

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF ILLINOIS
BENTON DIVISION

UNITED STATES OF AMERICA and)
STATE OF ILLINOIS,)
)
)
Plaintiffs,)
)
v.) Civil Action No. 3:23-cv-01934
)
)
GREAT LAKES SYNERGY CORPORATION,)
)
)
Defendant.)

CONSENT DECREE

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I. BACKGROUND

A. The United States of America (“United States”) on behalf of (a) the Secretary of the Department of the Interior (“DOI”), acting through the U.S. Fish and Wildlife Service (“FWS”), and (b) the Administrator of the United States Environmental Protection Agency (“EPA”), and the State of Illinois (the “State”) (collectively, the “Plaintiffs”) filed a complaint in this matter against Great Lakes Synergy Corporation (“Settling Defendant”) pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”), 42 U.S.C. §§ 9606 and 9607.

B. The Plaintiffs in their complaint seek, *inter alia*: (1) reimbursement of costs incurred and to be incurred by DOI, EPA, and the State for response actions at Area 7 of the Additional and Uncharacterized Sites Operable Unit (“Area 7 Pesticides Site” or the “Site”) at the Crab Orchard National Wildlife Refuge (the “Refuge”) National Priorities List Site located near Marion, Illinois, together with accrued interest; and (2) performance of response actions by the Settling Defendant at the Site consistent with the National Contingency Plan (“NCP”), 40 C.F.R. Part 300.

C. During World War II, the Illinois Ordnance Plant was located on a portion of the area now occupied by the Crab Orchard National Wildlife Refuge. In 1947, Congress established the Refuge, which encompasses over 40,000 acres located primarily in Williamson County, near Marion, Illinois. The enabling legislation assigned DOI, through FWS, the responsibility of managing the area as a national wildlife refuge, for the conservation of wildlife and development of agricultural, recreational, and industrial purposes. Public Law 80-361.

D. Pursuant to CERCLA Section 105, 42 U.S.C. § 9605, EPA placed the Crab Orchard National Wildlife Refuge on the CERCLA National Priorities List (“NPL”), set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on July 22, 1987, 52 Fed. Reg. 27,620, 27,631.

E. Pursuant to CERCLA Section 120, 42 U.S.C. § 9620, in 1991, DOI, EPA, the Department of the Army, and the Illinois Environmental Protection Agency (“IEPA”) entered into a Federal Facilities Agreement (“FFA”) for the Crab Orchard National Wildlife Refuge for the purpose, among other things, to “[i]dentify the nature, objective and schedule of response actions to be taken at the NPL Site.” The FFA designates DOI as the Lead Department for the Additional and Uncharacterized Sites Operable Unit, including the Area 7 Pesticides Site. The FFA also establishes certain consultation and dispute resolution procedures to be used by the signatories thereto and, concurrent with the FFA, DOI and the Department of the Army entered into a memorandum of agreement (“MOA”). A copy of the FFA has been provided to Settling Defendant. FWS has reimbursed response costs incurred by IEPA as a CERCLA support agency in accordance with a 1999 Cooperative Agreement for IEPA to support CERCLA activities at the Refuge pursuant to its role under the FFA.

F. In accordance with the NCP and CERCLA Section 121(f)(1)(F), 42 U.S.C. § 9621(f)(1)(F), the United States Department of Justice notified the State of Illinois of negotiations with potentially responsible parties regarding the implementation of the removal

action for the Site. The State has participated in such negotiations and is a party to this Consent Decree.

G. In response to a release or a substantial threat of a release of hazardous substances at or from the Site, on July 26, 2012, FWS entered into an Administrative Settlement Agreement and Order on Consent (“AOC”) with Settling Defendant for the performance of an Engineering Evaluation and Cost Analysis (“EE/CA”) and partial reimbursement of past costs incurred by FWS at the Area 7 Pesticides Site. Settling Defendant states that it incurred approximately \$3.9 million in response costs in complying with the requirements of the AOC, including \$675,000 paid to FWS to reimburse some of FWS past response costs. Under the AOC, Settling Defendant waived cost recovery and contribution rights against the United States for all costs addressed in the AOC, including the cost of implementing and complying with the AOC and the cost of partially reimbursing FWS past response costs. In January 2018, FWS approved a final EE/CA Report, which characterized the nature and extent of contamination at the Site and evaluated a number of removal action alternatives.

H. FWS published notice of the completion of the EE/CA and the proposed plan for the removal action on January 6, 2018, in a major local newspaper of general circulation. FWS provided an opportunity for written and oral comments from the public on the proposed plan for the removal action. A copy of the transcript of the public meeting is available to the public as part of the administrative record upon which the FWS Regional Director, Midwest Region, based the selection of the response action.

I. The decision by FWS on the Removal Action to be implemented at the Site is embodied in a final Action Memorandum, executed on April 4, 2018, on which EPA and the State have concurred.

J. On October 28, 2022, FWS, in consultation with the FFA parties, approved the Removal Action Work Plan – Revision 1 (the “Work Plan”) to be implemented at the Site. The Work Plan is attached hereto as Appendix B.

K. In the Complaint, the United States alleges that it has incurred unreimbursed Past Response Costs in excess of \$830,890 performing response actions associated with the Area 7 Pesticides Site. Of this total, DOI alleges it has incurred unreimbursed Past Response Costs of more than \$760,848, paid out of the Central Hazardous Materials Fund. EPA alleges it has incurred more than \$70,042 in unreimbursed Past Response Costs.

L. Plaintiffs allege that Settling Defendant is a responsible party pursuant to CERCLA Section 107(a), 42 U.S.C. § 9607(a), and is jointly and severally liable for Area 7 Pesticide Site response costs incurred and to be incurred.

M. Settling Defendant alleges that the United States, through DOI, the Department of the Army, and the General Services Administration (the “Settling Federal Agencies”), is liable as a responsible party under CERCLA Sections 107 and 113(f), 42 U.S.C. §§ 9607, 9613(f), for contribution to response costs incurred or to be incurred by Settling Defendant at the Area 7 Pesticides Site.

N. Settling Defendant does not admit any liability to Plaintiffs arising out of the transactions or occurrences alleged in the complaint, nor does it acknowledge that the release or

threatened release of hazardous substance(s) at or from the Site constitutes an imminent and substantial endangerment to the public health or welfare or the environment. The United States does not admit any liability arising out of the transactions or occurrences asserted by Settling Defendant.

O. Pursuant to CERCLA Section 104(a), 42 U.S.C. § 9604(a), based on the information presently available to FWS, FWS believes that the Work will be properly and promptly conducted by Settling Defendant if conducted in accordance with this Consent Decree and its appendices.

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

Q. Through this Consent Decree, Settling Defendant agrees to perform the Work as outlined in Paragraph 10 and pay Future Response Costs incurred by the United States and the State as outlined in Paragraph 32. In addition, Settling Federal Agencies agree to pay portions of the Past Response Costs and Reimbursable Costs, as outlined in Paragraph 37.

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

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

II. JURISDICTION

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

III. PARTIES BOUND

2. This Consent Decree is binding upon the United States, the State, and Settling Defendant and its successors and assigns. Any change in ownership or corporate or other legal status of Settling Defendant including, but not limited to, any transfer of assets or real or personal property, shall in no way alter Settling Defendant's responsibilities under this Consent Decree.

3. Settling Defendant shall provide a copy of this Consent Decree to each contractor hired to perform the Work and to each person representing it with respect to the Site or the Work, and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Decree. Settling Defendant or its contractors shall

provide written notice of the Consent Decree to all subcontractors hired to perform any portion of the Work. Settling Defendant shall nonetheless be responsible for ensuring that its contractors and subcontractors perform the Work in accordance with the terms of this Consent Decree. With regard to the activities undertaken pursuant to this Consent Decree, each contractor and subcontractor shall be deemed to be in a contractual relationship with Settling Defendant within the meaning of CERCLA Section 107(b)(3), 42 U.S.C. § 9607(b)(3).

IV. DEFINITIONS

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

“Action Memorandum” shall mean the FWS Action Memorandum relating to the Removal Action for the Site signed on April 4, 2018, by the FWS Regional Director, Midwest Region, or his delegate, and all attachments thereto. The Action Memorandum is attached as Appendix A.

“Affected Property” shall mean all real property at the Site and any other real property where FWS or EPA determines, at any time, that access, land, water, or other resource use restrictions are needed to implement or protect or ensure the effectiveness of the Removal Action.

“Building Area Exposure Unit” shall mean the area depicted generally on the map attached as Appendix C labeled “Building Area Exposure Unit” and constituting a portion of the Area 7 Pesticides Site.

“Central Hazardous Materials Fund” shall mean the Fund established by Public Law 103-332 (September 30, 1994) for costs incurred by DOI and its component Offices and Bureaus in responding, pursuant to CERCLA, to the presence of hazardous substances on public lands managed by DOI.

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

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

“Crab Orchard Lake Embayment” shall mean the body of water connected to Crab Orchard Lake depicted generally on the map attached as Appendix C labeled “Crab Orchard Lake Embayment” and constituting a portion of the Area 7 Pesticides Site.

“Creek Area Exposure Unit” shall mean the area depicted generally on the map attached as Appendix C labeled “Creek Area Exposure Unit” and constituting a portion of the Area 7 Pesticides Site.

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

“DOI” shall mean the United States Department of the Interior and its successor departments, agencies, or instrumentalities, including but not limited to the U.S. Fish and Wildlife Service.

“DOD” shall mean the United States Department of Defense, as described in 10 U.S.C. § 111.

“Effective Date” shall mean the date upon which the approval of this Consent Decree is recorded on the Court’s docket.

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

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

“FFA” shall mean the Federal Facilities Agreement entered into by DOI, EPA, the Department of the Army, and IEPA, pursuant to CERCLA Section 120, 42 U.S.C. § 9620, entitled *In the Matter of: The U.S. Department of the Interior’s Crab Orchard National Wildlife Refuge, Federal Facility Agreement Under CERCLA Section 120* and fully signed as of September 10, 1991.

“Future Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that a Party incurs related to the Removal Action, this Consent Decree, and the Site after the Effective Date. This term includes, but is not limited to, reviewing or developing deliverables submitted pursuant to this Consent Decree, overseeing implementation of the Work, or otherwise implementing, overseeing, or enforcing this Consent Decree, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Paragraph 13 (Emergencies and Releases), Paragraph 14 (Community Involvement) (including the costs of any technical assistance grant under CERCLA Section 117(e), 42 U.S.C. § 9617(e)), Paragraph 28 (Access to Financial Assurance), and Section XII (Dispute Resolution), and all litigation costs. Future Response Costs shall also include all Interim Response Costs and all Interest on those Past Response Costs Settling Defendant has agreed to pay under this Consent Decree that has accrued pursuant to 42 U.S.C. § 9607(a) during the period from September 30, 2020, through the Effective Date.

“FWS” shall mean the United States Fish and Wildlife Service and its successor departments, agencies, or instrumentalities.

“Interim Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, (a) paid by the United States in connection with the Site between September 30, 2020, and the Effective Date, or (b) incurred by the United States prior to the Effective Date but paid after that date.

“Interest” shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund, compounded annually on October 1 of each year, in accordance

with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year. Rates are available online at <https://www.epa.gov/superfund/superfund-interest-rates>.

“MOA” shall mean the memorandum of agreement entitled *United States Department of the Interior and United States Department of the Army Memorandum of Agreement for Crab Orchard National Wildlife Refuge* and fully signed as of August 1, 1991.

“National Contingency Plan” or “NCP” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to CERCLA Section 105, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

“Natural Resource” or “Natural Resources” shall mean land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources, belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States or the State.

“Natural Resource Damages” shall mean any damages recoverable by the United States or the State on behalf of the public, for injury to, destruction of, loss of, loss of use of, or impairment of Natural Resources at the Area 7 Pesticides Site as a result of a release of hazardous substances, including, but not limited to: (i) the reasonable costs of assessing such injury, destruction, or loss or impairment arising from or relating to such a release; (ii) the costs of restoration, rehabilitation, or replacement of injured or lost natural resources or of acquisition of equivalent resources; (iii) the costs of planning such restoration activities; (iv) compensation for injury, destruction, loss, loss of use, or impairment of natural resources; and (v) each of the categories of recoverable damages described in 43 C.F.R. § 11.15.

“Paragraph” shall mean a portion of this Consent Decree identified by an Arabic numeral or an upper or lower case letter.

“Parties” shall mean the United States, the State, and Settling Defendant.

“Past Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that a Party paid or incurred at or in connection with the Site through September 30, 2020, plus Interest on all such costs that has accrued pursuant to 42 U.S.C. § 9607(a) through such date.

“Plaintiffs” shall mean the United States and the State.

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

“Refuge” shall mean the Crab Orchard National Wildlife Refuge near Marion, Illinois, which encompasses the NPL Site as published in the Federal Register on July 22, 1987.

“Reimbursable Costs” shall mean costs incurred by Settling Defendant to implement the activities required by Section VI of the Consent Decree (Performance of the Work) and any Future Response Costs assessed by the United States or the State of Illinois under Paragraph 32. Reimbursable Costs do not include Settling Defendant’s payroll or overhead costs, dispute resolution costs, or stipulated penalties assessed by the United States against Settling Defendant for violations of this Consent Decree.

“Removal Action” shall mean the CERCLA response action selected in the Action Memorandum.

“Risk Based Remediation Goals” or “RBRG” shall mean the cleanup levels and other measures of achievement of the Removal Action objectives, as set forth in Section 3 (Remediation Approach) of the Work Plan.

“Section” shall mean a portion of this Consent Decree identified by a Roman numeral.

“Settling Defendant” shall mean Great Lakes Synergy Corporation.

“Settling Federal Agencies” shall mean DOI, acting by and through FWS, DOD acting by and through the Department of the Army, and the General Services Administration and their successor departments, agencies, or instrumentalities.

“Site” or “Area 7 Pesticides Site” shall mean the Building Area Exposure Unit, the Creek Area Exposure Unit, and the Crab Orchard Lake Embayment, located within the Additional and Uncharacterized Sites Operable Unit (“AUS OU”) at the Crab Orchard National Wildlife Refuge, located near Marion, Illinois, and depicted generally on the map attached as Appendix C. The “Site” is a subpart of and not coextensive with the AUS OU or the Crab Orchard National Wildlife Refuge National Priorities List Site.

“State” shall mean the State of Illinois.

“Supervising Contractor” shall mean the principal contractor retained by Settling Defendant to supervise and direct the implementation of the Work under this Consent Decree.

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

“United States” shall mean the United States of America and each department, agency, and instrumentality of the United States, including the Settling Federal Agencies and EPA.

“Waste Material” shall mean (1) any “hazardous substance” under CERCLA Section 101(14), 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under CERCLA Section 101(33), 42 U.S.C. § 9601(33); (3) any “solid waste” under RCRA Section 1004(27), 42 U.S.C. § 6903(27); and (4) any “hazardous material” or “hazardous waste” as defined by statutes and regulations adopted by the State of Illinois.

“Work” shall mean all activities and obligations Settling Defendant is required to perform under this Consent Decree, except the activities required under Section XVIII (Retention of Records).

“Work Plan” shall mean the Removal Action Work Plan – Revision 1 approved by FWS on October 28, 2022, which describes the activities Settling Defendant must perform to implement the Removal Action pursuant to this Consent Decree, as set forth in Appendix B, and any modifications made thereto in accordance with this Consent Decree.

V. GENERAL PROVISIONS

5. **Objectives of the Parties.** The objectives of the Parties in entering into this Consent Decree are to protect public health or welfare or the environment by the implementation of response actions at the Area 7 Pesticides Site by Settling Defendant, to pay response costs of Plaintiffs, and to resolve the claims of Plaintiffs against Settling Defendant and the claims of the Settling Defendant that could have been asserted against the United States with regard to the Area 7 Pesticides Site, as provided in this Consent Decree.

6. **Commitments by Settling Defendant and Settling Federal Agencies.** Settling Defendant shall finance and perform the Work in accordance with this Consent Decree, the Work Plan, and all deliverables developed by Settling Defendant and approved or modified by FWS in consultation with the FFA parties pursuant to this Consent Decree. Settling Defendant shall pay Plaintiffs for their response costs as provided in this Consent Decree. Settling Federal Agencies shall pay Settling Defendant for a portion of the Past Response Costs and for a portion of the Reimbursable Costs, as provided in this Consent Decree.

7. **Compliance with Applicable Law.** Nothing in this Consent Decree limits Settling Defendant's obligation to comply with the requirements of all applicable federal and state laws and regulations. Settling Defendant must also comply with all applicable or relevant and appropriate requirements of all federal and state environmental laws as set forth in the Action Memorandum and the Work Plan. The activities conducted pursuant to this Consent Decree, if approved by FWS, shall be deemed to be consistent with the NCP as provided in NCP Section 300.700(c)(3)(ii).

8. Permits

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

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

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

VI. PERFORMANCE OF THE WORK

9. Coordination and Supervision

a. Project Coordinators / On-Scene Coordinator

(1) Settling Defendant's Project Coordinator must have sufficient technical expertise to coordinate the Work. Settling Defendant's Project Coordinator may not be an attorney representing Settling Defendant in this matter and may not act as the Supervising Contractor. Settling Defendant's Project Coordinator may assign other representatives, including other contractors, to assist in coordinating the Work.

(2) FWS has designated Timothy Rodeffer as its Project Coordinator. FWS may designate other representatives, which may include its employees, contractors, and/or consultants, to oversee the Work. EPA has designated Viral Patel as its On-Scene Coordinator ("OSC"). The OSC and FWS' Project Coordinator shall have the authority vested in an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Consent Decree, or to direct any other removal action undertaken at the Site. Absence of the FWS Project Coordinator or OSC from the Site shall not be cause for stoppage of work unless specifically directed by the FWS Project Coordinator in consultation with the EPA OSC.

(3) Settling Defendant's Project Coordinator shall meet with the FWS Project Coordinator at least monthly.

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

c. Procedures for Disapproval / Notice to Proceed

(1) Within 10 days after the Effective Date, Settling Defendant shall designate and notify FWS of the name, title, contact information, and qualifications of Settling Defendant's proposed Project Coordinator and Supervising Contractor, whose qualifications shall be subject to FWS' review for verification based on objective assessment criteria (*e.g.* experience, capacity, technical expertise) and who do not have a conflict of interest with respect to the project.

(2) FWS shall issue notices of disapproval and/or authorizations to proceed regarding the proposed Project Coordinator and Supervising Contractor, as applicable. If FWS issues a notice of disapproval, Settling Defendant shall, within 30 days, submit to FWS a list of supplemental proposed Project Coordinators and/or Supervising Contractors, as applicable, including a description of the qualifications of each. FWS shall issue a notice of disapproval or authorization to proceed regarding each supplemental proposed coordinator and/or contractor. Settling Defendant may select any coordinator/contractor covered by an authorization to proceed and shall, within 21 days, notify FWS of Settling Defendant's selection.

(3) Settling Defendant may change its Project Coordinator and/or Supervising Contractor, as applicable, by following the procedures of Paragraphs 9.c(1) and 9.c(2).

10. **Performance of Work in Accordance with the Work Plan.** Settling Defendant shall perform the Removal Action in accordance with the Work Plan and all FWS-approved, conditionally-approved, or modified deliverables as required by the Work Plan. All deliverables required to be submitted for approval under the Consent Decree or the Work Plan shall be subject to approval by FWS in accordance with Paragraph 12 (Approval of Deliverables) of this Consent Decree.

11. **EPA and State Consultation**

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

b. **Review and Comment.** FWS shall provide the State and EPA with a reasonable opportunity for review and comment prior to:

(1) Any FWS approval or disapproval under Paragraph 12 (Approval of Deliverables) of any deliverables that are required to be submitted for FWS approval; and

(2) Any approval or disapproval or modification of the Final Report under Paragraph 20.

12. **Approval of Deliverables**

a. **Initial Submissions**

(1) After review of any deliverable that is required to be submitted for FWS approval under the Consent Decree or the Work Plan, FWS 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) FWS also may modify the initial submission to cure deficiencies in the submission if: (i) FWS 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 Paragraph 12.a (Initial Submissions), or if required by a notice of approval upon specified conditions under Paragraph 12.a, Settling Defendant shall, within 21 days or such longer time as specified by FWS in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, FWS 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 the Settling Defendant to correct the deficiencies; or (5) any combination of the foregoing.

c. **Implementation.** Upon approval, approval upon conditions, or modification by FWS under Paragraph 12.a (Initial Submissions) or Paragraph 12.b (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Consent Decree; and (2) Settling Defendant 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 Paragraph 12.a or Paragraph 12.b does not relieve Settling Defendant of any liability for stipulated penalties under Section XIII (Stipulated Penalties) of the Consent Decree.

d. **Certification.** All deliverables must be signed by Settling Defendant's Project Coordinator, or other responsible official of Settling Defendant, 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.

13. **Emergencies and Releases**

a. 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, Settling Defendant shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the authorized FWS/EPA officers (as specified in Paragraph 13.b) orally; and (3) take such actions in consultation with the authorized FWS officer and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by FWS under the Consent Decree or Work Plan.

b. Upon the occurrence of any event during performance of the Work that Settling Defendant is required to report pursuant to CERCLA Section 103, 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 Defendant shall immediately notify the authorized FWS officer orally. The "authorized FWS/EPA officer" for purposes of immediate oral notifications and consultations under this Paragraph 13 is the FWS Project Coordinator, the EPA OSC (if the FWS Project Coordinator is unavailable), or the FWS Emergency Response Unit, Midwest Region (if neither FWS Project Coordinator nor EPA OSC is available).

c. For any event covered by Paragraphs 13.a and 13.b, Settling Defendant shall: (1) within 14 days after the onset of such event, submit a report to FWS 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 FWS describing all actions taken in response to such event.

d. Settling Defendant shall comply with the emergency and release response reporting requirements under Paragraph 7.2 (Spill Prevention and Response) of the Work Plan. Subject to Section XIV (Covenants by Plaintiffs), nothing in this Consent Decree, including Paragraph 7.2 of the Work Plan, limits any authority of the United States or the State: (a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or (b) to direct or order such action, or seek an order from the Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site. If, due to Settling Defendant's failure to take appropriate response action under Paragraph 13.a of the Consent Decree or Paragraph 7.2 of the Work Plan, FWS or EPA, or, as appropriate, the State takes such action instead, Settling Defendant shall reimburse the United States and the State under Section IX (Payments for Response Costs) for all costs of the response action.

14. **Community Involvement.** If requested by FWS, Settling Defendant shall conduct community involvement activities under FWS' oversight. Such activities may include, but are not limited to, designation of a Community Involvement Coordinator. Costs incurred by the United States under this Section constitute Future Response Costs to be reimbursed under Section IX (Payments for Response Costs).

15. **Modification of Work Plan or Related Deliverables**

a. If FWS, in consultation with EPA and the State, determines that it is necessary to modify the work specified in the Work Plan and/or in deliverables developed under the Work Plan in order to achieve and/or maintain the Risk Based Remediation Goals or to carry out and maintain the effectiveness of the Removal Action, and such modification is consistent with the scope of the Removal Action set forth in Paragraph 1.2 of the Work Plan, then the FWS Project Coordinator may notify Settling Defendant of such modification in writing or by oral direction. Any oral modification will be memorialized in writing by FWS promptly, but shall have as its effective date the date of the FWS Project Coordinator's oral direction. If Settling Defendant objects to the modification it may, within 30 days after FWS' notification, seek dispute resolution under Section XII.

b. If Settling Defendant seeks permission to deviate from the attached Work Plan or from any other approved submission or schedule, Settling Defendant's Project Coordinator shall submit a written request to the FWS Project Coordinator for approval outlining the proposed modification and its basis. Settling Defendant may not proceed with the requested deviation until receiving oral or written approval from the FWS Project Coordinator pursuant to Paragraph 15.a.

c. No informal advice, guidance, suggestion, or comment by the FWS Project Coordinator or other FWS or EPA representatives regarding any deliverable submitted by Settling Defendant shall relieve Settling Defendant of its obligation to obtain any formal

approval required by this Consent Decree, or to comply with all requirements of this Consent Decree, unless it is formally modified.

d. The Work Plan shall be modified: (1) in accordance with the modification issued by FWS; or (2) if Settling Defendant invokes dispute resolution, in accordance with the final resolution of the dispute. The modification shall be incorporated into and enforceable under this Consent Decree, and Settling Defendant shall implement all work required by such modification. Settling Defendant shall incorporate the modification into the deliverables required under the Work Plan, as appropriate.

e. Nothing in this Paragraph shall be construed to limit FWS' or EPA's authority to require performance of further response actions as otherwise provided in this Consent Decree.

16. Nothing in this Consent Decree, the Work Plan, or any deliverable required under the Work Plan constitutes a warranty or representation of any kind by Plaintiffs that compliance with the work requirements set forth in the Work Plan or related deliverable will achieve the Risk Based Remediation Goals.

17. **Selection of Further Response Actions.** If FWS or EPA determine, at any time, that additional response actions not included in the Removal Action Work Plan or other approved plan(s) are necessary to protect public health, welfare, or the environment and such additional response actions are consistent with the Action Memorandum, FWS, in consultation with EPA and the State, may select further response actions for the Site in accordance with the requirements of CERCLA and the NCP, and will notify Settling Defendant of that determination. Unless otherwise directed by FWS, within 30 days after receipt of notice from FWS that additional response actions are necessary to protect public health, welfare, or the environment, Settling Defendant shall submit for approval by FWS, in consultation with EPA and the State, a work plan for the additional response actions. The plan shall conform to the applicable requirements of this Section. Upon FWS' approval of the plan pursuant to Paragraph 12 (Approval of Deliverables), Settling Defendant shall implement the plan for additional removal actions in accordance with the provisions and schedule contained therein. This Paragraph does not alter or diminish the FWS Project Coordinator's authority to make oral modifications to any plan or schedule pursuant to Section XXII (Modification).

18. Notwithstanding any provision of the Consent Decree, Plaintiffs retain all of their access authorities and rights, as well as all of their rights to require land, water, or other resource use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statute(s) or regulation(s).

19. **Progress Reports.** Settling Defendant shall submit a written progress report to FWS, EPA, and the State concerning actions undertaken pursuant to this Consent Decree on a monthly basis, or as otherwise requested by FWS, from the initiation of on-Site field work, until issuance of the Notice of Completion of Work pursuant to Section XXIII (Notice of Completion of Work), unless otherwise directed in writing by the FWS Project Coordinator. These reports shall describe all significant developments during the preceding period, including the actions performed and any problems encountered, analytical data received during the reporting period, and the developments anticipated during the next reporting period, including a schedule of actions to be performed, anticipated problems, and planned resolutions of past or anticipated

problems. The report will also include a timeline for completion of the Removal Action and state whether Settling Defendant is on schedule.

