UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

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UNITED STATES OF AMERICA,

Plaintiff,

Civil Action No. 2:19 cv 8654

v.

APOGENT TRANSITION CORP., BEAZER EAST, INC., COOPER INDUSTRIES, LLC, and OCCIDENTAL CHEMICAL CORPORATION,

Defendants.

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CONSENT DECREE

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I. BACKGROUND

A. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), filed a complaint in this matter pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9606 and 9607.

B. The United States in its complaint seeks, *inter alia*: (1) reimbursement of costs incurred by EPA and the Department of Justice ("DOJ") for response actions at the Standard Chlorine Chemical Co. Inc. Superfund Site in Kearny, New Jersey ("Site"), together with accrued interest; and (2) performance of response actions by the defendants at the Site consistent with the National Contingency Plan, 40 C.F.R. Part 300 ("NCP").

C. In accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the State of New Jersey (the "State") on July 13, 2017, of negotiations with potentially responsible parties ("PRPs") regarding the implementation of the remedial design and remedial action ("RD/RA") for the Site, and EPA has provided the State with an opportunity to participate in such negotiations and be a party to this Consent Decree ("CD").

D. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), EPA notified the National Oceanic and Atmospheric Administration and the Department of the Interior on July 13, 2017, of negotiations with PRPs regarding the release of hazardous substances that may have resulted in injury to the natural resources under federal trusteeship and encouraged the trustee(s) to participate in the negotiation of this CD.

E. The defendants that have entered into this CD ("Settling Defendants" or "SDs") do not admit any liability to Plaintiff arising out of the transactions or occurrences alleged in the complaint, nor do they acknowledge that the release or threatened release of hazardous substance(s) at or from the Site constitutes an imminent and substantial endangerment to the public health or welfare or the environment. The SDs do not admit, and retain the right to controvert in any subsequent proceedings, other than proceedings to implement or enforce this CD, the validity of any fact or legal conclusion set forth in this CD.

F. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List ("NPL"), set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on September 19, 2007, 72 Fed. Reg. 53,463.

G. In or around 2010-2011, an interim response action was implemented at the Site and adjacent property under oversight by the New Jersey Department of Environmental Protection that included installation of a barrier wall system; installation of a Hydraulic Control Treatment System; excavation of nearshore sediments from the Hackensack River; and placement of the same together with barrier wall construction materials beneath a consolidated cap (the "IRA"). EPA approved implementation of the IRA pursuant to a 2009 Engineering Evaluation/Cost Analysis.

H. In response to a release or a substantial threat of a release of a hazardous substance(s) at or from the Site, SDs entered into an Administrative Settlement Agreement and

Order on Consent ("AOC") on May 3, 2013, and commenced a Remedial Investigation and Focused Feasibility Study ("RI/FFS") for the Site pursuant to 40 C.F.R. § 300.430.

I. SDs completed a Remedial Investigation ("RI") Report on October 9, 2015, and SDs completed a Focused Feasibility Study ("FFS") Report on July 26, 2016.

J. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FFS and of the proposed plan for remedial action on July 27, 2016, in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting is available to the public as part of the administrative record upon which the Director of the Emergency and Remedial Response Division, EPA Region 2, based the selection of the response action.

K. The decision by EPA on the remedial action to be implemented at the Site is embodied in a final Record of Decision ("ROD"), executed on September 30, 2016, on which the State has given its partial concurrence. The ROD includes a responsiveness summary to the public comments. Notice of the final plan was published in accordance with Section 117(b) of CERCLA, 42 U.S.C. § 9617(b).

L. EPA included the following IRA components in the remedy set forth in the ROD: installation of the barrier wall system (which addressed groundwater migration, DNAPL migration, stormwater runoff, and nearshore sediments along the river frontage); installation of the Hydraulic Control Treatment System; and placement of nearshore sediments and barrier wall construction materials beneath a consolidated cap.

M. Based on the information presently available to EPA, EPA believes that the Work will be properly and promptly conducted by SDs if conducted in accordance with this CD and its appendices.

N. Solely for the purposes of Section 113(j) of CERCLA, 42 U.S.C. § 9613(j), the remedy set forth in the ROD and the Work to be performed by SDs shall constitute a response action taken or ordered by the President for which judicial review shall be limited to the administrative record.

O. The Parties recognize, and the Court by entering this CD finds, that this CD has been negotiated by the Parties in good faith and implementation of this CD will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and that this CD is fair, reasonable, and in the public interest.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C. §§ 9606, 9607, and 9613(b). This Court also has personal jurisdiction over SDs. Solely for the purposes of this CD and the underlying complaint, SDs waive all objections and defenses that they may have to jurisdiction of the Court or to venue in this District. SDs shall not challenge the terms of this CD or this Court's jurisdiction to enter and enforce this CD.

III. PARTIES BOUND

2. This CD is binding upon the United States and upon SDs and their successors and assigns. Any change in ownership or corporate or other legal status of a SD including, but not limited to, any transfer of assets or real or personal property, shall in no way alter such SD's responsibilities under this CD.

3. SDs shall provide a copy of this CD to each contractor hired to perform the Work and to each person representing any SD with respect to the Site or the Work, and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this CD. SDs or their contractors shall provide written notice of the CD to all subcontractors hired to perform any portion of the Work. SDs shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work in accordance with the terms of this CD. With regard to the activities undertaken pursuant to this CD, each contractor and subcontractor shall be deemed to be in a contractual relationship with SDs within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3).

IV. DEFINITIONS

4. Unless otherwise expressly provided in this CD, terms used in this CD that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this CD or its appendices, the following definitions shall apply solely for purposes of this CD:

"Affected Property" shall mean all real property at the Site and any other real property where EPA determines, at any time, that access, land, water, or other resource use restrictions, and/or Institutional Controls are needed to implement the Remedial Action.

"CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675.

"Consent Decree" or "CD" shall mean this consent decree and all appendices attached hereto (listed in Section XXII). In the event of conflict between this CD and any appendix, this CD shall control.

"Day" or "day" shall mean a calendar day. In computing any period of time under this CD, where the last day would fall on a Saturday, Sunday, or federal or State holiday, the period shall run until the close of business of the next working day.

"DOJ" shall mean the United States Department of Justice and its successor departments, agencies, or instrumentalities.

"Effective Date" shall mean the date upon which the approval of this CD is recorded on the Court's docket.

"EPA" shall mean the United States Environmental Protection Agency and its successor departments, agencies, or instrumentalities.

"EPA Hazardous Substance Superfund" shall mean the Hazardous Substance Superfund established by the Internal Revenue Code, 26 U.S.C. § 9507.

"Future Oversight Costs" shall mean that portion of Future Response Costs that EPA incurs in monitoring and supervising SDs' performance of the Work to determine whether such performance is consistent with the requirements of this CD, including costs incurred in reviewing deliverables submitted pursuant to this CD, as well as costs incurred in overseeing implementation of the Work; however, Future Oversight Costs do not include, *inter alia*: the costs incurred by the United States pursuant to ¶ 11 (Emergencies and Releases), Section VII (Remedy Review), Section VIII (Property Requirements), and ¶ 30 (Access to Financial Assurance), or the costs incurred by the United States in enforcing this CD, including all costs incurred pursuant to Section XIII (Dispute Resolution), and all litigation costs.

"Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in reviewing or developing deliverables submitted pursuant to this CD, in overseeing implementation of the Work, or otherwise implementing, overseeing, or enforcing this CD, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to ¶ 11 (Emergencies and Releases), ¶ 12 (Community Involvement) (including the costs of any technical assistance grant under Section 117(e) of CERCLA, 42 U.S.C. § 9617(e)), ¶ 30 (Access to Financial Assurance), Section VII (Remedy Review), Section VIII (Property Requirements) (including the cost of attorney time and any monies paid to secure or enforce access or land, water, or other resource use restrictions and/or to secure, implement, monitor, maintain, or enforce Institutional Controls including the amount of just compensation), and Section XIII (Dispute Resolution), and all litigation costs. Future Response Costs shall also include all Interim Response Costs and all Interest on those Past Response Costs SDs have agreed to pay under this CD that has accrued pursuant to 42 U.S.C. § 9607(a) during the period from July 14, 2017 to the Effective Date.

"Institutional Controls" or "ICs" shall mean Proprietary Controls and state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices that: (a) limit land, water, or other resource use to minimize the potential for human exposure to Waste Material at or in connection with the Site; (b) limit land, water, or other resource use to implement, ensure non-interference with, or ensure the protectiveness of the RA; and/or (c) provide information intended to modify or guide human behavior at or in connection with the Site.

"Interim Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, (a) paid by the United States in connection with the Site between April 30, 2017 and the Effective Date; or (b) incurred prior to the Effective Date but paid after that date.

"Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. Rates are available online at https://www.epa.gov/superfund/superfund-interest-rates.

"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, codified at 40 C.F.R. Part 300, and any amendments thereto.

"Non-Settling Owner" shall mean any person, other than a SD, that owns or controls any Affected Property, including the Town of Kearny, the Hudson County Improvement Authority,

and the New Jersey Department of Transportation. The clause "Non-Settling Owner's Affected Property" means Affected Property owned or controlled by Non-Settling Owner. Designation as a Non-Settling Owner does not equate to a finding that such Owner is not liable as a covered person under 42 U.S.C. § 9607(a) with respect to the Site.

"Operation and Maintenance" or "O&M" shall mean all activities required to operate, maintain, and monitor the effectiveness of the RA as specified in the SOW or any EPA-approved O&M Plan.

"Paragraph" or "¶" shall mean a portion of this CD identified by an Arabic numeral or an upper or lower case letter.

"Parties" shall mean the United States and SDs.

"Past Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States paid at or in connection with the Site through April 30, 2017, plus Interest on all such costs that has accrued pursuant to 42 U.S.C. § 9607(a) through such date.

"Plaintiff" shall mean the United States.

"Proprietary Controls" shall mean easements or covenants running with the land that (a) limit land, water, or other resource use and/or provide access rights; and (b) are created pursuant to common law or statutory law by an instrument that is recorded in the appropriate land records office.

"RCRA" shall mean the Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992 (also known as the Resource Conservation and Recovery Act).

"Record of Decision" or "ROD" shall mean the EPA Record of Decision relating to the Site signed on September 30, 2016, by the Director of the Emergency and Remedial Response Division, EPA Region 2, and all attachments thereto. The ROD is attached as Appendix A.

"Remedial Action" or "RA" shall mean the remedial action selected in the ROD. For the purposes of this CD and the SOW attached as Appendix B, O&M is excluded from the definition of RA.

"Remedial Action Objectives" or "RAOs" shall mean the objectives of the remedial action selected in the ROD.

"Remedial Design" or "RD" shall mean those activities to be undertaken by SDs to develop final plans and specifications for the RA as stated in the SOW.

"Section" shall mean a portion of this CD identified by a Roman numeral.

"Settling Defendants" or "SDs" shall mean those Parties identified in Appendix D.

"Site" shall mean the Standard Chlorine Chemical Co. Inc. Superfund Site, encompassing approximately 42 acres, located at 1025-1035 Belleville Turnpike in the Town of Kearny, Hudson County, New Jersey, and identified on the current tax map of the Town of Kearny, New Jersey as Block 287, Lots 32.01, 48, 49, 50, 51, and 52; Block 287, Lots 54, 55, and 56; and 3.8

acres of the Belleville Turnpike, Newark Turnpike, and associated rights-of-way and steep embankments, as depicted generally on the map attached as Appendix C. Consistent with the ROD, the definition of Site does not include the Hackensack River.

"Standard Chlorine Chemical Company Site Special Account" shall mean the special account, within the EPA Hazardous Substance Superfund, established for the Site by EPA pursuant to Section 122(b)(3) of CERCLA, 42 U.S.C. § 9622(b)(3).

"State" shall mean the State of New Jersey.

"Statement of Work" or "SOW" shall mean the document describing the activities SDs must perform to implement the RD, the RA, and O&M regarding the Site, which is attached as Appendix B.

"Supervising Contractor" shall mean the principal contractor retained by SDs to supervise and direct the implementation of the Work under this CD.

"Transfer" shall mean to sell, assign, convey, lease, mortgage, or grant a security interest in, or where used as a noun, a sale, assignment, conveyance, or other disposition of any interest by operation of law or otherwise.

"United States" shall mean the United States of America and each department, agency, and instrumentality of the United States, including EPA.

"Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C.§ 6903(27); and (4) any "hazardous waste" under N.J.A.C. § 7:26G-5.

"Work" shall mean all activities and obligations SDs are required to perform under this CD, except the activities required under Section XIX (Retention of Records).

V. GENERAL PROVISIONS

5. **Objectives of the Parties**. The objectives of the Parties in entering into this CD are to protect public health or welfare or the environment by the design and implementation of response actions at the Site by SDs, to pay response costs of Plaintiff, and to resolve the claims of Plaintiff against SDs as provided in this CD.

6. **Commitments by SDs**

a. SDs shall finance and perform the Work in accordance with this CD and all deliverables developed by SDs and approved or modified by EPA pursuant to this CD. SDs shall pay the United States for its response costs as provided in this CD.

b. SDs' obligations to finance and perform the Work, including obligations to pay amounts due under this CD, are joint and several. In the event of the insolvency of any SD or the failure by any SD to implement any requirement of this CD, the remaining SDs shall complete all such requirements.

7. **Compliance with Applicable Law.** Nothing in this CD limits SDs' obligations to comply with the requirements of all applicable federal and state laws and regulations. SDs must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the ROD and the SOW. The activities conducted pursuant to this CD, if approved by EPA, shall be deemed to be consistent with the NCP as provided in Section 300.700(c)(3)(ii) of the NCP.

8. **Permits**

a. As provided in Section 121(e) of CERCLA, 42 U.S.C. § 9621(e), and Section 300.400(e) of the NCP, no permit shall be required for any portion of the Work conducted entirely on-site (i.e., within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal or state permit or approval, SDs shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

b. SDs may seek relief under the provisions of Section XII (Force Majeure) for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit or approval referenced in ¶ 8.a and required for the Work, provided that they have submitted timely and complete applications and taken all other actions necessary to obtain all such permits or approvals.

c. This CD is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

VI. PERFORMANCE OF THE WORK

9. **Coordination and Supervision**

a. **Project Coordinators**

(1) SDs' Project Coordinator must have sufficient technical expertise to coordinate the Work. SDs' Project Coordinator may not be an attorney representing any SD in this matter. SDs' Project Coordinator may assign other representatives, including other contractors, to assist in coordinating the Work.

(2) EPA has designated Alison Hess, Remedial Project Manager with the Passaic/Hackensack/Newark Bay Remediation Branch of EPA Region 2, as EPA's Project Coordinator, and Michael Sivak, Chief of the Passaic/Hackensack/ Newark Bay Remediation Branch of EPA Region 2, as EPA's Alternate Project Coordinator, for the Site. EPA may designate other representatives, which may include its employees, contractors and/or consultants, to oversee the Work. EPA's Project Coordinator/Alternate Project Coordinator will have the same authority as a remedial project manager and/or an on-scene coordinator, as described in the NCP. This includes the authority to halt the Work and/or to conduct or direct any necessary response action when he or she determines that conditions at the Site constitute an emergency or may present an immediate threat to public health or welfare or the environment due to a release or threatened release of Waste Material.

(3) SDs' Project Coordinator shall meet with EPA's Project Coordinator, and others as directed or determined by EPA, on a monthly basis, unless another frequency is approved by EPA's Project Coordinator. These meetings may be held by telephone.

b. **Supervising Contractor**. SDs' proposed Supervising Contractor must have sufficient technical expertise to supervise the Work and a quality assurance system that complies with ANSI/ASQC E4-2004, Quality Systems for Environmental Data and Technology Programs: Requirements with Guidance for Use (American National Standard).

c. **Procedures for Disapproval/Notice to Proceed**

(1) SDs shall designate, and notify EPA, within 30 days after the Effective Date, of the name(s), title(s), contact information, and qualifications of the SDs' proposed Project Coordinator and Supervising Contractor, whose qualifications shall be subject to EPA's review for verification based on objective assessment criteria (e.g., experience, capacity, technical expertise) and do not have a conflict of interest with respect to the project.

(2) EPA, after a reasonable opportunity for review and comment by the State, shall issue notices of disapproval and/or authorizations to proceed regarding the proposed Project Coordinator and Supervising Contractor, as applicable. If EPA issues a notice of disapproval, SDs shall, within 15 days, submit to EPA a list of supplemental proposed Project Coordinators and/or Supervising Contractors, as applicable, including a description of the qualifications of each. EPA shall issue a notice of disapproval or authorization to proceed regarding each supplemental proposed coordinator and/or contractor. SDs may select any coordinator/contractor covered by an authorization to proceed and shall, within 21 days, notify EPA of SDs' selection.

(3) SDs may change their Project Coordinator and/or Supervising Contractor, as applicable, by following the procedures of ¶¶ 9.c(1) and 9.c(2).

(4) Notwithstanding the procedures of ¶¶ 9.c(1) through 9.c(3), SDs have proposed, and EPA has authorized SDs to proceed, utilizing the following to serve as Project Coordinator and Supervising Contractor:

Project Coordinator:

James Zubrow, P.G.
Principal Hydrogeologist
Key Environmental, Inc.

Supervising Contractor:

Key Environmental, Inc.
200 Third Avenue
Carnegie, PA 15106
412-279-3363

10. **Performance of Work in Accordance with SOW**. SDs shall: (a) develop the RD; (b) perform the RA; and (c) operate, maintain, and monitor the effectiveness of the RA; all in accordance with the SOW and all EPA-approved, conditionally-approved, or modified deliverables as required by the SOW. All deliverables required to be submitted for approval under the CD or SOW shall be subject to approval by EPA in accordance with ¶ 6.6 (Approval of Deliverables) of the SOW.

11. **Emergencies and Releases**. SDs shall comply with the emergency and release response and reporting requirements under ¶ 4.3 (Emergency Response and Reporting) of the SOW. Subject to Section XV (Covenants by Plaintiff), nothing in this CD, including ¶ 4.3 of the SOW, limits any authority of Plaintiff: (a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site; or (b) to direct or order such action, or seek an order from the Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site. If, due to SDs' failure to take appropriate response action under ¶ 4.3 of the SOW, EPA takes such action instead, SDs shall reimburse EPA under Section X (Payments for Response Costs) for all costs of the response action.

12. **Community Involvement**. If requested by EPA, SDs shall conduct community involvement activities under EPA's oversight as provided for in, and in accordance with, Section 2 (Community Involvement) of the SOW. Such activities may include, but are not limited to, designation of a Community Involvement Coordinator. Costs incurred by the United States under this Section constitute Future Response Costs to be reimbursed under Section X (Payments for Response Costs).

13. **Modification of SOW or Related Deliverables**

a. If EPA determines that it is necessary to modify the work specified in the SOW and/or in deliverables developed under the SOW in order to meet the RAOs or to carry out and maintain the effectiveness of the RA, and such modification is consistent with the Scope of the Remedy set forth in ¶ 1.3 of the SOW, then EPA may notify SDs of such modification. If SDs object to the modification they may, within 30 days after EPA's notification, seek dispute resolution under Section XIII.

b. The SOW and/or related work plans shall be modified: (1) in accordance with the modification issued by EPA; or (2) if SDs invoke dispute resolution, in accordance with the final resolution of the dispute. The modification shall be incorporated into and enforceable under this CD, and SDs shall implement all work required by such modification. SDs shall incorporate the modification into the deliverable required under the SOW, as appropriate.

c. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions as otherwise provided in this CD.

14. Nothing in this CD, the SOW, or any deliverable required under the SOW constitutes a warranty or representation of any kind by Plaintiff that compliance with the work requirements set forth in the SOW or related deliverable will meet the RAOs.

VII. REMEDY REVIEW

15. **Periodic Review**. SDs shall conduct, in accordance with ¶ 4.6 (Periodic Review Support Plan) of the SOW, studies and investigations to support EPA's reviews under Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and applicable regulations, of whether the RA is protective of human health and the environment.

16. **EPA Selection of Further Response Actions**. If EPA determines, at any time, that the RA is not protective of human health and the environment, EPA may select further response actions for the Site in accordance with the requirements of CERCLA and the NCP.

17. **Opportunity to Comment**. SDs and, if required by Sections 113(k)(2) or 117 of CERCLA, 42 U.S.C. § 9613(k)(2) or 9617, the public, will be provided with an opportunity to comment on any further response actions proposed by EPA as a result of the review conducted pursuant to Section 121(c) of CERCLA and to submit written comments for the record during the comment period.

18. **SDs' Obligation to Perform Further Response Actions**. If EPA selects further response actions relating to the Site, EPA may require SDs to perform such further response actions, but only to the extent that the reopener conditions in ¶¶ 65 or 66 (United States' Pre- and Post-Certification Reservations) are satisfied. SDs may invoke the procedures set forth in Section XIII (Dispute Resolution) to dispute (a) EPA's determination that the reopener conditions of ¶¶ 65 or 66 are satisfied; (b) EPA's determination that the RA is not protective of human health and the environment; or (c) EPA's selection of the further response actions. Disputes regarding EPA's determination that the RA is not protective or EPA's selection of further response actions shall be resolved pursuant to ¶ 49 (Record Review).

19. **Submission of Plans**. If SDs are required to perform further response actions pursuant to ¶ 18, they shall submit a plan for such response action to EPA for approval in accordance with the procedures of Section VI (Performance of the Work by SDs). SDs shall implement the approved plan in accordance with this CD.

VIII. PROPERTY REQUIREMENTS

20. **Agreements Regarding Access and Non-Interference**. SDs shall, with respect to any Non-Settling Owner's Affected Property, use best efforts to secure from such Non-Settling Owner an agreement, enforceable by SDs and by Plaintiff, providing that such Non-Settling Owner: (i) provides Plaintiff and the other SDs, and their representatives, contractors, and subcontractors with access at all reasonable times to such Affected Property to conduct any activity regarding the CD, including those listed in ¶ 20.a (Access Requirements); and (ii) refrain from using such Affected Property in any manner that EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Material, or interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action, including the restrictions listed in ¶ 20.b (Land, Water, or Other Resource Use Restrictions). SDs shall provide a copy of such access and use restriction agreement(s) to EPA.

a. **Access Requirements**. The following is a list of activities for which access is required regarding the Affected Property:

(1) Monitoring the Work;

(2) Verifying any data or information submitted to the United States;

(3) Conducting investigations regarding contamination at or near the Site;

(4) Obtaining samples;

(5) Assessing the need for, planning, or implementing additional response actions at or near the Site;

(6) Assessing implementation of quality assurance and quality control practices as defined in the approved construction quality assurance quality control plan as provided in the SOW;

(7) Implementing the Work pursuant to the conditions set forth in ¶ 69 (Work Takeover);

(8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by SDs or their agents, consistent with Section XVIII (Access to Information);

(9) Assessing SDs' compliance with the CD;

(10) Determining whether the Affected Property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted under the CD; and

(11) Implementing, monitoring, maintaining, reporting on, and enforcing any land, water, or other resource use restrictions and Institutional Controls.

b. **Land, Water, or Other Resource Use Restrictions**. The following is a list of land, water, or other resource use restrictions applicable to the Affected Property:

(1) A prohibition on the use of groundwater through establishment of Classification Exception Areas/Well Restriction Areas;

(2) A prohibition on the following activities in a manner that EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Material, or interfere with or adversely affect the implementation, integrity, or protectiveness of the Remedial Action: (i) soil excavation, building or construction activities, and any other soil disturbances undertaken without the express written approval of EPA; and (ii) use of groundwater except as provided in the Classification Exception Areas/Well Restriction Areas;

(3) A restriction of Site use to commercial/industrial, which prohibits any other use, including: (i) residential; and (ii) school or day care center; and

(4) A requirement that any new structures on the Site will be constructed in a manner that does not interfere with the RA and O&M and minimizes the potential risk of inhalation of contaminants, including, at a minimum: (i) installation of vapor barriers in any new buildings; and (ii) adherence to a site health and safety plan and/or deed notice protocols as approved by EPA.

