

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:)

Allied Paper Inc./Portage Creek/Kalamazoo)
River Superfund Site)
Otsego Township Dam Area)
Otsego, Michigan)

Georgia-Pacific LLC,)
International Paper Company, and)
Weyerhaeuser Company)
Respondents)

Proceeding under Section 106(a))
of the Comprehensive Environmental)
Response, Compensation, and Liability)
Act, as amended, 42 U.S.C. § 9606(a).)
_____)

Docket No. **V-W-16-C-009**

**UNILATERAL ADMINISTRATIVE
ORDER FOR REMOVAL ACTIONS**

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I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Order (“Order”) is issued under the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, (CERCLA), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of the United States Environmental Protection Agency (EPA) by Executive Order No. 12580, 52 Fed. Reg. 2923 (Jan. 23, 1987), and further delegated to the Regional Administrators by EPA Delegation Nos. 14-14-A and 14-14-B. This authority was further redelegated by the Regional Administrator of EPA Region 5 subject to the concurrence by the Regional Counsel and in certain situations approval of the Attorney General to the Director of the Region 5 Superfund Division by regional delegations 14-14-A (August 24, 2015), 14-14-B (May 2, 1996).

2. This Order pertains to property located at the Otsego Township Dam Area of the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site (the “Site”) located in Allegan and Kalamazoo Counties, Michigan. This Order requires Respondents to conduct removal actions described herein to abate an imminent and substantial endangerment to the public health or welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from the Site.

3. EPA has notified the State of Michigan (the “State”) of this action pursuant to Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

II. PARTIES BOUND

4. This Order applies to and is binding upon Respondents and their successors and assigns. Any change in ownership or control of the Site or change in the corporate or partnership status of a Respondent, including, but not limited to, any transfer of assets or real or personal property, shall not alter Respondents’ responsibilities under this Order.

5. Respondents are jointly and severally liable for implementing all activities required by this Order. Compliance or noncompliance by any Respondent with any provision of this Order shall not excuse or justify noncompliance by any other Respondents. No Respondent shall interfere in any way with performance of the Work in accordance with this Order by any other Respondent. In the event of the insolvency or other failure of any Respondent to implement the requirements of this Order, the remaining Respondents shall complete all such requirements.

6. Respondents shall provide a copy of this Order to each contractor hired to perform the Work required by this Order and to each person representing any Respondents 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 Order. Respondents or their contractors shall provide written notice of the Order to all subcontractors hired to perform any portion of the Work required by this Order. Respondents shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work in accordance with the terms of this Order.

III. DEFINITIONS

7. Unless otherwise expressly provided in this Order, terms used in this Order 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 Order or in appendices to or documents incorporated by reference into this Order, the following definitions shall apply:

“Action Memorandum” shall mean the EPA Action Memorandum relating to a time-critical removal action on the Kalamazoo River in the Otsego Township Dam Area signed on April 6, 2016, by the Director of the Region 5 Superfund Division and all attachments thereto. The Action Memorandum is attached as Appendix 1.

“Affected Property” shall mean all real property at the Site and any other real property where EPA determines, at any time, that access or land, water, or other resource use restrictions are needed to implement the removal action.

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

“Day” or “day” shall mean a calendar day. In computing any period of time under this Order, 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.

“Effective Date” shall mean the effective date of this Order as provided in Section VIII.

“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.

“GP” shall mean Georgia-Pacific Consumer Products LP, Georgia-Pacific LLC, Fort James LLC and all successors and assigns.

“Interest” shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, 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.

“IP” shall mean International Paper Company and its successors and assigns.

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

“Order” shall mean this Unilateral Administrative Order and all appendices attached hereto. In the event of conflict between this Order and any appendix, this Order shall control.

“Otsego Township Dam Area” shall mean the areal extent of PCB contaminated material along the 1.7 mile stretch of the Kalamazoo River between the M -89 (Lincoln Road) bridge and the Otsego Township Dam, and includes submerged sediments and Riverbank/ Floodplain Soils within that stretch of the Kalamazoo River. The Otsego Township Dam Area is located in that portion of OU5 of the Site referred to as Area 3 under the currently ongoing Supplemental Remedial Investigation and Feasibility Study (SRI/FS) for OU5. Appendix 2 includes a map of the Otsego Township Dam Area.

