

ATTACHMENT 2. RESPONSIVENESS SUMMARIES

**NEWTOWN CREEK PUBLIC COMMENT RESPONSE SUMMARY
COMMENTS RECEIVED PRIOR TO SUBMITTAL OF THE LTCP**

Public Letters Received:

1. Newtown Creek Alliance (NCA), February 11, 2015. Aeration Project within Newtown Creek.
2. Stormwater Infrastructure Matters (S.W.I.M), December 19, 2016. Newtown Creek CSO LTCP Kick-off meeting.
3. Newtown Creek Alliance (NCA), May 31, 2017. Newtown Creek CSO LTCP Alternatives meeting.
4. Newtown Creek Group (NCG), May 31, 2017. Comments on the Newtown Creek LTCP Alternatives.

1. Request delay in expansion of the Aeration Project to greater part of main channel of Newtown Creek (NC-4)

Response:

- *Based on the results of water quality sampling and modeling conducted for the Newtown Creek LTCP, the recommended plan for Newtown Creek includes a recommendation to delete the NC-4 Aeration Project that was proposed to cover Dutch Kills and parts of the main branch of Newtown Creek. The sampling and modeling indicated that the aeration project would not be necessary to achieve average annual attainment of the DO criteria in the reaches of the waterbody that would have been covered by the NC-4 project. In a letter to DEP dated June 29, 2018, DEC indicated that it intends to delete the NC-4 project from the CSO Consent Order Schedule.*

2. Alternative green strategies for Dutch Kills.

Response:

- *DEP's strategy is to utilize GI where it provides the highest benefits for water quality and other co-benefits. Accordingly, DEP is now looking at strategic projects for both public and private property retrofits in the Newtown Creek watershed. These future projects are not assumed in the baseline condition; however, DEP expects that targeting these properties will have a positive impact on water quality.*

3. Lack of CSO data presented at Kickoff Meeting.

Response:

- *Based on concerns raised by attendees of the November 15, 2016 Kickoff Meeting related to the lack of CSO/water quality data presented, a separate meeting was subsequently held on February 21, 2017, the focus of which was the presentation of water quality sampling data and baseline modeling results.*

4. Provide more information on planned and completed Green Infrastructure (GI) projects; extend the DEP GI Grant Program to the MS4 areas of the city.

Response:

- *The DEP's website includes a GIS map showing the locations and descriptions of planned and constructed GI projects City-wide. The link is as follows:*

<http://www.arcgis.com/home/webmap/viewer.html?webmap=a3763a30d4ae459199dd01d4521d9939&extent=-74.3899,40.497,-73.3757,40.9523>

- *DEP's strategy is to utilize GI where it provides the highest benefits for water quality and other co-benefits. Accordingly, DEP is now looking at strategic projects for both public and private property retrofits in the Newtown Creek watershed. These future projects are not assumed in the baseline condition; however, DEP expects that targeting these properties will have a positive impact on water quality.*

5. Request meeting on current aeration system operation and planned expansion.

Response:

- *As noted in the response to Comment No. 1 above, the recommended plan for Newtown Creek includes a recommendation to delete the NC-4 Aeration Project. DEP is open to further discussions with SWIM related to the operations of the aeration systems currently operating and/or under construction.*

6. Illegal dumping of cement and other wastes to the creek.

Response:

- *DEP will continue to enforce regulations related to illegal dumping of materials into Newtown Creek.*

7. Request more opportunity for public involvement in alternatives; separate meeting to discuss alternatives before initial knee-of-the-curve decisions.

Response:

- *On April 26, 2017, DEP conducted a public meeting that focused on the alternatives being considered for the LTCP. This meeting was held prior to selection of a recommended plan for Newtown Creek, and provided an opportunity for public input on the alternatives in advance of submittal of the LTCP on June 30, 2017.*

8. Supports 100% capture for largest 3 CSOs.

Response:

- *The recommended plan for Newtown Creek includes a CSO storage tunnel that will be sized to provide 62.5% capture of the CSO from outfalls NC-015, NC-077 and NC-083. This level of capture was determined to be the most cost-effective in terms of CSO volume reduction and resulting attainment of water quality standards.*

- *As described in the LTCP, a tunnel sized for 75% capture would require a dewatering pumping station capacity of 55 MGD to 59 MGD for 24-hour dewatering, depending on the tunnel route. However, based on considerations of loadings to the Newtown Creek WWTP, the maximum dewatering rate would be 40 MGD. To achieve a 24-hour dewatering time, approximately 20 MGD of additional treatment would be required for the dewatering flow discharged from the tunnel. Providing the additional treatment added significant cost and siting complexity to the 75% or 100% control tunnel alternative.*
- *As described in the LTCP, the final siting of the dewatering pumping station, the tunnel alignment and other associated details of the tunnel alternative will be evaluated further based upon a number of factors including additional modeling and will be finalized during subsequent planning and design stages. That additional planning will provide an opportunity to optimize the sizing of the tunnel. However, the ability of the Newtown Creek WWTP to handle the dewatering flows would remain a limiting factor for the sizing of the tunnel.*

9. Prefer storage tank for Dutch Kills; concerned with increasing discharge to East River if BB-026 flows diverted to Newtown Creek WWTP.

Response:

- *The recommended plan for Newtown Creek includes expansion of the Borden Avenue Pumping Station to 26 MGD capacity, with a new diversion structure and gravity pipe from Outfall BB-026, and a new force main to the Kent Avenue Gate Structure. This alternative will provide a 110 MG reduction in annual CSO volume to Newtown Creek, and will result in an 80 MG increase in annual CSO volume to the East River. All of the flow from BB-026 will be treated at the Newtown Creek WWTP; the 80 MG increase in volume to the East River will be from East River regulators.*
- *The Borden Avenue Pump Station expansion was determined to be the most cost-effective solution for Dutch Kills, and also provided the opportunity for synergies with state-of-good-repair needs that had been independently identified for the pump station. The cost of providing a storage tank for 75% capture of the BB-026 flows would have been more than five times the cost of the Borden Avenue Pump Station Expansion. In addition, the site acquisition process would have extended the schedule for implementation of the project.*
- *The projected 80 MG increase in CSO into the East River represents a nine percent increase above the current baseline projection of 848 MGY for East River CSOs associated with the Newtown Creek WWTP system. A number of GI projects are planned for the general vicinity of Outfall NC-014, where the greatest increase in volume would occur. Other potential options to mitigate the impact of the increased overflow volumes at the East River outfalls will be investigated under the City-wide/Open Waters LTCP*

10. Oppose use of chlorination as a CSO control measure.

Response:

- *Chlorination of CSO discharges is not included in the recommended plan for Newtown Creek.*

11. Wetlands and softer shoreline edges, where feasible, should be considered part of a long term strategy in Newtown Creek.