21. **Best Efforts**. As used in this Section, "best efforts" means the efforts that a reasonable person in the position of SDs would use so as to achieve the goal in a timely manner, including the cost of employing professional assistance and the payment of reasonable sums of money to secure access and/or use restriction agreements. "Best efforts" shall not include payment of any kind to the Hudson County Improvement Authority, any proposed redeveloper of the Site or Affected Property or the Town of Kearny, provided that as to the Town of Kearny, nothing herein is intended to alter the rights of the Town under those certain Settlement and Access Agreements concerning the Site dated as of June 9, 2010 and recorded in the Hudson County Register of Deeds at Instrument Number 20120402080006160. If SDs are unable to accomplish what is required through "best efforts" in a timely manner, they shall notify EPA, and include a description of the steps taken to comply with the requirements. If the United States deems it appropriate, it may assist SDs, or take independent action, in obtaining such access and/or use restrictions. All costs incurred by the United States in providing such assistance or taking such action, including the cost of attorney time and the amount of monetary consideration or just compensation paid, constitute Future Response Costs to be reimbursed under Section X (Payments for Response Costs).

22. If EPA determines in a decision document prepared in accordance with the NCP that Institutional Controls in the form of state or local laws, regulations, ordinances, zoning restrictions, or other governmental controls or notices are needed, SDs shall cooperate with EPA's efforts to secure and ensure compliance with such Institutional Controls.

23. In the event of any Transfer of the Affected Property, unless the United States otherwise consents in writing, SDs shall continue to comply with their obligations under the CD, including their obligation to secure access and ensure compliance with any land, water, or other resource use restrictions regarding the Affected Property, and to implement, maintain, monitor, and report on Institutional Controls.

24. Notwithstanding any provision of the CD, Plaintiff retains all of its access authorities and rights, as well as all of its rights to require land, water, or other resource use restrictions and Institutional Controls, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statute or regulations.

IX. FINANCIAL ASSURANCE

25. In order to ensure completion of the Work, SDs shall secure financial assurance, initially in the amount of $11,246,000.00 ("Estimated Cost of the Work"), for the benefit of EPA. The financial assurance must be one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available from EPA or under the "Financial Assurance - Settlements" category on the Cleanup Enforcement Model Language and Sample Documents Database at https://cfpub.epa.gov/compliance/models/, and satisfactory to

EPA. SDs using multiple mechanisms as a group to meet their financial assurance obligations under this enforcement instrument may use any combination of the following mechanisms in this Paragraph, so long as an individual SD using multiple mechanisms to secure its own financial assurance obligations is limited to surety bonds guaranteeing payment, letters of credit, trust funds, escrow accounts, and/or insurance policies.

a. A surety bond guaranteeing payment and/or performance of the Work that is issued by a surety company among those listed as acceptable sureties on federal bonds as set forth in Circular 570 of the U.S. Department of the Treasury;

b. An irrevocable letter of credit, payable to or at the direction of EPA, that is issued by an entity that has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a federal or state agency;

c. A trust fund established for the benefit of EPA that is administered by a trustee that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency;

d. A policy of insurance that provides EPA with acceptable rights as a beneficiary thereof and that is issued by an insurance carrier that has the authority to issue insurance policies in the applicable jurisdiction(s) and whose insurance operations are regulated and examined by a federal or state agency;

e. A demonstration by a SD that it meets the relevant test criteria of ¶ 27, accompanied by a standby funding commitment, which obligates the affected SD to pay funds to or at the direction of EPA, up to the amount financially assured through the use of this demonstration in the event of a Work Takeover;

f. A guarantee to fund or perform the Work executed in favor of EPA by a company: (1) that is a direct or indirect parent company of a SD or has a "substantial business relationship" (as defined in 40 C.F.R. § 264.141(h)) with a SD; and (2) can demonstrate to EPA's satisfaction that it meets the financial test criteria of ¶ 27; or

g. An escrow account that provides EPA security and rights equivalent to those provided by a trust fund that meets the requirements of the sample Trust Agreement available from EPA or under the "Financial Assurance - Settlements" category on the Cleanup Enforcement Model Language and Sample Documents Database at https://cfpub.epa.gov/compliance/models/, and is satisfactory to EPA, to finance the Work in accordance with this CD.

26. SDs shall, within 45 days of the Effective Date, obtain EPA's approval of the form of SDs' financial assurance. Within 30 days of such approval, SDs shall secure all executed and/or otherwise finalized mechanisms or other documents consistent with the EPA-approved form of financial assurance and shall submit such mechanisms and documents to the Chief of the Resource Management/Cost Recovery Section, Emergency and Remedial Response Division, to the United States, and to EPA as specified in Section XX (Notices and Submissions).

27. SDs seeking to provide financial assurance by means of a demonstration or guarantee under ¶¶ 25.e or 25.f, must, within 45 days of the Effective Date:

a. Demonstrate that:

(1) the affected SD or guarantor has:

i. Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

ii. Net working capital and tangible net worth each at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

iii. Tangible net worth of at least $10 million; and

iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; or

(2) The affected SD or guarantor has:

i. A current rating for its senior unsecured debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's; and

ii. Tangible net worth at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

iii. Tangible net worth of at least $10 million; and

iv. Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or tribal environmental obligations financially assured through the use of a financial test or guarantee; and

b. Submit to EPA for the affected SD or guarantor: (1) a copy of an independent certified public accountant's report of the entity's financial statements for the latest completed fiscal year, which must not express an adverse opinion or disclaimer of opinion; and (2) a letter from its chief financial officer and a report from an independent certified public

accountant substantially identical to the sample letter and reports available from EPA or under the "Financial Assurance - Settlements" subject list category on the Cleanup Enforcement Model Language and Sample Documents Database at https://cfpub.epa.gov/compliance/models/.

28. SDs providing financial assurance by means of a demonstration or guarantee under ¶¶ 25.e or 25.f must also:

a. Annually resubmit the documents described in ¶ 27.b within 90 days after the close of the affected Respondent's or guarantor's fiscal year;

b. Notify EPA within 30 days after the affected Respondent or guarantor determines that it no longer satisfies the relevant financial test criteria and requirements set forth in this Section; and

c. Provide to EPA, within 30 days of EPA's request, reports of the financial condition of the affected Respondent or guarantor in addition to those specified in ¶ 27.b; EPA may make such a request at any time based on a belief that the affected Respondent or guarantor may no longer meet the financial test requirements of this Section.

29. SDs shall diligently monitor the adequacy of the financial assurance. If any SD becomes aware of any information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, such SD shall notify EPA of such information within 7 days. If EPA determines that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, EPA will notify the affected SD of such determination. SDs shall, within 30 days after notifying EPA or receiving notice from EPA under this Paragraph, secure and submit to EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies the requirements of this Section. EPA may extend this deadline for such time as is reasonably necessary for the affected SD, in the exercise of due diligence, to secure and submit to EPA a proposal for a revised or alternative financial assurance mechanism, not to exceed 60 days. SDs shall follow the procedures of ¶ 31 (Modification of Financial Assurance) in seeking approval of, and submitting documentation for, the revised or alternative financial assurance mechanism. SDs' inability to secure financial assurance in accordance with this Section does not excuse performance of any other obligation under this Settlement.

30. **Access to Financial Assurance**

a. If EPA issues a notice of implementation of a Work Takeover under ¶ 69.b, then, in accordance with any applicable financial assurance mechanism and/or related standby funding commitment, EPA is entitled to: (1) the performance of the Work; and/or (2) require that any funds guaranteed be paid in accordance with ¶ 30.d.

b. If EPA is notified by the issuer of a financial assurance mechanism that it intends to cancel the mechanism, and the affected SD fails to provide an alternative financial assurance mechanism in accordance with this Section at least 30 days prior to the cancellation date, the funds guaranteed under such mechanism must be paid prior to cancellation in accordance with ¶ 30.d.

c. If, upon issuance of a notice of implementation of a Work Takeover under ¶ 69.b, either: (1) EPA is unable for any reason to promptly secure the resources guaranteed

under any applicable financial assurance mechanism and/or related standby funding commitment, whether in cash or in kind, to continue and complete the Work; or (2) the financial assurance is a demonstration or guarantee under ¶¶ 25.e or 25.f, then EPA is entitled to demand an amount, as determined by EPA, sufficient to cover the cost of the remaining Work to be performed. SDs shall, within 10 days of such demand, pay the amount demanded as directed by EPA.

d. Any amounts required to be paid under this ¶ 30 shall be, as directed by EPA: (i) paid to EPA in order to facilitate the completion of the Work by EPA or by another person; or (ii) deposited into an interest-bearing account, established at a duly chartered bank or trust company that is insured by the Federal Deposit Insurance Corporation ("FDIC"), in order to facilitate the completion of the Work by another person. If payment is made to EPA, EPA may deposit the payment into the EPA Hazardous Substance Superfund or into the Standard Chlorine Chemical Company Site Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

e. All EPA Work Takeover costs not paid under this ¶ 30 must be reimbursed as Future Response Costs under Section X (Payments for Response Costs).

31. **Modification of Amount, Form, or Terms of Financial Assurance.** SDs may submit, on any anniversary of the Effective Date or at any other time agreed to by the Parties, a request to reduce the amount, or change the form or terms, of the financial assurance mechanism. Any such request must be submitted to EPA in accordance with ¶ 26, and must include an estimate of the cost of the remaining Work, an explanation of the bases for the cost calculation, and a description of the proposed changes, if any, to the form or terms of the financial assurance. EPA will notify SDs of its decision to approve or disapprove a requested reduction or change pursuant to this Paragraph. SDs may reduce the amount of the financial assurance mechanism only in accordance with: (a) EPA's approval; or (b) if there is a dispute, the agreement, final administrative decision, or final judicial decision resolving such dispute under Section XIII (Dispute Resolution). SDs may change the form or terms of the financial assurance mechanism only in accordance with EPA's approval. Any decision made by EPA on a request submitted under this Paragraph to change the form or terms of a financial assurance mechanism shall not be subject to challenge by SDs pursuant to the dispute resolution provisions of this CD or in any other forum. Within 30 days after receipt of EPA's approval of, or the agreement or decision resolving a dispute relating to, the requested modifications pursuant to this Paragraph, SDs shall submit to EPA documentation of the reduced, revised, or alternative financial assurance mechanism in accordance with ¶ 26.

32. **Release, Cancellation, or Discontinuation of Financial Assurance.** SDs may release, cancel, or discontinue any financial assurance provided under this Section only: (a) if EPA issues a Certification of Work Completion under ¶ 4.7 (Certification of Work Completion) of the SOW; (b) in accordance with EPA's approval of such release, cancellation, or discontinuation; or (c) if there is a dispute regarding the release, cancellation or discontinuance of any financial assurance, in accordance with the agreement, final administrative decision, or final judicial decision resolving such dispute under Section XIII (Dispute Resolution).

X. PAYMENTS FOR RESPONSE COSTS

33. **Payment by SDs for United States Past Response Costs**

a. Within 30 days after the Effective Date, SDs shall pay to EPA $503,609.96 in payment for Past Response Costs. Payment shall be made in accordance with ¶ 35.a (instructions for past response cost payments).

b. **Deposit of Past Response Costs Payment**. The total amount to be paid by SDs pursuant to ¶ 33.a shall be deposited by EPA in the Standard Chlorine Chemical Company Site Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

34. **Payments by SDs for Future Response Costs**. SDs shall pay to EPA all Future Response Costs not inconsistent with the NCP.

a. **Periodic Bills**. On a periodic basis, EPA will send SDs a bill requiring payment that includes a SCORPIOS Report, which includes direct and indirect costs incurred by EPA, its contractors, subcontractors, and DOJ. SDs shall make all payments within 30 days after SDs' receipt of each bill requiring payment, except as otherwise provided in ¶ 36, in accordance with ¶ 35.b (instructions for future response cost payments).

b. **Deposit of Future Response Costs Payments**. The total amount to be paid by SDs pursuant to ¶ 34.a (Periodic Bills) shall be deposited by EPA in the Standard Chlorine Chemical Company Site Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund, provided, however, that EPA may deposit a Future Response Costs payment directly into the EPA Hazardous Substance Superfund if, at the time the payment is received, EPA estimates that the Standard Chlorine Chemical Company Site Special Account balance is sufficient to address currently anticipated future response actions to be conducted or financed by EPA at or in connection with the Site. Any decision by EPA to deposit a Future Response Costs payment directly into the EPA Hazardous Substance Superfund for this reason shall not be subject to challenge by SDs pursuant to the dispute resolution provisions of this CD or in any other forum.

35. **Payment Instructions for SDs**

a. **Past Response Costs Payments**

(1) The Financial Litigation Unit ("FLU") of the United States Attorney's Office for the District of New Jersey shall provide SDs, in accordance with ¶ 90, with instructions regarding making payments to DOJ on behalf of EPA. The instructions must include a Consolidated Debt Collection System ("CDCS") number to identify payments made under this CD.

(2) For all payments subject to this ¶ 35.a, SDs shall make such payment by Fedwire Electronic Funds Transfer ("EFT") to the U.S. DOJ account, in accordance with the instructions provided under ¶ 35.a(1), and including

references to the CDCS Number, Site/Spill ID Number NJ – 02RM, and DJ Number 90-11-3-11827.

(3) For each payment made under this ¶ 35.a, SDs shall send notices, including references to the CDCS, Site/Spill ID, and DJ numbers, to the United States, EPA, and the EPA Cincinnati Finance Center, all in accordance with ¶ 90.

b. **Future Response Costs Payments and Stipulated Penalties**

(1) For all payments subject to this ¶ 35.b, SDs shall make such payment by Fedwire EFT, referencing the Site/Spill ID and DJ numbers. The Fedwire EFT payment must be sent as follows:

Federal Reserve Bank of New York
ABA = 021030004
Account = 68010727
SWIFT address = FRNYUS33
33 Liberty Street
New York NY 10045
Field Tag 4200 of the Fedwire message should read
"D 68010727 Environmental Protection Agency"

(2) For all payments made under this ¶ 35.b, SDs must include references to the Site/Spill ID and DJ numbers. At the time of any payment required to be made in accordance with ¶ 35.b, SDs shall send notices that payment has been made to the United States, EPA, and the EPA Cincinnati Finance Center, all in accordance with ¶ 90. All notices must include references to the Site/Spill ID and DJ numbers.

36. **Contesting Future Response Costs**. SDs may submit a Notice of Dispute, initiating the procedures of Section XIII (Dispute Resolution), regarding any Future Response Costs billed under ¶ 34 (Payments by SDs for Future Response Costs) if they determine that EPA has made a mathematical error or included a cost item that is not within the definition of Future Response Costs, or if they believe EPA incurred excess costs as a direct result of an EPA action that was inconsistent with a specific provision or provisions of the NCP. Such Notice of Dispute shall be submitted in writing within 30 days after receipt of the bill and must be sent to the United States pursuant to Section XX (Notices and Submissions). Such Notice of Dispute shall specifically identify the contested Future Response Costs and the basis for objection. If SDs submit a Notice of Dispute, SDs shall within the 30-day period, also as a requirement for initiating the dispute, (a) pay all uncontested Future Response Costs to the United States; and (b) establish, in a duly chartered bank or trust company, an interest-bearing escrow account that is insured by the FDIC, and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. SDs shall send to the United States, as provided in Section XX (Notices and Submissions), a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. If the United States prevails in the dispute, SDs shall pay the sums due (with accrued interest) to the United States within 7 days after the resolution of the dispute. If SDs prevail concerning any aspect of the contested costs, SDs shall pay that portion of

the costs (plus associated accrued interest) for which they did not prevail to the United States within 7 days after the resolution of the dispute. SDs shall be disbursed any balance of the escrow account. All payments to the United States under this Paragraph shall be made in accordance with ¶ 35.b (instructions for future response cost payments). The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XIII (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding SDs' obligation to reimburse the United States for its Future Response Costs.

37. **Interest.** In the event that any payment for Past Response Costs or for Future Response Costs required under this Section is not made by the date required, SDs shall pay Interest on the unpaid balance. The Interest on Past Response Costs shall begin to accrue on the Effective Date. The Interest on Future Response Costs shall begin to accrue on the date of the bill. The Interest shall accrue through the date of SDs' payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to Plaintiff by virtue of SDs' failure to make timely payments under this Section including, but not limited to, payment of stipulated penalties pursuant to Section XIV (Stipulated Penalties).

XI. INDEMNIFICATION AND INSURANCE

38. **SDs' Indemnification of the United States**

a. The United States does not assume any liability by entering into this CD or by virtue of any designation of SDs as EPA's authorized representatives under Section 104(e) of CERCLA, 42 U.S.C. § 9604(e). SDs shall indemnify, save, and hold harmless the United States and its officials, agents, employees, contractors, subcontractors, and representatives for or from any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of SDs, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on SDs' behalf or under their control, in carrying out activities pursuant to this CD, including, but not limited to, any claims arising from any designation of SDs as EPA's authorized representatives under Section 104(e) of CERCLA. Further, SDs agree to pay the United States all costs it incurs including, but not limited to, attorneys' fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States based on negligent or other wrongful acts or omissions of SDs, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this CD. The United States shall not be held out as a party to any contract entered into by or on behalf of SDs in carrying out activities pursuant to this CD. Neither SDs nor any such contractor shall be considered an agent of the United States.

b. The United States shall give SDs notice of any claim for which the United States plans to seek indemnification pursuant to this ¶ 38, and shall consult with SDs prior to settling such claim.

39. SDs covenant not to sue and agree not to assert any claims or causes of action against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States arising from or on account of any contract, agreement, or arrangement between any one or more of SDs and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In

addition, SDs shall indemnify, save and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of SDs and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

40. **Insurance**. No later than 15 days before commencing any on-site Work, SDs shall secure, and shall maintain until the first anniversary after issuance of EPA's Certification of RA Completion pursuant to ¶ 4.5 (Certification of RA Completion) of the SOW, commercial general liability insurance with limits of liability of $1 million per occurrence, automobile liability insurance with limits of liability of $1 million per accident, and umbrella liability insurance with limits of liability of $5 million in excess of the required commercial general liability and automobile liability limits, naming the United States as an additional insured with respect to all liability arising out of the activities performed by or on behalf of SDs pursuant to this CD. In addition, for the duration of this CD, SDs 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 SDs in furtherance of this CD. Prior to commencement of the Work, SDs shall provide to EPA certificates of such insurance and a copy of each insurance policy. SDs shall resubmit such certificates and, upon written request of EPA or upon any change to the terms of the policies, copies of policies each year on the anniversary of the Effective Date. If SDs demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, SDs need provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor. SDs shall ensure that all submittals to EPA under this Paragraph identify the Standard Chlorine Chemical Co. Inc. Superfund Site, Kearny, New Jersey, and the civil action number of this case.

XII. FORCE MAJEURE

41. "Force majeure," for purposes of this CD, is defined as any event arising from causes beyond the control of SDs, of any entity controlled by SDs, or of SDs' contractors that delays or prevents the performance of any obligation under this CD despite SDs' best efforts to fulfill the obligation. The requirement that SDs exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring; and (b) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to the greatest extent possible. "Force majeure" does not include financial inability to complete the Work or a failure to meet the RAOs.

42. If any event occurs or has occurred that may delay the performance of any obligation under this CD for which SDs intend or may intend to assert a claim of force majeure, SDs shall notify EPA's Project Coordinator orally or, in his or her absence, EPA's Alternate Project Coordinator or, in the event both of EPA's designated representatives are unavailable, the Deputy Director of the Emergency and Remedial Response Division, EPA Region 2, within 48 hours of when SDs first knew that the event might cause a delay. Within 10 days thereafter, SDs shall provide in writing to EPA an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay

or the effect of the delay; SDs' rationale for attributing such delay to a force majeure; and a statement as to whether, in the opinion of SDs, such event may cause or contribute to an endangerment to public health or welfare, or the environment. SDs shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. SDs shall be deemed to know of any circumstance of which SDs, any entity controlled by SDs, or SDs' contractors or subcontractors knew or should have known. Failure to comply with the above requirements regarding an event shall preclude SDs from asserting any claim of force majeure regarding that event, provided, however, that if EPA, despite the late or incomplete notice, is able to assess to its satisfaction whether the event is a force majeure under ¶ 41 and whether SDs have exercised their best efforts under ¶ 41, EPA may, in its unreviewable discretion, excuse in writing SDs' failure to submit timely or complete notices under this Paragraph.

43. If EPA agrees that the delay or anticipated delay is attributable to a force majeure, the time for performance of the obligations under this CD that are affected by the force majeure will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure, EPA will notify SDs in writing of its decision. If EPA agrees that the delay is attributable to a force majeure, EPA will notify SDs in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure.

44. If SDs elect to invoke the dispute resolution procedures set forth in Section XIII (Dispute Resolution) regarding EPA's decision, they shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, SDs shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that SDs complied with the requirements of ¶¶ 41 and 42. If SDs carry this burden, the delay at issue shall be deemed not to be a violation by SDs of the affected obligation of this CD identified to EPA and the Court.

45. The failure by EPA to timely complete any obligation under the CD or under the SOW is not a violation of the CD, provided, however, that if such failure prevents SDs from meeting one or more deadlines in the SOW, SDs may seek relief under this Section.

XIII. DISPUTE RESOLUTION

46. Unless otherwise expressly provided for in this CD, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes regarding this CD. However, the procedures set forth in this Section shall not apply to actions by the United States to enforce obligations of SDs that have not been disputed in accordance with this Section.

47. A dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute. Any dispute regarding this CD shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal

negotiations shall not exceed 20 days from the time the dispute arises, unless it is modified by written agreement of the parties to the dispute.

48. **Statements of Position**

a. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA shall be considered binding unless, within 30 days after the conclusion of the informal negotiation period, SDs invoke the formal dispute resolution procedures of this Section by serving on the United States a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by SDs. The Statement of Position shall specify SDs' position as to whether formal dispute resolution should proceed under ¶¶ 49 (Record Review) or 50.

b. Within 30 days after receipt of SDs' Statement of Position, EPA will serve on SDs its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. EPA's Statement of Position shall include a statement as to whether formal dispute resolution should proceed under ¶¶ 49 (Record Review) or 50. Within 14 days after receipt of EPA's Statement of Position, SDs may submit a Reply.

c. If there is disagreement between EPA and SDs as to whether dispute resolution should proceed under ¶¶ 49 (Record Review) or 50, the parties to the dispute shall follow the procedures set forth in the Paragraph determined by EPA to be applicable. However, if SDs ultimately appeal to the Court to resolve the dispute, the Court shall determine which Paragraph is applicable in accordance with the standards of applicability set forth in ¶¶ 49 and 50.

49. **Record Review**. Formal dispute resolution for disputes pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation, the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this CD, and the adequacy of the performance of response actions taken pursuant to this CD. Nothing in this CD shall be construed to allow any dispute by SDs regarding the validity of the ROD's provisions.

a. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Section. Where appropriate, EPA may allow submission of supplemental statements of position by the parties to the dispute.

b. The Deputy Director of the Emergency and Remedial Response Division, EPA Region 2, will issue a final administrative decision resolving the dispute based on the administrative record described in ¶ 49.a. This decision shall be binding upon SDs, subject only to the right to seek judicial review pursuant to ¶¶ 49.c and 49.d.

c. Any administrative decision made by EPA pursuant to ¶ 49.b shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by SDs with the Court and served on all Parties within 10 days after receipt of EPA's decision. The motion shall include a description of the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this CD. The United States may file a response to SDs' motion.

d. In proceedings on any dispute governed by this Paragraph, SDs shall have the burden of demonstrating that the decision of the Deputy Director of the Emergency and Remedial Response Division, EPA Region 2, is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record compiled pursuant to ¶ 49.a.