“Operable Unit 5” or “OU5” shall mean the areal extent of contaminated instream sediments, banks and floodplains along 77 miles of the Kalamazoo River from Morrow Dam east of Kalamazoo to the river mouth at Lake Michigan, plus a 3-mile stretch of Portage Creek in Kalamazoo.

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

“Parties” shall mean EPA and Respondents.

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

“Riverbank/Floodplain Soils” shall mean bank soils above the water line starting at the water’s edge and proceeding inland a sufficient distance to support removal of those PCB impacted sediments and bank soils as necessary to provide a stable channel and bank.

“Respondents” shall mean GP, IP, and Weyerhaeuser.

“Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in monitoring and supervising Respondents’ performance of the Work to determine whether such performance is consistent with the requirements of this Order, including costs incurred in reviewing deliverables submitted pursuant to this Order, as well as costs incurred in overseeing implementation of this Order, including, but not limited to, payroll costs, contractor costs, travel costs, and laboratory costs.

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

“Site” shall mean the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, located in Allegan and Kalamazoo Counties, Michigan.

“State” shall mean the State of Michigan and each department, agency, and instrumentality of the State of Michigan, including the Michigan Department of Natural Resources and the Michigan Department of Environmental Quality.

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

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

“Waste Material” shall mean 1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); 2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and 3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

“Weyerhaeuser” shall mean Weyerhaeuser Company and its successors and assigns.

“Work” shall mean all activities Respondents are required to perform under this Order except those required by Section XV (Retention of Records) and includes all activities in deliverables required by this Order.

IV. FINDINGS OF FACT

8. Based on available information, including the administrative record in this matter, EPA finds that:

a. On August 30, 1990 and pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List (NPL) by publication in the Federal Register, 55 *Fed. Reg.* 35502. The Site was listed after routine surface water and biota sampling at the mouth of the Kalamazoo River indicated that polychlorinated biphenyls (PCBs) were discharging to Lake Michigan via the Kalamazoo River, and that these PCBs were widely bioavailable.

b. The State first issued a public health advisory regarding PCB contamination from the Site in 1977. The advisory remains in place today, and warns against eating carp, suckers, catfish and largemouth bass from these waters. The advisory warns nursing mothers, pregnant women, women who expect to bear children and children below the age of 15 not to eat certain species of fish from these waters.

c. Paper mills in the Kalamazoo River Valley disposed of PCBs into the Kalamazoo River and Portage Creek. Some of the wastepaper recycled by the mills was carbonless copy paper (CCP), a source of PCBs. CCP contained the PCB identified as Aroclor 1242. In the course of the recycling process, some of the PCBs from the recycled CCP ended up in wastewater effluent and papermaking waste, which the mills either directly discharged into the Kalamazoo River and/or Portage Creek, or disposed of in dewatering lagoons, landfills and other areas along the Kalamazoo River and Portage Creek.

d. The Site is contaminated with PCBs, a hazardous substance and probable human carcinogen, as a result of PCB-contaminated wastewater that Respondents discharged to the Kalamazoo River (either directly or indirectly).

e. GP owned and operated the Kalamazoo Paper Company Mill located upstream of the Otsego Township Dam Area, at a time when the mill was recycling paper that included PCB-laden CCP, resulting in the discharge of PCBs into the Kalamazoo River. GP also owned the property on which the Hawthorne Mills were located, and the King Highway, A-Site and Willow Boulevard disposal areas, which are located on the banks of the Kalamazoo River upstream of the Otsego Township Dam Area, during times when PCB-contaminated wastewater residuals were disposed at these locations.

f. IP owned the Bryant Mill, which was located upstream of the Otsego Township Dam Area on Portage Creek, at a time when the mill was recycling paper that included PCB-laden CCP, resulting in the discharge of PCBs into Portage Creek and the Kalamazoo River. Portage Creek is a tributary of the Kalamazoo River and empties into the River upstream of the Otsego Township Dam Area.

g. Weyerhaeuser owned and operated the Plainwell Mill, which was located upstream of the Otsego Township Dam Area, at a time when the mill was recycling paper that included PCB-laden CCP, resulting in the discharge of PCBs into the Kalamazoo River.

h. PCBs from the mills and disposal areas described in subparagraphs c-g above have come to be located in sediments and Riverbank/Floodplain Soils of the Otsego Township Dam Area.

i. PCBs have been detected in instream sediments of the Otsego Township Dam Area at concentrations ranging from non-detect to 156 milligrams per kilogram (mg/kg).