20. **Final Report.** Within 60 days after completion of all Work required by this Consent Decree, other than the continuing obligations listed in Section XXIII (Notice of Completion of Work), Settling Defendant shall submit for FWS review and approval, in consultation with EPA and the State, a Final Report summarizing the actions taken to comply with this Consent Decree. The Final Report shall conform, at a minimum, with the requirements set forth in NCP Section 300.165. The Final Report shall include a good faith estimate of total costs or a statement of actual costs incurred in complying with the Consent Decree, a listing of quantities and types of materials removed off-Site or handled on-Site, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destination or destinations of those materials, a presentation of the analytical results of all sampling and analyses performed and analyses of the data to demonstrate attainment of Risk Based Remediation Goals, and accompanying appendices containing all relevant documentation generated during the Removal Action (*e.g.*, manifests, chain-of-custody, trucking logs, invoices, bills, contracts, log books, laboratory data and validation reports, labeled photographs, certified survey information from surveyor, and permits). The Final Report shall also include the following certification signed by a responsible corporate official of Settling Defendant:

“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.”

21. **Off-Site Shipments**

a. Settling Defendant may ship hazardous substances, pollutants and contaminants from the Site to an off-Site facility only if it complies with CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Settling Defendant will be deemed to be in compliance with CERCLA Section 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Settling Defendant 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 Defendant may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, it provides written notice to the appropriate state environmental official in the receiving facility’s state and to the FWS Project Coordinator. This written notice requirement shall not apply to any off-Site shipments when the total quantity of all such shipments will not exceed ten cubic yards. The written 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 Defendant also shall notify the state

environmental official referenced above and the FWS 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. Settling Defendant shall provide the written notice after the award of the contract for the Removal Action and before the Waste Material is shipped.

c. Settling Defendant may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if it complies with CERCLA Section 121(d)(3), 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 Action Memorandum. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 C.F.R. § 261.4(e) shipped off-Site for treatability studies, are not subject to 40 C.F.R. § 300.440.

VII. PROPERTY REQUIREMENTS

22. **Agreements Regarding Access and Non-Interference.** FWS and Settling Defendant shall provide EPA, the State, and their representatives, contractors, and subcontractors with access at all reasonable times to the Affected Property to conduct any activity regarding the Consent Decree, including those activities listed in Paragraph 22.a (Access Requirements). Settling Defendant shall refrain from using such Affected Property in any manner that FWS or EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Material, or interfere with or adversely affect the implementation, integrity, or protectiveness of the removal action, including the restrictions listed in Paragraph 22.b (Land, Water, or Other Resource Use Restrictions).

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

- (1) Monitoring the Work;
- (2) Verifying any data or information submitted to the United States or the State;
- (3) Conducting investigations regarding contamination at or near the Site;
- (4) Obtaining samples;
- (5) Assessing the need for, planning, implementing, or monitoring response actions;
- (6) Assessing implementation of quality assurance and quality control practices as defined in the approved quality assurance quality control plan as provided in the approved quality assurance project plan;
- (7) Implementing the Work pursuant to the conditions set forth in Paragraph 69 (Work Takeover);
- (8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Settling Defendant or its agents, consistent with Section XVII (Access to Information);

(9) Assessing Settling Defendant's compliance with the Consent Decree;

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

(11) Implementing, monitoring, maintaining, reporting on, and enforcing any land, water, or other resource use restrictions regarding the Affected Property.

b. **Land, Water, or Other Resource Use Restrictions.** Pursuant to the National Wildlife Refuge System Improvement Act of 1997, each refuge within the National Wildlife Refuge System shall develop a Comprehensive Conservation Plan ("CCP"), and FWS "shall manage the refuge or planning unit in a manner consistent with the plan and shall revise the plan at any time if the Secretary determines that conditions that affect the refuge or planning unit have changed significantly." (P.L. 105-57). The Crab Orchard National Wildlife Refuge maintains an Environmental Land Use Control ("ELUC") plan as part of its CCP, which memorializes the various land use controls applicable in the former Illinois Ordnance Plant at the Refuge, including the Area 7 Pesticides Site. Any Work performed, future activities, and future use on the Area 7 Pesticides Site must comply with the CCP and ELUC, which currently includes the prohibition of production wells, camping, and residential future use.

VIII. FINANCIAL ASSURANCE

23. In order to ensure completion of the Work, Settling Defendant shall secure financial assurance, initially in the amount of \$1 million, for the benefit of the United States. The financial assurance must be one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available from FWS or under the "Financial Assurance - Settlements" category on the Cleanup Enforcement Model Language and Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>, and satisfactory to FWS. Settling Defendant may use multiple mechanisms if they are limited to surety bonds guaranteeing payment, letters of credit, trust funds, and/or insurance policies.

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

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

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

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

e. A demonstration by Settling Defendant that it meets the relevant test criteria of Paragraph 25, accompanied by a standby funding commitment, which obligates Settling Defendant to pay funds to or at the direction of FWS, up to the amount financially assured through the use of this demonstration in the event of a Work Takeover; or

f. A guarantee to fund or perform the Work executed in favor of FWS by a company: (1) that is a direct or indirect parent company of Settling Defendant or has a “substantial business relationship” (as defined in 40 C.F.R. § 264.141(h)) with Settling Defendant; and (2) can demonstrate to FWS’ satisfaction that it meets the financial test criteria of Paragraph 25.

24. Settling Defendant shall, within 60 days of the Effective Date, obtain FWS’ approval of the form of Settling Defendant’s financial assurance. Within 30 days of such approval, Settling Defendant shall secure all executed and/or otherwise finalized mechanisms or other documents consistent with the FWS-approved form of financial assurance and shall submit such mechanisms and documents to the EPA regional financial assurance specialist, to the United States, and to FWS as specified in Section XIX (Notices and Submissions).

25. If Settling Defendant seeks to provide financial assurance by means of a demonstration or guarantee under Paragraph 23.e or 23.f, it must, within 30 days of the Effective Date:

a. Demonstrate that:

(1) Settling Defendant or guarantor has:

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

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

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

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

(2) Settling Defendant or guarantor has:

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

ii. Tangible net worth at least six times the sum of the Estimated Cost of the Work and the amounts, if any, of other federal, state, or

tribal environmental obligations financially assured through the use of a financial test or guarantee; and

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

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

b. Submit to FWS for Settling Defendant or guarantor: (1) a copy of an independent certified public accountant's report of the entity's financial statements for the latest completed fiscal year, which must not express an adverse opinion or disclaimer of opinion; and (2) a letter from its chief financial officer and a report from an independent certified public accountant substantially identical to the sample letter and reports available from FWS or under the "Financial Assurance - Settlements" subject list category on the Cleanup Enforcement Model Language and Sample Documents Database at <https://cfpub.epa.gov/compliance/models/>.

26. If Settling Defendant provides financial assurance by means of a demonstration or guarantee under Paragraph 23.e or 23.f it must also:

a. Annually resubmit the documents described in Paragraph 25.b within 90 days after the close of Settling Defendant's or guarantor's fiscal year;

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

c. Provide to FWS, within 30 days of FWS' request, reports of the financial condition of the affected Settling Defendant or guarantor in addition to those specified in Paragraph 25.b; FWS may make such a request at any time based on a belief that Settling Defendant or guarantor may no longer meet the financial test requirements of this Section.

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

with this Section does not excuse performance of any other obligation under this Consent Decree.

28. Access to Financial Assurance

a. If FWS issues a notice of implementation of a Work Takeover under Paragraph 69.b, then, in accordance with any applicable financial assurance mechanism and/or related standby funding commitment, FWS is entitled to: (1) the performance of the Work; and/or (2) require that any funds guaranteed be paid in accordance with Paragraph 28.d.

b. If FWS is notified by the issuer of a financial assurance mechanism that it intends to cancel the mechanism, and Settling Defendant fails to provide an alternative financial assurance mechanism in accordance with this Section at least 30 days prior to the cancellation date, the funds guaranteed under such mechanism must be paid prior to cancellation in accordance with Paragraph 28.d.

c. If, upon issuance of a notice of implementation of a Work Takeover under Paragraph 69.b, either: (1) FWS is unable for any reason to promptly secure the resources guaranteed under any applicable financial assurance mechanism and/or related standby funding commitment, whether in cash or in kind, to continue and complete the Work; or (2) the financial assurance is a demonstration or guarantee under Paragraph 23.e or 23.f, then FWS is entitled to demand an amount, as determined by FWS, sufficient to cover the cost of the remaining Work to be performed. Settling Defendant shall, within 30 days of such demand, pay the amount demanded as directed by FWS.

d. Any amounts required to be paid under this Paragraph 28 shall be, as directed by FWS: (i) paid to FWS in order to facilitate the completion of the Work by FWS or by another person; or (ii) deposited into an interest-bearing account, established at a duly chartered bank or trust company that is insured by the Federal Deposit Insurance Corporation (“FDIC”), in order to facilitate the completion of the Work by another person. If payment is made to FWS, FWS may deposit the payment into the Central Hazardous Materials Fund.

e. All FWS Work Takeover costs not paid under this Paragraph 28 must be reimbursed as Future Response Costs under Section IX (Payments for Response Costs).

29. Modification of Amount, Form, or Terms of Financial Assurance. Settling Defendant may submit, on a calendar quarter end of the current year or at any other time agreed to by the Parties, a request to reduce the amount, or change the form or terms, of the financial assurance mechanism. Any such request must be submitted to FWS in accordance with Paragraph 24, and must include an estimate of the cost of the remaining Work, an explanation of the bases for the cost calculation, and a description of the proposed changes, if any, to the form or terms of the financial assurance. FWS will notify Settling Defendant of its decision to approve or disapprove a requested reduction or change pursuant to this Paragraph. Settling Defendant may reduce the amount of the financial assurance mechanism only in accordance with: (a) FWS’ approval; or (b) if there is a dispute, the agreement, final administrative decision, or final judicial decision resolving such dispute under Section XII (Dispute Resolution). Settling Defendant may change the form or terms of the financial assurance mechanism only in accordance with FWS’ approval. Any decision made by FWS on a request submitted under this Paragraph to change the form or terms of a financial assurance mechanism shall not be subject to challenge by Settling

Defendant pursuant to the dispute resolution provisions of this Consent Decree or in any other forum. Within 30 days after receipt of FWS' approval of, or the agreement or decision resolving a dispute relating to, the requested modifications pursuant to this Paragraph, Settling Defendant shall submit to FWS documentation of the reduced, revised, or alternative financial assurance mechanism in accordance with Paragraph 24.

30. **Release, Cancellation, or Discontinuation of Financial Assurance.** Settling Defendant may release, cancel, or discontinue any financial assurance provided under this Section only: (a) if FWS issues a Notice of Completion under Section XXIII (Notice of Completion of Work); (b) in accordance with FWS' approval of such release, cancellation, or discontinuation; or (c) if there is a dispute regarding the release, cancellation or discontinuance of any financial assurance, in accordance with the agreement, final administrative decision, or final judicial decision resolving such dispute under Section XII (Dispute Resolution).

IX. PAYMENTS FOR RESPONSE COSTS

31. Payment by Settling Defendant for United States' Past Response Costs.

a. Within 30 days after the Effective Date, Settling Defendant shall pay to the United States \$830,890 in payment for Past Response Costs. Payment shall be made in accordance with Paragraph 33.a (instructions for past response cost payments).

b. Of the total amount to be paid by Settling Defendant pursuant to Paragraph 31.a, \$760,848 shall be deposited by DOI in the Central Hazardous Materials Fund ("CHF") and \$70,042 shall be deposited by EPA in the Crab Orchard National Wildlife Refuge NPL Site Special Account.

32. Payments by Settling Defendant for Future Response Costs.

a. Settling Defendant shall pay to the United States and the State all Future Response Costs not inconsistent with the NCP. On a periodic basis (but no more frequently than annually), the United States and the State will send Settling Defendant a bill for Future Response Costs, including a standard cost summary. Settling Defendant shall pay the entire bill in accordance with Paragraph 33 within 30 Days after receipt of the bill, unless contested by Settling Defendant pursuant to Paragraph 35.

b. Any amounts paid to EPA as Future Response Costs shall be deposited by EPA in the Crab Orchard National Wildlife Refuge NPL Site Special Account to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund, provided, however, that EPA may deposit a Future Response Costs payment directly into the EPA Hazardous Substance Superfund if, at the time the payment is received, EPA estimates that the Crab Orchard Special Account balance is sufficient to address currently anticipated future response actions to be conducted or financed by EPA at or in connection with the Site. Any decision by EPA to deposit a Future Response Costs payment directly into the EPA Hazardous Substance Superfund for this reason shall not be subject to challenge by Settling Defendant pursuant to the dispute resolution provisions of this Consent Decree or in any other forum. Any amounts paid to FWS as Future Response Costs shall be deposited by FWS in the Central Hazardous Materials Fund.

33. Payment Instructions for Settling Defendant

a. Past Response Costs Payments.

(1) The Financial Litigation Unit (“FLU”) of the United States Attorney’s Office for the Southern District of Illinois shall provide Settling Defendant, in accordance with Paragraph 92, with instructions regarding making payments to a U.S. Department of Justice (“DOJ”) account on behalf of DOI and EPA. The instructions must include a Consolidated Debt Collection System (“CDCS”) number to identify payments made under this Consent Decree.

(2) For all payments subject to this Paragraph 33.a, Settling Defendant shall make such payment by Fedwire Electronic Funds Transfer to the DOJ account, in accordance with the instructions provided under Paragraph 33.a(1), and including references to the CDCS Number, Site/Spill ID Number 05P2, and DJ Number 90-11-3-643/6.

(3) For each payment made under this Paragraph 33.a, Settling Defendant shall send notices, including references to the CDCS, Site/Spill ID, and DJ numbers, to the United States, FWS, and EPA, all in accordance with Paragraph 92.

34. Future Response Costs Payments and Stipulated Penalties.

a. For all payments to FWS subject to this Paragraph 34, Settling Defendant shall make such payment by the automated clearing-house known as the Department of the Treasury’s Automated Clearing House (“ACH”) Remittance Express program.

Receiver Name:	Central Hazardous Materials Fund ALC # 14010001
Receiver Tax ID Number:	53-0196949
Receiver Address:	Department of Interior Business Center Financial Management Directorate Branch of Accounting Operations 7301 West Mansfield Ave. Mail Stop D-2770 ATTN: Collection Officer – Central Hazardous Materials Fund Payment Lakewood, CO 80235
Receiver Bank:	Federal Reserve Bank New York, NY ABA Routing # 051036706
Receiver ACH Account No.:	312024

b. For all payments to EPA subject to this Paragraph 34 Settling Defendant shall make such payment by ACH as follows:

500 Rivertech Court
Riverdale, MD 20737
Contact – John Schmid 202-874-7026 or REX, 1-866-234-5681
ABA = 051036706
Transaction Code 22 – checking
Environmental Protection Agency
Account 310006
CTX Format

c. For all payments and notices made under this Paragraph 34, Settling Defendant must include references to the Site/Spill ID and DJ numbers. At the time of any payment required to be made in accordance with Paragraph 34, Settling Defendant shall send notices that payment has been made to the United States, DOI, EPA, and the EPA Cincinnati Finance Center, all in accordance with Paragraph 92, as well as:

Veronica Dickerson, Interim CHF Coordinator
U.S. Department of the Interior
Office of Environmental Policy and Compliance
1849 C Street, NW, Room #2615
Washington, DC 20240
veronica_dickerson@ios.doi.gov

d. For all payments to the State subject to this Paragraph 34 Settling Defendant shall make such payment in the form of an official bank check. The check shall be made payable to the Illinois Environmental Protection Agency for deposit into the Hazardous Waste Fund. The case name, *United States and Illinois v. Great Lakes Synergy Corporation*, shall appear on the face of the check. Settling Defendant shall send each check and a copy of the State's invoice for Future Response Costs to:

Illinois Environmental Protection Agency
Fiscal Services
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

35. **Contesting Future Response Costs.** Settling Defendant may submit a Notice of Dispute, initiating the procedures of Section XII (Dispute Resolution), regarding any Future Response Costs billed under Paragraph 32 (Payments by Settling Defendant for Future Response Costs) if it determines that FWS, EPA, or the State has made a mathematical error or included a cost item that is not within the definition of Future Response Costs, or if it believes FWS, EPA, or the State incurred excess costs as a direct result of an FWS, EPA, or State action that was inconsistent with a specific provision or provisions of the NCP. Such Notice of Dispute shall be submitted in writing within 30 days after receipt of the bill and must be sent to the United States and the State pursuant to Section XIX (Notices and Submissions). Such Notice of Dispute shall specifically identify the contested Future Response Costs and the basis for objection. If Settling Defendant submits a Notice of Dispute, Settling Defendant shall within the 30-day period, also as a requirement for initiating the dispute, (a) pay all uncontested Future Response Costs to the United States and/or the State, as applicable, and (b) establish, in a duly chartered bank or trust

company, an interest-bearing escrow account that is insured by the FDIC, and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Settling Defendant shall send to the United States and the State, as provided in Section XIX (Notices and Submissions), a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. If the United States and/or the State prevails in the dispute, Settling Defendant shall pay the sums due (with accrued interest) to the United States and/or the State, as applicable, within seven days after the resolution of the dispute. If Settling Defendant prevails concerning any aspect of the contested costs, Settling Defendant shall pay that portion of the costs (plus associated accrued interest) for which it did not prevail to the United States and/or the State, as applicable, within seven days after the resolution of the dispute. Settling Defendant shall be disbursed any balance of the escrow account. All payments to the United States and/or the State under this Paragraph shall be made in accordance with Paragraph 34 (instructions for Future Response Cost payments). The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XII (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Settling Defendant's obligation to reimburse the United States and the State for Future Response Costs.

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

37. **Payments on behalf of Settling Federal Agencies.**

a. As soon as reasonably practicable after the Effective Date, the United States, on behalf of the Settling Federal Agencies, shall pay to Settling Defendant \$484,185 (in payment of a portion of the Past Response Costs) by ACH Electronic Funds Transfer in accordance with instructions provided by Settling Defendant.

b. In the event that the payment required by Paragraph 37.a is not made within 120 days after the Effective Date, the United States, on behalf of the Settling Federal Agencies, shall pay Interest on the unpaid balance, with such Interest commencing on the 121st day after the Effective Date and accruing through the date of the payment.

c. During performance of the Work, Settling Defendant shall submit annual written requests for reimbursement of Reimbursable Costs incurred during the prior calendar year to the Settling Federal Agencies. Upon completion of the Work, Settling Defendant shall submit a final written request for reimbursement of Reimbursable Costs to the Settling Federal Agencies. The United States shall reimburse Settling Defendant for 28% of Reimbursable Costs. Settling Defendant shall maintain accounting records of all reimbursable costs in accordance

with generally accepted accounting principles and shall make such records, including any supporting costs documentation, to the extent it exists, available on request for review by the Settling Federal Agencies or their duly authorized representatives.

d. If the Settling Federal Agencies believe that Settling Defendant has made an accounting error or that a cost item is included that represents costs which are inconsistent with or not incurred in implementing the Consent Decree, the United States on behalf of the Settling Federal Agencies may withhold payment of the identified disputed amount only and initiate dispute resolution in accordance with Section XII of the Consent Decree.

e. In the event that the payment required by Paragraph 37.c is not made within 120 days after the Settling Federal Agencies' receipt of a written request for reimbursement, the United States, on behalf of the Settling Federal Agencies, shall pay Interest on the unpaid balance, with such Interest commencing on the 121st day after the date of receipt of the written request for reimbursement and accruing through the date of the payment.

f. The Parties to this Consent Decree recognize and acknowledge that the payment obligations of the Settling Federal Agencies under this Consent Decree can only be paid from appropriated funds legally available for such purpose. Nothing in this Consent Decree shall be interpreted or construed as a commitment or requirement that any of the Settling Federal Agencies obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other applicable provision of law.

X. INDEMNIFICATION AND INSURANCE

38. Settling Defendant's Indemnification of the United States

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

b. The United States and the State shall give Settling Defendant notice of any claim for which the United States or the State plan to seek indemnification pursuant to this Paragraph 38, and shall consult with Settling Defendant prior to settling such claim.

39. Settling Defendant covenants not to sue and agrees not to assert any claims or causes of action against the United States or the State for damages or reimbursement or for set-off of any payments made or to be made to the United States or the State, arising from or on account of any contract, agreement, or arrangement between Settling Defendant and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Settling Defendant shall indemnify, save, and hold harmless the United States and the State with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between Settling Defendant and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

40. **Insurance.** No later than 15 days before commencing any on-site Work, Settling Defendant shall secure, and shall maintain until the first anniversary after issuance of FWS' Notice of Completion of Work pursuant to Section XXIII (Notice of Completion of Work), commercial general liability insurance with limits of liability of \$1 million per occurrence, automobile liability insurance with limits of liability of \$1 million per accident, and umbrella liability insurance with limits of liability of \$5 million in excess of the required commercial general liability and automobile liability limits, naming the United States as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Settling Defendant pursuant to this Consent Decree. In addition, for the duration of this Consent Decree, Settling Defendant shall satisfy, or shall ensure that its contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Defendant in furtherance of this Consent Decree. Prior to commencement of the Work, Settling Defendant shall provide to FWS certificates of such insurance and a copy of each insurance policy. Settling Defendant shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. If Settling Defendant demonstrates by evidence satisfactory to FWS that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Defendant need provide only that portion of the insurance described above that is not maintained by the contractor or subcontractor. Settling Defendant shall ensure that all submittals to FWS under this Paragraph identify the Area 7 Pesticides Site, Crab Orchard National Wildlife Refuge, Marion, Illinois and the civil action number of this case.

XI. FORCE MAJEURE

41. "Force majeure," for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Settling Defendant, of any entity controlled by Settling Defendant, or of Settling Defendant's contractors that delays or prevents the performance of any obligation under this Consent Decree despite Settling Defendant's best efforts to fulfill the obligation. The requirement that Settling Defendant exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure and best efforts to address the effects of any potential force majeure (a) as it is occurring and (b) following the potential force majeure such that the delay and any adverse effects of the delay are minimized to

the greatest extent possible. “Force majeure” does not include financial inability to complete the Work or a failure to achieve the Risk Based Remediation Goals.

42. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree for which Settling Defendant intends or may intend to assert a claim of force majeure, Settling Defendant shall notify FWS’ Project Coordinator orally or, in his or her absence, the FWS Regional Director, Midwest Region, within 48 hours of when Settling Defendant first knew that the event might cause a delay. Within seven days thereafter, Settling Defendant shall provide in writing to FWS an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Settling Defendant’s rationale for attributing such delay to a force majeure; and a statement as to whether, in the opinion of Settling Defendant, such event may cause or contribute to an endangerment to public health or welfare, or the environment. Settling Defendant shall include with any notice all available documentation supporting its claim that the delay was attributable to a force majeure. Settling Defendant shall be deemed to know of any circumstance of which Settling Defendant, any entity controlled by Settling Defendant, or Settling Defendant’s contractors or subcontractors knew or should have known. Failure to comply with the above requirements regarding an event shall preclude Settling Defendant from asserting any claim of force majeure regarding that event, provided, however, that if FWS, despite the late or incomplete notice, is able to assess to its satisfaction whether the event is a force majeure under Paragraph 41 and whether Settling Defendant has exercised its best efforts under Paragraph 41, FWS may, in its unreviewable discretion, excuse in writing Settling Defendant’s failure to submit timely or complete notices under this Paragraph.

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

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

45. The failure by FWS to timely complete any obligation under the Consent Decree or under the Work Plan is not a violation of the Consent Decree, provided, however, that if such

failure prevents Settling Defendant from meeting one or more deadlines in the Work Plan, Settling Defendant may seek relief under this Section.

XII. DISPUTE RESOLUTION

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

47. A dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute. Any dispute regarding this Consent Decree shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed 20 days from the time the dispute arises, unless it is modified by written agreement of the parties to the dispute.

48. Statements of Position

a. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by FWS (or the State for disputes concerning State Future Response Costs) shall be considered binding unless, within 30 days after the conclusion of the informal negotiation period, Settling Defendant invokes the formal dispute resolution procedures of this Section by serving on the Plaintiffs a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by Settling Defendant. The Statement of Position shall specify Settling Defendant's position as to whether formal dispute resolution should proceed under Paragraph 49 (Record Review) or 50.

b. Within 45 days after receipt of Settling Defendant's Statement of Position, FWS (or the State for disputes concerning State Future Response Costs) will serve on Settling Defendant its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by FWS (or the State). FWS' (or the State's) Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 49 (Record Review) or 50. Within 15 days after receipt of FWS' (or the State's) Statement of Position, Settling Defendant may submit a Reply.

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

49. **Record Review.** Formal dispute resolution for disputes pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the

adequacy of any response action includes, without limitation, the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by FWS under this Consent Decree, and the adequacy of the performance of response actions taken pursuant to this Consent Decree. Nothing in this Consent Decree shall be construed to allow any dispute by Settling Defendant regarding the validity of the Action Memorandum's provisions.

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

b. The FWS Regional Director, Midwest Region, will issue a final administrative decision resolving the dispute based on the administrative record described in Paragraph 49.a. This decision shall be binding upon Settling Defendant, subject only to the right to seek judicial review pursuant to Paragraphs 49.c and 49.d.

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

d. In proceedings on any dispute governed by this Paragraph, Settling Defendant shall have the burden of demonstrating that the decision of the FWS Regional Director is arbitrary and capricious or otherwise not in accordance with law. Judicial review of FWS' decision shall be on the administrative record compiled pursuant to Paragraph 49.a.

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

a. The FWS Regional Director, Midwest Region, will issue a final decision resolving the dispute based on the statements of position and reply, if any, served under Paragraph 48. The Regional Director's decision shall be binding on Settling Defendant unless, within 10 days after receipt of the decision, Settling Defendant files with the Court and serves on all Parties a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Decree. The United States may file a response to Settling Defendant's motion.

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

51. The invocation of formal dispute resolution procedures under this Section does not extend, postpone, or affect in any way any obligation of Settling Defendant under this Consent Decree, except as provided in Paragraph 35 (Contesting Future Response Costs), as

agreed by FWS, or as determined by the Court. Stipulated penalties with respect to the disputed matter shall continue to accrue, but payment shall be stayed pending resolution of the dispute, as provided in Paragraph 59. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Decree. In the event that Settling Defendant does not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XIII (Stipulated Penalties).