50. Formal dispute resolution for disputes that neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. The Deputy Director of the Emergency and Remedial Response Division, EPA Region 2, will issue a final decision resolving the dispute based on the statements of position and reply, if any, served under ¶ 48. The Deputy Director's decision shall be binding on SDs unless, within 10 days after receipt of the decision, SDs file with the Court and serve on the parties a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the CD. The United States may file a response to SDs' motion.

b. Notwithstanding ¶ N (CERCLA § 113(j) record review of ROD and Work) of Section I (Background), judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

51. The invocation of formal dispute resolution procedures under this Section does not extend, postpone, or affect in any way any obligation of SDs under this CD, except as provided in ¶ 36 (Contesting Future Response Costs), as agreed by EPA, or as determined by the Court. Stipulated penalties with respect to the disputed matter shall continue to accrue, but payment shall be stayed pending resolution of the dispute, as provided in ¶ 59. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this CD. In the event that SDs do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XIV (Stipulated Penalties).

XIV. STIPULATED PENALTIES

52. SDs shall be liable to the United States for stipulated penalties in the amounts set forth in ¶¶ 53.a and 54 for failure to comply with the obligations specified in ¶¶ 53.b and 54, unless excused under Section XII (Force Majeure). "Comply" as used in the previous sentence includes SDs' completion of all obligations under this CD, in accordance with all applicable requirements of this CD, within the deadlines established by and approved under this CD. If an initially submitted or resubmitted deliverable contains a material defect, and the deliverable is disapproved or modified by EPA under ¶¶ 6.6(a) (Initial Submissions) or 6.6(b) (Resubmissions)

of the SOW due to such material defect, then the material defect shall constitute a lack of compliance for purposes of this Paragraph. The provisions of Section XIII (Dispute Resolution) and Section XIV (Stipulated Penalties) shall govern the accrual and payment of any stipulated penalties regarding SDs' submissions under this CD.

53. **Stipulated Penalty Amounts – Work (Including Payments, Financial Assurance, Major Deliverables, and Other Milestones)**

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in ¶ 53.b:

Period of Noncompliance	Penalty Per Violation Per Day
1st through 14th day	$2,500
15th through 30th day	$3,750
31st day and beyond	$5,000

b. **Obligations**. As provided in ¶ 7.1 (Applicability and Revisions) of the SOW, SDs may submit proposed revised RD Schedules or RA Schedules for EPA approval. Upon EPA's approval, the revised RD and/or RA Schedules supersede the RD and RA Schedules set forth below, and any previously-approved RD and/or RA Schedules.

(1) RD Schedule

	Description of Deliverable, Task	**Included Supporting Deliverables**	**¶ Ref.**	**Deadline**
1	RDWP	HASP and ERP; FSP and QAPP if needed, SWMP	3.1, 6.7	60 days after the Effective Date of the CD
2	Preliminary (30%) RD	None	3.3	90 days after EPA approves RDWP
3	Pre-final (95%) RD	Same as RDWP plus CQA/QCP, O&M Plan, O&M Manual, ICIAP	3.4	90 days after EPA comments on Preliminary (30%) RD
4	Final (100%) RD	Same as Pre-final (95%) RD	3.5	60 days after EPA comments on Pre-final (95%) RD

(2) RA Schedule

	Description of Deliverable / Task	¶ Ref.	Deadline
1	Award RA contract		75 days after EPA approves Final (100%) RD
2	RAWP	4.1	120 days after EPA approves Final (100%) RD
3	Preconstruction Conference	4.2(a)	14 days after EPA approves RAWP
4	Start of Construction		30 days after EPA approves RAWP or as otherwise set forth in the approved RAWP
5	Completion of Construction	4.5	
6	Inspection of Constructed Remedy	4.5(a)	21 days after completion of construction
7	RA Report	4.5(b)	30 days after EPA determination that shakedown period is complete and remedy is functioning properly and performing as designed
8	Periodic Review Support Plan	4.6	Initial PRSP, 60 days after Approval of RA Report. Subsequent PRSPs, 60 days after EPA issuance of Five-Year Review Report
9	Work Completion Inspection	4.7(a)	
10	Work Completion Report	4.7(b)	

(3) Timely payment of any amount due under Section X (Payments for Response Costs).

(4) Establishment and maintenance of financial assurance in accordance with Section IX (Financial Assurance).

(5) Establishment of an escrow account to hold any disputed Future Response Costs under ¶ 36 (Contesting Future Response Costs).

54. **Stipulated Penalty Amounts – Other Violations (Including Reports and Other Deliverables).** The following stipulated penalties shall accrue per violation per day for any noncompliance with the obligations of this CD not identified in ¶ 53.b, including, but not limited to, failure to submit timely or adequate reports or other deliverables pursuant to the CD:

Period of Noncompliance	Penalty Per Violation Per Day
1st through 14th day	$1,500
15th through 30th day	$2,000
31st day and beyond	$2,500

55. In the event that EPA assumes performance of a portion or all of the Work pursuant to ¶ 69 (Work Takeover), SDs shall be liable for a stipulated penalty in the amount of

$1,500,000. Stipulated penalties under this Paragraph are in addition to the remedies available under ¶¶ 30 (Access to Financial Assurance) and 69 (Work Takeover).

56. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (a) with respect to a deficient submission under ¶ 6.6 (Approval of Deliverables) of the SOW, during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies SDs of any deficiency; (b) with respect to a decision by the Deputy Director of the Emergency and Remedial Response Division, EPA Region 2, under ¶¶ 49.b or 50.a of Section XIII (Dispute Resolution), during the period, if any, beginning on the 21st day after the date that SDs' reply to EPA's Statement of Position is received until the date that the Deputy Director issues a final decision regarding such dispute; or (c) with respect to judicial review by this Court of any dispute under Section XIII (Dispute Resolution), during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute. Nothing in this CD shall prevent the simultaneous accrual of separate penalties for separate violations of this CD.

57. Following EPA's determination that SDs have failed to comply with a requirement of this CD, EPA may give SDs written notification of the same and describe the noncompliance. EPA may send SDs a written demand for payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified SDs of a violation.

58. All penalties accruing under this Section shall be due and payable to the United States within 30 days after SDs' receipt from EPA of a demand for payment of the penalties, unless SDs invoke the Dispute Resolution procedures under Section XIII (Dispute Resolution) within the 30-day period. All payments to the United States under this Section shall indicate that the payment is for stipulated penalties and shall be made in accordance with ¶ 35.b (instructions for future response cost payments).

59. Penalties shall continue to accrue as provided in ¶ 56 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement of the parties or by a decision of EPA that is not appealed to this Court, accrued penalties determined to be owed shall be paid to EPA within 15 days after the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to this Court and the United States prevails in whole or in part, SDs shall pay all accrued penalties determined by the Court to be owed to EPA within 60 days after receipt of the Court's decision or order, except as provided in ¶ 59.c;

c. If the District Court's decision is appealed by any Party, SDs shall pay all accrued penalties determined by the District Court to be owed to the United States into an interest-bearing escrow account, established at a duly chartered bank or trust company that is insured by the FDIC, within 60 days after receipt of the Court's decision or order. Penalties shall be paid into this account as they continue to accrue, at least every 60 days. Within 15 days after

receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to EPA or to SDs to the extent that they prevail.

60. If SDs fail to pay stipulated penalties when due, SDs shall pay Interest on the unpaid stipulated penalties as follows: (a) if SDs have timely invoked dispute resolution such that the obligation to pay stipulated penalties has been stayed pending the outcome of dispute resolution, Interest shall accrue from the date stipulated penalties are due pursuant to ¶ 59 until the date of payment; and (b) if SDs fail to timely invoke dispute resolution, Interest shall accrue from the date of demand under ¶ 58 until the date of payment. If SDs fail to pay stipulated penalties and Interest when due, the United States may institute proceedings to collect the penalties and Interest.

61. The payment of penalties and Interest, if any, shall not alter in any way SDs' obligation to complete the performance of the Work required under this CD.

62. Nothing in this CD shall be construed as prohibiting, altering, or in any way limiting the ability of the United States to seek any other remedies or sanctions available by virtue of SDs' violation of this CD or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(*l*) of CERCLA, 42 U.S.C. § 9622(*l*), provided, however, that the United States shall not seek civil penalties pursuant to Section 122(*l*) of CERCLA for any violation for which a stipulated penalty is provided in this CD, except in the case of a willful violation of this CD.

63. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this CD.

XV. COVENANTS BY PLAINTIFF

64. **Covenants for SDs by United States.** Except as provided in ¶¶ 65, 66 (United States' Pre- and Post-Certification Reservations), and 68 (General Reservations of Rights), the United States covenants not to sue or to take administrative action against SDs pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), relating to the Site. Except with respect to future liability, these covenants shall take effect upon the Effective Date. With respect to future liability, these covenants shall take effect upon Certification of RA Completion by EPA pursuant to ¶ 4.5 (Certification of RA Completion) of the SOW. These covenants are conditioned upon the satisfactory performance by SDs of their obligations under this CD. These covenants extend only to SDs and do not extend to any other person.

65. **United States' Pre-Certification Reservations.** Notwithstanding any other provision of this CD, the United States reserves, and this CD is without prejudice to, the right to institute proceedings in this action or in a new action, and/or to issue an administrative order, seeking to compel SDs to perform further response actions relating to the Site and/or to pay the United States for additional costs of response if, (a) prior to Certification of RA Completion, (1) conditions at the Site, previously unknown to EPA, are discovered, or (2) information, previously unknown to EPA, is received, in whole or in part; and (b) EPA determines that these previously unknown conditions or information together with any other relevant information indicates that the RA is not protective of human health or the environment.

66. **United States' Post-Certification Reservations.** Notwithstanding any other provision of this CD, the United States reserves, and this CD is without prejudice to, the right to institute proceedings in this action or in a new action, and/or to issue an administrative order, seeking to compel SDs to perform further response actions relating to the Site and/or to pay the United States for additional costs of response if, (a) subsequent to Certification of RA Completion, (1) conditions at the Site, previously unknown to EPA, are discovered, or (2) information, previously unknown to EPA, is received, in whole or in part; and (b) EPA determines that these previously unknown conditions or this information together with other relevant information indicate that the RA is not protective of human health or the environment.

67. For purposes of ¶ 65 (United States' Pre-Certification Reservations), the information and the conditions known to EPA will include only that information and those conditions known to EPA as of the date the ROD was signed and set forth in the ROD for the Site and the administrative record supporting the ROD. For purposes of ¶ 66 (United States' Post-Certification Reservations), the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of RA Completion and set forth in the ROD, the administrative record supporting the ROD, the post-ROD administrative record, or in any information received by EPA pursuant to the requirements of this CD prior to Certification of RA Completion.

68. **General Reservations of Rights.** The United States reserves, and this CD is without prejudice to, all rights against SDs with respect to all matters not expressly included within Plaintiff's covenants. Notwithstanding any other provision of this CD, the United States reserves all rights against SDs with respect to:

a. liability for failure by SDs to meet a requirement of this CD;

b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the Site;

c. liability based on the ownership of the Site by SDs when such ownership commences after signature of this CD by SDs;

d. liability based on the operation of the Site by SDs when such operation commences after signature of this CD by SDs and does not arise solely from SDs' performance of the Work;

e. liability based on SDs' transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, other than as provided in the ROD, the Work, or otherwise ordered by EPA, after signature of this CD by SDs;

f. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

g. criminal liability;

h. liability for violations of federal or state law that occur during or after implementation of the Work; and

i. liability, prior to meeting RAOs, for additional response actions that EPA determines are necessary to meet RAOs or to carry out and maintain the effectiveness of the remedy set forth in the ROD, but that cannot be required pursuant to ¶ 13 (Modification of SOW or Related Deliverables).

69. **Work Takeover**

a. In the event EPA determines that SDs: (1) have ceased implementation of any portion of the Work; (2) are seriously or repeatedly deficient or late in their performance of the Work; or (3) are implementing the Work in a manner that may cause an endangerment to human health or the environment, EPA may issue a written notice ("Work Takeover Notice") to SDs. Any Work Takeover Notice issued by EPA will specify the grounds upon which such notice was issued and will provide SDs a period of 30 days within which to remedy the circumstances giving rise to EPA's issuance of such notice.

b. If, after expiration of the 30-day notice period specified in ¶ 69.a, SDs have not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice, EPA may at any time thereafter assume the performance of all or any portion(s) of the Work as EPA deems necessary ("Work Takeover"). EPA will notify SDs in writing (which writing may be electronic) if EPA determines that implementation of a Work Takeover is warranted under this ¶ 69.b. Funding of Work Takeover costs is addressed under ¶ 30 (Access to Financial Assurance).

c. SDs may invoke the procedures set forth in ¶ 49 (Record Review), to dispute EPA's implementation of a Work Takeover under ¶ 69.b. However, notwithstanding SDs' invocation of such dispute resolution procedures, and during the pendency of any such dispute, EPA may in its sole discretion commence and continue a Work Takeover under ¶ 69.b until the earlier of (1) the date that SDs remedy, to EPA's satisfaction, the circumstances giving rise to EPA's issuance of the relevant Work Takeover Notice; or (2) the date that a final decision is rendered in accordance with ¶ 49 (Record Review) requiring EPA to terminate such Work Takeover.

70. Notwithstanding any other provision of this CD, the United States retains all authority and reserves all rights to take any and all response actions authorized by law.

XVI. COVENANTS BY SDs

71. **Covenants by SDs**. Subject to the reservations in ¶ 73, SDs covenant not to sue and agree not to assert any claims or causes of action against the United States with respect to the Site, and this CD, including, but not limited to:

a. any direct or indirect claim for reimbursement from the EPA Hazardous Substance Superfund through CERCLA §§ 106(b)(2), 107, 111, 112 or 113, or any other provision of law;

b. any claims under CERCLA §§ 107 or 113, RCRA Section 7002(a), 42 U.S.C. § 6972(a), or state law regarding the Site and this CD; or

c. any claims arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, or at common law.

72. Except as provided in ¶¶ 75 (Waiver of Claims by SDs) and 81 (Res Judicata and Other Defenses), the covenants in this Section shall not apply if the United States brings a cause of action or issues an order pursuant to any of the reservations in Section XV (Covenants by Plaintiff), other than in ¶¶ 68.a (claims for failure to meet a requirement of the CD), 68.g (criminal liability), and 68.h (violations of federal/state law during or after implementation of the Work), but only to the extent that SDs' claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

73. SDs reserve, and this CD is without prejudice to, claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, and brought pursuant to any statute other than CERCLA or RCRA and for which the waiver of sovereign immunity is found in a statute other than CERCLA or RCRA, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States, as that term is defined in 28 U.S.C. § 2671, while acting within the scope of his or her office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, the foregoing shall not include any claim based on EPA's selection of response actions, or the oversight or approval of SDs' deliverables or activities.

74. Nothing in this CD shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

75. **Waiver of Claims by SDs**

a. SDs agree not to assert any claims and to waive all claims or causes of action (including but not limited to claims or causes of action under Sections 107(a) and 113 of CERCLA) that they may have:

(1) ***De Micromis* Waiver**. For all matters relating to the Site against any person where the person's liability to SDs with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if all or part of the disposal, treatment, or transport occurred before April 1, 2001, and the total amount of material containing hazardous substances contributed by such person to the Site was less than 110 gallons of liquid materials or 200 pounds of solid materials; and

(2) ***De Minimis*/Ability to Pay Waiver**. For response costs relating to the Site against any person that has entered or in the future enters into a final CERCLA § 122(g) *de minimis* settlement, or a final settlement based on limited ability to pay, with EPA with respect to the Site.

b. **Exceptions to Waiver**

(1) The waivers under this ¶ 75 shall not apply with respect to any defense, claim, or cause of action that a SD may have against any person otherwise covered by such waivers if such person asserts a claim or cause of action relating to the Site against such SD.

(2) The waivers under this ¶ 75 shall not apply to any SD's claim against the Town of Kearny, the Hudson County Improvement Authority, the New Jersey Department of Transportation, or any redeveloper of any portion of the Site.

(3) The waiver under ¶ 75.a(1) (*De Micromis* Waiver) shall not apply to any claim or cause of action against any person otherwise covered by such waiver if EPA determines that: (i) the materials containing hazardous substances contributed to the Site by such person contributed significantly or could contribute significantly, either individually or in the aggregate, to the cost of the response action or natural resource restoration at the Site; or (ii) such person has failed to comply with any information request or administrative subpoena issued pursuant to Section 104(e) or 122(e)(3)(B) of CERCLA, 42 U.S.C. § 9604(e) or 9622(e)(3)(B), or Section 3007 of RCRA, 42 U.S.C. § 6927, or has impeded or is impeding, through action or inaction, the performance of a response action or natural resource restoration with respect to the Site; or if (iii) such person has been convicted of a criminal violation for the conduct to which the waiver would apply and that conviction has not been vitiated on appeal or otherwise.

XVII. EFFECT OF SETTLEMENT; CONTRIBUTION

76. Except as provided in ¶ 75 (Waiver of Claims by SDs), nothing in this CD shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this CD. Except as provided in Section XVI (Covenants by SDs), each of the Parties expressly reserves any and all rights (including, but not limited to, pursuant to Section 113 of CERCLA, 42 U.S.C. § 9613), defenses, claims, demands, and causes of action that each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto. Nothing in this CD diminishes the right of the United States, pursuant to Section 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

77. The Parties agree, and by entering this CD this Court finds, that this CD constitutes a judicially-approved settlement pursuant to which each SD has, as of the Effective Date, resolved liability to the United States within the meaning of Section 113(f)(2) of CERCLA, 42 U.S.C. § 9613(f)(2), and is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Section 113(f)(2) of CERCLA, or as may be otherwise provided by law, for the "matters addressed" in this CD. The "matters addressed" in this CD are all response actions taken or to be taken and all response costs incurred or to be incurred, at or in connection with the Site, by the United States or any other person; provided, however, that if the United States exercises rights under the reservations in Section XV (Covenants by Plaintiff),

other than in ¶¶ 68.a (claims for failure to meet a requirement of the CD), 68.g (criminal liability), or 68.h (violations of federal/state law during or after implementation of the Work), the "matters addressed" in this CD will no longer include those response costs or response actions that are within the scope of the exercised reservation.

78. The Parties further agree, and by entering this CD this Court finds, that the complaint filed by the United States in this action is a civil action within the meaning of Section 113(f)(1) of CERCLA, 42 U.S.C. § 9613(f)(1), and that this CD constitutes a judicially-approved settlement pursuant to which each SD has, as of the Effective Date, resolved liability to the United States within the meaning of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B).

79. Each SD shall, with respect to any suit or claim brought by it for matters related to this CD, notify the United States in writing no later than 60 days prior to the initiation of such suit or claim.

80. Each SD shall, with respect to any suit or claim brought against it for matters related to this CD, notify in writing the United States within 10 days after service of the complaint on such SD. In addition, each SD shall notify the United States within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial.

81. **Res Judicata and Other Defenses.** In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, SDs shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XV (Covenants by Plaintiff).

XVIII. ACCESS TO INFORMATION

82. SDs shall provide to EPA, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form) (hereinafter referred to as "Records") within SDs' possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this CD, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the Work. SDs shall also make available to EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work, subject to any recognized and applicable privilege.

83. **Privileged and Protected Claims**

a. SDs may assert that all or part of a Record requested by Plaintiff is privileged or protected from disclosure as provided under federal law, in lieu of providing the Record, provided SDs comply with ¶ 83.b, and except as provided in ¶ 83.c.

b. If SDs assert a claim of privilege or protection, they shall provide Plaintiff with the following information regarding such Record: its title; its date; the name, title, affiliation (e.g., company or firm), and address of the author, of each addressee, and of each recipient; a description of the Record's contents; and the privilege or protection asserted. If a claim of privilege or protection applies only to a portion of a Record, SDs shall provide the Record to Plaintiff in redacted form to mask the privileged or protected portion only. SDs shall retain all Records that they claim to be privileged or protected until Plaintiff has had a reasonable opportunity to dispute the privilege or protection claim and any such dispute has been resolved in the SDs' favor.

c. SDs may make no claim of privilege or protection regarding: (1) any data regarding the Site, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, radiological or engineering data, or the portion of any other Record that evidences conditions at or around the Site; or (2) the portion of any Record that SDs are required to create or generate pursuant to this CD.

84. **Business Confidential Claims**. SDs may assert that all or part of a Record provided to Plaintiff under this Section or Section XIX (Retention of Records) is business confidential to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). SDs shall segregate and clearly identify all Records or parts thereof submitted under this CD for which SDs assert business confidentiality claims. Records that SDs claim to be confidential business information will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies Records when they are submitted to EPA and the State, or if EPA has notified SDs that the Records are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such Records without further notice to SDs.

85. If relevant to the proceeding, the Parties agree that validated sampling or monitoring data generated in accordance with the SOW and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this CD.

86. Notwithstanding any provision of this CD, Plaintiff retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XIX. RETENTION OF RECORDS

87. Until 10 years after EPA's Certification of Work Completion under ¶ 4.7 (Certification of Work Completion) of the SOW, each SD shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to its liability under CERCLA with respect to the Site, provided, however, that SDs who are potentially liable as owners or operators of the Site must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Site. Each SD must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to the performance of the Work, provided, however, that each SD (and its

contractors and agents) must retain, in addition, copies of all data generated during the performance of the Work and not contained in the aforementioned Records required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

88. At the conclusion of this record retention period, SDs shall notify the United States at least 90 days prior to the destruction of any such Records, and, upon request by the United States, and except as provided in ¶ 83 (Privileged and Protected Claims), SDs shall deliver any such Records to EPA or the State.

89. Each SD certifies individually that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any Records (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by the United States or the State and that it has fully complied with any and all EPA and State requests for information regarding the Site pursuant to Sections 104(e) and 122(e)(3)(B) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e)(3)(B), and Section 3007 of RCRA, 42 U.S.C. § 6927, and state law. This paragraph does not apply to Records that were damaged by water during Hurricane Sandy and were determined, in consultation with EPA, to be unsalvageable, or to Records that may be or may have been present in buildings at the Site that were determined by SDs to be unsafe to enter.

XX. NOTICES AND SUBMISSIONS

90. All approvals, consents, deliverables, modifications, notices, notifications, objections, proposals, reports, and requests specified in this CD must be in writing unless otherwise specified. Whenever, under this CD, notice is required to be given, or a report or other document is required to be sent, by one Party to another, it must be directed to the person(s) specified below at the address(es) specified below. Any Party may change the person and/or address applicable to it by providing notice of such change to all Parties. All notices under this Section are effective upon receipt, unless otherwise specified. Notices required to be sent to EPA, and not to the United States, should not be sent to the DOJ. Except as otherwise provided, notice to a Party by email (if that option is provided below) or by regular mail in accordance with this Section satisfies any notice requirement of the CD regarding such Party.

As to the United States:	EES Case Management Unit U.S. Department of Justice Environment and Natural Resources Division P.O. Box 7611 Washington, DC 20044-7611 eescdcopy.enrd@usdoj.gov Re: DJ # 90-11-3-11827
As to EPA:	Director, Emergency & Remedial Response Division U.S. Environmental Protection Agency Region 2 290 Broadway, 19th Floor New York, NY 10007

and:	Alison Hess, C.P.G. Remedial Project Manager U.S. Environmental Protection Agency Region 2 290 Broadway, 19th Floor New York, NY 10007 Hess.alison@epa.gov
As to the Regional Financial Management Officer:	Chief, Resource Management/Cost Recovery Section Emergency & Remedial Response Division U.S. Environmental Protection Agency Region 2 290 Broadway, 18th Floor New York, NY 10007
As to EPA Cincinnati Finance Center:	EPA Cincinnati Finance Center 26 W. Martin Luther King Drive Cincinnati, OH 45268 cinwd_acctsreceivable@epa.gov
As to the State:	Jay Nickerson New Jersey Department of Environmental Protection Mail Code 401-05F P.O. Box 420 Trenton, NJ 08625-0420 Jay.Nickerson@dep.nj.gov
As to SDs:	James Zubrow, P.G. SDs' Project Coordinator Key Environmental, Inc. 200 Third Avenue Carnegie, PA 15106 jzubrow@keyenvir.com

XXI. RETENTION OF JURISDICTION

91. This Court retains jurisdiction over both the subject matter of this CD and SDs for the duration of the performance of the terms and provisions of this CD for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this CD, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section XIII (Dispute Resolution).