j. PCB concentrations in the Riverbank/Floodplain Soils located at the Otsego Township Dam Area range from non-detect to 120 mg/kg.

k. A release of hazardous substances to the environment has occurred and continues to occur at the Otsego Township Dam Area due to ongoing erosion of PCB-contaminated Riverbank/Floodplain Soils and migration of PCB-contaminated instream sediments and riverbank/floodplain soils at the Otsego Township Dam Area.

l. In March 2016, the State completed installation of a temporary water control structure that was engineered to last approximately three years. Failure or removal of the temporary water control structure prior to the implementation of the removal action described in the Action Memorandum would lead to highly concentrated PCB-contaminated sediments being released to the riverbanks, floodplains, and instream sediments below the temporary water control structure where contamination does not currently exist or exists at lower levels. Furthermore, such a release is expected to increase the overall cost of the removal action in areas downstream of the Otsego Township Dam Area.

9. There are both human health and ecological risks at the Otsego Township Dam Area due to the bioavailability of PCBs from contaminated sediment and soils into the food chain.

i. Humans who regularly consume Kalamazoo River fish are potentially subject to increased risk from cancer and non-cancer health effects such as reproductive and immunological impairment.

ii. Ecological risks at the Site and the Otsego Township Dam Area include risks to benthic invertebrates, fish, fish eating birds, carnivorous birds, and fish eating mammals.

10. Consumption of fish from OU5 of the Site is a significant PCB exposure pathway for humans and biota. The risk and hazards estimated for Area 3 of OU5, where the Otsego Township Dam Area is located, are greater than at other areas of the Site. Fish from Area 3 of OU5 migrate downstream to other areas of OU5 and Lake Michigan.

11. Failure of the water control structure would lead to increased human health and ecological risks because high levels of PCB-contaminated sediments and soils would spread, potentially, potentially increasing area and level of PCB-contamination downstream of the structure.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

12. Based on the Findings of Fact set forth above, the attached Action Memorandum, and the administrative record, EPA has determined that:

a. The Site is a "facility" as defined by Section 101(9) of CERCLA, 42 U.S.C. § 9601(9). The Otsego Township Dam Area is a portion of the Site at which hazardous substances have come to be located, and from which hazardous substances have been released and threaten to be released.

b. Each Respondent is a "person" as defined by Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

c. Each Respondent is a liable party under one or more provisions of Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

i. Respondents are the "owner(s)" and/or "operator(s)" of portions of the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1).

ii. Respondents were the "owners" and/or "operators" of portions of the facility at the time of disposal of hazardous substances at the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2).

d. The PCB contamination found at the Site, as identified in the Findings of Fact above, includes a "hazardous substance" as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), and also includes a "pollutant or contaminant" that may present an imminent and substantial danger to public health or welfare under Section 104(a)(1) of CERCLA, 42 U.S.C. § 9604(a)(1).

e. The conditions described in the Findings of Fact above constitute an actual and/or threatened "release" of a hazardous substance from the facility as defined by Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

f. As set forth in the Action Memorandum, the conditions present at the Otsego Township Dam Area constitute a threat to public health, welfare, or the environment based upon the factors set forth in Section 300.415(b)(2) of the NCP. These factors include, but are not limited to:

i. *Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.* As outlined further in the Action Memorandum, this factor is present at the Otsego Township Dam Area due to the bioavailability of the PCBs in sediments and soils.

ii. *High levels of hazardous substances or pollutants or contaminants in riverbank soils and sediment at or near the surface that may migrate within the Site.* As outlined further in the Action Memorandum, this factor is present at the Otsego Township Dam Area due to the existence of PCBs in high concentrations near the surface of in-water sediments and riverbank soils that are eroding or may erode into the Kalamazoo River.

iii. *Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.* As outlined further in the Action Memorandum, this factor is present at the Otsego Township Dam Area due to the potential for scouring and/or mobilization of PCB-contaminated materials in riverbank soil and in-water sediments due to possible ice movement in late winter; heavy rains and flooding that add to stream volume and velocity in spring and summer; and desiccation of riverbank soils and associated sloughing during dry and/or hot weather.

iv. *Other situations or factors that may pose threats to public health or welfare or the environment.* As described in the Action Memorandum, this factor is present at the Otsego Township Dam Area due to the existence of temporary water control structure that currently maintains water levels and flows in the Kalamazoo River downstream of the Otsego Township Dam Area. The expected three-year lifespan and temporary nature of the water control structure increases the risk of widespread contamination and likelihood for wildlife populations to come into direct contact with PCB-contaminated sediments and Riverbank/Floodplain Soils if the structure fails prior to the completion of the TCRA.

g. EPA determined in the Action Memorandum that the conditions at the Otsego Township Dam Area as described in the Findings of Fact above may constitute an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from the facility within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

h. The removal actions required by this Order are necessary to protect the public health, welfare, or the environment.