XIII. STIPULATED PENALTIES

52. Settling Defendant shall be liable to the United States for stipulated penalties in the amounts set forth in Paragraphs 53.a and 54 for failure to comply with the obligations specified in Paragraphs 53.b and 54, unless excused under Section XI (Force Majeure). “Comply” as used in the previous sentence includes compliance by Settling Defendant with all applicable requirements of this Consent Decree, within the deadlines established under this Consent Decree. If an initially submitted or resubmitted deliverable contains a material defect, and the deliverable is disapproved or modified by FWS under Paragraph 12.a (Initial Submissions) or 12.b (Resubmissions) due to such material defect, then the material defect shall constitute a lack of compliance for purposes of this Paragraph.

53. Stipulated Penalty Amounts - Payments, Financial Assurance, Major Deliverables, and Other Milestones

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

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

b. Obligations

(1) Payment of any amount due under Section IX (Payments for Response Costs).

(2) Establishment and maintenance of financial assurance in accordance with Section VIII (Financial Assurance).

(3) Placement of any disputed Future Response Costs into an escrow account under Paragraph 34.d (Contesting Future Response Costs).

(4) Designation of a Project Coordinator and Supervising Contractor under Paragraph 9.

(5) Submission of Work deliverables as set out in the schedule set forth in Section 11 of the attached Work Plan.

54. **Stipulated Penalty Amounts – Other.** The following stipulated penalties shall accrue per violation per day for failure to comply with all requirements of this Consent Decree other than those specified in Paragraph 53.b:

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

55. In the event that FWS assumes performance of a portion or all of the Work pursuant to Paragraph 69 (Work Takeover), Settling Defendant shall be liable for a stipulated penalty in the amount of \$400,000. Stipulated penalties under this Paragraph are in addition to the remedies available under Paragraphs 28 (Access to Financial Assurance) and 69 (Work Takeover).

56. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (a) with respect to a deficient submission under Paragraph 12 (Approval of Deliverables), during the period, if any, beginning on the 31st day after FWS' receipt of such submission until the date that FWS notifies Settling Defendant of any deficiency; (b) with respect to a decision by the FWS Regional Director, Midwest Region, under Paragraph 49.b or 50.a of Section XII (Dispute Resolution), during the period, if any, beginning on the 21st day after the date that Settling Defendant's reply to FWS' Statement of Position is received until the date that the Regional Director issues a final decision regarding such dispute; or (c) with respect to judicial review by this Court of any dispute under Section XII (Dispute Resolution), during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute. Nothing in this Consent Decree shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Decree.

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

58. All penalties accruing under this Section shall be due and payable to the United States within 30 days after Settling Defendant's receipt from FWS of a demand for payment of the penalties, unless Settling Defendant invokes the Dispute Resolution procedures under Section XII (Dispute Resolution) within the 30-day period. All payments to the United States under this Section shall indicate that the payment is for stipulated penalties and shall be made in accordance with Paragraph 34 (instructions for Future Response Cost payments).

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

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

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

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

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

61. The payment of penalties and Interest, if any, shall not alter in any way Settling Defendant's obligation to complete the performance of the Work required under this Consent Decree.

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

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

XIV. COVENANTS BY PLAINTIFFS

64. **Covenants for Settling Defendant by Plaintiffs.** Except as provided in Paragraph 66 (Reservations of Rights Against Settling Defendant) and Paragraph 68 (Reservations Relating to Unknown Conditions and New Information), the United States

covenants not to sue or to take administrative action against Settling Defendant pursuant to CERCLA Sections 106 and 107(a) for the Work, Past Response Costs, Future Response Costs, and Natural Resource Damages at the Area 7 Pesticides Site. Except as provided in Paragraph 66 (Reservations of Rights Against Settling Defendant) and Paragraph 68 (Reservations Relating to Unknown Conditions and New Information), the State covenants not to sue or to take administrative action against Settling Defendant pursuant to CERCLA Section 107(a) for the Work, Past Response Costs, Future Response Costs, and Natural Resource Damages at the Area 7 Pesticides Site. These covenants shall take effect upon the Effective Date. These covenants are conditioned upon the satisfactory performance by Settling Defendant of its obligations under this Consent Decree. These covenants extend only to Settling Defendant and do not extend to any other person.

65. Covenants for Settling Federal Agencies. Except as provided in Paragraph 67 (Reservations of Rights Against Settling Federal Agencies) and Paragraph 68 (Reservations Relating to Unknown Conditions and New Information), in consideration of the payments that will be made by the United States on behalf of Settling Federal Agencies under this Consent Decree, EPA, DOI, and the State each covenant not to take administrative action against and the State covenants not to sue the Settling Federal Agencies pursuant to CERCLA Sections 106 and 107(a), 42 U.S.C. §§ 9606 and 9607(a), for the Work, Past Response Costs, Future Response Costs, and Natural Resource Damages at the Area 7 Pesticides Site. The covenants shall take effect upon the Effective Date. These covenants are conditioned upon the satisfactory performance by Settling Federal Agencies of their obligations under this Consent Decree. These covenants extend only to the Settling Federal Agencies and do not extend to any other person.

66. Reservations of Rights Against Settling Defendant. The United States and the State reserve, and this Consent Decree is without prejudice to, all rights against Settling Defendant with respect to all matters not expressly included within Plaintiffs' covenants. Notwithstanding any other provision of this Consent Decree, the United States and the State reserve all rights against Settling Defendant with respect to:

- a. liability for failure by Settling Defendant to meet a requirement of this Consent Decree;
- b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the Site;
- c. liability based on the ownership of the Site by Settling Defendant when such ownership commences after signature of this Consent Decree by Settling Defendant;
- d. liability based on the operation of the Site by Settling Defendant when such operation commences after signature of this Consent Decree by Settling Defendant and does not arise solely from Settling Defendant's performance of the Work;
- e. liability based on Settling Defendant's transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, other than as provided in the Action Memorandum, the Work, or otherwise ordered by FWS or EPA, after signature of this Consent Decree by Settling Defendant;

- f. criminal liability;
- g. liability for violations of federal or state law that occur during or after implementation of the Work; and
- h. liability for other operable units and the portion of the AUS OU not included in the Area 7 Pesticides Site at the Crab Orchard National Wildlife Refuge NPL Site.

67. **Reservation of Rights Against Settling Federal Agencies.** EPA, DOI, and the State reserve, and this Consent Decree is without prejudice to, all rights against the Settling Federal Agencies with respect to all matters not expressly included within the covenants in Paragraph 65. Notwithstanding any other provision of this Consent Decree, EPA, DOI, and the State reserve all rights against the Settling Federal Agencies with respect to:

- a. liability for failure by Settling Federal Agencies to meet a requirement of this Consent Decree;
- b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the Site;
- c. liability based on Settling Federal Agencies' transportation, treatment, storage, or disposal, or arrangement for transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, other than as provided in the Action Memorandum, the Work, or otherwise ordered by FWS or DOI, after signature of this Consent Decree on behalf of the Settling Federal Agencies,
- d. criminal liability; and
- e. liability for other operable units and the portion of the AUS OU not included in the Area 7 Pesticides Site at the Crab Orchard National Wildlife Refuge NPL Site (to the extent not inconsistent with the FFA and MOA).

68. **Reservations Relating to Unknown Conditions and New Information.**

- a. Notwithstanding any other provision of this Consent Decree, the United States reserves, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action, and/or to issue an administrative order, seeking to compel Settling Defendant, and DOI and EPA each reserve the right to issue an administrative order seeking to compel Settling Federal Agencies, to perform further response actions relating to the Area 7 Pesticides Site Response Action and/or to pay the United States for additional costs of response relating to the Area 7 Pesticides Site Response Action if conditions at the Area 7 Pesticides Site previously unknown to DOI or EPA are discovered or information previously unknown to DOI or EPA is received, in whole or in part, and DOI or EPA determine that these previously unknown conditions or this information together with other relevant information indicate that the Area 7 Pesticides Site Response Action is not protective of human health or the environment.
- b. For purposes of Paragraph 68.a, the information and the conditions known to DOI or EPA shall include only that information or those conditions known to DOI or EPA as of the Date of Lodging of this Consent Decree.

c. Nothing in this Paragraph 68 is intended to alter or affect any rights or obligations established under the FFA and/or the MOA.

69. Work Takeover

a. In the event FWS determines that Settling Defendant: (1) has ceased implementation of any portion of the Work; (2) is seriously or repeatedly deficient or late in its performance of the Work; or (3) is implementing the Work in a manner that may cause an endangerment to human health or the environment, FWS may issue a written notice (“Work Takeover Notice”) to Settling Defendant. Any Work Takeover Notice issued by FWS will specify the grounds upon which such notice was issued and will provide Settling Defendant a period of 15 days within which to remedy the circumstances giving rise to FWS’ issuance of such notice.

b. If, after expiration of the 15-day notice period specified in Paragraph 69.a, Settling Defendant has not remedied to FWS’ satisfaction the circumstances giving rise to FWS’ issuance of the relevant Work Takeover Notice, FWS may at any time thereafter assume the performance of all or any portion(s) of the Work as FWS deems necessary (“Work Takeover”). FWS will notify Settling Defendant in writing (which writing may be electronic) if FWS determines that implementation of a Work Takeover is warranted under this Paragraph 69.b. Funding of Work Takeover costs is addressed under Paragraph 28 (Access to Financial Assurance).

c. Settling Defendant may invoke the procedures set forth in Paragraph 49, to dispute FWS’ implementation of a Work Takeover under Paragraph 69.b. However, notwithstanding Settling Defendant’s invocation of such dispute resolution procedures, and during the pendency of any such dispute, FWS may in its sole discretion commence and continue a Work Takeover under Paragraph 69.b until the earlier of (i) the date that Settling Defendant remedies, to FWS’ satisfaction, the circumstances giving rise to FWS’ issuance of the relevant Work Takeover Notice, or (ii) the date that a final decision is rendered in accordance with Paragraph 49 requiring FWS to terminate such Work Takeover.

70. Notwithstanding any other provision of this Consent Decree, the United States and the State retain all authority and reserve all rights to take any and all response actions authorized by law.

**XV. COVENANTS BY SETTLING DEFENDANT AND
SETTLING FEDERAL AGENCIES**

71. **Covenants by Settling Defendant.** Subject to the reservations in Paragraph 73, Settling Defendant covenants not to sue and agrees not to assert any claims or causes of action against the United States or the State with respect to the Work, past response actions regarding the Site, Past Response Costs, Future Response Costs, Natural Resource Damages, and this Consent Decree, including, but not limited to:

a. any direct or indirect claim for reimbursement from the EPA Hazardous Substance Superfund or the DOI Central Hazardous Materials Fund through CERCLA Sections 106(b)(2), 107, 111, 112, or 113, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claims under CERCLA Sections 107 or 113, 42 U.S.C. §§ 9607 or 9613, RCRA Section 7002(a), 42 U.S.C. § 6972(a), or state law regarding the Work, past response actions regarding the Site, Past Response Costs, Future Response Costs, Natural Resource Damages, or this Consent Decree; or

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

72. Except as provided in Paragraphs 75 (Waiver of Claims by Settling Defendant) and 83 (Res Judicata and Other Defenses), the covenants in this Section shall not apply if the United States or the State brings a cause of action or issues an order pursuant to any of the reservations in Section XIV (Covenants by Plaintiffs), other than in Paragraphs 66.a (claims for failure to meet a requirement of the Consent Decree), 66.f (criminal liability), and 66.g (violations of federal/state law during or after implementation of the Work), but only to the extent that Settling Defendant's claims arise from the same response action, response costs, or damages that the United States or the State is seeking pursuant to the applicable reservation.

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

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

75. Waiver of Claims by Settling Defendant

a. **De Micromis Waiver:** Settling Defendant agrees not to assert any claims and to waive all claims or causes of action (including but not limited to claims or causes of action under CERCLA Sections 107(a) and 113) that it may have for all matters relating to the Site against any person where the person's liability to Settling Defendant with respect to the Site is based solely on having arranged for disposal or treatment, or for transport for disposal or treatment, of hazardous substances at the Site, or having accepted for transport for disposal or treatment of hazardous substances at the Site, if all or part of the disposal, treatment, or transport occurred before April 1, 2001, and the total amount of material containing hazardous substances contributed by such person to the Site was less than 110 gallons of liquid materials or 200 pounds of solid materials;

b. Exceptions to Waiver

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

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

76. Settling Defendant agrees not to seek judicial review of the final rule listing the Site on the NPL based on a claim that changed site conditions that resulted from the performance of the Work in any way affected the basis for listing the Site.

77. Settling Defendant waives any claims under CERCLA Sections 107 and 113, 42 U.S.C. §§ 9607 and 9613, RCRA Section 7002(a), 42 U.S.C. § 6972(a), or state law, regarding the Work, past response actions regarding the Site, Past Response Costs, Future Response Costs, Natural Resource Damages, or this Consent Decree, and EPA, DOI, and the State each waive any claims under CERCLA Sections 106 and 107(a), 42 U.S.C. §§ 9606 and 9607(a), for the Work, Past Response Costs, Future Response Costs, and Natural Resource Damages at the Area 7 Pesticides Site, against:

a. The Sherwin Williams Company, its parent companies, successors, assigns, subsidiaries, and affiliates (including, but not limited to, the Sherwin Williams Defense Corporation), and the directors, officers, members, shareholders, managers, employees, and insurers of The Sherwin Williams Company, and

b. Mason & Hanger Corporation (formerly known as the Silas Mason Company and Mason & Hanger Silas Mason Co. Inc.) and its parent companies, successors, assigns, subsidiaries, and affiliates (including, but not limited to, The Mason & Hanger Group Inc., The Mason Company, American Ordnance LLC, Day & Zimmermann, Inc., and The Day & Zimmermann Group, Inc.) (collectively, “Mason & Hanger”), and the directors, officers, members, shareholders, managers, employees, and insurers of Mason & Hanger.

78. **Covenant by Settling Federal Agencies.** Settling Federal Agencies agree not to assert any direct or indirect claim for reimbursement from the EPA Hazardous Substance Superfund or DOI Central Hazardous Materials Fund through CERCLA Sections 106(b)(2), 107, 111, 112, 113, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law

with respect to Past Response Costs, Future Response Costs, and this Consent Decree. This covenant does not preclude demand for reimbursement from the Superfund of costs incurred by a Settling Federal Agency in the performance of its duties (other than pursuant to this Consent Decree) as lead or support agency under the NCP (40 C.F.R. Part 300).

XVI. EFFECT OF SETTLEMENT; CONTRIBUTION

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

80. The Parties agree and the Court finds that: (a) the complaint filed by Plaintiffs in this action is a civil action within the meaning of CERCLA Section 113(f)(1); (b) this Consent Decree constitutes a judicially approved settlement under which Settling Defendant and each of the Settling Federal Agencies has, as of the Effective Date, resolved its liability to the United States and the State within the meaning of CERCLA Sections 113(f)(2) and 113(f)(3)(B); and (c) Settling Defendant and each Settling Federal Agency is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by CERCLA Section 113(f)(2), or as may be otherwise provided by law, for the “matters addressed” in this Decree. The “matters addressed” in this Decree are the Work, Past Response Costs, Future Response Costs, and Natural Resource Damages at the Area 7 Pesticides Site provided, however, that if the United States exercises rights against Settling Defendants (or if EPA, DOI, or the State assert rights against Settling Federal Agencies) under the reservations in ¶¶ 66.a. through 66.e., and 66.g. through 66.i., the “matters addressed” in this Decree will no longer include those response costs or response actions that are within the scope of the exercised reservation.

81. Settling Defendant shall, with respect to any suit or claim brought by it for matters related to this Consent Decree, notify the United States and the State in writing no later than 60 days prior to the commencement of such suit or claim.

82. Settling Defendant shall, with respect to any suit or claim brought against it for matters related to this Consent Decree, notify in writing the United States and the State within 10 days after service of the complaint on Settling Defendant. In addition, Settling Defendant shall notify the United States and the State within 10 days after service or receipt of any Motion for Summary Judgment and within 10 days after receipt of any order from a court setting a case for trial.

83. **Res Judicata and Other Defenses.** In any subsequent administrative or judicial proceeding initiated by the United States or the State for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Defendant (and, with respect to a

State proceeding initiated against a Settling Federal Agency, Settling Federal Agencies) shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or the State in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XIV (Covenants by Plaintiffs).

XVII. ACCESS TO INFORMATION

84. Settling Defendant shall provide to FWS, EPA, and the State, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form) (hereinafter referred to as “Records”) within Settling Defendant’s possession or control or that of its contractors or agents relating to activities at the Site or to the implementation of this Consent Decree, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information regarding the Work. Settling Defendant shall also make available to FWS, EPA, and the State, for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

85. Privileged and Protected Claims

a. Settling Defendant may assert that all or part of a Record requested by Plaintiffs is privileged or protected as provided under federal law, in lieu of providing the Record, provided Settling Defendant complies with Paragraph 85.b, and except as provided in Paragraph 85.c.

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

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

86. **Business Confidential Claims.** Settling Defendant may assert that all or part of a Record provided to Plaintiffs under this Section or Section XVIII (Retention of Records) is business confidential to the extent permitted by and in accordance with CERCLA Section 104(e)(7), 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Settling Defendant shall segregate and clearly identify all Records or parts thereof submitted under this Consent Decree

for which Settling Defendant asserts business confidentiality claims. Records that Settling Defendant claims to be confidential business information will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies Records when they are submitted to FWS, EPA, and the State, or if FWS and EPA have notified Settling Defendant that the Records are not confidential under the standards of CERCLA Section 104(e)(7) or 40 C.F.R. Part 2, Subpart B, the public may be given access to such Records without further notice to Settling Defendant.

87. If relevant to the proceeding, the Parties agree that validated sampling or monitoring data generated in accordance with the Work Plan and reviewed and approved by FWS shall be admissible as evidence, without objection, in any proceeding under this Consent Decree.

88. Notwithstanding any provision of this Consent Decree, Plaintiffs retain all of their information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XVIII. RETENTION OF RECORDS

89. Until five years after FWS' Notice of Completion of Work under Paragraph 97 (Notice of Completion of Work), Settling Defendant shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to its liability under CERCLA with respect to the Site. Settling Defendant must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to the performance of the Work, provided, however, that Settling Defendant (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the Work and not contained in the aforementioned Records required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

90. At the conclusion of this record retention period, Settling Defendant shall notify the United States and the State at least 90 days prior to the destruction of any such Records, and, upon request by the United States or the State, and except as provided in Paragraph 85 (Privileged and Protected Claims), Settling Defendant shall deliver any such Records to FWS or the State.

91. Settling Defendant certifies that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed, or otherwise disposed of any Records (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by the United States or the State and that it has fully complied with any and all FWS, EPA, and State requests for information regarding the Site pursuant to CERCLA Sections 104(e) and 122(e)(3)(B), 42 U.S.C. §§ 9604(e) and 9622(e)(3)(B), and RCRA Section 3007, 42 U.S.C. § 6927, and state law.

XIX. NOTICES AND SUBMISSIONS

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

As to the United States:

EES Case Management Unit
U.S. Department of Justice
Environment and Natural Resources Division
P.O. Box 7611
Washington, D.C. 20044-7611
eescdcopy.enrd@usdoj.gov
Re: DJ # 90-11-3-643/6

and

Chief
U.S. Department of Justice
Environment and Natural Resources Division
Environmental Defense Section
MailProcessing_EDS.ENRD@usdoj.gov
Re: DJ # 90-11-6-19211

As to Settling Federal Agencies

Chief
U.S. Department of Justice
Environment and Natural Resources Division
Environmental Defense Section
MailProcessing_EDS.ENRD@usdoj.gov
Re: DJ # 90-11-6-19211

As to DOI:

Sean H. Joyner
Office of the Solicitor
Division of Land Resources
U.S. Department of the Interior
1849 C Street, NW, MS-6412
Washington, DC 20240
sean.joyner@sol.doi.gov

and

Timothy Rodeffer
Program Manager / Project Coordinator
Environmental Remediation and Restoration Program
Crab Orchard National Wildlife Refuge
timothy_rodfeffer@fws.gov

As to EPA:

Viral Patel
Remedial Project Manager / On-Scene Coordinator
U.S. EPA Region 5
Mail Code SR-6J
77 West Jackson Blvd.
Chicago, IL 60604
patel.viral@epa.gov

**As to EPA Regional Financial
Management Officer:**

Richard D. Hackley
Financial Management Officer
U.S. EPA Region 5
Mail Code MF-10J
77 West Jackson Blvd.
Chicago, IL 60604
hackley.richard@epa.gov

**As to EPA Regional Financial
Assurance Specialist:**

Justin Abrams
Financial Assurance Monitoring & Mgt.
U.S. EPA Region 5
Mail Code MF-10J
77 West Jackson Blvd
Chicago, IL 60604
abrams.justin@epa.gov

**As to EPA Cincinnati Finance
Center:**

EPA Cincinnati Finance Center
26 W. Martin Luther King Drive
Cincinnati, Ohio 45268
cinwd_acctsreceivable@epa.gov

As to the State:

Angelic Mandell
State Project Coordinator
1021 North Grand Avenue East, #24
P.O. Box 19276
Springfield, IL 62794

As to Settling Defendant:

Bruce Iverson
Senior Project Manager
TRC
708 Heartland Trail, Suite 3000
Madison, WI 53717
BIverson@trcsolutions.com

Al Dobbeck
Great Lakes Synergy Corporation
955-10 National Pkwy.
Schaumburg, IL 60173
al.dobbeck@synergy55.com

and

Frederick S. Mueller
Garrett L. Boehm, Jr.
Johnson & Bell
33 W. Monroe Street, Suite 2700
Chicago, IL 60603
muellerf@jbltd.com
boehmg@jbltd.com

XX. RETENTION OF JURISDICTION

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

XXI. APPENDICES

94. The following appendices are attached to and incorporated into this Consent Decree:

“Appendix A” is the Action Memorandum.

“Appendix B” is the Work Plan.

“Appendix C” is the map of the Site.

XXII. MODIFICATION

95. Except as provided in Paragraph 15 (Modification of Work Plan or Related Deliverables), material modifications to this Consent Decree, including the Work Plan, shall be in writing, signed by the United States and Settling Defendant, and shall be effective upon approval by the Court. Except as provided in Paragraph 15, non-material modifications to this Consent Decree, including the Work Plan, shall be in writing and shall be effective when signed by duly authorized representatives of the United States and Settling Defendant. All modifications to the Consent Decree, other than the Work Plan, also shall be signed by the State, or a duly authorized representative of the State, as appropriate. A modification to the Work Plan shall be considered material if it fundamentally alters the basic features of the selected removal action within the meaning of 40 C.F.R. § 300.435(c)(2)(ii). Before providing its approval to any modification to the Work Plan, the United States will provide the State with a reasonable opportunity to review and comment on the proposed modification.

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

XXIII. NOTICE OF COMPLETION OF WORK

97. When FWS determines, in consultation with EPA and the State, after its review of the Final Reports, that all Work has been fully performed in accordance with this Consent Decree, with the exception of any continuing obligations required by this Consent Decree and the Work Plans, including payment of Future Response Costs and record retention, FWS will provide written notice to Settling Defendant ("Notice of Completion of Work"). If FWS determines that such Work has not been completed in accordance with this Consent Decree, FWS will notify Settling Defendant, provide a list of the deficiencies, and require that Settling Defendant modify the Work Plan, if appropriate, in order to correct such deficiencies. Settling Defendant shall implement the modified and approved Work Plan and shall submit a Modified Final Report in accordance with the FWS notice. Failure by Settling Defendant to implement the approved modified Work Plan shall be a violation of this Consent Decree.

XXIV. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

98. This Consent Decree shall be lodged with the Court for at least 30 days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Decree disclose facts or considerations that indicate that the Consent Decree is inappropriate, improper, or inadequate. Settling Defendant consents to the entry of this Consent Decree without further notice.

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

XXV. SIGNATORIES/SERVICE

100. Each undersigned representative of Settling Defendant, the Assistant Attorney General for the Environment and Natural Resources Division of the U.S. Department of Justice, and the Illinois Attorney General certifies that he or she is fully authorized to enter into the terms

and conditions of this Consent Decree and to execute and legally bind such Party to this document.

101. Settling Defendant agrees not to oppose entry of this Consent Decree by this Court or to challenge any provision of this Consent Decree unless the United States has notified Settling Defendant in writing that it no longer supports entry of the Consent Decree.

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

XXVI. FINAL JUDGMENT

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

104. Upon entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment between and among the United States, the State, and Settling Defendant under Fed. R. Civ. P. 54 and 58.

SO ORDERED THIS __ DAY OF _____, 2023.

United States District Judge

Signature Page for Consent Decree regarding Area 7, AUS OU, Crab Orchard National Wildlife Refuge Superfund Site.

FOR THE UNITED STATES OF AMERICA:

TODD KIM
Assistant Attorney General
U.S. Department of Justice
Environment and Natural Resources Division

DATE: _____

JEFFREY
SPECTOR

Digitally signed by JEFFREY SPECTOR
Date: 2023.06.06 15:37:40 -0400'

JEFFREY A. SPECTOR
Senior Attorney
U.S. Department of Justice
Environment and Natural Resources Division
Environmental Enforcement Section
P.O. Box 7611
Washington, D.C. 20044-7611

DATE: 6/6/2023

/s/ Daniel Dertke
DANIEL DERTKE
Trial Attorney
Environmental Defense Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611

Signature Page for Consent Decree regarding Area 7, AUS OU, Crab Orchard National Wildlife Refuge Superfund Site.

FOR THE UNITED STATES OF AMERICA:

RACHELLE AUD CROWE
United States Attorney
Southern District of Illinois



NATHAN WYATT
Assistant United States Attorney
Southern District of Illinois
9 Executive Drive
Fairview Heights, IL 62208

Signature Page for Consent Decree regarding Area 7, AUS OU, Crab Orchard National Wildlife Refuge Superfund Site.

**FOR THE UNITED STATES DEPARTMENT OF
THE INTERIOR**

**AARON
MOODY**

Digitally signed by AARON
MOODY
Date: 2023.05.12 13:47:52
-04'00'

AARON MOODY
Associate Solicitor, Division of Land Resources
Office of the Solicitor
1849 C Street, NW MS 5530
Washington, DC 20240

Signature Page for Consent Decree regarding Area 7, AUS OU, Crab Orchard National Wildlife Refuge Superfund Site.

