

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2

-----X
IN THE MATTER OF THE :
GOWANUS CANAL SUPERFUND SITE :
 :
 : INDEX NO.
 : CERCLA-02-2014-2019
 :
City of New York, : ADMINISTRATIVE ORDER
 : FOR REMEDIAL DESIGN
 :
Respondent. :
 :
 :
Proceeding under Section 106(a) of the Comprehensive :
Environmental Response, Compensation, and Liability :
Act of 1980, as amended, 42 U.S.C. § 9606(a). :
-----X

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Order ("Order") is issued to the above-captioned Respondent by the United States Environmental Protection Agency, Region 2 ("EPA") and requires Respondent to perform response actions as set forth in the Order in connection with the Gowanus Canal Superfund Site ("Site"). These response actions are for the Remedial Design ("RD") of the remedy selected in EPA's September 27, 2013 Record of Decision ("ROD") for the Site, including but not limited to, retention tanks to control contaminated solids discharges from Combined Sewer Overflows ("CSOs") and the cleanup and restoration of the former 1st Street turning basin.

2. This Order is issued to Respondent by EPA pursuant to the authority vested in the President of the United States under Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. § 9606(a), and delegated to the Administrator of EPA on January 23, 1987, by Executive Order No. 12580 (52 *Federal Register* 2926, January 29, 1987). This authority was further delegated to the EPA Regional Administrators by EPA Delegation Nos. 14-14-A and 14-14-B and to the Director of the Emergency and Remedial Response Division in Region 2 by Regional Delegation R-1200, dated November 23, 2004.

3. EPA has notified the New York State Department of Environmental Conservation ("NYSDEC") of this Order pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

II. PARTIES BOUND

4. This Order shall apply to and be binding upon Respondent and its successors and assigns.

5. Until EPA notifies Respondent under Paragraph 109 that the Work has been completed, Respondent shall provide a copy of this Order to its employees, contractors, consultants, subcontractors and agents involved in this matter. Respondent is responsible for compliance with this Order and for ensuring that its employees, contractors, consultants, subcontractors and agents comply with this Order.

III. DEFINITIONS

6. Unless otherwise expressly provided herein, terms used in this Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or its implementing regulations. Whenever terms listed below are used in this Order or in an attachment to this Order, the following definitions shall apply:

- a. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601-9675.
- b. "Day" shall mean a calendar day. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday or federal holiday, the period shall run until the close of business of the next working day.
- c. "Effective Date" shall be the date this Order goes into effect as provided in Subsection T (Opportunity to Confer, Effective Date).
- d. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.
- e. "1st Street Turning Basin RD Work Plan" or "Turning Basin RD Work Plan" shall mean the document to be developed pursuant to Section VII of the SOW and approved by EPA, and any amendments thereto.
- f. "National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, and codified at 40 C.F.R. Part 300, including any amendments thereto.
- g. "NYSDEC" shall mean the New York State Department of Environmental Conservation and any successor departments or agencies of the State.
- h. "Order" shall mean this Administrative Order and all appendices attached hereto. In the event of conflict between this Order and any appendix, this Order shall control.
- i. "Paragraph" shall mean a portion of this Order identified by an Arabic numeral.

- j. “Performance Standards” shall mean the cleanup standards, Remedial Action Objectives, and other measures of achievement of the goals of the remedy set forth in the ROD, Section II of the Remedial Design Statement of Work for the dredging and related activities (“Dredging RD SOW”), attached hereto as Appendix A, and Section II of the Retention Tank and 1st Street Turning Basin Statement of Work (“Tank and Turning Basin SOW”), attached hereto as Appendix B.
- k. “Record of Decision” or “ROD” shall mean the EPA Record of Decision relating to the Site signed on September 27, 2013 by the Director of the Emergency and Remedial Response Division, EPA Region 2, including all attachments thereto, attached hereto as Appendix C.
- l. “Remedial Design” or “RD” shall mean those activities to develop the final plans and specifications for the Remedial Action.
- m. “Remedial Design Statement of Work” or “Dredging RD SOW” shall mean the Statement of Work attached hereto as Appendix A.
- n. “Remedial Design Work Plans” or “RD Work Plans” shall mean the plans to be developed pursuant to the Dredging RD SOW and Tank and Turning Basin SOW and approved by EPA, and any amendments thereto.
- o. “Respondent” shall mean the City of New York.
- p. “Retention Tank and 1st Street Turning Basin Statement of Work” or “Tank and Turning Basin SOW” shall mean the Statement of Work attached hereto as Appendix B.
- q. “Retention Tank Remedial Design Work Plan” or “Tank RD Work Plan” shall mean the document developed pursuant to Section V of the Tank and Turning Basin SOW and approved by EPA, and any amendments thereto.
- r. “Section” shall mean a portion of this Order identified by an upper-case Roman numeral and includes one or more Paragraphs.
- s. “Site” shall mean the Gowanus Canal Superfund Site, an approximately 100-foot wide, 1.8-mile-long canal located in the New York City borough of Brooklyn, Kings County, New York, and also includes any areas which are sources of contamination to the Canal, areas where contamination has migrated from the Canal, and/or suitable areas in very close proximity to the contamination which are necessary for implementation of the Work. The Site is depicted generally on the map attached as Appendix D.
- t. “State” shall mean the State of New York.

- u. "United States" shall mean the United States of America.
- v. "Waste Material" shall mean (i) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (ii) any "pollutant or contaminant" under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and (iii) any "solid waste" under Section 1004(27) of the Solid Waste Disposal Act, as amended, 42 U.S.C. § 6903(27).
- w. "Work" means all activities Respondent is required to perform pursuant to this Order, except those required by Paragraph 86 below.

IV. FINDINGS OF FACT

A. **Site Location, Canal Construction, Ownership and Operation**

7. The Gowanus Canal ("Canal") is a brackish, tidal arm of the New York–New Jersey Harbor Estuary, extending for approximately 1.8 miles through Brooklyn, New York. The approximately 100–foot–wide Canal runs southwest from Butler Street to Gowanus Bay and Upper New York Bay. The adjacent waterfront is primarily commercial and industrial, currently including concrete plants, warehouses and parking lots, and the Site is near several residential neighborhoods.

8. In 1849, the State authorized construction of the Canal by the City of Brooklyn to open the area to barge traffic, flush away sewage, receive storm water and fill the adjacent lowlands for development. As a result of the 1849 legislation, Respondent, successor in interest to the City of Brooklyn, has been the owner and operator of the Canal since its construction.

9. The Canal was constructed by bulkheading and dredging a tidal creek and wetland. Additional fill was utilized to raise the grade of the surrounding land. The authorizing legislation and the initial canal designs had recognized the likelihood that the Canal would be stagnant, creating pollution problems. To prevent this, various flushing solutions were contemplated. However, none were implemented as part of its initial construction.

10. After completion of construction in the 1860s, the Canal quickly became one of the nation's busiest industrial waterways, home to heavy industry including manufactured gas plants ("MGPs"), coal yards, cement makers, soap makers, tanneries, paint and ink factories, machine shops, chemical plants and oil refineries.

11. Respondent is the current owner and operator of the sewer infrastructure which discharges into the Canal. Combined sanitary and storm sewers which discharge to the Canal were constructed at various times to handle the waste generated by industrial, commercial and residential development within the Canal sewershed, i.e., the areal extent of the sewer infrastructure system that discharges to the Canal, an area of approximately 1,758 acres. For facilities adjacent to the Canal, direct discharge pipes were typically constructed.

