

APPENDIX B
STATEMENT OF WORK FOR REMEDIAL DESIGN
AT THE TITTABAWASSEE RIVER DIOXIN SPILL SITE IN MICHIGAN

I. PURPOSE

This Statement of Work (SOW) sets forth the requirements for conducting a Remedial Design (RD) for any Record of Decision (ROD) at the Tittabawassee River Dioxin Spill Site (Site). No remedies have yet been selected, nor RODs issued by the United States Environmental Protection Agency (EPA) for the Site. However, a ROD or RODs are expected to be issued in the future. This SOW addresses only the RD for any such future RODs. The Respondent, in conjunction with EPA, will develop the RD consistent with any such RODs, the Administrative Order on Consent (AOC) to which this SOW is attached, and EPA's Superfund Remedial Design and Remedial Action Guidance (OSWER Directive 9355.0-4A) for designing remedial action and any additional guidance provided by EPA. The AOC and SOW do not require implementation of the remedy.

II. REMEDIAL DESIGN

The Respondent will undertake the RD as set forth herein. The RD will address the timing and sequencing of the selected remedial actions. The objectives of the response actions at the Site are expected to be to protect public health, welfare and the environment and to comply with applicable federal and state laws.

A. Introduction

As needed and determined by EPA, the RD will consist of five phases: (1) pre-design planning; (2) pre-design investigation; (3) pre-design reporting; (4) remedial design planning; and (5) preparation of remedial design documents. The work to be performed in each of these phases is described below.

In accordance with the Schedule in Section III of this SOW, the Respondent shall submit all documents or deliverables required as part of this SOW to the EPA, with a copy(ies) to the Michigan Department of Environmental Quality (MDEQ), for review and approval in accordance with Section X of the AOC.

This SOW is intended to achieve an expedited, cost-effective RD that builds on prior work using iterative approaches, is protective of human health and the environment, is consistent with the National Contingency Plan, and complies with the ROD. At EPA's discretion, the parties will meet and confer and seek to anticipate and resolve key issues in advance of document development and completion. If the ROD specifies that pre-design work will be required, the results may be used to establish or refine performance expectations and goals. The RD will be conducted so pertinent information will be taken into account as it becomes available.

The five RD phases are discussed below in subsections B through F.

B. Phase I - Pre-Design Planning

The Respondent shall submit a draft Pre-Design Investigation Work Plan (PDI Work Plan) that shall discuss the objectives of each component of the PDI; the minimum information needed to meet the objectives; how each component of the PDI will be addressed; identify the phases, tasks and sequencing necessary to complete the PDI; and provide an overall management strategy for completion of such tasks. The PDI Work Plan will also include a project schedule for major activities and submissions. The plan will document the responsibility and authority of the entities and key personnel involved in the PDI.

The parties intend the PDI work to be conducted in a flexible manner, to most efficiently meet the objectives of the study. To the extent appropriate, the planning document will incorporate elements of dynamic field activities. This approach will be used to streamline activities with real-time data and real-time decisions. This approach, sometimes called the Triad approach, involves systematic planning, a dynamic work plan strategy, and real-time measurement technologies. Dynamic field activities, if used, will be conducted consistent with OSWER No. 9200.1-40, *Using Dynamic Field Activities for On-Site Decision Making: A Guide for Project Managers*.

The PDI Work Plan shall include the following supporting plans:

- **Quality Assurance Project Plan (QAPP)**

The Respondent shall prepare a QAPP that covers sample analysis and data handling for samples collected during the PDI, based on the AOC and guidance provided by EPA. The Respondent shall prepare the QAPP in accordance with "EPA Requirements of Quality Assurance Project Plans (QA/R-5)" (EPA/240/B-01/003, March 2001) and "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-02/009, December 2002). The QAPP may include Field-Based Analytical Methods, if appropriate and scientifically defensible.

The Respondent shall demonstrate, in advance to EPA's satisfaction, that each laboratory it may use is qualified to conduct the proposed work. This includes use of methods and analytical protocols for the chemicals of concern in the media sampled within detection and quantification limits consistent with both QA/QC procedures and DQOs approved in the QAPP. The laboratory must have and follow an approved QA program. If a laboratory not in the Contract Laboratory Program is selected, methods consistent with CLP methods that would be used at the Site for the purposes proposed and QA/QC procedures approved by EPA shall be used. The Respondent shall only use laboratories which have a documented Quality Assurance Program which complies with ANSI/ASQC E-4 1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995) and "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01-002, March 2001) or equivalent documentation as determined by EPA.

Upon request by EPA, the Respondent shall have its laboratory analyze samples submitted by EPA for quality assurance monitoring. The Respondent shall provide EPA with the QA/QC

procedures followed by all sampling teams and laboratories performing data collection and/or analysis. The Respondent shall also ensure the provision of analytical tracking information consistent with OSWER Directive No. 9240.0-2B, *Extending the Tracking of Analytical Services to PRP-Lead Superfund Sites*.

The Respondent shall participate in a pre-QAPP meeting or conference call with EPA. The purpose of this meeting or conference call is to discuss QAPP requirements and obtain any clarification needed to prepare the QAPP.

