STATEMENT OF WORK

PRE-REMEDIAL DESIGN AND REMEDIAL DESIGN

LOWER 8.3 MILES OF LOWER PASSAIC RIVER

PART OF THE DIAMOND ALKALI SUPERFUND SITE

Essex and Hudson Counties, State of New Jersey

EPA Region 2

____ 2016

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1. INTRODUCTION

1.1 Purpose of the SOW. This Statement of Work (SOW) sets forth the procedures and requirements for implementing the pre-remedial design and remedial design work for the remedy selected in the Record of Decision (ROD) signed by the U.S. Environmental Protection Agency (EPA) on March 3, 2016 for the lower 8.3 miles of the Lower Passaic River part of the Diamond Alkali Superfund Site. Given the complexity and uncertainty involved with remediating sediment sites, especially at such a large scale, EPA expects to employ an adaptive management approach during the remedial design and implementation of the remedy. Information and experience gained as a result of earlier stages of the remedial design and remedy implementation will inform later stages of the design and implementation. This will allow for appropriate adjustments or modifications to enable efficient and effective remedy implementation, providing a means to address uncertainties promptly and inform specific design decisions.

1.2 Structure of the SOW.

- Section 2 (Community Involvement) sets forth EPA's and Settling Party's responsibilities for community involvement.
- Section 3 (Remedial Design) sets forth the process for developing the Pre-Design Investigation and Remedial Design, which includes the submission of specified primary deliverables.
- Section 4 (Emergency Response, Off-Site Shipments and Reporting) sets forth Settling Party's emergency response, off-site shipments and reporting obligations.
- Section 5 (Deliverables) describes the content of the supporting deliverables and the general requirements regarding Settling Party's submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section 6 (Schedules) sets forth the schedule for submitting the primary deliverables, and sets forth the schedule of milestones regarding the completion of the RD.
- Section 7 (State Participation) addresses State participation.
- Section 8 (References) provides a list of references, including URLs.

1.3 The Scope of the Remedy includes the actions described in Section 12 of the ROD, including the following major components:

(a) An engineered cap will be constructed over the river bottom of the lower 8.3 miles, except in areas where backfill may be placed because all contaminated fine-grained sediments have been removed. The engineered cap will generally consist of two feet of sand and may be armored where necessary to prevent erosion of the sand.

(b) Before the engineered cap is installed, the river will be dredged bank to bank (approximately 3.5 million cubic yards) so that the cap can be placed without increasing the potential for flooding. Depth of dredging is estimated to be 2.5 feet,

except in the 1.7 miles of the federally authorized navigation channel closest to Newark Bay.

(c) The remedy will include sufficient dredging and capping to allow for the continued commercial use of a federally authorized navigation channel in the 1.7 miles of the river closest to Newark Bay and to accommodate reasonably anticipated future recreational use above RM 1.7.

(d) Dredged materials will be barged or pumped to a sediment processing facility in the vicinity of the Lower Passaic River/Newark Bay shoreline for dewatering. Dewatered materials will be transported to permitted treatment facilities and landfills in the United States or Canada for disposal.

(e) Mudflats dredged during implementation of the remedy will be covered with an engineered cap consisting of one foot of sand and one foot of mudflat reconstruction (habitat) substrate.

(f) Institutional controls will be implemented to protect the engineered cap. In addition, New Jersey's existing prohibitions on fish and crab consumption will remain in place and will be enhanced with additional community outreach to encourage greater awareness of the prohibitions until the concentrations of contaminants of concern in fish and crab tissue reach protective concentrations corresponding to remediation goals. EPA will share the data and consult with [redacted] prohibitions on fish and crab consumption advisories can be lifted or adjusted to allow for increased consumption as contaminant levels decline.

(g) Long-term monitoring and maintenance of the engineered cap will be required to ensure its stability and integrity. Long-term monitoring of fish, crab and sediment will also be performed to determine when interim remediation milestones, remediation goals and remedial action objectives are reached. Other monitoring, such as water column sampling, will also be performed.

1.4 Performance Standards

(a) Performance Standards (PS) related to remedy implementation will be developed by EPA and incorporated into the Remedial Design (RD) process. The RD shall be developed to achieve the PS developed by EPA. EPA will consider opinions/suggestions provided by the Settling Party to EPA with respect to PS.