Response:

- *Wetlands restoration along the banks of Newtown Creek would most efficiently be implemented following completion of any dredging and/or shoreline work that may be included in the Superfund ROD. The timing for implementation of wetlands restoration would therefore depend on the scope and timing of the Superfund ROD dredging and/or shoreline work. For this reason, wetlands restoration along the shoreline of Newtown Creek was not included as recommendation in the LTCP.*

12. LTCP should identify design and construction schedules and justification for delays at start of the process. 100% CSO control solutions should be able to proceed independently of Superfund ROD. Less than 100% CSO control solution may create complications, delays and additional costs waiting for the ROD.

Response:

- *Section 9 of the LTCP includes milestone schedules for the Borden Avenue Pump Station Expansion and the CSO storage tunnel. The schedules assume DEC approval of the LTCP by June 2018. The procurement process for planning/design consultants would begin following DEC approval of the LTCP.*
- *Refer to the response to Comment No. 8 above regarding the 100% CSO control alternative. Issues related to timing of LTCP implementation with respect to the ROD and the potential impact of the ROD on the LTCP recommended plan are currently under discussion among DEP, DEC and EPA.*

13. Solutions beyond standards

- a. Consider pollutants/impacts beyond fecal coliform and dissolved oxygen; address water quality in a comprehensive fashion and invest in reduction of CSO.**

Response:

- *As noted in the response to Comment No. 8 above, the recommended plan for Newtown Creek includes a CSO storage tunnel that will be sized to provide 62.5% capture of the CSO from outfalls NC-015, NC-077 and NC-083. The estimated unescalated probable bid cost of the recommended plan presented in the LTCP was \$570 to \$597M, depending on the final alignment of the storage tunnel. Therefore, DEP is making a significant investment in reduction in CSO volume to Newtown Creek. The analyses in the LTCP demonstrated that providing higher levels of CSO storage would not be cost-effective in terms of both CSO reduction and attainment of water quality standards.*

- b. Question validity of model predicting attainment of water quality standards with over half a billion gallons of CSO discharging to Newtown Creek every year.**

Response:

- *Newtown Creek is a Class SD saline surface water. The best usage defined by DEC is fishing. The Class SD definition further states that "These waters shall be suitable for fish, shellfish, and wildlife survival. In addition, the water quality shall be suitable for primary contact recreation, although other factors may limit the use for this purpose".*

- For fecal coliform, the Class SD criterion is defined as a monthly geometric mean of five or more samples less than or equal to 200 colony forming units per 100 milliliters (cfu/100 ml). The criterion considers pathogen concentrations over an extended period of time as opposed to a specific point in time. Water quality sampling data presented in Section 2 of the LTCP showed that in dry weather, fecal coliform concentrations in Newtown Creek are generally well below 200 cfu/100mL. Although the sampling demonstrated that the duration of high fecal coliform concentrations associated with CSO events could extend for two to three days for larger events, for the more common smaller storm events, concentrations often recover with a day of the rain event. As the periods of low bacteria concentration are much longer than the periods of high concentration, attainment of the geometric mean criterion can be achieved despite the remaining CSO discharges and other sources of pathogen contributions to Newtown Creek.
- Water quality evaluations conducted as part of the LTCP have demonstrated that short-term impacts to water quality will continue to occur during wet-weather events. As a result, wet-weather advisories based on time to recovery analysis are recommended for consideration for this waterbody. As indicated in the LTCP, under the recommended plan, the frequency of CSO discharges to Newtown Creek will be reduced from 42 to 19 on an average annual basis. Therefore, the frequency of CSO-related short-term impacts to water quality in Newtown Creek will be significantly reduced.

14. Comments from NCG dated May 31, 2017

- a. The NCG is committed to identifying and quantifying the risks that Newtown Creek may pose to human health and the environment...Although the RI/FS process is ongoing, the extensive work to date reveals that the CSOs and MS4s are significant contributors to those risks.**

Response:

- DEP disagrees that CSOs and MS4s are significant contributors to risks associated with hazardous substances. A substantial set of data collected by DEP shows that CSO discharges are not a significant source of hazardous substances in Newtown Creek.
- The LTCP acknowledges that with implementation of the recommended plan, full compliance with existing Water Quality Standards will not be attained. However, full compliance not be attained even with 100% CSO control. As noted in the response to Comment No. 13 above, wet-weather advisories based on time to recovery analysis are recommended for consideration for this waterbody.

- b. These comments represent NCG's attempt to jumpstart the necessary dialogue between the two programs.**

Response:

- NYCDEP is committed to coordinating between CWA and CERCLA, and has presented to EPA and DEC on the LTCP process in February and August 2017, with ongoing updates to DEC.

- c. **CSOs and MS4s are the dominant source of freshwater flow (i.e., surface water inflow primarily comprised of municipal sewage, runoff and stormwater) into Newtown Creek.**

Response:

- *DEP disagrees with this statement. Approximately 30 percent of the freshwater flow into Newtown Creek is from direct drainage from private stormwater pipes or overland flow. In addition, data collected from the RI/FS show that private stormwater pipes and flow from groundwater treatment systems are a larger source of contaminants than CSO/MS4.*
- d. **According to data the NCG has collected and analyzed during the CERCLA RI/FS process, the following ongoing sources contribute solids, Total Polycyclic Aromatic Hydrocarbon (“TPAH”), total polychlorinated biphenyls (“PCB”), copper (“Cu”), pharmaceuticals, personal care products, and pathogens (“3Ps”) to surface sediment in Newtown Creek. Point sources (primarily CSOs and MS4s) and the East River are the dominant current sources of solids to CM 2+.**

Point sources (primarily CSOs and MS4s) are dominant current sources of solids to the surface sediment and surface water in the tributaries.

For all three chemicals (TPAH, PCB, Cu), CSOs and MS4s contribute significantly to the total loads to surface sediment. It should be noted, however, that the majority of the point source TP AH load enters the Study Area in CM 0-1 from the Con Edison - 11th Street Conduit discharge. This discharge, which contains dewatered groundwater effluent, alone contributes approximately 65% of the total point source discharge of TP AH to Newtown Creek.