- **Health and Safety Plan**

The Respondent shall prepare a Health and Safety Plan (HSP). The HSP shall conform to the Respondent's health and safety program and comply with the Occupational Safety and Health Administration (OSHA) regulations and protocols outlined in 29 C.F.R. Part 1910. The HSP shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992). The HSP shall include the 11 elements described in the RI/FS Guidance such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and Site control. EPA does not "approve" the Respondent's HSP, but rather EPA reviews it to ensure that all the necessary elements are included, and that the plan provides for the protection of human health and the environment, and after that review provides comments as may be necessary and appropriate. The safety plan must, at a minimum, follow the EPA's guidance document *Standard Operating Safety Guides* (Publication 9285.1-03, PB92-963414, June 1992).

C. Phase II - Pre-Design Investigation

The Respondent will conduct the PDI work in accordance with the final PDI Work Plan, this SOW and AOC. At any time during the work, if information becomes available that may indicate modifications to the PDI Work Plan may be needed to meet the study objectives, the parties shall confer as soon as possible to attempt to agree on the required changes. Any modifications will be made in accordance with Paragraph 30 of the AOC.

D. Phase III - Pre-Design Reporting

In accordance with the schedule in Section III of this SOW, the Respondent will submit a technical memorandum summarizing the findings of the PDI to EPA and MDEQ. Comments on the technical memorandum will be addressed via the Remedial Design Work Plan and in the Remedial Design documents, after EPA authorizes Respondent to proceed with RD pursuant to Task E and F. At a minimum, the technical memorandum will include:

- A summary of the work performed;
- Results of all tests;
- Current Site conditions; and

- Recommendations that may affect the RD or implementation of the remedy.

E. Phase IV - Remedial Design Planning

In accordance with the schedule in Section III of this SOW, the Respondent will submit a draft Remedial Design Work Plan (RD Work Plan) to EPA and MDEQ. The RD Work Plan will discuss how each component of the RD will be addressed; identify the phases, tasks and sequencing necessary to complete the RD; and provide an overall management strategy for completion of such tasks. The RD Work Plan will also include a project schedule for major design activities and submissions. The plan will document the responsibility and authority of the entities and key personnel involved in the RD.

F. Phase V - Preparation of Remedial Design Documents

The goal of Phase V is to develop a technical package (or packages) with a complete remedial design (which may include performance specifications) that addresses all elements of the remedy selected in the ROD. The Respondent may submit more than one set of design submittals reflecting different components of the remedial action. All design plans and specifications will be developed consistent with EPA's Superfund Remedial Design and Remedial Action Guidance (OSWER Directive 9355.0-4A). Respondent will meet regularly with EPA and MDEQ to discuss development of the design documents.

The Preliminary and Final Design Documents will be submitted as set forth in the schedule in Section III of this SOW. At EPA's discretion, Intermediate Design Documents may also be required, on a schedule to be developed in the RD Work Plan 88888.

1. Preliminary Design Documents

The Preliminary Design Documents will include or discuss the following:

- Preliminary plans, drawings and sketches, including design calculations;
- Results of studies and additional field sampling and analysis, if any, not discussed in previous submissions;
- Design assumptions and parameters, including design restrictions, process performance criteria, appropriate unit processes for the treatment train(s), and expected removal or treatment efficiencies for both the process and waste (concentration and volume), as applicable;
- Proposed cleanup verification methods, including compliance with Applicable and Relevant and Appropriate Requirements (ARARs);
- Outline Construction Quality Assurance Plan (CQAP);
- Outline of required specifications;

- Proposed siting/locations of processes/construction activities;
- Real estate, easement, and substantive permit equivalency (or permit) requirements;
- Expected long-term monitoring and operation requirements; and
- Preliminary construction schedule, including contracting strategy.

2. Intermediate Design

If EPA requires an Intermediate Design phase, Respondent shall submit the Intermediate Design when the design effort is approximately 60 % complete. The Intermediate Design shall fully address all comments made to the preceding design submittal. The Intermediate Design submittal shall include those elements listed for the Preliminary Design, as well as, the following:

- Draft Performance Standard Verification Plan; and
- Draft Construction Quality Assurance Plan.

3. Final Design Documents

The Final Design Documents will build on those elements listed for the Preliminary Design Documents, and will address comments on the Preliminary or Intermediate Design provided by EPA. The Final Design will also include¹:

- Final Performance Standard Verification Plan;
- Reproducible drawings and specifications suitable for bid advertisement;
- CQAP which describes the Site specific components of the quality assurance program which shall ensure that the completed project meets or exceeds all design criteria, plans, and specifications. The CQAP shall contain, at a minimum, the following elements:
 - Responsibilities and authorities of all organizations and key personnel involved in the design and construction of the Remedial Action
 - .Qualifications of a Quality Assurance Official to demonstrate he possesses the training and experience necessary to fulfill his identified responsibilities
 - Protocols for sampling and testing to monitor construction of the remedial action;

¹ It is expected that the Final Design can support a revised Capital and Operation and Maintenance Cost Estimate that may be requested by EPA separately.

