring constant communication among facilities and might, if applied literally, require a facility to flood because another facility began discharging first.

Moreover, the requirement that facilities bargain or barter for the right to discharge seems to be an effort to make NPDES permits serve the purpose intended for a TMDL. The statute contains TMDL provisions precisely to coordinate pollutant discharges among point sources (and nonpoint sources) by establishing maximum allowable loadings to a stream segment and then dividing those loadings, less a safety factor, among dischargers. Critically, dischargers have notice of their allocations under the TMDL program because those allocations become effluent limitations in their permits. Here, the informal allocation among dischargers – seemingly on a first-come, first-served basis – effectively creates a bazaar or race to discharge, with no objective test for whether a facility has adequately coordinated with its neighbors before discharging. Sunoco recommends that this new concept not be carried over to the final permit and that, if wasteload allocations are needed, they be established through the TMDL process that was established by Congress to create and clearly impose them.

In addition, Sunoco notes that this provision employs a standard of performance – "Maximum Extent Practicable" – that would unlawfully supplant the Best Available Technology standard applicable here[15] with the standard that the statute makes applicable to permits authorizing discharges from Municipal Separate Storm Sewer Systems.[16]

For these reasons, the provision requiring coordination with other dischargers should not be incorporated in the final permit.

[14] Draft Permit at Section I.C.b.3.
[15] See 33 U.S.C. 304(b)(2).
[16] 33 U.S.C. 1342(p)(3)(B)(iii).

Response to Comment H.4

The comment recognizes similarities between the Draft Permit Part I.C.1.b and the existing BMP in Part I.C.3.a of the 2014 Permit (MA0004006) but expresses concern that the Draft Permit expands the existing provision.

First, the comment explains that the Draft Permit provision "particularizes" the period under which a discharge of stormwater can occur because the Draft Permit requires Permittees to avoid discharging during the hour before and after slack tide, where the 2014 Permit requires "[a] detailed process for the initiation of discharge . . ., and the methods for avoiding worst-case conditions (i.e., *approximately* one hour before and after slack tides)" (emphasis added). The Draft and 2014 discharge practices BMPs both require the Permittee to minimize (or avoid)

discharging during worst-case conditions and are, in fact, nearly identical. Part I.C.3 of the 2014 Permit states:

> The Permittee shall implement a discharge practices BMP that minimizes the extent to which discharges from the Terminal occur under worst-case conditions in the receiving water, meets the requirements of a qualifying event as specified in Part I.A.1, and limits the runoff, run-in and re-entrainment of pollutants.

A qualifying event specified in Part I.A.1 (footnote 1) as referenced in Part I.C.3 of the 2014 Draft Permit is defined as "a discharge that occurs during daylight hours on an outgoing tide at least one hour from both the low and high slack tide." In other words, the 2014 Permit required the Permittee to implement a BMP that meets the requirement of Part I.A.1 footnote 1, which defined worst-case conditions as one hour before and after slack tide. In addition, Part I.A.1 footnote 1 specifies "[t]o identify a qualifying event, the permittee may use the tide charts to predict the two four-hour intervals of an outgoing tide." Again, the 2014 Permit defined the specific period of worst-case conditions in the context of the discharge practices BMP as the hour before and after slack tide. The Draft Permit establishes the same time period as worst-case conditions. For clarification, the Final Permit was revised to include "approximately" one hour before and after slack tide consistent with the 2014 Permit.

The comment also indicates the Draft Permit provides no standard by which to determine whether "adequate care" has been taken to avoid discharge during the slack tide window. The Permittee requests that the language from the 2014 Permit, which the commenter states "provides a clear standard for compliant behavior," be retained in the re-issued permit. Part I.C.3 of the Draft Permit specifies that "[t]he Permittee shall avoid discharging stormwater, hydrostatic test water and groundwater during worst-case conditions… and further avoid discharging concurrently with the other facilities located along Chelsea River *to the maximum extent practicable*." (emphasis added). EPA intended for "maximum extent practicable" to apply to both the requirement to avoid discharging during worst-case conditions and to avoid discharging concurrently with other facilities. This is the same standard that appears in Part I.C.3 of the 2014 Permit ("The BMP must include, to the maximum extent practicable…"). Therefore, the Draft Permit is consistent with the commenter's request, and the Final Permit retains the requirement to avoid discharging during worst-case conditions to the "maximum extent practicable."[147]

[147] While the commenter requests this standard here, the commenter somewhat confusingly later objects to the use of this standard in the concurrent discharges portion of the BMP. As explained in more detail later in the response above, EPA has removed the concurrent discharges portion of the BMP from the Final Permit. Thus, EPA considers the comment moot. In any event, EPA does not agree that using the phrase "maximum extent practicable" in a BMP somehow "supplants" the BAT standard with a standard applicable to MS4s. First, the phrase "maximum extent practicable" occurs numerous times in the CWA (and countless times in other statutes and in regulations); it is by no means unique to the regulation of MS4s. Moreover, a BAT is a technology-based treatment requirement applicable to a permittee, and a BMP may be part of a BAT. *See, e.g.*, 40 CFR §§ 423.13(k)(2)(i)(B), 434.72(a), 434.73. Using the phrase "maximum extent practicable" *within* the BMP recognizes that it may not be practicable for the permittee to follow the BMP to its full extent; it does not convert the BMP into another technology standard. *See, e.g.*, *id* § 430.03(c)(1). Finally, BMPs need not be technology-based requirements; they may be implemented whenever reasonably necessary to carry out the purposes and intent of the CWA.

As EPA explains in Response to Comment F.7, this BMP requires the Permittee to implement control measures to minimize discharges during worst-case conditions. EPA understands that stormwater is unpredictable and, under certain conditions (e.g., heavy precipitation), discharges cannot be avoided without affecting the safety or integrity of the stormwater system. The discharge of stormwater outside of the conditions specified in Part I.C.3.b would not be a permit violation if the Facility has documented in its SWPPP that the discharge could not otherwise be avoided.

Finally, the comment indicates that the requirement to avoid discharging concurrently with other Terminals is impractical and may cause flooding conditions at a Facility. Effectively coordinating all stormwater discharges with other facilities is likely to be impractical, particularly during storm events when facilities have less control over the discharge and/or must discharge to prevent flooding or impacts to the treatment system. EPA agrees that the Draft BMP is too broad to be effectively implemented. In response to this and the other similar comments from the Terminals, EPA has decided not to include the requirement to coordinate discharges. *See* Response to Comment F.23. Imposing the additional restriction to coordinate discharges among multiple, separate outfalls operated by several different permittees significantly narrows the window for discharge and presents new logistical challenges that may not be reasonable, where other, more attainable permit measures to reduce or prevent pollutants from being discharged are expected to be more protective. For instance, the Final Permits include more stringent technology- and water quality-based effluent limitations and include BMPs to discharge on outgoing tides when pollutants will be carried out of the Chelsea River, which minimizes the potential load to the river. *See also* Response to Comment F.7.

Comment H.5 - PFAS

The Draft Permit prohibits "[d]ischarges of aqueous film-forming foam and alcohol resistant foam either in concentrate form or as foam diluted with water during testing or maintenance of the fires suppression system at the Facility's marine vessel dock"[17] and, pursuant to its Section 308 information gathering authority, requires quarterly monitoring for six perflorinated compounds in the facility's discharge.[18]

Sunoco tests the foam-based fire suppression system located at its load rack with water only. Water from the load rack area is pumped to and collected in two process water tanks, and the oily/water mixture in those tanks is shipped offsite for recycling. Fire suppression systems at the tanks are not subject to testing.

Based on these practices, barring a fire emergency in which a foam system is activated, there should be no opportunity for PFAS to enter the facility's discharge. As a result, Sunoco believes that the quarterly monitoring of its facility for PFAS compounds will not serve the purpose of the information request and respectfully requests that the monitoring provision in Section I.A.1 of the Draft Permit not be carried over into the final permit.

[17] Draft Permit at Section I.B.2.i.
[18] Draft Permit at Section I.A.1.

Response to Comment H.5

The comment requests that EPA eliminate the monitoring requirements for PFAS compounds because it "will not serve the purpose of the information request." EPA responds to similar comments on the need for PFAS monitoring in Response to Comment F.13. The Fact Sheet (p. 37) explains that EPA identified certain facilities as potential point sources of PFAS in its "Interim Strategy for Per- and Polyfluoroalkyl Substances in Federally Issued National Pollutant Discharge Elimination System Permits" including contaminated sites and fire-fighting training facilities. *See* AR-131. The comment acknowledges that fire-fighting foams containing PFAS compounds are stored or used at multiple locations at the Facility (i.e., at "the load rack area," "at the tanks"). The comment asserts, however, that the Facility has appropriate BMPs in place to minimize the potential for discharges of PFAS associated with its foam-based fire suppression system (e.g., collecting water from the "load rack area" for offsite disposal, not subjecting "[f]ire suppression systems at the tanks" to testing) and that, as a result, there "should" be no opportunity for PFAS to enter the discharge. However, there is currently no monitoring information to confirm this assumption or to characterize PFAS exposure from these and other potential sources. For instance, spills and leaks at the various storage locations are potential means by which these compounds could be exposed to stormwater at the Facility and discharged to the Chelsea River. Furthermore, once released to the environment, PFAS compounds are persistent and could be present based on past use at the Facility. CWA § 308(a) grants EPA the authority to include monitoring requirements it deems necessary to develop effluent limitations and determine if a facility is violating effluent limitations (including narrative standards). The storage and use at the Facility of materials containing PFAS and the persistence of such compounds in the environment once released warrant investigation into their potential presence in the discharge. Furthermore, the rapid pace of research into the environmental fate and health effects of PFAS, coupled with the known toxicity of these compounds, necessitates understanding the extent of PFAS discharges from the Facility. *See also* Response to Comment F.13. As noted in the Fact Sheet (p. 37), the monitoring will provide information on potential PFAS discharges to inform permitting decisions, including whether to establish limits or additional requirements or whether to discontinue monitoring. The Final Permit retains the PFAS monitoring requirement.

Comment H.6 – Hydrotest Water

The Draft Permit imposes various conditions on the handling and discharge of hydrotest water.[19] Sunoco has two comments on these provisions.

Erroneous Reference to Certain Outfalls

Section I.C.3.a of the Draft Permit makes the following reference to outfalls.

> The flow of hydrostatic test water into the stormwater treatment system shall be controlled to prevent it from exceeding the maximum design flow rate of the system (i.e., 700 gpm at OWS to Outfall 001, 830 gpm at OWS to Outfall 002, and 500 gpm at OWS to Outfall 005).

There is only a single outfall at the Sunoco facility, and we believe that this language refers to a different facility on the Chelsea River. Sunoco requests that this language be deleted from its permit.

Incompatible Monitoring Requirements

Section I.C.3.b calls for analysis of hydrostatic test water "in process" prior to initiating discharge. Discharge is prohibited "unless treatment will reduce the pollutant levels below the effluent levels" established by the permit. Section I.C.3.d calls for reporting of results of hydrostatic test water within 90 days of the completion of the test. These requirements are incompatible with the Sunoco facility subject to this permit.

Unlike other facilities on the Chelsea River, Sunoco does not directly or separately discharge hydrostatic test water. Rather, the facility routes all hydrostatic test water through its treatment system along with other water permitted for discharge. That treatment system includes an oil-water separator, filtration, and treatment by granular activated carbon and is effective at achieving the effluent limitations applicable to the facility. Moreover, discharge to the River through Outfall 001 is exhaustively monitored, and will confirm the efficacy of the treatment system in meeting applicable effluent limitations

Collection of hydrostatic test water "in process" (presumably before treatment) would be a meaningless act at the facility, both because it would characterize an internal wastestream before treatment, and because it would in no way reflect the quality of the discharge resulting from that internal wastestream following treatment. Moreover, analysis of a sample before treatment would be of no operational value because, as the permit allows, in each case the discharge would proceed based on the fact that subsequent treatment is designed to meet applicable effluent limitations. The result would be a set of sample results that would never inform operations and that would be of no value in characterizing the discharge from this facility.

Similarly, the requirement to provide analytical results specific to hydrostatic test water would provide the Agency with no information about the quality or quantity of the discharge from the facility. Because that water is subsequently treated to a high level before discharge, the "in process" analytical data would merely characterize an internal wastestream but would not reflect at all the final and extensively monitored discharge.

For these reasons, Sunoco respectfully requests that Sections I.C.3.b, I.C.3.c and I.C.3.d be deleted from the final permit when issued.

[19] Draft Permit at I.C.3.

Response to Comment H.6

In response to the first comment, the Permittee correctly identifies several typographic errors in outfall numbering in Part I.B.3 and the listing of design flows in Part I.B.3.a. These errors were corrected in the Final Permit.

Turning to hydrostatic test water, the comment asserts that the discharge of hydrostatic test water at this Facility is different from other terminals and that an in-process sample would be of "no value in characterizing the discharge." First, EPA notes that all of the Terminals on Chelsea River route the hydrostatic test water discharges through the stormwater treatment systems. There are no "direct" discharges of hydrostatic test water and, as such, Sunoco is not "unlike" the other Terminals subject to the same requirements. The in-process sample of hydrostatic test water is intended to characterize the effluent pre-treatment to ensure there are no additional steps necessary to ensure that discharges do not impact the water quality of receiving waters or pose a risk to human health or the environment. For example, several Terminals commented that hydrostatic test water may require retention to allow for degradation of TRC prior to discharge to the stormwater treatment system. *See* Comments F.9, F.28, G.9 and G.26. Finally, the in-process sample will provide information on the reliability and effectiveness of the installed pollution abatement equipment for the purposes of hydrostatic test water as well as stormwater effluent and ensure that dilution is not being used as a form of treatment. Moreover, EPA does not find, nor does the comment allege, that the requirements are particularly burdensome. Hydrostatic test water is a non-continuous discharge that occurs infrequently and should result in minimal time and expense for the facility. As such, EPA respectfully declines the facility's request to remove Sections I.C.3.b, I.C.3.c and I.C.3.d from the final permit.

However, in consideration of this and other comments (e.g., F.28 and G.26), EPA determined that the requirement to sample both influent and in-process is redundant. Both samples characterize the pre-treatment quality of the hydrostatic test water. Therefore, EPA revised the Final Permit to eliminate the influent sampling requirement. EPA notes that the comment does not raise similar issues about the influent sample being "meaningless" and the purpose of the in-process sample now captures that of the influent sample.

Comment H.7 – Turbidity

The Draft Permit calls for monitoring of turbidity twice monthly, while calling for monitoring of TSS on a monthly basis.[20] Given the presence of a treatment system that provides filtration before discharge, Sunoco respectfully requests that the monitoring frequency for turbidity be changed to monthly.

[20] Draft Permit at Section I.A.1.

Response to Comment H.7

As EPA stated in the Fact Sheet, turbidity is considered in narrative State WQSs for color and turbidity at 314 CMR 4.05(4)(b)6, for aesthetics at 314 CMR 4.05(5)(a) and for bottom pollutants or alterations at 314 CMR 4.05(5)(b). The Commonwealth has specifically listed turbidity as a cause of the aesthetics and primary and secondary contact impairments in the Chelsea River and determined that it is a pollutant requiring a TMDL. *See* Fact Sheet p. 16. Turbidity has not been previously monitored at this facility.

TSS is a quantitative measure of the number of solids per volume of water, while turbidity is a quantitative measure of light penetration through the water. However, TSS and turbidity are not

interchangeable. Turbidity is impacted by water coloration, dissolved colored organic materials, and chemicals (i.e. dyes or acids). These factors will not cause an increase in TSS which detects only settleable solids. Turbidity is a simple field measurement collected using a turbidity meter and can be a useful indicator of the effectiveness of BMPs. *See* 2022 Proposed Construction General Permit. At the same time, the advanced treatment at this Terminal results in consistently low levels of TSS in the discharge and should not cause breakthrough of ultrafine or colloidal particles that would impact turbidity. *See* Fact Sheet Appendix A. EPA expects that aligning the turbidity and TSS monitoring to monthly is reasonable for this Facility and will provide sufficient information to determine if discharges of turbidity from the Facility cause, or have the reasonable potential to cause, or contribute to, an excursion above the State WQSs impacted by turbidity, including the dissolved oxygen impairment, in accordance with 40 CFR § 122.44(d)(1)(ii).

Comment H.8 – Fecal Coliform

The Draft Permit establishes a new fecal coliform effluent limitation of 88 organisms per 100 mL, and not more than 10 percent of samples may exceed an MPN of 260 organisms per 100 mL. *See* Fact Sheet, at 25. Additionally, the Draft Permit establishes monthly monitoring requirements for *Enterococcus* in order to generate data to evaluate pathogen issues in Chelsea River. *Id.*

These bacteria limitations and monitoring requirements in the Draft Permit are infeasible, impracticable, and unreasonable because the Facility lacks the reasonable and practical ability to control bacteria effluent. The Facility does not discharge sanitary wastewater, and there are no sewer cross-connections to the treatment system. In general the Facility does not engage in activities that would be expected to generate significant sources of bacteria. Measurable bacteria at the Facility is the result of wildlife – in particular, seabirds – which cannot be prevented as a practical matter. EPA may not impose permit conditions that a permittee cannot feasibly meet. In particular, in making a determination about water quality-based effluent limitations, EPA must consider "existing controls on point and nonpoint sources of pollution," 40 C.F.R. § 122.44(d)(1)(ii). Here, "existing controls" at the maximum feasible level are already in place.

EPA has also imposed an effluent limitation on fecal coliform that Massachusetts regulations explicitly apply to Class SB waters that are designated for shellfish, which Chelsea River is not. *See* 314 CMR 4.05(4)(B)(4(a) ("Waters designated for shellfishing shall not exceed a fecal coliform median or geometric mean MPN of 88 organisms per 100 ml, nor shall more than 10% of the samples exceed an MPN of 260 per 100 ml or other values of equivalent protection[.]") (emphasis added); *see also id.* at Table 15 (defining Boston Harbor Drainage Area boundaries; noting no "shellfishing" qualifier for Chelsea River). The Fact Sheet acknowledges this ("The Massachusetts WQS at 314 CMR 4.05(4)(b)(4)(A) limit fecal coliform in Class SB waters designated for shellfishing.") (emphasis added).

EPA has not explained why it is appropriate or justified to impose the effluent limit intended for shellfishing-designated waters to the Chelsea River. Indeed, the Fact Sheet suggests that the primary drivers of bacteria in the Chelsea River are factors that the Sunoco Facility cannot meaningfully affect: raw sewage, CSOs, "stormwater discharges from Phase I and Phase II

communities." *See* Fact Sheet, at 24-25. A permit condition that cannot reasonably be met, and would not reasonably contribute to meaningful improvements in water quality, is not consistent with law – particularly where it is unexplained.

Sunoco requests that EPA modify the Draft Permit to require only quarterly monitoring of bacteria in Facility effluent.

Response to Comment H.8

EPA addressed comments on the bacteria requirements in the Draft Permits in Response to Comment F.4. This comment raises many of the same issues as Comment F.4, including whether the Facility is a significant source of bacteria. Data collected over the last permit term demonstrate that the stormwater discharges from Sunoco can contain high levels of fecal coliform, including levels that exceed water quality criteria (e.g., 300 cfu/100 mL). *See* Fact Sheet p. 24-25, Appendix C. Requirements to control fecal coliform are warranted based on monitoring data for the Facility's stormwater discharges that indicate that the Facility has the potential to cause or contribute to an excursion of water quality standards in a receiving water already impaired for fecal coliform and subject to the requirements of a TMDL. *See* 40 CFR § 122.44(d)(1).