**FOR THE U.S. ENVIRONMENTAL
PROTECTION AGENCY**

DOUGLAS
BALLOTTI

Digitally signed by
DOUGLAS BALLOTTI
Date: 2023.05.26
13:06:01 -05'00'

DOUGLAS BALLOTTI

Director

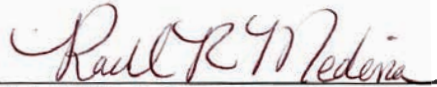
Superfund & Emergency Management Division
U.S. Environmental Protection Agency, Region 5
77 West Jackson Blvd.
Chicago, IL 60604-3507

Signature Page for Consent Decree regarding Area 7, AUS OU, Crab Orchard National Wildlife Refuge Superfund Site.

FOR THE STATE OF ILLINOIS:

4-28-23

Dated



RACHEL R. MEDINA
Deputy Bureau Chief, Environmental Bureau
Illinois Attorney General's Office
500 South Second St.
Springfield, IL 62704

Signature Page for Consent Decree regarding Area 7, AUS OU, Crab Orchard National Wildlife Refuge Superfund Site.

FOR GREAT LAKES SYNERGY CORPORATION:

4/26/2023

Dated



STEVEN L. DEHMLOW

CEO

Great Lakes Synergy Corporation

955-10 National Pkwy.

Schaumburg, IL 60173

APPENDIX A

United States Department of the Interior



FISH AND WILDLIFE SERVICE
Crab Orchard National Wildlife Refuge
Environmental Remediation and Restoration Project
8588 Route 148
Marion, Illinois 62959-5822



ACTION MEMORANDUM

To: Regional Director, U.S Fish and Wildlife Service Director for the Midwest Region (Region 3)

Through: Assistant Regional Director, Division of Refuges, Region 3

From: CERCLA Project Leader for the Crab Orchard National Wildlife Refuge Site

Site: Crab Orchard National Wildlife Refuge, Area 7 Pesticides Site
Marion, Illinois

Subject: Approval of CERCLA Non-Time-Critical Removal Action

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval for the proposed non-time-critical removal action (“Proposed Action”) for the Area 7 – Pesticide Site (the “Site”) within the Crab Orchard National Wildlife Refuge (“Crab Orchard” or “the Refuge”), in accordance with the Fish and Wildlife’s (“FWS’s”) delegated authority¹ under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (“CERCLA”) (42 USC §§ 9601 et. seq.), as implemented by the National Oil and Hazardous Substances Pollution Contingency Plan (“NCP”), 40 CFR Part 300.

This Memorandum outlines and documents the need for the Proposed Action, the scope of work, and the anticipated costs. The decision to select the response action described in this Action Memorandum is based on the Administrative Record for the Site, located at the Refuge.

II. SITE BACKGROUND AND CONDITIONS

In 1987, approximately 22,000 acres of the Refuge’s total nearly 44,000 acres was placed on the National Priorities List (“NPL”)² by the United States Environmental Protection Agency (“USEPA”) due to environmental contamination resulting from its operation as the Illinois Ordnance Plant (“IOP”) during World War II. The IOP was owned by the War Department and operated by the Sherwin Williams Defense Corporation for the Army during World War II, and

¹ Executive Order 12580, as amended by E.O 13016.

² The USEPA Identification Project (CERCLIS) Number for the Site is IL8143609487. In the CFR listing for this NPL site, the location is Carterville, Illinois. However, the site currently has a Marion, Illinois address. In the CFR listing, the site is referred to as Sangamo Dump/Crab Orchard National Wildlife Refuge.

was included within the boundaries of Crab Orchard when the Refuge was established by Act of Congress in 1947.

The NPL site is divided into six “operable units” by which the CERCLA investigation and cleanup is organized. The Site is within the geographic boundaries of the “Additional and Uncharacterized Sites Operable Unit” (“AUS OU”). A Preliminary Assessment/Site Investigation (“PA/SI”) of the AUS OU was completed in 2003. A Remedial Investigation (“RI”) of the AUS OU was completed by General Dynamics Ordnance and Tactical Systems pursuant to an Administrative Settlement and Order on Consent (“AOC”), and a Feasibility Study (“FS”) for AUS OU is currently underway pursuant to the same AOC.

A. Site Description, Characteristics, and Location

The Site is located approximately 1.5 miles east of the intersection of Highway 148 and Ogden Rod, approximately 0.5 mile north of Ogden Road, and approximately 0.4 mile south of Crab Orchard Lake. An intermittent stream leads from the Site to Crab Orchard Lake. The Site is in the restricted use part of the Refuge, which is closed to the general public except for tenant use and hunting by special permit. These restrictions are imposed by signage and occasional patrols. The warehouses in “Area 7” of the Refuge are part of what was once a World War II-era complex of 35 identical warehouses, almost all of which have either been removed or are currently unused. Please see attachment list in Section IX for maps, pictures, and other graphic representations.

Based on the specific history of operations at the Site, FWS determined that there was a sound technical basis to respond to pesticide contamination at the Site independently and in advance of the completion of the RI, FS, and subsequent remedial action for the entire AUS OU. More information regarding the investigations and actions taken to make this determination is in Section II.E. below.

B. Release or threatened release of hazardous substances at the site

Great Lakes Synergy Corporation (“Great Lakes”), formerly known as Great Lakes Terminal and Transport Co., leased four warehouses in Area 7 known as Buildings IN-1-3, IN-1-4, IN-1-5 and IN-1-6 (collective, the “Warehouses”) from 1951 to 1971, and the company confirmed that it used at least two of these Warehouses to receive, store, and ship commercial quantities of pesticides. During the AUS OU PA/SI, these pesticides were detected in soil samples taken by FWS in the vicinity of the Warehouses. Additional supplemental sampling conducted for the PA/SI confirmed the release and substantial threat of continued release of pesticides in soils surrounding the Warehouses as well as on the floors, walls, and materials within the Warehouses. These pesticides include aldrin, dieldrin, endrin, endrin aldehyde, endrin ketone, isodrin and DDT. Each of these pesticides is a “hazardous substance” as defined by CERCLA.

FWS concluded that the pesticides released at the Site were disposed of by Great Lakes at the time it operated at the Warehouses and identified Great Lakes as a CERCLA “potentially responsible person” (“PRP”) for the Site. On July 26, 2012, FWS entered into an AOC with Great Lakes for the performance of an Engineering Evaluation/Cost Analysis (“EE/CA”) to characterize the nature and extent of contamination at the Site and evaluate clean up alternatives.

C. Regulatory Framework for FWS CERCLA Response

CERCLA authority, including authority to undertake non-time-critical removal actions, has been delegated to FWS to respond to any release or threatened release of a hazardous substance, or pollutant or contaminant, on or from land under the FWS's jurisdiction, custody, or control. Response action conducted by FWS pursuant to CERCLA is governed by the requirements of the NCP. Several NCP provisions guide the determination as to whether a removal action is the appropriate course under CERCLA.

NCP §300.415(b)(1) establishes the foundation on which such a determination must be made:

[W]here the lead agency makes the determination, based on the factors in paragraph (b)(2)³ of this section, that there is a threat to public health or welfare of the United States or the environment, the lead agency may take any appropriate removal action to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or the threat of release.

When a removal action is under consideration, NCP §300.410(a) provides that a removal site evaluation ("RSE") be undertaken that includes a removal preliminary assessment and, if warranted, a removal site inspection. NCP §300.410(c)(1) directs that the removal preliminary assessment should be based, as appropriate, on readily available information and may include, but is not limited to, such information as: identification of the source and nature of the release or threat of release, evaluation of the threat to public health, evaluation of the magnitude of the threat, evaluation of factors necessary to make the determination of whether a removal is necessary, and determination of whether a nonfederal party is undertaking proper response.

NCP §300.415(b)(4) outlines the actions that must be initiated when a planning period of at least six months exists before on-site activities must be initiated and FWS determines that a removal action is appropriate. This non-time-critical removal action path requires preparation of an EE/CA, which is an investigation of the nature and extent of hazardous substances at a site and

³ Section 300.415(b)(2) states:

The following factors shall be considered in determining the appropriateness of a removal action pursuant to this section:

- (i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;
- (ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;
- (iii) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;
- (iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;
- (v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;
- (vi) Threat of fire or explosion;
- (vii) The availability of other appropriate federal or state response mechanisms to respond to the release; and
- (viii) Other situations or factors that may pose threats to public health or welfare of the United States or the environment.

evaluation of clean up alternatives; and, if environmental samples are to be collected, a field sampling plan (“FSP”) and quality assurance project plan (“QAPP”).

D. Removal Site Evaluation (RSE)

In 2006, FWS conducted a RSE for the Site in compliance with the NCP, and considered all appropriate factors and requirements set forth for such evaluations in NCP §300.410 and §300.415(b)(2) and (d) for the purpose of determining whether current conditions at the Site constitute a threat to public health, welfare, or the environment warranting a removal action. FWS completed the RSE based upon ample information available in existing documentation of Site contamination. In its RSE, FWS concluded that further response action was necessary to provide a permanent response to the pesticide contamination at the Site. FWS determined that there was a sound technical basis to respond to pesticide contamination at the Site independently and in advance of the completion of the RI, FS, and subsequent remedial action for the entire AUS OU.

E. Past Site Activity

1. AUS OU PA/SI, 1999-2000

Based primarily on the use of the Warehouses for past storage of pesticides, soil samples were taken around the Warehouses. Detections of a number of pesticides, all of which are hazardous substances, exceeded human health and/or ecological screening levels, including 4,4’-DDD, 4,4’-DDE, 4,4’-DDT, aldrin, alpha chlordane, beta-BHC, dieldrin, endosulfan sulfate, endrin, endrin aldehyde, gamma-BHC, gamma chlordane, heptachlor, heptachlor epoxide, isodrin, and methoxychlor. Aldrin and dieldrin were the predominant contaminants found, with maximum detections of 520 and 290 mg/kg, respectively.

2. Supplemental PA/SI Sampling, 2001

FWS conducted additional sampling at the Site to supplement the PA/SI, including soil, sediment and surface water from the drainageway leading away from the Site toward Crab Orchard Lake, and wipe and dust samples from the interior wall and floor surfaces inside the buildings. Result were similar to the PA/SI, with aldrin and dieldrin again the dominant chemicals, with maximum detections of 1,300 and 190 mg/kg, respectively. In the sediment samples, 4,4’-DDT and 4,4’-DDD were predominant, with maximum detections in a sample approximately 600 feet downstream of the site, at 0.048 and 0.039 mg/kg, respectively. Aldrin and dieldrin were the primary contaminants in the interior dust and wipe samples, with maximum detections in dust of 5,300 and 460 mg/kg, respectively.

3. Building Interior Sampling, 2002

Following review of the dust and wipe samples from inside the Warehouses, the U.S. Department of Health and Human Services recommended further testing in Buildings IN-

1-3 and IN-1-6, where tenants were storing goods; as well as quarantine of the products stored in IN-1-6. FWS implemented these recommendations. Wipe sample results from IN-1-3 indicated that the levels of pesticides present in the dust and on surfaces did not represent an unacceptable risk to workers or end users.

4. 2003 Removal Action

In 2003, based on a risk evaluation that included sampling to evaluate potential cleaning methods, FWS cleaned the exterior surfaces of sealed packages in Building IN-1-6 and returned them to their owner. Open inventory (open boxes) could not be decontaminated and returned.

5. AUS OU Phase I RI, 2006-2007

Phase I RI sampling at the Site included 126 soil locations, 7 sediment locations, and 9 surface water locations. In addition, five permanent and four temporary groundwater monitoring wells were installed and sampled.

Because the soil sampling was primarily for the purpose of bounding previous results, detections were generally lower than those from the PA/SI and post-PA/SI sampling. Sediment and surface water results were similar to those from previous sampling, with very low detections of pesticides.

Exceedances of the applicable Illinois Class II groundwater standards (maximum detections/Class II standard, ug/L in parentheses) for 1,2,3-trichloropropane (4.2/1), 1,2-dichloropropane (120/25), and dieldrin (130/45) were found in groundwater samples collected in two sampling events in 2007.

The Site was not included in subsequent AUS OU RI/FS activities.

6. Human Health and Ecological Risk Assessments, 2007

After its decision to conduct an EE/CA at the Site (Section II.D above), FWS conducted risk assessments for the Site⁴, and began the negotiations with Great Lakes that resulted in the 2012 AOC (Section II.B above).

The Human Health Risk Assessment (HHRA) found that USEPA's thresholds for cancer risk (1E-04) and hazard index (1.0) were exceeded for direct contact in scenarios with site surface and subsurface soil, in inhalation scenarios for chemicals released from soil and groundwater, and for ingestion of fish exposed to site surface water. Hazardous substances identified as contaminants of potential concern (COPCs) in surface soil (upper 6 inches) were aldrin, dieldrin, total DDT and carcinogenic polyaromatic hydrocarbons (cPAHs; expressed as PAH toxic equivalence quotient, PAH-TEQ). Hazardous substances identified as COPCs in subsurface soil were 1,2,4- and 1,3,5-

⁴ Risk Assessments were based on the current and anticipated future use of the land, including Wildlife Conservation and Recreation.

trimethylbenzene, 1,2-dichloropropane, ethylbenzene, total xylenes, 4,4-DDT, aldrin, dieldrin, and hexachlorobenzene. The ecological risk assessment found unacceptable risk to ecological receptors. The following hazardous substances are contaminants of potential ecological concern (COPECs) and were identified for the upper two feet of soil: aldrin, dieldrin, total DDT, endrin, endrin aldehyde, endrin ketone and isodrin.

7. EE/CA Phase I Field Investigation and Risk Assessment Updates, 2014-2016

Levels of pesticides in surface water and sediment in the drainages leading away from the Warehouses indicated the potential for impacts to Crab Orchard Lake. In addition, past releases may have resulted in impacts to the Lake and fish in the Lake. Because of the potential for impacts to the Lake, the Great Lakes AOC included an investigation of sediment, surface water and fish in the Lake embayment that receives drainage from the Site. Work included pesticide analysis of sediment, surface water, and fish tissue for samples taken from the embayment. For comparative purposes, sediment and surface water were collected from Crab Orchard Creek, the source stream for Crab Orchard Lake; and fish samples were obtained from the Lake outside the embayment. Results of the investigation indicated that Crab Orchard Lake, including fish, is not impacted by pesticides originating from the Warehouses. The results superseded the 2007 HHRA results that indicated risk from fish consumption, as the HHRA analysis was based on surface water and sediment samples from drainages near the site, and not from Crab Orchard Lake. Those surface water and sediment samples were from intermittent streams leading to the lake, which do not support fish populations.

Groundwater sampling of wells at the Site in 2014 and 2016 showed no exceedances of Class II groundwater standards.

As part of the EE/CA, the risk assessments were updated based on the additional analytical data, updated exposure parameters and scenarios, and updated toxicological data. Updated risk-based remediation goals (RBRGs) are summarized below. Only the lowest (controlling) RBRG for each chemical and media is shown.

Human Health Risk-Based Remediation Goals (RBRGs)		
Contaminant of Concern (COC)	Media	RBRG, mg/kg
Aldrin	Surface Soil	0.41
Dieldrin	Surface Soil	0.26
PAH-TEQ	Surface Soil	3.6
Aldrin	Subsurface Soil	8.27
Dieldrin	Subsurface Soil	7.29
1,2,4-Trimethylbenzene	Subsurface Soil	1423
1,2-Dichloropropane	Subsurface Soil	49
1,3,5-Trimethylbenzene	Subsurface Soil	626
Ethylbenzene	Subsurface Soil	530
Xylenes, Total	Subsurface Soil	1013
Chromium, Total	Subsurface Soil	1999

Human Health Risk-Based Remediation Goals (RBRGs)		
Iron	Subsurface Soil	163000
4,4-DDT	Subsurface Soil	109
Hexachlorobenzene	Subsurface Soil	72

Ecological Risk-Based Remediation Goals (RBRGs)		
Contaminant of Concern	Media	RBRG, mg/kg
aldrin	Soil (upper 2 ft)	1.4
Dieldrin	Soil (upper 2 ft)	1.5

F. Agency Roles

FWS, as the lead agency for the AUS OU, is undertaking this action under §104(a) of CERCLA. USEPA, Region 5 and the Illinois EPA (“IEPA”) are support agencies for the AUS OU. USEPA and the State of Illinois concur in the proposed remedy.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT

Documented Site conditions and associated risks, along with the evaluation of the relevant NCP factors, demonstrate that the release of hazardous substances at the Site poses imminent and substantial threats to public health, welfare, and the environment⁵ and the initiation of a removal action is appropriate. The HHRA, as updated, identified unacceptable risks and hazards from hazardous substances, primarily pesticides, associated with direct contact with soil and inhalation of vapors from soil. The BERA, as updated, found unacceptable risk to ecological receptors. Previous risk assessments found unacceptable risks and hazards from exposure to hazardous substances, primarily pesticides, inside the Warehouses and on materials stored in the Warehouses.

IV. ENDANGERMENT DETERMINATION

The risk assessments for the Site (discussed in Section II.E.6 above) concluded that the Site poses unacceptable risk and hazard, resulting from releases of hazardous substances, primarily pesticides. Therefore, actual or threatened releases of hazardous substances from this Site may present an imminent and substantial endangerment to public health, or welfare, or the environment. 40 CFR 300.415(b)(2)(i)

V. PROPOSED ACTION AND ESTIMATED COSTS

A. Description of Proposed Action

Two removal action alternatives were evaluated in the Final EE/CA Report: Alternative 1 includes removal and permanent disposal of impacted soils and Warehouse materials at a

⁵ CERCLA section 104(a) authorizes removal responses "whenever (A) any hazardous substance is released or there is a substantial threat of such a release into the environment, or (B) there is a release or substantial threat of release into the environment of any pollutant or contaminant which may present an imminent and substantial danger to the public health or welfare."

nonhazardous waste landfill, and Alternative 2 entails in-situ treatment of impacted soils to chemically/biologically reduce pesticide concentrations, and permanent disposal of Warehouse materials at a nonhazardous waste landfill.

A decision matrix was used for comparative analysis, and Alternative 1 emerged as the preferred alternative because it is:

- better proven to achieve the risk-based remediation goals in a shorter time period,
- more protective of workers and neighboring tenants,
- more protective of the environment, as the alternative will limit redistribution or re-release of impacted materials at the Site because of the shorter treatment period, and
- less expensive.⁶

The Final EE/CA Report was made available for a 30-day public comment period, and FWS did not receive any significant comments.

FWS proposes Alternative 1 as the Proposed Action for the Site. This Proposed Action includes excavation of contaminated soils, demolition of the Warehouses, and off-Site disposal of materials in a permitted nonhazardous waste landfill. These actions will remove pesticide-impacted structures, including stored materials, from the Site, and reduce the contaminant concentrations in soil until the Site no longer exceeds unacceptable risk levels from any of these sources.

The phases for the Proposed Action are summarized below:

- Obtain approval from Subtitle D, nonhazardous waste landfill to dispose of wastes.
- Abate regulated asbestos-containing materials (RACM) from Warehouses.
- Control pesticide dust in and on Warehouses with stabilizing foam.
- Demolish four Warehouses including slabs: IN-1-3, IN-1-4, IN-1-5, and IN-1-6.
- Dispose of demolition debris and materials inside Warehouses in the approved landfill.
- Excavate soil and dispose of in the approved landfill.
- Restore the site, including revegetation with native plantings.

If necessary, upon completion of the remedy, the FWS CERCLA Project Manager will memorialize any appropriate land use restrictions in the Refuge's Land Use Control Plan.

B. Contribution to Remedial Performance

This Proposed Action is intended to be a final action for the Site, and further response action at the Site is not anticipated. This final action for the Site will also, to the extent practicable, contribute to the efficient performance of any anticipated remedial action for the AUS OU. 40 CFR 300.415(d). Because the Site is part of the AUS OU, it will be included in the CERCLA five-year review process for the AUS OU until such time as it is included in a full or partial delisting from the NPL site.

⁶ Final EE/CA for Area 7 Pesticide Area at AUS OU, January 2018.

C. Description of Alternative Technologies

An alternative technology evaluated in Alternative 2 in the EE/CA included on-site treatment of contaminated soil using Daramend Reagent amendment for the soil. While this alternative would have resulted in greater reduction in toxicity through treatment, the effectiveness, implementability and cost did not compare favorably with Alternative 1.

D. Applicable or Relevant and Appropriate Requirements (ARARs)

Pursuant to CERCLA §121(d) and 40 CFR 300.415(j), removal actions shall, to the extent practicable considering the exigencies of the situation, attain “applicable or relevant and appropriate requirements” (“ARARs”). “Practicability” is based upon the urgency of the situation and the scope of the removal. FWS has identified ARARs for the removal action at the Site, which are discussed in Section 2.5 of the Final EE/CA and included in EE/CA Table 2-1.

E. Estimated Cost

Great Lakes’ estimated cost for the recommended removal action is \$1,996,000.

F. Project Schedule

Following approval of this Action Memorandum, FWS will engage in settlement negotiations with Great Lakes for implementation of the Proposed Action. During those negotiations, the parties will also develop a Removal Action Work Plan that will include a detailed schedule for implementation of the response action. In general, the work plan development and approval will require approximately three months and field work can be completed in an additional three months or less. Timing of field work may be constrained by seasonal groundwater levels, as excavation may be impractical under conditions of a high groundwater table, as well as compliance with ARARs for endangered species.

G. Administrative Record, Public Comment Period, and Community Relations

Pursuant to NCP §300.415(n) and §300.820(a), public notice of a 30-day public review and comment period for the Final EE/CA Report and Site Administrative Record was published in The Southern Illinoisan on January 6, 2018. An open house and public meeting were held at the Refuge Visitors’ Center on January 24, 2018. The meeting was posted to area internet calendars of events on January 9 (Southern Illinoisan, WSIL, z100fm, Carbondale Chamber, and WSIU.org). On January 19, the Site fact sheet was updated and a news release was distributed. Interested party letters were sent to government officials on January 22 and 23, 2018, and FWS participated in a phone interview with the local university radio station (WSIU) on January 25.

In addition, prior to the January 2018 public comment period, the following community outreach activities were conducted:

- November 19, 2015 – presentation to the Rotary Club, Marion, Illinois
- April 18, 2017 – post cards mailed to tenants and cooperators

- June 6, 2017 – open house for tenants and cooperators
- December 7, 2017 – Announcement of open house and public meeting tentatively scheduled for January 2018 for Friends Group (volunteer group for the Refuge)
- January 4, 2018 – Presentation to the Friends Group on EE/CA and community involvement opportunities

No significant comments were received during the 30-day comment period.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will increase the potential for exposure, and will increase the likelihood of releases of pesticides from the Warehouses as they continue to deteriorate.

VII. OUTSTANDING POLICY ISSUES

No outstanding policy issues exist for this removal action.

VIII. ENFORCEMENT

FWS concluded that the pesticides released at the Site were disposed of by Great Lakes at the time it operated at the Warehouses and identified Great Lakes as a CERCLA PRP for the Site. On July 26, 2012, FWS entered into an AOC with Great Lakes for performance of the EE/CA and partial recovery of past costs. Upon approval of this Action Memorandum, FWS, USEPA, and the Department of Justice will engage in settlement negotiations with Great Lakes for the implementation of the removal action and recovery of any outstanding past costs.

IX. ATTACHMENTS AND KEY DOCUMENTS

A. Attachments

Engineering Evaluation/Cost Analysis (EE/CA), Area 7 Pesticide Area of the Additional and Uncharacterized Sites Operable Unit, Crab Orchard National Wildlife Refuge NPL Site, Marion, Illinois (Williamson County). Final. January 2018.

B. Other Key Documents

Other key documents are included in the reference section of the attached EE/CA.

X. RECOMMENDATION

On the basis of the evaluation conducted and the factors outlined in the NCP, FWS has determined that the release of hazardous substances at the Site poses an imminent and substantial danger to public health, welfare, and the environment and that a non-time-critical removal action is necessary and appropriate to abate and contain the release and mitigate the ongoing migration of hazardous substances off-Site and the associated risks to public health, welfare, and the environment.

XI. AUTHORIZATION

Because conditions at the Site meet all applicable CERCLA and NCP criteria for undertaking a non-time-critical removal action (40 CFR §300.415(b)(2)), I approve the removal action as proposed herein.



Regional Director
U.S. Fish and Wildlife Service, Region 3

ACTING

Date: 4/4/18

APPENDIX B



Removal Design/Removal Action Work Plan

**Area 7, Pesticide Area of the
Additional and Uncharacterized Sites Operable Unit**

**Crab Orchard National Wildlife Refuge NPL Site
Marion, Illinois (Williamson County)**

**Final
November 2022
Revision 1**

*Prepared By
TRC Environmental Corporation
Madison, Wisconsin*

*Submitted on Behalf of
Great Lakes Synergy Corporation*



Removal Design/Removal Action Work Plan

Area 7, Pesticide Area of the Additional and Uncharacterized Sites Operable Unit

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	■ N.8: Waste Disposal Log
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	■ N.11: Notice of Non-Compliance Log

Acronyms/Abbreviations

ACM	Asbestos-Containing Material
AOC	Administrative Settlement Agreement and Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirements
AUS OU	Additional and Uncharacterized Sites Operable Unit
BAEU	Building Area Exposure Unit
BAF	bioaccumulation factor
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
BHHRA	Baseline Human Health Risk Assessment
BMPs	Best Management Practices
BoL	Bill of Lading
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COPC	Constituent of Potential Concern
CQCP	Construction Quality Control Plan
Crab Orchard	Crab Orchard National Wildlife Refuge
DOI	United States Department of the Interior
EE/CA	Engineering Evaluation/Cost Analysis
FFA	Federal Facility Agreement
FSP	Field Sampling Plan
FWS	Fish and Wildlife Service
GLS	Great Lakes Synergy Corporation, successor to GLT&T
GLT&T	Great Lakes Terminal & Transport
HQ	hazard quotient
HASP	Health and Safety Plan
HEPA	High Efficiency Particulate Arrestance
IEMA	Illinois Emergency Management Agency
IEPA	Illinois EPA
IOP	Illinois Ordinance Plant
LEPC	Local Emergency Planning Committee

NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NESHAP	National Emission Standards for Hazardous Air Pollutants
NPL	National Priorities List
NOAEL	No Observed Adverse Effects Level
OSFM	Illinois Office of the State Fire Marshal
PA/SI	Preliminary Assessment/Site Inspection
PRGs	preliminary remediation goals
QAPP	Quality Assurance Project Plan
RA	removal action
RD	removal design
RD/RA WP	Removal Design/Removal Action Work Plan
RBRGs	risk-based remediation goals
Refuge	Crab Orchard National Wildlife Refuge
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
SERC	State Emergency Response Commission
Site	The Warehouses, the surrounding area, and any area where hazardous substances have been released, or have otherwise come to be located
SOPs	Standard Operating Procedures
SSO	Site Safety Officer
SQH	Small Quantity Handlers
SWPPP	Storm Water Pollution Prevention Plan
TRC	TRC Environmental Corporation
UCL	Upper Confidence Limit
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USTs	Underground Storage Tanks
VOCs	volatile organic compounds
Warehouses	Four buildings at Area 7, IN-1-3, IN-1-4, IN-1-5, and IN-1-6

Executive Summary

This Removal Design/Removal Action Work Plan (RD/RA WP) describes how removal design and removal action activities associated with the Area 7, Pesticide Area will be performed.