Response:

- *DEP disagrees with these assertions. These statements are based on un-validated, un-reviewed model results from the NCG. The RI/FS process is ongoing; NCG submitted preliminary models to USEPA for review, and USEPA responded with many comments and revisions needed. Models used by NYCDEP have been developed in conjunction with an independent Peer Review. Preliminary modeling by NYCDEP indicates that CSOs and MS4s do not impact surface sediment throughout the Creek. This is further supported by data from non-Superfund reference areas, which also have CSO and MS4 inputs of similar magnitude to Newtown Creek, showing low surface sediment contamination levels.*
 - *The data show that CSO discharges are not a significant source of hazardous substances in Newtown Creek.*
- e. **The CSO and MS4 discharges pose ongoing risks to human health and the environment.**

Response:

- *DEP finds the information in this section of the commentor's letter to be inaccurate and misleading, as it appears to be based on a version of the Baseline Ecological Risk Assessment that has been rejected by USEPA due to numerous inaccuracies and incorrect statements.*

- f. **The NCG has observed that CSO discharges to Newtown Creek introduce significant levels of sheen to the water surface, and thus represent an additional source of NAPL which can adversely impact water quality and create ecological and human health risks.**

Response:

- *The major sources of sheens and contaminants in Newtown Creek are Non-Aqueous Phase Liquid (NAPL) and oil from NCG members including Texaco, BP, Phelps-Dodge Refining Corporation, specifically the Exxon Mobil oil spill (Meeker Ave Plume) and the National Grid former Manufactured Gas Plant (MGP) sites. The NYSDEC spills website has documented ongoing NAPL (pure product which results in sheens) seeps from the BP former Pratt oil works site, National Grid former Greenpoint energy site, Manhattan Poly bag – a former oil storage site, Morgan oil terminal site. NCG fails to document these sites as sources of sheens to the Creek.*
 - *Sheens are also caused by NAPL releasing from the subsurface sediments to the surface sediments and surface water due to groundwater and processes such as ebullition.*
 - *Conversely, NCG has collected CSO and MS4 samples for over 15 sampling events and did not document presence of sheens in the collected samples.*
- g. **Possible conflict between aeration and CERCLA remedy; alternatives analysis is flawed in that it does not address the possible impacts of any sediment remedy.**

Response:

- *The recommended plan for Newtown Creek presented in the LTCP identified the elimination of the previously-proposed aeration project NC-4, covering for Dutch Kills and parts of the main branch of Newtown Creek (see response to Comment No. 1 above).*
- *The evaluations conducted for the LTCP further demonstrated that without the aeration system for East Branch/English Kills, the existing DO criteria would not be fully met in Newtown Creek even with 100 percent CSO control.*
- *DEP acknowledges and has been fully aware that if dredging, cap construction, or similar activity is required in the areas of Newtown Creek where in-stream aeration equipment is located, then that equipment will have to be removed at the appropriate time so as not to interfere with construction of the Superfund remedy. Without knowing the depth of dredging or final bottom bathymetry that could result from the Superfund remedy, DEP was not in a position to eliminate the East Branch/English Kills aeration systems as part of the LTCP.*
- *If the East Branch/English Kills aeration equipment needs to be removed to accommodate construction of the Superfund remedy, then the design of the replacement system would need to take into account the new final bathymetry. These evaluations would include reassessment of the need for these systems, as well as operational changes that may be dictated by the new conditions in the Creek. Again, these evaluations cannot be undertaken definitively until the final bathymetry is known.*
- *The commentor asserts that DEP's alternatives analysis was flawed because it did not evaluate a remedy (dredging) the scope and need for which is not currently known. DEP strongly disagrees with this assertion. The appropriate time for evaluating the impact of dredging depth on DO will come when the dredging depth that may be required as a Superfund remedy is known. Then the cost/benefit of potentially adjusting the depth, revising the aeration system design, or other changes can be more definitively evaluated.*

h. Overly narrow range of pollutants examined.

Response:

- *The purpose of an LTCP is to evaluate attainment of water quality standards (WQS) and to evaluate potential CSO control alternatives that may improve WQS attainment. Bacteria and DO are the WQS parameters evaluated in an LTCP. Newtown Creek is classified by DEC as a Class SD waterbody. Class SD waters' best uses are fish, shellfish, and wildlife survival. The WQS analysis conducted in the LTCP was developed in close coordination with the DEC, and is consistent with the previous eight LTCPs that DEC approved under this program as well as the Clean Water Act. As noted above under Comment 14.d, the data show that CSO discharges are not a significant source of hazardous substances in Newtown Creek*

i. NYCDEP cannot rewrite the DO and Pathogen Water Quality Standards during the LTCP process.

Response:

- *DEP disagrees with the statement in NCG's comments that "NYCDEP appears to be attempting to dramatically re-define the water quality standards for Newtown Creek, which will result in its failure to provide adequate protection to ensure Newtown Creek is suitable for fish, shellfish, and wildlife survival and suitable for primary and secondary contact recreation"*
- *As noted in the response to Comment No. 13a above, Newtown Creek is a Class SD saline surface water. The Class SD definition states that "These waters shall be suitable for fish, shellfish, and wildlife survival. In addition, the water quality shall be suitable for primary contact recreation, although other factors may limit the use for this purpose". It is important to note the qualifier that is included in DEC's use description. While the Class SD criterion for fecal coliform (200 cfu/100mL) is consistent with the criterion for primary contact recreation, DEC is acknowledging that in Class SD waters such as Newtown Creek, the use may not be fully attained due to other factors.*
- *DEP worked closely with DEC to develop the scope, content, and organization of the LTCPs developed under the current program, including the approach to demonstrating compliance with water quality standards. With regard to DO, DEP has followed DEC's guidance in presenting the attainment on annual average basis. As stated in the LTCP, the average annual attainment was calculated by averaging the calculated attainment in each of ten modeled depth layers, comprising the entire water column. This approach to presenting DO compliance is consistent with the approach taken in the LTCPs that have been approved to date under this program.*
- *With regard to fecal coliform, DEP is not "seeking to change the criterion from monthly geometric mean to seasonal bacteria compliance" as asserted in NCG's comments. The LTCP presents both seasonal and annual compliance with the Class SD fecal coliform bacteria criterion. Compliance during the recreational season is relevant, as that is the period of time when recreational use of the waterbody would be most common. However, as clearly stated in Section 8 of the LTCP, the recommended plan is not projected to fully attain the Class SD bacteria criterion on an annual basis, and for this reason, a Use Attainability Analysis is included as an appendix to the LTCP.*
- *The evaluation of the "time to recovery" was developed in conjunction with DEC as a means of demonstrating the duration of short-term disruptions to the recreational use of the waterbody following wet weather events. This assessment came out of a recognition that even if the monthly geometric mean criterion is met, the waterbody will not be capable of supporting primary contact 100 percent of the time. The time to recovery, which measures the time to return to a fecal coliform bacteria level that the Department of Health and Mental*

Hygiene (DOHMH) considers safe for primary contact (<1,000 cfu/100mL), provides useful guidance on the duration of wet weather advisories that may be necessary during certain wet weather events.