VI. ORDER

13. Based upon the Findings of Fact, Conclusions of Law and Determinations set forth above, and the administrative record, Respondents are hereby ordered to comply with all provisions of this Order and any modifications to this Order, including all appendices to this Order and all documents incorporated by reference into this Order.

VII. OPPORTUNITY TO CONFER

14. Within 5 days after this Order is signed by the Director of the Region 5 Superfund Division, Respondents may, in writing, request a conference with EPA to discuss this Order, including its applicability, the factual findings and the determinations upon which it is based, the appropriateness of any actions Respondents are ordered to take, or any other relevant and material issues or contentions that Respondents may have regarding this Order.

15. Respondents may appear in person or by an attorney or other representative at the conference. Any such conference shall be held at least 5 days after the conference is requested. Respondents may also submit written comments or statements of position on any matter pertinent to this Order no later than 5 days after the conference or within 10 days after this Order is signed if Respondents do not request a conference. This conference is not an evidentiary hearing, does not constitute a proceeding to challenge this Order, and does not give Respondents a right to seek review of this Order. Any request for a conference or written comments or statements should be submitted to:

Charles Mikalian, Office of Regional Counsel
U.S. Environmental Protection Agency
77 W. Jackson Blvd., Mail Code C-14J
Chicago, IL 60604
Mikalian.Charles@epa.gov
312-886-2242

VIII. EFFECTIVE DATE

16. This Order shall be effective 5 days after the Order is signed by the Regional Administrator or his/her delegatee unless a conference is requested or written materials are submitted in accordance with Section VII (Opportunity to Confer). If a conference is requested or written materials are submitted, this Order shall be effective on the later of the 10th day after the day of the conference, or the 10th day after written materials, if any, are submitted, unless EPA determines that the Order should be modified based on the conference or written materials. In such event, EPA shall notify Respondents, within the 10-day period, that EPA intends to modify the Order. The modified Order shall be effective 5 days after it is signed by the Regional Administrator or his/her delegatee.

IX. NOTICE OF INTENT TO COMPLY

17. On or before the Effective Date, each Respondent shall notify EPA in writing of Respondent's irrevocable intent to comply with this Order. Such written notice shall be sent to EPA as provided in Paragraph 15. Each Respondent's written notice shall describe, using facts

that exist on or prior to the Effective Date, any “sufficient cause” defense asserted by such Respondent under Sections 106(b) and 107(c)(3) of CERCLA, 42 U.S.C. §§ 9606(b) and 9607(c)(3). The absence of a response by EPA to the notice required by this Paragraph shall not be deemed to be acceptance of any Respondent’s assertions. Failure of any Respondent to provide such notification within this time period shall, as of the Effective Date, be treated as a violation of this Order by such Respondent.

X. DESIGNATION OF CONTRACTOR, PROJECT COORDINATOR, AND ON-SCENE COORDINATOR

18. Selection of Contractors, Personnel. All Work performed under this Order shall be under the direction and supervision of qualified personnel. Within 30 days after the Effective Date, and before the Work outlined below begins, Respondents shall notify EPA in writing of the names, titles, and qualifications of the personnel, including contractors, subcontractors, consultants, and laboratories to be used in carrying out such Work. If, after the commencement of the Work, Respondents retain additional contractor(s) or subcontractor(s), Respondents shall notify EPA of the name(s) and qualification(s) of such contractor(s) or subcontractor(s) retained to perform the Work at least 15 days prior to commencement of Work by such additional contractor(s) or subcontractor(s). EPA retains the right, at any time, to disapprove of any or all of the contractors and/or subcontractors retained by Respondents. If EPA disapproves of a selected contractor or subcontractor, Respondents shall retain a different contractor or subcontractor and shall notify EPA of that contractor’s or subcontractor’s name and qualifications within 15 days after EPA’s disapproval. With respect to any proposed contractor, Respondents shall demonstrate that the proposed contractor demonstrates compliance with ASQ/ANSI E4:2014 “Quality management systems for environmental information and technology programs – Requirements with guidance for use” (American Society for Quality, February 2014), by submitting a copy of the proposed contractor’s Quality Management Plan (QMP). The QMP should be prepared in accordance with “EPA Requirements for Quality Management Plans (QA/R-2)” (EPA/240/B-01/002, Reissued May 2006) or equivalent documentation as determined by EPA. The qualifications of the persons undertaking the Work for Respondents shall be subject to EPA’s review for verification that such persons meet minimum technical background and experience requirements.