(b) EPA is developing the following PS:

(1) Engineering performance standards, including but not limited to resuspension and productivity.

(2) Quality of life performance standards, including, but not limited to, air quality, odor, noise and lighting.

1.5 The terms used in this SOW that are defined in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), in regulations promulgated under CERCLA, or in the Settlement Agreement and Order on Consent (Settlement Agreement), have the meanings assigned to them in CERCLA, in such regulations, or in the Settlement Agreement, 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 Lower Passaic River and Newark Bay. Pursuant to 40 C.F.R. § 300.435(c), EPA shall 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, Settling Party shall participate in 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 [redacted] Party's 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, (2) any Technical Assistance Grant recipients and their advisors, and (3) other entities to provide them with a reasonable opportunity for review and comment. EPA may describe in its CIP Settling Party's responsibilities for community involvement activities. All community involvement activities conducted by Settling Party at EPA's request are subject to EPA's oversight. Upon EPA's request, Settling Party shall establish a community information repository at or near the Site to house one copy of the administrative record.

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

3. REMEDIAL DESIGN

3.1 Project Management Plan. The purpose of the Project Management Plan is to develop a strategy to complete the Remedial Design (RD) and Remedial Action (RA) successfully, including, but not limited to:

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

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

(c) A description of the responsibility and authority of, and communications strategy among, all organizations and key personnel involved with the development of the RD, including by not limited to meetings between the Settling Party's Project Coordinator and EPA's Project Coordinator;

(d) Baseline schedule for completion of the Work, including a preliminary list of all work plans, tasks and deliverables to be prepared.

The Project Management Plan will be updated periodically to reflect changes in the project status and team members.

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3.2 Pre-Design Investigation. The purpose of the Pre-Design Investigation (PDI) is to gather sufficient information to fully develop the Remedial Design (RD).

(a) **PDI Work Plan.** Settling Party shall submit a PDI Work Plan (PDI WP) for EPA approval. The PDI WP shall describe activities to be conducted by Settling Party to gather sufficient information to fully develop the RD and schedule for completing the individual items. Settling Party shall perform PDI activities including, but not limited to, the following:

(1) Sediment core collection and analysis for chemical, waste, geological and geotechnical characterization, for the purposes of designing the dredging plan and the engineered cap, and developing a plan for dredged material disposal.

(2) Pore water sample collection and chemical analysis for the purpose of designing the engineered cap.

(3) Sub-bottom geophysical and bathymetric surveys for the purpose of designing the dredging plan and the engineered cap.

(4) Physical and chemical water column sampling program to establish a baseline for PS developed by EPA.

(5) Dredge Elutriate Test and other laboratory studies on desorption of

contaminants from solids to assess the potential impacts of dredging on water quality.

(6) Fish migration/spawning study and other surveys necessary to determine fish windows and other restrictions on in-water construction.

(7) Borrow site pre-screening and preliminary borrow material characterization to identify suitable materials for designing the engineered cap.

(8) In-river habitat survey for the purpose of designing habitat replacement measures on the mudflats and any other habitat areas affected by implementation of the selected remedy.

(9) A detailed survey of the bottom of the lower 8.3 miles of the Lower Passaic River for performing pre-construction debris removal and to locate utilities for protection during construction.

(10) A survey and assessment, as it relates to the implementation of the remedy, of the integrity of existing bulkheads, natural shoreline, rip rapped areas and bridge abutments along the lower 8.3 miles of the Lower Passaic River and a determination of the extent of temporary bulkhead installation and other protective measures required for remedy implementation.

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(11) A plan for compliance with Federal and State archeological requirements, including Phase I and II cultural surveys, as required.

(12) The following supporting deliverables described in ¶ 5.7 (Supporting Deliverables) applicable to the PDI: Health and Safety Plan, Field Sampling Plan, Quality Assurance Project Plan.

(b) Following the PDI, Settling Party shall submit a PDI Evaluation Report for EPA comment. This report must include:

(1) Summary of the investigations performed;

(2) Summary of investigation results;

(3) Summary of validated data (i.e., tables and graphics);

(4) Data validation reports and laboratory data reports;

(5) Narrative interpretation of data and results;

(6) Results of statistical and modeling analyses;

(7) Photographs documenting the work conducted;

(8) Conclusions and recommendations for RD, including design parameters and criteria; and

(9) Recommendations for additional data collection or analyses.