- DEP finds the assertion by the commentor that DEP is attempting to “lower the bar of regulatory compliance standards, rather than directly address the impact of CSO discharges on Newtown Creek” to be incorrect. As noted above, DEP has worked closely with DEC throughout the LTCP program on the approach to demonstrating compliance with water quality standards. The recommended plan for Newtown Creek represents an approximately \$570 to \$600M (unescalated) investment in CSO reduction in Newtown Creek. The evaluations presented in the LTCP demonstrated that the recommended plan provides the most cost-effective level of CSO control, and that higher levels of storage would incur significant additional cost while providing diminishing incremental benefits. DEP is cognizant of the impacts of rate increases on the vulnerable populations in New York City, and must carefully weigh the costs of the CSO program against both the water quality benefit and the economic impacts on its rate payers. For these reasons, cost-effectiveness is a key consideration in evaluating CSO control alternatives and establishing the most appropriate level of control.
- j. NYCDEP data needs to be readily available. Data not presented in a manner consistent with applicable water quality standards.**
- Slide No. 14 from the April 26, 2017 Review of Alternatives public meeting showed the locations of the DEP’s Harbor Survey Monitoring (HSM) and Sentinel Monitoring (SM) program sampling locations in Newtown Creek, as well as the sampling locations from the LTCP sampling program conducted specifically in support of the Newtown Creek LTCP. The data from the HSM program are available at http://www.nyc.gov/html/dep/html/harborwater/harbor_water_sampling_results.shtml; the data from the SM program are available at <http://www.nyc.gov/html/dep/html/harborwater/sentinel-monitoring-program.shtml>.
 - The commentor refers to the presentation of bacteria geometric means and DO data in the “Alternatives Review”, but it appears that the commentor is referring to slides from the February 21, 2017 Public Data Review Meeting. That meeting was conducted by DEP in response to comments received at the November 15, 2017 Kickoff Meeting, where attendees requested a meeting specifically focused on the water quality sampling results.
 - The comment on slides 22 to 24 from the February 21, 2017 Public Data Review Meeting states that monthly geometric means of the data from January to November 2016 should have been presented, and the data from the recreational season in slides 25 to 27 should similarly have been presented on a monthly basis. The intent of those slides from the Public Data Review Meeting was to provide a snapshot of the sampling data conducted in 2016. These data were used to support the calibration of the receiving water quality model for Newtown Creek. Slides 23 and 24 showed the geometric mean and 10th and 90th percentile values for dry and wet weather samples at 14 sampling locations in Newtown Creek. To show monthly geometric means would have required preparing 11 separate slides, showing the geometric mean concentrations for the 14 locations for each of the 11 months from January to November. Presenting 11 separate slides on geometric mean concentration data would not have provided any clearer understanding of the wet weather conditions in Newtown Creek, and would have been more difficult for the attendees at the public meeting to follow.
 - Further, the commentor states that “by taking geomeans over a longer period of time, larger exceedances of the water quality criterion for bacteria may have been effectively masked”. However, the data in the slides clearly show wet weather geometric means well over the 200

cfu/100mL criterion. For example, the wet weather geometric mean at station NC-6 was 20,213. The implication that the presentation of the data “effectively masked” the exceedances has no merit.

- Similarly, slide 22 showed a mosaic of the wet weather geometric mean concentrations for fecal coliform and *Enterococcus* for the January to November data set. Breaking this data into monthly geometric means would have required preparing 11 mosaic slides, one for each month. The point of slide 22 was to show that the data demonstrated that Newtown Creek has high bacteria concentrations in wet weather.
 - DEP finds the comments on the slides presenting DO data (slides 34 to 38 from the February 21, 2017 Public Data Review Meeting) to be similarly off base. Again, the intent of the slides was to provide a snapshot of the DO data collected during the 2016 monitoring period. Slide 36 shows the average, and 95th and 5th percentile ranges of the dry and wet weather DO data collected. The data show that the average concentrations are above 3 mg/L in dry and wet weather, but excursions below the 3 mg/L level were recorded. Showing the full range of data instead of the 95th and 5th percentiles would not have changed that observation. Showing the data range in terms of percentiles is customary in presenting water quality data, to minimize the impact of a limited number of outliers on the understanding of the data range. Again, the conclusion that excursions below 3 mg/L were observed in the data is not changed by presenting the 5th percentile range.
- k. NYCDEP has not considered several effective alternatives and too many alternatives were presented in insufficient details during the Alternatives Public Meeting.**

Response:

- Section 8 of the Newtown Creek LTCP presents the “toolbox” of CSO control technologies considered for Newtown Creek. For each technology in the toolbox that was not carried forward to a short-listed alternative, the LTCP describes the reasons for eliminating the technology from further consideration.
- At the April 26, 2017 Review of Alternatives public meeting, DEP presented six categories of alternatives that were under consideration for Newtown Creek. While each of these categories could be developed for a range of levels of control, the public was provided with a sense of the scale, impacts, and range of costs associated with these alternatives. NCG’s comment that DEP presented 184 alternatives is misleading, as is the comparison to Coney Island Creek. Coney Island Creek had just a single CSO outfall, and the most cost-effective control for Coney Island Creek had already been implemented (Avenue V Pump Station improvements).

**NEWTOWN CREEK PUBLIC COMMENT RESPONSE SUMMARY
COMMENTS RECEIVED AFTER LTCP SUBMITTAL**

Public Letters Received:

1. Newtown Creek Alliance (NCA), Letter dated October 23, 2017.
2. Newtown Creek Group (NCG), Letter dated August 14, 2017, with Appendices A1, A2, A3 and H1

1. NCA: The implementation timeline is too long, and should be accelerated.

Response:

- *The schedule presented in Section 9 of the LTCP was based on DEP's experience in implementing major wastewater infrastructure projects in New York City. A significant planning and comprehensive environmental review effort will be required to identify the final tunnel route, select the location of the tunnel mining shaft/dewatering pump station, and perform detailed geotechnical borings along the final tunnel route. Additionally, the site acquisition process to obtain the mining/pump station site may also be a key factor driving the schedule, depending on the selected tunnel alignment. The tunnel construction schedule was based on experience of other projects undertaken in New York City and other cities of a similar scale to the tunnel proposed for Newtown Creek.*

2. NCA: Increased CSO discharges to East River are unacceptable. CSO from Dutch Kills should be captured by a storage tank, not relocated.