XXII. APPENDICES

92. The following appendices are attached to and incorporated into this CD:

"Appendix A" is the ROD.

"Appendix B" is the SOW.

"Appendix C" is the description and/or map of the Site.

"Appendix D" is the complete list of SDs.

XXIII. MODIFICATION

93. Except as provided in ¶ 13 (Modification of SOW or Related Deliverables), material modifications to this CD, including the SOW, shall be in writing, signed by the United States and SDs, and shall be effective upon approval by the Court. Except as provided in ¶ 13, non-material modifications to this CD, including the SOW, shall be in writing and shall be effective when signed by duly authorized representatives of the United States and SDs. A modification to the SOW shall be considered material if it implements a ROD amendment that fundamentally alters the basic features of the selected remedy within the meaning of 40 C.F.R. § 300.435(c)(2)(ii). Before providing its approval to any modification to the SOW, the United States will provide the State with a reasonable opportunity to review and comment on the proposed modification.

94. Nothing in this CD shall be deemed to alter the Court's power to enforce, supervise, or approve modifications to this CD.

XXIV. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

95. This CD shall be lodged with the Court for at least 30 days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the CD disclose facts or considerations that indicate that the CD is inappropriate, improper, or inadequate. SDs consent to the entry of this CD without further notice.

96. If for any reason the Court should decline to approve this CD in the form presented, this agreement is voidable at the sole discretion of any Party and the terms of the agreement may not be used as evidence in any litigation between the Parties.

XXV. SIGNATORIES/SERVICE

97. Each undersigned representative of a SD to this CD and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this CD and to execute and legally bind such Party to this document.

98. Each SD agrees not to oppose entry of this CD by this Court or to challenge any provision of this CD unless the United States has notified SDs in writing that it no longer supports entry of the CD.

99. Each SD shall identify, on the attached signature page, the name, address, and telephone number of an agent who is authorized to accept service of process by mail on behalf of that Party with respect to all matters arising under or relating to this CD. SDs agree to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including, but not limited to, service of a summons. SDs need not file an answer to the complaint in this action unless or until the Court expressly declines to enter this CD.

XXVI. FINAL JUDGMENT

100. This CD and its appendices constitute the final, complete, and exclusive agreement and understanding among the Parties regarding the settlement embodied in the CD. The Parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this CD.

101. Upon entry of this CD by the Court, this CD shall constitute a final judgment between and among the United States and SDs. The Court enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

SO ORDERED THIS _____ DAY OF _____, 20___.

_____
United States District Judge

Signature Page for CD regarding the Standard Chlorine Chemical Co. Inc. Superfund Site

ELLEN M. MAHAN
Deputy Section Chief
U.S. Department of Justice
Environment and Natural Resources Division
Environmental Enforcement Section
Washington, D.C. 20530

3/15/2019
Dated

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Signature Page for CD regarding the Standard Chlorine Chemical Co. Inc. Superfund Site

FOR APOGENT TRANSITION CORP.:

September 28, 2018
Dated

Name (print): John A. Piccione
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Signature Page for CD regarding the Standard Chlorine Chemical Co. Inc. Superfund Site

FOR BEAZER EAST, INC.

9/28/2018
Dated

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Signature Page for CD regarding the Standard Chlorine Chemical Co. Inc. Superfund Site

FOR COOPER INDUSTRIES, LLC:

9/28/2018
Dated

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Signature Page for CD regarding the Standard Chlorine Chemical Co. Inc. Superfund Site

FOR OCCIDENTAL CHEMICAL CORPORATION:

9.27.18
Dated

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APPENDIX A

RECORD OF DECISION

STANDARD CHLORINE CHEMICAL COMPANY, INC.

TOWN OF KEARNY

HUDSON COUNTY, NEW JERSEY

U.S. Environmental Protection Agency

Region 2

September 2016

393188

DECLARATION FOR THE RECORD OF DECISION

Record of Decision

FACILITY NAME AND LOCATION

Standard Chlorine Chemical Company, Inc. Site
1025-1035 Belleville Turnpike
Kearny, New Jersey

EPA Superfund Site Identification Number NJD002175057

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) documents the U.S. Environmental Protection Agency's (EPA's) selection of a remedy for contamination at the Standard Chlorine Chemical Company, Inc. Site (SCCC Site), chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §§ 9601-9675, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. This decision document explains the factual and legal basis for selecting the remedy. The Administrative Record Index (see Appendix 3) identifies the items that comprise the Administrative Record upon which the selected remedy is based.

The State of New Jersey was consulted on the proposed remedy in accordance with CERCLA Section 121(f), 42 U.S.C § 9621(f). The State of New Jersey concurs with EPA's selection of Alternative III for remediation of the SCCC Site. The State of New Jersey does not fully concur on the ROD, however, as stated its September 26, 2016 letter, because the current property owners have not agreed to the required institutional controls. Moreover, The State of New Jersey stated that it continues to object to EPA's exclusion of the Hackensack River as an operable unit of the SCCC Site (see Appendix 4).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances, pollutants, or contaminants from the SCCC Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy in this ROD is the first and only planned remedial phase or operable unit for the SCCC Site. The selected remedy addresses contaminated soil, surface water, groundwater, and dense non-aqueous phase liquids (DNAPL). In addition to the remedy components already in place as a result of early actions at the Site, including a fully enclosed perimeter barrier wall

system, hydraulic control groundwater extraction and treatment systems, existing surface covers, and stormwater management facilities, the selected remedy requires the following components:

- Placement of targeted cap/cover in specific locations within Area 1 that are not capped/covered, including stone and vegetative cover areas and wetlands areas. The existing stone cover areas would be overlain by a more permanent cover such as asphalt paving. This alternative would also include repairing the existing covers (e.g., repairing the asphalt) as necessary. Stormwater management enhancements, including wetland restoration, would be incorporated into the remedial design;

- DNAPL recovery in Area 1 and Area 2;

- Institutional controls (ICs), such as deed notices, Classification Exception Areas/Well Restriction Areas (CEAs/WRAs), soil management and health and safety deed notice protocols, requirements for vapor barriers installed in any new building construction, and/or other ICs to restrict future use of the SCCC Site to commercial/industrial uses and prohibit residential use, to prohibit groundwater use in Area 1 and Area 2, and to prevent potential adverse exposures;

- Demolition of the Thomas A. Edison, Inc. Emark Battery Corporation (Edison) buildings; and

- Continued operation, maintenance, and monitoring (O&M) of remedial components, including the fully enclosed perimeter barrier wall system, hydraulic control groundwater extraction and treatment systems, existing surface covers, and stormwater management facilities.

These actions are considered the final remedy for the SCCC Site. Early response actions taken at the SCCC Site addressed, in whole or in part, the lagoons, the drainage ditches, septic tank contents, releases from certain buildings, and exposure to contaminated soil. The barrier wall system installation along the adjacent Hackensack River that encompasses a portion of the SCCC Site and the adjacent Diamond Shamrock property addressed groundwater migration, DNAPL migration, stormwater runoff, and nearshore sediments along the river frontage. The barrier wall currently prevents any further discharge of SCCC Site-related constituents to the Hackensack River. With respect to historic releases from the SCCC Site to the Hackensack River, additional investigation of the river is under consideration by EPA and NJDEP as a separate matter.

The principal threat wastes remaining at the SCCC Site are industrial fill with chromite ore processing residue and DNAPL. The selected remedy addresses the industrial fill principal threat waste through cap/cover systems and institutional controls to prevent exposure to the industrial fill materials and prevent transport by erosion and runoff or wind. The selected remedy addresses the DNAPL principal threat waste through recovery and off-site disposal of the DNAPL to the extent practicable, which will reduce its mass in the subsurface and prevent its migration into areas without DNAPL contamination.

The environmental benefits of the selected remedy may be enhanced by consideration, during remedy design or implementation, of technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy.

The estimated 30-year present worth cost of the selected remedy, with a seven percent discount factor, is $11,246,000.

DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy meets the requirements for remedial actions set forth in CERCLA Section 121, 42 U.S.C. § 9621, and the NCP at 40 CFR Section 300.430(f)(1)(ii) because it: 1) is protective of human health and the environment; 2) meets a level or standard of control of hazardous substances, pollutants, and contaminants which at least attains the legally applicable or relevant and appropriate requirements under federal and state laws or justifies a waiver; 3) is cost-effective; and 4) utilizes permanent solutions and alternative treatments (or resource recovery) technologies to the maximum extent practicable.

The selected remedy does not satisfy the statutory preference for treatment of principal threat waste as a principal element of the remedy. The selected remedy addresses the principal threat wastes through cap/cover systems on the industrial fill materials and recovery and off-site disposal of the DNAPL because neither the industrial fill material nor the DNAPL liquid waste are suitable for treatment. SCCC Site-specific factors regarding the principal threat wastes, including the extensive nature of the industrial fill waste (38 acres with an average depth of eight feet) and the substantial quantities of DNAPL in the subsurface at numerous locations that cannot be readily identified due to their settling into troughs in a substantial clay layer at depth below the industrial fill, the meadow mat and a sand unit, make treatment technologies impracticable.

Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, EPA will conduct a review as required by CERCLA within five years after initiation of the remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

ROD DATA CERTIFICATION CHECKLIST

The ROD contains the remedy selection information noted below. More details may be found in the attached Decision Summary and the Administrative Record file for the SCCC Site.

- Chemicals of concerns (COCs) and their respective concentrations (see Appendix 2, Tables 1A through 1C);
- Objectives for the cleanup and the basis for invoking a technical impracticability waiver for groundwater standards for COCs (see ROD section "Remedial Action Objectives");
- Baseline risks presented by the COCs (see ROD section "Summary of Site Risks" and Table 5);

- How source materials constituting principal threats will be addressed (see ROD section "Principal Threat Wastes" and "Statutory Determinations – Preference for Treatment as a Principal Element");

- Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater considered in the baseline risk assessment and ROD, including potential land and groundwater uses that will be available at the SCCC Site as a result of the Selected Remedy (see ROD section "Current and Potential Future Land and Resource Uses");

- Estimated capital, annual operation and maintenance, and present worth costs; discount rate; and the number of years over which the remedy cost estimates are projected (see ROD sections "Summary of Remedial Alternatives" and "Comparative Analysis of Alternatives – Cost" with embedded table of costs); and,

- Key factors used in selecting the remedy, i.e., how the selected remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision (see ROD section "Selected Remedy").

AUTHORIZING SIGNATURE

Walter E. Mugdan, Director
Emergency & Remedial Response Division

September 30, 2016
Date

DECISION SUMMARY

Standard Chlorine Chemical Company, Inc. Site
Kearny, New Jersey

U.S. Environmental Protection Agency
Region 2
September 2016

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SITE NAME, LOCATION AND DESCRIPTION

The Standard Chlorine Chemical Company, Inc. Site (SCCC Site), U.S. Environmental Protection Agency (EPA) Superfund Site Identification Number NJD002175057, is located at 1025-1035 Belleville Turnpike in Kearny, New Jersey, along the Hackensack River (Appendix 1, Figure 1). EPA is the lead agency and the New Jersey Department of Environmental Protection (NJDEP) is the support agency.

The SCCC Site consists of approximately 42 acres in an industrial area of the Town of Kearny, Hudson County, New Jersey. It includes the 25-acre former SCCC property located at 1025-1035 Belleville Turnpike and a 13-acre portion of the adjacent Seaboard Hudson County Improvement Authority (HCIA) property commonly referred to as the Seaboard property. Together, the SCCC property and 13-acre portion of the Seaboard property are designated as Area 1 of the SCCC Site. The SCCC Site also includes 3.8 acres that consist primarily of the Belleville Turnpike, Newark Turnpike, and associated right-of-ways and steep embankments, which are designated as Area 2 of the SCCC Site (Appendix 1, Figure 2). The Seaboard property adjacent to the south of the SCCC Site is a New Jersey brownfields site, and the Diamond Shamrock property adjacent to the north of the SCCC Site is also a New Jersey brownfields site.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

The area of the SCCC Site originally consisted of marshlands bordering the Hackensack River. In the first half of the 20th century, industrial fill materials were placed in the coastal marshlands of this region to create property for industrial/commercial development. The SCCC Site is relatively flat, with elevations ranging from about three to 15 feet above sea level.
Since 1916, various forms of industrial manufacturing, chemical refining, blending/mixing, and/or processing have occurred on the different parcels that make up the SCCC property. Activities have included naphthalene refining and product formulation, lead-acid battery manufacturing, formulation of drain cleaner, dye-carrier production, and distillation/purification of various chlorinated benzenes. Buildings, production areas, ditches, and lagoons were constructed to support these historic operations. Two lagoons (east lagoon and west lagoon) were located on the eastern portion of the SCCC Site. The lagoons drained into a ditch that ran along the southern property boundary (southern ditch) and into the Hackensack River. The historical SCCC Site arrangement, along with the lot numbers, is shown in Appendix 1, Figure 3.

Early response actions were previously completed at the SCCC Site with oversight by EPA and/or NJDEP. At the current time, SCCC Site access is restricted. The surface of the SCCC property is currently either paved, covered with coarse gravel, or vegetated. Most of the buildings have been demolished and several concrete slabs are all that remain of the other former structures. The only original structures remaining are the five dilapidated buildings associated with the Thomas A. Edison, Inc. Emark Battery Corporation (Edison). A newly built structure houses the hydraulic control system and groundwater treatment plant. On the eastern portion of the SCCC Site, a mounded Consolidation Area was constructed with an engineered cover. A number of dense non-aqueous phase liquid (DNAPL) recovery wells, groundwater extraction wells, and piezometers are

present at the SCCC Site for operation, maintenance, and monitoring (O&M) of the early response actions. The current SCCC Site arrangement is shown in Appendix 1, Figure 4.

The SCCC Site is located within the 100-year floodplain of the Hackensack River, with the exception of limited areas that have been raised due to certain early response actions. Surface water runoff at the SCCC Site previously was channeled into surface ditches that emanated eastward toward the Hackensack River or into on-site lagoons. Currently, no flowing surface waters are present on the SCCC Site. A new subsurface stormwater collection piping system manages the stormwater runoff. Approximately 1.28 acres of man-made freshwater wetlands exist across the SCCC Site.

Property Ownership History

The northern portion of the SCCC Site (Block 287, Lots 48 and 49) was originally sold to the White Tar Company of New Jersey in 1916. White Tar Company was eventually acquired by the Koppers Company and successors. In 1946, Koppers acquired Lots 51, 52, and 52R from Edison, and by 1962 sold all of its properties to Standard Naphthalene Products Company, Inc., a wholly-owned subsidiary of SCCC. Standard Naphthalene and/or SCCC continued operations on Lots 48, 49, 51, and 52 until 1981.

The southern portion (Lots 50, 51, and 52) was acquired by Thomas A. Edison in 1917 and 1918 and, through a number of related party transfers, was owned by Edison by 1929, and used for lead acid battery production up to 1953. Lot 50 continued to be owned by Edison until December 1953, when the property was sold to Crown Rubber Products and then to Keaton Rubber Company. For the period between 1954 and 1963, Tanatex Chemical Corporation leased space in Building 3 on Lot 50 for its operations. For some of that period it also leased space in Building 1 on Lot 50. By 1962, Lot 50 was sold to SCCC. SCCC and its subsidiary Cloroben Chemical Corporation continued operating facilities at the SCCC Site until 1982 and 1993, respectively. On October 10, 2010, the Town of Kearny, New Jersey completed a tax foreclosure on Lots 48, 49, 50, 51, 52, and 52R and is now the owner of these parcels. Lot 52R, also known as 52.01, is a riparian parcel outboard of the barrier wall and is not considered part of the SCCC Site.

Lot 32.01 is approximately 25 feet wide and bisects the SCCC property in a roughly north/south direction. Lot 32.01 formerly contained working rail lines associated with the New York and Greenwood Lake Railroad and was used for transportation until use was discontinued at an unknown time. Prior to 1993, Lot 32.01 was acquired by HCIA, which still owns this portion of the SCCC Site today. HCIA also owns the Seaboard property, and thus is the owner of the 13-acre portion of Area 1 on the SCCC Site that is part of the Seaboard property.

Regulatory History

In 1982, a NJDEP inspection of the SCCC property revealed the presence of chromite ore processing residue-impacted fill materials, hexavalent chromium in surface waters, and spillages of naphthalene and dichlorobenzene on the ground surface. The inspection also disclosed that the lagoon system at the SCCC Site was previously used for waste disposal by Koppers Company.

Groundwater samples collected from a monitoring well on the Diamond Shamrock property adjacent to the SCCC property's northern border revealed the presence of naphthalene, dichlorobenzene, and trichlorobenzene in the groundwater, which NJDEP suspected to have migrated from the SCCC property. Subsequent sampling undertaken by SCCC and NJDEP from 1983 until 1987 demonstrated the presence of hazardous substances in groundwater and soil throughout the SCCC Site. In October 1989, SCCC entered into an Administrative Consent Order with NJDEP to conduct a remedial investigation and perform a remedial action at the SCCC Site. In April 1990, Occidental Chemical Corporation (OCC) and Chemical Land Holdings, Inc. (now Tierra Solutions, Inc.) entered into a separate Administrative Consent Order to address the chromite ore processing residue-impacted fill materials at the SCCC Site, which were generated at the adjacent Diamond Shamrock property. NJDEP was the lead agency during these initial investigations and early response actions. In December 2001, NJDEP referred the SCCC Site to EPA for proposed inclusion on the National Priorities List (NPL). On April 30, 2003, EPA proposed adding the SCCC Site to the NPL. The SCCC Site was subsequently listed on the NPL on September 19, 2007.

Enforcement History

In April 2008, EPA sent a general notice letter to SCCC, OCC, Beazer East, Inc. (Beazer), and Tierra Solutions, Inc. (Tierra) advising each party of its potential responsibility for cleanup of the SCCC Site under Section 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. § 9607(a), including all costs incurred by EPA in responding to releases at the SCCC Site. EPA sent a similar general notice letter to Cooper Industries, LLC (Cooper) in July 2009 and to Apogent Transition Corp. (Apogent) in December 2012. In July 2010, EPA contacted SCCC, Beazer, OCC, Tierra, and Cooper, inviting each party to enter into a settlement with EPA to conduct Remedial Investigation and Focused Feasibility Study (RI/FFS) activities at the SCCC Site. Later, EPA contacted Apogent to enter into the settlement. The RI/FFS was conducted pursuant to the May 2013 Administrative Settlement Agreement and Order on Consent entered into between EPA and Apogent, Beazer, Cooper, and OCC. Tierra participated in the RI/FFS on behalf of OCC.

EARLY INVESTIGATIONS AND EARLY RESPONSE ACTIONS

Early Investigations (1983 to 2009)

Major investigations and activities completed prior to the RI/FFS are listed below. These included investigations of impacts to soil, groundwater, surface water, and sediment, as well as an asbestos and lead paint survey of the Edison buildings, a wetlands delineation, an aerial topographic survey, waste classification requests, off-site disposal of demolition debris, numerical groundwater modeling, and sampling and analysis of vault contents.

Pre-RI/FFS Investigations and Surveys dating back to the early 1980s		
Date	Investigation	Company
1983-1984	Hydrogeologic Investigation	Roy F. Weston, Inc.
1985	Phase II Dioxin Investigation	E.C. Jordan, Inc.
1987	Stage 1 Dioxin Investigation	Roy F. Weston, Inc.
1988	Stage 2 and 3 Dioxin Investigations	Roy F. Weston, Inc.
1991	Chromium Delineation	French & Parrello Associates
1990-1993	Remedial Investigation/Supplemental RI	Roy F. Weston, Inc.
1996-1997	Focused Remedial Investigation	ERM, Inc.
1997-1999	Supplemental Remedial Investigation	Key Environmental, Inc.
2000	Soil/Sediment Sampling and Analysis	Enviro-Sciences, Inc.
2000	Characterization of Containerized Materials	Enviro-Sciences, Inc.
2002	Surface Water and Sediment Sampling	EPA Technical Assistance Team
2004	Asbestos and Lead Based Paint Survey	Omega Environmental
2008-2009	Interim Response Actions Pre-Design Investigation	Key Environmental, Inc.
2008-2009	Phase II Supplemental RI	Key Environmental, Inc.

Interim Remedial Measures (1990s to 2008)

Since the early 1990s, various interim remedial measures were completed at the SCCC Site with NJDEP oversight as follows:

- Installation of security fencing surrounding a former production area and lagoons to prevent unauthorized access;
- Addition of soil to the lagoon berm to increase its height and prevent potential overflows;
- Placement of stabilizing geotextile and rip rap along the Hackensack River shoreline in the vicinity of the lagoons;
- Removal of the contents of five aboveground storage tanks and repackaging of asbestos-containing material removed from the former distillation building;
- Installation of an asphalt pavement overlay on traffic areas where existing deteriorated asphalt pavement was present;
- Installation of geotextile fabric/aggregate/ asphalt cover in all remaining traffic areas where total chromium concentrations exceeded the NJDEP criterion in effect at the time (75 milligrams per kilogram);
- Placement of geotextile/geomembrane liner or aggregate cover construction in non-traffic areas west of a railroad right-of-way;
- Installation of a dust fence barrier along the railroad right-of-way and north fence line of the northeast process area; and,

- Improvements to the existing stormwater sewer located between the SCCC Site and the Diamond Shamrock property.

Work related to the SCCC Site with NJDEP as the lead agency continued through NPL listing in 2007, when EPA took over lead agency responsibilities.

Interim Response Actions and Non-Time Critical Removal Action (2009 to 2011)

In 2009, EPA approved an Engineering Evaluation/ Cost Analysis (EE/CA) for a non-time critical removal action under CERCLA that corresponded with an interim response action approved by NJDEP in 2008. EPA designated NJDEP as the lead agency for implementation of the EE/CA. Activities conducted pursuant to the EE/CA and the NJDEP interim response action include the following engineering controls and containment measures:

- Construction of a *barrier wall containment system*, a 1,230 foot long steel sheet pile wall along the Hackensack River and a 6,880 foot long barrier wall with cement bentonite slurry two feet in width. The barrier wall is keyed a minimum of three feet into the underlying varved clay, which contains the area inside the barrier wall from the surrounding subsurface. The barrier wall system was initially designed to contain contamination on the SCCC property and Diamond Shamrock property, and was expanded prior to construction to also enclose 13 acres of Seaboard property when groundwater and subsurface soil data showed that SCCC Site-related DNAPL had migrated onto Seaboard property.