EPA agrees that, when determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion of criteria within a State water quality standard, EPA must account for existing controls on point and nonpoint sources of pollution. 40 CFR § 122.44(d)(1)(ii). And EPA has done so.[148] But to the extent the comment asserts that EPA must set the effluent limits based on whether a facility's "existing controls" represent the "maximum feasible," it is a gross misreading of § 122.44(d)(1)(ii). Subparagraph (ii) applies to EPA's determination whether a discharge causes or has the reasonable potential to cause an exceedance. It does not direct EPA's determination of what those limits must be. Moreover, the Clean Water Act requires that water quality-based limits be established at levels necessary to attain water quality criteria—feasibility is not to be factored into that analysis. *See Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 33 (1st Cir. 2012); *In re City of Taunton*, 17 E.A.D. 105, 190 (EAB 2016); *In re City of Moscow*, 10 E.A.D. 135, 168 (EAB 2001); *In re City of Fayetteville, Ark.*, 2 E.A.D. 594, 600-601 (CJO 1988) (Section 301(b)(1)(C) "requires unequivocal compliance with applicable water quality standards, and does not make any exceptions for cost or technological feasibility."). Further, the comment provides no explanation or factual support for its assertion that "'existing controls' at the maximum feasible level are already in place." For example, certain BMPs are available to better control sources of bacteria,

[148] When determining whether the facility's discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion of Massachusetts water quality criteria for bacteria, EPA did account for existing controls on point and nonpoint sources of pollution. 40 CFR § 122.44(d)(1)(ii). In particular, grab samples for fecal coliform were collected after treatment through the existing treatment system and free from tidal influence. *See* 2014 Permit Part I.A.1 footnote 1. As such, the samples account for treatment of the discharges through the Facility's oil water separator and any best management practices (BMPs) implemented at the site to control stormwater discharges. Levels of fecal coliform in the discharge were above water quality criteria despite these existing controls and, as such, a water quality-based numeric limit is required to ensure the Facility does not cause, have the reasonable potential to cause, or contribute to an in-stream excursion of the Commonwealth's bacteria criteria. 40 CFR § 122.44(d)(1)(iii).

such as more frequent sweeping of impervious surfaces and actions to discourage rodents and birds from congregating. *See* Response to Comment F.4. In addition, while the comment asserts that the "Facility does not discharge sanitary wastewater, and [that] there are no sewer cross-connections to the treatment system," there is no evidence presented in the comment that the facility has methodically ruled out the existence of illicit cross-connections. There is also potential for cross-connections with other sources of stormwater that may contain significant levels of bacteria. As EPA noted in the Fact Sheet, as aggressive efforts to control CSO discharges reduce bacteria loads from these sources, stormwater discharges will become a more dominant source of bacteria pollution. FS at 24-25. The Draft Permit includes a provision—retained in the Final Permit—requiring the permittee to complete a cross-connection evaluation with respect to MS4s. Part I.C.1.b.8.

The comment also asserts that EPA inappropriately applied a fecal coliform limit because fecal coliform is the indicator bacteria in Class SB waters designated for shellfishing and, according to the commenter, Chelsea River is not designated for shellfishing based on the lack of a "shellfishing" qualifier in Table 15 in 314 CMR 4.06 for Chelsea River. In addition to the water quality standards, MassDEP's record of assessment of the Chelsea River for the Integrated List of Waters supports the application of fecal coliform for shellfishing. The *Mystic River Watershed 2004-2008 Water Quality Assessment Report* (AR-75) lists the designated uses and assessment of each segment of the watershed. This Report identifies that the "Shellfishing Use is assessed as impaired for the entire 0.39 mi^2 area due to a DMF [Massachusetts Division of Marine Fisheries] prohibition" in the Chelsea River with the cause of impairment listed as fecal coliform (Segment MA71-06). *Id*. p. 33. The Final 2010, 2012, and 2016 Massachusetts Integrated Lists as well as the Draft 2018/2020 Integrated List all include "fecal coliform" as a cause of impairment in the Chelsea River. Fecal coliform is the indicator bacteria used to evaluate the shellfishing designated use for marine waters and, by identifying fecal coliform as the impairment in the referenced documents, the Integrated Lists also identify shellfishing as a designated use of the Chelsea River despite the river not currently attaining water quality standards to allow for shellfishing. Thus, MassDEP has repeatedly recognized that the shellfishing designated use is applicable to the Chelsea River. MassDEP's Section 401 certification for this permit proceeding continues that practice and further supports the application of the fecal coliform limit to meet water quality standards in Chelsea River (including the shellfishing designated use). *See* AR-132.

Recreational harvesting and human consumption of shellfish is a designated use as part of the secondary contact recreation use of certain waters (i.e., shellfish growing areas). 314 CMR 4.02.[149] The harvesting goal for Class SB waters is that they "shall be suitable for harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas)." 314 CMR 4.05(4)(b). In addition, 314 CMR 4.05(5)(e)(2)(a)(ii) states pollutants shall not "result in unacceptable concentrations in edible portions of marketable fish or for the recreational use of fish, shellfish, other aquatic life, or wildlife for human consumption." Massachusetts Division of Marine Fisheries (MarineFisheries) is responsible for classifying shellfish growing areas. MarineFisheries classifies Chelsea River as "prohibited" for shellfish harvesting, which means that this waterbody is closed to shellfish harvesting under all conditions except the gathering of

[149] The shellfishing use, which includes human consumption of shellfish, does not apply to freshwaters with the secondary contact recreation designated use. Thus, only waters classified as marine waters are designated for the shellfishing use within the secondary contact recreation use.

seeds for municipal propagation programs under a MarineFisheries program. Although MarineFisheries' classification of the Chelsea River as "prohibited" for shellfishing recognizes that the River does not currently support shellfish harvesting, the goal of the CWA is to restore and maintain the quality of surface waters, 33 USC § 1251(a), including meeting designated uses by assessing impairments, developing TMDLs, and controlling the discharge of pollutants through the imposition of effluent limits. The primary contact, secondary contact, and shellfishing designated uses for Chelsea River are currently listed as impaired based on levels of fecal coliform, Enterococci, and other pollutants. *See* AR-31. pp. 55-6. *See also* AR-75 p. xxi.[150] Instituting requirements to reduce levels of fecal coliform establishes progress towards restoring the Chelsea River for the shellfishing use. *See also* 40 CFR §§ 130.3 (A water quality standard "defines the water quality *goals* of a water body, or portion thereof, by designating the use or uses *to be made* of the water and by setting criteria necessary to protect the uses.") (emphases added), 131.3(f) (specifying that "*[d]esignated uses* are those uses specified in water quality standards for each water body or segment *whether or not they are being attained*") (second emphasis added). If the water quality in Chelsea River were to improve such that fecal coliform standards are met, it is possible that MarineFisheries could classify certain areas of the river as "Restricted" or "Conditionally Restricted" with some level of shellfishing harvesting with depuration authorized. EPA recognizes that other sources of fecal coliform must also be controlled before the shellfishing use is likely to be attained, but that does not mean that EPA may issue permits to the Terminals without any controls on fecal coliform until those other sources are also controlled. *See* 40 CFR §§ 122.4(d), 122.44(d)(1)(iii).

Finally, the water quality standards provide that "[d]ischarges shall be limited or prohibited to protect existing uses and not interfere with the attainment of designated uses *in downstream and adjacent segments*." 314 CMR 4.03(1)(a) (emphasis added). Table 15 in 314 CMR 4.06 includes the shellfishing qualifier for the segment of the Mystic River from "Amelia Earhart Dam to confluence with the Chelsea River." Table 15 also includes the shellfishing qualifier for other portions of the Boston Harbor Drainage Area. In other words, segments adjacent to and downstream of the Chelsea River are clearly designated as shellfishing in Table 15. Therefore, even if shellfishing were not a designated use for Chelsea River, the bacteria requirements in the Final Permit are warranted pursuant to 314 CMR 4.03(1)(a) to control the discharges in the Chelsea River to protect existing shellfishing beds in Boston Harbor and not interfere with the attainment of the designated shellfishing use in the adjacent and downstream segments in the Mystic River, including from the "Amelia Earhart Dam to [the] confluence with the Chelsea River."

The Fact Sheet and this Response to Comments establish that the point sources operated by the Permittee contribute bacteria to the receiving water. As explained above and in Response to Comment F.4, the requirement to control fecal coliform for point source discharges to Chelsea River is appropriate and warranted based on the record and applicable law. EPA is obligated to regulate discharges that have the reasonable potential to cause or contribute to an excursion above water quality standards. 40 CFR § 122.44(d)(1)(i)-(iii). In addition, EPA must ensure that the level of water quality to be achieved by water quality-based effluent limitations is derived

[150] Also see Waterbody Report for Chelsea River at https://mywaterway.epa.gov/waterbody-report/MA_DEP/MA71-06/2016.

from, and complies with, applicable water quality standards and that the limits are consistent with the assumptions and requirements of any available wasteload allocation. *Id.* § 122.44(d)(1)(vii). In response to this and similar comments on the Draft Permits, EPA determined that water quality-based, non-numeric limitations are appropriate in lieu of numeric fecal coliform limits to carry out the purposes and intent of the CWA to ensure compliance with water quality standards. *See* Response to Comment F.4. Implementing the BMPs proposed in the Draft Permit, coupled with the additional, water-quality based non-numeric limits targeting bacteria sources (described in Response to Comment F.4) reduce sources of bacteria in the stormwater runoff and will ensure compliance with water quality standards in accordance with 40 CFR § 122.44(d)(1)(vii)(A) and (B). Given the intermittent nature of the discharge and because the source of bacteria in the effluent is likely from runoff or from the stormwater drainage system itself, BMPs that eliminate or minimize sources are the most direct method of controlling pollutants to meet water quality standards. EPA concludes that the non-numeric limits targeting bacteria, coupled with monitoring and requirements to assess and improve BMPs as necessary to maintain bacteria levels, will ensure that the discharge does not exceed water quality standards such that a separate, numeric fecal coliform limit is not necessary. Monthly monitoring is required for fecal coliform and enterococci to ensure that the BMPs continue to be implemented effectively to protect the designated uses of the receiving water. EPA maintains that the fecal coliform and *Enterococcus* monitoring requirements are supported by the record and are necessary to ensure that water quality standards are met.

Comment H.9 – Available Test Methods

The Draft Permit establishes 400 ug/L as the minimum level, or ML, for ethanol, and establishes 2 ug/L as the ML and Compliance Level for free cyanide.[21] Sunoco has surveyed four laboratories in the region and been advised that these laboratory minimum levels cannot be achieved. The facility is inquiring of laboratories more distant from it to determine whether they are capable of providing analyses that achieve these MLs but has not yet received responses about their capabilities and whether holding times or other method requirements could be satisfied by samples sent across country. Because there appears to be no laboratory capacity in the region that is capable of providing the MLs stated in the Draft Permit, and because it is unknown whether more distant labs could provide such MLs on properly handled samples, Sunoco respectfully requests that the Agency reconsider the MLs and Compliance Levels for ethanol and free cyanide, and adjust them as necessary to allow the facility to obtain compliant analytical services.

[21] Draft Permit at Section I.A.1, footnotes 13 and 16, respectively.

Response to Comment H.9

The comment raises concerns that the Permittee cannot perform sufficiently sensitive testing at the compliance levels for ethanol (400 µg/L) and cyanide (2 µg/L) assigned in the Draft Permit. The current, 2014 Permit for Sunoco (MA0004006) requires that the method analysis for ethanol achieve a practical quantitation limit (PQL) of 400 µg/L or less. *See* Sunoco 2014 Permit Part I.A.1 footnote 12. The Facility has consistently reported non-detects at a minimum level of 400 or 200 µg/L. *See* Sunoco Fact Sheet Appendix A. Both levels comply with the 2014 and Draft Permits. In addition, the 2014 Permits for other Chelsea Bulk Oil Terminals required a minimum

level of 400 µg/L for ethanol and reported non-detects at a minimum level of 400 µg/L. See, e.g., Irving 2014 Permit (MA0001929) Part I.A.1 footnote 11 and 2020 Fact Sheet Appendix A; Gulf 2014 Permit (MA0001091) Part I.A.1 footnote 11 and 2020 Fact Sheet Appendix A. Finally, the Remediation General Permit (MAG910000) requires a minimum level of 400 µg/L for ethanol. The comment provides no explanation as to why the laboratories that were used in the past to analyze ethanol at the appropriate level in the past are no longer available, nor has any other Terminal indicated that achieving a minimum level of 400 µg/L would not be feasible.[151] For these reasons, the Final Permit maintains the minimum level for ethanol at 400 µg/L.

The Draft Permit proposed a water quality-based limit for free cyanide and specified a minimum level of 2 µg/L. Free cyanide is the bioavailable form associated with toxic effects on organisms. EPA recognizes that there are limitations for analyzing free cyanide; methods for analyzing total cyanide are more widely available. The 2014 Permit required monitoring for total cyanide; DMR data indicate that the method analysis achieved a minimum level of 5 µg/L. In the Final Permit, EPA has replaced the free cyanide minimum level in Footnote 16 with a minimum level for total cyanide of 5 µg/L.

Comment H.10 Bilge and Ballast Water Discharge

The Draft Permit prohibits the discharge of bilge water[22] and ballast water.[23] No bilge or ballast water is taken ashore at the facility for discharge through its regulated outfall.

Sunoco also wishes to make clear that the vessels that dock at the facility are not owned or operated by Sunoco. Because it is neither the owner nor the operator of these vessels, Sunoco has no duty to apply for, and has not applied for authorization to discharges directly from these vessels.[24] It is Sunoco's understanding that the terms of the Draft Permit will not apply to discharges directly from vessels berthed at its facility. Sunoco respectfully requests clarification in the Fact Sheet that discharges directly from third-party vessels berthed at the permitted facility are not subject to the terms of the permit.

[22] Draft Permit at Section I.B.2.a.
[23] Draft Permit at Section I.B.2.e.
[24] See 40 CFR 122.21(b)(it is the obligation of a facility's "operator" to apply for an NPDES permit).

Response to Comment H.10

The prohibition on discharges of tank bottom water and/or bilge water alone or in combination with stormwater or other wastewater was carried forward from the 2014 Permit. See 2014 Permit Part I.B.3.a. As the comment points out, no bilge or ballast water is taken ashore or expected to be discharged at this Facility. The comment confirms that the Facility's current operations will comply with this requirement in the Final Permit. Any discharges of bilge or ballast water from vessels berthed at the Facility are the responsibility of the owner or operator of the vessel and are subject to authorization under EPA's Vessel General Permit.[152]

[151] EPA notes that it has considered geographic limitations in setting minimum levels for other parameters where appropriate. *See* Response to Comment A.3.
[152] The currently effective VGP is available at https://www.epa.gov/vessels-marinas-and-ports/vessels-vgp

Comment H.11 General Comment – Compliance Levels

Because several effluent limitations contained in this permit are below the detection level of available analytical methods, the permit establishes "Compliance Levels" equal to the ML, the laboratory minimum levels of detection for those parameters. Compliance is defined as attainment of the Compliance Levels for these pollutants. It is important for reporting through EPA systems such as the ECHO system to reflect this fact. Sunoco requests that reporting of discharge monitoring data in ECHO and related information systems for this permit make clear that any value that satisfies a Compliance Level specified in this permit, even if it exceeds the unmeasurably lower effluent limitation, constitutes a compliant sample.

Response to Comment H.11

In cases where the effluent limitation is lower than the analytical detection level for a particular parameter, the recommended approach is to include the limit in the table of effluent limitations in the permit and add a footnote to the table that specifies a particular method or compliance level. *See* AR-114 p. 111. The Permittee will be deemed in compliance with the permit limit if the reported value is below the compliance level. EPA has followed this approach here. For parameters that have effluent limitations lower than the analytical detection method (e.g., PAHs, TRC, cyanide), the Final Permit specifies a minimum level and explains that the minimum level is the compliance level. When entering permits for electronic reporting systems (e.g., ECHO), EPA codes the compliance level as the level above which an exceedance is triggered.

Comments from Irving Oil Terminals Inc.

Irving Oil Terminals Inc. (Irving Oil) respectfully submits the enclosed comments on the draft National Pollutant Discharge Elimination System (NPDES) permit (Draft Permit) issued by the United States Environmental Protection Agency (EPA) on February 10, 2021 and the Massachusetts Permit to Discharge Pollutants to Surface Waters issued by the Massachusetts Department of Environmental Protection (MassDEP) on February 10, 2021 (MassDEP Permit) for discharges from the Irving Oil Marine Terminal (the Facility).

Irving Oil appreciates the opportunity to provide feedback and commentary on the Draft Permit and we respect the process of allowing other industry representatives, community members, and other stakeholders to do the same.

Across our organization, we have a strong commitment to the safety of our employees, the community, and the environment, as demonstrated by our performance in our last permit cycle.

As a family-owned company deeply rooted in our communities, we work hard to make a difference in the places we serve. Locally, we are proud of our long-term partnership with Tufts Children's Hospital through our Fuel the Care program, and, notably, our work with the New England Aquarium to protect the North Atlantic right whale is the longest uninterrupted survey on right whales of its kind. We've partnered with leading researchers at the aquarium for more than two decades to protect our oceans and sea life.

As a responsible operator and energy producer, we are committed to protecting the environment. We are constantly working to reduce our environmental footprint and as demands for action toward a more sustainable energy future continue to grow, we continue to work hard to adapt our operations for changing energy needs in the areas in which we operate.

Irving Oil continues to invest heavily in terminal maintenance and improvement programs aimed at enhancing the safety and reliability of the Facility. Safety is a core value and fundamental to the way we operate each and every day. A focus on safety underpins all activities at our Terminal and the team regularly completes rigorous risk identification and action planning to reduce or eliminate process hazards.

Irving Oil supports many of the effluent limitations, monitoring requirements and other conditions in the Draft Permit and the MassDEP Permit. However, we feel that there are a few reasonably ascertainable issues that present undue burden to the Terminal and the industry in general. As such, we've elected to provide the following reasonably available arguments supporting our position:

Comment I.1 – Fecal Coliform and Enterococcus

The Draft Permit proposes to change the monitoring requirements and effluent limitations for Fecal Coliform to monthly sampling, with a 100 MPN Maximum Daily Effluent Limitation and 88 MPN monthly average. The Draft Permit also proposes a new monthly report-only monitoring requirement for enterococcus.

The Fact Sheet states that Irving Oil does not engage in activities that would be expected to generate large sources of bacteria. The Facility exists within a shoreline area that is attractive to migratory seabirds and, it is unclear to Irving Oil why monthly monitoring is justified considering the regional nature of this issue and the acknowledgment by EPA that the presence of these pollutants is due to naturally occurring sources, not industrial activity. The historical data collected by the Facility indicates wide seasonal variability in the concentrations of fecal coliform which illustrates that the impacts are not mitigated by control measures used by the Facility to minimize petroleum related pollutants.

The Draft Permit requirement for monthly monitoring of fecal coliform and enterococcus places a burden on Irving Oil that is unrelated to its operations and is inconsistent with the NPDES regulations (40 CFR Part 122.26(b)(14)) for regulated industrial activities. Consistent with the impaired waters monitoring requirements of 2021 Multi-Sector General Permit (MSGP), Irving Oil respectfully requests that the EPA identify a Best Management Practice (BMP) aimed at controlling seasonal wildlife in the Facility tank farm, as opposed to an effluent monitoring limit.

Request: Irving Oil requests to maintain the current 1/year report-only monitoring requirement for Fecal Coliform and implement a BMP to minimize seasonal bird and wildlife impacts at the Facility. Irving Oil also requests removal of Enterococcus as a new monthly report only effluent characteristic.

Response to Comment I.1

EPA addressed comments on the fecal coliform effluent limitations and the *Enterococcus* monitoring requirements in the Draft Permits in Responses to Comments F.4 and F.5 above, which raise similar arguments as the comment above. Data collected over the last permit term demonstrate that the stormwater discharges from Irving can contain high levels of fecal coliform, including levels that exceed water quality criteria (e.g., 20000 cfu/100 mL). *See* Fact Sheet p. 24-26 and Appendix A. Requirements to control fecal coliform are warranted based on monitoring data for the Facility's stormwater discharges that indicate that the Facility has the potential to cause or contribute to an excursion of water quality standards in a receiving water already impaired for fecal coliform and subject to the requirements of a TMDL. *See* 40 CFR § 122.44(d)(1).

