



Environmental Data & Governance Initiative

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To the United States Environmental Protection Agency - Region 1:

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

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.

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.

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.

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.

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.

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.

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.

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.

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.

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

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

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.

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

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>

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/>

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

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/vyhlf396/f/uploads/20170215_chelsea_va.pdf

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.

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.

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

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

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

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.

Sincerely,

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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>