(c) EPA may require Settling Party to supplement the PDI Evaluation Report and/or to perform additional pre-design studies.

3.3 **Remedial Design Work Plan**. Settling Party shall submit a Remedial Design (RD) Work Plan (RDWP) for EPA approval. The RDWP must include:

(a) Plans and technical approaches for implementing all RD activities identified in this SOW, in the RDWP, or required by EPA to be conducted to develop the RD;

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

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

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

(e) Description of supporting design calculations and modeling runs to be performed in support of design;

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(f) A plan for identification, screening and selection of disposal sites for Waste Material;

(g) Description of plans for obtaining Congressional action to modify the depths and deauthorize portions of the federally-authorized navigation channel in accordance with the navigation depths included in the selected remedy in the ROD;

(h) Tasks required for implementing institutional controls; and

(i) Descriptions of how the RD and RA will be implemented using the principles specified in the EPA Region 2's Clean and Green Policy.

(j) The Emergency Response Plan described in ¶ 5.7 (Supporting Deliverables).

3.4 Settling Party shall meet regularly with EPA according to time frames identified within the Project Management Plan, or as directed or determined by EPA.

3.5 **Site Wide Monitoring Plan**. Settling Party shall submit a Site Wide Monitoring Plan for EPA comment as described in ¶ 5.7 (Supporting Deliverables).

3.6 **Site Selection and Evaluation.** Settling Party shall identify and select a site or sites for the sediment processing facility.

(a) Settling Party shall submit a Site Selection and Evaluation Work Plan for EPA approval. The work plan will include, but not be limited to the following tasks:

(1) Site(s) selection criteria, identification process and selection process;

(2) Collection of site evaluation data to assess the suitability of the site(s) for use as a sediment processing facility and as required for bidding purposes during contractor selection, including, but not limited to geotechnical, baseline chemical conditions, habitat and cultural resources surveys, topographical survey, and utility service assessment;

(3) Land leasing or acquisition plan.

(b) Following completion of the site selection and evaluation for the sediment processing facility, Settling Party shall submit a Site Selection and Evaluation Report for EPA comment.

3.7 Treatability Studies

(a) Settling Party shall perform Treatability Studies (TS) for the following purposes, unless otherwise agreed to by EPA:

(1) To evaluate enhanced capping technologies, with a focus on constructability and placement techniques, such as the use of additives or amendments (e.g., activated carbon or organoclay) to create a reactive cap or thin-layer capping technologies where conditions are conducive to such approaches;

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(2) To evaluate constructability and placement techniques for habitat substrate on the mudflats and any other habitat areas affected by implementation of the selected remedy.

(b) Settling Party will submit a TS Work Plan (TSWP) for EPA approval. Settling Party shall prepare the TSWP in accordance with EPA's *Guide for Conducting Treatability Studies under CERCLA, Final* (Oct. 1992), as supplemented for RD by the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995).

(c) Following completion of the TS, Settling Party shall submit a TS Evaluation Report for EPA comment.

(d) EPA may require Settling Party to supplement the TS Evaluation Report and/or to perform additional treatability studies.

3.8 Preliminary (30%) RD. Settling Party 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) A basis of design report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);

(c) Preliminary drawings and specifications, including, but not limited to:

(1) An outline of general specifications

(2) Listing of drawings and schematics

(3) Description of the planned O&M requirements

(4) Description of how PDI data will be incorporated into the RD.

(d) Design elements to be addressed include, but are not limited to:

(1) Identification of dredging methods and equipment

(2) Identification of materials handling and sediment dewatering technology for the sediment processing facility

(3) Site layout for sediment processing facility, including transportation

(4) [illegible] DRAFT affected by implementation of the selected remedy;

(5) A plan for debris removal, decontamination and disposal;

(6) Descriptions of permit requirements, if applicable;

(e) A draft schedule for RA activities; and

(f) The following supporting deliverable described in ¶ 5.7 (Supporting Deliverables): Transportation and Off-Site Disposal Plan.