12. Respondent owns and/or operates, or its legal predecessor owned or leased, and/or operated, numerous facilities on or near the Canal which are or have been sources of past or present releases of hazardous substances to the Canal. These include, but are not limited to, the Hamilton Asphalt plant, the Hamilton Avenue Marine Waste Transfer Station, the former Hamilton Street incinerator, the Second Avenue Department of Sanitation vehicle storage lot, the former Second Avenue Department of Sanitation garage, the former Smith Street Brooklyn Rapid Transit Power Station; the former Second Avenue Brooklyn Rapid Transit Power Station and coal yard; the former 3rd Street Brooklyn Rapid Transit Coal Yard; and the 25th Street pier.

13. Respondent owns Thomas Greene Park, a portion of the former Fulton MGP facility. The Fulton MGP facility was operated by the Brooklyn Union Gas Co. from approximately 1879 until 1930. In 1935, Respondent opened a public playground on the property, prior to completing acquisition in 1938 from the Brooklyn Union Gas Co. (“BUG”). This former MGP facility, a State Superfund Site, is a major ongoing source of hazardous substance contamination to the Canal.

14. Since 1975, Respondent has owned a large portion of Public Place, the location of the former Citizen’s Gas Works MGP facility. The Citizen’s Gas Works facility was operated by BUG from approximately 1859 until 1965. This former MGP facility is a major ongoing source of hazardous substances to the Canal. Together with National Grid New York, the successor to BUG, Respondent is a signatory to a NYSDEC administrative order for the remediation of Public Place under the State Brownfields cleanup program.

B. Contamination and Early Actions by Respondent

15. The Canal was first declared a public nuisance in 1877 due to discharge of sanitary and industrial waste, in combination with stagnant water conditions. Subsequent studies and commissions have repeatedly examined methods of addressing the contamination. A series of unsuccessful solutions were implemented by Respondent between 1891 and 1904, including directing additional sewage discharges to the Canal in order to improve flow.

16. A tunnel was constructed by Respondent (“Flushing Tunnel”) and began operating in 1911 in an effort to address the Canal’s pollution problems. Designed to improve circulation and flush pollutants from the Canal, the Flushing Tunnel consists of a one mile long, 12-foot diameter tunnel stretching from New York Bay near Governors Island to the head of the Canal. Originally using a large ship propeller-type pump system, the Flushing Tunnel could pump water in either direction. The Flushing Tunnel was operated by Respondent with mixed results until the mid-1960s when it fell into disrepair.

17. Periodic infrastructure improvements constructed, owned and operated by Respondent have eliminated dry weather discharges and reduced, but not eliminated, wet weather discharges to the Canal. These include, but are not limited to, the Owls Head Waste Water Treatment Plant (“WWTP”) which was completed in 1952, serving portions of the Park Slope area and the Red Hook WWTP, serving portions of Red Hook, which was completed in 1987. Until 1987, when the Red Hook WWTP came on-line, dry weather discharges from outfalls in the Red Hook system, such as RH-034 at the head of the Canal, were continuous, at a rate of at least 15 million

gallons per day (“MGD”), and with wet and dry weather discharges totaling 21 MGD. A pump station at Second Avenue near outfall OH-007 was completed in 1990, eliminating the last area of dry weather discharges along the Canal by pumping sewage to the Owls Head WWTP.

18. Notwithstanding the construction of the WWTPs and the other improvement described in Paragraph 17, above, between at least 1952 and 1990, depending on location relative to those sewer infrastructure improvements, a variety of commercial and industrial facilities located directly adjacent to the Canal discharged untreated industrial and sanitary waste containing hazardous substances directly into the Canal in both dry weather and wet weather conditions due to the lack of infrastructure necessary to divert discharges from the Canal to upgradient sewer lines, and/or through discharges into private direct disposal outfalls. During this period, domestic, commercial and industrial facilities not directly adjacent to the Canal but downgradient of main sewer lines also discharged untreated industrial and sanitary waste into the Canal via combined sewers in both dry weather and wet weather conditions. Domestic, commercial and industrial facilities upgradient of the main sewer lines also discharged untreated industrial and sanitary waste indirectly into the Canal in wet weather conditions. Wet weather CSO discharges continue to the present.

19. As a result of decades of direct and indirect discharges of hazardous substances generated by industrial and other activity, the Canal is a repository for untreated industrial wastes, raw sewage and runoff containing hazardous substances, causing it to be one of New York’s most polluted waterways.

20. Pursuant to the 1972 federal Clean Water Act (“CWA”), Respondent has been required to prepare multiple CWA plans and reports to address CSO discharges, including a 1983 Gowanus Canal “201 Facilities Plan,” a 1993 “Inner Harbor CSO Facility Planning Project” and a 2001 “Gowanus Facilities Upgrade Plan.” These documents discuss actions that are not primarily designed to address CERCLA hazardous substances released by CSO discharges.

21. The 1983 Gowanus Canal 201 Facilities Plan included: upgrading the Gowanus Pump Station located at Red Hook outfall number RH-0034; dredging the CSO sediments accumulated at the head of the Canal, turning basins and other areas; rehabilitating and reactivating the Flushing Tunnel; installing a force main within the Flushing Tunnel; and, if necessary, dredging the entire Canal to 13 feet below mean low water level. The subsequent plans referred to in Paragraph 20 included similar, if not identical, activities.

22. The Gowanus Pump Station was upgraded in 1985 with new pumps. The pressurized main installed within the Flushing Tunnel was completed in 1989, but failed in 1992, causing failure of the Gowanus Pump Station pumps that had been installed in 1985, which pumps were replaced once again to revert sewage flow into an under-capacity sewer main (the “Bond-Lorraine” sewer main). The Flushing Tunnel was re-started in 1999 after a partial rehabilitation, but was shut down in 2010 due to equipment problems. The dredging of the head of the Canal has not been implemented to date. No major long-term CSO reductions were realized as a result of the measures described in this paragraph.

C. Respondent's Ongoing CSO Control Activities

23. In 2005, Respondent entered into a consent order with NYSDEC (DEC Case #C02-20000107-8) (January 14, 2005)(the "CWA CSO Order") requiring, with respect to the Canal, Respondent's preparation of a 2007 Receiving Water Quality Modeling Report and a 2008 Gowanus Canal Waterbody/Watershed Facility Plan ("WWFP"). Respondent is required to implement the WWFP, which includes, by September 2014, installing a replacement force main within the Flushing Tunnel, upgrading the Gowanus Pump Station, rehabilitating and reactivating the Flushing Tunnel, and, by December 2018, dredging the CSO sediment mounds which have accumulated at the head of the Canal. The rehabilitation of the Flushing Tunnel and the planned CSO sediment dredging do not address CSO discharge reductions to the Canal.

24. According to Respondent's 2008 WWFP, wet weather CSO discharges to the Canal occur at an estimated volume of 377 million gallons per year. Respondent projects that the pending force main and Gowanus Pump Station upgrades, when implemented pursuant to the WWFP, are estimated to reduce this CSO discharge volume by 34%, to 250 million gallons per year. These upgrades will not decrease CSO discharges to the upper Canal. Respondent's CSO discharge volume estimates and upgrade reductions are based on modelling which utilizes a variety of data, studies, inputs and assumptions, including, for example, annual rainfall data. Respondent's pending model update for future studies required under the CWA CSO Order will reflect higher annual rainfall values than those used in the 2008 WWFP. Therefore, EPA believes that the actual reduction in CSO discharge volumes, and in turn, discharges of contaminated CSO sewer solids, may be smaller than the 2008 WWFP projection.

