

APPENDIX B

INTERIM REMEDIAL DESIGN/REMEDIAL ACTION

STATEMENT OF WORK

CTS OF ASHEVILLE, INC. SUPERFUND SITE

Asheville, Buncombe County, North Carolina

EPA Region 4

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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 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 primary deliverables.
- Section 4 (Interim Remedial Action) sets forth requirements regarding the completion of the RA, including primary 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 primary deliverables, specifies the supporting deliverables that must accompany each primary 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 Section 2.12 of the Interim Action ROD. The major components of the selected interim remedy include the following:

- Electrical Resistance Heating (ERH) to treat the mixed NAPL and TCE plume in an approximate 1.2 acre area. ERH will address about 47,250 cubic yards (CYs) of saturated material contaminated by NAPL/TCE.
- In-Situ Chemical Oxidation (ISCO) to treat the TCE (only) contamination in the expanded Northern Area (approximately 1.9 acres). The volume of the 1.9 acre expanded treatment area is approximately 161,000 CYs.
- Collection of performance data to demonstrate the effectiveness of the interim remedy in meeting the Remedial Action Objective (RAO), which is a 95% reduction in TCE concentrations.
- Monitoring during remedy implementation to ensure adequate protection of on-site workers and the surrounding community. Groundwater monitoring of TCE in the bedrock aquifer will also be conducted to evaluate the anticipated decreasing concentration trends over time.

- 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) **SDs’ CI Coordinator.** If requested by EPA, SDs shall, within 30 days, designate and notify EPA of SDs’ Community Involvement Coordinator (SDs’ 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.
- (b) EPA has the lead responsibility for developing and implementing community involvement activities at the Site. Previously, EPA developed a Community Involvement Plan (CIP) for the Site. 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, including, if applicable, any Technical Assistance Grant (TAG), any use of the Technical Assistance Services for Communities (TASC) contract, and/or any Technical Assistance Plan (TAP).
- (c) If requested by EPA, SDs shall, through their CI Coordinator, participate in community involvement activities, including participation in the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification. 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, (2) any Technical Assistance Grant recipients and their advisors, and (3) other entities to provide them with a reasonable opportunity for review and comment. SDs are welcome but shall not be required to attend public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. 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.

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;

- (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 Interim 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) Description of any proposed pre-design investigation;
- (g) Description of any proposed treatability study;
- (h) Descriptions of any applicable permitting requirements and other regulatory requirements;
- (i) Description of plans for obtaining access in connection with the Work, such as property acquisition, property leases, and/or easements; and
- (j) The following supporting deliverables described in ¶ 6.7 (Supporting Deliverables): Health and Safety Plan, Emergency Response Plan, Field Sampling Plan and Quality Assurance Project Plan.

3.2 SDs shall meet regularly with EPA to discuss design issues as necessary, as directed or determined by EPA.

3.3 Pre-Design Investigation. The purpose of the Pre-Design Investigation (PDI) is to address data gaps by conducting additional field investigations to the extent necessary to implement the ISCO remedy component in the Northern Area.

- (a) **PDI Work Plan.** If EPA requests, SDs shall submit a PDI Work Plan (PDIWP) for EPA approval. The PDIWP must include:
 - (1) An evaluation and summary of existing data and description of data gaps;
 - (2) A sampling plan including media to be sampled, contaminants or parameters for which sampling will be conducted, location (areal extent and depths), and number of samples; and
 - (3) Cross references to quality assurance/quality control (QA/QC) requirements set forth in the Quality Assurance Project Plan (QAPP) as described in ¶ 6.7(d).

- (b) Following the PDI, SDs shall submit a PDI Evaluation Report. 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, if any;
 - (7) Photographs documenting the work conducted; and
 - (8) Conclusions and recommendations for RD, including design parameters and criteria.
- (c) EPA may require SDs to supplement the PDI Evaluation Report and/or to perform additional pre-design studies.