As explained in Response to Comment F.4, EPA determined that water quality-based, non-numeric limitations are appropriate in lieu of numeric fecal coliform limits to carry out the purposes and intent of the CWA to ensure compliance with water quality standards in accordance with 40 CFR § 122.44(d)(1)(vii)(A) and (B). Implementing the BMPs proposed in the Draft Permit, coupled with the additional, water-quality based non-numeric limits targeting bacteria sources (described in Response to Comment F.4) reduce sources of bacteria in the stormwater runoff and will ensure compliance with water quality standards. Given the intermittent nature of the discharge and because the source of bacteria in the effluent is likely from runoff or from the stormwater drainage system itself, BMPs that eliminate or minimize sources are the most direct method of controlling pollutants to meet water quality standards. EPA concludes that the non-numeric limits targeting bacteria, coupled with monitoring and requirements to assess and

improve BMPs as necessary to maintain bacteria levels, will ensure that the discharge does not exceed water quality standards such that a separate, numeric fecal coliform limit is not necessary. However, an annual monitoring requirement is insufficient for the purposes of ensuring compliance with the permit conditions. Monthly monitoring is required for fecal coliform and *Enterococcus* to ensure that the BMPs continue to be implemented effectively to protect the designated uses of the receiving water. *Enterococcus* monitoring can be reduced to 1/year if all sample results are less than the applicable water quality criteria. *See* Part I.A.1 fn 8. EPA maintains that the fecal coliform and *Enterococcus* monitoring requirements are supported by the record and are necessary to ensure that water quality standards are met.

Comment I.2 – Benzene and Naphthalene

The Draft Permit proposes to change the monitoring requirements and effluent limitations for benzene (i.e., reducing the 51 µg/L average monthly limit to a 5 µg/L maximum daily effluent limit) and naphthalene (i.e., reducing the 100 µg/L average monthly limit to a 20 µg/L maximum daily effluent limit).

These significant reductions in effluent limitations, in a single permit cycle, place an unreasonable burden on Irving Oil to manage stormwater as remedial water, and to meet or exceed drinking water standards in an industrial setting. Past effluent monitoring results indicate that consistently achieving these Massachusetts drinking water standards, with the existing controls in place, is not possible with 'minor' improvements.

<u>Remediation General Permit Applicability</u>
Irving Oil believes that the more stringent water quality-based effluent limits under the Remediation General Permit (RGP) for benzene and naphthalene should not apply to the Facility because its activities are not consistent with the type of discharges considered under the RGP. The RGP includes standards for treated groundwater discharges. The Facility does not operate a groundwater treatment system on the property and does not operate any additional groundwater treatment controls. Furthermore, at the Facility, prior to hydrostatic testing, tanks are emptied, cleaned, and certified gas free, for inspection. These activities follow standard operating procedures and mitigate the potential for introducing pollutants to the hydrostatic test water. There are also a series of influent and effluent monitoring requirements in the Draft Permit specific to hydrostatic testing that Irving Oil has complied with during previous hydrostatic testing events. Therefore, hydrostatic tests performed by Irving Oil are not consistent with RGP regulated activities.

<u>Treatment Considerations</u>

To consistently maintain a stormwater discharge benzene concentration below 5 µg/L, the Facility would need to install additional treatment system controls at great expense (i.e., implement filtration through media or granulated activated carbon), to treat very large volumes of stormwater discharge.

Focused treatment of RGP impacted waters is typically reserved for much lower volumes, compared to the very large volumes of stormwater that are handled, treated, and discharged at

the Facility. The volume of stormwater presents operational challenges for the Facility because of the restrictions for the timing of discharge and BMP discharge objectives. For instance, stormwater is not discharged when a ship or barge is docked and discharging fuel to the Facility, to the maximum extent practicable. This can occur multiple times per week for 10 – 20 hours at a time, further limiting when discharges can occur. If all stormwater required treatment, it would be exceedingly difficult to discharge stormwater in a timely manner, which could cause asset integrity-related issues.

Request: Irving Oil requests that the effluent limitation for benzene be set at 25.5 ug/L, which represents a 50% reduction in the current permitted limitation. Irving Oil also requests that the effluent limitation for naphthalene remain at 100 ug/L, which is already more stringent than the 140 ug/L drinking water standard for naphthalene in State of Massachusetts. Lastly, Irving Oil requests that each of these effluent characteristics remain as average monthly, as opposed to maximum daily, effluent limitations.

Response to Comment I.2

Irving requests that, in the Final Permit, EPA revise the benzene limit in the Draft Permit from 5 µg/L to 25.5 µg/L (a 50% reduction from the 2014 Permit limit) and revise the proposed naphthalene limit from 20 µg/L to 100 µg/L (equivalent to the 2014 permit). EPA addressed similar comments about the proposed benzene and naphthalene limits in Response to Comment F.2 and includes additional response to Irving's arguments below.

EPA based the effluent limits in the 2014 Permit on human health water quality criteria. *See* 2021 Fact Sheet p. 26; 2014 Fact Sheet p. 17, 20. For example, the benzene limit in the 2014 Permit is based on the state water quality standard for human health associated with the consumption of aquatic organisms.[153] Further, because the risk assessment interval for human health effects is considered over a lifetime, EPA generally includes human health criteria in the form of a chronic, i.e., monthly average limit. In the 2021 Draft Permit, EPA proposed technology-based effluent limits (TBELs) informed by TBELs in Region 1's Remediation General Permit (RGP) and monitoring results for benzene and naphthalene indicative of the performance of the BAT at this and other bulk oil terminals on the Chelsea River over the last permit cycle. *See* Fact Sheet pp. 27-29, 31-33. These TBELs are based on treatment technologies that achieve a particular level of performance at any time, rather than over any particular averaging period. Further, these TBELs are not expressed in terms of monthly average limitations because the discharges are typically "non-continuous discharges," and the federal regulation at 40 CFR §122.45(e) allows non-continuous discharges to be described and limited considering the following factors, as appropriate: 1) frequency of discharge; 2) total mass of the pollutant discharged per batch; 3) maximum rate of discharge of pollutants per batch; and 4) expression of limitations using the appropriate measure (i.e., concentration, mass). Irving asserts in the comment that the limits from the RGP are not applicable to its Facility because its activities

[153] The comment raises Massachusetts drinking water standards with respect to the proposed limits. The Massachusetts drinking water guideline for naphthalene is 140 µg/L and the Massachusetts maximum contaminant level for benzene is 5 µg/L (310 CMR 22.00). EPA explains in the Fact Sheet (pp. 26, 31) and reiterates in this response that neither the existing nor proposed limits are based on drinking water standards. The Chelsea River is not a public water system and, as such, these standards are not applicable.

are not consistent with those regulated under the RGP (i.e., the Permittee does not operate a groundwater treatment system). In Response to Comment F.2, EPA addresses similar comments about the nature of discharges and technologies considered in setting the technology-based effluent limits in the RGP and in the 2021 Draft Permits for bulk oil terminals on the Chelsea River.

The comment also asserts, without support or cost estimates, that the proposed TBEL for benzene cannot be met without the installation of additional treatment system controls (i.e., filtration through media or granulated activated carbon) "at great expense."[154] As previously explained, EPA is required to apply the more stringent of applicable water quality-based effluent limits and TBELs. *See* CWA § 301(b)(1)(C); 40 CFR §§ 122.44(d)(1), 122.44(d)(5), 125.84(e), 125.94(i); *see also* Fact Sheet p. 31. In the case of benzene and naphthalene, which are toxic pollutants, the TBELs must meet the "best available technology economically available" (BAT) standard of control. As explained in Response to Comment F.2, where the BAT standard applies, CWA §§ 301(b)(2) and 304(b)(2) require "EPA to set discharge limits that reflect the amount of pollutant that would be discharged by a point source employing the best available technology that the EPA determines to be economically feasible . . .." *Tex. Oil & Gas*, 161 F.3d at 928. To be an "available" technology, the option in question must be "economically achievable." *See Chem. Mfrs.*, 870 F.2d at 250 (citing 33 U.S.C. § 1311(b)(2)(A)). The United States Supreme Court has interpreted the CWA to mean that the BAT should "represent[] a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges." *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 74 (1980). Furthermore, Congress intended that TBELs for BAT are to "be based on the performance of the single best-performing plant in an industrial field." *Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 195, 226; *Kennecott v. EPA*, 780 F.2d 445, 448, 453 (4th Cir. 1985). Finally, because no national technology-based effluent limitation guidelines (ELGs) are applicable for the type of activity or discharge from these facilities, EPA is authorized in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2) to establish BAT on a case-by-case basis using its Best Professional Judgment (BPJ).

In response to this and other comments on the Draft Permit, EPA reviewed its BAT determination and re-evaluated the existing monitoring data and confirmed that the BAT and the proposed effluent limits are appropriate. EPA maintains that the BPJ-based, site-specific BAT for these facilities is the use of best management practices (BMPs) through the implementation of a stormwater pollution prevention plan (SWPPP) along with treatment of the stormwater by oil/water separation. *See* Response to Comment F.2. EPA's analysis of the data shows that the proposed limits can routinely be achieved through implementation of the BAT. In Response to Comment F.2, EPA evaluated the performance of the BAT at this Facility and the other terminals on the Chelsea River by calculating site-specific long-term averages and daily variability factors (based on the 99th percentile of the distribution) for benzene and naphthalene using data reported over the last permit term. *See* AR-123. The performance analysis confirms that the BMPs and oil/water separator will control naphthalene to concentrations less than the proposed maximum daily TBEL of 20 µg/L at all of the Terminals without any changes. The statistical methodology

[154] The comment does not make the same claim for naphthalene, and the DMR data from the last permit term confirm that the maximum reported value (19.6 µg/L) and the estimated maximum daily value (16.7 µg/L calculated following the statistical methodology explained in Response to Comment F.2) do not exceed the proposed 20 µg/L limit.

used to evaluate the performance of the BAT is robust and indicates that proper implementation of the technology will also routinely achieve benzene concentrations lower than the effluent limitation proposed in the Draft Permit. As explained above, TBELs are meant to be technology-forcing and should reflect the optimally operating, or best performing, facility. In this case, the technology in use at all of the terminals on the Chelsea River—BMPs plus an oil/water separator—consistently achieves benzene concentrations below 5 µg/L at the Global outfalls and the Gulf outfall (with a single exception) without additional treatment.[155] In other words, other plants in this "industrial field" operate this technology in the immediate vicinity of the Irving terminal and meet the benzene limit proposed in the Draft Permit. The current, water quality-based effluent limits are established as average monthly values because these limits are based on human health criteria. The technology-based limit is appropriately established as a daily maximum based on the methodology for calculating technology-based limits for effluent limitations guidelines. *See* Response to Comment F.2 and AR-122.

While the maximum daily benzene concentration (calculated using the statistical methodology described in Response to Comment F.2) at the Irving Terminal is 35.5 µg/L, the long-term average benzene concentration for the Irving Terminal is 3.8 µg/L. Thus, the analysis indicates that the Facility's treatment is targeted to achieve concentrations at or less than 5 µg/L. Moreover, in 82 reported samples, the Facility detected benzene in just 17 samples and only 8 exceeded 5 µg/L. In other words, the Facility has reported benzene at non-detect in nearly 80% of samples and has reported concentrations in excess of the proposed limit in less than 10% of the samples collected during the previous permit cycle. The existing technology at the Facility (BMPs plus an oil/water separator) does not exceed the proposed effluent limit in a routine manner that would suggest that the Facility cannot meet the limit using this technology. To the contrary, the majority of samples at the Facility report levels of benzene below the limit or even below minimum detection level, indicating that the technology, which focuses on source control BMPs, effectively controls the addition of benzene in stormwater and meets the proposed benzene limit. In EPA's view, the monitoring data indicate that the Permittee can improve its use of the existing technology by refining the source control and pollution prevention BMPs to eliminate breakthroughs, rather than install additional treatment. EPA expects that refining source control BMPs to meet effluent limitations can be achieved at relatively low cost, for example, through consistent use of good housekeeping measures in areas that are potential sources of pollutants, timely spill prevention and response measures, employee training, and erosion controls.

To reiterate, Congress intended that TBELs for BAT are to "be based on the performance of the single best-performing plant in an industrial field." *Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 195, 226; *Kennecott v. EPA*, 780 F.2d 445, 448, 453 (4th Cir. 1985). EPA's evaluation of the performance data from the previous permit term following the statistical methodology used for setting effluent limitations guidelines and described in the TSD, as explained in Response to Comment F.2, confirms that the BAT at the best performing facilities on the Chelsea River can achieve the maximum daily effluent limits proposed in the Draft Permit without additional treatment. The case-by-case, BPJ-based TBELs are more stringent than the water quality-based

[155] In fact, the single facility that does treat all of the stormwater on-site with additional treatment is not the best performing oil terminal on the Chelsea River. The maximum daily benzene concentration for the Sunoco Terminal, which operates a carbon treatment system for all of its stormwater, is 6.2 µg/L.

limits for benzene and naphthalene in the 2014 Permit and are more stringent than the updated human health criteria for benzene. *See* Fact Sheet p. 37. EPA has made a reasonable determination, based on BPJ and after evaluation of the performance of the BAT at these facilities, that maximum daily TBELs of 5 µg/L for benzene and 20 µg/L for naphthalene are appropriate for the bulk oil terminals at issue in this permit proceeding. The Final Permit retains the maximum daily, technology-based effluent limitations for benzene and naphthalene proposed in the Draft Permit.

Comment I.3 – Copper and Zinc

The Draft Permit proposes to change the monitoring requirements and effluent limitations for copper and zinc to monthly sampling with new maximum daily effluent limitations.

Residual low concentrations of copper and zinc are attributed to infrastructure weathering, heavy vehicle traffic, and the effects of acid rain. Historically, both copper and zinc have not been detected, or only intermittently detected, at low concentrations. Therefore, there is no basis to warrant a maximum daily effluent limitation or an increase in the frequency of sampling for these parameters.

Request: Irving Oil requests to maintain the current 1/year report-only monitoring requirement and will consider additional BMPs for maintenance and oversight of exposed surfaces (i.e. sweeping of heavy vehicle traffic areas, covering of scrap metal dumpsters, and coating of buildings, tanks and pipelines, etc.).

Response to Comment I.3

The comment objects to the new maximum daily Total Copper and Zinc limits proposed in the Draft Permit. The Fact Sheet (p. 40-41 and Appendix C) explains that copper and zinc monitoring data collected for Whole Effluent Toxicity testing over the last permit demonstrate reasonable potential to cause or contribute to exceedances of water quality standards for these two metals. EPA considered the acute saltwater aquatic life criteria for metals from EPA's National Recommended Water Quality Criteria expressed as total recoverable metals. *See* former 314 CMR 4.05(5)(e).[156] The acute criterion is 5.78 µg/L for copper and 95.14 µg/L for zinc. *See* Fact Sheet Appendix C. Between March 2015 and September 2021 copper was detected in 11 of 17 samples ranging from 2.5 to 130 µg/L, with 6 detections that exceed the water quality standard. Zinc was detected in all 17 samples ranging from 1.1 to 502 µg/L with 4 samples in exceedance of the water quality standard. EPA evaluates reasonable potential for metals by calculating a 95th percentile "upper bound" effluent concentration consistent with the statistical approach outlined in the *Technical Support Document for Water-quality Based Toxics Control*

[156] EPA derived the copper and zinc limits in the Draft Permits from EPA's *National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002*, pursuant to the then-approved Massachusetts WQS. On January 7, 2022, MassDEP submitted revisions to EPA, and, on March 31, 2022, EPA approved them. While the numeric criteria for copper and zinc did not change, the state regulatory reference changed slightly. See 314 CMR 4.05(5)(e)(1) and 4.06(6)(d), Table 29.

(TSD) (AR-X) and explained in Appendix C of the Fact Sheet.[157] The 95th percentile effluent value based on a delta-lognormal distribution (appropriate for datasets with non-detect values) is 46.6 µg/L for copper and 338.9 µg/L for zinc.

While the comment asserts that copper and zinc "have not been detected, or only intermittently detected, at low concentrations," it also attributes the detections of these metals in the discharge to the facility's infrastructure and operations. Furthermore, the projected values based on the Facility's data are well above the saltwater acute criteria and demonstrate reasonable potential for the Facility's discharges to cause or contribute to an exceedance of water quality standards for copper and zinc. In accordance with 40 CFR § 122.44(d)(1)(i), the permit must contain effluent limitations for all pollutants that are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above water quality standards. Because the data demonstrate reasonable potential, the Final Permit retains the maximum daily effluent limitations for copper and zinc. Additional BMPs such as those referenced in the comment (e.g., sweeping of heavy vehicle traffic areas, covering of scrap metal dumpsters, and coating of buildings, tanks and pipelines) should be pursued to control levels of metals in the discharge.

Comment I.4 - Ammonia

The Draft Permit proposes to change the monitoring requirements and effluent limitations for ammonia to monthly sampling (six samples between April and October) with a new maximum daily effluent limitation of 1.8 mg/L. There is no basis for implementing a daily effluent limit for ammonia (i.e., additional costs for unnecessary data).

Request: Irving Oil requests to maintain the current 1/year report-only monitoring requirement for ammonia.

Response to Comment I.4

The comment objects to the new Total Ammonia Nitrogen maximum daily limit during warm weather months. The Fact Sheet (p. 42-43 and Appendix C) explains that ammonia monitoring data collected for Whole Effluent Toxicity testing over the last permit demonstrate reasonable potential to cause or contribute to exceedances of water quality standards for Total Ammonia Nitrogen. EPA considered the acute saltwater aquatic life criteria for ammonia from EPA's 1989

[157] EPA reviewed the Fact Sheet and Appendix C in response to the comment and noticed an error in the reasonable potential analysis presented in Appendix C. The DMR data in Appendix A (Outfall 001 Whole Effluent Toxicity Monitoring) reports values with units in both µg/L and mg/L. For example, reported copper values of 0.0008 to 0.0027 µg/L are less than the listed minimum level for copper (<.05 µg/L). EPA concludes that the monitoring data for metals was reported as µg/L in some quarters (e.g., 8.6 µg/L on 9/30/2020) and mg/L in others (e.g., 0.0096 mg/L on 9/30/2017). When EPA initially evaluated reasonable potential for Appendix C, all of the values were converted to mg/L including those already reported as mg/L, which resulted in artificially low values (e.g., on 9/30/2017 the reported value of 0.0096 mg/L because 0.0000096 mg/L). For this Response to Comment, EPA converted only the values reported as µg/L to mg/L. EPA also updated the data to include the most recent monitoring period (9/30/2021) so that the analysis reflected the most up-to-date conditions at the Facility. The resulting reasonable potential analysis for all metals did not change from the Fact Sheet (p. 41) or alter the limit proposed in the Draft Permit.

Ambient Aquatic Life Water Quality Criteria for Ammonia (Saltwater) considering ambient temperature and salinity data appropriate for Chelsea River. *See* 314 CMR 4.05(5)(e). The acute warm-water criterion is 1.8 mg/L and the cold-water criterion is 9.4 mg/L for zinc. *See* Fact Sheet Appendix C. Between March 2015 and September 2021, ammonia was detected in 15 of 17 samples, ranging from 0.7 to 2.01 mg/L. EPA evaluates reasonable potential by calculating a 95th percentile "upper bound" effluent concentration consistent with the statistical approach outlined in the *Technical Support Document for Water-quality Based Toxics Control* (TSD) (AR-114) and explained in Appendix C of the Fact Sheet. For ammonia, EPA evaluated data from December and March as cold water and June and September as warm water. The 95th percentile effluent value for ammonia based on a delta-lognormal distribution (appropriate for datasets with non-detect values) for cold water is 2.47 mg/L and for warm water is 3.62 mg/L. The projected warm water value is above the saltwater acute warm water criteria and demonstrates reasonable potential for the Facility's discharges to cause or contribute to an exceedance of water quality standard.