25. Following the force main, Flushing Tunnel and Pump Station upgrades, Respondent is required under the 2005 CWA CSO Order to conduct post-construction monitoring and to prepare, with public input, a CWA Long-Term Control Plan ("LTCP") for NYSDEC review and approval. One purpose of the LTCP is to evaluate the effectiveness of these upgrades at increasing dissolved oxygen levels and reducing pathogen levels, and to analyze and select the next stage of CWA CSO-related improvements for the Canal. NYSDEC agreed, in concurring on the ROD, that "The LTCP, which is due to the State in June 2015, is expected to address, at a minimum, the EPA's remedial performance goals for further contaminated CSO solids control in the upper reach of the canal."

26. In addition, NYSDEC has indicated that the current WWFP upgrades will not result in achievement of the CWA Section 101(a)(2) water quality goals for Fishable/Swimmable waters, and that Respondent will need to complete a Use Attainability Analysis ("UAA") as part of the LTCP. The UAA is based on the assessment of the physical, chemical, biological and economic factors affecting Canal water quality. According to NYSDEC, the UAA will likely need to reflect an upgraded water quality standard for the Canal. This could potentially result in the need for additional CWA CSO control(s) beyond the contaminated CSO solids controls required by EPA as part of the ROD.

27. The CSO sediment dredging requirement under the CWA CSO Order will not remove the contaminated accumulated CSO sediments at the head of the Canal to the full depth of remedial

dredging specified in the ROD. This ROD component is more fully described in Paragraph 40. Respondent has estimated that the CWA CSO sediment dredging, which includes capping the remaining contaminated sediment at a final elevation of 3 feet below mean low water, may cost up to \$20 million. However, if the CWA CSO sediment dredging were to be implemented prior to the ROD dredging, the area of dredging would need to be re-dredged deeper, including removal of the cap, during the ROD-related dredging and capping. As a result, Respondent has requested NYSDEC approval for deferral of the CWA CSO Order dredging based on the prospective implementation of the ROD dredging. EPA does not expect NYSDEC to approve such a deferral until there is a commitment by Respondent and/or others to implement the dredging called for in the ROD, which implementation will result in cost efficiencies for Respondent through achievement of the objectives of the CWA CSO sediment dredging.

28. Respondent's 2008 WWFP also provides as follows:

Dredging would be conducted as an alternative to structural CSO controls such as storage. Bottom water conditions between dredging operations would likely not comply with dissolved oxygen standards and bottom habitat would degrade following each dredging. This technology allows CSO settleable solids to exit the sewer system and settle in the waterbody generally immediately downstream of the outfall, but without regular or periodic dredging, such mounds can extend a thousand feet or more.” (2008 WWFP at page 7-25).

The 2008 WWFP memorializes practices that, in effect, result in the Canal being used by Respondent as a settling basin for the management of sewage solids. Under the CWA CSO Order, Respondent submitted an October 2012 “Evaluation of Possible Measures for CSO Solids Control” that indicates such periodic CSO maintenance dredging could cost up to \$4 million every 5 years. Implementation of the contaminated CSO solids controls called for in the ROD would reduce or eliminate the cost and need for future CWA CSO dredging.

D. 1st Street Turning Basin

29. The former 1st Street turning basin, the excavation of which is one of the components of the ROD, was originally utilized to deliver coal via barges to an adjacent electric generating station (the “Power House”) originally built to provide power to the former Brooklyn Rapid Transit Authority (“BRT”) subway system. The Power House began operations in 1904. During operations, it consumed large quantities of coal, fed from coal piles which surrounded the building and were located adjacent to the Canal. The 1st Street turning basin was filled in between 1954 and 1966 after the Power House became obsolete and was removed from service.

30. Based on currently available information, EPA believes Respondent owns the real property for the former 1st Street turning basin, in whole or in part. The assets of BRT, including the Power House, were acquired by the Brooklyn–Manhattan Transit Corporation (“BMT”) in 1923 following BRT's bankruptcy, and then were acquired by Respondent in 1940.

E. Superfund Response Activities at the Site

31. The Site was placed on the National Priorities List (“NPL”) pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, on March 2, 2010.

32. In April 2010, EPA entered into separate administrative consent orders with Respondent and National Grid to perform work in support of EPA’s remedial investigation/feasibility study (“RI/FS”). An RI report was completed by EPA in January 2011 and an FS report was completed by EPA in December 2011. An FS addendum report was issued by EPA in December 2012, together with a Proposed Plan. The Proposed Plan described the remedial alternatives considered to address the contamination in the Canal and identified the preferred remedy with the rationale for this preference.

33. Sampling results from the RI/FS document the presence of a wide range of hazardous substances in the groundwater, soil, and Canal sediments at the Site. These include PAHs, polychlorinated biphenyls (“PCBs”), pesticides (such as methoxychlor and DDT), metals (such as barium, cadmium, copper, lead, mercury, nickel and silver), as well as volatile organic compounds (“VOCs”) (such as benzene, toluene, ethylbenzene and xylene). The contamination in the sediments extends the entire length of the Canal. The contamination is present in both the sediment which has accumulated above the native sediments (referred to as “soft sediments”), and in the native sediment below the original bed of the Canal. The soft sediment layer ranges in thickness from approximately 1 foot to greater than 20 feet, with an average thickness of about 10 feet. Some of the hazardous substances are present at high levels, including in nonaqueous phase liquid (“NAPL”). For example, total PAH concentrations in surface sediment (defined as the top 6 inches of the soft sediments, where potential exposure is more likely to occur) range up to 8,001,000 micrograms per kilogram (“ug/kg”). PCBs in surface sediment were detected up to 3,400 ug/kg. In the subsurface (*i.e.*, deeper than 6 inches), total PAH concentrations in the soft sediment ranged up to 45,000,000 ug/kg. Total PAH concentrations in the native sediment were detected up to 47,500,000 ug/kg. In the subsurface, total PCB concentrations in the soft sediment were detected up to 50,700 ug/kg. In the native sediments, total PCBs were detected up to 2,610 ug/kg.

34. Sampling by EPA, National Grid and Respondent documented that discharges from CSOs, particularly solids, contain CERCLA hazardous substances, including VOCs, PAHs, PCBs, pesticides and metals. In CSO solids from the four major outfalls (RH-034, RH-035-OH-007 and RH-031), total PAHs levels range from 4 – 185 milligram/kilogram (“mg/kg”), while copper and lead levels range from 94 – 2,286 mg/kg and 74 – 2,086 mg/kg, respectively. These are produced by a variety of sources, including but not limited to household and industrial discharges to the sanitary sewers and contaminated stormwater captured by storm drains. In addition, after discharge to the Canal, CSO solids adsorb and concentrate other hazardous substances released to the Canal, further impacting sediment contaminant levels.

35. The storage and handling of coal can result in the releases of hazardous substances, including PAHs and metals. Analytical data obtained during the RI in the former 1st Street turning

basin showed the existence of significant hazardous substance contamination in soil and groundwater including but not limited to, PAHs, metals (lead, arsenic, barium) and pesticides. Prior to filling, contaminated sediments from the Canal would have accumulated in the 1st Street turning basin. Run-off from coal piles at the Power House likely resulted in releases of hazardous substances to the former 1st Street turning basin and Canal. Borings collected as part of the RI/FS indicate that contaminated sediments within the 1st Street basin were left in place when the basin was filled in. In addition, those borings indicate that the fill itself contains waste materials, and also evidence additional spills and dumping after the basin was filled in. The former basin is hydraulically connected to the Canal and is an on-going source of contamination to the Canal.

36. Based on the results of the RI/FS, chemical contamination in the Canal sediments presents an unacceptable ecological and human health risk, primarily due to exposure to PAHs, PCBs, and metals (barium, cadmium, copper, lead, mercury, nickel and silver) in surface water and sediment, and from ingesting fish and crabs from the Canal.