3.9 Intermediate (60%) RD. Settling Party shall submit the Intermediate (60%) RD for EPA's comment. The Intermediate RD must address EPA's comments regarding the Preliminary RD and value engineering study results, if the value engineering study is conducted prior to the Intermediate RD, and include the following:

(a) A revised basis of design report;

(b) Intermediate drawings and specifications, including but not limited to:

(1) Draft specifications

(2) Drawings and schematics

(3) O&M description and cost estimate

(4) Unit price lists for the RA

(5) All relevant PDI data

(c) Design elements to be addressed include, but are not limited to:

(1) Updates of design elements addressed in the Preliminary RD

(2) 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;

(3) A description of how the RA will be implemented consistent with the PS developed by EPA; and

(4) A description of how recontamination of the cap by contaminants of concern due to remedy implementation will be minimized;

(d) An updated draft schedule for RA activities; and

(e) Updates, as necessary, of supporting deliverables described in ¶ 5.7 (Supporting

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3.10 Value Engineering Analysis. Settling party shall implement a value engineering study, to be undertaken following the Preliminary Remedial Design but prior to the Pre-Final Remedial Design. The value engineering study will be conducted in accordance with EPA's *Value Engineering for Fund-Financed Remedial Design and Remedial Action Projects* (OSWER 9355.5-24, April 2006) and *Value Engineering* (OSWER 9355.5-24FS, November 2005). Settling Party shall submit the results of the value engineering study for EPA comment and shall address EPA comments in the Intermediate or Pre-Final RD.

3.11 Pre-Final (95%) RD. Settling Party shall submit the Pre-final (95%) RD for EPA's comment. The Pre-final RD must be a continuation and expansion of the previous design submittal and must address EPA's comments regarding the Intermediate RD and the value engineering study results. 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 2012;

(b) A survey and engineering drawings showing existing features of OU2 of the Site, such as elements, property borders, easements, and site conditions;

(c) Pre-Final versions of the same elements and deliverables as are required for the RD;

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

(e) Updates, as necessary, of the supporting deliverables described in ¶ 5.7 (Supporting Deliverables) previously submitted and the following additional supporting deliverables: Construction Quality Assurance/Quality Control Plan; O&M Plan; and Institutional Controls Implementation and Assurance Plan.

3.12 Final (100%) RD. Settling Party shall submit the Final (100%) RD for EPA approval. 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. EMERGENCY RESPONSE, OFF-SITE SHIPMENTS AND REPORTING

4.1 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 OU2 of the Site and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Settling Party 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 ¶ 4.1(c)) orally; and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plan and any other deliverable approved by EPA under the SOW.

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(b) **Release Reporting**. Upon the occurrence of any event during performance of the Work that Settling Party 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, Settling Party shall immediately notify the authorized EPA officer orally.

(c) The "authorized EPA officer" for purposes of immediate oral notifications and consultations under ¶ 4.1(a) and ¶ 4.1(b) is the EPA Project Coordinator, the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA Emergency Response Unit, Region 2 (if neither EPA Project Coordinator is available).

(d) For any event covered by ¶ 4.1(a) and ¶ 4.1(b), Settling Party 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 ¶ 4.1 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

4.2 Off-Site Shipments

(a) Settling Party may ship hazardous substances, pollutants, and contaminants from OU2 of the Site to an off-Site facility only if it complies with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Settling Party will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Settling Party obtains 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) Settling Party may ship Waste Material from OU2 of the Site to an out-of-state waste management facility only if, prior to any shipment, it provides 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; (3) the schedule for the shipment; and (4) the method of transportation. Settling Party also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the

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state facility.

(c) Settling Party may ship Investigation Derived Waste (IDW) from OU2 of the Site to an off-Site facility only if it complies 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 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

4.3 Progress Reports. Commencing with the month following the Effective Date of the Settlement Agreement and until EPA approves the Final (100%) RD, Settling Party shall submit progress reports to EPA on a quarterly basis, 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 Settlement Agreement;

(b) All results of sampling, tests and all other data received or generated by Settling Party, in an interactive, searchable database (in Excel or Access format). This database will be equivalent in form and function to any database used by the

Settling Party in the development of the RD;

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

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

(e) A description of any modifications to the work plans or other schedules that Settling Party has proposed or that have been approved by EPA; and

(f) A description of all activities undertaken in support of the Community Involvement Plan (CIP) during the reporting period and those to be undertaken in the next reporting period.