In accordance with 40 CFR 122.44(d)(1)(i), the permit must contain effluent limitations for pollutants discharged at a level that causes, has the reasonable potential to cause, or contributes to an excursion above water quality standards. For this reason, the Final Permit retains the seasonal maximum daily effluent limitation for total ammonia nitrogen (April through October). The monthly monitoring frequency is necessary to confirm compliance with the maximum daily effluent limitation. While the comment broadly asserts that "[t]here is no basis for implementing a daily effluent limit for ammonia (i.e., additional costs for unnecessary data)," it does not support this general claim with any analysis or otherwise address EPA's explanation for the ammonia requirements.

Comment I.5 – Per- and Polyfluoroalkyl Substances (PFAS)

The Draft MassDEP Permit includes conditions for Irving Oil to assess whether per- and polyfluoroalkyl substances (PFAS) discharges from the Facility are occurring, and whether the Permittee may be contributing to a violation of the narrative toxics criteria. Specifically, the Draft MassDEP Permit requires the Facility to monitor its discharges for PFAS using a '24-hour Composite' sample collection methodology.

The Permittee does not agree that a new sample collection methodology be introduced at this time, during a discovery period for substances without pre-established toxicity risk levels. The Facility discharge is not typically continuous for 24 hours and can be constrained by tidal flow, the presence of ships, and day-time hours.

Request: The Permittee requests that sampling methods be consistent with sampling practices for other monitored constituents that are collected as 'grab' samples during the first qualifying event.

Response to Comment I.5

The comment requests a change in the sample type for PFAS compounds from composite to grab. A "grab" sample is an individual sample and provides an instantaneous view of stormwater

quality at a single point in time at a particular location. A "composite" sample is collected over time, either by continuous sampling or by mixing discrete samples, and represents the average characteristics of the wastestream during the sample period. Grab sampling collected during the "first flush" of a discharge following a storm often contains the highest pollutant concentrations in a storm runoff event, especially in small catchment areas with mostly impervious surfaces, and in storms with relatively constant rainfall. In such cases, the first flush may carry pollutants that accumulated in the collection system and on paved surfaces during the dry period before the storm. Thus, the results from single grab samples collected during the initial part of storm runoff may be useful for screening level programs designed to determine which pollutants, if any, are present at levels of concern. *See also* Response to Comment A.3.3.

In this case, PFAS monitoring is at the screening level and is intended to characterize presence or absence of the compounds. EPA agrees that a grab sample is an appropriate sampling type to screen for presence or absence in this case, particularly as the Final Permit otherwise requires sampling the "first flush" of pollutants. *See* Final Permit Part I.A.1 footnote 1. For this reason, EPA agrees that the sample type for PFAS compounds can be changed to grab, which also makes it consistent with the sample type for all other parameters listed in Part I.A.1. However, quarterly grab samples will result in substantially fewer overall samples of the stormwater than quarterly composite samples would because composite samples are made up of multiple grab samples over a period of time. For this reason, and because there is at least one known source of PFAS at the facility (fire-fighting foam), EPA reconsidered the number of samples needed prior to requesting elimination of the monitoring requirement. Consistent with the screening level pollutant sampling requirements in the 2014 Permit, EPA revised the Final Permit to require three years of quarterly non-detect grab samples prior to requesting elimination of PFAS monitoring. Finally, EPA notes that MassDEP also changed the PFAS sample type from composite to grab in its Section 401 Certification for the Irving Oil Terminal based on comments received. *See* AR-133.

Comment I.6 – Bioassessment

The Permittee does not agree that the current stormwater permitting process should mandate a scientific study of benthic conditions that have been historically impacted for hundreds of years by industrial activities such as:

- urban filling and wetlands filling;
- coal gasification;
- manufacturing;
- atmospheric deposition of coal and ash;
- municipal waste (sewage) and MS-4 inputs;
- MWRA outfalls;
- airport parking lots and transportation activities; and
- railroad operations, loading, and unloading.

The extent of the scientific study requested is extensive (i.e. Benthic Morphology Characterization, Substrate Characterization, Benthic Pollutant Analysis, etc.) and overreaches the potential impact of each bulk terminal. It will be difficult to differentiate impacts from stormwater and the historical industrial activities. Such a regional study needs to be addressed by

more stakeholders, municipalities, and other industries that contribute/d to the potential impacts and singling out a specific industry is not warranted. Additionally, Irving Oil feels that hydrodynamic modeling is outside the boundaries for assessing stormwater impacts from an industrial activity, which is the focus of the NPDES program

Request: The proposed requirement for the Facility to complete a bioassessment as part of the Special Conditions of the draft Permit should be removed because it singles out a specific industry within the Chelsea River and focuses on impacts well beyond the scope of the Facility's past and present-day operations.

Response to Comment I.6

The comment requests that the bioassessment requirements be removed from the Final Permit because it "singles out a specific industry" and "focuses on impacts well beyond the scope of the Facility's past and present-day operations." However, the comment misrepresents the purpose of the bioassessment by suggesting that it is intended to "differentiate impacts" from various industries on the benthic environment. This is not the case. The bioassessment requirements serve to ensure compliance with current permit limits and applicable water quality standards as required by CWA § 402(a)(2) and 40 CFR § 122.44(d) and are necessary and appropriate to carry out the provisions of the CWA. *See also* CWA § 308(a). EPA addressed similar comments on the bioassessment requirements in Response to Comment F.3.

Massachusetts State WQSs at 314 CMR 4.05(5)(b) include narrative criteria for bottom pollutants or alterations, which state, "[a]ll surface waters shall be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms." State WQSs at 314 CMR 4.05(5)(e)(2)(a) also contain narrative criteria for accumulation of pollutants applicable to all classes, which state, "[w]here appropriate the Department shall use an additional margin of safety when establishing water quality based effluent limits to assure that pollutants do not persist in the environment or accumulate in organisms to levels that: a. are toxic to humans, wildlife or aquatic life; or b. result in unacceptable concentrations in edible portions of marketable fish or shellfish or for the recreational use of fish, shellfish, other aquatic life or wildlife for human consumption."

As EPA noted in the Fact Sheet (p. 95), MassDEP has determined that the Aquatic Life designated use in the Chelsea River is not supported due to sediment screening value and that contaminated sediments and the activities at the Terminals are among the sources of the impairment of this designated use. MassDEP has also listed contaminated sediments as one of the sources of the impairment of the Fish Consumption designated use of the river. The Fact Sheet (p. 95) further notes a 2005 USGS study identifying pollutant concentrations in sediment high enough to pose a threat to benthic organisms in the river. EPA considered this information, and that the Facilities' discharge sediment/solids and pollutants that exhibit physical and chemical characteristics that can accumulate in sediments, to propose that an assessment related to sediment and benthic organisms is needed to understand the extent of impacts to designated uses, the ways in which the discharges from the Facilities may cause or contribute to these

impairments, the impact of current permit limits and conditions in mitigating any such contribution, and, if necessary, whether and what sort of limits or conditions may be appropriate in future permitting actions for these Facilities. The Fact Sheet (pp. 95-97) clearly states the purpose of the bioassessment in the Chelsea River in the vicinity of Irving's outfall is to evaluate the extent to which its discharges cause or contribute to excursions above state water quality standards (including the two narrative criteria and designated uses mentioned above) in the receiving waterbody and to assess whether permit limits are sufficient to protect them.

As the comment points out, Chelsea Creek has been home to industrial activity for over a century; the current impairments in the waterbody are not attributable to a single point source but are likely the result of the multiple combined sewer overflows (CSOs), multiple petroleum facilities, and other commercial and industrial discharges. Part I.C.6 of the Draft Permit requires a limited number of monitoring events (during the first and fifth year of the permit term) in close proximity to the Facility's outfall bounded by the zone of influence of the discharge upstream and downstream. The focused bioassessment monitoring is designed to evaluate whether the current permit limits are sufficiently protective of water quality and that the discharges are in compliance with the permit requirements. The bioassessment program is not designed to determine which historical entities contributed to the pollutants currently in the receiving water body sediment or to determine if any single point source is a cause of the impairments in Chelsea River. Rather, the bioassessment is necessary to gather data to determine whether the discharges from the Facility have the potential to cause or contribute to an excursion of water quality standards, including the narrative standards for bottom pollutants, in the vicinity of Irving's outfalls. A more robust monitoring effort is warranted for this permit given the Chelsea River's existing impairments and the potential that the effluent may contribute to these impairments.

EPA maintains that the monitoring requirements are a reasonable exercise of EPA's authority under CWA §§ 308(a) and § 402(a)(2) because the discharges from the Facility are a suspected source of the listed impairments to the Chelsea River and additional data are necessary for EPA to ensure compliance with permit limits and make informed decisions about whether further conditions or limits will be necessary to ensure that the Facility does not cause or contribute to exceedances of the water quality standards, particularly those related to benthic conditions. *See* 40 CFR § 122.44(d)(1) (requiring NPDES permits to include "any requirements . . . necessary to . . . [a]chieve water quality standards").

Finally, EPA requested comment on whether a comparative analysis should include hydrodynamic modeling. Irving Fact Sheet (p. 55-56). Information provided from the development of a hydrodynamic model would be useful to characterize mixing, dilution and behavior of the stormwater discharges from the Irving outfall under various receiving water conditions. EPA recognizes that a hydrodynamic model, while potentially useful in interpreting bioassessment data, is not essential at this point. That is why EPA included the proposal for a comparative analysis that includes hydrodynamic modeling as one of five topics in the Fact Sheet (p. 97) as a way to generate comments from the permittee and the public. Based on the comment above and additional comments received (*see*, *e.g.*, Comments F.3 and G.3), the Final Permit does not include a requirement to complete hydrodynamic modeling.

Comment I.7 – Best Management Practices (BMPs): Discharge Practices

EPA requests comment on whether it is also appropriate for the permit to require the Facility to avoid discharging at the same time as the other petroleum bulk storage facilities along Chelsea River and/or whether it would be best to require a permittee to sequence its discharge starting from the uppermost Facility (i.e., Global Companies, LLC) and progressing downstream (i.e., (i.e. Irving Oil Terminals, Inc., Gulf Oil Limited Partnership, Sunoco Partners Marketing and Terminals L.P.) to the confluence with Boston Inner Harbor (i.e., Chelsea Sandwich, LLC). EPA believes this type of control could reduce the potential for cumulative impacts.

The volume of stormwater managed at the Facility presents operational challenges because of the restrictions for the timing of discharge and BMP discharge objectives. For instance, stormwater is not discharged when a ship or barge is docked and discharging fuel to the Facility, to the maximum extent practicable. This can occur multiple times per week for 10 – 20 hours at a time, further limiting when discharges can occur. Additionally, the Facility may need to discharge continuously during significant storms. In a wet month, the Facility could discharge very large volumes of water, and at the restricted flow rates and hours of discharge, could take an extended period to effectively drain the tank farm dikes. The Permittee believes that discharge activities cannot be effectively coordinated with the other Facilities, as it would place an additional burden on the already limited opportunities for discharges. Furthermore, allowing stormwater to sit for extended periods of time in the tank farm increases the potential for asset integrity-related issues.

Request: Irving Oil requests that EPA remove the proposed BMP to avoid discharging concurrently with the other facilities located along Chelsea Creek.

Response to Comment I.7

EPA addressed similar comments on coordinating discharges with other facilities in Response to Comment F.23. Effectively coordinating all stormwater discharges with other facilities is likely to be impractical, particularly during storm events when facilities have less control over the discharge and/or must discharge to prevent flooding or impacts to the treatment system. EPA agrees that the Draft BMP is too broad to be effectively implemented. In response to this and the other similar comments from the Terminals, EPA has decided not to include the requirement to coordinate discharges. *See* Response to Comment F.23.

Comment I.8 – Best Management Practices (BMPs): Major Storm Events

EPA requests comment on whether it is appropriate for the permit to require the Facility to consider implementing enhanced controls to minimize impacts from stormwater discharges from major storm events. EPA requests information on structural improvements, enhanced pollution prevention measures, and other mitigation measures that the permit could require the Facility to consider and how the Permittee might identify areas of the Facility that are at the highest risk for stormwater impacts from major storms that cause extreme flooding conditions.

Irving Oil has several BMPs, written programs and procedures already in place to prepare for and manage major storm events. These include, but are not limited to, the following:

- Stormwater Pollution Prevention Plan (SWPPP) Control Measures
- Facility Response Plan (FRP)
- Spill Prevention, Control, and Countermeasure (SPCC) Plan
- U.S. Coast Guard Operations Manual
- Port Marine Safety and Environmental Protection Manual
- Severe Weather Readiness Standard, Procedure & Checklist
- Emergency Shutdown Procedures
- Emergency Operating Procedures
- Stormwater Discharge Procedure
- Good Housekeeping Practices
- Weather-Related Restrictions on Vessel Discharge / Docking

Further, according to the Federal Emergency Management Agency's (FEMA) map(s) covering the location of the Facility, the tank farm is not within the SFHA and is classified Zone X. Zone X are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood and are considered areas of minimal flood hazard.

Request: Irving Oil requests removal of the following Draft Permit language: "The Permittee shall implement structural improvements… to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation, and flood events." The Permittee does not consider the stormwater permit process to be the appropriate program to require such improvements because they are not related to enhancing the quality of stormwater discharged from the Facility's outfall.

Response to Comment I.8

EPA commends the commenter for considering the risks of major storm and flood events and proactively taking these steps. However, the permittee's proactiveness does not render the cited language from the draft permits (and contained in the final permits) inappropriate. As noted *supra*, Part I.C.1.b.6 makes explicit the requirement that permittees prospectively consider the heightened risk of discharges that result from impacts of major storm and flood events caused by climate change. *See* 2021 Fact Sheet at 88–89 ("The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications and must take future conditions into consideration." (emphasis added)).

The implementation of structural improvements—also known as structural control measures—is one of numerous specific control measures that permittees must consider, supplied in an expressly non exhaustive list, and is a well-established means of controlling the discharge of pollutants in stormwater.[158] The decision of the appropriate control measures is left to the

[158] *See, e.g.*, National Resource Council of the National Academies, *Urban Stormwater Management in the United States*, at 294 (Oct. 15, 2008) ("SCMs [stormwater control measures] reduce or mitigate the generation of stormwater runoff and associated pollutants. These practices include both 'structural' or engineered devices as well

permittees; as explained *supra*, Part I.C.1.b.6 does not require nor prescribe specific control measures, but it requires permittees to document in their SWPPPs the considerations made to select and design control measures at the facility to minimize discharges that result from impacts of major storm and flood events.[159] Moreover, preventing the discharge of pollutants through stormwater and resulting from flooding is an appropriate exercise of EPA's authorities. *See generally* CWA §§ 301, 402; 40 CFR § 122.26.

In addition to specific requirements of the Permit at Part I.C.1.b.6, the Region is mindful of the Standard Conditions in Part II of the Permit, specifically:

> B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS
>
> 1. Proper Operation and Maintenance
>
> The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.
>
> 2. Need to Halt or Reduce Not a Defense
>
> It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
>
> 3. Duty To Mitigate
>
> The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

When interpreting EPA's standard conditions, and the conditions of NPDES permits generally, the Region assumes a precautionary posture, particularly where permit conditions require consideration of climate-change dependent data, models or other information and analyses, and where human health is directly at risk. *See In re Upper Blackstone Water Pollution Abatement Dist.*, 14 E.A.D. 577, 599 (EAB 2010) (explaining that the NPDES regulations require a "precautionary" approach to determining whether the permit must contain a water quality-based

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as more 'nonstructural measures' such as land-use planning, site design, land conservation, education, and stewardship practices."), *available at* https://www3.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf.

[159] EPA acknowledges that permittees may already have some controls in place due to existing requirements mandated by state, local, or federal agencies. For this reason, Part I.C.1.b.6 provides: "For control measures already in place, including requirements from state, local or federal agencies, a description of the controls and how they meet the requirement(s) of this permit must be documented in the SWPPP."

effluent limit for a particular pollutant), *aff'd.* 690 F.3d 9 (1st Cir. 2012), *cert. denied*, 133 S. Ct. 2382 (2013). Compliance with the site-specific and standard conditions of the permit is achieved by taking into account the most representative data reasonably available to reflect current conditions and the best models reasonably available to project future conditions with reasonable certainty, along with consideration of worst-case scenarios, as discussed below. The permittee must also take into account its own experiences with major storm and flood events, as well as those of analogous or similarly-situated facilities across the country with respect to disruptions to facility operations. For example, a reasonable permittee is expected to factor into its pollution prevention planning reasonably available information relating to facility disruptions at near or on-shore petroleum bulk storage facilities resulting from past major storm and flood events such as Hurricane Harvey and Hurricane Sandy. *See e.g.*, Blake, E. & Zelinsky, D., *Tropical Cyclone Report: Hurricane Harvey*, NOAA Nat'l Hurricane Ctr. at 9-12 (2018), *available at* https://www.nhc.noaa.gov/data/tcr/AL092017_Harvey.pdf. (describing "catastrophic" flooding impacting businesses and residences over a large area of southeastern Texas); Blake, E. *et al*., *Tropical Cyclone Report: Hurricane Sandy*, NOAA Nat'l Hurricane Ctr. at 8-19 (2013), *available at* https://www.nhc.noaa.gov/data/tcr/AL182012_Sandy.pdf (describing storm surge, rainfall, and flooding across the eastern seaboard). Analyses under the permit should in other words consider "worst-case" scenarios, an approach that is grounded in the preventative nature of the Clean Water Act. *In re Wash. Aqueduct Water Supply Syst.*, 11 E.A.D. 565, 584 (EAB 2004); *accord Am. Iron & Steel Inst. v. EPA*, 115 F.3d 979, 1001 (D.C. Cir. 1997) (discussing EPA's policy that the reasonable potential analysis be based on the worst-case scenario).

Finally, designing and implementing stormwater BMPs is a dynamic, adaptive process. This is true of the BMPs required to be developed under this permit and of the efforts around sustainability and resilience being undertaken throughout the wider watershed by a variety of public and private actors. When designing and implementing BMPs to comply with this permit, EPA expects that permittees will make reasonable best efforts to account for any stormwater resilience planning/implementation activity occurring on adjacent/off-parcel properties, whether by public or private actors, if that activity will impact the volume or nature of stormwater discharged from the permitted facilities. EPA expects permittees to take reasonable steps to minimize conflicts between BMPs they develop and other stormwater resilience activities that may have a nexus to their facilities (i.e., where a control measure on their parcel might cause an increase in stormwater on another parcel, or vice versa). Additionally, EPA encourages reasonable steps to act in conformity/consistently with other resilience initiatives in the watershed that permittees deem to be effective.

Comment I.9 – Draft Permit Errors Requiring Administrative Updates: **Groundwater Treatment System and Discharge**

There are several places in the Draft Permit and Fact Sheet that refer to groundwater treatment systems, groundwater infiltration, and the location of Outfall 003. These features are not associated with the Facility and need to be corrected in the Final Permit.

Request: Irving Oil requests that the applicable Permit and Fact Sheet errors, as underlined below, be removed to reflect the subject Facility's operations:

- Sections (C)(1)(b)(3) and (C)(1)(b)(4) and of the Draft Permit and Section 5.3.1 Best Management Practices of the Fact Sheet, Effluent Flow BMP refer to groundwater treatment systems. Irving Oil does not operate groundwater treatment systems.
- Section 5.3.1 Best Management Practices of the Fact Sheet, Stormwater System BMP, refers to Internal Outfall 003. Internal Outfall 003 is not associated with Irving Oil.