37. PCBs and PAHs have been demonstrated to cause a variety of adverse health effects. PCBs have been shown to cause cancer in test animals. PCBs have also been shown to cause a number of serious non-cancer health effects in animals, including effects on the immune system, reproductive system, nervous system, endocrine system and other health effects. Studies in humans provide supportive evidence for potential carcinogenic and non-carcinogenic effects of PCBs. The PAH compounds found at the Site include, but are not limited to, 2-methylnaphthalene, acenaphthene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene and pyrene. The toxicity of PAHs can vary from being nontoxic to extremely toxic. EPA has classified seven of these PAH compounds as probable human carcinogens: benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. PAHs known for their carcinogenic, mutagenic, and teratogenic properties are benz[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. High prenatal exposure to PAHs is associated with lower IQ and childhood asthma. The Center for Children's Environmental Health reports studies that demonstrate that exposure to PAH pollution during pregnancy is related to adverse birth outcomes including low birth weight, premature delivery, and heart malformations. Cord blood in cases of prenatal exposure shows DNA damage that has been linked to cancer. Follow-up studies show increased developmental delays at age three, and lower scores on IQ tests and increased behavioral problems at ages six and eight.

38. EPA's ecological risk assessment of the Site determined that PAHs, PCBs and metals in the sediment are toxic to benthic organisms. PAHs were detected in sediment at the highest concentrations relative to their ecological screening benchmarks and represent the greatest site-related risk to the benthic community. PCBs and seven metals (barium, cadmium, copper, lead, mercury, nickel and silver) were also detected at concentrations above their ecological screening benchmarks and at concentrations significantly higher than those detected in reference area sediments and also represent a potential site-related risk to the benthic community. PAHs were

found to be a potential risk to aquatic herbivores (represented by the black duck) and mercury was found to be a potential risk to avian omnivores (represented by the heron).

39. Much of the heavy industrial activity along the Canal has ceased, although many upland areas adjacent to the Canal remain zoned as manufacturing districts. Zoning along and near certain portions of the Canal is in the process of transitioning from heavy industrial to light industrial, commercial, and residential uses. The Canal is currently used by some for recreational purposes such as boating, diving, and catching fish for consumption. The Canal and New York City harbor are subject to New York State fishing advisories for various ingestion risks, including PCBs. Based on the current and reasonably anticipated future land uses adjacent to and near the Canal, there is high potential for increases in the number of people who live adjacent to or near the Canal, with a corresponding increase in the use of the Canal, and potential exposure from contamination at the Canal.

40. On September 27, 2013, EPA issued a ROD for the Site which includes the following response actions: 1) Dredging of the entire column of hazardous substance-contaminated soft sediments in the upper and mid-reaches of the canal; 2) in-situ stabilization of those native sediments in select areas in the upper and mid-reaches of the canal contaminated with high levels of NAPL; 3) construction of a multilayered cap in the upper and mid-reaches of the canal to isolate and prevent the migration of PAHs and residual NAPL from native sediments; 4) dredging of the entire soft sediment column in the lower reach of the canal; 5) construction of a multilayer cap to isolate and prevent the migration of PAHs from native sediments in the lower reach of the canal; 6) off-Site treatment with thermal desorption of the NAPL-impacted sediments dredged from the upper and mid-reaches of the canal, followed by beneficial reuse off-Site (*e.g.*, landfill daily cover) if possible; 7) off-Site stabilization of the less contaminated sediments dredged from the lower reach of the canal and the sediments in the other reaches not impacted by NAPL, followed by beneficial reuse off-Site; 8) excavation and restoration of approximately 475 feet of the filled-in former 1st Street turning basin; 9) excavation and restoration of the portion of the 5th Street turning basin beginning underneath the 3rd Avenue bridge and extending approximately 25 feet to the east and the installation of a barrier or interception system at the eastern boundary of the excavation; 10) implementation of institutional controls incorporating the existing fish consumption advisories (modified as needed), as well as other controls to protect the integrity of the cap; 11) periodic maintenance of the cap and long-term monitoring to insure that the remedy continues to function effectively; and 12) CSO controls to significantly reduce overall contaminated solid discharges to the canal, which shall include a) construction of retention tanks to retain CSOs which currently discharge through outfalls RH-034 and OH-007; and b) implementation of appropriate engineering controls to ensure that hazardous substances and solids from separated stormwater, including from future upland development projects, are not discharged to the canal.

F. Superfund Enforcement Activities

41. In 2009, EPA began the investigation of potentially responsible parties (“PRPs”) for the Site. EPA began issuing letters notifying parties of their potential liability, and, thus, their status as PRPs, in August 2009. Respondent was notified of its potential liability in November 2009.

As noted above, in April 2010, EPA entered into an administrative consent order with Respondent, Administrative Order and Settlement Agreement, Index Number CERCLA-02-2010-2011, to perform RI/FS work (the “Consent Order”).

42. On March 21, 2012, EPA convened a meeting of all of the PRPs, including Respondent, which had received a notice letter as of January 13, 2012 for the purpose of providing a technical and enforcement briefing regarding the Site, and to encourage the PRPs to begin preparations for future settlement negotiations.

43. On September 30, 2013, EPA issued a Notice for the Commencement of Remedial Design Negotiations and Demand for Past Costs (“Notice and Demand”) to various parties named therein, including Respondent. The Notice and Demand sought \$5 million in partial reimbursement of EPA’s outstanding past costs for the Site and execution of an RD consent order, a draft of which was included therein, both by December 13, 2013, which deadline was determined by EPA to be necessary in order to ensure RD fieldwork could begin in spring 2014.

44. To facilitate settlement discussions between EPA and the PRPs, EPA convened a meeting of the PRPs on November 7, 2013. Thereafter, based on statements by the PRPs, including Respondent, EPA determined that it would be preferable to conduct separate negotiations for different portions of the RD. EPA continued negotiations with the non-federal PRPs other than Respondent (the “non-NYC PRPs”) for the RD of, among other things, the dredging and capping of the Canal (the “Dredging RD”). EPA also continued consent order negotiations with Respondent for that portion of the RD that involves the siting and design of the CSO retention tanks and the design for the cleanup and restoration of the former 1st Street turning basin.

45. To provide further time for the various negotiations, EPA extended the time for the non-NYC PRPs other than National Grid to enter into a partial RD consent order from December 13, 2013 to January 31, 2014 and then later to February 14, 2014.

46. To prevent a delay in implementation of RD work during the extended negotiation period, EPA requested, and on December 18, 2013, Respondent agreed to perform, through April 15, 2014, limited RD tasks related to the siting selection of retention tanks, pursuant to the existing Consent Order.

47. In addition, on January 24, 2014, National Grid and EPA entered into Amendment to Administrative Order and Settlement Agreement, Index Number CERCLA-02-2010-2009 (“National Grid Amended Settlement Agreement”). Pursuant to the National Grid Amended Settlement Agreement, National Grid developed and submitted for EPA approval Dredging Pre-RD and RD Work Plans for the RD, other than the retention tanks and the 1st Street turning basin, in January and February 2014, respectively, and paid EPA \$1 million in partial reimbursement of EPA’s outstanding past response costs. Based on the National Grid Amended Settlement Agreement, EPA also extended National Grid’s period for negotiation of the Dredging RD to January 31, 2014 and then to February 14, 2014.

48. After EPA and the non-NYC PRPs failed to reach agreement on an RD consent order, on March 21, 2014, EPA issued Administrative Order, Index Number CERCLA-02-2014-2001 (the "Dredging RD Order"), to 31 PRPs requiring the performance of the pre-RD and RD for the remedy selected in EPA's ROD other than the pre-RD and RD related to CSO controls and the cleanup and restoration of the former 1st Street turning basin.