- Identification of proposed quality assurance sampling activities including the sample size, locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance reports, and final documentation; and
- Reporting requirements for CQAP activities, including such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation.
- Draft Operation, Maintenance and Monitoring Plan (OMMP)²;
- Draft Institutional Control (IC) Plan². ICs will be needed to restrict uses of areas at the Site where on-site hazardous substances remain above levels that allow for unlimited used and unrestricted exposure. ICs may also be necessary to prevent interference with remedy components. A description of EPA's IC initiative may be found in "Strategy to Ensure Institutional Control Implementation at Superfund Sites," OSWER No. 9355.0-106 (2004), <http://www.epa.gov/superfund/action/ic/strategy.htm>. The IC Plan shall include the following:
 - Map of Expected Restricted Areas: Provide map(s) that identify the expected boundaries of the restricted areas (e.g., areas that will require a cover or cap; area of groundwater contamination that exceeds performance standards), boundaries of areas covered by existing ICs (if any), boundaries of the Site, streets, easements, encumbrances, property ownership, assessor's parcel number or other recorded plat or survey information;
 - Survey of unrestricted areas: Provide a survey of any areas that may be available for unrestricted use and unlimited access;
 - GIS Information: Provide Geographic Information System (GIS) coordinates that shows the expected boundaries of restricted areas, areas covered by existing ICs (if any), boundaries of the Site, easements and other encumbrances. Identify the accuracy of the coordinates (i.e. within 0.01 feet). Please format the coordinates of the restricted areas, areas covered by existing ICs and Site boundaries into an ESRI polygon-shape file. The shape file shall be projected into the UTM, NAD 83 projection system (or other system specified by EPA). Please identify the UTM zone. Provide an attribute name in the shape file for each polygon submitted. For example: "site boundary", "no restrictions", "recreational only", "industrial only";
 - Documentation of Existing Controls: If any ICs currently exist, provide documentation of the ICs and an assessment of those controls. Discuss whether existing controls achieve the IC objectives for the Site.

² The draft OMMP and IC Plan will be finalized following completion of remedial construction. However, certain work, such as well closure, may be conducted in advance of the final OMMP, following EPA's written direction.

- Recommendations: Propose ICs that will ensure that the use restrictions are correctly implemented, are maintained and will be protective in the short term and the long term. Propose controls for remaining areas that do not support unlimited use and unrestricted exposure but are not covered by existing controls. Include a title commitment for any proposed proprietary control. Propose subrogation agreements for any encumbrance that negatively impacts restricted areas. Include a draft restrictive covenant and environmental easement that is enforceable under the laws of Michigan and that prohibits interference of the soil cover and underlying soils on the site and prohibits groundwater use until performance standards are met. Demonstrate that the proposed signer of the restrictive covenant and easement currently owns the property. Demonstrate that the proposed restrictive covenant and easement is free and clear of prior liens and encumbrances via a current title insurance commitment or other evidence of title acceptable to EPA.
- Propose a schedule for implementation of the ICs after review and approval;
- Propose a monitoring plan to ensure that ICs are maintained, complied with in the short term and in the long term, and remain in place. The monitoring plan must include a schedule and an annual certification to EPA that ICs are in place and remain effective.
- Propose a schedule for the construction and implementation of the Remedial Action which identifies timing for initiation and completion of all critical path tasks. The final project schedule submitted as part of the Final Design shall include specific dates for completion of the project and major milestones.; and
- The following supporting plans (which may build upon the plans developed for the PDI):
 - *Health and Safety Plan (HSP)*
The final Remedial Action HSP will be submitted prior to the start of construction, in accordance with the approved construction schedule.
 - *Contingency Plan*
The final Contingency Plan will be submitted prior to the start of construction, in accordance with the approved construction schedule. The Contingency Plan will include, at a minimum, the following:
 - Name of the person or entity responsible for responding in the event of emergency incident;
 - Plan and date to meet with the local community, including local, State and Federal agencies involved in the remedial action, as well as local emergency squads and hospitals; and
 - First-aid information.

III. SUMMARY OF PRELIMINARY PROJECT SCHEDULE

DELIVERABLE/MILESTONE	DUE DATE
Draft PDI Work Plan	Due 30 days after EPA's signature of a ROD at the Site requiring a PDI.
Final PDI Work Plan	Due 30 days after receipt of EPA's direction to modify pursuant to Section X of the AOC.
PDI Technical Memorandum	In accordance with the schedule in the final PDI Work Plan.
Draft Remedial Design Work Plan	Due 30 days after EPA's signature of a ROD at the Site not requiring a PDI, or in accordance with the schedule in the final PDI Work Plan, whichever is later.
Final Remedial Design Work Plan	Due 30 days after receipt of EPA's direction to modify pursuant to Section X of the AOC.
Preliminary Design Documents	In accordance with the schedule in the final RD Work Plan.
Final Design Documents	In accordance with the schedule in the final RD Work Plan.
Progress Reports	On the 10 th day of each month or the first business day after the 10 th of the month commencing 30 days after EPA's signature of a ROD.