Response to Comment I.9

The Irving Terminal does not operate an internal outfall or a groundwater treatment system. The Fact Sheet (at 47) incorrectly references "internal Outfall 003" and "groundwater treatment" in the description of the some of the BMPs. While the Fact Sheet is issued only with the Draft Permit and will not be re-issued, this Response to Comment serves as a record that the references to this internal outfall and groundwater treatment systems in the Fact Sheet were in error. EPA did not identify any use of the term "Outfall 003" in the Draft Permit that would need to be corrected.

Part I.C.1.b.4 of the Draft Permit requires the Permittee to "document the measures and methods used to control flow through both the stormwater and groundwater treatment systems to ensure that the design flow of the treatment systems are not exceeded." EPA has revised the Final Permit to remove "groundwater" from the description of the treatment system. In addition, EPA has revised Part I.C.5.b.5 to remove the reference to "groundwater remediation effluent."

While the commenter requests that the reference to "groundwater treatment system" be removed from Part I.C.1.b.3, EPA notes that Part I.C.1.b.3 contains no such reference. To the extent the commenter is requesting that EPA remove the term "groundwater" from that provision based on the claim in the comment that "groundwater infiltration" is not a "feature[] associated with the Facility, the comment does not provide support for any such a claim. Moreover, even if the claim is true, retaining the reference to groundwater in Part I.C.1.b.3 should not be problematic. All groundwater infiltration prohibitions listed in the Draft Permit are retained in the Final Permit.

Comment I.10 – Draft Permit Errors Requiring Administrative Updates: **Hydrostatic Testing**

Irving Oil has traditionally used water from the Chelsea River, as opposed to potable water, as the source of water for conducting hydrostatic tests. Section 3 of the Draft Permit Special Conditions requires Hydrostatic Test Water to be analyzed for several parameters, including Total Residual Chlorine (TRC). Per the Effluent Limitations and Monitoring Requirements section of the permit, monitoring for TRC is only required for discharges that have been previously chlorinated, or that contain residual chlorine.

Request: Irving Oil requests the inclusion of a footnote exemption in the hydrostatic test water section of the Draft Permit, denoting that TRC analysis is only required when potable water is used as the source of water for conducting hydrostatic tests.

Response to Comment I.10

Through the monitoring of hydrostatic test water, EPA seeks to fully characterize all discharges, both internal wastestreams and final effluent discharges, to understand the full scope of potential pollutants that are being discharged to the Chelsea River. The comment points out that the most likely source of TRC in hydrostatic test water is if the fill source is potable water and requests that the Final Permit include a footnote, similar to footnote 12 in Part I.A.1 of the Draft Permit, specifying that TRC analysis of hydrostatic test water is required only when potable water is used in hydrostatic testing. Irving correctly identifies that it has used Chelsea River water for the previous three hydrostatic tests. *See* Fact Sheet p 51. In response to this comment, EPA revised Part I.C.3.c.13 of the Final Permit to require TRC sampling of the hydrostatic test water only when potable water or a similar source of water that is likely to contain residual chlorine concentrations is used for hydrostatic testing.

EPA notes for awareness that it has removed the first sentence of footnote 12 (in Part I.A.1) from the Final Permit based on comments from other terminals that they may not at this time be able to identify discharges (other than hydrostatic test water) that have previously been chlorinated.[160] *See, e.g.*, F.9, F.28, G.9, G.26. As a result, EPA is recommending that each Permittee complete a source identification program to investigate the likely sources of TRC to the effluent and implement operational controls or other BMPs to minimize discharges of TRC to ensure the protection of water quality. The identification and control of sources of pollutants, including TRC, is consistent with Part I.C.a. of the Final Permit (as proposed in the Draft Permit), which establishes BMPs to minimize pollutant discharges, including TRC. In addition, this revision of footnote 12 in Part I.A.1 of the Final Permit means that the effluent limit for TRC at Outfall 001 applies in all cases. However, EPA has also revised the Final Permit to allow the Permittee to request a change to apply the limit and monitoring only to discharges that have been previously chlorinated or contain residual chlorine based on the results of the source identification. *See also* Response to Comment F.9, F.28. For example, during the source identification study, the Permittee may find that the presence of TRC is associated with the use of potable water to wash structures and equipment. Based on this information, the Permittee could request that the TRC limit apply only when potable wash down water is being discharged.

[160] The first sentence read: "Monitoring for total residual chlorine (TRC) is only required for discharges that have been previously chlorinated or that contain residual chlorine."

Comments from Gulf Oil Limited Partnership (Gulf)

Comment J.1 – Fecal Coliform

Gulf objects to the inclusion of monthly monitoring for fecal coliform and *Enterococcus* in the Draft Permit. As stated in the Fact Sheet "the Facility does not engage in activities that would be expected to generate large sources of bacteria." Sewage from the facility is discharged to the City sewerage system. No other activities at the Terminal generate bacteria that could be exposed to stormwater runoff. Analytical results reporting the presence of fecal coliform or *Enterococcus* in the stormwater runoff will be from the natural presence of wildlife that visits the property despite the location in a dense urban setting. The majority of point source stormwater flow to the Chelsea River comes from the Municipal Separate Storm Sewer Systems (MS4s) in Chelsea, Revere, and Boston. In particular, the City of Chelsea has a combined sanitary and storm sewer overflow (CSO) (Outfall CHE008) which is located on the Chelsea River. However, the MS4s and CSOs are not required to sample for fecal coliform and *Enterococcus* in their discharges under the MS4 National Pollutant Discharge Elimination System (NPDES) General Permit or the City's CSO NPDES Permit.

Therefore, Gulf requests that the requirement for monthly fecal coliform and *Enterococcus* monitoring be removed from the Permit.

If the fecal coliform and *Enterococcus* monitoring requirements are not removed, Gulf requests that the language from the Fact Sheet regarding reducing the frequency of monitoring for these parameters be included in the Permit. The last sentence of Fact Sheet Section 5.2.2.6 (Page 26) states "After one year, if all monitoring results are below the applicable WQS, the monitoring frequency may be reduced to once per year, in conjunction with the annual monitoring event." However, the Draft Permit does not indicate that the fecal coliform or *Enterococcus* sampling frequency can be reduced. Please clarify this statement in the Fact Sheet and revise the Permit requirements if necessary.

Response to Comment J.1

EPA addressed comments on the fecal coliform effluent limitations and the *Enterococcus* monitoring requirements in the Draft Permits in Responses to Comments F.4 and F.5 above, which are nearly identical to the comment above. Data collected over the last permit term demonstrate that the stormwater discharges from the Gulf Oil Terminal can contain high levels of fecal coliform, including levels that exceed water quality criteria (e.g., 1100 cfu/100 mL). *See* Fact Sheet p. 24-26 and Appendix A. Requirements to control fecal coliform are warranted based on monitoring data for the Facility's stormwater discharges that indicate that the Facility has the potential to cause or contribute to an excursion of water quality standards in a receiving water already impaired for fecal coliform and subject to the requirements of a TMDL. *See* 40 CFR § 122.44(d)(1).

As explained in Response to Comment F.4, EPA determined that water quality-based, non-numeric limitations are appropriate in lieu of numeric fecal coliform limits to carry out the purposes and intent of the CWA to ensure compliance with water quality standards in accordance

with 40 CFR § 122.44(d)(1)(vii)(A) and (B). Implementing the BMPs proposed in the Draft Permit, coupled with the additional, water-quality based non-numeric limits targeting bacteria sources (described in Response to Comment F.4) reduce sources of bacteria in the stormwater runoff and will ensure compliance with water quality standards. Given the intermittent nature of the discharge and because the source of bacteria in the effluent is likely from runoff or from the stormwater drainage system itself, BMPs that eliminate or minimize sources are the most direct method of controlling pollutants to meet water quality standards. EPA concludes that the non-numeric limits targeting bacteria, coupled with monitoring and requirements to assess and improve BMPs as necessary to maintain bacteria levels, will ensure that the discharge does not exceed water quality standards such that a separate, numeric fecal coliform limit is not necessary. Monthly monitoring is required for fecal coliform and enterococci to ensure that the BMPs continue to be implemented effectively to protect the designated uses of the receiving water. EPA maintains that the fecal coliform and *Enterococcus* monitoring requirements are supported by the record and are necessary to ensure that water quality standards are met.

Lastly, the comment requests that EPA clarify whether monitoring requirements for bacteria can be reduced after one year consistent with the statement in the Fact Sheet (p. 26). The paragraph from which the quote about reducing monitoring requirements is taken only refers to the monitoring requirements for *Enterococcus*. The Draft Permit proposed a numeric effluent limitation for fecal coliform with monthly monitoring. As explained above, the Final Permit's approach for controlling bacteria is to impose BMPs, the effectiveness of which will be measured with the monthly monitoring data. EPA expects the Facility to implement BMPs targeting the source of bacteria at the Facility. The monitoring frequency cannot be reduced to annual because the data would be insufficient to evaluate the effectiveness of the BMPs. EPA proposed and retains monthly monitoring for fecal coliform based on the impairment in the Chelsea River, which will provide an opportunity for the permittee to regularly assess the BMPs. However, EPA does not expect that the source of fecal coliform is likely to be different than for *Enterococcus* and, as such, the targeted BMPs are likely to be effective for both indicator bacteria. As the comment states, the Fact Sheet (p. 26) includes language that indicates that monitoring frequency for *Enterococcus* may be reduced to once per year after one year of monitoring data in which no sample exceeds the water quality standard. This language was inadvertently omitted from the Gulf Draft Permit but was included in the Draft Permits for the Global, Chelsea Sandwich, Sunoco, and Irving facilities. *See, e.g.*, Part I.A.1 footnote 8 in Sunoco Draft Permit MA0004006. Therefore, EPA revised Part I.A.1 of the Gulf Final Permit to include the footnote allowing for a reduction in *Enterococcus* monitoring to once per year based on no less than 12 months of sampling data.

Comment J.2 – Part I.A.1 Errors

Part I.A.1 Table - In the Table, under the Measurement Frequency column, Gulf believes there was an error and Note 9 should be applied to benzo(a)anthracene, chrysene, and dibenzo(a,h)anthracene instead of Note 10. Gulf requests that the Table be revised to reflect this.

Part I.A.1 Table - In the Table, Gulf believes there was an error and Note 10 should be applied to chrysene and dibenzo(a,h)anthracene instead of Note 11. In addition, Note 10 should be applied

to naphthalene, acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, phenanthrene, and pyrene. Gulf requests that the Table be revised to reflect this.

Part I.A.1 Table Footnote 9 - Gulf requests that the text of Note 9 be revised to remove benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, and naphthalene since these parameters have a monthly sampling frequency in the Table in Part I.A.1.

Part I.A.1 Table Footnote 10 - In Note 10, Gulf requests that the last sentence be revised to include benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene so that each has a compliance level equal to the minimum level (ML) of 0.1 µg/L, since the Effluent Limits for these compounds are lower than can be achieved using commercially available analytical methods.

Part I.A.1 Table Footnote 17 - Note 17 states that annual monitoring of the receiving water for polycyclic aromatic hydrocarbons (PAHs) and benzene, toluene, ethylbenzene, and xylenes (BTEX) is to be conducted in the month of April. However, the last sentence in Note 17 states "Sampling shall be performed concurrently with the monthly monitoring event and annual effluent monitoring described above." (emphasis added) Note 9 specifies the annual effluent monitoring as September. Based on the last sentence of Note 17, it appears that EPA's intention is for all of the annual sampling of the effluent and receiving water to be conducted at the same time. Therefore, Gulf requests that the annual sampling in Note 17 be changed to the month of September to correspond to the annual sampling specified in Note 9.

Part I.A.1 Table - In the Table, Gulf believes there was an error and the Sample Type for MtBE should be listed as "Grab". Gulf requests that the Table be revised to reflect this.

Part I.A.1 Table - In the Table page 5, there is blank row under the Ambient Characteristic heading row. Is there a parameter missing from the Ambient Characteristic portion of the Table, or should this blank row be deleted?

Part I.A.1 Table Footnote 17 - The second to last sentence of this Note refers to "Outfall 001". Gulf requests that this be changed to Outfall 003, which is Gulf's only outfall at the Terminal.

Response to Comment J.2

The Permittee identified several errors in the Draft Permit. EPA has consolidated these comments and responds to them here. In addition to the errors noted above, EPA identified two additional errors in the Gulf Draft Permit. The footnote for *Enterococcus* monitoring was not included in the Draft Permit and was added to the Final Permit as Footnote 9. The remaining footnotes were renumbered as a result of this addition. The Draft Permit identified 20 µg/L as the minimum level for total residual chlorine; in fact, the minimum level should be 30 µg/L consistent with the minimum level in the other terminal permits. See Response to Comment F.9.

The comment identifies several inconsistencies in the table and the footnotes for certain PAHs. EPA reviewed the Fact Sheet (p. 30-32) and Draft Permits for other terminals on the Chelsea River. The Fact Sheet explains that effluent limitations for the indicator parameters

benzo(a)pyrene and naphthalene are carried forward from the 2014 Permit with a monthly monitoring frequency. Based on detections over the monitoring period, effluent limitations were established for benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene with a monthly monitoring frequency. Consistent with the Draft Permits for other terminals, the Permittee must continue to report Group I PAHs that were not detected in the last permit term, which includes benzo(a)anthracene, chrysene, and dibenzo(a,h)anthracene, on a monthly basis.[161] The measurement frequency of once per year for benzo(a)anthracene, chrysene, and dibenzo(a,h)anthracene was an error; the correct monitoring frequency of 1/month was included in the Final Permit. Footnote 9 in the Draft Permit erroneously listed several Group I PAHs and naphthalene in the footnote referencing annual monitoring, which were deleted because these parameters are monitored on a monthly basis. The Final Permit reflects these changes. Footnote 10 identifies the appropriate minimum levels for Group I and Group II PAHs and was revised in response to comments received about the methods and minimum levels for Group I PAHs. The Final Permit footnote 10 specifies the method for analysis of Group I and II PAHs (Method 625.1) and the expected range of MLs. See Response to Comments A.3.

The comment also identifies an inconsistency in annual monitoring in Footnotes 9 and 17. EPA intends that the annual monitoring of the receiving water and the effluent be conducted during the same month, as the comment suggests. EPA revised the Final Permit to require annual monitoring of the effluent, whole effluent toxicity testing, and ambient annual monitoring during the month of April. In addition, EPA revised the Final Permit to remove the extraneous row under Ambient Characteristic in the Table, include the inadvertently omitted sample type for MTBE ("grab," as it was in the 2014 permit), and correct the reference to Outfall 001 in Footnote 17 to Outfall 003.

Comment J.3 – Methyl tert-butyl Ether (MtBE)

Part I.A.1 Table - In the Table, the frequency of sampling for MtBE was increased from quarterly to monthly. The Fact Sheet (p. 37) states "Historic groundwater samples at the Facility have indicated up to 10,000 µg/L of MtBE. Because MtBE has been detected in significant concentrations in groundwater impacted by releases of petroleum fuels, As a result, MtBE serves as an indicator parameter of the infiltration of contaminated groundwater at this Facility." Over the last 15-years, Gulf and the Chevron (previous property owner) have implemented remedial activities under the Massachusetts Contingency Plan (MCP) to address historical releases. Based on annual groundwater sampling over the last five-years, MtBE concentrations have been detected below the applicable GW-2/GW-3 standards, highest concentration of 857 µg/L. In addition, from December 1, 2014 to October 31, 2020, MtBE was only detected once at Outfall 003 in March of 2015 at a concentration of 0.2 µg/L. Given that there was only one detection of MtBE from 21 samples, increasing the monitoring frequency for this parameter is not necessary to be protective of the Chelsea River. Therefore, Gulf requests that the monitoring frequency for MtBE be reduced to annually, or at the most, to be quarterly consistent with the 2014 Permit.

[161] The Fact Sheet Table 3 identifies zero detections of chrysene at this Facility and the Draft Permit did not propose an effluent limitation for chrysene. The reference to a chrysene limit on p. 32 of the Fact Sheet was an error. *See also* Response to Comment J.13.

Response to Comment J.3

The comment asserts that the increase in monitoring frequency for MtBE from quarterly in the 2014 Permit to monthly as proposed in the Draft Permit is not necessary to be protective of the Chelsea River. The Fact Sheet (p. 37) explains that MtBE serves as an indicator parameter for the infiltration of contaminated groundwater. Further, EPA explains that MtBE was detected once at a concentration of 0.2 µg/L over the last permit term and that, as such, there is no reasonable potential to cause or contribute to an excursion of the water quality standards for taste and odor. *See Id*. p. 38. The Draft Permit proposed a technology-based daily maximum effluent limit of 20 µg/L monitored monthly. In response to this and other comments, EPA has revised the Final Permit to remove the new technology-based effluent limit and reduce the monitoring frequency to quarterly.[162] *See* Responses to Comments F.16, J.10. MtBE serves as an indicator of the effectiveness of BMPs or triggers corrective action. A single grab sample once per year is inadequate for an indicator parameter given the variability in stormwater flow and the potential for dilution of groundwater infiltration. Under the Final Permit, parameters monitored annually are supported by more frequent monitoring of an indicator parameter (e.g., Group II PAHs and naphthalene, ethylbenzene and benzene). In this case, MtBE is the single indicator parameter used to demonstrate the effectiveness of BMPs intended to eliminate infiltration of contaminated groundwater into the stormwater conveyance system (see Part I.C.1.b.8) and, as such, quarterly monitoring is appropriate.

Comment J.4 – Per- and Polyfluoroalkyl Substances (PFAS)

EPA Draft Permit, Part I.A.1 Table; MassDEP Draft Permit, Condition 6; and MassDEP Draft Clean Water Act (CWA) Section 401 Certification, Item 1.b – Per- and Polyfluoroalkyl Substances (PFAS)

Gulf is concerned with a potential conflict in PFAS monitoring requirements between the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection's (MassDEP's) Draft Permits.

- EPA's Draft Permit requires monitoring for PFAS parameters to take effect "six months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website." [EPA Draft Permit, Part I.A.1 Table, Note 12]
- MassDEP's Draft Permit and Draft Clean Water Act (CWA) Section 401 Certification requires the monitoring to be conducted using a method specified by MassDEP, if EPA's method has not been published withing 2 years of the effective date of the permit. [MassDEP Draft Permit, Condition 6; MassDEP Draft CWA Section 401 Certification, Item 1.b]

These separate requirements create the potential for the Terminal to be required to conduct the PFAS monitoring twice using different analytical methods, if EPA's method is not finalized

[162] The Final Permit retains water quality-based effluent limits from the 2014 Permits (e.g., Global Oil Terminal Outfall 002) and any new, water quality-based effluent limit based on a finding of reasonable potential (e.g., Sunoco Oil Terminal).

within 2 years of the permit effective date. This "double sampling" would be an undue burden on the Terminal. Therefore, Gulf requests that EPA and MassDEP coordinate their PFAS sampling requirements. MassDEP could remove their requirement to start sampling within 2 years of the permit effective date and mirror EPA's requirement that PFAS monitoring will begin within 6 months after publication of EPA's analytical method. Otherwise, EPA could include a statement that it will accept PFAS data collected using MassDEP's method, if EPA's method is not available within 2 years of the permit effective date.

The EPA and MassDEP Draft Permits refer to the analysis for PFAS parameters taking effect six months after "EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website." To avoid confusion, Gulf requests that this requirement be clarified by specifying that the monitoring is to begin after the final method for wastewater is made available to the public on the website.

In the Draft Permits and the Draft CWA Section 401 Certification, the Sample Type for PFAS is stated as a 24-hour composite sample. Gulf request that this Sample Type be changed to Grab to be consistent with the Sample Type for all of the other analytical parameters required to be sampled.