4.4 **Notice of Progress Report Schedule Changes**. If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ 4.1(d), changes, Settling Party shall notify EPA of such change at least 7 days before performance of the activity.

4.5 **Periodic Review Support Plan (PRSP)**. Upon EPA request, Settling Party shall submit the PRSP for EPA approval. The PRSP addresses the studies and investigations that Settling Party shall conduct to support EPA's reviews of whether conditions at the Site are 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"). Settling Party 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 guidances.

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5. DELIVERABLES

5.1 **Applicability**. Settling Party 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 5.2 (In Writing) through 5.4 (Technical Specifications) apply to all deliverables. Paragraph 5.5 (Certification) applies to any deliverable that is required to be certified. Paragraph 5.6 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

5.2 **In Writing**. All deliverables under this SOW must be in writing unless otherwise specified.

5.3 **General Requirements for Deliverables.** All deliverables must be submitted by the deadlines in the RD Schedule, as applicable. Settling Party shall submit all deliverables to EPA in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in ¶ 5.4. 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", Settling Party shall also provide EPA with paper copies of such exhibits, upon EPA request.

5.4 Technical Specifications

(a) Sampling and monitoring data should be submitted in standard EPA Region 2 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 by EPA 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://edg.epa.gov/EME/.

(c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult https://www.epa.gov/geospatial/geospatial-policies-and-standards for any

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

5.5 Certification. The Pre-Design Investigation Evaluation Report, the Site Selection and Evaluation Report, the Treatability Study Evaluation Report, and the Final (100%) Remedial Design must be signed by the Settling Party's Project Coordinator, or other responsible official of Settling Party, 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.

5.6 Approval of Deliverables

(a) **Initial Submissions**

(1) After review of any deliverable that is required to be submitted for EPA approval under the Settlement Agreement or the SOW, EPA shall: (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 ¶ 5.6(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 5.6(a), Settling Party 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 Settling Party to correct the deficiencies; or (5) any combination of the foregoing.

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material defect, and the deliverable is disapproved or modified by EPA under Paragraph 5.6(a) or 5.6(b) due to such material defect, then the material defect shall constitute a lack of compliance for purposes of Paragraph 71 of the Settlement Agreement. The provisions of Section XIV (Dispute Resolution) and Section XVI (Stipulated Penalties) of the Settlement Agreement shall govern the accrual and payment of any stipulated penalties regarding Settling Party's submissions under this paragraph.

(d) **Implementation**. Upon approval, approval upon conditions, or modification by EPA under ¶ 5.6(a) (Initial Submissions) or ¶ 5.6(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Settlement Agreement; and (2) Settling Party 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 ¶ 5.6(a) or ¶ 5.6(b) does not relieve Settling Party of any liability for stipulated penalties under Section XVI (Stipulated Penalties) of the Settlement Agreement.

(e) Settling Party may propose modifications to any EPA approved schedule or work plan in writing for review and approval by EPA, outlining the basis for the requested modifications. EPA shall retain the final authority to approve or disapprove modifications to the EPA approved schedules or work plans proposed by Settling Party. The EPA Project Coordinator may authorize minor field

modifications to the work plans, provided that any such modifications are consistent with the SOW and provided further that EPA's approval must be documented in writing which may be in electronic form (e-mail) submitted by Settling Party within 5 days of the field modification.

5.7 **Supporting Deliverables**. Settling Party shall submit each of the following supporting deliverables for EPA approval, except as specifically provided. Settling Party shall develop the deliverables in accordance with all applicable regulations, guidances, and policies (see Section 8 (References)). Settling Party 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 Health and Safety Plan (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. Settling Party 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 PDI and RD activities. 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 [redacted] (for example, damage to utilities, 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 ¶ 4.1(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 the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004; and

(5) A description of all necessary actions to ensure compliance with Paragraph 46 (Emergencies and Releases) of the Settlement Agreement in

the event of an occurrence during the performance of the Work that causes or threatens a release of Waste Material from OU2 of the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.