19. Within 10 days after the Effective Date, Respondents shall designate a Project Coordinator who shall be responsible for administration of the Work required by this Order and shall submit to EPA the designated Project Coordinator’s name, address, telephone number, email address, and qualifications. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during the Work. EPA retains the right to disapprove of the designated Project Coordinator. If EPA disapproves of the designated Project Coordinator, Respondents shall retain a different Project Coordinator and shall notify EPA of that person’s name, address, telephone number, email address, and qualifications within 10 days following EPA’s disapproval. Respondents shall have the right to change their Project Coordinator, subject to EPA’s right to disapprove. Respondents shall notify EPA 10 days before such a change is made. The initial notification may be made orally, but shall be promptly followed by a written notification. Communications between Respondents and EPA, and all documents concerning the activities performed pursuant to this Order, shall be directed to the Project Coordinator. Receipt

by Respondents' Project Coordinator of any notice or communication from EPA relating to this Order shall constitute receipt by all Respondents.

20. EPA has designated Paul Ruesch of the Emergency Response Branch, Region 5 as its On-Scene Coordinator (OSC). Except as otherwise provided in this Settlement, Respondents shall direct all submissions required by this Settlement to the OSC at EPA, Region 5, 77 W. Jackson Blvd., Mail Code SE-5J, Chicago, IL 60604. EPA will notify Respondents of a change of its designated OSC. Communications between Respondents and EPA, and all documents concerning the activities performed pursuant to this Order, shall be directed to the OSC in accordance with Paragraph 25.

21. The OSC shall be responsible for overseeing Respondents' implementation of this Order. The OSC shall have the authority vested in a Remedial Project Manager (RPM) and an OSC by the NCP, including the authority to halt, conduct, or direct any Work required by this Order, or to direct any other response action when s/he determines that conditions at the Site constitute an emergency situation or may present a threat to public health or welfare or the environment. Absence of the OSC from the Site shall not be cause for stoppage or delay of Work.

XI. WORK TO BE PERFORMED

22. Respondents shall perform, at a minimum, all actions necessary to implement the Action Memorandum. The actions to be implemented include, but are not limited to, the following:

- a. dredging and/or excavation of PCB-contaminated in-stream sediments and Riverbank/Floodplain Soils in the Otsego Township Dam Area, at locations specified in the Action Memorandum and so that remaining PCB concentrations are ≤ 1 mg/kg for in-stream sediments and ≤ 5 mg/kg for impacted Riverbank/Floodplain soils;
 - b. cut-back and stabilization of riverbanks to mitigate exposures to PCB-contaminated Riverbank/Floodplain Soils and future erosion;
 - c. dewatering and, as necessary, disposal of excavated or dredged Waste Material;
 - d. backfilling and re-vegetation of excavated Riverbank/Floodplain Soils areas;
 - e. monitoring and maintenance during and after the implementation of the Work;
- and
- f. post-removal site control activities, including restoration.

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

24. Work Plan and Implementation.

a. Within 30 days after the Effective Date, in accordance with Paragraph 25 (Submission of Deliverables), but no later than June 17, 2016, Respondents shall submit to EPA for review and approval a draft work plan for performing the removal actions (the "Removal Work Plan") generally described in Paragraph 22 above. The draft Removal Work Plan shall provide a description of the Work required by this Order and an expeditious schedule to ensure that implementation of the Work begins by August 1, 2016 and that Work, with exception of post-removal site control described in Paragraph 29, is completed by March 31, 2018.

b. EPA may approve, disapprove, require revisions to, or modify the draft Removal Work Plan in whole or in part. If EPA requires revisions, Respondents shall submit a revised draft Removal Work Plan within 10 days after receipt of EPA's notification of the required revisions. Respondents shall implement the Removal Work Plan as approved in writing by EPA in accordance with the schedule approved by EPA. Once approved, or approved with modifications, the Removal Work Plan, the schedule, and any subsequent modifications shall be incorporated into and become fully enforceable under this Order.