The construction removal action activities are based on Alternative 1 identified in the Engineering Evaluation/Cost Analysis (EE/CA; TRC 2018a), and selected in the Action Memo. Alternative 1 consists of the following major elements:

- Perform removal design (RD) soil sampling to assess the extent of Site-wide aldrin- and dieldrin-impacted soil compared to risk-based remediation goals (RBRGs). This work is being performed as described in the February 22, 2018, *EE/CA Work Plan Addendum* (TRC, 2018b).
- Demolish and dispose of structure, concrete foundations, and contents of four impacted Warehouses IN-1-3, IN-1-4, IN-1-5, and IN-1-6 to eliminate potential exposure to aldrin and dieldrin residual pesticides present in these structures.
- Reduce aldrin and dieldrin concentrations in soil in the Building Area Exposure Unit (BAEU) to the compliance metrics (see Section 3.1) based on the RBRGs.
- Maintain functionality of drainage ditches leading to the Embayment.
- Revegetate the area affected by the removal action to a condition consistent with the use of the Refuge in that area in accordance with the Refuge Administration Act.

Section 1

Introduction

TRC Environmental Corporation (TRC) has been contracted to provide non-time-critical removal action (RA) services at the Area 7, Pesticide Area of the Additional and Uncharacterized Sites Operable Unit (AUS OU) at the Crab Orchard National Wildlife Refuge (Crab Orchard or the Refuge) National Priorities List (NPL) Site in Marion, Illinois (Drawing 1).

This RD/RA WP provides a description of the RD sampling/delineation (previously described in the Field Sampling Plan [FSP]), construction activities, permitting requirements, and documentation that will be performed for the RD/RA. Additional documents associated with this RD/RA WP include the following:

- EE/CA (TRC, 2018a)
- EE/CA Work Plan Addendum (TRC, 2018b)
- Sampling and Analysis Plan (SAP), which includes the FSP and the Quality Assurance Project Plan (QAPP) Addendum (TRC, 2018c)

1.1 Background

The Crab Orchard National Wildlife Refuge, located near Marion, Illinois, includes a site on the NPL, which is subject to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, 42 U.S.C. § 9601, et seq. The NPL site is divided into seven operable units by which investigation and cleanup is organized.

One such site is the AUS OU, in which the Area 7, Pesticide Area is located. Area 7 was an “inert storage” area consisting of 26 buildings, surrounding lawns, and interconnecting roadways (Drawing 2). Four buildings within Area 7 (IN-1-3, IN-1-4, IN-1-5, and IN-1-6 [the Warehouses]), were previously leased by the predecessor to GLS for the storage of pesticides. The Warehouses, surrounding area, and any area where hazardous substances have been released or have otherwise come to be located comprise the Site. This RD/RA WP has been prepared to address the Area 7, Pesticide Area Site.

The Refuge is administered by the United States Fish and Wildlife Service (FWS). The United States Environmental Protection Agency (USEPA), Region 5; the Illinois EPA (IEPA); and the United States Army Corps of Engineers (USACE) are support agencies for the AUS OU.

The FWS investigated the Warehouses and surrounding area as part of the Preliminary Assessment/Site Inspection (PA/SI) for the AUS OU (URS, 2003a). Additional sampling was

done after the PA/SI (URS, 2003b), and as part of the Remedial Investigation (RI) for the AUS OU, in 2006-2007 (NewFields, 2009). A preliminary assessment of the potential risks associated with contaminated media was performed based on the data gathered during these investigations, and were summarized in the draft Baseline Human Health Risk Assessment (FWS, 2007a), and draft Baseline Ecological Risk Assessment (FWS, 2007b). Aldrin and dieldrin were determined to be the primary human health and ecological risk drivers based on the Baseline Human Health Risk Assessment (BHHRA), Baseline Ecological Risk Assessment (BERA), Risk Management Technical Memorandum (TRC, 2016a), and EE/CA (including technical addenda to the EE/CA).

FWS determined that the soil adjacent to the Pesticide Area Warehouses (buildings IN-1-3 through IN-1-6), the interior of the Warehouses, and materials inside the Warehouses, as well as the groundwater, were impacted by the release and/or substantial threat of release of pesticides and other hazardous substances. FWS determined that a RA was appropriate for the Site (FWS, 2009), and developed a work plan to complete an EE/CA in support of a non-time-critical RA (FWS, 2012). Additional preliminary assessments of the potential risks associated with contamination in site soil, surface water, sediment, and groundwater in the AUS OU was performed as part of the remedial investigation on behalf of GD-OTS (Shannon & Wilson, 2015). Historical soil and groundwater sampling locations are shown on Drawing 3.

The EE/CA Phase I field investigation was performed in August and October of 2014 (TRC, 2016b; and TRC, 2016c). Groundwater sampling data confirmed no current exceedances of Class II groundwater standards for pesticides or volatile organic compounds (VOCs). The most recent rounds of groundwater sampling results are shown on Drawing 4. Based on the results of the Phase I investigation, sediment, surface water, fish in the Embayment and Crab Orchard Lake, and groundwater were determined to not be media of concern. A summary of soil sampling results for the BAEU and the Creek Area Exposure Unit are shown on Drawings 5.1 to 5.3.

1.2 RA Purpose, Objectives, and Scope

The risks associated with this Site include potential exposure within Warehouses and to shallow soil containing aldrin and dieldrin, which have the potential to threaten human health and ecological receptors if not mitigated. The purpose of the RA project is to remove and dispose of the pesticide material. The objectives of work will include the following:

- Removal of contaminated soils, debris, and building material, to mitigate potential exposure to and/or continuing migration of pesticides at concentrations that may pose an unacceptable risk to human receptors under land use scenarios consistent with current land use and reasonably anticipated future use.

- Removal of contaminated soils, debris, and building material to mitigate potential exposure to pesticides at concentrations that may pose an unacceptable risk to ecological resources under land use scenarios consistent with current land use and reasonably anticipated future use.

The specific scope items anticipated under the RD and RA include the following:

- Perform RD soil sampling to assess the extent of Site-wide aldrin and dieldrin impacted soil compared to RBRGs. This work is being performed as described in the February 22, 2018, *EE/CA Work Plan Addendum*.
- Demolish and dispose of structure, concrete foundations, and contents of four impacted Warehouses IN-1-3, IN-1-4, IN-1-5, and IN-1-6 to eliminate potential exposure to aldrin and dieldrin residual pesticides present in these structures.
- Reduce aldrin and dieldrin concentrations in soil in the BAEU to the compliance metrics (see Section 3.1) based on the RBRGs.
- Maintain functionality of drainage ditches leading to the Embayment.
- Revegetate the area affected by the removal action to a condition consistent with the use of the Refuge in that area in accordance with the Refuge Administration Act.

1.3 Report Organization

This RD/RA WP consists of two parts as follows:

- **Part I:** RD/RA WP
- **Part II:** Health and Safety Plan (HASP), which is a separate document

Section 2

Existing Conditions

2.1 Site Location, Setting, and Land Use

Area 7, Pesticide Area is a part of the AUS OU of the NPL site discussed in Section 1.1. Area 7 is located approximately 1.5 miles east of the intersection of Highway 148 and Ogden Road, and approximately 0.5 miles north of Ogden Road (Drawing 1). Area 7 was the Illinois Ordinance Plant (IOP) “inert storage” area, consisting of 26 buildings, surrounding lawns, and interconnecting roadways. Four buildings within Area 7 (IN-1-3, IN-1-4, IN-1-5, and IN-1-6 [the Warehouses]), were previously leased by GLS predecessor for the storage of pesticides. The Warehouses, surrounding area, and any area where hazardous substances have been released or have otherwise come to be located comprise the Site.

The Site physical setting was described in detail in Section 2 of the Pesticide Area EE/CA Work Plan (FWS, 2012), as follows:

“Geologic Setting

The Refuge exists within a physiographic designation known as the Till Plains Section and is only a few miles north of the southernmost boundary of modern (Pleistocene) glaciation in North America (Willman and others, 1975). A thin layer of topsoil and/or fill exists throughout much of the Refuge, underlain by glacial deposits that are generally less than 50 feet thick (Willman and others, 1975). At the site, the uppermost deposit is windblown (loess) of silt and clay (Peoria Loess/Roxana Silt) (Lineback, 1979). Beneath these Wisconsinan Stage deposits, ground moraine till of the Illinoian Stage (Vandalia Member of the Glasford Formation) exists, predominantly composed of hard silty clay (Lineback, 1979) with discontinuous sandy lenses (URS, 2003). The Loveland Silt, a loess deposit of the Illinoian Stage, is also present in some areas but its presence and thickness (up to eight feet in the southwest portion of Williamson County) is difficult to predict due to irregular erosion of the unit (Leon Folmer, ISGS, personal communication).

The Refuge is located near the southern margin of the Illinois Basin, an oval geologic depression spanning most of Illinois, southwest Indiana, and western Kentucky. The basin initially formed as the result of a failed continental rift during early to middle Cambrian time and contains considerable thickness of marine bedrock units. The depth to bedrock in the area encompassing the Refuge is usually less than 50 feet and often less

than 20 feet south of Crab Orchard Lake. Bedrock in the area consists of a thick sequence of Pennsylvanian age units, approximately 600 to 800 feet thick (Willman and others, 1975) that uniformly dip at a rate of approximately 1:75 (less than 1 degree) slightly east of north toward the center of the Illinois Basin (Nelson, 2007a).

The initial bedrock in the part of the Refuge south of Crab Orchard Lake is the Tradewater Formation, a marine sedimentary series consisting of shale, sandstone, coal (with associated underclay), and scattered limestone beds with a total thickness of about 475 to 525 feet (Nelson, 2007a). Due to considerable uneven erosion of Pennsylvanian age rock, and the inherent variability of the Pennsylvanian formations, substantial variability exists with respect to the rock type initially encountered throughout the Refuge. Sandstone is more typical as the first bedrock in area south of the lake. Below the Tradewater Formation lies the Pennsylvanian age Caseyville Formation, about 325 to 375 feet thick (Nelson, 2007a). The Caseyville Formation is similar to the Tradewater Formation in lithology but exhibits thicker sandstone and shale units. The Mississippian age Kincaid Limestone underlies the Caseyville Formation and is about 100 to 170 feet thick (Nelson, 2007a)."

The Site operational history was summarized in Section 3.1 of the EE/CA Work Plan, as follows (FWS, 2012):

"This NPL site was the Illinois Ordnance Plant ("IOP") during World War II. Area 7 was the Inert Storage Area for the IOP and was used for warehousing metal parts and other inert (non-explosive) materials used in the production of ordnance. The original building complex consisted of about 40 identical buildings in 6 rows, each about 50 ft by 200 ft in plan dimension. All building numbers in this area were prefixed with "IN" (for Inert Storage). Grassed areas and gravel roads separate the warehouses in Area 7.

In 1947 an Act of Congress transferred the old IOP area, together with an additional 21,500 acres, to the DOI, thereby creating the Crab Orchard National Wildlife Refuge. The enabling legislation assigned FWS the responsibility of managing the area as a wildlife refuge, with the additional missions of supporting recreation, agriculture and industrial use. As part of its industrial mission, the Refuge leased these warehouses to industrial tenants.

Great Lakes Terminal & Transport (GLT&T) leased Buildings IN-1-3 through IN-1-6 for storage of pesticides during the 1950s to the early 1970s. In response to a CERCLA §104(e) information request, GLT&T reported storing the following products, among others, at the Refuge: technical aldrin, 94-97%; technical bidrin; ciodrin 2-3%; ciopap;

technical dieldrin 100%; technical endrin 95-99%; technical nemagon; phosdrin; technical planavin; planavin 75%; rabon; vapona 1%; technical vapona; allyl alcohol; Azordin; compound 4072; halbard; technical methyl parathion; 10% parathion 1% telodrin; niran 10-G; SD-8447 2lb/gal solution XP-837; SD-8447 4lb/gal solution XP-783; SD-8447 75% wettable powder code 3-15-24-1; vapona smear XP-246; vapona in petrolatum XP-507; vapona 50% solution XP-465; vapona 90% solution XP-409; 20% vapona resin XP-555; vapona 0.5% dieldrin-0.5% spray solution. Some of these pesticides are highly toxic and/or probable carcinogens and have been banned. For example, EPA banned all uses of aldrin and dieldrin in 1987. GLT&T lease dates are as follows: Building IN-1-3, 1961-1966; Building IN-1-5, either 1951 or 1961, through 1966; Building IN-1-5, 1951-1971; and Building IN-1-6, 1951-1971.

Great Lakes Synergy Corporation is the successor to GLT&T.”

The Warehouses were subsequently leased by FWS to a number of other tenants listed in the EE/CA (TRC, 2018a).

2.2 Surrounding Area

The land to the north of the BAEU is used as agricultural fields. A northward flowing creek transects the BAEU between IN-1-3 and IN-1-4, and then angles to the northwest before it flows north again into Crab Orchard Lake, which is located approximately 2,000 feet north of the Warehouses. Additional buildings remain to the east and south of the BAEU. One building immediately east of the BAEU, IN-1-2, is currently leased for storage by Habitat for Humanity. All buildings immediately south of the BAEU (IN-2-3 through IN-2-6) have been demolished, and only the concrete slabs of IN-2-3, IN-2-5, and IN-2-6 remain. The land to the west of the BAEU is a wooded section of the Refuge.

2.3 Hydrogeologic Conditions

The Site hydrogeologic conditions were described in detail in Section 2 of the EE/CA Work Plan (FWS, 2012), as follows:

“The Refuge exists within the Big Muddy River Watershed, which drains to the Mississippi River. This watershed comprises 1,510,655 acres (2,360 square miles) and covers portions of Washington, Jefferson, Perry, Franklin, Jackson, and Williamson counties. Crab Orchard Creek, a tributary of the Big Muddy River, was dammed in the middle reaches during the 1930s for flood control and recreation, creating Crab Orchard Lake. Crab Orchard Lake covers 6,965 acres (10.88 square miles) and is also fed by perennial streams that include Pigeon Creek, Wolf Creek, Sugar Creek, Little Grassy

Creek, and Grassy Creek. The sub-watershed contributing to Crab Orchard Lake consists of 109,261 acres (171 square miles) (IEPA, 2007; URS, 2003).

Water-table groundwater conditions, including flow patterns, are strongly correlated to the surface water features. The water table occurs at shallow depths ranging from near the ground surface to approximately 20 feet below ground surface (bgs). The unconsolidated deposits overlying bedrock (overburden) are dominated by fine grained material (silt and clay) of sufficiently low hydraulic conductivity that saturated conditions are often not initially apparent in these materials when drilling below the water table. Groundwater levels fluctuate substantially both seasonally and from year to year, depending on precipitation. ..."

"The first several hundred feet of bedrock is dominated by shale and sandstone with some coal seams and underclay. ...Based on the hydraulic conductivity testing values determined from these bedrock monitoring wells, the sandstone bedrock has a low hydraulic conductivity, with most values in the 10^{-5} and 10^{-6} cm/s range (URS, 2003). Although no hydraulic conductivity tests have been performed for the shale in the AUS OU, the shale can be expected to yield lower values than the sandstone. Therefore, to a depth of 239 feet bgs, bedrock is dominated by low hydraulic conductivity conditions, based on field observations and testing performed during AUS OU investigative activities, through the Phase I RI investigation.

At depths between 400 and 500 feet, well log data indicate the presence of thick, waterbearing sandstone. Other sandstone is also encountered between 600 and 700 feet and perhaps as deep as 860 feet. Below this depth, groundwater may not be usable due to its increasing mineralization (URS, 2003). Based on well log information, hydraulic conductivity testing, and general geologic information, no materials of substantial aerial and vertical extent with hydraulic conductivity values above 10^{-4} cm/s are known to exist in the AUS OU to a depth of 400 feet. Materials with K values above 10^{-4} cm/s occur over limited vertical extent and are often highly localized."

Groundwater monitoring wells were installed by General Dynamics Ordnance and Tactical Systems, Inc. and TRC in the overburden in Area 7 through the completion of the RI. The depth to groundwater beneath the Site ranged from approximately 3 to 12 feet bgs, and is shallowest in the vicinity of the Warehouses (TRC, 2016c). Based on aquifer testing and two rounds of water level monitoring (during seasonal high and seasonal low conditions), the following evaluation of the groundwater flow conditions were made (FWS, 2012):

“...Flow is toward the north, and the gradient based on the December 2007 data is approximately 0.015. Based on the geometric mean hydraulic conductivity value of 8.09×10^{-5} cm/sec for all the wells in Area 7, and an assumed porosity of 0.4 for the aquifer materials, the effective velocity is approximately of 3×10^{-6} cm/sec (3 ft/yr).”

Based on the calculated hydraulic conductivity, the overburden groundwater would be classified under Illinois regulations (35 IAC 620) as Class II (General Resource Groundwater). Following submittal of the Final RI in 2015, IEPA concurred with the Class II determination for Area 7 groundwater. The focus of this RA is impacted soil and buildings, not groundwater. As current monitoring demonstrates that Class II standards are not exceeded, no groundwater removal action is planned in this RD/RA WP except to the extent that some potential source zone soils will be remediated. Also, the TCE groundwater plume in Area 7, which is not associated with the Warehouses, is not addressed by this RA.

2.4 Summary of Media and Constituents of Concern

Pesticides were detected in the soil adjacent to buildings IN-1-3 through IN-1-6, and the interior and contents of the Warehouses. Prior to demolition, the pesticide-impacted dust, asbestos-containing material (ACM), universal wastes, and other building contents will be removed and disposed off-site.

The risk evaluation identified aldrin and dieldrin in soil as the primary risk drivers for the Site. Other constituents of potential concern (COPC) identified in soil in the vicinity of the Warehouses included other pesticides (endrin, endrin aldehyde, endrin ketone, and isodrin), VOCs (1,2,4- and 1,3,5-trimethylbenzene, 1,2-dichloropropane, ethylbenzene, xylenes, and hexachlorobenzene), and carcinogenic polycyclic aromatic hydrocarbons. However, these compounds were not identified as risk drivers for the Site remediation. EE/CA Technical Addenda 3 and 4 illustrate that even when using conservative assumptions, other COPC will not be present, post removal, at concentrations of concern, as the removal of aldrin and dieldrin-impacted soil removes other co-located COPC (TRC, 2018a).

Groundwater will be addressed to the extent that some source zone soils will be remediated. The TCE groundwater plume in Area 7 (which is not associated with the Warehouses) is not addressed by this RA.

2.5 EE/CA Summary

Two RA alternatives were evaluated in the EE/CA (TRC, 2018a):

- **Alternative 1** – Removal and permanent disposal of impacted soils and Warehouse materials at a non-hazardous waste landfill.

- **Alternative 2** – In-situ treatment of impacted soils to chemically/biologically reduce pesticide concentrations, and permanent disposal of Warehouse materials at a non-hazardous waste landfill.

A decision matrix was used for comparative analysis. Alternative 1 emerged as the preferred alternative based on the following:

- Based on initial aldrin and dieldrin concentrations, Alternative 1 is better proven to achieve RBRGs.
- Alternative 1 will achieve RBRGs in a shorter time period than Alternative 2, requiring approximately 2 months as compared to the more than 7 months required for Alternative 2.
- Alternative 1 is more protective of workers and neighboring tenants, as handling of impacted materials is significantly less than that for Alternative 2.
- Alternative 1 is more protective of the environment, as the alternative will limit re-distribution or re-release of impacted materials at the Site because of the shorter treatment period of 2 months rather than 7 months.
- The capital costs associated with Alternative 1, \$1,996,000, are less than those for Alternative 2, \$2,580,000.

The Action Memo dated April 4, 2018, selected Alternative 1 as the recommended RA for the Area 7, Pesticide Area.

Section 3

Remediation Approach

3.1 Remediation Goals

Pursuant to the EE/CA Work Plan (FWS, 2012), the draft baseline Risk Assessments (FWS 2007a and 2007b) were reviewed and refined following the completion of the EE/CA Phase I sampling. The site COPCs and potential exposure pathways presented in the Risk Assessments were evaluated during this review. New and additional exposure and toxicity information published since 2007, or that was not included in the 2007 baseline Risk Assessments was evaluated and used to determine numerical soil clean up targets (risk-based remediation goals – RBRGs) for the Area 7 Pesticide Area. Based on the results of the Phase I investigation, sediment, surface water, fish in the Embayment and Crab Orchard Lake, and groundwater were determined to not be media of concern.

The basis for development of the RBRGs for all of the Site COPCs is documented in a Risk Management technical memorandum submitted to the Federal Facility Agreement (FFA) partners on March 21, 2016 (TRC, 2016a). The RBRGs were calculated for an agricultural/industrial reuse scenario, consistent with the mission of the Refuge under the Refuge Administration Act. The RBRGs calculated in the Risk Management memo are summarized in Tables 1-1 and 1-2 of the EE/CA (TRC, 2018a). A summary of the development of the RBRGs is presented below.

The risk evaluation identified two primary chemical drivers in soil—aldrin and dieldrin—in three distinct soil layers representing three different exposure pathways:

1. outdoor worker (human health) in the 0-6 inch soil interval,
2. omnivorous mammals and insectivorous birds (ecological) in the 0-2 foot soil interval, &
3. excavation worker (human health) in the 0-10 foot soil interval.

The ecological preliminary remediation goals (PRGs) from the 2007 Baseline Ecological Risk Assessment were refined based on updated bioaccumulation factors (BAFs) and toxicity reference values (TRVs) determined from literature review. The updated ecological RBRGs were calculated based on a No Observed Adverse Effects Level (NOAEL) for the most conservative wildlife receptor (represented by the American Woodcock). The resulting ecological RBRGs are:

- 1.4 mg/kg for aldrin; and
- 1.0 mg/kg for dieldrin

Similarly, the human health PRGs from the 2007 Baseline Human Health Risk Assessment were refined based on updated exposure assumptions for workers (both outdoor and excavation workers) as well as updated toxicity data for the Site COPCs. The calculated RBRGs based on human health risk are included in Table 1-1 of the EE/CA (TRC, 2018a). The RBRGs representing the $1E^{-6}$ cancer target risk level and a non-cancer hazard quotient (HQ) of 1.0 are as follows:

- Surface soil (0 to 6 inches) – 0.41 mg/kg aldrin; 0.26 mg/kg dieldrin
- Subsurface soil (below 6 inches) – 8.27 mg/kg aldrin; 7.29 mg/kg dieldrin

Table 1 summarizes the human health and ecological RBRGs associated with each soil depth interval/exposure pathway

Table 1-1 of the EE/CA (TRC, 2018a) contains RBRGs for other Site COPCs. However, remediation of soil to achieve the aldrin and dieldrin RBRGs will simultaneously address the other COPCs. Therefore, the RBRGs for aldrin and dieldrin will be used to define the soil removal areas for the RA.

3.2 Removal Areas

Soil removal areas will be determined based on both historical soil data and RD soil sampling. The RD soil sampling program has been designed to further define the limits of the RA, evaluating each of the soil layers and exposure pathways defined in Section 3.1. The RD soil sampling program is being initiated prior to the start of the soil RA pursuant to an approved EE/CA Work Plan Addendum in order to pre-define the limits of excavation. Therefore, the excavation boundary extent Drawings 6.1 through 6.5 included in this RD/RA WP will be revised, finalized, and re-submitted to the FFA partners following RD soil sample collection and incorporation into the current dataset. Surface soil (outdoor worker and ecological pathways) is being evaluated using an area weighted average concentration, while the subsurface soil (excavation worker pathway) will be evaluated on a point-by-point basis, consistent with the underlying assumptions in the risk calculations.

The general sampling and soil removal strategy, and associated compliance metrics to achieve the RBRGs consists of the following steps, as described in the previously submitted FSP:

- Collect additional surface soil samples from 0 to 4 feet to increase data density. Initial sample intervals will be 0 to 6-inch, 0 to 2-foot, and 2 to 4-foot. The 0 to 6-inch and 0 to 2-foot samples will be analyzed first, and the 2 to 4-foot samples will be held pending surface sample results.
- Calculate the area-weighted 95% upper confidence limit (UCL) of the mean for the 0 to 2-foot soil concentrations in the BAEU for comparison against the RBRGs (ecological).

- Iteratively identify which Thiessen polygons must be replaced with clean fill to achieve an area-weighted 95% UCL of the mean for the 0 to 2-foot interval RBRGs (ecological).
- Calculate the 0 to 6-inch soil layer area-weighted 95% UCL of the mean of the remaining soil after removal of the Thiessen polygons, to determine if it is less than the RBRGs for the outdoor worker.
- If the area-weighted 95% UCL of the mean exceeds the 0 to 6-inch RBRG, then more Thiessen polygons will be identified for removal, and the UCL recalculated until the RBRGs are achieved.
- In addition to the above, soil removal will be conducted at any individual sampling location in the 0 to 6-inch interval or the 0 to 2-foot interval that exceeds 5 mg/kg aldrin or dieldrin.
- Wherever a 0 to 2-foot (or deeper) soil concentration exceeds the 0 to 10-foot RBRGs (excavation workers), the next deeper 2-foot interval will be analyzed, down to 10 feet.

Soil sampling locations were shown on drawings included in the FSP; refer to the SAP.

3.3 Health and Safety

A site-specific HASP has been developed to address health and safety matters during performance of the RD sampling and RA field activities.

Section 4

Delineation of Soil Contamination

The RD soil sampling approach to further define the limits of the soil RA limits and other sampling activities associated with the RA activities are described in the SAP. The SAP includes the FSP and QAPP Addendum.