Response:

- *The Borden Avenue Pump Station expansion to control 75% of the annual discharges from BB-026 was determined to be the most cost-effective solution for Dutch Kills, and also provided the opportunity for synergies with state-of-good-repair needs that had been independently identified for the pump station. The cost of providing an equivalent storage tank for 75% capture of the BB-026 flows would have been more than five times the cost of the Borden Avenue Pump Station Expansion. In addition, the site acquisition process would have extended the schedule for implementation of the project.*
- *The projected 80 MGY increase in CSO into the East River represents a nine percent increase above the current baseline projection of 848 MGY for East River CSOs associated with the Newtown Creek WWTP system, and this additional overflow volume is not projected to detrimentally impact water quality. The increased CSO volume to the East River will not occur during every storm event, but will mostly occur during the larger, less frequent storms in the typical year. A number of GI projects that will mitigate a portion of the annual CSO volume are planned for the general vicinity of Outfall NC-014, where the greatest increase in volume would occur. Other potential options to mitigate the additional CSO volumes into the East River will be investigated under the City-wide/Open Waters LTCP.*

3. NCA: The evaluation of additional Green Infrastructure (GI) was insufficient. More investment in stormwater capture is necessary to improve water quality.

Response:

- *DEP has one of the most ambitious green infrastructure programs in the country and has constructed or is planning for over 1,400 green infrastructure assets in the Newtown Creek watershed which will manage an estimated 161 million gallons of stormwater annually. DEP's strategy is to utilize GI where it is feasible, cost-effective to stormwater management, water*

quality enhancements and other co-benefits. In addition, although future projects are not assumed in the baseline, DEP is planning to pursue a combination of public and private property retrofits to achieve additional stormwater capture. All green infrastructure projects in the Newtown Creek watershed, including any additional green infrastructure beyond baseline assumptions, will be reported in the GI Program's Annual Reports as the Program progresses. For more information on the green infrastructure program, visit www.nyc.gov/dep/greeninfrastructure.

4. Comments from Newtown Creek Group (NCG) dated August 14, 2017

a. Installing LTCP controls may delay or prevent certain CERCLA actions.

Response:

- Based on DEC's June 27 approval of the LTCP, the key milestones for implementation of the Newtown Creek LTCP recommended plan have been incorporated by DEC into the CSO Consent Order. DEP is closely coordinating implementation of the LTCP project with DEC, EPA, as well as other appropriate parties to enhance coordination with CERCLA actions.
- b. The LTCP will not eliminate all CSO discharges or address discharges from MS4s or the Newtown Creek Wastewater Treatment Plant discharges into Whale Creek.**

Response:

- The LTCP demonstrated that elimination of CSO to Newtown Creek would be cost-prohibitive, and would not result in full attainment of water quality standards for fecal coliform on an annual basis. The recommended plan was demonstrated to be the most cost-effective approach to addressing CSOs. Controlling or reducing SPDES-permitted MS4 discharges or the treated effluent from the Newtown Creek WWTP were not part of the scope of the LTCP. The City received its MS4 Permit in August 2015 and will submit a Stormwater Management Program (SWMP) to NYSDEC for review and approval on August 1, 2018. The SWMP details measures to reduce pollution in stormwater runoff in the MS4 areas of the City. For more information, visit www.nyc.gov/dep/ms4.
- c. Future contamination from CSOs and MS4 discharges will contribute to urban background that will include CERCLA hazardous substances and other pollutants that create risks for human health and the aquatic community.**

Response:

- On March 20, 2017, the City submitted extensive comments to EPA on the Draft Remedial Investigation (RI) Report.
- The data show that CSO discharges are not a significant source of hazardous substances in Newtown Creek. Nevertheless, the City expects that the CSO control alternative selected in this LTCP (see Section 8) would be sufficient to address any CSO discharge controls that EPA may require under Superfund. The Feasibility Study, which is being conducted by the non-City PRPs, will evaluate potential remedies for Newtown Creek based on both data collected during the RI and on additional sampling and studies. EPA expects to issue a Record of Decision (ROD) sometime after 2020, which will set forth EPA's selected remedy for Newtown Creek.
- The data collected by the USEPA to assess background levels for reference areas, which include inputs from CSOs and MS4s, do not show presence of toxicity to benthic organisms or human health. It is expected that once the EPA remediation for the Site takes place, which may include, but not be limited to, removal or isolation of contaminated sediments, control of

NAPL and contaminated groundwater from upland properties the Creek will return to the background conditions expected in reference areas with varying levels of point source inputs.

- d. The CERCLA process for Newtown Creek will have to account for these future uncontrolled loadings from CSOs and MS4s discharging to the creek.**

Response:

- *DEP has been actively coordinating with EPA and DEC on integrating the LTCP and Superfund processes. Thus, DEP expects that the selected remedy will account for future reduced loadings to the creek.*

The NCG's August 14, 2017 comment letter, with four attached appendices, put forth a number of assertions based on data and analyses conducted by the NCG. DEP disagrees with many of those assertions, as presented below.

- e. NCG: CSOs and MS4 outfalls produce sheens, and the sheens provide a pathway by which contaminants enter the waters of the creek from CSOs and MS4 outfalls.**

Response:

- *See above response on the CSO and MS4 data. The major sources of sheens and contaminants in Newtown Creek are Non-Aqueous Phase Liquid (NAPL) and oil from NCG members including Texaco, BP, Phelps-Dodge Refining Corporation, specifically the Exxon Mobil oil spill (Meeker Ave Plume) and the National Grid former Manufactured Gas Plant (MGP) sites. The NYSDEC spills website has documented ongoing NAPL (pure product which results in sheens) seeps from the BP former Pratt oil works site, National Grid former Greenpoint energy site, Manhattan Poly bag – a former oil storage site, Morgan oil terminal site. NCG fails to document these sites as sources of sheens to the Creek.*
 - *Sheens are also caused by NAPL releasing from the subsurface sediments to the surface sediments and surface water due to groundwater and processes such as ebullition.*
 - *Conversely, NCG has collected CSO and MS4 samples for over 15 sampling events and did not document presence of sheens in the collected samples.*
- f. NCG: Surface sediment in the creek exhibits high concentrations of total organic carbon (TOC), compared to those normally found in natural estuarine systems, primarily due to ongoing discharges of solids from CSOs and MS4 outfalls. The extremely high load of organic matter entering the creek via CSOs is likely the primary cause of gas ebullition due to the decomposition of organic material by microbes. This may be an important process due to the potential for gas bubbles to transport contaminants, particularly nonaqueous phase liquid (NAPL), from the sediment to surface water.**

Response:

- *Gas ebullition is a natural process that occurs in many ecosystems with or without CSO/MS4 input. This phenomenon has been documented in the middle reaches of the Creek and at the mouth where CSO/MS4 inputs are not significant inputs. USGS data collected for the Site under EPA supervision shows gas generation throughout the length of the Creek. In addition, TOC inputs for the Newtown Creek system are not limited to CSOs and MS4s. This is evident in the reference areas where CSOs/MS4s are present but the TOC is not elevated. Additional sources of TOC to the Site are NAPLs which are present in the sediments due to ongoing and legacy contamination from former refineries, former manufactured gas plants and fuel storages owned by various parties.*