3.4 Treatability Study

- (a) SDs shall perform a Treatability Study (TS) for the purpose of determining the radius of influence, and amount of oxidant required for the ISCO remedy component in the Northern Area.
- (b) SDs shall submit a TS Work Plan (TSWP) for EPA approval. SDs 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, SDs shall submit a TS Evaluation Report for EPA comment.
- (d) EPA may require SDs to supplement the TS Evaluation Report and/or to perform additional treatability studies.

3.5 Preliminary RD. SDs shall submit a Preliminary RD for EPA's comment for each of the ERH and ISCO interim remedial actions. Each 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 drawings and specifications;
- (c) Descriptions of permit requirements, if applicable;

- (d) Preliminary Operation and Maintenance (O&M) Plan and O&M Manual (ERH only);
- (e) 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);
- (f) A description of monitoring and control measures to protect human health and the environment, such as air monitoring and dust suppression, during the RA;
- (g) Any proposed revisions to the RA Schedule that is set forth in ¶ 7.3 (RA Schedule);
- (h) Updates of all supporting deliverables required to accompany the RDWP and the following additional supporting deliverables described in ¶ 6.7 (Supporting Deliverables): Site Wide Monitoring Plan; Construction Quality Assurance/Quality Control Plan; O&M Plan; and O&M Manual.
- (i) A survey and engineering drawings showing existing Site features, such as elements, property borders, easements, and Site conditions; and
- (j) A specification for photographic documentation of the RA.

3.6 Final RD. SDs shall submit a Final RD for each of the ERH and ISCO interim remedial actions for EPA approval. Each Final RD must address EPA's comments on the Preliminary RD and must include final versions of all Preliminary RD deliverables. Each Final RD shall include 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.

4. INTERIM 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 (or equivalent);
- (b) An updated health and safety plan that covers activities during the RA; and
- (c) Plans for satisfying any needed 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 regularly with EPA, and others as directed or determined by EPA, to discuss construction issues. 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 shall conduct periodic inspections or have an on-site presence during the Work. At EPA's request, the Supervising Contractor or other designee shall accompany EPA or its representative during inspections.
 - (2) 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 that 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 Health and Safety Plan, 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 Superfund Emergency Response, Removal and Prevention Branch, Region 4 (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; (3) the schedule for the shipment; and (4) the method of transportation. 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 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

4.5 RA Construction Completion for ERH and ISCO

- (a) For purposes of this ¶ 4.5:
 - (1) "RA Construction" comprises, for any RA that involves the construction and operation of a system to achieve Performance Standards (for example,

groundwater or surface water restoration remedies), the construction of such system and the performance of all activities necessary for the system to function properly and as designed.

- (2) ERH and ISCO shall be addressed separately.
- (b) **Inspection of Constructed Remedy.** SDs shall schedule an inspection to review the construction and operation of the system and to review whether the system is functioning properly and as designed. The inspection must be attended by SDs and EPA and/or their representatives. A re-inspection must be conducted if requested by EPA.
- (c) **Shakedown Period.** There shall be a shakedown period for EPA to review whether the remedy is functioning properly and performing as designed. SDs shall provide such information as EPA requests for such review.
- (d) **RA Report.** Following the shakedown period, SDs shall submit an “RA Report” requesting EPA’s determination that RA Construction has been completed. The RA Report must: (1) include statements by a registered professional engineer and by SDs’ Project Coordinator that construction of the system is complete and that the system is functioning properly and as designed; (2) include a demonstration, and supporting documentation, that construction of the system is complete and that the system is functioning properly and as designed; (3) include as-built drawings signed and stamped by a registered professional engineer; (4) be prepared in accordance with Chapter 2 (Remedial Action Completion) of EPA’s *Close Out Procedures for NPL Sites* guidance (May 2011); and (5) be certified in accordance with ¶ 6.5 (Certification).
- (e) If EPA determines that RA Construction is not complete, EPA shall so notify SDs. EPA’s notice must include a description of, and schedule for, the activities that SDs must perform to complete RA Construction. EPA’s notice may include a schedule for completion of such activities or may require SDs to submit a proposed schedule for EPA approval. SDs shall perform all activities described in the EPA notice in accordance with the schedule.
- (f) If EPA determines, based on the initial or any subsequent RA Report, that RA Construction is complete, EPA shall so notify SDs.