The SAP, which includes the FSP and the QAPP Addendum, was previously submitted for FWS review on March 7, 2018, in order to perform tree clearing prior to the April 1st bat disturbance deadline and to conduct RD soil sampling prior to building demolition. TRC's February 22, 2018, *EE/CA Work Plan Addendum* was approved in a letter from FWS on February 27, 2018. The Draft SAP was also submitted to the FFA partners for review on April 26, 2018. Based on FFA partner comments, the Draft SAP was revised to a Draft Final SAP and resubmitted to FFA partners for review on June 18, 2018.

The RD soil sampling program is being initiated prior to the start of the soil RA pursuant to an approved *EE/CA Work Plan Addendum* in order to pre-define the limits of excavation. Therefore, the excavation boundary extent Drawings 6.1 through 6.5 included in this RD/RA WP will be revised, finalized, and re-submitted to the FFA partners following RD soil sample collection and incorporation into the current dataset.

Section 5

Remediation Activities

Remediation activities associated with the RA will include initial mobilization and site preparation; tree clearing; storm water and erosion control measures; asbestos abatement; universal waste disposal; dust control measures; building demolition; soil excavation; transportation of demolition and excavated materials for disposal at an approved off-site disposal facility; and site restoration.

5.1 Mobilization and Site Preparation

Activities for mobilization and site preparation will include: mobilization of the project team personnel, materials, and equipment; specialty subcontractor and vendor subcontracting arrangements; setup of management and support facilities; identifying work area boundaries; and preparing the site for construction activities. Further definition of these activities is provided below.

5.1.1 Logistics

Prior to mobilizing to the site, TRC will identify which remediation activities will be self-performed by TRC crews and which will be performed by specialty contractors. The specialty contractors selected will be pre-qualified by TRC prior to the start of work. Other activities that will be performed prior to mobilization include the following:

- Develop the construction progress schedule
- Obtain necessary permits and licenses (refer to Section 9)
- Hold a pre-construction meeting to discuss health and safety protocols, project requirements, procedures, roles, responsibilities, and lines of communication

5.1.2 Mobilization

The objective of this activity is to complete pre-work tasks required to efficiently perform the RA. Mobilization activities, at a minimum, will include:

- Mobilize personnel, materials, and equipment to the site in Marion, Illinois
- Set up job trailer(s), sanitary facilities, temporary electrical power, and support areas
- Define the work area
- Conduct site health and safety plan orientation with team
- Initiate site security/access control

The site job trailer(s) will be set up on the concrete slabs for former buildings IN-2-6 and IN-2-5, and site access gates will be installed on Mousertown Road as shown on Drawing 6.1. Existing site utilities are shown on Drawing 7.

5.1.3 Site Preparation

Site improvements will be necessary to prepare the site for the anticipated RA. Erosion and sedimentation control features will be required prior to the initiation of earth-disturbing activities at the site. Site improvements will include the following:

- Establishment of site survey control and removal zones
 - Field personnel equipped with sub-foot accuracy GPS equipment (GeoXH 6000, or similar) will stake all boundaries of the planned removal zones developed based on GIS mapping and analysis of RD soil sample results. This device will be synchronized with a local RTK system to provide maximum possible real-time accuracy. These boundaries will be used to guide the lateral extent of removal as well as establish exclusion zones.
 - Field personnel will also set benchmarks to remain in place throughout construction activities. These will be used to provide consistent vertical reference for removal activities, to be located within sight-lines of removal zones.
 - At each established removal assessment location (see Drawings 6.1-6.5) survey leveling techniques (laser or auto-level) will be used to sight in relative elevations prior to construction, at the targeted base of excavation, and after completing backfilling to assess that targeted excavation and backfill targets are met.
- Setup of work zones and health and safety plan zones, including posting Occupational Safety and Health Administration (OSHA) required notices and safety signage
 - Safety signage identifying the impacted dust hazards have been previously installed throughout the work area by USFWS. Additional safety signage for asbestos hazards present in the Warehouses will be placed in accordance with 29 CFR 1926.1101(k)(7).
 - Caution tape will be placed around the outer perimeter of the planned soil removal areas to delineate the exclusion zone. The exclusion zone will consist of the Warehouses and the soil removal areas. The contaminant reduction zones will be the stabilized construction entrance located at each Warehouse. The support zone will be Mousertown Road and the job trailers located at former Buildings IN-2-5 and IN-2-6 (see Drawing 6.1).

- Installation of temporary gates
 - Temporary gates will be installed at the eastern and western boundaries of the Site on Mousertown Road as shown on Drawing 6.1.
 - The temporary gates will be opened during working hours and closed and locked during non-working hours. The gates will span the width of Mousertown Road and be locked with a chain and either keyed or combination locks to prevent unauthorized access.
- Establishment of contamination reduction zone(s)
 - At the beginning of the project, a traffic plan will be implemented with designated access/egress provisions for decontaminating personnel and equipment. This will consist of installing a temporary stabilized construction entrance from Mousertown Road to a garage door at each of the Warehouses. The stabilized construction entrances consist of a minimum of 6-inches of compacted aggregate underlain by geotextile. The aggregate and geotextile will provide a clean access point to the work areas and a barrier to upward migration of underlying soils. Refer to the site-specific Storm Water Pollution Prevention Plan (SWPPP) prepared for the RD/RA in Appendix A for stabilized construction entrance details. These stabilized construction entrances will be used as contamination reduction zones. The aggregate and geotextile that comprise the stabilized construction entrances will be excavated, loaded, hauled, and disposed along with adjacent soils that are required to be removed during soil excavation activities.
 - Decontamination efforts for personnel will be minimized through the use of disposal PPE (i.e. booties, Tyvek suits, etc.) as appropriate. Boot cleaning stations will be implemented as required.
 - Designated areas will be setup for equipment (i.e., excavators, loaders) at designated access / egress points, which will be free of surface contamination. Waste generated will be containerized and disposed of off-site along with excavated soils.

5.1.4 Storm Water Management

Erosion control features will be installed prior to earth disturbing activities and maintained throughout construction and until the site is stabilized. Erosion controls will be installed and maintained as described in the site-specific SWPPP in Appendix A. To avoid introduction of weeds to the site, the selected erosion control products will either be made with synthetic materials (e.g., foam or plastic) or will be certified as being free of weeds. Straw bales or other potentially weed-containing erosion control products

will not be used. FWS Cultural Resource & Endangered Species forms are included in Appendix B. Details for the silt fence are shown in the SWPPP. Management of storm water during excavation is further discussed in Section 5.2.2.

5.1.5 Monitoring Well Abandonment

The eight existing permanent monitoring wells (W01, W02, W03, W15, W17, W21, W22, and W23) and three temporary monitoring wells (W08, W09, and W10) will be abandoned in accordance with Illinois Administrative Code (IAC) Section 920.120. The Illinois Department of Public Health will be notified at least 48 hours prior to monitoring well abandonment. The surface completions will be removed if present. The casings will be filled by tremie pumping bentonite grout or cement-bentonite grout to within 3 feet of the ground surface. An attempt will be made to pull the casing and screen from the ground. If the well casing and screen are removed, the remaining hole will be backfilled by tremie pumping the sealant material to within 3 feet of the ground surface. If the casing and screen cannot be removed, the backfilled casings will be cut off three feet below grade. The well backfilling will be performed by a certified Illinois well drilling contractor. The surface completions and pipe cutting may be performed by the remediation contractor in conjunction with the RA. The drilling contractor or TRC will submit well sealing forms to the Illinois Department of Public Health within 30 days after the wells are abandoned. Existing groundwater monitoring wells that will be abandoned are shown on Drawing 8. Appendix C contains well construction logs for the existing wells, as well as an example monitoring well abandonment log.

5.2 Demolition and Excavation Activities

The preferred RA alternative identified in the EE/CA consists of removal and disposal of Warehouse materials and impacted soils at a non-hazardous waste landfill to eliminate potential exposure to aldrin and dieldrin residual pesticides present within the structures and reduce Site-wide aldrin and dieldrin concentrations in soil to the RBRGs. The general sequence of demolition and excavation activities will proceed as follows:

- **Warehouse Demolition** – includes the following:
 - Cleaning and removing Warehouse contents (see Section 5.2.1)
 - Friable asbestos abatement (see Sections 5.2.1.1 and 5.2.1.1.1)
 - Removing Warehouse siding and roofing (see Sections 5.2.1.1 and 5.2.1.1.2)
 - Removing Warehouse framing down to concrete slab (see Section 5.2.1.2)

- **Excavation of Soil Above RBRG Cleanup Criteria** – includes excavation and removal of pesticide impacted soil to the predetermined lateral and vertical extent, and backfilling with imported soil.
- **Concrete Demolition** – includes demolishing and removing remaining concrete Warehouse slabs, and backfilling with imported soil.

Further details on the specifics of each remediation activity follow.

5.2.1 Warehouse Demolition

Demolition of each Warehouse will be carried out to remove potential exposure to aldrin and dieldrin residual pesticides present within the structures. Pesticide impacted dust may be present on the building contents and the structure itself. As such, the Warehouse contents and structure will be managed in a manner that controls dust during work activities. The sequence for Warehouse demolition will proceed as follows:

Building IN-1-6

1. As a measure to control dust, install negative air machines to direct air movement away from employees performing work within the Warehouse and through a high efficiency particulate arrestance (HEPA) filtration device that will discharge to the Warehouse exterior.
2. Clean a designated area at each Warehouse and construct a containment enclosure area within the cleaned area. In order to prevent contamination of roll-off containers, one of two options will be implemented, similar to methods used during asbestos abatement work:
 - (a) The floors of the containment enclosure area and all sides of the roll-off container will be covered in plastic, or
 - (b) An end-close roll-off container with a lined interior will be backed up to the side of the Warehouse so that the roll-off does not enter the Warehouse.

By managing roll-offs in this manner, when roll-offs are transported or replaced, decontamination procedures are not needed, unless conditions occur where it is determined that the plastic lining was not protective.

3. As a measure to control dust, perform HEPA vacuuming through walkways between the Warehouse contents.
4. Remove bulk of non-regulated building contents (refer to Appendix D) and place into lined roll-off containers, removing and replacing roll-off containers as necessary.

5. As a measure to control dust, perform a second cleaning by HEPA vacuuming and light wet-mopping the remaining building contents and interior and apply an encapsulant to lock down remaining dust. Encapsulant will be applied per manufacturer's instructions, included in Appendix E. Two encapsulant products are included in Appendix E for use at the Site.
6. Remove friable asbestos and other regulated materials as described in Section 5.2.1.1.
7. Remove the Category II non-friable asbestos as described in Section 5.2.1.1, and demolish siding and roofing by "skinning" the remaining structure, which consists of removing siding and roofing panels intact.

Buildings IN-1-5, IN-1-4, and IN-1-3

1. As a measure to control dust, install negative air machines to direct air movement away from employees performing work within the Warehouse and through a HEPA filtration device that will discharge to the Warehouse exterior.
2. Clean a designated area at each Warehouse and construct a containment enclosure area within the cleaned area. In order to prevent contamination of roll-off containers, one of two options will be implemented, similar to methods used during asbestos abatement work:
 - (a) The floors of the containment enclosure area and all sides of the roll-off container will be covered in plastic, or
 - (b) An end-close roll-off container with a lined interior will be backed up to the side of the Warehouse so that the roll-off does not enter the Warehouse.

By managing roll-offs in this manner, when roll-offs are transported or replaced, decontamination procedures are not needed, unless conditions occur where it is determined that the plastic lining was not protective. Rather than a roll-off container, 55-gallon drums may be sufficient for Warehouse IN-1-3, as the only Warehouse contents are building fixtures.

3. As a measure to control dust, perform HEPA vacuuming of Warehouse contents and interior.
4. Remove bulk of non-regulated building contents (refer to Appendix D) and place into lined roll-off containers, removing and replacing roll-off containers as necessary.
5. Clean the exterior of containers of USFWS items (refer to Appendix D), and place these items on a tarp at the access / egress point for pickup by USFWS.

6. As a measure to control dust, perform a second cleaning by HEPA vacuuming and light wet-mopping the remaining building contents and interior and apply an encapsulant to lock down remaining dust. Encapsulant will be applied per manufacturer's instructions, included in Appendix E. Two encapsulant products are included in Appendix E for use at the Site.
7. Remove friable asbestos and other regulated materials as described in Section 5.2.1.1.
8. Remove the Category II non-friable asbestos as described in Section 5.2.1.1.2, and demolish siding and roofing by "skinning" the remaining structure, which consists of removing siding and roofing panels intact.

Throughout individual demolition activities, dust control will be maintained by installing negative air machines, constructing containment enclosures within cleaned areas, HEPA vacuuming, and/or wet cleaning, as necessary. Building contents and materials will be handled with care and remain as intact as practical during demolition. In addition, lock down encapsulants will be used to encapsulate dust and prevent migration during demolition activities.

When roll-offs are full or deemed ready to be transported off-site for disposal, they will be transported directly to the landfill. The intent is not to store them on-site prior to off-site transport.

5.2.1.1 Asbestos and Other Regulated Material Removal

In June of 2016, TRC performed an inspection of the Warehouses to determine the presence of regulated materials, including ACM. The asbestos inspection identified friable ACM (i.e. any material containing more than 1% asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure) in small amounts on buildings IN-1-3 and IN-1-6. Category II non-friable ACM (i.e. any material, excluding Category I Non-Friable ACM, containing more than 1% asbestos that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure) was found in all four Warehouses. A summary of the ACM identified during the inspection is provided in Tables 1-5 and Drawing 1-4 in Appendix F.

Due to the presence of ACM in the Warehouses, proper removal and disposal of ACM must take place during building demolition and will be carried out by a properly licensed asbestos abatement contractor. The asbestos abatement will be executed in compliance with applicable provisions of the OSHA asbestos standard for construction (29 CFR 1926.1101) and the EPA Asbestos National Emissions Standard for Hazardous Air Pollutants (NESHAP) (40 CFR Part 61,

Subpart M). In addition, asbestos abatement work will be supervised by an OSHA competent person who, by virtue of his/her education, credentials, and experience, is capable of supervising the asbestos abatement in accordance with all regulations, standard work practices, and guidance established for asbestos removal. The competent person will be an employee of the licensed asbestos abatement contractor selected for this project and is defined as one capable of identifying existing asbestos and other hazards in the workplace, and who has the authority to take prompt corrective measures to eliminate them.

In addition to the presence of ACM, other regulated materials are also present in Warehouses IN-1-4, IN-1-5, and In-1-6. The other regulated materials present consist of typical household hazardous wastes such as electrical switches, fire extinguishers, lamps, light fixture ballasts, and obsolete electronics. A full inventory of the other regulated materials present in the Warehouses is provided in Appendix D. These materials will be decontaminated and placed in suitable containers (e.g., 55-gallon drum) for transportation off-site to appropriate disposal facilities or provided to USFWS as described in Section 6.1.6. FWS will determine the specific disposal facility for FWS-generated regulated materials. The specific disposal facility for other regulated materials will be determined by the RA contractor and reviewed by TRC during the bidding process.

5.2.1.1.1 Friable Asbestos Removal

The friable asbestos present in the Warehouses consists of caulk around the exterior windows and garage door. Removal of the friable asbestos caulking will proceed as follows:

- Place poly or other resilient drop cloths or tarps on the surfaces inside and outside the base of each window or door to catch any pieces of caulking that may fall or be dislodged during removal and handling.
- Remove exposed caulking via wet methods and/or HEPA vacuuming and place into appropriately labeled and sealed asbestos bags or drums. The bags or drums will be placed into a suitable container for transport to the landfill for disposal. Suitable containers consist of poly-lined dumpsters or roll-off boxes that have the capability to be completely sealed for transport.
- The remaining window or garage door assembly will be removed intact and handled carefully to prevent disturbance to any remaining ACM. Once removed, the assemblies will be wrapped and tightly

sealed with at least two layers of 6-mil poly sheeting held in place with duct tape. Each wrapped assembly will be labeled appropriately as asbestos-containing waste and placed in a suitable container for transport to the landfill for disposal.

5.2.1.1.2 Category II Non-Friable Asbestos Removal

The remaining Category II non-friable ACM identified in the asbestos inspection will be thoroughly wetted or covered with an encapsulant during removal. It will be removed in an intact state; cutting, abrading, or breaking the material is prohibited. Nails or bolts will be cut with flat, sharp instruments, and removed ACM will be immediately bagged or wrapped, or kept wet until transferred to a sealable receptacle.

5.2.1.2 Removing Warehouse Framing

Demolish the remaining Warehouse timber frame and cut into sections less than or equal to six feet long to meet the requirements for transport and disposal at the landfill. Cutting of timber frame will be performed using chainsaws and will be conducted on the respective concrete Warehouse foundation. Sawdust generated during timber frame cutting will be wetted, swept, and either directly loaded, hauled, and disposed with the timber framing or temporarily staged on the concrete slab and covered with plastic for future disposal.

5.2.2 Excavation of Soil Above the Compliance Metrics to Achieve the RBRG Cleanup Criteria

The RD soil sampling program is being initiated prior to the start of the soil RA pursuant to an approved EE/CA Work Plan Addendum (TRC, 2018b) in order to pre-define the limits of excavation. Therefore, the excavation boundary extent Drawings 6.1 through 6.5 included in this RD/RA WP will be revised, finalized, and re-submitted to the FFA partners following RD soil sample collection and incorporation into the current dataset.

Excavation activities to remove soil with aldrin and dieldrin concentrations above the compliance metrics will take place following demolition of the Warehouses down to the structure's concrete slabs. The targeted soil will be excavated to the lateral and vertical extent defined in the soil delineation described in the SAP. The anticipated soil excavation limits are shown on Drawings 6.1 through 6.5. Following excavation of targeted soil, the excavation will be backfilled with imported fill soil.

Prior to beginning excavation activities, and perhaps at the same time as Warehouse cleaning activities are conducted (see Section 5.2.1), trees and brush previously cleared pursuant to the EE/CA Work Plan Addendum (TRC, 2018b) and stockpiled within the BAEU will be cut to sections less than or equal to six feet long, removed, transported, and disposed at an appropriate disposal facility (See Section 6.1.1).

Prior to beginning excavation activities, stabilized construction entrances will be installed at the locations immediately adjacent to Mousertown Road as shown on Drawings 6.1 through 6.5. If results from RD soil sampling activities indicate soil removal is required beneath the concrete aprons on the north and south sides of the Warehouses, the aprons will be demolished and removed prior to soil excavation activities to facilitate soil removal. If soil beneath the concrete aprons does not require removal, the aprons will be left in place until soil excavation activities are completed and removed during the concrete demolition described in Section 5.2.3. Demolition and removal of the concrete aprons will be performed in accordance with the OSHA Crystalline Silica Rule (29 CFR 1926.1153).

Excavation activities will start at the west end of the site and proceed to the east as a means to reduce the potential for cross contamination. Additional cross contamination measures are discussed in Section 5.5. Tree root balls from tree clearing activities and other vegetative matter will be removed as part of soil excavation activities, as discussed in Section 6.1.1. As excavations are completed to the targeted limits, the following activities will be performed:

- The horizontal limits of the excavation will be recorded using a sub-foot accuracy GPS equipment (GeoXH 6000, or similar). These post-processed horizontal limits will be compared to the extent identified by the RD soil sampling program and to the locations of RD soil sample location stakes to assess that the horizontal limits were achieved.
- The vertical limits will be recorded by comparing pre- and post-removal elevations at pre-selected vertical assessment points to an established vertical benchmark. The pre-selected points will be distributed throughout the removal area, and will be identified on revised Drawings 6.1 through 6.5 following RD soil sample collection and incorporation into the current dataset. Excavation depths at these vertical assessment points will be compared to the extent identified by the RD soil sampling program to assess that the vertical limits were achieved. The GPS unit will be used to target the same pre- and post-removal assessment locations.
- The excavated area will be backfilled with imported soil (refer to Section 5.3 for a discussion on imported soil). During initial backfilling, imported soil will be placed to direct stormwater away from the open excavation area. During site restoration, after completion of excavation activities, the excess soil will be used as backfill in

areas of concrete removal, or graded to blend into existing adjacent contours. The final top 6-inches of soil will be imported topsoil to facilitate vegetation growth.

- Backfill will be placed as follows:
 - Imported backfill will be stockpiled to the northwest of Building IN-1-6. The backfill stockpile will be accessed by a temporary access road off Mousertown Road. Refer to Drawing 6.1 for the backfill stockpile and temporary access road location.
 - The same piece of equipment used to excavate impacted soil will not be used to place the imported backfill. Dedicated equipment (e.g., loader / bulldozer) will be used to place backfill.
 - As excavation activities proceed from west to east, backfilling will also proceed from west to east via the route shown on Drawing 6.1. Therefore, the dedicated equipment used to place backfill will not be tracking across soil that is targeted for excavation.
 - Backfill will be placed in lifts of approximately 12 inches.
 - Backfill will be compacted by mechanical means through tracking the material with the dedicated equipment used to place the soil.
 - No compaction testing (e.g., troxler testing) will be performed.
- Backfill placement thickness will be checked using survey leveling techniques at the same vertical assessment point locations used to determine proper removal depths. The on-site GPS will be used to navigate to the initially established locations (see Drawings 6.1 through 6.5).

Excavating from west to east, minimizing the area of excavation open at a time, and using backfill to divert stormwater away from the open excavation will minimize the potential for stormwater to contact contaminated soil. Berms (e.g., triangular silt dikes, temporary earthen berms, coir logs, etc.) will be used along portions of the excavation boundary perimeter to divert stormwater away from excavations. Rainwater or stormwater that enter the excavation and does not readily infiltrate or evaporate will be pumped into a temporary water storage tank or truck. Water from the storage tank/truck will be used to control dust on temporary staging piles of excavated soil, as needed; water not needed for excavated or targeted soil dust control will be characterized for disposal and disposed off-site. These fluids will only be applied to soils that will be hauled for off-site disposal, not on stockpiles of imported backfill or soils that will remain on-site. Liquids will be applied to soils using a hose with a spray nozzle attachment to disperse the water as it is applied in a manner to promote equal distribution and infiltration that does not generate free liquids. If free liquids are

initially generated, additional soils will be added to the temporary staging pile and mixed with the excavator bucket to promote absorption. Whenever these actions are performed, TRC's on-site representative will be present to observe and document in the Photographic Log and Daily Construction and QC Report described in Section 10.

Runoff will further be reduced by minimizing the amount of exposed soils to the extent practical and following the Best Management Practices (BMPs) identified in the SWPPP provided in Appendix A. In the event dry conditions require dust control, "clean" water will be used to wet exposed soils that have been backfilled or are not targeted for soil excavation to reduce airborne dust migration. Sediment collected in ditch checks will be disposed with excavated soil, so waste characterization testing of the sediment will not be conducted.

In addition to proceeding from west to east, excavation activities will work their way out of the targeted removal area from the north towards Mousertown Road to the south as a means to reduce the potential for cross contamination. Additional cross contamination measures are discussed in Section 5.5. Overburden materials and excavated soils will be transported off site and disposed of at an approved off-site disposal facility.

5.2.3 Concrete Demolition

Following completion of targeted soil excavation activities, the leftover concrete building slabs will be demolished. Prior to demolition of the concrete slabs, the slabs will be cleaned by sweeping, and/or HEPA vacuuming, or other appropriate methods to remove soil/dust that may have deposited on the slab during targeted soil excavation activities. These procedures will also be used on the vertical perimeter concrete curbs (i.e., less than approximately 6-inches tall) located around the perimeter of the Warehouse foundations. The concrete slab will be broken with a hydraulic excavator (hoe-ram) into pieces less than or equal to four feet by four feet to meet the disposal facility requirements. During demolition of the concrete slabs, concrete demolition activities will be performed per the OSHA Crystalline Silica Rule (29 CFR 1926.1153). The remaining Warehouse foundations will be managed as discussed in Section 5.4. The demolished concrete will be removed along with the remaining stabilized construction entrances and transported off site for disposal at an appropriate disposal facility.

The leftover depression from concrete removal will be filled and graded to match the adjacent ground surface and eliminate water retention or drainage issues. Fill will be imported as required, with the uppermost 6-inches consisting of topsoil in order to facilitate revegetation of the site.

5.3 Imported Soil

Imported soil from an off-site location will be required to backfill voids remaining from excavation areas. The selected source of backfill for this project is the Earth Services borrow pit located at 14716 State Highway 14 in Benton, Illinois. Soil from this borrow pit was previously sampled, tested, and approved for use as backfill at the Crab Orchard National Wildlife Refuge by the USEPA as documented in the *Final Remedial Action Completion Report for the 1960s Ditch* provided by CH2MHILL in April 2013; refer to Appendix G, Section 2.4.3 of report, and Table 3-1 included with report (CH2MHILL, 2013). The sample collected from the borrow pit was analyzed for the following:

- VOCs by SW846 Method 8260B
- Semivolatile organic compounds by SW846 Method 8270C
- Pesticides by SW846 Method 8081A
- Polychlorinated biphenyls by SW846 Method 8082
- Inorganics by SW846 Method 6010B, 6020, and 7000 Series

Concentrations of chromium and sodium were found to be above the Illinois statewide background concentrations (13 mg/kg and 130 mg/kg, respectively). However, the presence of the metals at concentrations above the background level was determined to be naturally occurring by USEPA. Refer to Appendix G for email dated July 17, 2012 from the USEPA's consultant.

Historical aerial photos of the selected borrow pit were also reviewed to evaluate prior use of the site. Based on historical aerial photos, the selected borrow pit location was under agricultural use from 1938 until at least 2005. The next available aerial photo showed the site to be under use as a borrow pit in 2011. Historical aerial photos are provided in Appendix G. Based on TRC's borrow pit site walk on January 17, 2018, and interviews with the borrow pit owner/operator, site use and activities have not changed since the samples referenced in Appendix G were collected. The site continues to be used solely as a borrow pit. This information illustrates that the borrow site use has not changed since the soil samples were collected, so the analytical results are still considered to be representative of current conditions. Imported soil from this off-site borrow source is still appropriate for use as backfill.

5.4 Site Restoration Activities and Revegetation

Following Warehouse demolition, soil excavation, and concrete demolition, the remedy area and other areas disturbed by implementation of the remedy will be regraded and revegetated. Final site grades for restored areas will promote positive drainage, match adjacent ground surface contours, and maintain pre-existing drainage patterns to the extent practical by:

- Reviewing the pre-existing spot locations and elevations documented during site preparation and remediation activities (refer to Sections 5.1.3 and 5.2.2 and Drawings 6.1 to 6.5).
- Identifying the pre-existing spot locations/coordinates of points using a GPS at the locations shown on Drawings 6.1 to 6.5.
- Comparing restoration site grades to the pre-existing grades to maintain pre-existing drainage patterns, to the extent practicable.