- g. **NCG: Data collected as part of the Newtown Creek RI demonstrate that CSO and MS4 discharges are ongoing sources of CERCLA hazardous substances to Newtown Creek.**

Response:

- See above on data analysis. Although CERCLA hazardous substances were detected in CSO/MS4 discharges, the relative inputs are less than background inputs from the East River and are comparable to inputs from atmospheric deposition. The reference areas which have inputs from CSOs and MS4s do not show toxicity under CERCLA.
- h. **NCG: Results suggest that major CSOs and MS4s have been and continue to be sources of phytane and pristane to the sediment.**

Response:

- See above. As per the Baseline Human Health Risk Assessment (BHHRA) and the recently submitted (July 13, 2018) Baseline Ecological Risk Assessment (BERA) to the EPA by the NCG, phytane and pristane are not shown to pose risks to human health or the environment.
- i. **NCG: Pathogens and pharmaceuticals and personal care products (PPCP) are at levels in the sediment porewater that represent potentially significant chemical stressors to the aquatic community, and the major CSOs and MS4s are likely the major sources of these compounds in the sediment of the creek.**

Response:

- The data do not support this assertion. Pathogens are not a significant chemical stressor to the aquatic community. Reference area data collected at waterbodies with CSO/MS4 inputs outside of Newtown Creek (including Westchester Creek, Spring Creek, Gerritson Creek) show low toxicity (Anchor QEA (Anchor QEA, LLC), 2018. Draft Baseline Ecological Risk Assessment. Remedial Investigation/Feasibility Study, Newtown Creek. July 2018).
- j. **NCG: PCB concentrations on particulate matter discharging from CSO and MS4s exceed the average concentrations in surface sediment of the four regional reference areas.**

Response:

- The data do not support this assertion. The CSO and MS4 concentrations are very similar or lower than the concentrations in the regional reference areas. The major inputs of PCBs have not been identified by the NCG for the RI; this is considered a major data gap for the CERCLA investigation of Newtown Creek. Data collected by the City shows that sources of PCB to the Creek are from the NCG historical spills and ongoing/uncontrolled seeps. Review of available upland site data reports also shows presence of elevated PCB concentrations in soils and NAPLs present in the upland properties (see attached list of references).
- k. **NCG: At locations in the vicinity of the larger CSOs and MS4s, porewater concentrations of CERCLA hazardous substances were too low to explain the observed toxicity to benthic organisms. Other factors contributing to toxicity include high organic matter leading to high porewater sulfide concentrations, high PPCP concentrations in porewater, and elevated concentrations of unresolved complex mixtures of organic compounds (UCMs). Continued CSO and MS4 discharges will contribute to risks to benthic organisms.**

Response:

- Comparison to reference/background areas that have CSO/MS4 input and low toxicity show that they are not the risk driver to benthic organisms. There is an extremely high correlation between benthic toxicity and chemicals associated with tar/oil, as well as locations where

NAPL has been observed. The assertion fails to account for toxicity due to sources coming in from other properties and upland sources.

- I. NCG: CSOs and MS4s will influence the composition and level of urban background conditions of the creek and future chemical equilibrium concentrations within surface sediment. Incremental risks due to CERCLA hazardous substances will be overestimated if these background risks are not accounted for in the development of preliminary remediation goals (PRGs).**

Response:

- The data does not support this assertion, but rather demonstrates the low benthic toxicity measured at reference/background areas where CSO/MS4 inputs are present in varying degrees (Anchor QEA (Anchor QEA, LLC), 2018. Draft Baseline Ecological Risk Assessment. Remedial Investigation/Feasibility Study, Newtown Creek. July 2018).*
- m. NCG: In many cases, predicted equilibrium surface sediment chemical concentrations increase with CSO control, due to the increased influences of stormwater on net sedimentation rates (NSRs) and the relatively higher contaminant concentrations of stormwater solids (as compared to CSO solids) measured as part of the RI point source sampling. These results show that LTCP control scenarios will have little influence on future recontamination levels and that MS4s will result in future sedimentation at concentrations that need to be considered when setting PRGs for the CERCLA remedy.**

Response:

- This assertion is not supported by verified models. . The volume of stormwater is being discharged from the City's MS4 into Newtown Creek is less than the volume from direct drainage and private stormwater pipes, and the City's stormwater discharges are authorized an MS4 SPDES Permit. Approximately 30% of the freshwater flow into Newtown Creek is from direct drainage from private stormwater pipes or overland flow. Data collected from the RI/FS shows that private stormwater pipes and flow from groundwater treatment systems are a much larger source of contaminants than CSO/MS4.*
- n. NCG: The proposed CSO Controls face a number of challenges that may result in these controls being delayed, modified or totally prevented from being implemented.**

Response:

- The LTCP reviewed a number of implementation challenges for each of the two major elements of the recommended plan: the Borden Avenue Pumping Station (BAPS) expansion, and the CSO storage tunnel. These challenges will need to be addressed during the implementation phase, but none of these challenges was determined to be a "fatal flaw" to the successful implementation of the project. DEP has faced similar types of challenges on the many major wastewater infrastructure projects that it has implemented over the years, and had demonstrated the ability to work through these challenges and successfully implement projects.*
- o. NCG: Construction schedules, predicted CSO volume reductions and predicted water quality improvements are not clearly presented in the LTCP.**

Response:

- Section 9 of the LTCP clearly lays out the milestone schedule for implementation of the BAPS expansion and the CSO storage tunnel. In response to comments from the DEC, a table comparing the baseline vs. recommended plan CSO volumes and activation frequencies by outfall will be incorporated into Section 8 of the LTCP via Supplemental*

Documentation. The impact of the recommended plan on attainment of water quality standards is presented in Tables 8-28 to 8-31 and Figures 8-29 to 8-40 in the LTCP.