- A *DNAPL recovery system* consisting of sixteen 18-inch diameter high-density polyethylene recovery wells with 10-foot deep sumps within the barrier wall system; as of June 30, 2016, 6,330 gallons of DNAPL have been recovered at the SCCC Site for off-site disposal;

- A *hydraulic control system and groundwater treatment plant* to maintain hydraulic control of groundwater within the barrier wall and to treat impacted groundwater pursuant to a New Jersey Pollutant Discharge Elimination System (NJPDES) Permit No. NJ0155438, with treated effluent meeting discharge permit limits and then discharging to the Hackensack River;

- *Lagoon dewatering and solidification.* Historic analytical results confirmed the lagoons as a significant source area. Lagoon solids were found to consist of 77 percent naphthalene with the remainder consisting largely of chlorinated benzenes, methylnaphthalene, phenols, 2,3,7,8-tetrachlorodibenzo-p-dioxin, arsenic, lead, and hexavalent chromium. The accumulated liquids in the former lagoons were collected and treated on-site and the solids were stabilized primarily with Portland cement and encapsulated in place;

- Construction of a *Consolidation Area and surface cover* in the vicinity of the former lagoons. Soft soils in the south ditch were found to contain chlorinated benzenes (1,4-dichlorobenzene most frequently), naphthalene and other polycyclic aromatic

hydrocarbons (PAHs), and to a lesser extent polychlorinated biphenyls (PCBs) and dioxin/furans, chromium, and lead. The south ditch soft soils were excavated, stabilized with Portland cement, and placed in the Consolidation Area. Materials generated during the barrier wall construction and nearshore river sediment impacted by chlorobenzenes, naphthalene and other PAHs, dioxins, and metals, including chromium, were removed, stabilized, and placed in the Consolidation Area. The Consolidation Area was covered with a multi-layer cover system consisting of a 60-mil linear low density polyethylene liner, geosynthetic drainage layer, structural fill, and top soil;

- *Treatment and disposal of septic tank contents.* Six septic tanks were sampled and analyzed to determine appropriate disposal methods and requirements. The tank solids contained benzene, various chlorobenzenes, naphthalene and other PAHs, PCBs, and several metals. Solids were removed and disposed of off-site. Liquids were removed and treated in a temporary on-site treatment facility, and discharged through the NJPDES outfall. The tanks were then filled with a flowable concrete grout; and,

- *Process area surface cover and stormwater controls.* A liner and gravel surface cover was installed in the former process area located to the north of the former lagoons. Existing surface cover materials across the SCCC Site were repaired as needed. Stormwater conveyance piping, catch basins, and manholes were installed to convey stormwater historically carried by the south ditch. The newly installed stormwater system is approximately 2,980 feet long and extends from the northwestern corner of the SCCC Site to the Hackensack River.

CERCLA Removal Action (2010)

In June 2010, SCCC and Beazer entered into an Administrative Order on Consent for a Removal Action with EPA that required sealing the openings in the former process area buildings and the maintenance, and replacement as necessary, of the existing fencing surrounding the eastern portion of the SCCC Site and the warning signs along the fencing. These activities are summarized in the December 2010 Final Report, Closure of Building Openings, Northeastern Area, Standard Chlorine Chemical Company Superfund Site, which is included in the Administrative Record for the Site (see Appendix 3).

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The public has been informed of the progress on the RI/FFS and other Superfund actions through community notification flyers, presentations, and updates in accordance with the *2014 Community Involvement Plan* developed for the SCCC Site. In 2010, EPA published a public notice and established a 30-day public comment period on the EE/CA for the non-time critical removal action described above.

The local community has provided input to EPA regarding SCCC Site progress. EPA representatives also received input regarding the reasonably anticipated future land use of the SCCC Site. The Town of Kearny's conditionally designated developer, the Sitex Group, LLC,

provided information to EPA regarding its plans to construct an 850,000 square foot warehouse and distribution center on the SCCC property and adjacent Diamond Shamrock property. Morris Kearny Associates, LLC, with which HCIA has entered into a purchase and sale agreement for the adjacent Seaboard property, also provided EPA with plans for redevelopment of the Seaboard property, including the 13-acre portion of the Seaboard property included within Area 1 of the SCCC Site. The Seaboard redevelopment plan includes the construction of four new industrial warehouse buildings totaling approximately 2.1 million square feet and related infrastructure.

The Proposed Plan for the SCCC Site was released for public comment on July 27, 2016. The Proposed Plan and other SCCC Site-related documents were made available to the public in the administrative record file maintained at the Kearny Public Library in Kearny, New Jersey, and at the EPA Region 2 Superfund Records Center located at 290 Broadway, New York, New York (Appendix 3). The notice of availability of these documents was published in *The Observer*, a Kearny newspaper, on July 27, 2016. A public comment period was held from July 27, 2016, to August 26, 2016.

A public meeting was held on August 16, 2016, at Kearny Town Hall – Council Chambers, 402 Kearny Avenue, Kearny, New Jersey, to discuss the findings of the RI/FFS and to present EPA's Proposed Plan to the community. At this meeting, EPA representatives answered questions about the RI/FFS and the remedial alternatives. Comments that were received by EPA at the public meeting and in writing during the public comment period are summarized and addressed in the Responsiveness Summary (see Appendix 5).

SCOPE AND ROLE OF RESPONSE ACTION

The SCCC Site is being addressed as a single operable unit. The RI/FFS was completed for all SCCC-Site related constituents of interest, environmental media, and exposure pathways of concern.

Early response actions taken at the SCCC Site addressed, in whole or in part, the lagoons, the drainage ditches, septic tank contents, releases from certain buildings, and exposure to contaminated soil. The barrier wall system installation along the adjacent Hackensack River that encompasses a portion of the SCCC Site and the adjacent Diamond Shamrock property, addressed groundwater migration, DNAPL migration, stormwater, and nearshore sediments along the river frontage and currently prevents any further discharge of SCCC Site-related constituents to the Hackensack River. With respect to historic releases from the SCCC Site to the Hackensack River, additional investigation of the river is under consideration by EPA and NJDEP as a separate matter in light of the many potential sources of contamination along the 45-mile river. EPA has released a September 2015 Preliminary Assessment of the Lower Hackensack River, Bergen and Hudson Counties (which is available online at https://www.epa.gov/nj/hackensack_river_preliminary_assessment_report).

SITE CHARACTERISTICS

A Site Characterization Summary Report (March 2013) and Site Characterization Summary Report Addendum (March 2014) were prepared to summarize the investigations and the early response actions that were conducted at the SCCC Site prior to the RI/FFS. These reports also identified data gaps requiring further investigation during the RI. The RI Report and RI Addendum Report combine information from the Site Characterization Summary Reports and the RI field work to characterize the SCCC Site.

Remedial Investigation (2013 to 2015)

To supplement the pre-RI/FFS investigations conducted from 1983 to 2009, the first phase of RI field investigation focused on obtaining data necessary to evaluate the risks posed to human health and the environment and to support the evaluation of remedial alternatives in the FFS. The main data gaps included surface soil evaluation, DNAPL delineation, and verifying the continuity of the varved clay. Appendix 1, Figure 5 shows sample locations. The RI investigations confirmed that the thick and continuous varved clay unit located below the industrial fill, the original meadow layer, and a sand unit, is an effective barrier to vertical migration of dissolved phase groundwater constituents and DNAPL. The original meadow layer has been compressed (i.e., into a meadow mat unit) and was found to effectively mitigate and impede the downward migration of hexavalent chromium by reducing it to insoluble trivalent chromium.
Details are summarized in the March 2015 RI Report. A brief summary of the RI Report is presented below.

Geology and Hydrology

Hudson County lies within the Piedmont Physiographic Province of New Jersey. It is mainly underlain by slightly folded and faulted sedimentary rocks of Triassic and Jurassic age (240 to 140 million years old) and igneous rocks of Jurassic age. At the surface, the Piedmont is a low rolling plain divided by a series of higher ridges that slope gently toward sea level in Newark Bay.

The area originally consisted of marshlands bordering the Hackensack River. In the first half of the 20th century, industrial fill materials were placed in the coastal marshlands of this region to create property for industrial/commercial development. At the SCCC Site, the industrial fill materials (fill unit) are two to 10 feet thick and include chromite ore processing residue generated at the adjacent Diamond Shamrock property. The marsh surface below the fill unit is two to eight feet thick and consists of silt, humus, and peat (meadow mat). Beneath the meadow mat is a sand unit generally less than 10 feet thick and a continuous varved clay unit estimated at greater than 40 feet thick across the SCCC Site. Below the clay unit is glacial till and bedrock.

The fill unit and the sand unit are separate shallow groundwater bearing units. The fill unit is unconfined and the depth to groundwater is typically three to four feet below existing ground surface. The meadow mat is compacted into a semi-confining unit. Decomposition of the organic matter in the meadow mat has used up the available oxygen so that it is now a chemically reducing environment. The varved clay unit has low permeability and is an effective aquitard hydraulically

separating the sand unit above and the glacial till and bedrock below. Prior to installation of the barrier containment wall system, groundwater flow was generally from north to south across the SCCC Site, except in the eastern portion near the lagoons where groundwater flow radiated away from the lagoons in the fill unit and was eastward towards the Hackensack River in the sand unit. With the completion of the barrier wall system in 2011, all groundwater within the wall is contained and a gradient differential is maintained across the barrier wall.

The SCCC Site is located within the 100-year floodplain of the Hackensack River with the exception of limited areas that have been raised due to certain early response actions (e.g., construction of the ground water treatment plant). Surface water runoff at the SCCC Site previously was channeled into surface ditches that emanated eastward toward the Hackensack River or into on-site lagoons. Currently, no flowing surface waters are present on the SCCC Site, and thus no surface water is discharging from the SCCC Site to the Hackensack River. A new subsurface stormwater collection piping system manages the stormwater runoff. Approximately 1.28 acres of man-made freshwater wetlands exist across the SCCC Site.

DNAPL

DNAPL is an immiscible fluid with a density greater than water that migrates through the subsurface and leaves behind a residual that is difficult to remediate. The DNAPL at the SCCC Site contains chlorinated benzenes, naphthalene, PCBs, and dioxins/furans, which are associated with naphthalene and chlorinated benzene refining and other processing activities conducted at the SCCC Site.

DNAPL in the fill unit is present in the former lagoon area and near Building 4 on Lot 50. DNAPL in the sand unit extends beyond the SCCC property onto the Seaboard property (Appendix 1, Figure 6). The DNAPL is considered to be an ongoing source of groundwater impacts in both the fill unit and the sand unit.

Surface and Subsurface Soil

Impacts to surface and subsurface soil extend across the SCCC Site due to the placement of the historical fill and historical manufacturing/processing activities. Constituent groups detected include chlorinated benzenes, PAHs (including naphthalene), PCBs, dioxins/furans (or polychlorinated dibenzodioxin/polychlorinated dibenzofuran (PCDD/PCDF)), and metals, including lead and hexavalent chromium. Chlorinated benzenes were found in soil in both the eastern and western portions of the SCCC Site, generally near former chlorinated benzene distillation, purification, storage, and/or handling areas and the lagoons. Chlorinated benzene concentrations were generally highest in soil at depth in the sand unit due to their accumulation as DNAPL on top of the underlying varved clay.

Naphthalene and other PAHs, and to a lesser extent PCBs and PCDD/PCDF, were found in the eastern SCCC Site soil and lagoons. Naphthalene and other PAHs were also found in the western SCCC Site soil within areas of fill. The highest concentrations were associated with the lagoons and DNAPL beneath or near the former lagoons and extending west. Chromium was found in the

western, eastern, and southern portions of the SCCC Site. Hexavalent chromium was found primarily within the upper 10 feet of the fill unit. Lead was found in the eastern and western portions of the SCCC Site.

Groundwater

Investigations of shallow groundwater within the fill unit found SCCC Site-related constituents in groundwater, including chlorinated benzenes, several volatile organic compounds, naphthalene and other PAHs, phenols, PCBs, lead, and chromium. The highest concentrations of chlorinated benzenes and PAHs were found in the former lagoon area, although chlorinated benzenes were also found in the groundwater in the fill unit in the western portion of the SCCC Site near Building 2.

A similar suite of constituents was found in the sand unit groundwater, with the exception of hexavalent chromium due to the reducing influence of the overlying meadow mat, an organic rich layer that reduces hexavalent chromium to trivalent chromium. Impacts of organic constituents in the sand unit were found to be laterally extensive and vertically limited due to the underlying varved clay acting as a barrier to downward migration.

Surface Water

Historical data indicated impacts to surface water in drainage ditches from chlorinated benzenes, naphthalene and other PAHs, lead, and total chromium. Surface water in the former lagoon representing accumulated precipitation in contact with lagoon solids contained dichlorobenzene, phenols, total chromium, and lead. The stagnant nature of surface water in the ditches appeared to have limited surface water impacts, and no significant impacts to Hackensack River surface water were identified during several historical sampling events.

Remedial Investigation Addendum (2015 to 2016)

Following the RI conducted from 2013 to 2015, a second phase of RI field work was initiated to determine whether SCCC Site-related DNAPL had migrated to the west beyond the limits the barrier wall prior to its construction. The area investigated in this second phase of RI field investigation became known as Area 2 of the SCCC Site (the area within the barrier wall was then Area 1). The data necessary to delineate SCCC Site-related DNAPL impacts to subsurface soils and groundwater in Area 2 of the SCCC Site are summarized in the January 2016 RI Addendum Report. A brief summary of the RI Addendum Report is presented below.

- The geologic profile within Area 2 is the same as Area 1. Surficial materials in Area 2 are comprised of (in descending order) fill unit, meadow mat, sand unit, and varved clay. The higher elevation in Area 2 is consistent with a thicker fill in Area 2 associated with road construction. The varved clay unit is continuous beneath Area 2.

- Area 2 is located hydraulically downgradient of Area 1. A northward component of groundwater flow south of Area 2 limits dissolved constituent migration to the south.

- SCCC Site-related impacts in Area 2 are limited to subsurface soil and groundwater within the sand unit. The horizontal extent of SCCC Site-related impacts in the sand unit appears to end at the vegetated highway median between the westbound lane of the Belleville Turnpike and the Newark Turnpike.

- The configuration of the upper surface of the varved clay appears to have some control on the distribution of DNAPL in Area 2. DNAPL was observed in a localized broad depression in the varved clay surface. The clay surface elevation rises slightly to the south and west, preventing further DNAPL movement laterally to the south and west. Based upon evidence from Area 1, the varved clay is an effective barrier to vertical migration of DNAPL beneath Area 2.

- Significant reductions in dichlorobenzene concentrations in subsurface soil and groundwater occur within a short distance of DNAPL impacted areas, indicating that migration of dissolved phase groundwater impacts is limited.

- A DNAPL that is believed not to be SCCC Site-related was encountered south of Area 2. This DNAPL has a different chemical signature than the DNAPL encountered at the SCCC Site, which is predominantly dichlorobenzene, and was found at a shallower depth than where the SCCC Site-related DNAPL was found. The findings related to this non-SCCC Site-related DNAPL are presented in the RI Addendum and have been made available to NJDEP for further evaluation. Further investigation of this non-SCCC Site-related DNAPL, however, was beyond the scope of the RI/FFS.

CULTURAL RESOURCES AND EDISON BUILDINGS

Activities conducted under CERCLA are required to comply with Section 106 of the National Historic Preservation Act of 1966, as amended, 54 U.S.C. § 306108, and its implementing regulations (36 CFR Part 800). Archaeological and architectural surveys and related efforts were completed as part of the RI/FFS to address the possible presence of pre-European contact cultural resources and to document the historic Edison buildings in compliance with the requirements of the National Historic Preservation Act. A summary of these reports follows:

- *Phase IA Cultural Resource Survey for the Standard Chlorine Chemical Company Site, Interim Response Action Work Plan – Town of Kearny, Hudson County, New Jersey (August 2009)* – This document was developed prior to the installation of the barrier wall to assess the presence or absence of cultural resources and the potential impacts on those resources. This report concluded that there was a low to moderate potential for deep archaeological deposits and that the activities would have only a temporary adverse effect on the historic buildings.

- *Phase IB Archaeological Survey During Slurry Wall Construction (May 2011)* – Samples were collected from the sand unit (approximately nine to 17 feet below grade) during the barrier wall construction to evaluate potential evidence of pre-European contact. Possible

artifacts were recovered primarily where the barrier wall extends along the Hackensack River. A recommendation for conducting potential additional archaeological surveying was included in the report if other deep excavation activities were to be implemented.

- *Historic American Buildings Survey (HABS) (October 2015)* – This document provides details on the architectural aspects of the Edison buildings. It includes information on the Emark plant and the chronology of its operation. This document includes numerous photographs and copies of some original architectural drawings and meets the Secretary of the Interior's Standards for Architectural and Engineering Documentation.

- *This is the Story of Emark – A Product of Thomas A. Edison, Inc. (October 2015)* – This document is a public information bulletin to promote public understanding and appreciation of the SCCC Site's historic significance.

- *This is the Story of Emark: Learning from New Jersey History – Teacher's Guide and Lesson Plans Grade 4 (October 2015)* – This document was prepared to fulfill specific standards and goals of the New Jersey Core Curriculum Content Standards for Social Studies and Science and to foster local interest and pride.

A Memorandum of Agreement pursuant to the National Historic Preservation Act was signed in 2016 by representatives of the EPA and New Jersey State Historic Preservation Office. The Memorandum of Agreement documents the measures that have been implemented to mitigate planned adverse effects to the cultural resources (i.e., demolition of the Edison buildings). Although the buildings have historic significance, they contain asbestos and lead and are dilapidated beyond repair. The sampling conducted in 2004 established the buildings as having regulated asbestos-containing material (one percent or greater asbestos content) which requires removal prior to the onset of demolition, and lead based paint up to 11 percent by weight. Further sampling was not undertaken during the RI/FFS for physical safety reasons due to the deteriorated condition of the buildings. EPA has determined that the Edison buildings constitute a release or threat of release of hazardous substances to the environment. The cultural resource surveys have documented the historic significance of the Edison buildings in advance of demolition.

CURRENT AND POTENTIAL FUTURE LAND AND RESOURCE USES

Land Use

The SCCC Site is currently vacant and access to it is restricted. The SCCC Site and the surrounding areas were historically used for industrial and commercial activities.

The RI/FFS considered the reasonably anticipated future uses of the SCCC Site. In 2012, the Town of Kearny, which owns the majority of the SCCC Site, petitioned the New Jersey Meadowlands Commission (now the New Jersey Sports and Exposition Authority) to designate the SCCC property and adjoining properties as a redevelopment area. In 2013, the New Jersey

Meadowlands Commission adopted a redevelopment plan for the area that allows for certain commercial or industrial uses and prohibits residential use. The Town of Kearny recently adopted a resolution (Resolution 2016-250) conditionally designating the Sitex Group, LLC (Sitex) as the redeveloper of the SCCC property and the adjacent Diamond Shamrock property owned by Tierra. Sitex is planning to construct an 850,000 square foot warehouse and distribution center on the SCCC property and adjacent Diamond Shamrock property.

Plans for redevelopment of the Seaboard property are also underway. According to information provided to EPA by HCIA, HCIA has entered into a Purchase and Sale Agreement with Morris Kearny Associates, LLC (Morris) to develop the Seaboard property, including the 13-acre portion of the Seaboard property included within Area 1 of the SCCC Site. In 2016, the HCIA/Morris development for the entire 175-acre Seaboard property was designated a "Vital Project" by the New Jersey Sports and Exposition Authority. Morris's redevelopment plan for the portion of the Seaboard property in the vicinity of the barrier wall includes the construction of four new industrial warehouse buildings totaling approximately 2.1 million square feet, along with paved parking lots, paved roads, and utility infrastructure.

Most of Area 2 consists of a New Jersey Department of Transportation (NJDOT) right-of-way for Belleville Turnpike and Newark Turnpike and is occupied by highway and associated steep embankments. It is reasonably anticipated that the future use will remain consistent with this current use.

The remedial alternatives were developed to be compatible with the commercial/industrial future uses of the SCCC Site while remaining protective of human health and the environment.

Groundwater Use

The SCCC Site is subject to NJDEP classification exception area/well restriction areas (CEA/WRAs) established prior to the RI/FFS. A CEA serves as an institutional control (IC) by providing notice that groundwater quality standards are not or will not be met in a localized area due to natural water quality or anthropogenic influences (for example, impacted sites), and that aquifer uses are restricted in the affected area for the duration of the CEA.

In 2003, Tierra, on behalf of OCC, established a CEA/WRA that covers certain chromite ore processing residue sites on the Kearny Peninsula, including the SCCC property. The constituents listed in CEA/WRA for the chromite ore processing residue sites include total chromium, hexavalent chromium, total dissolved solids, and chloride.

In 2013, Beazer established a CEA/WRA that addresses the 13 acres of the Seaboard property included in Area 1 of the SCCC Site and enclosed within the barrier wall system. The constituents of interest listed in the CEA/WRA for the Seaboard property include various volatile organic compounds, semi-volatile organic compounds, and metals.

SUMMARY OF SITE RISKS

A site-specific baseline risk assessment was conducted to estimate the current and future effects of contaminants on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land uses. The baseline risk assessment includes a baseline human health risk assessment and a baseline ecological risk assessment. The results of the human health risk assessment are provided in the December 2014 baseline human health risk assessment. The results of the ecological risk assessment are provided in the September 2014 screening level ecological risk assessment. A summary of the human health risk assessment is shown in Appendix 2, Table 5.

Human Health Risk Assessment

A four-step human health risk assessment process was used for assessing site-related cancer risks and non-cancer health hazards. The four-step process is comprised of:

Hazard Identification: In this step, the chemicals of concern at the SCCC Site in the various media (groundwater, soil, sediment, and surface water) are identified based on factors such as toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentration of the contaminants in specific media, mobility, persistence, and potential for bioaccumulation. Chemicals of concern include chlorinated benzenes, several volatile organic compounds, naphthalene and other PAHs, phenols, PCBs, and hexavalent chromium (Appendix 2, Table 1A through 1C).

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the chemicals of concern in the various media identified in the previous step are identified. The exposure areas include the western area, located west of the railroad right-of-way that parallels the Hackensack River, and the eastern area, located between the railroad right-of-way and the riverbank. Examples of exposure pathways include incidental ingestion and dermal contact with contaminated groundwater. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of the exposure. Using these factors, a reasonably maximum exposure scenario is calculated, which is an appropriate mix of values that reflect averages (for example, adult body weight) and 95th percentile distributions that together portray the highest level of human exposure that could reasonably be expected to occur. The exposure pathways evaluated are presented in Appendix 2, Table 2. The conceptual site models for Area 1 and Area 2 are shown in Appendix 1, Figures 7 and 8, respectively, and depict an evaluation of potential exposure pathways for each area.

Toxicity Assessment: In this step, the types of adverse health effects associated with chemical exposures and the relationship between magnitude of exposure (dose) and severity of adverse effects (response) are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or non-cancer health hazards, such as changes in the

normal function of organs within the body (e.g., changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and non-cancer health hazards. The toxicity values that were used to evaluate non-cancer health hazards are presented in Appendix 2, Table 3A and Table 3B. The toxicity values that were used to evaluate cancer risk are presented in Appendix 2, Table 4A and Table 4B.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of SCCC Site-related risks for all chemicals of concern. Exposures are evaluated based on the potential risk of developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a one-in-ten-thousand excess lifetime cancer risk, or one additional cancer may be seen in population of 10,000 as a result of exposure to SCCC Site contaminants under the conditions identified in the exposure assessment. Superfund regulations for exposures identify the range for determining whether remedial action is necessary as an excess lifetime cancer risk of 10^{-4} to 10^{-6}, corresponding to a one-in-ten-thousand to one-in-a-million excess cancer risk. For non-cancer health effects, a hazard index (HI) is calculated. An HI represents the sum of the individual non-carcinogenic exposure levels compared to their corresponding reference doses. The key concept for a non-cancer HI is that a threshold exists below which non-cancer health hazards are not expected to occur (an HI of one or less would indicate that the threshold is not exceeded and a non-cancer health hazard is not expected). These acceptable risk levels are defined in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) at 40 CFR Section 300.430(e)(2)(I)(A). Chemicals that contribute to a cancer risk that exceeds 10^{-4} or an HI to a specific target that exceed one are typically those that will require remedial action at a site.

The baseline human health risk assessment was conducted to evaluate the potential human health risks associated with current exposure to an on-site visitor, an on-site operator of the hydraulic control and treatment system, an outdoor worker, a utility worker, and future exposure to an indoor worker. Exposure media are surface soil, subsurface soil, surface water, air, and groundwater. The risk characterization summaries for non-cancer and cancer health effects are presented in Appendix 2, Table 5.

Under current conditions, there are no known complete human exposure pathways. The early response actions conducted at the SCCC Site have addressed the current known pathways that may result in human exposure to SCCC Site-related contaminants.