Response to Comment J.4

EPA addressed comments on PFAS monitoring in Responses to Comments F.13, G.13, H.5, and I.5. This comment requests that EPA and MassDEP coordinate PFAS monitoring requirements listed in Part I.A.1 and in MassDEP's Section 401 Certification to avoid additional burden or "double sampling" by the Permittee. First, as explained in Response to Comment F.13, EPA explains that a Draft Method (1633) is currently available, and a multi-lab validation of this method is expected to be available in Fall 2022 (i.e., much sooner than two years from the effective date of the permit). As such, EPA does not anticipate a conflict with the requirements in the 401 Certification. However, as the commenter points out, in the event that a multi-lab validated method is not available within two years of the effective date of the permit, the 401 Certification requires monitoring to begin using a method specified by MassDEP. See Part 1.b of the 401 Certification (AR-135). If a multi-lab validated method becomes available after two years from the effective date of the permit, the 401 Certification could be interpreted to suggest that PFAS monitoring would continue using two different methods. MassDEP expects that Permittees will use EPA's multi-lab validated method when it is available regardless of whether PFAS monitoring begins prior to that time under an alternative method. State 401 Certification Conditions that DEP has since issued for other EPA-issued Draft Permits are clearer on this point, stating "The permittee shall use EPA's multi-lab validated method for wastewater once notified by EPA that the method is available." *See, e.g.*, Part I.I.1 in NPDES Permit MA0100412 (Westborough WWTF). EPA has confirmed with MassDEP that the intention for PFAS monitoring for the oil terminals is to use EPA's multi-lab validated method once it is available such that separate analyses for PFAS will not be required. *See* Part I.F of the Final Permit.

The comment requests that EPA clarify that monitoring is to begin after the final method for wastewater is made available to the public on the website. In response to this and other comments, EPA has revised the Final Permit to clarify that monitoring is to begin within six

months after receiving written notification from EPA that a multi-lab validated method is available. EPA expects that the written notification will avoid any confusion about when monitoring is to begin. *See* Response to Comment F.13. Finally, EPA has responded to similar comments about sample type for PFAS in wastewater and has revised the Final Permit to require grab samples. *See* Responses to Comments H.5, I.5. EPA notes that MassDEP also changed the PFAS sample type from composite to grab in its Section 401 Certification for the Gulf Oil Terminal based on comments received. *See* AR-135.

Comment J.5 – Whole Effluent Toxicity (WET) Testing

Gulf requests that the WET testing requirement be removed from the permit. As stated in the Fact Sheet Section 5.2.8 (p. 45), "From December 1,2014 through October 31, 2020, WET testing results indicate a LC50 of 100% in each of the tests completed for both test species. Since no toxicity was detected in the effluent, there is no reasonable potential to cause an excursion above the acute criterion for toxicity…". In the fifth paragraph of this Section, EPA states that elimination of the WET testing requirement was contingent on using the receiving water as the diluent in the tests, and because Gulf's tests used alternate dilution water instead of the receiving water, then the WET testing cannot be eliminated. However, Gulf reviewed of the WET testing reports from 2015 through 2020 and they show that the receiving water was used as the diluent in the tests. Therefore, Gulf meets EPA's condition to eliminate WET testing and restates its request to eliminate the WET testing requirement.

If the WET testing requirement is not removed from the Permit, then Gulf requests that Part I.A.1 Note 13 be revised to refer to testing for the Mysid Shrimp (*Americamysis bahia*) and Inland Silverside (*Menidia beryllina*) instead of the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*). This change will make the Draft Permit consistent with 2014 Permit and the Protocol provided in Attachment A of the Draft Permit.

Response to Comment J.5

As noted in the Fact Sheet (p. 45), CWA § 308(a) provides EPA with the authority to require the owner or operator of any point source to provide information as may reasonably be required to:

> carry out the objective of [the Clean Water Act], including but not limited to: (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition . . . or standard of performance under [the Clean Water Act]; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, . . . or standard of performance; (3) any requirement established under this section; or (4) carrying out section[402 of the Clean Water Act]

33 U.S.C. § 1318(a); *see also In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 671-72 (EAB 2001); *In re City of Port St. Joe & Fla. Coast Paper Co*., 7 E.A.D. at 310 (observing that "an obvious purpose behind Section 308(a) . . . is to enable EPA to require dischargers to gather data so that EPA can make informed regulatory decisions"). In addition, CWA § 402(a)(2) authorizes EPA to include in NPDES permits "conditions on data and information collection, reporting, and such other requirements as [the Administrator] deems

appropriate." 33 U.S.C. § 1342(a)(2). As the Environmental Appeals Board has held, sections 308 and 402 confer on the Agency broad authority to impose monitoring requirements. *In re City of Springfield Water & Sewer Comm'n*, 18 E.A.D. 430, 484 (EAB 2021); *In re Avon Custom Mixing Servs., Inc.*, 10 E.A.D. 700, 709 (EAB 2002).

Massachusetts narrative criteria (314 CMR 4.05(5)(e)) prohibit toxic discharges in toxic amounts. In this case, EPA did not include WET *limits*, because the data from the last permit cycle did not indicate reasonable potential to cause or contribute to an exceedance of Massachusetts' toxics criteria. EPA determined, however, that continued WET *testing* is still warranted because: 1) the receiving water is impaired for its designated uses by multiple pollutants; 2) the discharge is a source of many of these pollutants; and 3) one or more of these pollutants are known to exhibit additive, synergistic or antagonistic effects. Gulf Fact Sheet p. 46. These conditions have not changed, and the comment does not address them. EPA maintains that WET testing requirements for this Facility are reasonable because the discharges from this Facility and others along the Chelsea River are known sources of toxics to the waterbody and WET data are necessary to allow EPA to make informed decisions about whether future conditions or limits are necessary to ensure WQSs are met when the discharge contains pollutants not limited through chemical-specific testing, pollutants that have additive, synergistic or antagonistic effects, or for which bioavailability can vary. *See* Fact Sheet pp. 45-46. WET testing will also address monitoring necessary for additional pollutants required in this permit reissuance for the discharge, the receiving water, or both (e.g., metals in the discharge and receiving water). *See* Fact Sheet p. 46. The Fact Sheet (p. 46) explains that eliminating WET testing is inappropriate where alternate dilution water was used as the diluent. EPA recognizes that receiving water, not alternate dilution, was used as the diluent in WET testing at the Gulf Terminal and, as such, this reasoning does not apply here. At the same time, annual WET testing is warranted for the reasons discussed above, which the comment does not address. EPA maintains that the requirement to conduct WET testing is necessary and appropriate to carry out the provisions of the CWA and ensure compliance with State WQSs. *See* CWA §308(a), 33 U.S.C. §1318(a).

The Final Permit establishes WET testing at an annual monitoring frequency, which carries forward the reduced monitoring frequency from the 2014 Permit. Finally, EPA revised the Part I.A.1 Footnote 13 in the Final Permit to identify the appropriate test species as the Mysid Shrimp (*Americamysis bahia*) and Inland Silverside (*Menidia beryllina*) consistent with the Marine Acute Toxicity Test Procedure and Protocol provided in Attachment A of the Final Permit.

Comment J.6 – Part I.A.1 Note 1 – Sampling Location

Table Note 1 states "Grab samples for Outfall 003 shall be collected at the discharge point from the Facility's oil/water separator (OWS) prior to comingling with any other wastestream." The 2014 Permit specified collection of samples at the discharge point to the Chelsea River. The OWS is not constructed to allow sampling from its discharge point. Gulf requests that the text of Note 1 be changed to match the text from the 2014 Permit.

Response to Comment J.6

A representative sample must be collected after treatment in the oil/water separator (OWS) but prior to comingling with any other wastestream and free from tidal influence. *See* 2014 Final Permit Part I.A.1 footnote 1 and 2021 Draft Permit Part I.A.1 footnote 1. The sample does not need to be collected at the discharge point of the OWS if this location is inaccessible. The Final Permit has been revised to require sampling for Outfall 003 "at a point after treatment through the Facility's oil/water separator (OWS), prior to comingling with any other wastestream, and free from tidal influence." This revision addresses concerns about the accessibility of the sampling location while ensuring that the grab sample is representative of treated effluent prior to comingling with any other volume.

Comment J.7 – Part I.C Special Conditions - Groundwater

Part I.C.1.b(3) and (4)

These Parts in the Draft Permit refer to discharging groundwater and a groundwater treatment system; however, the Gulf Chelsea Terminal does not have a groundwater treatment system onsite and does not actively discharge groundwater through their Outfall 003. Gulf requests that these statements be clarified or corrected.

Response to Comment J.7

The references to groundwater and groundwater treatment in Parts I.C.1.b.3 and 4 were inadvertently included in the Draft Permit. As the comment recognizes, the Gulf Chelsea Terminal does not discharge groundwater and has no groundwater treatment. The Final Permit was revised to eliminate references to groundwater or groundwater treatment in Part I.C.1.b.

Comment J.8 – Part I.C Special Conditions – Coordinating Discharges

Part I.C.1.b(3)

The Effluent Limitations established in the Draft Permits are set by EPA to protect the water quality of the Chelsea River under the condition of all of the Terminals discharging at the same time (and meeting their Effluent Limitations). Therefore, coordinating discharges between the terminals on the Chelsea River should not be necessary to be protective of the River water quality.

In addition, there are many variables for scheduling a discharge event that coordinating with the other Terminals, particularly trying to sequence discharges from upstream to downstream, is impracticable. Each Terminal has a different capacity to store stormwater prior to discharge. Depending on the frequency and size of rain events (that already occurred or are predicted) and the amount of precipitation already stored onsite, each Terminal will have variable timing as to when it needs to discharge. Finally, a discharge event for a particular Terminal can take multiple days, which would further limit when the next Terminal could discharge. In addition, if a rain event is heavy, the Terminal may need to discharge before the event is over to prevent flooding of critical infrastructure at the Terminal.

As a result, Gulf requests that the requirement to coordinate discharge events with the other terminals be removed, or that the statement "to the extent practicable" remain in the requirement. Gulf particularly sees sequencing of the stormwater discharges from the upstream to downstream terminals as impracticable.

Response to Comment J.8

EPA has addressed similar comments about coordinating discharges from multiple facilities in Response to Comment F.23. The comment indicates that the requirement to avoid discharging concurrently with other Terminals is impractical and may cause flooding conditions at a Facility. Effectively coordinating all stormwater discharges with other facilities is likely to be impractical, particularly during storm events when facilities have less control over the discharge and/or must discharge to prevent flooding or impacts to the treatment system. EPA agrees that the Draft BMP is too broad to be effectively implemented. In response to this and the other similar comments from the Terminals, EPA has decided not to include the requirement to coordinate discharges. *See* Response to Comment F.23.

Comment J.9 – Part I.C – Special Conditions – Base Flood Elevation

Part I.C.1.b(6)

As stated in this Part, the Gulf Terminal already implements a number of stormwater control measures to minimize impacts from stormwater discharges from major storm events. Gulf will review those measures and document them in the Stormwater Pollution Prevention Plan (SWPPP) (if they are not already included). If Gulf determines
that additional structural measures are required to address this Permit condition, based on the Base Flood Elevation, Gulf will establish a schedule for implementing those measures. In addition, Gulf agrees with using the Base Flood Elevation from the Federal Emergency Management Agency's Flood Maps for identifying areas where these major storm event Best Management Practices (BMPs) should apply.

Gulf recently participated in the Lower Mystic Infrastructure Resilience Working Group, hosted by the Resilient Mystic Collaborative. In October 2020, the Working Group conducted a tabletop exercise to assess the effects of a major Nor'easter directly hitting Boston Harbor in the year 2050. The exercise allowed the participants to identify potential impacts and risks and to begin to develop responses to address those risks. Gulf continues to monitor Terminal operations to identify and prioritize measures that will improve operational safety, public health, welfare and the environment.

Response to Comment J.9

Comment noted. EPA commends the commenter for considering the risks of major storm and flood events and proactively taking these steps. Designing and implementing stormwater BMPs is a dynamic, adaptive process. This is true of the BMPs required to be developed under this permit and of the efforts around sustainability and resilience being undertaken throughout the wider watershed by a variety of public and private actors, like those noted in the comment. When

designing and implementing BMPs to comply with this permit, EPA expects that permittees will make reasonable best efforts to account for any stormwater resilience planning/implementation activity occurring on adjacent/off-parcel properties, whether by public or private actors, if that activity will impact the volume or nature of stormwater discharged from the permitted facilities. EPA expects permittees to take reasonable steps to minimize conflicts between BMPs they develop and other stormwater resilience activities that may have a nexus to their facilities (i.e., where a control measure on their parcel might cause an increase in stormwater on another parcel, or vice versa). Additionally, EPA encourages reasonable steps to act in conformity/consistently with other resilience initiatives in the watershed that permittees deem to be effective.

Regarding the use of FEMA Flood Maps, please see Responses to Comments A.2.D and A.2.E.

Comment J.10 – Part I.C – Special Conditions – Groundwater Monitoring BMP

Part I.C.1.b(8)

Gulf seeks clarification on the BMP requirements specified in Part I.C.1(8) of the Draft Permit regarding evaluating potential infiltration of pollutant impacted groundwater into the stormwater conveyance system. It is unclear what the term "routine" means in this requirement; therefore, Gulf proposes to conduct this evaluation once during the term of the new Permit. The Draft Permit's requirement to analyze groundwater and stormwater samples for all of the parameters listed in the Table in Part I.A.1 of the Draft Permit (except for the WET testing) is unwarranted and will not be useful in demonstrating groundwater infiltration to the stormwater system. A list of site-specific parameters, associated with the historical releases, will allow for a clearer determination of whether there is infiltration of impacted groundwater to the stormwater system.

Therefore, Gulf requests that the term "routine" be removed from this section of the Draft Permit and it be stated that this evaluation will be conducted once during the term of the final Permit. In addition, in Parts I.C.1(8)(iv) and (v), Gulf requests that the text be revised to not specify the pollutants to be analyzed for in this part of the evaluation.

Finally, the first paragraph of Part I.C.1(8) refers to "internal Outfall 003, above" and it is unclear what this is in refence to. There are no internal outfalls at the Gulf Terminal. Gulf requests that this statement be clarified or corrected.

Response to Comment J.10

Part I.C.1.b.8 of the Draft Permit requires the Permittee to implement a BMP, including monitoring and inspection, that will ensure the integrity of the stormwater system through elimination of the infiltration of groundwater. This BMP is consistent with, and a continuation of, the existing requirement in Part I.C.5 of the 2014 Permit. The BMP in the Draft Permit requires "routine" inspections and sampling but, as the comment points out, does not define any time period as "routine." In addition, Gulf comments that the groundwater and stormwater

samples for all of the parameters listed in the Table in Part I.A.1[163] of the Draft Permit (except for the WET testing) is unwarranted and not useful for demonstrating groundwater infiltration to the stormwater system. As the comment also points out, the Draft Permit includes a reference to "internal Outfall 003," which is an outfall unique to the Global Oil Terminal. In response to the comment, EPA reviewed the Draft BMP and agrees that clarification is warranted. EPA also notes that the reference to "internal Outfall 003" was erroneously included and has been removed from the Final Permit.

The BMP is meant to ensure the integrity of the stormwater system and to demonstrate that there is no infiltration and subsequent discharge of contaminated groundwater—including of groundwater containing pollutants that may exist from legacy contamination and that EPA does not know about and, therefore, could not specifically analyze[164]—into the stormwater conveyance system. The discharge of contaminated groundwater, alone or in combination with stormwater or other wastewater, is not authorized by this permit. *See* Draft Permit Part I.B.2.h. Therefore, parameters that would serve as indicators of groundwater infiltration (and of discharge of legacy contaminants in groundwater) would be appropriate for sampling under this BMP. The Fact Sheet (p. 37) explains that methyl tert-butyl ether (MtBE), which is no longer used at the Facility but has been detected in groundwater impacted by releases of petroleum fuels, serves as an indicator parameter of the infiltration of contaminated groundwater at this Facility. MtBE monitoring is required at Outfall 003 on a quarterly basis and will serve to ensure that contaminated groundwater is not discharged. *See* Response to Comment J.3. EPA agrees that analyzing for the entire list of parameters at Part I.A.1 is not necessary in order to detect contaminated groundwater infiltration. Therefore, EPA revised Parts I.C.1.b.8(iv) and (v) of all the Final Permits to require monitoring only for MtBE as the indicator parameter for groundwater infiltration, with the exception of the Final Permit for the Chelsea Sandwich Terminal because MtBE was never stored at that facility. The Final Permit for Chelsea Sandwich specifies cyanide as the indicator parameter.

EPA agrees that the Draft Permit is not clear what frequency constitutes "routine" monitoring for the purposes of implementing this BMP. The visual inspection, groundwater flow measurement, and sampling efforts described in Part I.C.1.b.8 must be completed to demonstrate that there is no contaminated groundwater infiltration and that this BMP is properly implemented. The use of the word "routine" was meant to indicate an iterative approach, where necessary, to eliminate the unauthorized discharge of contaminated groundwater. This BMP also reflects the need for compliance with a Permittee's duty to properly operate and maintain its facilities and systems. *See* Part II.B.1. *See also* 40 CFR § 122.41(e). Consistent with the 2014 Permit, EPA has revised the Final Permit to clarify that confirmation of the stormwater system integrity (i.e., Parts I.C.1.b.8 (i) through (v)) must be completed within one year of the effective date of the permit and documented in the first annual SWPPP certification submitted to EPA. See Part I.C.2.d. If implemented properly and maintained, this first study should eliminate any contaminated groundwater infiltration into the system. Monitoring of MtBE at Outfall 003 will confirm that

[163] The Draft Permit for the Gulf Terminal actually references Part I.A.3 for the list of parameters to be analyzed. This reference appears to have been inadvertently copied from the Draft Permit for the Global Terminal and should have, as the comment correctly assumes, referred to Part I.A.1.

[164] This BMP could also help to control discharges of pollutants that are specifically limited by the permits, such as PAHs, and aid the facilities in achieving those limits.

there is no contaminated groundwater present. If MtBE is detected in any quarter during a calendar year, which indicates that contaminated groundwater continues to infiltrate the stormwater conveyance system, the Final Permit requires the Permittee to repeat the inspections and sampling in Parts I.C.1.b.8 (ii) through (v) again in the next calendar year.

Comment J.11 – Part I.C – Special Conditions - Hydrostatic Test Water

Part I.C.3

The first paragraph and Section a. of this Part refer to outfalls that are not part of the Gulf Chelsea Terminal (e.g., "Outfalls 001, 002, to Chelsea River and Outfall 005 to Sales Creek"). Gulf requests that these paragraphs be revised to refer to Outfall 003, which has a maximum design flow rate of 800 gallons per minute (GPM), since this is Gulf's only outfall.

Response to Comment J.11

The reference to discharges of hydrostatic test water from Outfalls 001 and 002 (to Chelsea River) and 005 (to Sales Creek) in Part I.C.3 was inadvertently carried forward from the Draft Permit for another terminal. As the comment states, this Permittee operates only one outfall (003). EPA revised the Final Permit by replacing the erroneous references to the other outfalls and maximum design flows with Outfall 003 and its maximum design flow (800 gpm).

Comment J.12 - Part I.C – Special Conditions - Bioassessment

Part I.C.5

EPA has included bioassessment requirements in the Draft Permit with the objective "to characterize the extent to which, if any, pollutants discharged from the Facility to the receiving water affect the benthic morphology, substrate, and/or biota." Given the urban nature of the Chelsea River, Gulf believes that the bioassessment requirements given in the Draft Permit are overly prescriptive and will not be useful in defining effects to biota from the discharge at Outfall 003. The bioassessment should be developed specific to the Terminal's current and historic uses, and in consideration of other sources of pollutants on the River.

There are many potential sources of pollutants in the River, some in close proximity to the Terminal's Outfall 003. These sources include:

- Other outfalls near the Terminal – There is an active City of Chelsea CSO outfall (Outfall CHE008) which is located on the Chelsea River at the Gulf Terminal property, approximately 1,300 ft north of the Terminal's Outfall 003. In addition, there is a City storm sewer outfall located approximately 1,500 ft south of the Terminal's Outfall. These outfalls could be significant contributors of total suspended solids, fecal coliform, ammonia, and petroleum hydrocarbons observed in the river near the Gulf Terminal.
- The tidal influence in the River, which causes flow to change direction, can transport sediment from upstream and downstream areas of the River, distributing sediments and pollutants from other areas of the River.