c. Upon approval or approval with modifications of the Removal Work Plan, Respondents shall commence implementation of the Work in accordance with the schedule included therein. Respondents shall not commence or perform any Work except in conformance with the terms of this Order. Respondents shall notify EPA at least 48 hours prior to performing any Work on-Site pursuant to the EPA-approved Removal Work Plan.

d. Unless otherwise provided in this Order, any additional deliverables that require EPA approval under the Removal Work Plan shall be reviewed and approved by EPA in accordance with this Paragraph.

e. Any non-compliance with any EPA-approved plans, reports, specifications, schedules, or other deliverables shall be considered a violation of the requirements of this Order. Determinations of non-compliance shall be made by EPA. Approval of the Removal Work Plan shall not limit EPA's authority under the terms of this Order to require Respondents to conduct activities consistent with this Order to accomplish the Work outlined in this Section.

25. Submission of Deliverables. Except as otherwise provided in this Order, Respondents shall direct all submissions required by this Order to the OSC at Paul Ruesch, EPA Region 5, 77 W. Jackson Blvd., Mail Code SE-5J, Chicago, IL 60604. Respondents shall submit all deliverables required by this Order or any approved work plan to EPA in accordance with the schedule set forth in such plan. All deliverables shall be submitted to EPA in electronic form unless otherwise specified by the OSC. If any deliverable includes maps, drawings, or other exhibits that are larger than 8.5 x 11 inches, Respondents shall also provide EPA with paper copies of such exhibits.

26. Sampling and Analysis Plan. As part of the Removal Work Plan, Respondents shall submit a Sampling and Analysis Plan to EPA for review and approval. This plan shall consist of a Field Sampling Plan (FSP) and a Quality Assurance Project Plan (QAPP) that is

consistent with the Removal Work Plan, the NCP and applicable guidance documents, including, but not limited to, "Guidance for Quality Assurance Project Plans (QA/G-5)" EPA/240/R-02/009 (December 2002), "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" EPA 240/B-01/003 (March 2001, reissued May 2006), and "Uniform Federal Policy for Quality Assurance Project Plans," Parts 1-3, EPA/505/B-04/900A-900C (March 2005). Upon its approval by EPA, the Sampling and Analysis Plan shall be incorporated into and become enforceable under this Settlement.

27. Health and Safety Plan. As part of the Removal Work Plan, Respondents shall submit for EPA review and comment a Health and Safety Plan that ensures the protection of on-site workers and the public during performance of on-site Work under this Order. This plan shall be prepared in accordance with "OSWER Integrated Health and Safety Program Operating Practices for OSWER Field Activities," Pub. 9285.0-OIC (Nov. 2002), available on the NSCEP database at <http://www.epa.gov/nscep/index.html>, and "EPA's Emergency Responder Health and Safety Manual," OSWER Directive 9285.3-12 (July 2005 and updates), available at <http://www.epaosc.org/HealthSafetyManual/manual-index.htm>. In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration (OSHA) regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the plan shall also include contingency planning. Respondents shall incorporate all changes to the plan recommended by EPA and shall implement the plan during the pendency of the removal action.

28. Community Involvement Plan. EPA will prepare a community involvement plan in accordance with EPA guidance and the NCP. If requested by EPA, Respondents shall participate in community involvement activities, including participation in (a) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification, and (b) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. Respondents' support of EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to (a) any community advisory groups, (b) any technical assistance grant recipients and their advisors, and (c) other entities to provide them with a reasonable opportunity for review and comment. All community involvement activities conducted by Respondents at EPA's request are subject to EPA's oversight. Upon EPA's request, Respondents shall establish a community information repository at or near the Site to house one copy of the administrative record.

29. Post-Removal Site Control. In accordance with the Removal Work Plan schedule, or as otherwise directed by EPA, Respondents shall submit a proposal for Post-Removal Site Control which shall include, but not be limited to, site control activities such as maintenance/replacement of vegetation, erosion control measures, and engineering/physical barriers; institutional controls such as land/water use and public access control/restrictions. If not included in the Removal Work Plan, the Post-Removal Site Control shall include removal of the temporary water control structure and re-grading/restoration of the adjacent riverbanks, as necessary, to ensure stabilization of the river channel. Upon EPA approval, Respondents shall either conduct Post-Removal Site Control activities, or obtain a written commitment from another party for performance of such activities, until such time as EPA determines that no further Post-Removal Site Control is necessary. Respondents shall provide EPA with documentation of all Post-Removal Site Control commitments.