Excess soil will be spread across backfilled areas or hauled off site. Topsoil will be used for the top 6-inches of backfill (including the area where the concrete slab floor is removed) to facilitate revegetation.

Based on historical drawings, the Warehouse foundation features are as follows, from top to bottom:

- An approximate 8-foot wide apron on the north and south sides of the Warehouses. On the north side of the Warehouses, the apron is elevated and supported by concrete piers.
- An approximate 6-inch thick concrete slab over the main foundation.
- An approximate 6-inch tall concrete curb around the perimeter of the foundation, except at openings (e.g., entrances).
- Note, based on previous demolition of Warehouses in this portion of the Refuge (i.e., IN-3-5 and IN-3-6), it has been reported that 10-foot by 10-foot, very thick concrete foundations were located in the northeast corner of these warehouses.
- Concrete stem walls below the concrete slab. Note, these stem walls appear to be continuous around the perimeter of the Warehouse footprints.
- Concrete footings below the concrete stem walls.

As discussed in Sections 5.2.2 and 5.2.3, the approximate 8-foot wide concrete aprons and approximate 6-inch thick concrete slabs will be removed, as necessary. The remaining Warehouse features will be managed as follows as part of site restoration activities:

- On the north side of the Warehouses, the concrete piers used to support the 8-foot wide concrete aprons will be broken approximately 6 inches below ground surface. The below ground portions of the piers will be abandoned in place.
- If deep foundations similar to those previously encountered at Warehouses IN-3-5 and IN-3-6 are present, the deep foundations will be abandoned in place.
- The footings will be abandoned in place.
- The curbs and vertical concrete stem walls will be managed as discussed below as part of the Site Restoration Plan.

Upon completion of final grading activities, disturbed areas will be seeded with an upland seed mix and have trees planted based on recommendations provided by the FWS (e.g., native grassy cover and hardwood species). The specifics of the final restoration activities will be described in a Site Restoration Plan, including:

- The Site Restoration Plan will describe the tree species, density of trees, the seed mix, the specific herbicides to be used, the final restoration plan for the curbs and vertical concrete stem walls of the Warehouse foundations, etc.
- The Site Restoration Plan will be a separate document from this RD/RA WP, and will be submitted to FWS for review, discussion, and approval.
- Once the specifics of the Site Restoration Plan are agreed to between FWS and GLS, the Site Restoration Plan will be implemented.

There will be monitoring and maintenance of the revegetation, including replacement of failed plantings, up to 30% of plantings per year, for a three year period to ensure success of the vegetation.

5.5 Cross Contamination Management Measures

Measures that will be implemented during RA activities to reduce the potential for cross contamination of materials include the following:

- Site access and egress will be established to prevent movement of personnel and equipment from contaminated to non-contaminated areas without going through a decontamination procedure.
- Containment enclosures and negative air machines with HEPA filters will be used during cleaning of the Warehouses.
- Roll-off boxes containing the Warehouse contents will be lined and covered during transport.
- Friable ACM will be double bagged per NESHAP requirements.
- Imported backfill will not be back-hauled with the same trucks that haul contaminated materials from the site.
- Soil excavation activities will progress from west to east and north to south to the extent practicable; refer to Section 5.2.2. The sequencing of excavation work in this manner is intended to prevent tracking of the excavator over imported backfill.
- By working from upgradient to downgradient areas in this way, surface water would flow downgradient from remediated and backfilled areas toward areas yet to be remediated, thus avoiding cross-contamination due to surface water runoff.
- The same piece of equipment used to excavate impacted soil will not be used to place the imported backfill. Dedicated equipment (e.g., loader / bulldozer) will be used to place backfill.

- As excavation activities proceed from west to east, backfilling will also proceed from west to east; refer to Section 5.2.2. Therefore, the dedicated equipment used to place backfill will not be tracking across soil that is targeted for excavation.
- Trucks transporting excavated soil will be tarped during transport; refer to Section 6.2.
- Barriers (e.g. plastic sheeting) will be utilized in the load-out areas. Materials collected on the covered load-out area will be disposed along with the load of soil.
- Exterior surfaces of soil transport trucks will be dry-decontaminated prior to leaving load-out areas as needed. Trucks will be inspected to assess that residual materials are not present prior to leaving the Site.
- Prior to demolition of the concrete slabs, the slabs will be cleaned by sweeping, and/or HEPA vacuuming, or other appropriate methods to remove soil/dust that may have deposited on the slab during targeted soil excavation activities (refer to Section 5.2.3).
- The decontamination procedures that will be implemented (refer to Section 6.3).

5.6 Post RA Soil Sampling

In consideration that soil excavation will be performed to the limits defined by the RD soil sampling program, that BMPs will be implemented during soil excavation activities as described in Section 5.2.2, and that cross contamination measures will be implemented as described in Section 5.5, post RA soil sampling will not be performed. At the discretion of the FFA partners, RA audit samples may be collected.

5.7 Site Air Monitoring

During RA field work, the following air monitoring activities will be performed:

- During initial cleaning of Warehouses, personal air monitoring will be performed. Based on the results of the personal air monitoring, the level of PPE that workers are required to wear may be downgraded.
- During non-friable asbestos abatement of Warehouses, personal air monitoring will be performed. Based on the results of the personal air monitoring, the level of PPE that workers are required to wear may be downgraded. Note, during friable asbestos abatement of Warehouses, abatement workers will wear respirators; therefore, personal air monitoring will not be performed during friable asbestos abatement work.
- During soil excavation and backfilling activities, perimeter dust monitoring will be performed through visual observations, as warranted, if visible dust is observed. Visual dust monitoring observations will be performed and recorded at least three times per day and whenever dust generation is observed, and will be documented in the Visual Dust Monitoring Log (see Section 10.6). If visible dust generation is observed, immediate engineering controls will be

implemented, such as wetting piles/excavations, covering with plastic sheeting or tarps, modifying construction practices, etc.

Additional information regarding personal air monitoring is described in the FSP.

5.8 Site Security

In addition to the temporary gates discussed in Section 5.1.3, there are permanent gates owned by FWS on Prison Road between Buildings IN-1-2 and IN-1-3 preventing access from the north, and on Ogden Road to the west of the Mousertown Road intersection, preventing access from the west. These gates are locked by FWS and access is only given to authorized users.

5.9 Dust Management Plan

Dust management measures are detailed in the following sections:

- Section 5.1.3 – Site Preparation; OSHA dust safety signage
- Section 5.2.1 – Warehouse Demolition; dust management during Warehouse content removal and Warehouse demolition
- Section 5.2.2 – Excavation of Soil above the Compliance Metrics to Achieve the RBRG Cleanup Criteria; dust management during excavation
- Section 5.2.3 – Concrete Demolition; dust management during concrete demolition
- Section 5.5 – Cross Contamination Management Measures; dust cross contamination prevention measures
- Section 5.7 – Site Air Monitoring; visual dust monitoring
- Section 6.1.2 – Dust from Cleaning Warehouses; sampling and disposal
- Section 6.1.4 – Non-Hazardous Warehouse Debris and ACM; dust management during material handling
- Section 6.1.6 – Special or Universal Waste; dust removal from FWS-generated materials
- Section 6.3 – Decontamination Procedures for Equipment; dust control through/during decontamination
- Section 9 – Permitting and Licensing; hazardous waste requirements for dust, if required
- Section 10.6 – Observations, Results, and Documentation; visual dust monitoring documentation
- Appendix N.2 – Visual Dust Monitoring Log

Section 6

Waste Management Plan

This section will address how materials encountered during the RA will be managed when removed from the site. Based on site inspections and investigations, there will be the following types of materials for handling:

- Trees and Brush
- Dust from cleaning Warehouses
- Water from cleaning Warehouses
- Non-Hazardous Impacted Warehouse Debris and ACM
- Non-Hazardous Targeted Soil and/or Concrete
- Special or Universal Waste

6.1 On-Site Material Management

6.1.1 Trees and Brush

Trees and brush cleared before the RA will be cut or broken into sections less than or equal to six feet long to meet the requirements of the landfill, and stockpiled adjacent to Mousertown Road for load out. Cutting of trees will be performed using chainsaws and will be conducted on either soil excavation areas or Warehouse slabs. Sawdust generated during tree cutting will either be directly loaded, hauled, and disposed with the trees, brush, and underlying soils, or loaded into a roll-off dumpster or other suitable transport container during the chipping process. Woody materials may be chipped to facilitate transportation, and wood chips will be loaded into a roll-off dumpster or other suitable transport container during the chipping process. Sections of trees and brush or wood chips will be loaded and hauled off site to an appropriate disposal facility. Root balls located within excavation areas will be excavated, loaded, hauled, and disposed along with adjacent soils that are required to be removed during soil excavation activities.

6.1.2 Dust from Cleaning Warehouses

Dust and HEPA filters generated during Warehouse cleaning activities will be contained in vacuum bags, which will in turn be placed directly into labeled 55-gallon drums. The 55-gallon drums will be underlain by plastic sheeting and will be stored on the concrete

foundation slab within the Warehouse. One scoop of the dust from each vacuum bag will be reserved and temporarily placed in a 5-gallon bucket for waste characterization purposes. The 5-gallon bucket will be labeled as “Dust from Cleaning Warehouse” and dated.

Once the HEPA vacuuming has been completed, the reserved dust material in the 5-gallon bucket will be homogenized and transferred to the remediation subcontractor for their use for waste characterization sampling. Dust sampling and homogenization will be performed within the negative air containment enclosure and over a plastic sheet. Dust sampling personnel will wear appropriate PPE as required by the HASP, including appropriate respiratory protection. Excess material, if any, will be returned to the 55-gallon drums.

The vacuums will then be disassembled and decontaminated within the negative air containment enclosure and over the plastic sheeting. The HEPA vacuums will be decontaminated with wet wipes containing a biodegradable agent and following additional procedures outlined in Section 6.3. Decontamination personnel will wear appropriate PPE as required by the HASP, including appropriate respiratory protection.

Following Warehouse cleaning, dust sampling, and vacuum disassembly and decontamination, the negative air machine will be turned off and placed on plastic sheeting within the interior of the Warehouse. The negative air machine will be disassembled and decontaminated as described above for the HEPA vacuum. Negative air machine filters and plastic sheeting will be placed in the accompanying 55-gallon drum.

The 55-gallon drums will be sealed and stored within the interior of the Warehouse until transported off-site to an appropriate disposal facility based on the results of the waste characterization sampling.

6.1.3 Water from Cleaning Warehouses

Wet mop cleaning of Warehouses will generate minimal was water, which will be containerized in 55-gallon drums and added to soil hauled off-site. Mop heads will be placed in sealed plastic bags, placed in the 55-gallon drums containing dust and HEPA filters mentioned in Section 6.1.2, and disposed accordingly.

6.1.4 Non-Hazardous Warehouse Debris and ACM

As previously discussed, Warehouse contents and debris generated from cleaning and demolition activities will be handled in a manner to control the generation of airborne

dust. Airborne dust will be controlled through the use of negative air machines, containment enclosures constructed within cleaned areas, HEPA vacuuming, wet mopping, wet method handling, application of encapsulant, and/or intact removal methods. The material will be placed into lined and sealed containers. As outlined in Section 5.2.1, each lined container will remain on-site either within the containment enclosure area or abutting the Warehouse. Containers will remain on-site until filled or until all Warehouse contents are removed. Any exterior plastic sheeting will be folded into the container, and the containers sealed prior to hauling off-site to the appropriate disposal facility.

6.1.5 Non-Hazardous Targeted Soil and/or Concrete

Targeted soil, stabilized construction entrances (aggregate and geotextile), and demolished pieces of concrete will be directly loaded into haul trucks or temporarily placed in staging piles within the targeted removal zone adjacent to Mousertown Road as shown on Drawings 6.1 through 6.5 for load out. If concrete that requires off-site disposal exceeds the maximum four foot by four foot dimension as required by the disposal facility, the pieces will be broken in place using a hydraulic excavator (hoe-ram) in accordance with the OSHA Crystalline Silica Rule (29 CFR 1926.1153). In the event dry conditions create a risk of airborne dust from the temporary staging piles, the staging piles will be kept wet, covered and secured (e.g. Visqueen and sandbags), or have an encapsulant applied. The temporary staging piles will vary in size, but are intended to be removed by the end of the day. If staging piles are left in place overnight or during non-working hours, they will be covered with tarps. Temporary staging piles will only be placed within the removal area, thus soil/material directly below the staging piles will ultimately be removed and disposed. If insufficient space is available for temporary staging piles, these materials will be direct loaded into trucks. Because targeted soil will either be temporarily staged over soil that will also be removed, or direct-loaded for off-site disposal, there is no need for roll-off boxes.

6.1.6 Special or Universal Waste

Special Wastes, including 5-gallon buckets of decontamination waste and containers of lab chemicals, will have surface dust cleaned off with HEPA vacuuming and/or wet-method cleaning prior to handling. Those Special Waste items in the Warehouses that belong to FWS (see Appendix D for a full inventory) will be placed on a tarp at the access/egress point for pickup by FWS once the outside of the containers are cleaned off. Remaining Special Waste items will be placed into a suitable container (e.g., 55-gallon drum) and transported off site to an appropriate recycling or disposal facility. FWS will determine the specific disposal facility for FWS-generated regulated materials. The

specific disposal facility for other regulated materials will be determined by the RA contractor and reviewed by TRC during the bidding process.

Universal Waste items (see Appendix D) will be handled in a similar manner to the Special Waste items. They will be cleaned off and placed into a suitable container and transported to an approved off site recycling or disposal facility.

The total quantity of Universal Waste will be well under 11,000 pounds, classifying the site under the Small Quantity Handler (SQH) standards. Per 35 IAC 733 Subpart B, requirements for SQHs are as follows:

- Notification to IEPA is not required.
- Waste Containers are to be labeled and marked to identify the type of universal waste
- Accumulation time limit of 1-year
- Employees are to be informed of the proper handling and emergency response procedures appropriate to the types of universal waste handled
- Off-site shipments will be sent to an appropriate destination facility
- Tracking a SQH is not required to keep records of shipments of universal wastes

6.2 Loading, Transportation, and Disposal/Traffic Control Plan

Demolition debris, excavated soils, and vegetation intended for off-site disposal will be loaded into roll-off dumpsters or tarped trucks for transportation to an appropriate disposal facility. As discussed earlier, Special and Universal Wastes will be loaded and hauled in suitable containers for recycling or disposal at an appropriate facility. The general transportation plan to Perry Ridge Landfill is shown on Drawing 9.

6.3 Decontamination Procedures for Equipment

The equipment decontamination Standard Operating Procedures (SOPs) developed by FWS are included in Appendix H. These SOPs outline methods used to clean and decontaminate heavy equipment, vehicles, tools, and other equipment to achieve the following outcomes:

- Prevent the spread of contaminants within the site
- Prevent cross-contamination by workers' use of potentially contaminated equipment within the site
- Reduce the potential for worker exposure to contaminants
- Improve data quality and reliability

The Crab Orchard SOP 1 for site specific decontamination of drilling rigs, trailers, trucks, and equipment indicates there is to be a central decontamination facility constructed to accommodate decontamination of equipment upon arrival at the Refuge, prior to performing activities. The central decontamination pad is to be placed within the exclusion zone at a location approved by the FWS. In addition to a central decontamination facility, the SOP indicates temporary decontamination facilities may also be constructed and operated to eliminate the need to travel large distances to the central decontamination pad.

Based on the site configuration consisting of access via Mousertown Road to the Warehouses and soil removal areas (exclusion zone) directly north of Mousertown Road, installation of contamination reduction zone immediately between Mousertown Road and each Warehouse to be demolished provides a practical site arrangement to facilitate support and access / egress to the exclusion zone. In lieu of a central decontamination pad for the entire project area, the concrete slabs temporarily left in place following Warehouse demolition will be used as a temporary decontamination pad. In addition, rather than bringing equipment to the site and decontaminating at the site prior to use, equipment will be thoroughly decontaminated off-site prior to delivery to the site. TRC will inspect equipment upon delivery to the site and reject the equipment from being offloaded at the site if found to be in unsuitable condition. The equipment will be inspected to ensure it is in good repair and free from oil grease, hydraulic fluid, dirt, rust buildup, and debris. TRC will also notify the FWS representative of equipment deliveries for inspection of equipment by the FWS representative.

Following equipment use within the exclusion zone (equipment will primarily be the excavator and a loader), the following decontamination procedures will take place within a temporary decontamination area setup on a Warehouse concrete slab:

- Set aside an area on the concrete slab in between the concrete construction joints and place absorbent socks (i.e., pigs) around the perimeter of the equipment to be decontaminated.
- Physically remove dust, dirt, and debris accumulated on hand tools, small equipment, and parts of large equipment that contact impacted material with shovels, brooms, wire brushes, and vacuums, as appropriate.
- If necessary, remove remaining debris with a power washer, adding additional absorbent socks as needed to capture and contain decontamination water.
- Capture accumulated decontamination waste and use for dust control of excavated soils, add to temporary storage tank/truck, and/or containerize – containers will be labeled and removed from the site and disposed of as necessary. These fluids will only be applied to soils that will be hauled for off-site disposal, and will be applied in a manner that does not generate free liquids. Refer to Section 5.2.2 for details for use as dust control of excavated soils.

- Perform a final inspection of the decontaminated equipment prior to removing from the temporary decontamination area, and complete the Decontamination Inspection Form described in Section 10.6.

The temporary decontamination area(s) will be inspected after each use and cleaned or repaired as necessary. The decontamination area(s) will be removed during the concrete slab demolition and removal activities.

6.4 Landfill and Disposal Documentation and Recordkeeping

Prior to leaving the site, each truckload of material will receive appropriate shipping papers under the supervision of the TRC site manager. Shipping papers will include either of the following, as summarized in Table 2.

- Bills of lading for non-special wastes or hazardous wastes.
- Manifests for materials classified as special wastes.

Copies of shipping papers will be maintained at the site during the course of RA activities. Tables summarizing the quantities of materials disposed will be included in the final documentation report.

Section 7

Contingency Plans

The following subsections describe contingency plans that will be implemented in the event that certain conditions occur, including:

- Severe Weather
- Spill Response
- UST/Drum Management
- Historic Items, Native American Graves, and Human Skeletal Remains

7.1 Severe Weather

Severe weather may arise as either forecasted or unexpected. For this site, during the timeframe of the RD/RA, severe weather would be expected to be in the form of heavy rains, thunderstorms, or tornados. Weather forecasts/conditions will be monitored by the TRC Project Superintendent, and/or the SSO.

In the event severe weather is forecasted, a decision will be made whether or not work activities will be performed that day. If severe weather is forecasted, contingency plans that will be reviewed/implemented, as warranted based on weather forecasts, include the following:

- Ensure that the extent of open excavations are minimized to the extent practicable to reduce the amount of impacted stormwater that may be generated.
- Ensure that berms/swales to divert stormwater are intact.
- Ensure that tarps on trucks used for transporting impacted materials are in-place and secured.
- Ensure that covers on stockpiles are secured.
- Ensure that fuel/hazardous material containers are secured.
- Ensure that loose items are secured.
- Review with on-site staff the mustering location; which will be Warehouse IN-5-6, which is located south of the RD/RA work area.
- Review with on-site staff that if thunder is heard, that on-site operations will stop, and an assessment will be made on when it is appropriate to resume work.

In the event of unexpected severe weather, contingency plans that will be reviewed/implemented include the following:

- The main goal is to ensure on-site staff are safe; so the first priority is for staff to get to the mustering location, which will be Warehouse IN-5-6, which is located south of the RD/RA work area (refer to Drawing 6.1).
- The secondary priorities, if time and conditions allow, are to implement as many of the above contingency plans as described for a forecasted event.

7.2 Spill Prevention and Response

For this RD/RA, spills of pesticide containing material during transport, or fuel/hydraulic fluids may occur while RD/RA activities are occurring. The following subsections describe the methods to be used to respond to a spill.

7.2.1 Pesticide-Containing Material Spills

Releases of pesticide-containing material may occur during transport of containers after they are loaded. If a spill of the pesticide-containing material occurs during transport, the steps to be taken include:

- Notify the TRC Project Manager.
- Contact FWS, and discuss if the release requires notification of the Illinois Emergency Management Agency (IEMA)/ State Emergency Response Commission (SERC) at 800-782-7860 on behalf of Crab Orchard National Wildlife Refuge. Notification requirements and information required by the IEMA is outlined in the IEMA Emergency Release Notification Fact Sheet (IEMA Fact Sheet), refer to Appendix I. In general, information associated with the IEMA Fact Sheet includes the following:
 - If a release equal to or greater than the reportable quantity of a CERCLA hazardous substance occurs. Note, per 40 CFR 302.4, both aldrin and dieldrin are CERCLA hazardous substances, and each's reportable quantity is 1 pound.
 - In such incidents, notification is required to:
 - The IEMA/SERC at (800) 782-7860.
 - The Local Emergency Planning Committee (LEPC) for Williamson County at (618) 998-2123.
 - The National Response Center (because aldrin and dieldrin are CERCLA hazardous substances) at (800) 424-8802.
 - Note, transportation related incidents only require 9-1-1 notification.

- Notification is also required if an incident or accident involving a hazardous material occurs which results in one of the listed events described in the IEMA Fact Sheet. Note, per 49 CFR 172.01, both aldrin and Dieldrin are hazardous materials, and each's reportable quantity is 1 pound.
- Written follow-up notice is required, refer to the IEMA Fact Sheet.
- For assessing if more than 1 pound (i.e., the reportable quantity) of aldrin or Dieldrin are released:
 - At concentrations of 10,000 mg/kg, and a density of 1.62 tons/cy, 0.03 cys of soil spilled would equal or exceed the reportable quantity.
 - At concentrations of 1,000 mg/kg, and a density of 1.62 tons/cy, 0.3 cys of soil spilled would equal or exceed the reportable quantity.
 - At concentrations of 500 mg/kg, and a density of 1.62 tons/cy, 0.62 cys of soil spilled would equal or exceed the reportable quantity.
 - At concentrations of 50 mg/kg, and a density of 1.62 tons/cy, 6.2 cys of soil spilled would equal or exceed the reportable quantity.
- This first priority upon discovery of a spill will be to assess the safety of on-site personnel and the general public.
- Workers responding to a spill shall be HAZWOPER trained and wearing level D PPE, and be prepared to upgrade to level C PPE, if warranted. Refer to the HASP for a description of level D and C PPE requirements.
- Assess that the pesticide containing material is not entering a waterway (i.e., stream, storm sewer inlet, etc.). If so, block the flow of material.
- Document the location of the spill and record on the Daily Construction and QC Report. If possible, obtain the coordinates of the spill location via a GPS.
- Remove the pesticide containing material as soon as possible and containerize.
- If the spill cannot be removed immediately, mark the area where the spill occurred with chalk, degradable spray paint or caution tape. Secure the spill site from entry by unauthorized personnel by roping/taping off the area, posting warning signs, and cover the spill area with polyethylene or plastic cover.
- If the spill occurred on a pervious surface, remove the impacted material and the top 6 inches of soil beneath the spill area. Because the area of the spill is known, confirmation soil sampling of remaining soils is not warranted.
- If the spill occurred on an impervious surface, moisten with a fine mist to prevent the pesticide containing material from becoming airborne unless the material can be removed immediately. Remove bulk material and place into container. Sweep area with a broom and place into a container.

- Dispose of the spilled material with the pesticide/soil material being sent for disposal.
- Decontaminate any tools or equipment used in the cleanup.

A written follow-up notice is also required when a release is equal to or exceeds the reportable quantity of an extremely hazardous substance or a CERCLA hazardous substance occurs. The requirements of the notice are outlined in the IEMA Emergency Release Notification Fact Sheet, refer to Appendix I.

7.2.2 Fuel/Hydraulic Oil Spills

Releases of fuel may occur during fueling of vehicles and equipment, or breakage of fuel lines. Releases of hydraulic oil may occur if a hydraulic line breaks. If a spill of fuel or hydraulic oil occurs, the steps to be taken include:

- Notify the TRC Project Superintendent and RD/RA Project Manager.
- Contact FWS, and discuss if the release requires notification of the IEMA/SERC at 800-782-7860 on behalf of Crab Orchard National Wildlife Refuge. Notification requirements and information required by the IEMA is outlined in the IEMA Emergency Release Notification Fact Sheet (IEMA Fact Sheet), refer to Appendix I. In general, information associated with the IEMA Fact Sheet includes the following:
 - Notification is required if:
 - Any release of petroleum product (or oil) that produces a sheen on nearby surface water and/or threatens navigable waters.
 - Any release of petroleum product (or oil) in excess of 25 gallons.
 - In such incidents, notification is required to:
 - The IEMA/SERC at (800) 782-7860.
 - The Local Emergency Planning Committee (LEPC) for Williamson County at (618) 998-2123.
- This first priority upon discovery of a spill will be to assess the safety of on-site personnel and the general public. If safe to do so, the spill will be stopped at the source and contained as quickly as possible.
- Any ignition sources will be removed from the vicinity of the spill.
- Workers responding to a spill shall be HAZWOPER trained and wearing level D PPE. Refer to the HASP for a description of level D PPE requirements.
- Document the location of the spill and record on the Daily Construction and QC Report. If possible, obtain the coordinates of the spill location via a GPS.

- Perform a visual inspection of the site and its surroundings to determine its current uses, topography, buried utilities and tiles, sewers and surface drainage, structures and improvements, nearby sources of drinking water supply, natural barriers or engineered structures that constrain contaminant movement, visible and olfactory evidence of the extent of the contamination, as well as evidence of pertinent geologic and hydrogeologic (i.e., surface and groundwater) conditions. Record the observations and events as remembered by those present at the spill. The exact nature of the opening through which the release occurred should be depicted by photos, drawings or diagrams. The estimated amount of product spilled should also be recorded.
- Assess that the fuel is not entering a waterway (i.e., stream, storm sewer inlet, etc.). If it is, block the flow of free product.
- If the spill cannot be removed immediately, mark the area where the spill occurred with degradable spray paint and caution tape. Secure the spill site from entry by unauthorized personnel by roping/taping off the area, posting warning signs, and cover the spill area with polyethylene or plastic cover.
- If the spill occurred on a pervious surface, remove soil until visual observations and photoionization detector (PID) readings do not indicate contamination. Contaminated soil should be containerized.
- If the spill occurred on an impervious surface, surround the spill with a dike using absorbent material (e.g., pigs) to prevent further spreading. Use absorbent material to remove visible traces of fuel. Place contaminated absorbent material in a sealable, leak-proof container and label container identifying the fuel for disposal.
- Dispose of the spilled material in properly labeled containers as non-hazardous special waste for off-site transport to an approved disposal facility in accordance with all applicable state and federal regulations.
- Because the area of the spill is known, and impacted material will be removed, confirmation soil sampling of remaining soils is not warranted.
- Decontaminate any tools or equipment used in the cleanup.