49. On November 26, 2013, EPA separately extended the time for negotiation with Respondent to enter into a partial RD consent order from December 13, 2013 to March 15, 2014.

V. CONCLUSIONS OF LAW

50. The Site constitutes a "facility" within the meaning of Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

51. The contamination found at the Site, as identified in the Findings of Fact above, includes hazardous substances as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

52. The conditions described in these Findings of Fact constitute an actual or threatened "release" of one or more a hazardous substances from a facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22). Such actual or threatened releases include, but are not limited to, the discharge of high levels of PAHs, PCBs, pesticides, metals, and VOCs into the Canal, and/or the discharge of such hazardous substances into the Canal through sewer or other pipes and/or the soil and/or groundwater at the Site, as well as the potential for future migration of hazardous substances at and from the Site.

53. Respondent is a responsible party with respect to the Site pursuant to Section 107(a) of CERCLA, 42 U.S.C. §9607(a), for reasons including but not limited to, Respondent's status as the current owner/operator of one or more facilities at the Site and/or the owner/operator of one or more facilities at the Site at a time of disposal of one or more hazardous substances, and/or a successor in interest thereto.

54. Respondent is a municipal corporation chartered by the State of New York and is a "person" within the meaning of Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

55. Respondent was given an opportunity to enter into a settlement agreement for all or part of the RD. Respondent did not timely consent to perform such work.

VI. DETERMINATIONS

56. Based on the Findings of Fact and Conclusions of Law set forth above and the entirety of the administrative record, EPA has determined that the release or threatened release of hazardous substances from the Site may present an imminent and substantial endangerment to the public health or welfare or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

57. The actions required by this Order are necessary to protect the public health or welfare or the environment, are in the public interest, and are consistent with CERCLA and the NCP.

VII. ORDER

58. Based upon the foregoing Findings of Fact, Conclusions of Law and Determinations, and the administrative record supporting the Record of Decision for this Site, it is hereby ordered that Respondent comply with all requirements of this Order including, but not limited to, performance of the Remedial Design at the Site in accordance with Subsection A herein (Description of Work) and the Dredging RD SOW.

A. Description of Work

59. Respondent shall perform all tasks for the Work required hereunder in accordance with CERCLA, the NCP, the ROD and the Performance Standards as well as applicable provisions of the following guidance documents, (and of other guidance documents referenced therein) as they may be amended or modified by EPA: *Uniform Federal Policy for Implementing Quality Systems* (UFP-QS), EPA-505-F-03-001, March 2005, *Uniform Federal Policy for Quality Assurance Project Plans* (UFP-QAPP), Parts 1, 2 and 3, EPA-505-B-04-900A, B and C, March 2005, *EPA Region 2's "Clean and Green Policy"* which may be found at <http://epa.gov/region2/superfund/greenremediation/policy.html>, *Guidance for Scoping the Remedial Design* (EPA 540/R-95/025, March 1995), and *Guide to Management of Investigation-Derived Wastes* (OSWER Publication 9345.3-03FS, January 1992). The Work that Respondent must perform includes the following:

a. Obligation to Cooperate and Participate in Dredging RD SOW: Respondent is jointly and severally responsible for carrying out all activities required by the Dredging RD SOW, attached hereto as Appendix A, and which is incorporated into and made an enforceable part of this Order. Respondent shall make best efforts to coordinate with the recipients of the Dredging RD Order that are performing under the Dredging RD Order (hereinafter, "Performing Parties") in the performance of the pre-RD and RD for the selected remedy, (other than the performance of the pre-RD activities and RD for the CSO controls and the cleanup and restoration of the former 1st Street turning basin, separately required by Paragraph 59.b., below). Best efforts to coordinate shall include, at a minimum:

i. submission within 28 days of the Effective Date of this Order of a good-faith offer to the recipients of the Dredging RD Order to perform the Dredging RD SOW or pay for the performance of the Dredging RD SOW;

ii. replying in writing within a reasonable period of time to written requests from recipients of the Dredging RD Order who invite Respondent to perform or pay for the work required by the Dredging RD SOW;

iii. engaging in good-faith negotiations with any person not a party to this Order who invites Respondent to perform or pay for the work required by the Dredging RD SOW; and

iv. good-faith consideration of offers to perform or pay for the work required by the Dredging RD SOW.

To the extent that Performing Parties are performing or have stated an intent to perform, pursuant to the RD Dredging Order, any requirement of the Dredging RD SOW, Respondent shall make best efforts to participate in the performance of all such requirements with them. Best efforts to participate shall include, at a minimum:

- i. performance of such portion of the Dredging RD SOW as agreed by Respondent and the Performing Parties to be undertaken by Respondent; and
- ii. payment of all amounts as agreed by Respondent and the Performing Parties to be paid by Respondent if, in lieu of performance, Respondent has offered to pay for the performance of the Dredging RD SOW required by this Order, in whole or in part.

Respondent shall provide EPA with notice of its intent to comply with this Order, consistent with Paragraph 114 below. In addition, Respondent shall notify EPA in writing within five (5) days of the rejection, if any, by the Performing Parties of Respondent's offer to perform or, in lieu of performance, to pay for the performance of the Dredging RD SOW.

The undertaking or completion of any requirement of this Order by any other person, with or without the participation of Respondent, shall not relieve Respondent of its obligation to perform each and every other requirement of this Order.

Any failure to perform, in whole or in part, any requirement of this Order by any other person with whom Respondent is coordinating or participating in the performance of such requirement shall not relieve Respondent of its obligation to perform each and every requirement of this Order.

Upon request of EPA and subject to any claims of applicable privileges(s), Respondent shall submit to EPA (1) any offer to perform or pay for or (2) all documentation relating to the performance of or payment for, the work required by the Dredging RD SOW by any recipient of the Dredging RD Order.

Nothing in this Paragraph shall be construed to require or permit Respondent to delay implementing the RD, or otherwise comply with the terms of this Order.

b. Tank and Turning Basin SOW: Respondent shall perform all of the tasks required in the Tank and Turning Basin SOW, attached hereto as Exhibit B, which is incorporated into and made an enforceable part of this Order.

60. Respondent shall assure that all field personnel used by Respondent are properly trained in the use of field equipment and in chain-of-custody procedures.

B. Designation of Project Coordinator

61. Within twenty-one (21) days after the Effective Date, Respondent shall select a coordinator to be known as the Project Coordinator and shall submit the name, address, qualifications and telephone number of the Project Coordinator to EPA. The Project Coordinator shall be responsible on behalf of Respondent for oversight of the implementation of the Work to be carried out under this Order. The Project Coordinator shall not be an attorney engaged in the practice of law. He or she shall have the technical expertise sufficient to adequately oversee all aspects of the Work contemplated by this Order. The Project Coordinator shall be knowledgeable at all times about all matters relating to the Work being performed under this Order.

62. Selection of the Project Coordinator shall be subject to approval by EPA in writing. If EPA disapproves a proposed Project Coordinator, Respondent shall propose a different person and notify EPA of that person's name, address, telephone number and qualifications within seven (7) days following EPA's disapproval. Respondent may change its Project Coordinator provided that EPA has received written notice at least seven (7) days prior to the desired change. All changes of the Project Coordinator shall be subject to EPA approval.

63. EPA correspondence related to this Order will be sent to the Project Coordinator. Notice by EPA in writing to the Project Coordinator shall be deemed notice to Respondent for all matters relating to the Work under this Order and shall be effective upon receipt. To the extent possible, the Project Coordinator shall be present on-Site or readily available for EPA to contact during all working days and be retained by Respondent at all times until EPA issues a notice of termination of this Order upon the completion of the Work in accordance with Paragraph 109.