Under future use scenarios, there are estimated cancer risks and non-cancer health hazards that are above acceptable levels in the absence of a remedial action. The main potential future exposure pathway is associated with disturbance of the impacted soil located beneath clean cover materials. Human receptors that could be involved in surface or subsurface soil disturbance are future construction or utility workers, or possibly full-time outdoor employees and on-site visitors. Exposure routes to these potential future receptors are inhalation of fugitive dust, and dermal contact with and incidental ingestion of impacted soil, such as potential exposures during or after SCCC Site redevelopment. The baseline risk assessment requires that additional controls, such as

health and safety measures and fugitive dust suppression, are assumed to be absent. Exposure to groundwater and disturbance of the cover materials and exposure to the underlying soils results in unacceptable risks to most receptors (calculated cancer risk up to 1 x 10^{-2} and non-cancer HI up to 21,189). In addition, the future construction of industrial or commercial structures without vapor mitigation systems was found to potentially result in an unacceptable inhalation risk to future occupants due to the potential for intrusion of vapors originating from impacted soil and groundwater at the SCCC Site. Therefore, future development, including buildings, will require further project-specific analysis of this pathway and/or the use of construction techniques to mitigate the potential for intrusion of vapors into buildings or other measures to address this pathway.

Furthermore, sampling and analysis conducted in the Edison buildings identified the presence of asbestos and lead in the building materials. As described earlier, these buildings are at risk of collapse and cannot be safely entered. The mechanisms for past, present and future releases to the environment include the effects of weathering of these contaminants in building materials existing on the SCCC Site. Asbestos fibers and lead-contaminated dust can travel in air when disturbed by natural wind events or man-made disruption. The most significant human exposure pathway for asbestos is the inhalation of respirable asbestos fibers. Once released, asbestos fibers can remain in suspension for long periods and can be transported long distances. Wind traveling over the Site may cause asbestos fibers to be entrained in the air increasing the likelihood of being carried off-property. Given the likelihood of building collapse, this condition is expected to worsen over time.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- Environmental chemistry sampling and analysis;
- Environmental parameter measurement;
- Fate and transport modeling;
- Exposure parameter estimation; and,
- Toxicological data.

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there could be significant uncertainty as to the actual levels present. However, during the RI, areas of suspected contamination were included in the sampling so the uncertainty associated with uneven distribution would have erred on the side of overestimating concentrations. Environmental chemistry-analysis error can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled. The use of standard methods and quality assurance protocols help mitigate this source of uncertainty. Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come into contact with the chemicals of concern, the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the chemicals of concern at the point of exposure. Upper-bound estimates were used in the

assessment which present a conservative estimate of exposure. Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals.

These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations at the SCCC Site, and is highly unlikely to underestimate actual risks related to the SCCC Site.

More specific information concerning public health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the December 2014 baseline human health risk assessment.

Ecological Risk Assessment

The SCCC Site is located in a highly industrialized area and the conceptual site model identified that, under current and future SCCC Site conditions, there are no known completed exposure pathways for the potential ecological receptors identified for the SCCC Site. A screening level ecological risk assessment was conducted, which concluded that no potentially complete exposure pathways exist. Therefore, chemicals of potential ecological concern were not identified, the ecological risks were determined to be negligible, and further baseline ecological risk assessment work was not required.

Detailed information regarding the ecological risk can be found in the September 2014 Screening Level Ecological Risk Assessment.

Basis for Action

The results of the baseline risk assessment provide the basis for taking action and identify the contaminants and exposure pathways that need to be addressed by the remedial action. The baseline human health risk assessment indicates that exposure to groundwater and soil at the SCCC Site results in unacceptable risks to most receptors (calculated cancer risk up to 1×10^{-2} and non-cancer HI up to 21,189). In addition, the future construction of industrial or commercial structures without vapor mitigation systems was found to result in an unacceptable inhalation risk to future occupants due to the potential for intrusion of vapors originating from contaminants in soil and groundwater at the SCCC Site. The baseline ecological risk assessment consisted of a screening level ecological risk assessment which concluded that no potentially complete exposure pathways exist at the SCCC Site and thus the present SCCC Site conditions pose no unacceptable risks to ecological receptors.

Based on the results of the quantitative, SCCC Site-specific human health risk assessment, EPA has determined that actual or threatened releases of hazardous substances, pollutants, or contaminants from the SCCC Site, if not addressed by the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare or the environment.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) are identified following completion of the baseline risk assessment and describe what the proposed cleanup is expected to accomplish. These objectives are based on available information and standards, such as applicable or relevant and appropriate requirements (ARARs), to-be-considered guidance, and SCCC Site-specific risk-based levels, if applicable. The following RAOs were developed for the SCCC Site:

- Eliminate human exposure to impacted surface soil and subsurface soil via direct contact, incidental ingestion, and inhalation.
- Eliminate the transport of impacted surface soil by erosion and runoff or wind.
- Prevent human exposures to SCCC Site-related impacted groundwater via direct contact, incidental ingestion, and inhalation.
- Prevent the migration of impacted groundwater into unimpacted groundwater, surface water, and wetlands.
- Prevent the migration of SCCC Site-related DNAPL into areas without DNAPL impacts.
- Reduce the mass of SCCC Site-related DNAPL in the subsurface to the extent practicable.
- Eliminate the release or threat of release of asbestos and lead into the environment from the dilapidated Edison buildings.
- Prevent future unacceptable risks due to vapor intrusion into new buildings.

As explained further below (see section "Selected Remedy"), the response action identified in this ROD satisfies the RAOs by addressing the risks identified in the baseline risk assessment.

Groundwater Restoration and Technical Impracticability Waiver

As stated in the NCP, EPA expects to restore usable groundwater to its beneficial use wherever practicable, within a timeframe that is reasonable given the particular circumstances at a site. When restoration of groundwater to beneficial uses is not practicable, EPA expects to prevent further migration of the plume, prevent exposure to the contaminated groundwater, and evaluate further risk reduction.

The groundwater in the vicinity of the SCCC Site is categorized as Class II, currently or potentially a source for drinking water. The state and federal drinking water standards (e.g., maximum contaminant levels, or MCLs) are chemical-specific ARARs for groundwater at the SCCC Site.

Hydrogeologic factors, contaminant-related factors, and SCCC Site-specific implementation factors were evaluated to determine the practicability of remediating the groundwater to MCLs in Area 1 and Area 2. The technical impracticability (TI) evaluation established that it is technically impracticable to remediate groundwater to drinking water standards. The chromite ore processing residue fill materials in Area 1 will continue to be a source of contaminants to the groundwater within the barrier wall for the foreseeable future. Hydrogeologic factors include diffusion of the DNAPL into the upper surface of the alternating clay and sand seams of the varved clay, which would pose a significant challenge to remediation. Contaminant factors include the high density and low viscosity of the DNAPL, which allow it to easily migrate extensively in the subsurface. While some portion of the DNAPL can be recovered in wells, residual DNAPL will remain trapped in subsurface voids. This residual DNAPL will dissolve slowly into the groundwater over many decades, making it technically impracticable to achieve groundwater standards in the micrograms per liter (ug/l), or part per billion, rang (e.g., 0.2 ug/l for benzene). The estimated timeframe for dissolution of the SCCC Site-related DNAPL is 150 years or more. In addition, land use considerations, including the NJDOT right-of-way and steep embankments, make remediation in that part of Area 2 impracticable.

For the reasons discussed above, restoration of groundwater to MCLs is not technically practicable and groundwater restoration is not an RAO for the SCCC Site.

CERCLA Section 121(d), 42 U.S.C. § 9621(d), specifies that a remedial action must require a level or standard of control of the hazardous substances, pollutants, and contaminants, which at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA Section 121(d)(4), 42 U.S.C. § 9621(d)(4). EPA is hereby invoking a TI waiver in the ROD. Consistent with the NCP, the RAOs for the SCCC Site include preventing further migration of the groundwater plume, preventing exposure to the contaminated groundwater, and further reducing risks by preventing the migration of DNAPL and preventing vapor intrusion of contaminants into new buildings which may be constructed during SCCC Site redevelopment.

Detailed information on the chemical-specific groundwater standards being waived and the area of the TI Waiver (i.e., TI zone) as well as other technical information in support of the TI Waiver is presented in the FFS Report and in the September 30, 2016 Technical Memorandum added to the Administrative Record. The ARARs being waived are listed in Appendix 2, Table 6 of this ROD.

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA Section 121(b)(1), 42 U.S.C. § 9621(b)(1), mandates that remedial actions be protective of human health and the environment, be cost effective, and use permanent solutions, alternative treatment technologies, and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which use, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants at a site. As noted above, CERCLA Section 121(d), 42 U.S.C. § 9621(d), specifies that a remedial action must require a level or standard of

control of the hazardous substances, pollutants, and contaminants which at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA Section 121(d)(4), 42 U.S.C. § 9621(d)(4).

Based on the RAOs listed above, technologies were identified and screened during the FFS based on overall implementability, effectiveness, and cost. Remedial alternatives consisting of one or more technologies were assembled and evaluated in detail. Remedial alternatives for the SCCC Site are summarized below and presented in detail in the July 2016 FFS Report. Capital costs are those expenditures that are required to construct a remedial alternative. O&M costs are those post-construction costs necessary to ensure or verify the continued effectiveness of a remedial alternative and are estimated on an annual basis. Present worth costs reflect the amount of money which, if invested in the current year, would be sufficient to cover all the costs over time associated with a project, calculated using a discount rate of seven percent and a 30-year time interval. Construction time is the time required to construct and implement the alternative and does not include the time required to design the remedy, negotiate performance of the remedy with the responsible parties, or procure contracts for design and construction.

Remedial Alternatives	
Alternative	**Description**
I	No Action
II	DNAPL Recovery, Barrier Wall, ICs, Building Demolition
III	Targeted Cap/Cover, DNAPL Recovery, Barrier Wall, ICs, Building Demolition
IV	Site-wide Engineered Cap/Cover, DNAPL Recovery, Barrier Wall, ICs, Building Demolition

Alternative I: NO ACTION

Capital Cost	$0
Annual O&M Cost	$0
Present Worth Cost	$0
Construction Time	0 months

The No Action alternative is required by the NCP as a baseline with which to compare other remedial action alternatives. Alternative I is not protective of human health and the environment because it does not meet any of the RAOs.

Alternative II: CONTINUED DNAPL RECOVERY IN AREA 1, BARRIER WALL SYSTEM, DNAPL RECOVERY IN AREA 2, INSTITUTIONAL CONTROLS, AND BUILDING DEMOLITION

Capital Cost	$1,392,000
Annual O&M Cost	$541,000
Present Worth Cost	$9,759,000
Construction Time	3 months

This alternative would include the barrier wall system and continued DNAPL recovery in Area 1, construction of a new DNAPL recovery system in Area 2, ICs, such as deed notices and CEAs/WRAs, demolition of the Edison buildings, and O&M.

The DNAPL recovery technology planned for Alternative II is continuing the passive DNAPL recovery already in place in Area 1 and passive DNAPL recovery in Area 2. The recovered DNAPL would be collected periodically and disposed of off-site. Use of the hydraulic control and groundwater treatment system would continue, with treatment consisting of chromium reduction, metals precipitation, carbon adsorption, oil separation, and solids management prior to discharge to the Hackensack River in compliance with effluent limits established under NJPDES Permit No. NJ0155438. The existing Area 1 O&M procedures would be implemented as described in the existing O&M Manuals and updated as appropriate. Additional recovery wells would be installed in Area 1 if needed. In Area 2, new large-diameter DNAPL recovery wells would be installed. Following initial well placement, the DNAPL removal procedures would be optimized, and additional recovery wells installed if needed.

ICs would prevent potentially adverse exposure by restricting or prohibiting future activities at and uses of the SCCC Site that could result in exposure to subsurface contamination. ICs, such as deed notices and CEAs/WRAs, will: (i) prohibit groundwater use; (ii) establish specific requirements to be adhered to for any activity which may result in disturbance of the existing Consolidation Area; (iii) prohibit intrusive activities below the SCCC Site ground surface unless appropriate health and safety measures (including personal protective equipment requirements), emission control measures, and SCCC Site restoration activities are employed; (iv) prohibit residential use of the SCCC Site and limit future use of the SCCC Site to commercial/industrial purposes; and (v) require the use of vapor control barriers for any new building construction to prevent vapors from infiltrating future structures on the SCCC Site. The existing CEAs/WRAs would be reviewed and updated as necessary, and a new and separate CEA/WRA request covering the entire SCCC Site would be established for Areas 1 and 2. A groundwater monitoring plan would be developed and implemented as part of O&M.

Demolition of the existing Edison buildings would be completed as part of this alternative. The building foundations would be left in place. Fill will then be added within the building footprints, as necessary, to bring the surface to grade. Non-hazardous debris resulting from the building demolition would be consolidated within the building footprint to the extent practical. The final surface would be graded to promote positive stormwater drainage.

Alternative III: TARGETED CAP/COVER, AREA 1 CONTINUED DNAPL RECOVERY IN AREA 1, BARRIER WALL SYSTEM, DNAPL RECOVERY IN AREA 2, INSTITUTIONAL CONTROLS, AND BUILDING DEMOLITION

Capital Cost	$4,618,000
Annual O&M Cost	$396,000
Present Worth Cost	$11,246,000
Construction Time	6 months

Alternative III would include placement of targeted cap/cover in specific locations within Area 1 that are not capped/covered, including stone and vegetative cover areas and wetlands areas. The existing stone cover areas would be overlain by a more permanent cover such as asphalt paving. This alternative would also include repairing the existing covers (i.e., repairing the asphalt) as necessary. Stormwater management enhancements would be incorporated into the remedial design. Alternative III would include the same DNAPL recovery in Area 1 and Area 2, ICs, including prohibitions on groundwater use and residential use of the SCCC Site as well as requirements for the use of vapor control barriers in any future buildings, demolition of the Edison buildings, and O&M as described in Alternative II.

The detailed specifications for Alternative III would be developed during remedial design. The conceptual locations for the new DNAPL recovery wells in Area 2 and the conceptual targeted cap/cover system details for Area 1 are shown on Appendix 1, Figure 9. The stone covered and vegetated areas are assumed to be covered with an asphalt cover system consisting of two inches of wearing course, two inches of asphalt binder course, four inches of granular subgrade, and capillary break as necessary. The proposed cap/cover systems would be retrofitted into the existing cap/cover systems. Low lying areas of the existing asphalt or areas observed to be in disrepair would be lined with additional asphalt to facilitate positive stormwater drainage and reduce infiltration. The wetlands areas would be covered with a geomembrane cap consisting of a 10 ounce per square yard (oz/sy) geotextile, a 60-mil capillary break geomembrane (or other capillary break component as needed), a 10 oz/sy geotextile, and one foot of wetlands planting substrate and revegetation. Proposed topsoil composition, planned plant species, and post-restoration monitoring requirements would be determined during the remedial design. The wetlands planting substrate is assumed to consist of a silty organic soil followed by wetlands plants; the list of plants would be determined during the design phase and likely would be consistent with existing restoration efforts for freshwater emergent wetlands which included the planting of salt meadow cordgrass, spike grass, prairie cord grass, black grass, swamp mallow, big cordgrass, seaside goldenrod, salt marsh bulrush, switch grass, and groundsel bush. It is assumed that the seed mixture to establish first year coverage would consist of annual rye, fall panicum, switch grass, coastal panic grass, and lady's thumb. A freshwater emergent wetlands restoration monitoring plan would be prepared as part of the remedial design. The plan would include invasive species management, post-construction monitoring (growing seasons one and two), specifications, and a final wetlands monitoring report.

Alternative IV: SITE-WIDE ENGINEERED CAP/COVER, CONTINUED DNAPL RECOVERY IN AREA 1, BARRIER WALL SYSTEM, DNAPL RECOVERY IN AREA 2, INSTITUTIONAL CONTROLS, AND BUILDING DEMOLITION

Capital Cost	$13,456,000
Annual O&M Cost	$231,000
Present Worth Cost	$17,299,000
Construction Time	12 months

Alternative IV would include a new engineered cap/cover system on the SCCC property for all but the Consolidation Area, which already has a geosynthetic liner overlain by a vegetative cover, and a wetland area cap/cover (as in Alternative III). Alternative IV also includes the option to relocate existing wetlands to other areas of the SCCC Site or to utilize the wetlands banking option and purchase wetland credits off-site. The capillary break cap/cover components and the stormwater management enhancements associated with Alternative III would be installed as part of Alternative IV. Alternative IV also would include the same DNAPL recovery in Area 1 and Area 2, ICs, including prohibitions on groundwater use and residential use of the SCCC Site as well as requirements for the use of vapor control barriers in any future buildings, demolition of the Edison buildings, and O&M as described in Alternative II.

The detailed specifications for Alternative IV would be developed during remedial design. Because the engineered cap/cover would encompass essentially the entire SCCC property (with the exception of the Consolidation Area and the wetlands areas), no repair of the existing covers would be necessary. The engineered cap/cover would extend over the prepared surface of the Edison building footprints. For conceptual planning and cost estimating, the SCCC property areas are assumed to be covered with an engineered cap/cover system consisting of a 10 oz/sy non-woven geotextile layer, a 60-mil geomembrane, another 10 oz/sy non-woven geotextile layer, approximately 33 inches of general fill (including a capillary break as needed), approximately three inches of topsoil, and seeding and mulching of the topsoil. The existing wetlands on-site that would be capped/covered include freshwater emergent wetlands that were formed as a result of stormwater runoff. The proposed Alternative IV cap/cover to be installed in the wetlands would be the same as that for the wetlands cover in Alternative III. If the existing wetlands are relocated on the SCCC Site, the relocation area would compensate for the loss of the existing wetlands, with the location and extent of the area to be determined during remedial design. No wetlands cap/cover would be required on-site if the wetlands banking and off-site wetlands credit purchase option were to be utilized. The relocated wetlands would be constructed in the same manner as the cap/cover installation methods in the freshwater emergent wetlands described in Alternative III and their location and areal extent would be determined during the remedial design.

Common Elements of Each Alternative

Alternatives II, III, and IV all include the barrier wall system; continued DNAPL recovery in Area 1; construction of a new DNAPL recovery system in Area 2; ICs, including prohibitions on groundwater use and residential use of the SCCC Site as well as requirements for the use of vapor

control barriers in any future buildings and health and safety measures for workers performing intrusive activities; demolition of the Edison buildings; and O&M. Alternative II does not include any placement of a cap/cover on the SCCC property. Alternative III includes placement of a targeted cap/cover in specific locations within Area 1 that are not adequately capped/covered, and Alternative IV includes placement of a cap/cover on the entire SCCC property except for the Consolidation Area. Both Alternatives III and IV would include the same capillary break cap/cover components and the stormwater management enhancements. Alternative IV also includes the same freshwater emergent wetlands restoration plan as Alternative III, but with the option to relocate existing non-permitted pre-interim remedial action wetlands to other areas on the SCCC Site or to utilize the wetland banking option and purchase wetland credits off-site. Alternatives II, III, and IV all would allow the reasonably anticipated future industrial/commercial use of the SCCC Site. There are no common elements between Alternative I and Alternatives II, III, and IV.

Comparative Analysis of Alternatives

In selecting a remedy, EPA considered the factors set forth in Section 121 of CERCLA, 42 U.S.C. § 9621, by conducting a detailed evaluation of the remedial alternatives pursuant to the NCP, 40 CFR Section 300.430(e)(9). During the detailed evaluation of remedial alternatives, each alternative was assessed against nine evaluation criteria, which consist of two threshold criteria (overall protection of human health and the environment, compliance with ARARs), five balancing criteria (long-term effectiveness and permanence, reduction of toxicity, mobility or volume through treatment, short-term effectiveness, implementability, and cost), and two modifying criteria (state acceptance and community acceptance). The comparative analysis of the four remedial alternatives based upon the nine evaluation criteria is summarized below.

1. Overall Protection of Human Health and the Environment

Overall protection of human health and the environment addresses whether or not an alternative provides adequate protection and describes how risk posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced or controlled through treatment, engineering controls, or ICs.

Alternative I would not provide overall protection of human health and the environment. This no action alternative does not prevent or eliminate human exposure and does not reduce the mass of SCCC Site-related DNAPL, and so Alternative I would not address the RAOs for the SCCC Site. Alternatives II, III, and IV would all offer some level of protection of human health and the environment. Alternative II does not involve placement of cap/covers, and thus provides less protection of human health and the environment than Alternatives III and IV. The placement of additional cap/cover systems (Alternatives III and IV) would provide additional overall protection of human health and the environment due to the further reduction in exposure and reduction in transport of impacted soil. The additional protection is considered similar for both Alternatives III and IV. The release or threat of release of asbestos and lead into the environment would be addressed by Alternatives II, III, and IV via demolition of the dilapidated Edison buildings.

2. Compliance with ARARs

Compliance with ARARs addresses whether or not an alternative will meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and requirements or provides grounds for invoking a waiver.

The chemical-specific ARARs that apply to all the alternatives include groundwater quality standards and soil standards. State and federal drinking water standards (Appendix 2, Table 6) would be waived in Area 1 and Area 2 due to the technical impracticability of attaining those standards in groundwater under all the alternatives. Appendix 1, Figure 10 shows the areal extent of the TI waiver zone. Alternatives II, III, and IV would comply with chemical-specific soil ARARs through ICs and cap/covers (Appendix 2, Table 7).

Location-specific ARARs include requirements for floodplains and wetlands areas. Alternative I would not comply with these ARARs. Alternatives II, III, and IV would comply with the location-specific ARARs including potential excavation and filling activities in wetland or floodplain areas.

Action-specific ARARs are not relevant for Alternative I, which is the no action alternative. Action-specific ARARs for Alternatives II, III, and IV include erosion and sedimentation control/stormwater management regulations and hazardous and solid waste management regulations. Alternatives II, III, and IV would comply with action-specific ARARs.

In sum, Alternative I does not meet the threshold criteria of overall protection of human health and the environment and compliance with ARARs. Accordingly, it is not considered further in assessing the five balancing criteria in the comparative analysis. Alternatives III and IV offer greater overall protection of human health and the environment than Alternative II. Alternatives II, III, and IV comply with ARARs.

3. Long-Term Effectiveness and Permanence

Long-term effectiveness and permanence refers to the ability of an alternative to maintain reliable protection of human health and the environment over time, once cleanup levels have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.

Alternatives II, III, and IV are each anticipated to have both long-term effectiveness and permanence, as all three alternatives include monitoring and maintenance to ensure that the remedies remain protective.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

Reduction of toxicity, mobility, or volume of contaminants through treatment is the anticipated performance of the treatment technologies, with respect to these parameters, which an alternative may employ.

The reduction of toxicity and volume of chemicals of concern in impacted media would continue for Alternatives II, III, and IV by virtue of the continued O&M of the hydraulic control and treatment system. However, other than treating groundwater in compliance with the surface water discharge permit, Alternatives II, III, and IV would not utilize treatment to reduce the toxicity, mobility, or volume of chemicals of concern.

5. Short-Term Effectiveness

Short-term effectiveness addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

The construction activities associated with Alternatives II, III, and IV would generally be surficial with the exception of the Area 2 DNAPL well drilling/installation, and only relatively small quantities of impacted SCCC Site media would need to be managed during the active construction. Therefore, the short-term human risks resulting from these actions are considered to be minimal.

The potential short-term risks for Alternative IV would be greater than Alternatives II and III due to the larger volumes of fill soil to be transported and placed and longer duration of construction activities.

The estimated timeframe is approximately three months to complete Alternative II. The estimated timeframes are approximately six months to construct Alternative III, and approximately one year to complete construction of Alternative IV. The sequentially longer timeframes are due to more extensive construction requirements. These construction schedules are within typical and expected remedial construction timeframes.

6. Implementability

Implementability is the technical and administrative feasibility of the alternative, including the availability of materials and services needed to implement the alternative.