(c) **Field Sampling Plan**. In accordance with the *Uniform Federal Policy for Quality Assurance Project Plans* cited below, 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. Settling Party 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) addresses sample collection, analysis and data handling regarding the Work. The QAPP must include a detailed explanation of Settling Party's quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance and monitoring samples. Settling Party shall develop the QAPP in accordance with the most current version of the *Uniform Federal Policy for Quality Assurance Project Plans*, Parts 1-3, EPA/505/B-04/900A though 900C (March 2005). The QAPP also must include procedures:

(1) To ensure that analyses, including specific laboratory methods and

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(2) To ensure that EPA and its authorized representative have reasonable access to laboratories used by Settling Party in implementing the Settlement Agreement (Settling Party's Labs);

(3) To ensure that Settling Party's Labs analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring;

(4) To ensure that Settling Party's Labs perform all analyses using the latest version of EPA-accepted methods (e.g., the methods documented in SW-846; 40 CFR Part 136; 40 CFR Part 141; and *USEPA Contract Laboratory Program Statements of Work Organic Superfund Methods Multi-Media, Multi-Concentration* and *Inorganic Superfund Methods Multi-Media, Multi-Concentration*, etc.) or other methods acceptable to EPA. Any modifications to the Contract Laboratory Program, SW-846 or other EPA methods must be submitted to the EPA for approval;

(5) To ensure that either (a) the QAPP is amended and resubmitted to EPA for approval prior to any field sampling event to reflect: updated sampling and analytical methods, new methods for analytical parameters, and new parameters under the Unregulated Contaminant Monitoring Rule or (b) a justification is provided to EPA for approval to utilize the existing QAPP.

(6) To ensure that Settling Party's Labs participate in an EPA-accepted QA/QC program or other program QA/QC acceptable to EPA;

(7) For Settling Party to provide EPA with notice at least 7 days prior to any sample collection activity;

(8) For Settling Party to provide split samples and/or duplicate samples to EPA upon request;

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

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

(11) For Settling Party to submit to EPA all sampling and test results and other data in connection with the implementation of the Settlement Agreement.

(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 OU2 of the Site; to obtain information, through short- and long- term monitoring, about the movement of and changes in contamination throughout OU2 of the Site, before and during implementation of the RA; to obtain information regarding contamination levels to determine whether interim remediation milestones, remediation goals and remedial action objectives are achieved; and to obtain information to determine whether to perform additional actions, including further OU2 Site monitoring. The SWMP must include:

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(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 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) Include a description of the PS developed by EPA;

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

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(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) **Transportation and Off-Site Disposal Plan**. The Transportation and Off-Site Disposal Plan (TODP) describes plans to ensure compliance with ¶ 4.2 (Off-Site Shipments). The TODP must include:

(1) Proposed routes for transportation of Waste Material from the lower 8.3 miles to the sediment processing facility.

(2) Identification of disposal sites for Waste Material;

(3) Proposed routes for off-site shipment of Waste Material;

(4) Identification of communities affected by shipment of Waste Material; and

(5) Description of plans to minimize impacts on affected communities.

(h) **O&M Plan**. The O&M Plan describes the requirements for inspecting, operating, and maintaining the RA. Settling Party 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 activities to be performed: (i) to provide confidence that interim remediation milestones, remediation goals and remedial action objectives will be met; and (ii) to determine whether interim remediation milestones, remediation goals and remedial action objectives have been met;

(2) **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 monthly and annual reports to EPA and State agencies;

(3) 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 achieve interim remediation milestones, remediation goals and remedial action objectives; (ii) analysis of

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

(4) Description of corrective action to be implemented in the event that interim remediation milestones, remediation goals and remedial action objectives are not achieved; and a schedule for implementing these corrective actions.

(i) **Institutional Controls Implementation and Assurance Plan**. The Institutional Controls Implementation and Assurance Plan (ICIAP) describes plans to implement, maintain, and enforce the Institutional Controls (ICs) at OU2 of the Site. Settling Party 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) Institutional controls to protect the engineered cap identified by EPA to be implemented by the appropriate federal and State of New Jersey entities;

(2) Tools and mechanisms to conduct enhanced outreach to increase awareness of New Jersey's prohibitions and advisories on fish and crab consumption;

(3) 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

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

6. SCHEDULES

6.1 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 Schedule set forth below. Settling Party may submit proposed revised RD Schedules for EPA approval. Upon EPA's approval, the revised RD Schedule supersede the RD Schedule set forth below, and any previously-approved RD Schedule.