64. All activities required of Respondent under the terms of this Order shall be performed only by well-qualified persons possessing all necessary permits, licenses, and other authorizations required by Federal, State and/or local governments consistent with Section 121 of CERCLA, 42 U.S.C. § 9621, and all Work conducted pursuant to this Order shall be performed in accordance with prevailing professional standards. All plans and specifications shall be prepared under the supervision of, and signed/certified by, a licensed New York professional engineer.

65. EPA retains the right to disapprove any or all of the contractors and/or subcontractors proposed by Respondent to conduct the Work. If EPA disapproves in writing of any of Respondent's proposed contractors to conduct the Work, Respondent shall propose a different contractor within seven (7) days of receipt of EPA's disapproval.

66. Respondent shall provide a copy of this Order to each contractor and subcontractor approved and retained to perform the Work required by this Order. Respondent shall include in all contracts or subcontracts entered into for Work required under this Order provisions stating that such contractors or subcontractors, including their agents and employees, shall perform activities required by such contracts or subcontracts in compliance with this Order and all applicable laws and regulations. Respondent shall be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Order.

C. EPA Remedial Project Manager, Other Personnel and Modification to EPA-Approved RD Work Plans

67. EPA has designated Christos Tsiamis of the New York Remediation Branch, Emergency and Remedial Response Division, EPA Region 2, as its Remedial Project Manager (“RPM”) for the Site. Except as otherwise provided in this Order, Respondent shall direct all submissions required by this Order to the RPM via e-mail to tsiamis.christos@epa.gov and by regular mail to him, at U.S. EPA, Region 2, 290 Broadway, 20th Floor, New York, NY 10007.

68. EPA, including the RPM, or his authorized representative, will conduct oversight of the implementation of this Order. The RPM shall have the authority vested in an RPM by the NCP, including the authority to halt, conduct or direct any Work required by this Order, or to direct any other response action undertaken by EPA or Respondent at the Site consistent with this Order. Absence of the RPM from the Site shall not be cause for stoppage of Work unless specifically directed by the RPM.

69. As appropriate during the course of implementation of the actions required of Respondent pursuant to this Order, Respondent or its consultants or contractors, acting through the Designated Project Coordinator, may confer with EPA concerning the required actions. Based upon new circumstances or new information not in the possession of EPA on the Effective Date of this Order, the Project Coordinator may request in writing EPA approval of modification(s) to the EPA-approved Tank RD Work Plan and/or Turning Basin RD Work Plan. In addition, Respondent may propose other additional investigations, studies and response actions and, upon EPA approval of the same, Respondent shall conduct such actions pursuant to this Order. Only modifications approved by EPA in writing shall be deemed effective.

D. EPA Review of Submissions

70. After review of any deliverable, plan, report or other item which is required to be submitted for review and approval pursuant to this Order, EPA may: (a) approve the submission; (b) approve the submission with modifications; (c) disapprove the submission and direct Respondent to re-submit the document after incorporating EPA's comments; or (d) disapprove the submission and assume responsibility for performing all or any part of the response action. As used in this Order, the terms “approval by EPA,” “EPA approval,” or a similar term means the action described in subparagraphs (a) or (b) of this Paragraph.

71. In the event of approval or approval with modifications by EPA, Respondent shall proceed to take any action required by the plan, report or other item, as approved or modified by EPA.

72. Upon receipt of a notice of disapproval or a direction for a modification, Respondent shall correct the deficiencies and resubmit the plan, report or other item for approval within thirty (30) days or such other time as may be specified by EPA in its notice of disapproval or request for modification. Notwithstanding the notice of disapproval or approval with modifications, Respondent shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission.

73. If any plan, report or other item required to be submitted to EPA for approval pursuant to this Order is disapproved by EPA, even after being resubmitted following Respondent's receipt of EPA's comments on the initial submittal, Respondent shall be deemed to be out of compliance with this Order. If any resubmitted plan, report or other item, or portion thereof, is disapproved by EPA, EPA may again direct Respondent to make the necessary modifications thereto, and/or EPA may amend or develop the item(s) and recover the costs of doing so from Respondent. Respondent shall implement any such item(s) as amended or developed by EPA.

74. EPA shall be the final arbiter regarding the sufficiency or acceptability of all documents submitted and all activities performed pursuant to this Order. EPA may modify those documents and/or perform or require the performance of additional work unilaterally.

75. All plans, reports and other submittals required to be submitted to EPA under this Order shall, upon approval by EPA, be deemed to be incorporated in and an enforceable part of this Order. In the event EPA approves a portion of a plan, report or other item required to be submitted to EPA under this Order, the approved portion shall be deemed to be incorporated into and an enforceable part of this Order.

E. Reporting Requirements

76. Reporting

a. Respondent shall submit written progress reports to EPA concerning actions undertaken pursuant to this Order every thirtieth (30th) day after the Effective Date of this Order until termination of this Order, unless otherwise directed in writing by EPA. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems and planned resolutions of past or anticipated problems.

b. Respondent shall submit copies of all plans, reports or other submissions required by this Order, the Dredging RD SOW, Tank and Turning Basin SOW or any approved work plan as set forth below. Any electronic submissions must be in a format that is compatible

with EPA software and in database files and sizes to be specified by EPA. Reports should be submitted to the following:

- 4 copies: Remedial Project Manager – Gowanus Canal Site
(2 bound, Emergency and Remedial Response Division
1 unbound, United States Environmental Protection Agency, Region 2
1 electronic) 290 Broadway, 20th Floor
New York, New York 10007-1866

- 1 copy: Chief, New York/Caribbean Superfund Branch
Office of Regional Counsel
United States Environmental Protection Agency, Region 2
290 Broadway, 17th Floor
New York, New York 10007-1866
Attn: Gowanus Canal Superfund Site Attorney

- 3 copies: Director, Division of Environmental Remediation
(2 unbound, New York State Department of Environmental Conservation
1 electronic) 625 Broadway, 12th Floor
Albany, New York 12233-7011
Attn: Gowanus Canal Superfund Site

F. Oversight

77. During the implementation of the requirements of this Order, Respondent and its contractor(s) and subcontractors shall be available for such conferences with EPA and inspections by EPA or its authorized representatives as EPA may determine are necessary to adequately oversee the Work being carried out or to be carried out by Respondent, including inspections at the Site and at laboratories where analytical work is being done hereunder.

78. Respondent and its employees, agents, contractor(s) and consultant(s) shall cooperate with EPA in its efforts to oversee Respondent's implementation of this Order.

G. Community Relations

79. Respondent shall cooperate with EPA in providing information relating to the Work required hereunder to the public. As requested by EPA, Respondent shall participate in the preparation of all appropriate information disseminated to the public; participate in public meetings which may be held or sponsored by EPA to explain activities at or concerning the Site; and provide a suitable location for public meetings, as needed.

H. Access to Property and Information

80. EPA, NYSDEC and their designated representatives, including, but not limited to, employees, agents, contractor(s) and consultant(s) thereof, shall be permitted to observe the Work carried out pursuant to this Order. Respondent shall at all times permit EPA, NYSDEC,

and their designated representatives full access to and freedom of movement at the Site, including Respondent's sewer infrastructure and related facilities, and any other premises where Work under this Order is to be performed, for purposes of inspecting or observing Respondent's progress in implementing the requirements of this Order, verifying the information submitted to EPA by Respondent, conducting investigations relating to contamination at the Site or for any other purpose EPA determines to be reasonably related to EPA oversight of the implementation of this Order. Respondent shall also refrain from any action with respect to the Work which would delay or interfere with the implementation of the RD for the selected remedy. Respondent shall provide EPA's Project Coordinator with reasonable advance written notice of its planned activities in or near the Canal which may affect the Work.