The technical and administrative issues increase progressively for Alternatives II, III, and IV. However, the cap/cover alternatives have commonly been utilized at similar sites, including previously at the SCCC Site. Implementation of Alternatives II, III, and IV would require specialized contractors and equipment which are readily available. The clearing and grubbing requirements would be most significant for Alternative IV versus Alternative III; however, the difference is not significant. Management of impacted media and DNAPL required for Alternatives II, III, and IV is readily implementable. Alternatives II, III, and IV are considered to be equivalent with respect to implementability.

7. Cost

Cost includes estimated capital and O&M costs, and present worth costs.

A summary of the total estimated cost for each remedial alternative is provided in this section for comparative analysis. The total estimated present worth costs (including the applicable capital and O&M costs) range from $0 for Alternative I to $17,299,000 for Alternative IV as shown in the table below.

Alternative	Capital Cost	Annual O&M	Total Present Worth Cost
I	$ 0	$ 0	$ 0
II	$ 1,392,000	$ 541,000	$ 9,759,000
III	$ 4,618,000	$ 396,000	$11,246,000
IV	$13,456,000	$ 231,000	$17,299,000

Total estimated present worth costs for Alternative II and Alternative III are somewhat similar, with Alternative III being more expensive than Alternative II. The estimated capital cost of Alternative IV is substantially higher than the capital costs of Alternatives II and III. The costs for all alternatives do not include the more than $14,000,000 associated with construction of the early response actions implemented at the SCCC Site from 2009 to 2011.

8. State Acceptance

State acceptance indicates whether or not the State of New Jersey concurs with the selected remedy.

The State of New Jersey concurs with EPA's selection of Alternative III for remediation of the SCCC Site. The State of New Jersey does not fully concur on the ROD, however, as stated its September 26, 2016 letter, because the current property owners have not agreed to the required institutional controls. Moreover, the State of New Jersey stated that it continues to object to EPA's exclusion of the Hackensack River as an operable unit of the SCCC Site (see Appendix 4).

9. Community Acceptance

Community acceptance refers to the public's general response to the results of the RI and the alternatives described in the FS Report and the Proposed Plan.

Comments received during the public comment period indicate that the public generally supports the selected remedy and development of the SCCC Site for commercial/industrial reuse. Oral comments were recorded from attendees at the public meeting held on August 16, 2016. Written comments were received at the public meeting and during the public comment period (July 27 to August 26, 2016) from 11 commenters. The Responsiveness Summary addresses all comments received during the public comment period (see Appendix 5).

PRINCIPAL THREAT WASTES

The NCP establishes the expectation that EPA will use treatment to address the principal threat posed by a site wherever practicable (NCP at 40 CFR Section 300.430(a)(1)(iii)(A)). The principal threat concept is applied to the characterization of source materials at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants, or contaminants and acts as a reservoir for migration of impacts to groundwater, surface water, or air, or acts as a source for direct exposure.

The principal threat wastes at the SCCC Site are the industrial fill with chromite ore processing residue, and the DNAPL liquid waste. Site-specific factors regarding the principal threat wastes, including the extensive nature of the industrial fill waste (38 acres with an average depth of eight feet) and the substantial quantities of DNAPL in the subsurface at numerous locations that cannot be readily identified due to their settling into troughs in a substantial clay layer at depth below the industrial fill, the meadow mat and a sand unit, make treatment technologies impracticable. Accordingly, EPA has determined that it is not practicable to address these principal threat wastes using treatment. Alternative I would not address either of these principal threat wastes. Alternative II would address the DNAPL but not exposure to the industrial fill. After implementation of Alternative III and Alternative IV, principal threat wastes would be effectively covered and contained, protecting human and environmental health.

SELECTED REMEDY

Based upon consideration of the requirements of CERCLA, the results of SCCC Site investigations, the detailed analysis of the alternatives, and the public comments, EPA has determined that Alternative III (Targeted Cap/Cover, Continued DNAPL Recovery in Area 1, Barrier Wall System, DNAPL Recovery in Area 2, Institutional Controls, and Building Demolition) satisfies the requirements of CERCLA Section 121, 42 U.S.C. § 9621, and provides the best balance of tradeoffs among the remedial alternatives with respect to the NCP's nine evaluation criteria at 40 CFR Section 300.430(e)(9). In addition to the remedy components already in place as a result of early actions at the Site, including a fully enclosed perimeter barrier wall system, hydraulic control groundwater extraction and treatment systems, existing surface covers, and stormwater management facilities, this remedy requires the following components:

- Placement of targeted cap/cover in specific locations within Area 1 that are not capped/covered, including stone and vegetative cover areas and wetlands areas. The existing stone cover areas would be overlain by a more permanent cover such as asphalt paving. This alternative would also include repairing the existing covers (e.g., repairing the asphalt) as necessary. Stormwater management enhancements, including wetland restoration, would be incorporated into the remedial design;

- DNAPL recovery in Area 1 and Area 2;

- ICs, such as deed notices, CEA/WRAs, soil management and health and safety deed notice protocols, requirements for vapor barriers installed in any new building construction, and/or other ICs to restrict future use of the SCCC Site to commercial/industrial uses and

prohibit residential use, to prohibit groundwater use in Area 1 and Area 2, and to prevent potential adverse exposures;

- Demolition of the Edison buildings; and
- Continued operation, maintenance, and monitoring (O&M) of remedial components, including the fully enclosed perimeter barrier wall system, hydraulic control groundwater extraction and treatment systems, existing surface covers, and stormwater management facilities.

The rationale for selecting this remedy is as follows:

The selected remedy satisfies the two threshold criteria of overall protection of human health and the environment, and compliance with ARARs (or justifying a waiver). The selected remedy achieves the best combination of the five balancing criteria of the comparative analysis. It addresses all of the RAOs established for the SCCC Site. The placement of additional cap/cover systems provides additional protection to human health and the environment due to the additional reduction in exposure potential and reduction in transport of impacted soil. The release or threat of release of asbestos and lead into the environment is addressed via demolition of the dilapidated Edison buildings.

The environmental benefits of the selected remedy may be enhanced by consideration, during remedy design or implementation, of technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy.

The selected remedy will be designed to reasonably accommodate the commercial/industrial redevelopment plans for the SCCC Site, while at the same time maintaining the environmental protectiveness provided by the remedy. EPA recognizes that redevelopment plans, when finalized, may also require modification to accommodate existing components of the selected remedy. In such cases, the proposed design for any such modification must be reviewed and approved by EPA in advance to ensure that the remedy remains protective of human health and the environment.

The total present cost worth of the selected remedy is $11,246,000. A detailed list of itemized costs for the selected remedy is presented in Table 5-2 of the 2016 FFS Report. The costs estimates are expected to be within +50 to -30 percent of the actual cost of the project.

STATUTORY DETERMINATIONS

Under CERCLA Section 121, 42 U.S.C. § 9621, and the NCP, 40 CFR Section 300.430(f)(1)(ii), the lead agency must select remedies that are protective of human health and the environment, comply with ARARs (unless a waiver is justified), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Section 121(b)(1), 42 U.S.C. § 9621(b)(1), also establishes a preference for remedial actions which employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at a site. For the

reasons discussed below, EPA has determined that the selected remedy meets these statutory requirements.

Protection of Human Health and the Environment

The selected remedy is expected to be protective of human health and the environment. It will meet the RAOs through placement of additional cap/cover systems, DNAPL recovery, ICs, and demolition of the dilapidated Edison buildings.

Compliance with ARARs

The selected remedy invokes a technical impracticability waiver of chemical-specific ARARs in groundwater based on SCCC Site-specific conditions. The selected remedy will comply with the chemical-specific, location-specific, and action-specific ARARs and other criteria, advisories, or guidance for Alternative III presented in Appendix 2, Table 7.

Cost-Effectiveness

A cost-effective remedy is one whose costs are proportional to its overall effectiveness (NCP at 40 CFR Section 300.430(f)(1)(ii)(D)). Overall effectiveness is based on the evaluation of the following: long-term effectiveness and permanence; reduction in toxicity, mobility, or volume through treatment; and short-term effectiveness. Costs for each alternative were evaluated in detail. Capital and annual O&M costs were estimated and used to develop present worth costs. In the present worth costs, annual O&M costs were calculated for the life of the alternative using a seven percent discount rate and a 30-year interval. Based on the comparison of overall effectiveness to cost, the selected remedy meets the statutory requirement that Superfund remedies be cost-effective. The selected remedy is the least costly alternative that will achieve the RAOs. The estimated capital cost of the selected remedy is $4,618,000. The annual O&M cost is $396,000. The present worth cost is $11,246,000.

Utilization of Permanent Solutions and Alternative Treatment Technologies

The selected remedy provides the best balance of tradeoffs among the alternatives with respect to the balancing criteria set forth in the NCP at 40 CFR Section 300.430(f)(1)(i)(B), such that it represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the SCCC Site. The selected remedy will use the existing hydraulic control and groundwater treatment system (chromium reduction, metals precipitation, carbon adsorption, oil separation, and solids management) to permanently treat the contaminated groundwater collected in connection with DNAPL recovery, and ICs, including CEA/WRAs, will remain in effect in perpetuity.

Preference for Treatment as a Principal Element

EPA's statutory preference for treatment of principal threat wastes has been considered in selecting this remedy. The selected remedy does not satisfy the statutory preference for treatment of principal threat waste as a principal element of the remedy. The principal threat wastes at the

SCCC Site are the industrial fill with chromite ore processing residue, and the DNAPL liquid waste. Neither the industrial fill material nor the DNAPL liquid waste are suitable for treatment. Site-specific factors regarding the principal threat wastes, including the extensive nature of the industrial fill waste (38 acres with an average depth of eight feet) and the substantial quantities of DNAPL in the subsurface at numerous locations that cannot be readily identified due to their settling into troughs in a substantial clay layer at depth below the industrial fill, the meadow mat and a sand unit, make treatment technologies impracticable. The selected remedy instead addresses the principal threat wastes through cap/cover systems on the industrial fill materials and recovery and off-site disposal of the DNAPL.

Five-Year Review Requirements

Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure, EPA will conduct a review within five years after the initiation of the remedial action for the SCCC Site to ensure that the remedy is, or will be, protective of human health and the environment.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan identified Alternative III (Targeted Cap/Cover, Continued DNAPL Recovery in Area 1, Barrier Wall System, DNAPL Recovery in Area 2, Institutional Controls, and Building Demolition), as the preferred alternative for the SCCC Site. Upon review of all comments submitted during the public comment period from July 27, 2016, to August 26, 2016, and at the public meeting on August 16, 2016, EPA has determined that no significant changes to the selected remedy, as it was presented in the Proposed Plan, are warranted.

The selected remedy is compatible with the reasonably anticipated future land use of the SCCC Site for commercial/industrial use. As stated in the Proposed Plan, when practicable and cost-effective, the remedial alternative selected in the ROD will be designed to reasonably accommodate the commercial/industrial redevelopment plans underway for Area 1, while at the same time maintaining the environmental protectiveness provided by the remedy. In response to public comments regarding the compatibility of the selected remedy with the current plans for redevelopment of the SCCC Site, EPA has further stated in this ROD that the Agency recognizes that redevelopment plans, when finalized, may also require modification to accommodate existing components of the selected remedy. In such cases, the proposed design for any such modification must be reviewed and approved by EPA in advance to ensure that the remedy remains protective of human health and the environment.

The list of groundwater standards proposed to be waived in the Proposed Plan has been reduced. The final list of groundwater standards being waived is presented in Appendix 2, Table 6 of this ROD.

APPENDIX B

REMEDIAL DESIGN/REMEDIAL ACTION

STATEMENT OF WORK

STANDARD CHLORINE CHEMICAL COMPANY, INC. SUPERFUND SITE

Town of Kearny, Hudson County, State of New Jersey

EPA Region 2

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Purpose of the SOW. This Statement of Work ("SOW") sets forth the procedures and requirements for implementing the Work.

1.2 Structure of the SOW

- Section 2 (Community Involvement) sets forth EPA's and Settling Defendants' ("SDs'") responsibilities for community involvement.
- Section 3 (Remedial Design) sets forth the process for developing the RD, which includes the submission of specified main deliverables.
- Section 4 (Remedial Action) sets forth requirements regarding the completion of the RA, including main deliverables related to completion of the RA.
- Section 5 (Reporting) sets forth SDs' reporting obligations.
- Section 6 (Deliverables) describes the content of the supporting deliverables and the general requirements regarding SDs' submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 7 (Schedules) sets forth the schedule for submitting the main deliverables, specifies the supporting deliverables that must accompany each main deliverable, and sets forth the schedule of milestones regarding the completion of the RA.
- Section 8 (State Participation) addresses State participation.
- Section 9 (References) provides a list of references, including URLs.

1.3 The Scope of the Remedy includes the actions described in the "Selected Remedy" section of the ROD, including: (a) remedy components already in place as a result of early actions at the Site, including a fully enclosed perimeter barrier wall system, hydraulic control groundwater extraction and treatment systems, existing surface covers, and stormwater management facilities; (b) placement of targeted cap/cover in specific locations within Area 1 that are not capped/covered, including stone and vegetative cover areas and wetlands areas and repair of the existing covers (e.g., repairing the asphalt) as necessary, and stormwater management enhancements, including wetland restoration; (c) DNAPL recovery in Area 1 and Area 2; (d) institutional controls ("ICs"), such as deed notices, Classification Exception Areas/Well Restriction Areas ("CEAs/WRAs"), soil management and health and safety deed notice protocols, requirements for vapor barriers installed in any new building construction, and/or other ICs to restrict future use of the Site to commercial/industrial uses and prohibit residential use, to prohibit groundwater use in Area 1 and Area 2, and to prevent potential adverse exposures; (e) demolition of the Thomas A. Edison, Inc. Emark Battery Corporation buildings; and (f) continued operation, maintenance, and monitoring ("O&M") of remedial components, including the

fully enclosed perimeter barrier wall system, hydraulic control groundwater extraction and treatment systems, existing surface covers, and stormwater management facilities.

1.4 The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Consent Decree ("CD"), have the meanings assigned to them in CERCLA, in such regulations, or in the CD, except that the term "Paragraph" or "¶" means a paragraph of the SOW, and the term "Section" means a section of the SOW, unless otherwise stated.

2. COMMUNITY INVOLVEMENT

2.1 Community Involvement Responsibilities

(a) EPA has the lead responsibility for developing and implementing community involvement activities at the Site. Previously during the RI/FFS phase, EPA developed a Community Involvement Plan ("CIP") for the Site. Pursuant to 40 C.F.R. § 300.435(c), EPA will review the existing CIP and determine whether it should be revised to describe further public involvement activities during the Work that are not already addressed or provided for in the existing CIP.

(b) If requested by EPA, SDs shall participate in EPA's community involvement activities, including participation in (1) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification; and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. SDs' support of EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to (1) any Community Advisory Groups; and (2) other entities to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP SDs' responsibilities for community involvement activities. All community involvement activities conducted by SDs at EPA's request are subject to EPA's oversight. Upon EPA's request, SDs shall establish a community information repository at or near the Site to house one copy of the administrative record. SDs may establish an electronic copy of the administrative record at the community information repository.

(c) **SDs' CI Coordinator**. If requested by EPA, SDs shall, within 15 days, designate and notify EPA of SDs' Community Involvement Coordinator ("CI Coordinator"). SDs may hire a contractor for this purpose. SDs' notice must include the name, title, and qualifications of the SDs' CI Coordinator. SDs' CI Coordinator is responsible for providing support regarding EPA's community involvement activities, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries about the Site.

3. REMEDIAL DESIGN

3.1 **RD Work Plan**. SDs shall submit a Remedial Design ("RD") Work Plan ("RDWP") for EPA approval. The RDWP must include:

(a) Plans for implementing all RD activities identified in this SOW, in the RDWP, or required by EPA to be conducted to develop the RD, including any pre-design investigation;

(b) A description of the overall management strategy for performing the RD, including a proposal for phasing of design and construction, if applicable;

(c) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the Remedial Action ("RA") as necessary to implement the Work;

(d) A description of the responsibility and authority of all organizations and key personnel involved with the development of the RD;

(e) Descriptions of any areas requiring clarification and/or anticipated problems (e.g., data gaps);

(f) Descriptions of any applicable permitting requirements and other regulatory requirements;

(g) Descriptions of plans for obtaining access in connection with the Work, such as property acquisition, property leases, and/or easements; and

(h) All supporting deliverables required to accompany the RDWP as specified in the RD Schedule set forth in ¶ 7.2 (RD Schedule).

3.2 SDs shall meet monthly with EPA, and others as directed or determined by EPA, to discuss remedial design issues and to maintain continuity and consistency among remedial and redevelopment activities, unless another frequency is approved by EPA. These meetings may be held by telephone. SDs shall distribute an agenda and list of attendees to all parties prior to each meeting. SDs shall prepare minutes of the meetings and shall distribute the minutes to all parties.

3.3 **Preliminary (30%) RD**. SDs shall submit a Preliminary (30%) RD for EPA's comment. The Preliminary RD must include:

(a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);

(b) Preliminary conceptual drawings and outline of specifications;

(c) Descriptions of permit requirements, if applicable;

(d) A description of how the RA will be implemented in a manner that minimizes environmental impacts in accordance with EPA's *Principles for Greener Cleanups* (Aug. 2009) and EPA Region 2's *Clean and Green Policy* (Mar. 2010);

(e) A description of monitoring and control measures to protect human health and the environment, such as air monitoring and dust suppression, during the RA; and

(f) Any proposed revisions to the RA Schedule that is set forth in ¶ 7.3 (RA Schedule).

3.4 **Pre-final (95%) RD**. SDs shall submit the Pre-final (95%) RD for EPA's comment. The Pre-final RD must be a continuation and expansion of the Preliminary (30%) RD. The Pre-final RD will serve as the approved Final (100%) RD if EPA approves the Pre-final RD without comments. The Pre-final RD must include:

(a) A complete set of construction drawings and specifications that are: (1) certified by a registered professional engineer; (2) suitable for procurement; and (3) follow the Construction Specifications Institute's MasterFormat 2016;

(b) A survey and engineering drawings showing existing Site features, such as elements, property borders, easements, and Site conditions;

(c) Pre-final versions of the same elements and deliverables as are required for the Preliminary (30%) RD;

(d) A specification for photographic documentation of the RA; and

(e) Updates of all supporting deliverables required to accompany the RDWP and the following additional supporting deliverables described in ¶ 6.7 (Supporting Deliverables): Construction Quality Assurance/Quality Control Plan; O&M Plan, O&M Manual; and Institutional Controls Implementation and Assurance Plan.

3.5 **Final (100%) RD**. SDs shall submit the Final (100%) RD for EPA approval if Pre-Final (95%) RD was not approved by EPA. The Final RD must address EPA's comments on the Pre-final RD and must include final versions of all Pre-final RD deliverables.

4. REMEDIAL ACTION

4.1 **RA Work Plan**. SDs shall submit a RA Work Plan ("RAWP") for EPA approval that includes:

(a) A proposed RA Construction Schedule in Gantt chart format;

(b) An updated Health and Safety Plan ("HASP") that covers activities during the RA; and

(c) Plans for satisfying permitting requirements, including obtaining permits for off-Site activity and for satisfying substantive requirements of permits for on-Site activity.

4.2 Meetings and Inspections

(a) **Preconstruction Conference**. SDs shall hold a preconstruction conference with EPA and others as directed or approved by EPA and as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995). SDs shall prepare minutes of the conference and shall distribute the minutes to all parties.

(b) **Periodic Meetings**. During the construction portion of the RA ("RA Construction"), SDs shall meet monthly with EPA, and others as directed or determined by EPA, to discuss RA Construction issues and to maintain continuity and consistency among remedial and redevelopment activities, unless another frequency is approved by EPA. These meetings may be held by telephone. SDs shall distribute an agenda and list of attendees to all parties prior to each meeting. SDs shall prepare minutes of the meetings and shall distribute the minutes to all parties.

(c) **Inspections**

(1) EPA or its representative will conduct periodic inspections of the Work. At EPA's request, the Supervising Contractor or other designee shall accompany EPA or its representative during inspections.

(2) SDs shall provide personal protective equipment needed for EPA personnel and any oversight officials to perform their oversight duties.

(3) Upon notification by EPA of any deficiencies in the RA Construction, SDs shall take all necessary steps to correct the deficiencies and/or bring the RA Construction into compliance with the approved Final RD, any approved design changes, and/or the approved RAWP. If applicable, SDs shall comply with any schedule provided by EPA in its notice of deficiency.

4.3 Emergency Response and Reporting

(a) **Emergency Response and Reporting**. If any event occurs during performance of the Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, SDs shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized EPA officer (as specified in ¶ 4.3(c)) orally; and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the HASP, the Emergency Response Plan, and any other deliverable approved by EPA under the SOW.

(b) **Release Reporting**. Upon the occurrence of any event during performance of the Work that SDs are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community

Right-to-Know Act ("EPCRA"), 42 U.S.C. § 11004, SDs shall immediately notify the authorized EPA officer orally.

(c) The "authorized EPA officer" for purposes of immediate oral notifications and consultations under ¶¶ 4.3(a) and 4.3(b) is the EPA Project Coordinator, the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA Emergency Spill Reporting Hotline at (732) 548-8730 (if neither EPA Project Coordinator is available).

(d) For any event covered by ¶¶ 4.3(a) and 4.3(b), SDs shall: (1) within 14 days after the onset of such event, submit a report to EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.

(e) The reporting requirements under ¶ 4.3 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

4.4 Off-Site Shipments

(a) SDs may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. SDs will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if SDs obtain a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).

(b) SDs may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide notice to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; and (3) the schedule for the shipment. SDs also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. SDs shall provide the notice after the award of the contract for RA construction and before the Waste Material is shipped.

(c) SDs may ship Investigation Derived Waste ("IDW") from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, *EPA's Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the ROD. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an

exemption from RCRA under 40 § C.F.R. 261.4(e) shipped off-Site for treatability studies, are not subject to 40 C.F.R. § 300.440.

4.5 Certification of RA Completion

(a) **RA Completion Inspection**. The RA is "Complete" for purposes of this ¶ 4.5 when it has been fully performed. SDs shall schedule an inspection for the purpose of obtaining EPA's Certification of RA Completion. The inspection must be attended by SDs and EPA and/or their representatives.

(b) **RA Report**. Following the inspection in ¶ 4.5(a), SDs shall submit a RA Report to EPA requesting EPA's Certification of RA Completion. The report must: (1) include certifications by a registered professional engineer and by SD's Project Coordinator that the RA is complete; (2) include as-built drawings signed and stamped by a registered professional engineer; (3) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA's *Close Out Procedures for NPL Sites* guidance (May 2011); and (4) be certified in accordance with ¶ 6.5 (Certification).

(c) If EPA concludes that the RA is not Complete, EPA will so notify SDs. EPA's notice must include a description of any deficiencies. EPA's notice may include a schedule for addressing such deficiencies or may require SDs to submit a schedule for EPA approval. SDs shall perform all activities described in the notice in accordance with the schedule.

(d) If EPA concludes, based on the initial or any subsequent RA Report requesting Certification of RA Completion, that the RA is Complete, EPA will so certify to SDs. This certification will constitute the Certification of RA Completion for purposes of the CD, including Section XVI of the CD (Covenants by Plaintiffs). Certification of RA Completion will not affect SDs' remaining obligations under the CD.

4.6 Periodic Review Support Plan. SDs shall submit the Periodic Review Support Plan ("PRSP") for EPA approval. The PRSP addresses the studies and investigations that SDs shall conduct to support EPA's reviews of whether the RA is protective of human health and the environment in accordance with Section 121(c) of CERCLA, 42 U.S.C. § 9621(c) (also known as "Five-Year Reviews"). SD shall develop the plan in accordance with *Comprehensive Five-Year Review Guidance*, OSWER 9355.7-03B-P (June 2001), and any other relevant Five-Year Review guidance.

4.7 Certification of Work Completion

(a) **Work Completion Inspection**. SDs shall schedule an inspection for the purpose of obtaining EPA's Certification of Work Completion. The inspection must be attended by SDs and EPA and/or their representatives.