- p. **NCG: The Newtown Creek LTCP makes inaccurate predictions of water quality improvements associated with proposed CSO controls. NCG identified the following as “flaws that affect its accuracy”.**
- i. **Overly narrow focus on bacteria and dissolved oxygen (DO) concentrations.**

Response:

- *The purpose of an LTCP is to evaluate attainment of water quality standards (WQS) and to evaluate potential CSO control alternatives that may improve WQS attainment. Bacteria and DO are the WQS parameters evaluated in an LTCP. Newtown Creek is classified by DEC as a Class SD waterbody. Class SD waters’ best uses are fish, shellfish, and wildlife survival. The WQS analysis conducted in the LTCP was developed in close coordination with the DEC, and is consistent with the previous eight LTCPs that DEC approved under this program as well as the Clean Water Act. As noted above under Comment 4.c, the data show that CSO discharges are not a significant source of hazardous substances in Newtown Creek.*
- ii. **Inappropriate use of baseline conditions in the LTCP. The LTCP baseline conditions compared two highly speculative future CSO conditions, rather than comparing existing conditions to a future CSO control condition.**

Response:

- *The elements of the baseline conditions that are used as a basis for comparing CSO controls in the LTCP were established with DEC early in the LTCP program, and have been used consistently in the eight LTCPs previously submitted and approved by DEP. The baseline conditions for Newtown Creek as described in Section 6 of the LTCP are based on the following:*
 - *Dry-weather flow and loads to the Bowery Bay and Newtown Creek WWTPs were based on CY2040 projections. The 2040 projected dry-weather flow rate for the Bowery Bay WWTP was 113.5 MGD and was 112 MGD for the Brooklyn/Queens portion of Newtown Creek WWTP.*
 - *The Bowery Bay WWTP could accept and treat peak flows up to 300 MGD, equal to two times design dry-weather flow (2xDDWF). The Newtown Creek WWTP could accept peak flows up to 700 MGD, which is greater than 2xDDWF (design dry-weather flow at Newtown Creek WWTP is 310 MGD).*
 - *Constructed or planned GI projects resulting in an 83 MGY reduction in baseline annual CSO volume in the watershed were included. Most of the CSO volume reduction takes place at Outfall NC-014 (64 MG).*
 - *Cost-effective Grey Infrastructure CSO controls included in the CSO Order were fully implemented. For Newtown Creek, these projects included:*
 - *Diversion of low-lying sewers [construction completed 2017], and*
 - *Modifications to regulators along the Bowery Bay High Level Interceptor system [construction completed 2017]*
- *As described in Section 6 of the LTCP, the dry-weather sanitary sewage flows used in the baseline modeling were escalated to reflect anticipated population growth in NYC. In 2014, DEP completed detailed analysis of water demand and wastewater flow projections. A detailed GIS analysis was also performed to apportion total population among the 14 WWTP*

sewersheds throughout NYC. For this analysis, Transportation Analysis Zones were overlaid with WWTP sewersheds. Population projections for 2010-2040 were derived from population projections developed by DCP and the New York Metropolitan Transportation Council. These analyses used the 2010 census data to reassign population values to the watersheds in the model and project sanitary flows to 2040. These projections also reflect water conservation measures implemented by DEP that have reduced flows to the WWTPs and thus free up capacity in the conveyance system. The trends in water conservation are firmly established from DEP's flow data at the WWTPs, and are consistent with trends in reduced per-capita water use seen in major cities nation-wide. The estimated future dry weather flows are therefore based on detailed and realistic evaluations of population and water use trends.

- The current wet weather capacities at the Bowery Bay and Newtown Creek WWTPs are 225 mgd and 700 mgd, respectively. The Newtown Creek WWTP is therefore currently providing the wet weather flow capacity that is included in the baseline conditions. The Bowery Bay WWTP is currently undergoing upgrades to provide the 300 mgd wet weather flow capacity. These upgrades are under a Consent Order milestone schedule, with a scheduled completion date of December 2019.
- As described in Section 5 of the LTCP, DEP has installed or plans to install over 1,300 GI assets, including ROW practices, public property retrofits, and GI implementation on private properties resulting in a CSO volume reduction of approximately 83 MGY, based on the 2008 baseline rainfall condition. Figure 5-1 in the LTCP shows the multiple contracts that have either been constructed, are in construction, or are in the planning phase in the Newtown Creek CSO tributary areas. The implementation of the GI program has been incorporated into the Consent Decree.
- As shown above, the cost-effective grey CSO control projects included in the baseline conditions have all been completed as of 2017.
- Therefore, each of the projects on the list of baseline conditions has either already been completed, or is under a Consent Order schedule for completion. The intent of including these previously-approved projects in the baseline conditions is to allow for a clear distinction between the expected conditions upon completion of the previously-approved projects and the relative performance of the alternatives considered in the Newtown Creek LTCP. Inclusion in the baseline conditions of previously approved projects and/or projects expected to be completed within the planning horizon of an LTCP, is a well-established practice in the development of LTCPs.

iii. Failure to include Newtown Creek water quality measurements in the LTCP.

Response:

- All of the raw data from the LTCP sampling program have been submitted to the DEC and EPA. The plots of the sampling data that were included in the LTCP were also presented to the public at the LTCP public meeting held on February 21, 2017 that specifically focused on water quality data. The intent of showing the plots of the data was to provide a snapshot of the general water quality conditions. The data were used specifically as a basis for verifying the calibration of the receiving water model for Newtown Creek. As the data cover only the specific periods when sampling was conducted, they do not allow for determination of the annual or recreational season attainment of water quality standards. As defined in conjunction with DEC at the start of the LTCP program, the calibrated receiving water model output provides the basis for establishing annual or recreational season attainment with water quality standards.

iv. Use of an incorrect water quality standard for DO in the LTCP

Response:

- The representation of DO attainment based on average annual concentrations was based on direction from DEC. NCG's statement that "NYCDEP has not used an average annual attainment metric as a DO WQS surrogate in previous LTCPs" is not correct. The average annual attainment metric for DO has been used in all of the previous LTCPs approved by DEC.

v. Long-term phased implementation and adaptive management without robust monitoring

Response:

- The comment, as presented in Appendix H1 to NCG's comment letter, concludes that the annual monitoring program for Newtown Creek should be expanded to include, at a minimum, the 14 LTCP2 sampling stations, with additional stations so that there are at least two stations in each tributary. The commentor also indicates that the monitoring program should include monitoring of CSO outfall flows and water quality during wet weather events, as well as MS4 outfalls and direct discharges.
- The long-term monitoring program described by the commentor would be so expensive and labor intensive as to be completely unrealistic and unsustainable over a long-term period. The level of monitoring proposed is not necessary to quantify general trends in water quality in Newtown Creek. DEP's Harbor Survey Monitoring Program has been providing robust and reliable data on Newtown Creek water quality for decades. As the implementation of the Newtown Creek LTCP recommended plan proceeds, DEP will work with DEC to develop a more detailed post-construction monitoring plan.
- DEP takes issue with the commentor's statements in Appendix H1 that "NYCDEP appears to undervalue direct water quality measurements to support assessment of water quality conditions and compliance with water quality standards in Newtown Creek," and "the importance of a robust water quality monitoring program is increased by NYCDEP's use of speculative future conditions in the baseline and performance gap analysis." Over the course of the LTCP program, DEP has invested over \$8.1 million in water quality sampling and monitoring programs, including \$935,000 in Newtown Creek. The substantial investment in cost and resources to these programs was critical to provide the data needed to calibrate and verify the collection system and water quality models that DEP uses to assess the performance and expected water quality improvements from CSO control alternatives.