81. Large vessel access to the upper Canal is needed to conduct the RD and other anticipated CERCLA response actions, including removal actions for bulkhead upgrades. Since Super Storm Sandy struck the New York City area on October 29, 2012, the Third Street, Carroll Street and Union Street bridges have been inoperable. As a result, vessel size access has been limited. According to Respondent, repairs are scheduled to be completed in or about March 2015. Respondent shall make timely efforts to conduct temporary and/or permanent repairs to the Union, Carroll and 3rd Street bridges in order for the RD for the selected remedy to proceed without delay. Respondent shall also provide such personnel and materials as are necessary for the operation of all Canal bridges during Work required under this Order. Respondent's monthly report required pursuant to Paragraph 76, above, shall include an update on the status of bridge repairs.

82. In the event that action under this Order is to be performed in areas owned by or in possession of a person other than Respondent, Respondent shall use its best efforts to obtain access agreements from such persons within forty-five (45) working days of the Effective Date of this Order for purposes of implementing the requirements of this Order. Such agreements shall provide access not only for Respondent, but also for EPA and its designated representatives or agents, as well as NYSDEC and its designated representatives or agents. Such agreements shall specify that Respondent is not EPA's representative with respect to liability associated with Site activities. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access and/or access easements. If such access agreements are not obtained by Respondent within the time period specified herein, Respondent shall immediately notify EPA of its failure to obtain access and shall include in that notification a summary of the steps Respondent has taken to attempt to obtain access. Subject to the United States' non-reviewable discretion, EPA may use its legal authorities to obtain access for Respondent, may perform those response actions with EPA contractors at the property in question, or may terminate the Order if Respondent cannot obtain access agreements. If EPA performs those tasks or activities with EPA contractors and does not terminate the Order, Respondent shall perform all other activities not requiring access to that property. Respondent shall integrate the results of any such tasks undertaken by EPA into its reports and deliverables.

83. Upon request, Respondent shall provide EPA with access to all records and documentation related to the conditions at the Site, hazardous substances found at or released

from the Site and the actions conducted pursuant to this Order except for those items, if any, subject to the attorney-client or work product privilege. All data, information and records created, maintained or received by Respondent or its contractor(s) or consultant(s) in connection with implementation of the Work under this Order, including, but not limited to, contractual documents, invoices, receipts, work orders and disposal records shall, without delay, be made available to EPA upon request, subject to the same privileges specified above in this paragraph. EPA shall be permitted to copy all such documents. Respondent shall submit to EPA upon receipt the results of all sampling or tests and all other technical data generated by Respondent or its contractor(s), or on Respondent's behalf, in connection with the implementation of this Order.

84. Upon request by EPA, Respondent shall provide EPA or its designated representatives with duplicate and/or split samples of any material sampled in connection with the implementation of this Order.

85. Notwithstanding any other provision of this Order, EPA hereby retains all of its information gathering, access, and inspection authority under CERCLA, the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C §6901, *et seq.*, and any other applicable statutes or regulations.

I. Record Retention, Documentation, Availability of Information

86. Respondent shall preserve all documents and information relating to the Work performed under this Order, or relating to Waste Materials found on or released from the Site, for ten (10) years after completion of the Work required by this Order. At the end of the ten (10) year period, Respondent shall notify EPA at least thirty (30) days before any such document or information is destroyed that such documents and information are available for inspection. Upon request, Respondent shall provide EPA with the originals or copies of such documents and information.

87. All documents submitted by Respondent to EPA in the course of implementing this Order shall be available to the public. In addition, EPA may release all documents to NYSDEC, and NYSDEC may make those documents available to the public.

J. Off-Site Shipments

88. All hazardous substances, pollutants, or contaminants removed from the Site pursuant to this Order for off-Site treatment, storage or disposal shall be treated, stored or disposed of in compliance with (a) Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), (b) Section 300.440 of the NCP, (c) RCRA, (d) the Toxic Substances Control Act, 15 U.S.C. § 2601, *et seq.*, and (e) all other applicable federal and New York State requirements.

89. If hazardous substances from the Site are to be shipped outside of the State of New York, Respondent shall provide prior notification of such Waste Material shipments to the

RPM at the address set forth in Paragraph 67 and in accordance with the EPA Memorandum entitled "Notification of Out-of-State Shipments of Superfund Site Wastes" (OSWER Directive 9330.2-07, September 14, 1989). At least five (5) working days prior to such Waste Material shipments, Respondent shall notify the environmental agency of the accepting state of the following: (a) the name and location of the facility to which the Waste Materials are to be shipped; (b) the type and quantity of Waste Material to be shipped; (c) the expected schedule for the Waste Material shipments; (d) the method of transportation and name of transporter; and (e) the treatment and/or disposal method of the Waste Material streams.

90. Certificates of destruction must be provided to EPA upon Respondent's receipt of such. These certificates must be included in the monthly progress reports.

K. Compliance With Other Laws

91. Respondent shall undertake all action that this Order requires in accordance with the requirements of all applicable state and federal laws and regulations, unless an exemption from such requirements is specifically provided by law.

92. As provided in Section 121(e)(1) of CERCLA, 42 U.S.C. § 9621(e)(1), and the NCP, no federal, state or local permit shall be required for any portion of the Work required hereunder that is conducted entirely on-Site. Where any portion of the Work requires a federal or New York State permit or approval, Respondent shall submit timely applications and shall take all other actions necessary to obtain and to comply with all such permits or approvals. This Order is not, nor shall it be construed to be, a permit issued pursuant to any federal or state statute or regulation.

L. Emergency Response and Notification of Releases

93. Upon the occurrence of any event during performance of the Work required hereunder which, pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, requires reporting to the National Response Center (800) 424-8802, Respondent shall then immediately orally notify the Chief of the Removal Action Branch of the Emergency and Remedial Response Division of EPA, Region 2, at (732) 321-6658 and the Chief of the Central Remedial Section, New York Remediation Branch, of the Emergency and Remedial Response Division of EPA, Region 2, at (212) 637-4258 of the incident or Site conditions. Respondent shall also submit a written report to EPA within seven (7) days after the onset of such an event, setting forth the events that occurred and the measures taken or to be taken, if any, to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. The reporting requirements of this paragraph are in addition to, not in lieu of, reporting under CERCLA Section 103, 42 U.S.C. § 9603, and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004.

94. In the event of any action or occurrence during Respondent's performance of the requirements of this Order which causes or threatens to cause a release of a hazardous substance or which may present an immediate threat to public health or welfare or the

environment, Respondent shall immediately take all appropriate action to prevent, abate or minimize the threat and shall immediately notify EPA as provided in the preceding paragraph. Respondent shall take such action in accordance with applicable provisions of this Order including, but not limited to, the Health and Safety Plan required to be submitted pursuant to Section VII.F. of the Tank and Turning Basin RD SOW. In the event that EPA determines that (a) the activities performed pursuant to this Order, (b) significant changes in conditions at the Site or (c) emergency circumstances occurring at the Site pose a threat to human health or the environment, EPA may direct Respondent to stop further implementation of any actions pursuant to this Order or to take other and further actions reasonably necessary to abate the threat.

95. Nothing in the preceding paragraph shall be deemed to limit any authority of the United States to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances on, at, or from the Site.

M. Modifications

96. No informal advice, guidance, suggestion, or comment by EPA regarding reports, plans, specifications, schedules or any other writing submitted by Respondent shall relieve Respondent of its obligation to obtain such formal approval as may be required by this Order and to comply with all requirements of this Order.

N. Delay in Performance

97. Any delay in performance of the Work under this Order that, in EPA's judgment, is not properly justified by Respondent under the terms of Paragraph 98 below, shall be considered a violation of this Order. Any delay in performance of this Order shall not affect Respondent's obligations to perform all obligations fully under the terms and conditions of this Order.