- There is currently an active Contained Aquatic Disposal (CAD) cell in the Chelsea River located between the Gulf Terminal and the Chelsea Street Bridge. The Chelsea River CAD cell has been partially filled and has not yet been capped. While there are standards that the dredged sediment must meet to be placed in the CAD cell, there is still the potential that contaminated sediments could be transported in the vicinity of Outfall 003 with the bi-directional river currents.

Gulf has recently completed a sediment sampling program in December 2018 to support dredging the berth in the vicinity of Outfall 003. The sediment sampling program was implemented to meet the requirements of the Clean Water Act Section 401 Water Quality Certificate as specified under 314 CMR 9.07 (2): Sampling and Analysis Requirements. This sediment sampling effort was used to evaluate the physical and chemical characteristics of sediments along the bulkhead wall, adjacent to stormwater Outfall 003. Sediment samples were analyzed for volatile organic compounds (VOCS), PAHs, polychlorinated biphenyls (PAHs), metals, grain size distribution, toxicity characteristic leaching procedure (TCLP), total organic carbon (TOC), and extractable petroleum hydrocarbons (EPH). Property-specific chemicals of concern (i.e., benzene, ethylbenzene, xylenes, toluene, and MtBE) associated with operations of a petroleum bulk storage terminal were not detected above laboratory detection limits from any of the sediment samples. The dredge material was deemed acceptable by MassDEP and the U.S. Army Corps of Engineers (USACE) for disposal/re-use at the Boston Inner Harbor CAD Cell.

In lieu of the prescriptive bioassessment studies in the Draft Permit, Gulf proposes to develop a study that takes into account the site-specific activities that have occurred and are occurring at the Terminal, while taking into account the confounding factors (i.e. other potential pollutant sources on the River) that could hinder addressing the stated objective for the bioassessment. This bioassessment may include the items specified in the Draft Permit or other appropriate alternate investigative methods.

Finally, the proposed schedule for submittal of the bioassessment work plan and initiation of work is impracticable. The Draft Permit requires submittal of the work plan within 30 days of the effective date of the Final Permit. This is an insufficient amount of time for Gulf to identify/contract a consultant, to develop a draft work plan per Final Permit requirements, and incorporate edits/comments to the final work plan. Therefore, Gulf requests that the bioassessment work plan be due within 60 days of the effective date of the Final Permit, and the assessment work begin within 90 days of the effective date of the Final Permit. Gulf proposes to submit one report to EPA and MassDEP after the first year (4 quarters) of field work and one after the fifth year.

Response to Comment J.12

Gulf's initial comment states that the bioassessment requirements are overly prescriptive. EPA notes that one objective of the bioassessment is to collect limited, reliable data spatially (to the area in the vicinity of the Facility's outfalls) and temporally (during two years of the five year permit term). All five bulk oil storage facilities in the Chelsea River are required to perform the bioassessment within their own zones of influence. For the bioassessment effort to be useful in producing data over time and at several locations in the river, the objectives must be clearly

documented to reduce variability introduced by different interpretations of collection methods, for example.

The comment next states that and the bioassessment will not be useful in defining effects to biota from the discharge at Outfall 003. EPA has judged that the proposed bioassessment is necessary and appropriate to carry out the provisions of the CWA and ensure compliance with applicable water quality standards as required by CWA § 402(a)(2) and 40 CFR § 122.44(d). EPA acknowledges that the discharge from other outfalls, tidal currents, and the Contained Aquatic Disposal (CAD) cell in the Chelsea River have the potential to influence the bioassessment results. In a dynamic riverine environment, it is not possible to isolate or exclude all other impacts to the biota and sediment when focused on a specific sampling location. This aspect of field monitoring is common to the majority of sampling efforts. By locating the bioassessment monitoring activities near the facility's outfall, EPA's objective is to minimize the influence of other environmental contributors and gather information regarding the effects of Outfall 003 to the extent possible. EPA maintains that the bioassessment program is not designed to determine which historical entities contributed to the pollutants currently in the receiving water body sediment or to determine if any single point source is a cause of the impairments in Chelsea River, but rather to improve understanding of the current benthic environment in the vicinity of the permitted outfall as well as the potential impact of the permitted Facility's discharge and how to address any continuing impact. It is not EPA's intent in this NPDES permit to investigate potential outside sources of the pollutants in the sediment or water column. Rather the existence of pollutants in the receiving water and sediment, as sampled, will inform EPA as to whether the permit limits require modification. This is also discussed in Response F.3

The comment further notes that the bioassessment should be developed specific to Gulf Terminal's current and historic uses, and in consideration of other sources of pollutants on the River. As noted above and in Response to Comment F.3, EPA designed the bioassessment to gather water quality, sediment and biological data in the area of the river influenced by the Outfall 003 discharge. EPA has determined that it is not necessary to customize the bioassessment program further to determine which historical uses or entities contributed to the pollutants currently in the receiving water body sediment or to determine if any single point source is a cause of the impairments in Chelsea River, but to improve understanding of the impact of the Facility's current discharge on water quality standards and how to address any continuing impact. The EPA bioassessment, as presented in the Draft Permit, is sufficient to gather data to determine whether the discharge from the Facility has the potential to cause or contribute to an excursion of water quality standards, including the narrative standards for bottom pollutants, in the vicinity of Gulf's outfall. The level of monitoring required is warranted for this permit given the Chelsea River's existing impairments and the potential that the effluent may contribute to these impairments.

Further, EPA notes that a number of NPDES permitted facilities discharge to receiving waters that are not meeting designated uses or contain pollutants in the water column or sediment of the receiving water that are likely the result of various ongoing and legacy sources not related to the permitted facility. It is not EPA's objective to tease out the sources of these pollutants through the issuance of an NPDES permit, but to characterize the existing pollutants in the benthic habitat of the zone of influence and determine whether the permitted discharge is contributing to

a documented impairment. EPA has the authority under CWA § 308(a) to require information necessary for developing or assisting in the development of effluent limitations in support of future permitting. The proposed monitoring of the substrate in the vicinity of Gulf's outfall is designed to evaluate compliance with, and the effectiveness of, the limits and conditions in the permit, including the Final Permit's narrative requirements, to ensure that the limitations are sufficiently protective of water quality standards. *See, e.g.*, Part I.A.6 ("The discharge shall not cause a violation of the water quality standards of the receiving water") and Part I.A.8 ("The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom").

EPA acknowledges Gulf's sediment sampling program (December 2018) to support dredging the berth in the vicinity of Outfall 003. If Gulf would like sediment data from the program to be analyzed as part of the overall analysis of the two year bioassessment program required by the NPDES permit, please attach the December 2018 Report to the first bioassessment report required by the permit.

EPA does not accept Gulf's proposal to develop a unique study. As noted above, the bioassessment, as presented in the Draft Permit, is designed to gather sufficient information to determine whether water quality standards and designated uses in the receiving water are being influenced by the Facility's discharge. A unique, customized study is not necessary to provide this information. Also, to a lesser extent, a sampling plan that is different from the EPA bioassessment as presented, may limit the data collected at Gulf from being compared with the standardized EPA bioassessment programs being conducted at the other four Chelsea River Terminals.

The comment notes that there are many potential sources of pollutants in the river. The permittee asserts that the condition of sediment and the benthic community in the portion of the Chelsea River abutting the Company's outfall is a function of many influences beyond the facility's discharge. As discussed above, EPA agrees that the condition of the sediment is likely influenced by a range of factors. Through the design of the bioassessment monitoring program and the location of monitoring stations in the proximity of the Gulf outfall, EPA's objective is to minimize the collection of bioassessment data that may exclude the influence of the Facility's discharge and instead collect information focused on the potential ongoing impacts to the sediment in place from Gulf's stormwater discharge. In general, monitoring in the vicinity of a facility's outfall is routinely used in NPDES permits to determine whether the discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom, or shall be free from settleable solids in concentrations or combinations that would impair any use assigned to the receiving water. Response to Comment F.3 lists NPDES permit requirements for three facilities that incorporate benthic monitoring in the vicinity of the outfall to ensure the discharge is not violating water quality standards.

Finally, the commenter requests a change to EPA's schedule for submittal of the bioassessment work plan and initiation of work. The comment proposes that the bioassessment work plan be due within 60 days of the effective date of the Final Permit, and the assessment work begin within 90 days of the effective date of the Final Permit. EPA has judged this to be a reasonable

request, and will apply the proposed schedule modification to all five Chelsea River oil terminal final permits to maintain a consistent schedule for bioassessment activities at all facilities.

Comment J.13 – Fact Sheet, multiple locations

There are several locations in the Fact Sheet that refer to "Outfall 001" or "Outfall 002" as being active outfalls at the Gulf Chelsea Terminal. The only current active outfall at this Terminal is Outfall 003. Gulf requests that these references be corrected.

Section 5.2.4.1, page 31, paragraph before Table 3 - The last sentence of this paragraph appears to be incorrect; naphthalene was detected 8 times at Outfall 003 between December 1, 2014 and October 31, 2020, as shown in Appendix A of the Fact Sheet. Gulf requests that this text be corrected.

Fact Sheet, Section 5.2.4.1, page 31, Table 3 - Some of the information on this table appears to be incorrect when compared to the data tables presented in Appendix A of the Fact Sheet. Gulf requests that this text be corrected:

> For benzo(a)pyrene, the Number of Detections should be 2.
> For naphthalene, the Number of Detections should be 8, the Minimum of Detected Values should be 0.056 µg/L, and the Maximum of Detected Values should be 46 µg/L.

Fact Sheet, Section 5.2.4.1, page 32, first full paragraph - Gulf requests that chrysene be removed from the list of PAHs in this paragraph. The Part I.A.1 Table does not include an effluent limit for chrysene. In addition, there were no detections of chrysene at Outfall 003 between December 1, 2014 and October 31, 2020, as shown in Appendix A of the Fact Sheet. Gulf requests that this text be corrected.

Fact Sheet, Section 5.2.4.1, page 33, Table 4 - For MA0001091 (Gulf, Chelsea), the Number of Detections should be 8, as shown in Appendix A of the Fact Sheet. Gulf requests that this text be corrected.

Fact Sheet, Section 5.2.5.4, page 37, Table 5 - For MA0001091 (Gulf, Chelsea), the Number of Detections should be 1, the Maximum of Detected Values should be 0.2 µg/L and the Number of Values >20 µg/L should be 0 (zero), as shown in Appendix A of the Fact Sheet. Gulf requests that this text be corrected.

Fact Sheet, Section 5.3.1, page 48, first full paragraph, 4th bullet - This bullet refers to "measures and methods used to control flow through both the stormwater and groundwater treatment systems" (emphasis added) at the Gulf Terminal. However, the Gulf Chelsea Terminal does not have a groundwater treatment system onsite and does not actively discharge groundwater through their Outfall 003. Gulf requests that this bullet be clarified or corrected.

Response to Comment J.13

The Fact Sheet is prepared for the Draft Permit and is not reissued with the Final Permit. *See* 40 CFR § 124.8. However, this Response to Comment serves to acknowledge the referenced errors in the Fact Sheet. The comment clarifies that the only outfall operated at the Gulf Chelsea Terminal is Outfall 003. The clarification on the number of detections identified in the comment for various pollutants does not alter the effluent limitations in the Final Permit. As the comment points out, the DMR data provided in Appendix A are accurate. The Final Permit does not establish a numeric limit for chrysene because, as the comment notes, the parameter was not detected during the last permit term. *See also* Response to Comment J.2. Finally, as explained in Response to Comment J.7, the Gulf Chelsea Terminal does not operate a groundwater treatment system and EPA has removed references to groundwater treatment discharges from the Final Permit.

Comments from C. J. Livingstone

Comment K.1

After speaking with a principal representative of the EPA, it has been determined that the EPA has no jurisdiction over the massive amounts of graffiti on Sunoco's property. An Energy Transfer employee has been notified and has been asked that the graffiti be removed from our neighborhood. The employee's response has been nothing but arrogant and dismissive.

There is serious concern that Sunoco's failure to respect our neighborhood may be indicative of its failure to adhere to other required maintenance. Therefore, it is requested that the following be required in connection with any permitting:

1. that Sunoco test all rainwater which is removed from the perimeter of each tank, BEFORE the rainwater is discharged; and

2. that an evaluation be made by the appropriate agencies - based on the volume of contents of these holding tanks - as to any fire dangers and other dangers they present to nearby homes.

Residents have a right to know of any dangers or quality of life issues this facility may pose to neighborhood residents living nearby.

Thank you for your understanding in this matter.

Response to Comment K.1

EPA notes the concerns surrounding graffiti at the Sunoco property; however, the Clean Water Act does not provide EPA with regulatory authority to implement requirements, restrictions, or limitations on graffiti, if they do not impact the ability of the Facility to comply with federal NPDES permit requirements.

Sunoco is required to test stormwater (which includes rainwater)—including stormwater collected in the perimeter area of each tank—discharged from the Facility's outfall to ensure it meets the effluent limitations and conditions in the Final Permit. Stormwater is collected in two separate areas of the facility: the tank farm and the terminal yard. Stormwater runoff from these areas is visually inspected, drained and pumped to tanks 50 and/or 57 for storage. This stormwater undergoes treatment in an oil/water separator prior to discharge to the Chelsea River. The facility is required to sample the stormwater after treatment, but prior to discharge.

Sunoco is a bulk oil terminal involved in the receipt, storage, and distribution of petroleum products. The facility contains 20 above ground storage tanks, which store and contain various petroleum products. While petroleum products are flammable and present fire risk if handled or stored incorrectly, EPA NPDES permits regulate aspects of the facility pertinent to the Clean Water Act. For instance, the Final Permit establishes numeric effluent limits and other conditions, including Best Management Practices (BMPs), a set of non-numeric effluent limitations, to ensure the facility complies with water quality standards for the protection of

human health and the environment. As noted in Part C.1 of the Draft Permit, the facility must implement structural improvements and comply with mitigation measures to minimize the risk of pollutant discharges due to major storm and flood events. The permit also requires the permittee to implement spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur. EPA does not, however, directly regulate fire safety in a NPDES permit.

EPA notes that all residents have the right to know about potential toxic releases and dangers present in their local communities under the Emergency Planning and Community Right-to-Know Act (EPCRA). EPCRA is used by federal, state, and tribal governments to institute appropriate community planning for their area based on the potential list of chemical hazards. In addition, the Toxics Release Inventory (TRI) is a publicly available platform that allows residents to conduct a search for industrial facilities that release chemicals into the air, water, and land and understand the potential human health consequences associated with chemical exposure. This search tool can be found here: https://www.epa.gov/toxics-release-inventory-tri-program.

IV. Responses to Comments submitted at the Public Hearing

Comments from Public Hearing

Comment L.1 – Ian Coghill

As you know, my name is Ian Coghill, and I will be commenting on the half of the Conservation Law Foundation.

These oral comments will briefly summarize the later written comments that we will submit before the deadline. We would like to thank EPA for holding this public hearing to allow the neighboring communities, especially, to be heard on the permits.

My comments this evening concern the as mentioned, or as named major storm provision and the monitoring protocols for polycyclic aromatic hydrocarbons, or PAH's.

Starting with the major storm provision, the provision as written is inadequate and impermissibly limits the requirement for the terminals to consider and address the risks of climate change. It is beyond dispute that climate change is causing rising sea levels and increasing both the frequency and severity of storms in the northeast.

These impacts are particularly dangerous for coastal facilities like the terminals here. We only need to look at what happened in Hurricane Harvey and Super Storm Sandy to see the potential effects. Facilities just like these terminals were flooded causing huge oil storage tanks to break and dump hundreds of thousands of gallons of oil into the surrounding environment and communities.

The same thing could easily happen in Chelsea Creek if the terminals don't take the adequate precautions to deal with it. And the cost of getting it wrong here would be catastrophic. The

terminals here hold millions of gallons of oil and they're densely packed up and down the Chelsea Creek.

And the terminals are not in a far-off industrial area. They are surrounded by residential neighborhoods. Neighborhoods that have borne the brunt of industrial pollution from these facilities and other industrial facilities for too long as it is.

The current permits already in place for these terminals already require the permittees to address the risks of climate change. For example, the permits require the terminals to use good engineering practices to design and enact storm water control measures. And any reasonable engineer designing control measures for these terminals must consider and address the reasonably foreseeable impacts of climate change.

As written, the Draft Permits impermissibly lessen the requirements that are already there for two reasons I will summarize briefly.

First, the Draft Permits rely only on FEMA flood maps for defining flood risks to the terminals. These maps were never designed for this purpose and are wholly inadequate. FEMA maps are based on backward looking information and do not consider anticipated increases in the severity of weather and climate change.

Also, FEMA maps are often updated and do not reflect even recent flood information.

The recent multi sector General Permit moved in the right direction on this issue stating that the permittees should "use all reasonably available data" to determine the flood risks to a facility The Draft Permits should require the terminals to use the most accurate flood modeling available which may include NOAA, USGS, or more local data as it's available.

And the fact that each terminal is already in a FEMA flood zone doesn't change that sort of requirement. The terminals need to understand the true flood risks to the facilities and to take appropriate action.

In addition, the permits also require that the terminals maintain dry access to the facilities during any flood events. Even if the terminals themselves are not flooded, the terminals cannot be allowed to become isolated islands surrounded by flood waters. Terminal and emergency personnel must be able to access them during major storms.

Turning to PAH's briefly, PAH's are known highly toxic and carcinogenic compounds found in oil products. Group 1 PAH's, as named in particular, are potent carcinogens and the terminals are known sources of the PAH that is already polluting Chelsea Creek.

EPA, in this permit, set a specific limit on the number of PAH's that is quite low, it is .018. And they have found that that was necessary to protect human health and water quality at Chelsea Creek.

The provisions for monitoring PAH's are inadequate in the permit for two reasons.

First, there is insufficient sampling. The sampling only requires once a month sampling for these products in order to try to find an average monthly concentration. One sampling event is not enough per month.

Second, the PAH testing and reporting isn't sufficiently precise. The permit only requires that the terminals use a test that can get down to .1 micrograms per liter which is more than five times the effluent limits that EPA is setting.

The Draft Permits do not explain how this minimum level was calculated. And the prior reporting from the terminals makes clear that they are capable of testing to much lower levels. And in fact, EPA relied on testing well below these .1 limits when it determined which group 1 PAH's each terminal must test for going forward.

The terminals should be required to use the most sensitive PAH tests available and not stop at a level of .1. And in addition to that, the terminals should also be required to report any results that they get, even if they are below the .1 levels.

As they are written right now, if the terminals tested and got a .09, they wouldn't be required to report it despite the fact that it is five times the limit established in the permit.

And I will stop my comments there in the interest of time.

Response to Comment L.1

EPA appreciates the commenter's participation at the public hearing. As the commenter noted during the public hearing, these comments are a summary of the written comments submitted by CLF. These comments are addressed in full in Sections A.1 to A.5 of this Response to Comments document.

Comment L.2 – Patrick Herron

Good evening. This is Patrick Herron, Executive Director at the Mystic River Watershed Association.

I want to start by just saying thank you to the US EPA and Massachusetts Department of Environmental Protection for holding this hearing and for working hard to solicit the input from the community.

This evening, I want to briefly make mention of the items that we'll be commenting on in our written comments. Very briefly, I think, we would like to raise some concerns about whether the EJ analysis has an impact at all on the permitting and industrial activities in the creek.

While we appreciate the effort to perform an EJ analysis, it only serves a purpose if it will inform the permits. And right now, we don't see how those two processes are connected.

The second area that the Mystic River Watershed Association will be commenting on is in regard to both testing and the reporting of that data. As Mr. Coghill from CLF notes, I think, we have some concerns about the frequency of sampling for some of the analytes. But, we also have a concern about the ability to turn that data into information that the community can respond to.