4.6 Certification of RA Completion for ERH and ISCO

- (a) **RA Completion.** RA is “complete” for purposes of this ¶4.6 when it has been fully performed and the Performance Standards have been achieved.
- (b) **Monitoring Reports.** SDs shall submit a separate Monitoring Report to EPA requesting EPA’s Certification of RA Completion for each of the ERH and ISCO interim remedial actions. Each report must: (1) include certifications by a registered professional engineer and by SD’s Project Coordinator that the RA is complete; (2) be prepared in accordance with Chapter 2 (Remedial Action

Completion) of EPA's *Close Out Procedures for NPL Sites* guidance (May 2011); (3) contain monitoring data to demonstrate that Performance Standards have been achieved; and (4) be certified in accordance with ¶ 6.5 (Certification).

- (c) If EPA concludes that the RA is not Complete, EPA shall 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 Monitoring Report requesting Certification of RA Completion, that the RA is Complete, EPA shall so certify to SDs. This certification will constitute the Certification of RA Completion for purposes of the CD, including Section XV of the CD (Covenants by Plaintiff). Certification of RA Completion will not affect SDs' remaining obligations under the CD.

4.7 Periodic Review Support Plan (PRSP). SDs shall submit the 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"). SDs 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.

4.8 Certification of Work Completion

- (a) **Work Completion Inspection.** SDs shall schedule an inspection for the purpose of obtaining EPA's Certification of Work Completion for each of the ERH and ISCO interim remedial actions. Each inspection must be attended by SDs and EPA and/or their representatives.
- (b) **Work Completion Report.** Following each 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 Monitoring Report submitted under ¶ 4.6(a) includes all elements required under this ¶ 4.8(b), then the Monitoring Report suffices to satisfy all requirements under this ¶ 4.8(b).
- (c) If EPA concludes that the Work is not complete, EPA shall 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 shall so certify in writing to SDs. Issuance of the Certification of Work Completion does not affect the following continuing obligations: (1) activities under the Periodic Review Support Plan; (2) obligations under Sections VIII (Property Requirements), XIX (Retention of Records), and XVIII (Access to Information) of the CD; (3) Institutional Controls obligations; and (4) 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 Construction Completion, SDs shall submit progress reports to EPA on a monthly 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 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 Community Involvement Plan (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 7 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 ¶ 85 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. 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://edg.epa.gov/EME/>.

(c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult <http://www.epa.gov/geospatial/geospatial-policies-and-standards> 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 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) submission(s) of previous deliverables 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, guidances, 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 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. 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 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 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 through 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); and *USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration)*, ISM01.2 (Jan. 2010)) 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 14 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 Performance Standards (PS) are achieved; 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 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 PS required to be met to achieve Completion of the RA;
 - (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;
 - (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 PS required to be met to implement the ROD;
 - (2) Description of activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS 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 monthly and annual 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 achieve PS;
 - (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 PS are not achieved; 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).