References for Sites with PCB Data for Soil and NAPL (See Response to Comment 4.j)

- AECOM, 2009. *Remedial Investigation Work Plan*. Equity Former MGP Site. Prepared on behalf of National Grid. July 2009.
- AECOM, 2016. *Remedial Investigation Report*. Equity Former MGP Site. Prepared on behalf of National Grid. March 2016.
- CRA (Conestoga-Rovers & Associates), 2000. *Remedial Investigation Report*. Operable Unit 1A Laurel Hill Site. November 2000.
- CRA (Conestoga-Rovers & Associates), 2004. *Final Report - Hot Spot Removal*. Laurel Hill Site. December 2004.
- CRA (Conestoga-Rovers & Associates), 2007. *Barrier Wall and Groundwater Collection/Treatment System Final Engineering Report*. Laurel Hill Site. Prepared on behalf of Phelps Dodge Refining Corporation. August 2007.
- ERM-Northeast, 1992. *Phase II Environmental Assessment*. 37-30 Review Ave. Prepared on behalf of European American Bank. May 1992.
- FPM, 2016. *Feasibility Study Report*. Former NuHart Plastic Manufacturing Site. Prepared on behalf of Dupont St Developers, LLC. April 2016.
- Gannett Fleming Engineers, 2007. *Surface Pile Characterization Findings*. Frito Lay. Prepared on behalf of Frito-Lay. May 2007.
- Gannett Fleming Engineers, 2010. *Final Remedial Investigation Report*. 202-218 Morgan Ave. Prepared on behalf of Frito-Lay. July 2010.
- Gannett Fleming Engineers, 2011. *Supplemental Remedial Investigation and Second Supplemental Remedial Investigation Report*. 202-218 Morgan Ave. Prepared on behalf of Frito-Lay. April 2011.
- Gannett Fleming Engineers, 2013. *Final Engineering Report*. Frito Lay. Prepared on behalf of Rolling Frito-Lay Sales, LP. November 2013.
- GEI (GEI Consultants, Inc.), 2010. *Appendix A - Analytical Results. Phase 2/3 Remedial Investigation Work Plan*. Prepared on behalf of National Grid. August, 2010.
- GEI (GEI Consultants, Inc.), 2010. *Appendix B - Site-Related Records. Remedial Investigation Work Plan Phase 1*. Table 1 Analytical Soil Results. 2010.
- GEI (GEI Consultants, Inc.), 2010. *Ball Field Investigation Report Greenpoint Energy Center*. Table 2 Miller Environmental Soil Analytical Data. Prepared on behalf of National Grid. August, 2010.
- GEI (GEI Consultants, Inc.), 2016. *Phase 2/3 Remedial Investigation Work Plan*. Table 1 Greenpoint Phase II 2015 Soil Analysis Results. Prepared on behalf of National Grid. February 2016.
- GEI (GEI Consultants, Inc.), 2016. *Interim Remedial Investigation Report*. Phases 1 and 2. Prepared on behalf of National Grid. November 2016.
- GHD, 2015. *Site Management Plan*. Laurel Hill Site. Prepared on behalf of Phelps Dodge Refining Corporation. December 2015.
- Golder Associates, 2005. *Remedial Investigation Report Data Summary Report*. Prepared on behalf of Quanta Site Administrative Group. June 2005.
- Golder Associates, 2014. *Remedial Investigation Report*. 37-88 Review Avenue. Prepared on behalf of NYSDEC. November 2014.
- Kleinfelder East, Inc., 2012. *Supplemental Site Characterization Work Plan*. Former Pratt Oil Works. Prepared on behalf of ExxonMobil Environmental Services Company. January, 2012.
- Langan, 2015. *Remedial Investigation Report*. Former ACME Steel/Metal Works. Prepared on behalf of Whitehead Realty Company. December 2015.
- Langan, 2016. *Remedial Investigation Report*. Former ACME Steel/Brass Foundry. Prepared on behalf of Whitehead Realty Company. January 2016.
- Malcolm Pirnie, 2010. *Remedial Investigation Report*. BCF Oil Site. Prepared on behalf of BCF Oil. December 2010.
- Paulas, Sokolowski and Sartor Engineering, PC, 2005. *Interim Remedial Action Work Plan*. Greenpoint Energy Center Northeast Corner. Prepared on behalf of KeySpan Corporation. March 2005.
- Paulas, Sokolowski and Sartor Engineering, PC, 2006. *Supplemental Site Investigation Report and Interim Remedial Measure Work Plan*. Greenpoint Energy Center Northeast Corner Area. Prepared on behalf of KeySpan Corporation. August 2006.

- Roux (Roux Associates, Inc.), 2007. *460 Kingsland Ave Investigation Report*. Prepared on behalf of ExxonMobil Refining and Supply Company. August 2007.
- Roux (Roux Associates, Inc.), 2008. *375 Kingsland Ave Investigation Report*. Prepared on behalf of ExxonMobil Refining and Supply Company. February 2008.
- Roux (Roux Associates, Inc.), 2009. *Comprehensive Site Investigation Report*. ExxonMobil Brooklyn Terminal. Prepared on behalf of ExxonMobil Environmental Services Company. March 2009.
- Roux (Roux Associates, Inc.), 2011. *PCB Source Evaluation Report*. ExxonMobil Greenpoint Petroleum Remediation Project. Prepared on behalf of ExxonMobil Environmental Services Company. May 2011.
- Roux (Roux Associates, Inc.), 2013. *OU-1 Site Characterization Report*. Prepared on behalf of ExxonMobil Environmental Services Company. July 2013.
- Stantec (Stantec Consulting Services, Inc.), 2011. *Final Engineering Report Volume 1 of 1*. Former Maspeth Substation. Excerpt. Prepared on behalf of Consolidated Edison of NY. April 2011.
- URS, 2008. *Phase III Data Summary Report Site Characterization Meeker Ave Plume Trackdown*. Prepared on behalf of New York State DEC. October 2008.
- URS, 2011. *On-Site Phase III Remedial Investigation Report*. Former Klink Cosmo Cleaners Site. Prepared on behalf of NYSDEC. December 2011.
- URS, 2012. *Phase II Remedial Investigation Report*. Former Klink Cosmo Cleaners Site. Prepared on behalf of NYSDEC. November 2012.
- URS, 2015. *DNAPL Recovery Pilot Test Report*. Former Spic and Span Cleaners and Dyers, Inc. Site. Prepared on behalf of NYSDEC. November 2015.