Currently, data that is submitted through the ECHO database is unavailable to the community. It is virtually impossible for a community member to access that data and understand it.

That's a brief summary of two of the areas that the Mystic River Watershed Association will be commenting on.

We have concerns to encourage that Chelsea Creek have great water quality and appreciate that the industries play a role in protecting that water quality.

Thank you all for holding this hearing this evening.

Response to Comment L.2

EPA appreciates the commenter's participation at the public hearing. As the commenter noted during the public hearing, these oral comments are in reference to the written comments submitted by MWRA. These comments are addressed in full in Sections E.1 to E.6 of this Response to Comments document.

Comment L.3 – John Walkey

Thank you. My name is John Walkey. I live at 63 Putnam Street in East Boston. I can see Chelsea Creek from my door. And I work at GreenRoots and will be submitting written comments in addition, too. I hope they will be more coherent than what I am about to say in the five minutes.

So, I have been living here in East Boston for the past 14 years and have actually been working on environmental issues on the Chelsea Creek for the past 15 years even before I moved in and was involved in the last NPDES permitting process, the last go around, in 2014, and greatly appreciated the fact that the EJ analysis that was performed then was the first one, you know, in this context of NPDES permits.

I want to thank Region One, EPA Region One for the efforts they have put into over the years of considering EJ and supporting efforts by community based groups, program and such.

And I also want to recognize the limitations that are inherent in implementing and enforcing environmental regulations that are so encumbered by a political process that's dominated by industry and money.

And commenting on a NPDES permit is a bit like commenting on the functioning of a refrigerator. You open the door, the light goes on. You shut it, the light goes off. There's not too

much to say. So, a lot of what we'll be commenting on goes beyond maybe the purview of the NPDES permit.

But, I basically wanted to just make mention of a report that was done for EPA Region One back in 2001. It was a university study from Tufts on identification, evaluation of pollutant inputs into the Chelsea Creek. And a lot of their findings and recommendations are things that, 20 years later, still pretty much hold.

During this study, the report reviewed a number of different inputs into the creek. But, it did look at the NPDES permits and noted, one thing it noted were different failures to report and noticing that there could be clerical errors or there could be just failures to report on the part of the terminals themselves.

But, in the end, the emergency response section, ERS of the EPA Region One concluded that facilities were more or less in compliance. And since 2000, we have had different spills and exceedances, and repeated failures to report which, again, still could be clerical errors or problems in the database or such.

But, a lot of their final recommendations are relevant to today and haven't changed much. Their recommendations in terms of further study, I would highlight two things.

They recommend a sediment study. And I think that there is some thought about doing that. In conversations, we've discussed that. I think, looking at the sediments in the creek is pretty critical both in terms of legacy contaminants. But, then, to have an understanding of what currently might be contributing to contaminants in the sediments, as well as the cumulative effects of effluent discharge from oil terminals to the creek. That was another one of their recommendations for further study.

Their priority actions were to expand water quality monitoring in the creek. And I can say that, when they did this in 2001, is about the time that the Mystic River Watershed Association started their monitoring network which, in terms of citizen science is a good step forward. But obviously, relative to the kind of work that the NPDES permits represent, we'd like to see some additional monitoring, and better understanding of that monitoring for the community.

Another area for priority action in addition to monitoring was an EJ pilot project to implement EEA's draft EJ policy at that time, way back when, 20 years ago. Ironically, here we are, 20 years later and environmental justice has just been signed into state law which is great. However, it also indicates that, in the past 20 years, we haven't really moved beyond EJ just being kind of a recommendation.

And there are also recommendations relative to community involvement and support in this report from 2001. And included in that was a website for data sharing and more accessible data for the community which I think still remains a very important and needed aspect of this work.

One of the other things they mentioned was also changing the perception, the community's perception of Chelsea Creek. And I think, in the past 20 years, GreenRoots, in its different

incarnations, has actually done quite a bit towards achieving that change in the perception of the creek from an environmental liability to an environmental asset for the community. And we'd like to see that really built upon.

So, in looking at the EJ analysis, I would sort of echo what Patrick has just mentioned from the Mystic River Watershed Association, that the EJ analysis is basically an expanded demographic introduction to the Chelsea Creek area and does not really impact the permit so much. And understandably, it cannot impact the permit so much, because that's not how the law was necessarily written. But, that is an issue that we should be considering.

Data reporting and data access remain a problem. Failures to report are common. And in talking to our corporate neighbors, GreenRoots does, up until Covid, we were having quarterly meetings of the Chelsea Creek Roundtable, Business Roundtable.

And in talking to the oil terminals, it became obvious that they had as many issues with the ECHO database as we have.

I see the comment. I will slow down.

So, there are some concerns about data access and concerns about that data being understandable to a public audience.

And there are exceedances that are not penalized. And we should be looking, as we are trying to understand the cumulative impacts of these various exceedances or even, if all the terminals were going right up to their limits, the cumulative impact of that would be greater than any one facility.

So, there is a concern about what does enforcement look like in a cumulative setting like that.

And finally, I would say, as I was driving home today, crossing over the Chelsea Street Bridge, I looked over at the Sunoco facility or the energy transfer partners, whatever they are called today and their outfall pipe was shooting water out. And I was thinking, I don't know what's in that effluent. And I don't know if someone were to -- like who is actually testing that. And if they were to tell me what was in it, I don't even know what I would do with that information.

There needs to be a better public understanding of the chemicals that are being monitored, what those concentrations actually mean to public health. If you're just driving by the creek, or if you're actually kayaking in the creek, should I be concerned.

And then, an understanding of the life span of these chemicals. For many of the oil chemicals, some of them just vaporize pretty quickly, disperse quickly. Other contaminants may be locked in the sediments of the creek for a longer period of time. And we really don't know much about that.

And it would also be useful for the public to know a bit more about the best management practices that the oil terminals are using and the different testing procedures that they implement

so that there is an understanding of what the oil terminals are investing in this. And so, there is a better appreciation of what they are doing to prevent contamination, but then, also, so we have a better understanding of what it means when there are exceedances.

And we will put this all into writing so it is a bit more organized for you. So, thank you very much for the opportunity.

Response to Comment L.3

EPA appreciates the commenter's participation at the public hearing. As the commenter noted during the public hearing, these oral comments are in reference to the written comments submitted by Greenroots. These comments are addressed in full in Sections C.1 to C.7 of this Response to Comments document.

Comment L.4 – Emily Freeman

Hello. My name is Emily Freeman. I am a student at Northeastern University living in Roxbury at the moment.

I first heard of the re-permitting of these facilities through my senior capstone project. And as part of this project, I found that between 2013 and 2020, the seven facilities in Chelsea have violated their permit at least 100 times and particularly concerning is that Global Petroleum and Global Rev Co have had recent violations in benzene, which is a known carcinogen.

Further, the most common violations are of total suspended solids, notably by Gulf Oil.

Generally, it's vital to understand what is being released into Chelsea Creek in order to assess the potential impact that these facilities have on the environment and the community's health.

However, between 2016 and March 2020, there were 169 reporting violations across five of the seven facilities, indicating the same discharge monitoring report values. And 141 of which have gone unresolved for over two years. And 13 which are still unresolved. Essentially, this just creates a gap in data where reports are missing. Neither the EPA nor the public can know what facilities are releasing into the water.

Beyond these missing reports, there are many missing values in the submitted reports. Overall, there were 3516 out of 14,500 reports, meaning that 24 percent of the reports were missing discharge monitoring values. This indicates that the report was just submitted without a DMR value number.

At the initial question and answer session, when asked about consideration of the violations in the re-permitting process, it was stated that the EPA permitting division does not generally develop permits based on past compliance. We just ask that these violations be taken into consideration when re-permitting these facilities.

Thank you.

Response to Comment L.4

EPA appreciates the commenter's participation at the public hearing. The comments provided at the public hearing were also submitted to the EPA in the form of a written comments document from Northeastern University. These comments are addressed in full in Sections D.1 to D.3 of this Response to Comments document.

Comment L.5 – Alex Train

Good evening, everyone. My name is Alex Train. And I am the Director of Housing and Community Development with the City of Chelsea. So, the City of Chelsea will be submitting a formal written comment that outlines some of the key points that I will talk through in just a moment. We appreciate the EPA's opportunity to let us comment on this important matter that affects our community.

So, first, I just want to echo the requests, observations and recommendations that many of the attendees this evening, in particular, the Mystic River Watershed Association and GreenRoots have put forth and urge the EPA and all parties to seriously consider these requests as they are material to the well-being of the community of Chelsea.

So, second, I do want to reinforce the request pertaining to the sharing of information and the notifications during events that are termed as exceedances or when discharges are occurring above the limits captured under the permit.

As the participant just before me referenced, these exceedances are actually quite common. And the contents of the discharges pose public health risk to the community.

This is a community that has already been disproportionately impacted by Covid 19 and disparately impacted by decades of environmental pollution and discriminatory policy.

Second, I do want to implore the EPA and all facilities to share robust data that is in an easily understandable and intelligible format. So, when each exceedance occurs, the community is notified in a format that they can understand, access and share in order to develop a response.

My third comment pertains to the violations for any exceedances or deviations from the permit. It is our position that any fines that are imposed on these facilities for exceedances or for any violations of their permit should be redirected towards the communities that they are disproportionately impacting. In particular, any revenue that is generated from the fines of these facilities along the Chelsea Creek, should be explicitly set up for the purposes of advancing environmental justice and public health in the city of Chelsea. Seeing this funding go outside of the city and outside of the region further compounds the hardship the community has had to endure because of these facilities.

And then lastly, you know, I do encourage the EPA to consider robust asset management and best management practices that account for climate change and that ensure that there is robust

monitoring that is uninterrupted in order to ensure compliance with all conditions of the permit and to lower the likelihood and probability of exceedances occurring at these facilities.

We understand that this is a process that includes only certain parameters that are under the EPA's purview. But, we do urge the EPA to consider all of the comments heard this evening that seek to protect and safeguard the well-being of the community in their decision making process.

Thank you.

Response to Comment L.5

EPA appreciates the commenter's participation at the public hearing. While the commenter begins by noting that the City of Chelsea would be submitting written comments, Chelsea did not ultimately submit any written comments to EPA on the Draft Permits. Of course, EPA has considered the City's comments made at the public hearing and provides responses below.

The comment echoes comments made by others at the public hearing, including the Mystic River Watershed Association and GreenRoots. EPA provides responses to these comments above. *See* Responses to Comment A.1 to A.6, B.1 to B.11, C.1 to C.7, D.1 to D.3, E.1 to E.6, L.1 to L.4. The comment also touches upon issues related to data accessibility, permit exceedances, and enforcement that were also raised by other commenters. EPA responds to such comments in Responses to Comments B.1 to B.11 and D.1 to D.3, among others. In addition, EPA notes that since the public comment period, EPA has added a new feature to ECHO, called ECHO Notify, that allows members of the public to sign up to receive automatic email notifications of permit violations at particular facilities or within geographic areas of their choosing.[165] In other words, individuals may use ECHO Notify to receive notification of exceedances that occur at any of these facilities. In addition, EPA has revised the Final Permits to require the Permittees to submit their Stormwater Pollution Prevention Plans (SWPPPs) and related documents (e.g., annual certifications) so that EPA may make them available to the public on Region 1's Chelsea Terminals website.[166]

The comment also requests that "any fines that are imposed on these facilities for exceedances or for any violations of their permit should be redirected towards the communities that they are disproportionately impacting." In general, federal law requires that fines collected through NPDES permit enforcement proceedings be paid to the U.S. Treasury. EPA generally does not have the ability to redirect fines to the communities impacted by the violations. In certain cases resolved through settlement agreements, however, the federal government may consider the inclusion of a Supplemental Environmental Project (SEP) in a settlement if a settling party voluntarily agrees to undertake it as part of the settlement of the enforcement action. SEPs are environmentally beneficial projects or activities that go beyond what could legally be required in order for the settling party to return to compliance and secure environmental and/or public health benefits in addition to those achieved by compliance with applicable laws. There are strict guidelines for SEPs, as explained in the 2015 Update to EPA's SEP Policy. In any case, the

[165] Available at: https://echo.epa.gov/tools/echo-notify.
[166] https://www.epa.gov/npdes-permits/chelsea-river-bulk-petroleum-storage-facilities-npdes-permits

extent to which SEPS are appropriate and how they are included in a settlement will depend on the particular facts and circumstances of each case.

Even in the absence of a SEP, however, enforcement settlements can provide substantial benefits to communities and the environment. Penalties promote environmental compliance by deterring future violations by the defendant and other members of the regulated community. Penalties also help ensure a national level playing field for the regulated community. Injunctive relief measures ensure that compliance is achieved and maintained, and redress the harm caused by a violation, thereby providing long-term significant environmental and public health benefits to the impacted community.

With respect to the comments about "robust asset management and best management practices that account for climate change," EPA has responded to comments that include aspects of this topic above. *See* Responses to Comment A.2. EPA agrees that robust monitoring is important to ensuring compliance with permit limits and conditions and has generally increased monitoring requirements over those in the previous permits. EPA also notes that the corrective action provisions of the permit are intended to lower the likelihood of repeated exceedances of permit limits by requiring Permittees to review and potentially revise control measures when they have exceedances. *See, e.g.*, Gulf Final Permit at Part I.C.1.b.1. The Permittees are also required to document in their SWPPPs the corrective actions implemented in response to exceedances, *id*., and, as noted above, EPA plans to post the SWPPPs to its website.

The Federal Code of Regulations requires a NPDES permittee to properly operate and maintain their facility to ensure compliance with other conditions of the permit. Specifically, all permittees are required to comply with 40 CFR 122.41(e) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

The purpose of incorporating conditions such as asset management provisions into NPDES permits is to ensure that permittees implement sound system operation and maintenance practices (AMPs), properly plan for needed system replacements and upgrades, and meet water quality protection requirements.[167] These permits require best management practices (BMPs), specifically through a Stormwater Pollution Prevention Plan, which provide a framework for permittees to engage in AMPs (i.e., targeting, assessing, planning and forecasting). For example, the permits require the Permittees to establish appropriate quality assurance procedures to ensure technology and water quality-based requirements are met. BMPs provide a framework for setting and operating quality assurance procedures and ensure permittees have sufficient financial and technical resources to ensure compliance with the provisions of 40 CFR 122.41(e). Moreover, BMP provisions are incorporated as part of corrective actions to ensure permittees take proper steps to repair and maintain failed infrastructure to address permit violations and prevent their recurrence.

[167] U.S. Environmental Protection Agency, Region 9. *Incorporating Asset Management Planning Provisions into NPDES Permits*, December 2014. *See* AR-136.

Further, the permits require operators to document the selection, design and installation of control measures, including BMPs designed to meet the effluent limitations required in the permits to minimize the discharge of pollutants from the Facility's operations to the receiving water. A "good engineering practices" standard is specified with respect to these BMPs. The permits require that the SWPPP shall be prepared in accordance with good engineering practices and manufacturer's specifications and must take future conditions into consideration. In this way, the SWPPP and BMPs required in the permits function in a comparable way to AMPs. Thru AMP, as in the ongoing SWPPP, BMP and corrective action requirements, operators would identify and inventory all critical system components and assess their cost and implementation, consider the likelihood and consequence of failure, and address alterations or additions as conditions evolve and as climate change data predict. Therefore, EPA expects the Permittees to meet the good engineering practices requirement for the selection, design, installation, implementation, and maintenance of any control measures used to comply with the non-numeric requirements of the permit.

The Permits allow operators to determine and select the appropriate stormwater control measures for their facility. Further, operators must modify these stormwater control measures if they are not achieving their intended effect of minimizing pollutant discharges (i.e., discharges will be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards or meet any of the other non-numeric effluent limits in this permit). Therefore, EPA has not specifically added AMPs provisions to the final permits but has retained (and in some cases revised) the SWPPP and BMP provisions.

Regarding robust asset management and best management practices that account for climate change, EPA agrees that asset management planning is a tool for maintaining wastewater and stormwater systems and planning system maintenance and improvements. The Federal Code of Regulations requires a NPDES permittee to properly operate and maintain their facility to ensure compliance with other conditions of the permit. Specifically, all permittees are required to comply with 40 CFR 122.41(e) Proper operation and maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

The purpose of incorporating conditions such as asset management provisions into NPDES permits ensures permittees implement sound system operation and maintenance practices (AMPs), properly plan for needed system replacements and upgrades, and meet water quality protection requirements.[168] These permits require best management practices (BMPs), specifically through a Stormwater Pollution Prevention Plan, which provide a framework for permittees to engage in AMPs (i.e., targeting, assessing, planning and forecasting). For example, the permits require the Permittees to establish appropriate quality assurance procedures to ensure technology and water quality-based requirements are met. BMPs provide a framework for setting and operating quality assurance procedures and ensure permittees have sufficient financial and technical resources to ensure compliance with the provisions of 40 CFR 122.41(e). Moreover,

[168] U.S. Environmental Protection Agency, Region 9. *Incorporating Asset Management Planning Provisions into NPDES Permits*, December 2014.

BMP provisions are incorporated as part of corrective actions to ensure permittees take proper steps to repair and maintain failed infrastructure to address permit violations and prevent their recurrence.

Further, the permits require operators to document the selection, design and installation of control measures, including BMPs designed to meet the effluent limitations required in the permits to minimize the discharge of pollutants from the Facility's operations to the receiving water. A "good engineering practices" standard is specified with respect to these BMPs. The permits require that the SWPPP shall be prepared in accordance with good engineering practices and manufacturer's specifications and must take future conditions into consideration. In this way, the SWPPP and BMPs required in the permits function in a comparable way to AMPs. Thru AMP, as in the ongoing SWPPP, BMP and corrective action requirements, operators would identify and inventory all critical system components and assess their cost and implementation, consider the likelihood and consequence of failure, and address alterations or additions as conditions evolve and as climate change data predict. Therefore, EPA expects the Permittees to meet the good engineering practices requirement for the selection, design, installation, implementation, and maintenance of any control measures used to comply with the non-numeric requirements of the permit.

The Permits allow operators to determine and select the appropriate stormwater control measures for their facility. Further, operators must modify these stormwater control measures if they are not achieving their intended effect of minimizing pollutant discharges (i.e., discharges will be controlled as necessary such that the receiving water of the United States will meet applicable water quality standards or meet any of the other non-numeric effluent limits in this permit). Therefore, EPA has not specifically added AMPs provisions to the final permits but has retained (and in some cases revised) the SWPPP and BMP provisions.

Comment L.6 – Kelsey Breseman

Hi. I am Kelsey Breseman. And I really appreciate all of the comments we have heard so far. And mine is pretty brief.

I started looking at these permits because they were brought up at the organization I work at, the Environmental Data and Governance Initiative. I work on environmental data justice which addresses transparency and accessibility of environmental data.

One of the issues I see often is information that is made available to the public, but is not actually made very accessible. These permits are a good example. Technically, anyone can open and look at the permits. But, if you want to understand what they mean, what the chemicals under regulation do to human bodies, or even have old and new permits to compare, you have to do quite a lot of work.

EPA is required to make information accessible to the public that impacts the public, particularly communities burdened by environmental injustice. However, the data in the permits are not provided in a machine readable format, nor are the changes to the permits clearly explained.

I work in this field. I am a programmer. I am in graduate school for data science. And I found it really time consuming even to do basic comparison between the 2014 permits and these permits under review.

This permit review process is not sufficiently accessible and requires significant time investment just to acquire a basic understanding of the proceeding. Permit data should be available in machine readable formats. And permits should be directly comparable with an explanation for why changes are being proposed.

Please take these important factors into account when seeking public comment.

Thank you.

Sorry about the oven.

Response to Comment L.6

EPA appreciates the commenter's participation at the public hearing. The comments provided here are generally similar to the written comments submitted to EPA by the Environmental Data and Governance Initiative. EPA responds to the EDGI comments in Section II.B.1 to II.B.11 of this Response to Comments document.