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	¶ Ref.	Deadline
1	RDWP (includes HASP, ERP, FSP and QAPP)	3.1	30 days after EPA's Authorization to Proceed regarding Supervising Contractor under CD ¶ 9.c
2	ISCO PDIWP	3.3(a)	30 days after EPA's Authorization to Proceed regarding Supervising Contractor under CD ¶ 9.c
3	ISCO PDI Evaluation Report	3.3(b)	Per approved schedule in PDIWP
4	ISCO TSWP	3.4(b)	Per approved schedule in PDIWP
5	ISCO TS Evaluation Report	3.4(c)	Per approved schedule in PDIWP
6	Preliminary ERH RD	3.5, 3.3(a)	105 days after EPA approval of Final RDWP
7	Final ERH RD	3.6	45 days after EPA comments on Preliminary ERH RD
8	Preliminary ISCO RD	3.5, 3.3(a)	45 days after EPA approval of ERH Monitoring Report
9	Final ISCO RD	3.6	30 days after EPA comments on Preliminary ISCO RD

7.3 RA Schedule

	Description of Deliverable / Task	¶ Ref.	Deadline
1	ERH RAWP	4.1	30 days after EPA Notice of Authorization to Proceed with RA
2	ERH Pre-construction conference	4.2(a)	30 days after EPA approval of ERH RAWP
3	Start of ERH RA Construction	4.5(a)(1)	45 days after EPA approval of ERH RAWP
4	ERH inspection of constructed remedy	4.5(b)	30 days after construction completion
5	ERH RA Report	4.5(d)	60 days after inspection of constructed remedy
6	ERH Monitoring Report	4.6(b)	30 days after RA completion
7	ISCO RA Work Plan	4.1	30 days after EPA Notice of Authorization to Proceed with ISCO RA
8	ISCO Pre-construction conference	4.2(a)	30 days after EPA approval of ISCO RAWP
9	Start of ISCO RA Construction	4.5(a)(1)	45 days after EPA approval of ISCO RAWP
10	ISCO inspection of constructed remedy	4.5(b)	30 days after construction completion
11	ISCO RA Report	4.5(d)	60 days after inspection of constructed remedy
12	ISCO Monitoring Report	4.6(a)	30 days after RA completion
13	Work Completion Inspection	4.8(a)	30 days after completion of all Work (aside from the Work Completion Inspection and the Work Completion Report)
14	Work Completion Report	4.8(b)	30 days after Work Completion Inspection
15	Periodic Review Support Plan	4.7	Five years after start of RA construction

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 shall, 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 approval or disapproval of the Construction Phase under ¶ 4.5 (RA Construction Completion), any disapproval of, or Certification of RA Completion under ¶ 4.6 (Certification of RA Completion), and any disapproval of, or Certification of Work Completion under ¶ 4.8 (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) Quality management systems for environmental information and technology programs -- Requirements with guidance for use, ASQ/ANSI E4:2014 (American Society for Quality, February 2014).
- (r) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A through 900C (Mar. 2005).
- (s) Superfund Community Involvement Handbook, SEMS 100000070 (January 2016) available at <http://www.epa.gov/superfund/community-involvement-tools-and-resources>.
- (t) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).
- (u) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006).
- (v) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).
- (w) USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4 (Dec. 2006).
- (x) USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2 (amended Apr. 2007).
- (y) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), available at <http://www.epa.gov/geospatial/geospatial-policies-and-standards> and <http://www.epa.gov/geospatial/epa-national-geospatial-data-policy>.
- (z) Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER 9283.1-33 (June 2009).

- (aa) Principles for Greener Cleanups (Aug. 2009), available at <http://www.epa.gov/greenercleanups/epa-principles-greener-cleanups>.
- (bb) Providing Communities with Opportunities for Independent Technical Assistance in Superfund Settlements, Interim (Sep. 2009).
- (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) Construction Specifications Institute's MasterFormat 2012, available from the Construction Specifications Institute, <http://www.csinet.org/masterformat>.
- (gg) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), http://www.epaosc.org/_HealthSafetyManual/manual-index.htm.
- (hh) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).
- (ii) Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions, OSWER 9355.0-129 (Nov. 2013).
- (jj) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).

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

Laws, Policy, and Guidance: <http://www.epa.gov/superfund/superfund-policy-guidance-and-laws>

Test Methods Collections: <http://www.epa.gov/measurements/collection-methods>

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.