6.2 RD Schedule

	Description of		
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1	Designate Community Coordinator	2.1(c)	15 days after EPA request
2	Project Management Plan	3.1	90 days after EPA's Authorization to Proceed regarding Supervising Contractor under Settlement Agreement
3	RDWP	3.3	90 days after EPA's Authorization to Proceed regarding Supervising Contractor under Settlement Agreement
4	PDI WP	3.2(a)	60 days after EPA's approval of the RDWP
5	PDI Evaluation Report	3.2(b)	1 year and 180 days after EPA approval of the PDI WP
6	Site Wide Monitoring Plan	3.5	60 days after EPA's approval of the RDWP
7	Site Selection and Evaluation Work Plan	3.6(a)	90 days after EPA's approval of the RDWP
8	Site Selection and Evaluation Report	3.6(b)	180 days after EPA's approval of the Site Selection and Evaluation Work Plan
9	TSWP	3.7(b)	90 days after EPA's approval of the PDI WP
10	TS Evaluation Report	3.7(c)	180 days after EPA's approval of the TSWP
11	Preliminary (30%) RD	3.8	90 days after Settling Party submittal of PDI Evaluation Report

12	Intermediate (60%) RD	3.9	120 days after EPA's comments on the Preliminary RD
13	Value Engineering (VE) Study Results	3.10	90 days after submittal of the Intermediate RD
14	Pre-final (95%) RD	3.11	90 days after EPA's comments on the Intermediate RD and VE Study
15	Final (100%) RD	3.12	60 days after EPA's comments on the Pre-final RD
16	Periodic Review Support Plan	4.5	30 days after EPA request

7. STATE PARTICIPATION

7.1 **Copies**. Settling Party shall, at any time it sends a deliverable to EPA, send a copy of such deliverable to the State. EPA shall, at any time it sends a notice, authorization, approval, disapproval, or certification to Settling Party, send a copy of such document to the State.

7.2 **Review and Comment**. The State will have a reasonable opportunity for review and comment prior to any EPA approval or disapproval under ¶ 5.6 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval.

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8. REFERENCES

8.1 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 three EPA Web pages listed in ¶ 8.2:

(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).

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(o) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, EPA 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, ASQ/ANSI 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 http://www.epa.gov/geospatial/policies.html and http://www.epa.gov/geospatial/docs/National_Geospatial_Data_Policy.pdf.

(aa) Principles for Greener Cleanups (Aug. 2009), available at http://www.epa.gov/oswer/greenercleanups/.

(ab) EPA Region 2 Clean and Green Policy, available at https://www.epa.gov/greenercleanups/epa-region-2-clean-and-green-policy

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

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

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

(af) Construction Specifications Institute's MasterFormat 2012, available from the Construction Specifications Institute, www.csinet.org/masterformat.

(ag) 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).

(ah) 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).

(ai) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), http://www.epaosc.org/_HealthSafetyManual/manual-index.htm.

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

(ak) Contaminated Sediment Remediation Guidance for Hazardous Waste Sites, OSWER 9355.0-85 (December 2005).

(al) Use of Amendments for In Situ Remediation at Superfund Sediment Sites, OSWER 9200.2-128FS (April 2013).

(am) Guidelines for Using Passive Samplers to Monitor Organic Contaminants at Superfund Sediment Sites, OSWER 9200.1-110FS (December 2012).

(an) Using Fish Tissue Data to Monitor Remedy Effectiveness, OSWER 9200.1-77D (July 2008).

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

Laws, Policy, and Guidance http://www.epa.gov/superfund/policy/index.htm

Test Methods Collections http://www.epa.gov/fem/methcollectns.htm

Guidance and Policies Relating to Contaminated Sediment at Superfund Sites: https://www.epa.gov/superfund/superfund-contaminated-sediments-guidance-documents-fact-sheets-and-policies

8.3 For any regulation or guidance referenced in the Settlement Agreement 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 Settling Party receive notification from EPA of the modification, amendment, or replacement.

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