98. Respondent shall notify EPA of any delay or anticipated delay in performing any requirement of this Order. Such notification shall be made by telephone to EPA's RPM as soon as Respondent knows that a delay might occur. Respondent shall adopt all reasonable measures to avoid or minimize any such delay. Within two (2) days after notifying EPA by telephone, Respondent shall provide written notification fully describing the nature of the delay, any justification for the delay, any reason why Respondent should not be held strictly accountable for failing to comply with any relevant requirements of this Order, the measures planned and taken to minimize the delay and a schedule for implementing the measures that have been or will be taken to mitigate the effect of the delay. Increased cost or expense associated with the implementation of the activities called for in this Order is not a justification for any delay in performance.

O. Enforcement and Reservation of Rights

99. Notwithstanding any other provision of this Order, failure of Respondent to comply with any provision of this Order may subject Respondent to civil penalties of up to thirty-seven thousand five hundred dollars (\$37,500) per violation per day, as provided in Section 106(b)(1) of CERCLA, 42 U.S.C. § 9606(b)(1), the Debt Collection and Improvement Act of 1996 (see Civil Monetary Penalty Inflation Adjustment Rule, 78 Fed. Reg. 66643 (November 6, 2013) and 40 CFR Part 19. Respondent also may be subject to punitive damages in an amount at least equal to but not more than three times the amount of any costs incurred by the United States as a result of such failure to comply with this Order, as provided in Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Should Respondent violate this Order or any portion thereof, EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604, and/or may seek judicial enforcement of this Order pursuant to Section 106 of CERCLA, 42 U.S.C. § 9606.

100. Nothing herein shall limit the power and authority of EPA or the United States to take, direct or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate or minimize an actual or threatened release of hazardous substances, pollutants or contaminants or hazardous or solid waste on, at or from the Site. Further, nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Order, from taking other legal or equitable action as it deems appropriate, or from requiring Respondent in the future to perform additional activities pursuant to CERCLA or any other applicable law. EPA reserves the right to bring an action against Respondent under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to this Order or the Site.

P. Other Claims

101. By issuance of this Order, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent or Respondent's employees, agents, contractors, or consultants in carrying out any action or activity pursuant to this Order. The United States or EPA shall not be held out as or deemed a party to any contract entered into by Respondent or its employees, agents, successors, representatives, assigns, contractors or consultants in carrying out actions pursuant to this Order.

102. Nothing in this Order constitutes or shall be construed as a satisfaction of or release from any claim or cause of action against Respondent or any person not a party to this Order for any liability that Respondent or other persons may have under CERCLA, other statutes, or the common law, including but not limited to any claims of the United States for injunctive relief, costs, damages and interest under Sections 106(a) and 107 of CERCLA, 42 U.S.C. §§ 9606(a) and 9607. Nothing herein shall constitute a finding that Respondent is the only responsible party with respect to the release and threatened release of hazardous substances at and from the Site.

103. Nothing in this Order shall affect any right, claim, interest, defense, or cause of action of any party hereto with respect to third parties.

104. Nothing in this Order shall be construed to constitute preauthorization under Section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2), and 40 CFR § 300.700(d).

Q. Insurance

105. At least five (5) days prior to commencing any on-Site Work under this Order, Respondent shall secure and shall maintain for the duration of this Order comprehensive general liability insurance and automobile insurance with limits of \$5 million dollars, combined single limit, naming the EPA as an additional insured. Within the same period, Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondent shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Order, Respondent shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Order. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondent need provide only that portion of the insurance described above that is not maintained by such contractor or subcontractor.

R. Financial Assurance

106. Within thirty (30) days of the Effective Date of this Order, Respondent shall demonstrate its financial ability to complete the Work, initially valued in the amount of \$35 million, by submitting to EPA, one or more of the following:

- a. Information showing that Respondent has outstanding, rated, general obligation bonds that (i) are not secured by insurance, a letter of credit, or other collateral or guarantee, and (ii) have a current rating of Aaa, Aa, A, or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard and Poor's on all such general obligation bonds; or
- b. Such other form of financial assurance as EPA may approve in writing.

107. If Respondent provides financial assurance by means of a demonstration under Paragraph 106.a. of this Section, Respondent shall resubmit the required information on an annual basis within 90 days after the close of its fiscal year.

108. If EPA determines that the financial assurance provided under this Section is inadequate, EPA will notify Respondent of such determination. Respondent shall, within 30 days after receiving notice from EPA under this Paragraph, submit to EPA for approval a revised or alternate financial assurance mechanism that satisfies the requirements of this Section.

S. Termination and Satisfaction

109. Upon a determination by EPA that the Work required pursuant to this Order has been fully carried out in accordance with this Order, EPA will so notify Respondent in writing.

T. Opportunity to Confer, Effective Date

110. This Order shall be effective ten (10) days after receipt by Respondent via electronic mail, unless a conference is timely requested pursuant to Paragraph 111 below. If such a conference is timely requested, this Order shall become effective three (3) days following the date the conference is held, unless the effective date is modified by EPA. All times for performance of ordered activities shall be calculated from this Effective Date.

111. Respondent may, within seven (7) days after receipt of this Order, request a conference with EPA to discuss this Order. If requested, the conference shall occur within five (5) days of Respondent's request for a conference. The conference may occur in person or telephonically.

112. The purpose and scope of the conference is to discuss issues involving the implementation of the Work required by this Order and the extent to which Respondent intends to comply with this Order. The conference is not intended to be a forum for discussing liability issues or whether the Order should have been issued. This conference is not an evidentiary hearing and does not constitute a proceeding to challenge this Order. It does not give Respondent a right to seek review of this Order or to seek resolution of potential liability, and no official stenographic record of the conference will be made. At any conference held pursuant to Respondent's request, Respondent may appear in person or by an attorney or other representative.

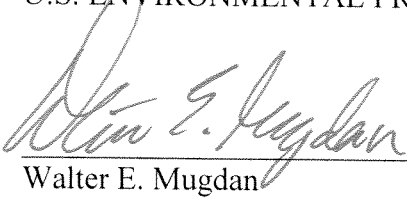
113. A request for a conference must be made by telephone to Brian E. Carr, Assistant Regional Counsel, Office of Regional Counsel, EPA Region II, telephone (212) 637-3170, followed by written confirmation emailed that day to Mr. Carr at carr.brian@epa.gov.

U. Notice of Intent to Comply

114. Respondent shall provide, not later than five (5) days after the Effective Date, written notice to EPA stating whether it will comply with the terms of this Order. The notice should state the manner in which the Respondent intends to comply. If Respondent does not unequivocally commit to perform the work required by this Order, it shall be deemed to have violated this Order and to have failed or refused to comply with this Order. Respondent's written notice shall describe, using facts that exist on or prior to the effective date of this Order, any "sufficient cause" defenses asserted by Respondent under Sections 106(b) and 107(c)(3) of CERCLA. Respondent's written notice shall be sent to EPA via electronic mail to carr.brian@epa.gov and tsiamis.christos@epa.gov. The absence of a response by EPA to the

notice required by this paragraph shall not be deemed to be an acceptance of Respondent's assertions.

U.S. ENVIRONMENTAL PROTECTION AGENCY



Walter E. Mugdan
Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
Region 2

MAY 28, 2014

Date of Issuance

APPENDICES

Available Electronically on EPA's Gowanus Webpage:
<http://www.epa.gov/region02/superfund/npl/gowanus/>

Appendix A – Dredging Statement of Work

Appendix B - Tank and Turning Basin Statement of Work

Appendix C - Record of Decision

Appendix D - Site Map