A written follow-up notice is also required when a release is equal to or exceeds the reportable quantity of an extremely hazardous substance or a CERCLA hazardous substance occurs. The requirements of the notice are outlined in the IEMA Emergency Release Notification Fact Sheet, refer to Appendix I.

7.3 UST/Drum Management

In the unlikely event that unknown underground storage tanks (USTs) or drums are encountered during RA excavation activities, the following contingency plans will be implemented:

- Notify the TRC Project Superintendent and Project Manager.
- Contact FWS, and discuss the discovery.
- Secure the area of the discovery using caution tape.
- Re-plan the excavation activities to avoid the area of the discovery.
- Assess if the USTs or drums are empty. Contact TRC HASP personnel for PPE requirements.
- If it is determined that the UST contained petroleum products:
 - Contact an Illinois Office of the State Fire Marshal (OSFM) certified tank removal contractor to close the UST by removal.
 - Obtain a permit for tank closure and removal from the OSFM.
 - Remove the UST, and perform a closure assessment to assess for the evidence of a release.
 - If evidence of a release is confirmed, notify IEMA. The requirements of the notice are outlined in the IEMA Emergency Release Notification Fact Sheet, refer to Appendix I.
- If it is determined that the drum contained petroleum products, follow the similar steps listed above for a UST, with the exceptions that an OSFM certified tank removal contractor, and obtaining a permit from the OSFM are not applicable.
- If it is determined that the UST or drum contained other than petroleum products, than an addendum to this RD/RA WP will be prepared, based on the specific contents of the material contained in the UST or drum, that will describe the appropriate steps that will be performed.

7.4 Historic Items, Native American Graves, and Human Skeletal Remains

If the following are encountered during RD/RA construction activities, construction activities will be put on hold pending an evaluation:

- If items of historic or archaeological significance are encountered.
- If Native American remains or cultural items are encountered.
- If skeletal remains are encountered.

Section 8 Submittals

Prior to beginning RD/RA field work, the following submittals will be provided by subcontractors to TRC:

- Documentation from the subcontractor that equipment has been decontaminated prior to performing work on-site.
- Documentation from the subcontractor that personnel working in the exclusion zone meet the HAZWOPER requirements.
- Documentation from the subcontractor that a Demolition/Renovation/Asbestos Project Notification Form has been submitted to the IEPA 10 working days in advance of commencing a regulated asbestos demolition or renovation project for asbestos abatement.
- Documentation from the subcontractor that vehicles used to transport waste material off-site are appropriately licensed. In particular, per 35 IAC 809.201, materials classified as special waste will be transported via a current special waste hauling permit issued by the IEPA. Note, a special waste hauling permit does not apply to the on-site transportation of a special waste.

During RD/RA field work, the following submittals will be provided to the FWS Representative:

- Daily Field Construction Reports (refer to Section 10.6).
- Daily Tailgate Safety Meetings (refer to Section 10.6).
- Weekly Construction Meetings (refer to Section 10.7).
- Waste Disposal Log to document disposal of the pesticide-impacted material and soil (refer to Section 10.6).

Section 9

Permitting and Licensing

Applicable or Relevant and Appropriate Requirements (ARARs) for the Site were identified by FWS as part of the EE/CA process. The FWS's ARAR summary table is included in Appendix J. ARARs include both federal and state requirements, and include requirements specific to chemical, location, and action requirements. Table 3 provides details describing how the substantive requirements of each ARAR will be met during the RD/RA.

If necessary, the Refuge FFA partners may come to an agreement that it is appropriate to invoke an ARAR waiver and agree on the rationale justifying such an invocation prior to seeking the waiver. At this NPL Site operable unit where FWS is the lead agency, FWS would have the responsibility to obtain an ARAR waiver from the USEPA, which is the ultimate arbiter under the Refuge.

In addition to the ARARs requirements summarized in Table 3, other permitting and licensing requirements associated with the pesticide removal include:

- **Landfill Approval.** Landfill approval for disposal of the pesticide-impacted material will be obtained prior to RA activities. A waste profile and a non-special waste certification form will be submitted to the landfill for each applicable waste stream, including vegetation, concrete foundation slab, and soil. An example waste profile is provided in Appendix K. It is expected that the existing analytical results will be adequate to characterize the waste for permitting requirements. It is anticipated that many of the materials from the RA activities will be disposed at the Perry Ridge Landfill, located in Du Quoin, IL. The Perry Ridge Landfill maintains its status as an acceptable subtitle-D landfill, as determined by the October 25, 2006 USEPA Off-Site Rule Acceptability Determination included in Appendix L.
- **Bills of Lading (BoL) and Manifests.** Either a BoL or a manifest will be completed and carried when waste is transported off-site in any vehicle; refer to Table 2 for the applicable shipping documentation for each waste stream. The shipping forms will be signed by the TRC and the transporter before off-site shipment, and will identify GLS as the generator. An example BoL and manifest are included in Appendix M.
- **Waste Transport.** Vehicles will be licensed waste transporters for off-site shipments, as required by regulation. Vehicles transporting wastes will be marked, labeled, and placarded in accordance with DOT requirements.

- **RCRA Very Small or Small Quantity Generator Requirements.** The pesticide-impacted soil and building materials have been classified as non-hazardous waste. However, cleaning of the Warehouses with HEPA vacuums will yield concentrated pesticide-contaminated dust. Resulting dust concentrations may exceed hazardous waste levels, triggering hazardous waste regulations for that limited waste stream. TRC will collect samples of the dust for analysis in order to classify the waste. If the waste is determined to be hazardous, TRC will determine the quantity of material generated and the corresponding generator classification. TRC will then follow the applicable requirements and compliance actions described in Table 4.

Section 10

Construction Quality Control and Assurance

This Construction Quality Control Plan (CQCP) has been prepared for the RA at Crab Orchard. The purpose of the CQCP is to describe the activities for planning and controlling quality to be followed by TRC and its subcontractors during RA activities. The CQCP is intended to provide systems and procedures to assure adequate work performance, and to identify and correct nonconforming work.

10.1 QA/QC Objectives

In addition to the overall project objectives described in Section 1.2, the QA/QC objectives for the RA are as follows:

- To remove and dispose of the identified impacted pesticide containing material pursuant to applicable rules and regulations (refer to ARARs discussed in Section 9).
- To follow a process that includes QA/QC such that the end product achieves the project objectives.
- To conduct documentation of removal activities such that a Construction Completion Report can be prepared that sufficiently summarizes the work performed, and the results of the work performed.

The intent of this CQCP is assist in ensuring that these objectives are met.

10.2 Project Definition

Refer to Section 1 for project background information, purpose, and scope. In general, this project can be characterized by the following definable features:

- **Site preparation.** This includes installation of decontamination stations, stormwater management and well abandonment.
- **Building demolition of the four warehouses.** This includes removal of materials present in buildings, such as non-hazardous materials, friable asbestos, regulated materials, universal wastes, and non-friable asbestos.
- **Excavation and disposal.** This includes removal of identified impacted soil, and concrete slabs associated with the four warehouses.
- **Site restoration.** This includes backfilling, and revegetation.

A more detailed discussion of these definable features is presented in Sections 5 and 6.

10.3 Parties

The organization structure and QC system for the RD/RA have been developed to facilitate communication and compliance during RD/RA activities. RD/RA project personnel are shown in the Project Organization Chart (Figure 1). The main parties associated with this RD/RA, and their responsibilities are summarized as follows:

- **FWS Representative:** Chuck Beasley will serve as the FWS Representative. The FWS Representative will be the primary contact person for correspondence between FWS and TRC, and will be responsible for the successful execution and completion of the RD/RA.

Project responsibilities will include tracking progress of schedule and cost during the RD/RA. The FWS Representative will be in regular contact with the TRC regarding project status, potential schedule and cost impacts, and quality issues.

- **TRC RD/RA Project Manager:** Bruce Iverson, will serve as the TRC RD/RA Project Manager. The RD/RA Project Manager will be the primary contact person for correspondence between FWS and TRC, and will be responsible for the successful execution and completion of the RD/RA.

Project responsibilities will include tracking progress of schedule and cost during the removal, and reviewing submittals. The TRC RD/RA Project Manager will be in regular contact with the FWS Representative regarding project status, potential schedule and cost impacts, and quality issues.

- **TRC CQC System Manager, Project Superintendent, and On-Site Safety Officer:** The CQC System Manager, Project Superintendent, and Site Safety Officer (SSO) for TRC will be determined. The CQC System Manager and Project Superintendent reports directly to the TRC RD/RA Project Manager.

The primary responsibility of the CQC System Manager is to ensure that inspections are completed and to give field approvals on behalf of TRC. This includes:

- Checking material and equipment as it is delivered to the site.
- Performs and/or directs tests and inspections as described in this CQCP.
- Ensures compliance with this RD/RA WP.
- Maintains and submits QC documentation.

Responsibilities as the Project Superintendent include implementing, executing, and completing the construction activities associated with the RD/RA field work, subcontractor coordination, communicating with the TRC Project Manager, completing documentation for construction activities, performing testing and sampling, and approving scope changes. The Project Superintendent will also serve as the SSO and is responsible for verifying implementation of the HASP.

10.4 Communications

In general, communications during the RD/RA field work will be conducted per the lines of communication shown on the Project Organization Chart. Weekly status calls will be conducted between the FWS Representative and the TRC RD/RA Project Manager as field work is being performed. Additional communications between stakeholders will be conducted as warranted.

10.5 Inspections

Various inspections will be conducted by TRC during RD/RA field work.

10.5.1 Construction Progress and Conformance Inspections

Inspections completed during construction will be characterized according to the following types, as needed:

- **Receiving Inspection** – These inspections include a visual examination and accounting of equipment and materials obtained from suppliers (e.g., silt fence) as they arrive on-site. Receiving Inspections will be completed to verify that the delivered equipment and material are free from defects, and have not been damaged in transit.
- **In-Progress Inspection** – These inspections are performed when work begins, and continue at appropriate intervals as the work progresses. In-Progress Inspections will be conducted as part of daily observation activities to verify work is being completed in accordance with project documents and specifications.

Results of these inspections will be recorded on the Daily Construction and QC Report.

10.5.2 Health and Safety Compliance Inspections

Inspections of the site and work in progress will be conducted periodically to assure compliance with the HASP and OSHA standards. These inspections will supplement the daily safety oversight performed by the SSO. The inspections will be completed by TRC and will address, as appropriate:

- Use of proper personal protective equipment (PPE).
- Proper work zone delineation and work practices.
- Proper decontamination procedures and handling of waste.
- Proper air monitoring procedures and calibrations (refer to Section 5.7).
- Verifying workers have received the necessary training and orientation.
- Accident prevention and hazards identification.

TRC will document each inspection in a memorandum.

10.5.3 Pre-Final Inspection

As the project is nearing completion, a Pre-Final Inspection meeting will be completed. The Pre-Final Inspection will be attended by the FWS Representative, the TRC Project Superintendent. The Pre-Final Inspection will consist of a walk-through inspection and completion of a punch list.

10.5.4 Final Inspection

Upon completion of the outstanding construction items determined from the Pre-Final Inspection, a Final Inspection will be completed. The Final Inspection will be attended by the FWS Representative and the TRC Project Superintendent. The Final Inspection will consist of a walk-through inspection. Documentation of the Final Inspection will be included in the Construction Completion Report.

10.6 Observations, Results, and Documentation

Documentation of observations and results during RD/RA field work will be in various forms, including the following:

- **Daily Construction and QC Reports** – Daily Construction and QC Reports will be completed by the Project Superintendent/CQC System Manager. The Project Superintendent/CQC System Manager will send the Daily Construction and QC Report to the TRC RD/RA Project Manager after the completion of each working day. Copies of the reports will be maintained on-site for reference. The standard Daily Construction and QC Report form is included in Appendix N.1.
- **Visual Dust Monitoring Log** – Visual Dust Monitoring Logs will be completed by the Project Superintendent/CQC System Manager. Visual dust monitoring observations will be performed and recorded at least three times per day and whenever dust generation is observed, and will be documented in the Visual Dust Monitoring Log. Recorded wind speed and direction will be approximated based on local meteorological data publicly available online. Copies of the logs will be maintained on-site for reference. The standard Visual Dust Monitoring Log is included in Appendix N.2.
- **Field Notebooks** – Field notebooks will be maintained.
- **Field Logs** – Appropriate field logs will be used, such as well abandonment forms.
- **Chain of Custody (COC) Forms** – COC forms will be completed for samples collected for analytical testing, Appendix N.3.
- **Contractor Submittal Log** – This form will be completed to record contractor submittals. The log will be completed by the TRC Project Superintendent. The Contractor Submittal Log is included in Appendix N.4.

- **Notice of Completion** – This form will be completed to document completion of work after the Final Inspection (see Section 10.5.4) is performed. The Notice of Completion will be completed by the CQC System Manager. The certificate will be submitted to the FWS Representative. The Notice of Completion is included in Appendix N.5.
- **In-Progress Inspection** – In-progress inspections will be completed as the work progresses. Results from the inspections will be summarized on the Daily Construction and QC Report.
- **Field Modification Form** – This form will be used to document field modifications to the RD/RA WP. The form will be completed by the TRC Project Superintendent and reviewed by the FWS Representative. The form will be attached to the Daily Construction and QC Report. The Field Modification Form is included in Appendix N.6.
- **Photographic Log** – This form will be completed to record construction photo documentation. The log will be completed by the TRC Project Superintendent. Select photographs will be included in the Construction Completion Report to document RD/RA activities. The Photographic Log is included in Appendix N.7.
- **Waste Disposal Log** – This form will be completed to record transportation and disposal of the pesticide material. The log will be completed by the TRC Project Superintendent. The log will be attached to the Daily Construction and QC Report. The Waste Disposal Log is included in Appendix N.8.
- **Decontamination Inspection** – This form will be completed to document completion of final decontamination activities. The form will be completed by the contractor performing the work. The Decontamination Inspection form is included in Appendix N.9.
- Documentation reporting that will be completed for Health and Safety considerations during the removal includes:
 - **Tailgate Safety Meeting** – A daily tailgate safety meeting will be held prior to beginning work each day. The meeting will be coordinated by the SSO. The SSO will complete the Tailgate Safety Meeting Form and attach a copy to the Daily Construction and QC Report. The Tailgate Safety Meeting Form is included in Appendix N.10.
 - **Supervisor Safety Meeting** – Weekly safety meetings for supervision of staff will be held in conjunction with the Weekly Construction Meetings. Safety issues will be documented in the meeting minutes.
 - **Compliance Inspection** – A compliance inspection will be completed periodically by a TRC (see Section 10.5.2). TRC will summarize the results on a memorandum, and will send the memorandum to the TRC RD/RA Project Manager.

10.7 Weekly Construction Meetings

Weekly construction meetings will be held on-site during remediation construction activities. These meetings will be coordinated by the TRC RD/RA Project Manager and will be attended by the FWS Representative, the TRC Project Superintendent, and TRC's subcontractor if appropriate. The weekly meetings will include the following:

- Review QC issues and identify any areas or conditions requiring resolution or clarification.
- Identify problem areas such as work deficiencies, work conflicts, or conditions affecting work.
- Make potential modifications to either the construction or QC systems that would improve the final work product.
- Review applicable conditions of the HASP.
- Review work progress since previous meeting.
- Review field observations since previous meeting.
- Review construction schedule.
- Review documentation and submittals.
- Review field modifications.

Minutes from the Weekly Meeting will be completed by the TRC RD/RA Project Manager and distributed to the appropriate parties within three working days.

10.8 Notice of Noncompliance

The FWS Representative will notify the TRC CQC System Manager of any detected noncompliance with the project requirements. TRC will, after receipt of such notice, immediately take corrective action. The CQC System Manager will notify the TRC RD/RA Project Manager of detected noncompliance with the above requirements. The CQC System Manager may issue an order stopping all or part of the work until satisfactory corrective action has been taken. A Notice of Noncompliance Log will be maintained by the CQC System Manager. The Notice on Noncompliance Log is included in Appendix N.11.

Section 11

Project Schedule

RD/RA field work activities and documentation described in this RD/RA WP are anticipated to be performed per the following schedule:

TASK NO.	RD/RA TASK	ANTICIPATED TIME TO COMPLETE (WEEKS)
1	Site Mobilization	1-2 weeks
2	Remove Contents, Clean Warehouse, Perform ACM Abatement, Demolish and Dispose of the Four Impacted Warehouses IN-1-3, IN-1-4, IN-1-5, and IN-1-6.	8-10 weeks
3	Remove stockpiled cleared tree and brush material	Likely during same time frame as Task 2
4	Excavate and Dispose of Impacted Soil	2-4 weeks
5	Site Restoration	2-3 weeks
6	Construction Completion Report	4-6 weeks

Note: Based on Site conditions and timing considerations, the sequence of RD/RA tasks described above may be revised to facilitate implementation of the RD/RA tasks. For example, a Warehouse may be demolished concurrently with soil excavation being performed.

Section 12

Construction Documentation

12.1 Construction Oversight and Documentation

Construction oversight will be performed to document that the RD/RA activities are performed in compliance with the RD/RA WP. TRC will document on a daily basis field activities to include the weather conditions, duration of work, extent of work, material import and exports for the day, any problems, deviations, communications, and other information.

12.2 Construction Completion Report

TRC will prepare a Construction Completion Report, which summarizes the RD/RA activities including construction activities, modifications, and record photographs. A draft Construction Completion Report will be prepared for FWS, IEPA, USEPA, and USACE review. The final report will incorporate FWS, IEPA, USEPA, and USACE comments and will be distributed to FWS, IEPA, USEPA, and USACE.

Section 13 References

- CH2MHILL. 2013. Final Remedial Action Completion Report, 1960s Ditch, Crab Orchard National Wildlife Refuge. April 2013.
- FWS. 2007a. Baseline Human Health Risk Assessment Report, Area 7 Pesticide Area, Additional and Uncharacterized Sites Operable Unit, Crab Orchard National Wildlife Refuge NPL site, Marion, Illinois. December 2007. Draft.
- FWS. 2007b. Baseline Ecological Risk Assessment Report, Area 7 Pesticide Area, Additional and Uncharacterized Sites Operable Unit, Crab Orchard National Wildlife Refuge NPL site, Marion, Illinois. December 2007. Draft.
- FWS. 2009. Engineering Evaluation/Cost Assessment (EE/CA) Approval Memorandum. July 6, 2009.
- FWS. 2012. Work Plan for an Engineering/Cost Analysis (EE/CA) for the Pesticide Contamination at Area 7, Additional and Uncharacterized Sites Operable Unit, Crab Orchard National Wildlife Refuge NPL site, Marion, Illinois. April 2012.
- NewFields. 2009. Preliminary Site Characterization Summary Report. Phase I Remedial Investigation, Additional and Uncharacterized Sites Operable Unit, Crab Orchard National Wildlife Refuge, Williamson County, Illinois. August 2009.
- Shannon & Wilson, Inc. 2015. Remedial Investigation Report. Remedial Investigation, Additional and Uncharacterized Sites Operable Unit, Crab Orchard National Wildlife Refuge, Williamson County, Illinois. February 2015.
- TRC. 2016a. Memorandum to US Fish and Wildlife Service, Risk Management Technical Memorandum, Area 7 Pesticide Area. March 21, 2016.
- TRC. 2016b. Memorandum to US Fish and Wildlife Service, EE/CA Phase I – Field Investigation Documentation and Summary of Results, Area 7 Pesticide Area. May 2, 2016.
- TRC. 2016c. Memorandum to US Fish and Wildlife Service, EE/CA Phase I - Supplemental Groundwater Sampling Results, Area 7 Pesticide Area. October 28, 2016.
- TRC. 2018a. Engineering Evaluation/Cost Analysis, Area 7 Pesticide Area of the Additional and Uncharacterized Sites Operable Unit. January 5, 2018.

TRC. 2018b. EE/CA Work Plan Addendum, Tree Clearing and RD Soil Sampling. February 22, 2018.

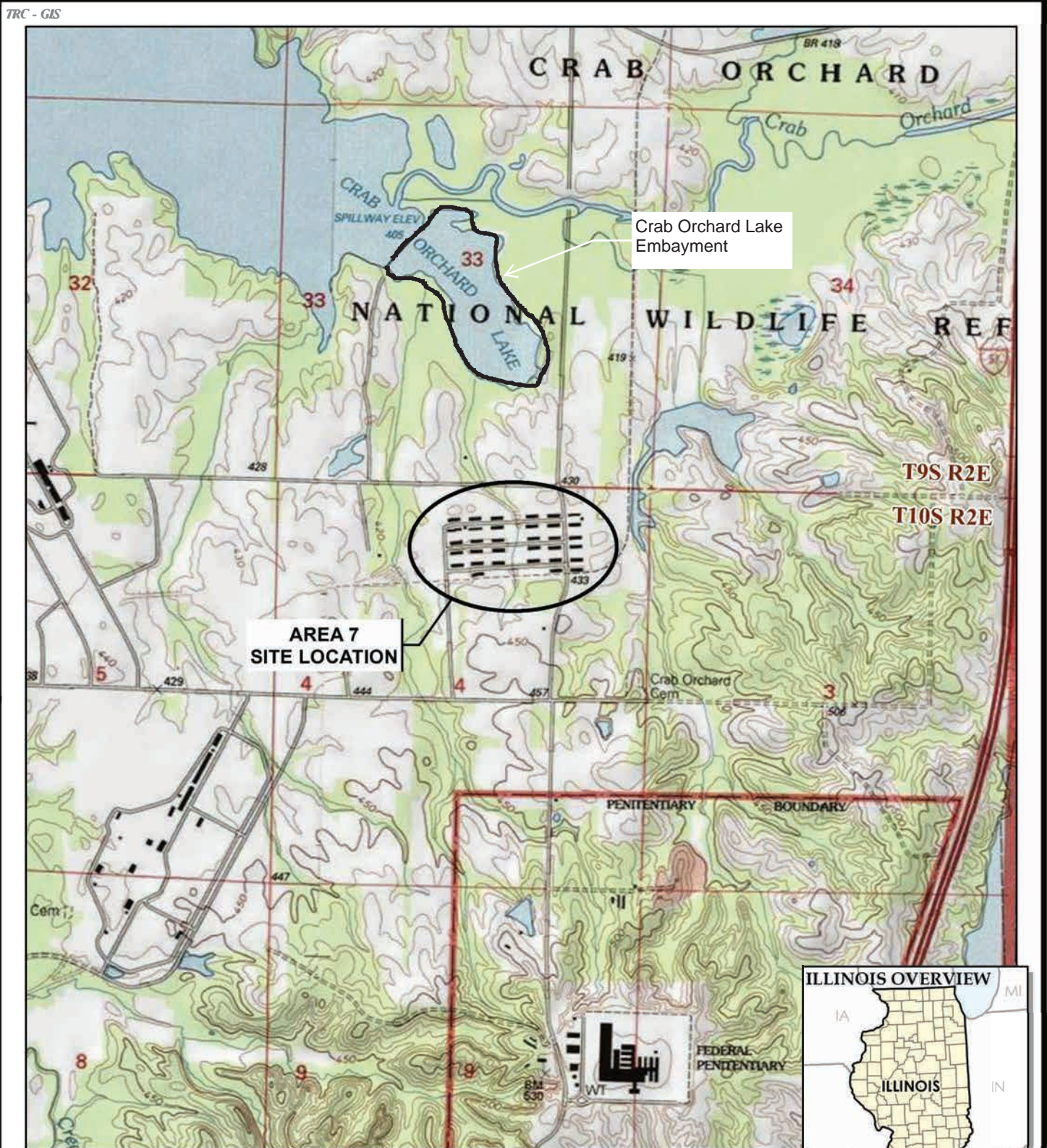
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URS. 2003a. Final Preliminary Assessment/Site Inspection Report. Additional and Uncharacterized Sites Operable Unit, Crab Orchard National Wildlife Refuge NPL Site, Marion, Illinois (Williamson County). June 2003.

URS. 2003b. Final Post Preliminary Assessment/Site Inspection in Area 7 (AUS-0A07). Additional and Uncharacterized Sites Operable Unit, Crab Orchard National Wildlife Refuge NPL Site, Marion, Illinois (Williamson County). October 2003.

APPENDIX C

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BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.



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708 Heartland Trail
Suite 3000
Madison, WI 53717
Phone: 608.826.3600

**RISK MANAGEMENT MEMO
AREA 7 PESTICIDE AREA, AUS OU
CRAB ORCHARD NATIONAL WILDLIFE REFUGE**

SITE LOCATION MAP

DRAWN BY:	PAPEZ J
APPROVED BY:	STOLZENBURG T
PROJECT NO:	194355
FILE NO:	194355-001b-slm.mxd
DATE:	MARCH 2016

FIGURE 2-1




Crab Orchard National Wildlife Refuge Marion, Illinois	URS		PROJECT NO: 18600184 05/01/15
	SCALE: 1:4,500	DRAWN BY: RL CHECKED BY: CC	FIGURE NO: 3-1
	DATE 11/02/07 DATE 11/02/07		

Building Area Exposure Unit and
Creek Area Exposure Unit

c:\crab_orchard\gis\arab\ba\11-building_creek\exposure\units.mxd

Map image from: Map information from the BERA, Area 7, Pesticide Area, 2007.
Not to scale.

 708 Heartland Trail Suite 3000 Madison, WI 53717 Phone: 608.826.3600 TRC - GIS	PROJECT:	RISK MANAGEMENT MEMO AREA 7 PESTICIDE AREA, AUS OU CRAB ORCHARD NATIONAL WILDLIFE REFUGE	DRAWN BY: PAPEZ J
	TITLE:	EXPOSURE UNIT AREAS	CHECKED BY: WESTOVER M
			APPROVED BY: STOLZENBURG T
			DATE: MARCH 2016
			PROJ. NO.: 194355
		FILE: 194355-036.mxd	FIGURE 2-2