(b) **Work Completion Report**. Following the inspection, SDs shall submit a report to EPA requesting EPA's Certification of Work Completion. The report must:

(1) include certifications by a registered professional engineer and by SDs' Project Coordinator that the Work, including all O&M activities, is complete; and (2) be certified in accordance with ¶ 6.5 (Certification). If the RA Report submitted under ¶ 4.5(b) includes all elements required under this ¶ 4.7(b), then the RA Report suffices to satisfy all requirements under this ¶ 4.7(b).

(c) If EPA concludes that the Work is not complete, EPA will so notify SDs. EPA's notice must include a description of the activities that SDs must perform to complete the Work. EPA's notice must include specifications and a schedule for such activities or must require SDs to submit specifications and a schedule for EPA approval. SDs shall perform all activities described in the notice or in the EPA-approved specifications and schedule.

(d) If EPA concludes, based on the initial or any subsequent report requesting Certification of Work Completion, that the Work is complete, EPA will so certify in writing to SDs. Issuance of the Certification of Work Completion does not affect the following continuing obligations: (1) activities under the PRSP (¶ 4.6); (2) obligations under Sections VIII (Property Requirements), XVIII (Access to Information), and XIX (Retention of Records) of the CD; and (3) reimbursement of EPA's Future Response Costs under Section X (Payments for Response Costs) of the CD.

5. REPORTING

5.1 **Progress Reports**. Commencing with the month following lodging of the CD and until EPA approves the RA Completion, SDs shall submit progress reports to EPA on a monthly basis by the 15th day of the following month, or as otherwise requested by EPA. The reports must cover all activities that took place during the prior reporting period, including:

(a) The actions that have been taken toward achieving compliance with the CD;

(b) A summary of all results of sampling, tests, and all other data received or generated by SDs;

(c) A description of all deliverables that SDs submitted to EPA;

(d) A description of all activities relating to RA Construction that are scheduled for the next six weeks;

(e) An updated RA Construction Schedule, together with information regarding percentage of completion, delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;

(f) A description of any modifications to the work plans or other schedules that SDs have proposed or that have been approved by EPA; and

(g) A description of all activities undertaken in support of the CIP during the reporting period and those to be undertaken in the next six weeks.

5.2 **Notice of Progress Report Schedule Changes**. If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 5.1(d), changes, SDs shall notify EPA of such change at least seven days before performance of the activity.

6. DELIVERABLES

6.1 **Applicability**. SDs shall submit deliverables for EPA approval or for EPA comment as specified in the SOW. If neither is specified, the deliverable does not require EPA's approval or comment. Paragraphs 6.2 (In Writing) through 6.4 (Technical Specifications) apply to all deliverables. Paragraph 6.5 (Certification) applies to any deliverable that is required to be certified. Paragraph 6.6 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

6.2 **In Writing**. As provided in ¶ 90 of the CD, all deliverables under this SOW must be in writing unless otherwise specified.

6.3 **General Requirements for Deliverables**. All deliverables must be submitted by the deadlines in the RD Schedule or RA Schedule, as applicable. SDs shall submit all deliverables to EPA in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in ¶ 6.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA Project Coordinator. If any deliverable includes maps, drawings, or other exhibits that are larger than 8.5" by 11", SDs shall also provide EPA with paper copies of such exhibits.

6.4 **Technical Specifications**

(a) Sampling and monitoring data should be submitted in standard regional Electronic Data Deliverable ("EDD") format, which can be found at https://www.epa.gov/superfund/region-2-superfund-electronic-data-submission. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.

(b) Spatial data, including spatially-referenced data and geospatial data, should be submitted: (1) in the ESRI File Geodatabase format and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 ("NAD83") or World Geodetic System 1984 ("WGS84") as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee ("FGDC") Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor ("EME"), complies with these FGDC and EPA metadata requirements and is available at https://www.epa.gov/geospatial/epa-metadata-editor.

(c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult http://www.epa.gov/geospatial for any further available guidance on attribute identification and naming.

(d) Spatial data submitted by SDs does not, and is not intended to, define the boundaries of the Site.

6.5 **Certification**. All deliverables that require compliance with this ¶ 6.5 must be signed by the SDs' Project Coordinator, or other responsible official of SDs, and must contain the following statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

6.6 **Approval of Deliverables**

(a) **Initial Submissions**

(1) After review of any deliverable that is required to be submitted for EPA approval under the CD or the SOW, EPA will: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.

(2) EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

(b) **Resubmissions**. Upon receipt of a notice of disapproval under ¶ 6.6(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 6.6(a), SDs shall, within 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may: (1) approve, in whole or in part, the resubmission; (2) approve the resubmission upon specified conditions; (3) modify the resubmission; (4) disapprove, in whole or in part, the resubmission, requiring SDs to correct the deficiencies; or (5) any combination of the foregoing.

(c) **Implementation**. Upon approval, approval upon conditions, or modification by EPA under ¶¶ 6.6(a) (Initial Submissions) or 6.6(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the CD; and (2) SDs shall take any action required by such deliverable, or portion thereof. The implementation of any non-deficient portion of a deliverable submitted or resubmitted under ¶¶ 6.6(a) or 6.6(b) does not relieve SDs of any liability for stipulated penalties under Section XIV (Stipulated Penalties) of the CD.

6.7 **Supporting Deliverables**. SDs shall submit each of the following supporting deliverables for EPA approval, except as specifically provided. SDs shall develop the deliverables in accordance with all applicable regulations, guidance, and policies (see Section 9 (References)). SDs shall update each of these supporting deliverables as necessary or appropriate during the course of the Work, and/or as requested by EPA.

(a) **Health and Safety Plan**. The HASP describes all activities to be performed to protect on-Site personnel and area residents from physical, chemical, and all other hazards posed by the Work. SDs shall develop the HASP in accordance with EPA's Emergency Responder Health and Safety and Occupational Safety and Health Administration ("OSHA") requirements under 29 C.F.R. §§ 1910 and 1926. The HASP should cover RD activities and should be, as appropriate, updated to cover activities during the RA and updated to cover activities after RA completion. EPA does not approve the HASP, but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment.

(b) **Emergency Response Plan**. The Emergency Response Plan ("ERP") must describe procedures to be used in the event of an accident or emergency at the Site (for example, power outages, water impoundment failure, treatment plant failure, slope failure, etc.). The ERP must include:

(1) Name of the person or entity responsible for responding in the event of an emergency incident;

(2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;

(3) Spill Prevention, Control, and Countermeasures ("SPCC") Plan (if applicable), consistent with the regulations under 40 C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;

(4) Notification activities in accordance with ¶ 4.3(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of EPCRA, 42 U.S.C. § 11004; and

(5) A description of all necessary actions to ensure compliance with ¶ 11 (Emergencies and Releases) of the CD in the event of an occurrence during the performance of the Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.

(c) **Field Sampling Plan**. The Field Sampling Plan ("FSP") addresses all sample collection activities. The FSP must be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. SDs shall develop the FSP in accordance with *Guidance for Conducting Remedial Investigations and Feasibility Studies*, EPA/540/G 89/004 (Oct. 1988).

(d) **Quality Assurance Project Plan**. The Quality Assurance Project Plan ("QAPP") augments the FSP and addresses sample analysis and data handling regarding the Work. The QAPP must include a detailed explanation of SDs' quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance, and monitoring samples. SDs shall develop the QAPP in accordance with *EPA Requirements for Quality Assurance Project Plans*, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006); *Guidance for Quality Assurance Project Plans*, QA/G-5, EPA/240/R 02/009 (Dec. 2002); and *Uniform Federal Policy for Quality Assurance Project Plans*, Parts 1-3, EPA/505/B-04/900A though 900C (Mar. 2005). The QAPP also must include procedures:

(1) To ensure that EPA and its authorized representative have reasonable access to laboratories used by SDs in implementing the CD ("SDs' Labs");

(2) To ensure that SDs' Labs analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring;

(3) To ensure that SDs' Labs perform all analyses using EPA-accepted methods (i.e., the methods documented in *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis*, ILM05.4 (Dec. 2006); *USEPA Contract Laboratory Program Statement of Work for Organic Analysis*, SOM01.2 (amended Apr. 2007); *USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration)*, ISM01.2 (Jan. 2010); and *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods Compendium, SW-846* (July 2014)); or other methods acceptable to EPA;

(4) To ensure that SDs' Labs participate in an EPA-accepted QA/QC program or other program QA/QC acceptable to EPA;

(5) For SDs to provide EPA with notice at least 28 days prior to any sample collection activity;

(6) For SDs to provide split samples and/or duplicate samples to EPA upon request;

(7) For EPA to take any additional samples that it deems necessary;

(8) For EPA to provide to SDs, upon request, split samples and/or duplicate samples in connection with EPA's oversight sampling; and

(9) For SDs to submit to EPA all sampling and tests results and other data in connection with the implementation of the CD.

(e) **Site Wide Monitoring Plan**. The purpose of the Site Wide Monitoring Plan ("SWMP") is to obtain baseline information regarding the extent of contamination in affected media at the Site; to obtain information, through short- and long- term monitoring, about the movement of and changes in contamination throughout the Site, before and during implementation of the RA; to obtain information regarding contamination levels to determine whether the Remedial Action Objectives ("RAOs") are met; and to obtain information to determine whether to perform additional actions, including further Site monitoring. The SWMP must include:

(1) Description of the environmental media to be monitored;

(2) Description of the data collection parameters, including existing and proposed monitoring devices and locations, schedule and frequency of monitoring, analytical parameters to be monitored, and analytical methods employed;

(3) Description of how performance data will be analyzed, interpreted, and reported, and/or other Site-related requirements;

(4) Description of verification sampling procedures;

(5) Description of deliverables that will be generated in connection with monitoring, including sampling schedules, laboratory records, monitoring reports, and monthly and annual reports to EPA and State agencies; and

(6) Description of proposed additional monitoring and data collection actions (such as increases in frequency of monitoring, and/or installation of additional monitoring devices in the affected areas) in the event that results from monitoring devices indicate changed conditions (such as higher than expected concentrations of the contaminants of concern or groundwater contaminant plume movement).

(f) **Construction Quality Assurance/Quality Control Plan ("CQA/QCP")**. The purpose of the Construction Quality Assurance Plan ("CQAP") is to describe planned and systemic activities that provide confidence that the RA Construction will satisfy all plans, specifications, and related requirements, including quality objectives. The purpose of the Construction Quality Control Plan ("CQCP") is to

describe the activities to verify that the RA Construction has satisfied all plans, specifications, and related requirements, including quality objectives. The CQA/QCP must:

(1) Identify, and describe the responsibilities of, the organizations and personnel implementing the CQA/QCP;

(2) Describe the RAOs required to be met to achieve Completion of the RA;

(3) Describe the activities to be performed: (i) to provide confidence that RAOs will be met; and (ii) to determine whether RAOs have been met;

(4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQA/QCP;

(5) Describe industry standards and technical specifications used in implementing the CQA/QCP;

(6) Describe procedures for tracking construction deficiencies from identification through corrective action;

(7) Describe procedures for documenting all CQA/QCP activities; and

(8) Describe procedures for retention of documents and for final storage of documents.

(g) **O&M Plan**. The O&M Plan describes the requirements for inspecting, operating, and maintaining the RA. SDs shall develop the O&M Plan in accordance with *Operation and Maintenance in the Superfund Program*, OSWER 9200.1 37FS, EPA/540/F-01/004 (May 2001). The O&M Plan must include the following additional requirements:

(1) Description of RAOs required to be met to implement the ROD;

(2) Description of activities to be performed: (i) to provide confidence that RAOs will be met; and (ii) to determine whether RAOs have been met;

(3) **O&M Reporting**. Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and submittal of reports to EPA and State agencies;

(4) Description of corrective action in case of systems failure, including: (i) alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to meet the RAOs; (ii) analysis of vulnerability and additional resource requirements should a failure occur; (iii) notification

and reporting requirements should O&M systems fail or be in danger of imminent failure; and (iv) community notification requirements; and

(5) Description of corrective action to be implemented in the event that RAOs are not met; and a schedule for implementing these corrective actions.

(h) **O&M Manual**. The O&M Manual serves as a guide to the purpose and function of the equipment and systems that make up the remedy. SDs shall develop the O&M Manual in accordance with *Operation and Maintenance in the Superfund Program*, OSWER 9200.1 37FS, EPA/540/F-01/004 (May 2001).

(i) **Institutional Controls Implementation and Assurance Plan**. The Institutional Controls Implementation and Assurance Plan ("ICIAP") describes plans to implement, maintain, and enforce the ICs at the Site. SDs shall develop the ICIAP in accordance with *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012), and *Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites*, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012). The ICIAP must include the following additional requirements:

(1) Locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including accurate mapping and geographic information system ("GIS") coordinates of such interests; and

(2) Legal descriptions and survey maps that are prepared according to current American Land Title Association ("ALTA") Survey guidelines and certified by a licensed surveyor.

7. SCHEDULES

7.1 **Applicability and Revisions**. All deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the RD and RA Schedules set forth below. SDs may submit proposed revised RD Schedules or RA Schedules for EPA approval. Upon EPA's approval, the revised RD and/or RA Schedules supersede the RD and RA Schedules set forth below, and any previously-approved RD and/or RA Schedules.

7.2 RD Schedule

	Description of Deliverable, Task	Included Supporting Deliverables	¶ Ref.	Deadline
1	RDWP	HASP and ERP; FSP and QAPP if needed, SWMP	3.1, 6.7	60 days after the Effective Date of the CD
2	Preliminary (30%) RD	None	3.3	90 days after EPA approves RDWP
3	Pre-final (95%) RD	Same as RDWP plus CQA/QCP, O&M Plan, O&M Manual, ICIAP	3.4	90 days after EPA comments on Preliminary (30%) RD
4	Final (100%) RD	Same as Pre-final (95%) RD	3.5	60 days after EPA comments on Pre-final (95%) RD

7.3 RA Schedule

	Description of Deliverable / Task	¶ Ref.	Deadline
1	Award RA contract		75 days after EPA approves Final (100%) RD
2	RAWP	4.1	120 days after EPA approves Final (100%) RD
3	Preconstruction Conference	4.2(a)	14 days after EPA approves RAWP
4	Start of Construction		30 days after EPA approves RAWP or as otherwise set forth in the approved RAWP
5	Completion of Construction	4.5	
6	Inspection of Constructed Remedy	4.5(a)	21 days after completion of construction
7	RA Report	4.5(b)	30 days after EPA determination that shakedown period is complete and remedy is functioning properly and performing as designed
8	Periodic Review Support Plan	4.6	Initial PRSP, 60 days after Approval of RA Report. Subsequent PRSPs, 60 days after EPA issuance of Five-Year Review Report
9	Work Completion Inspection	4.7(a)	
10	Work Completion Report	4.7(b)	

8. STATE PARTICIPATION

8.1 **Copies**. SDs shall, at any time they send a deliverable to EPA, send a copy of such deliverable to the State. EPA will, at any time it sends a notice, authorization, approval, disapproval, or certification to SDs, send a copy of such document to the State.

8.2 **Review and Comment**. The State will have a reasonable opportunity for review and comment prior to:

(a) Any EPA approval or disapproval under ¶ 6.6 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval; and

(b) Any disapproval of, or Certification of RA Completion under ¶ 4.5 (Certification of RA Completion), and any disapproval of, or Certification of Work Completion under ¶ 4.7 (Certification of Work Completion).

9. REFERENCES

9.1 The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in ¶ 9.2:

(a) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).

(b) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).

(c) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G-89/004 (Oct. 1988).

(d) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).

(e) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G-90/001 (Apr.1990).

(f) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).

(g) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).

(h) Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).

(i) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R-92/071A (Nov. 1992).

(j) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. Part 300 (Oct. 1994).

(k) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995).

(l) Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).

(m) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).

(n) Operation and Maintenance in the Superfund Program, OSWER 9200.1-37FS, EPA/540/F-01/004 (May 2001).

(o) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, 540-R-01-007 (June 2001).

(p) Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R-02/009 (Dec. 2002).

(q) Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls (Apr. 2004).

(r) Quality management systems for environmental information and technology programs -- Requirements with guidance for use, ANSI/ASQ E4-2014 (American Society for Quality, February 2014).

(s) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A though 900C (Mar. 2005).

(t) Superfund Community Involvement Handbook, EPA/540/K-05/003 (Apr. 2005).

(u) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).

(v) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006).

(w) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).

(x) USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4 (Dec. 2006).

(y) USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2 (amended Apr. 2007).

(z) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), available at https://www.epa.gov/geospatial and at https://www.epa.gov/sites/production/files/2013-11/documents/21310.pdf.

(aa) Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER 9283.1-33 (June 2009).

(bb) Principles for Greener Cleanups (Aug. 2009), available at https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups.

(cc) USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration), ISM01.2 (Jan. 2010).

(dd) Close Out Procedures for National Priorities List Sites, OSWER 9320.2-22 (May 2011).

(ee) Groundwater Road Map: Recommended Process for Restoring Contaminated Groundwater at Superfund Sites, OSWER 9283.1-34 (July 2011).

(ff) Recommended Evaluation of Institutional Controls: Supplement to the "Comprehensive Five-Year Review Guidance," OSWER 9355.7-18 (Sep. 2011).

(gg) Construction Specifications Institute's MasterFormat 2016, available from https://www.csiresources.org/home.

(hh) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012).

(ii) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012).

(jj) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012).

(kk) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), available at https://response.epa.gov/_healthsafety manual/.

(ll) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).

(mm) Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions, OSWER 9355.0-129 (Nov. 2013).

(nn) EPA Region 2's Clean and Green Policy (Mar. 2010), https://www.epa.gov/sites/production/files/2016-01/documents/r2_clean_and_green_update.pdf.

(oo) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).

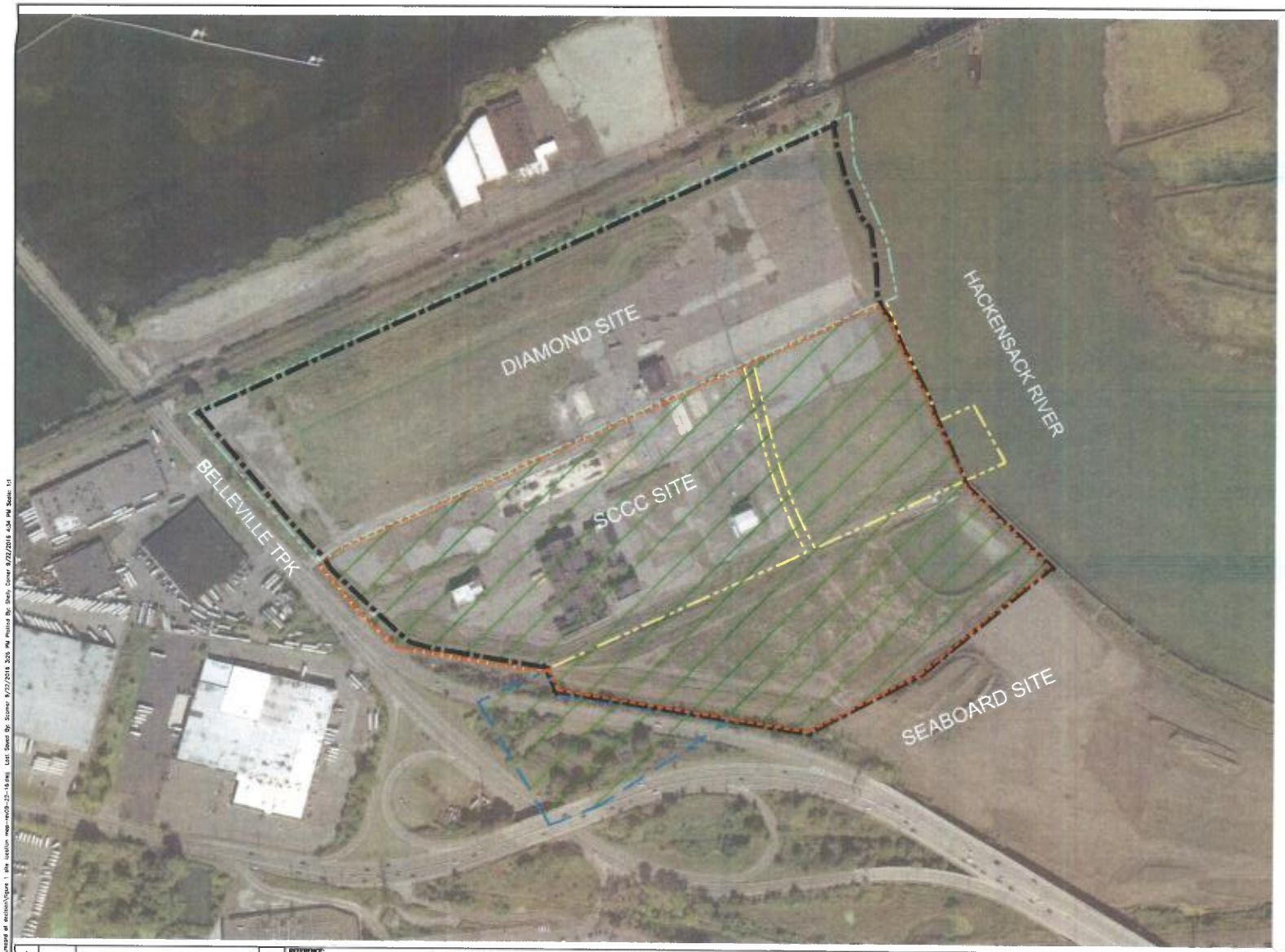
(pp) Test Methods for Evaluating Solid Waste: Physical/Chemical Methods Compendium, SW-846 (July 2014).

9.2 A more complete list may be found on the following EPA Web pages:

- Policy, Guidance, and Laws: https://www.epa.gov/superfund/superfund-policy-guidance-and-laws.
- Test Methods Collections: https://www.epa.gov/fem/methcollectns/htm.

9.3 For any regulation or guidance referenced in the CD or SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after SDs receive notification from EPA of the modification, amendment, or replacement.

APPENDIX C



N

LEGEND

- SCCC SITE PROPERTY BOUNDARY
- DIAMOND SITE PROPERTY BOUNDARY
- AREA 1 LIMITS
- AREA 2 LIMITS
- SCCC SITE AREA
- SLURRY WALL

0 300 600 FEET

PERFORMING PARTIES GROUP

DRWN: SCC DATE: 09/09/16
CHKD: DATE:
APPD: DATE:
SCALE: AS SHOWN

KEY ENVIRONMENTAL INCORPORATED

RECORD OF DECISION
STANDARD CHLORINE CHEMICAL CO., INC. SITE
KEARNY, HUDSON COUNTY, NEW JERSEY

SITE LOCATION MAP

PROJECT NO: 201601-01
FIGURE 1

REV #	DATE	DESCRIPTION	APPD
1			
2			
3			

REFERENCE:
1. PROPERTY BOUNDARY SHOWN HEREON FROM SHEET 1 OF 1 TITLED "SURVEY OF PROPERTY, TAX LOTS 32.02, 46, 47 & 47R, BLOCK 287, TAX LOTS 48, 49, 50, 51, 52 AND 52R, BLOCK 287, TOWN OF KEARNY, HUDSON COUNTY, NEW JERSEY," DATED JULY 1, 2009 (REVISION 2: JULY 29, 2009), PREPARED BY DIVISTRA ASSOCIATES, PC.
2. IMAGE PROVIDED BY GOOGLE EARTH DATED OCTOBER, 2012.

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

J:\Data\Working\record of decision\figure 1 site location map-rev09-23-16.dwg Last Saved By: Scarr 9/23/2016 3:25 PM Plotted By: Shelly Corner 9/23/2016 4:34 PM Scale: 1:1

APPENDIX D

List of Settling Defendants

Apogent Transition Corp.

Beazer East, Inc.

Cooper Industries, LLC

Occidental Chemical Corporation