30. Progress Reports. Respondents shall submit a written progress report to EPA concerning actions undertaken pursuant to this Order on a monthly basis, or as otherwise requested by EPA, from the date of receipt of EPA's approval of the Removal Work Plan until issuance of Notice of Completion of Work pursuant to Section XXVII, unless otherwise directed in writing by the OSC. 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.

31. Final Report. Within 90 days after completion of all Work required by this Order, with the exception of any continuing obligations required by this Order, including post-removal site controls, reimbursement of Response Costs, or record retention, Respondents shall submit for EPA review and approval a final report summarizing the actions taken to comply with this Order. EPA will review and approve the final report in accordance with Section XXVII (Notice of Completion of Work). The final report shall conform, at a minimum, with the requirements set forth in Section 300.165 of the NCP and "Superfund Removal Procedures: Removal Response Reporting – POLREPS and OSC Reports" (OSWER Directive No. 9360.3-03, June 1, 1994). The final report shall include a good faith estimate of total costs or a statement of actual costs incurred in complying with the Order, 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(s) of those materials, a presentation of the analytical results of all sampling and analyses performed, and accompanying appendices containing all relevant documentation generated during the removal actions (e.g., manifests, invoices, bills, contracts, and permits). The final report shall also include the following certification signed by a responsible corporate official of a Respondent or Respondent's Project Coordinator: "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."

32. Off-Site Shipments.

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

b. Respondents may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide written notice to the

appropriate state environmental official in the receiving facility's state and to the OSC. This notice requirement will 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. Respondents shall also notify the state environmental official referenced above and the OSC of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-state facility. Respondents shall provide the notice after the award of the contract for the removal action and before the Waste Material is shipped.

c. Respondents may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, EPA's "Guide to Management of Investigation Derived Waste," OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the 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.

XII. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

33. Respondents shall use quality assurance, quality control, and other technical activities and chain of custody procedures for all samples consistent with "EPA Requirements for Quality Assurance Project Plans (QA/R5)," EPA/240/B-01/003 (March 2001, reissued May 2006), "Guidance for Quality Assurance Project Plans (QA/G-5)," EPA/240/R-02/009 (December 2002), and "Uniform Federal Policy for Quality Assurance Project Plans," Parts 1-3, EPA/505/B-04/900A-900C (March 2005).

34. Access to Laboratories.

a. Respondents shall ensure that EPA personnel and its authorized representatives are allowed access at reasonable times to all laboratories utilized by Respondents pursuant to this Order. In addition, Respondents shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality assurance, quality control, and technical activities that will satisfy the stated performance criteria as specified in the QAPP and that sampling and field activities are conducted in accordance with EPA's "Field Operations Group Operational Guidelines for Field Activities" (<http://www.epa.gov/region8/qa/FieldOperationsGroupOperationalGuidelinesForFieldActivities.pdf>) and "EPA QA Field Activities Procedure" (<http://www.epa.gov/irmmpoli8/policies/2105-p-02.pdf>). Respondents shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Order meet the competency requirements set forth in EPA's "Policy to Assure Competency of Laboratories, Field Sampling, and Other Organizations Generating Environmental Measurement Data under Agency-Funded Acquisitions" (<http://www.epa.gov/fem/pdfs/fem-lab-competency-policy.pdf>) and that the laboratories perform all analyses using EPA-accepted methods. Accepted EPA methods consist of, but are not limited to, methods that are documented in the EPA's Contract Laboratory Program (<http://www.epa.gov/superfund/programs/clp/>), SW 846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"

(<http://www.epa.gov/epawaste/hazard/testmethods/sw846/online/index.htm>), “Standard Methods for the Examination of Water and Wastewater” (<http://www.standardmethods.org/>), 40 C.F.R. Part 136, “Air Toxics - Monitoring Methods” (<http://www.epa.gov/ttnamtl1/airtox.html>).” However, upon approval by EPA, Respondents may use other appropriate analytical method(s), as long as (i) quality assurance/quality control (QA/QC) criteria are contained in the method(s) and the method(s) are included in the QAPP, (ii) the analytical method(s) are at least as stringent as the methods listed above, and (iii) the method(s) have been approved for use by a nationally recognized organization responsible for verification and publication of analytical methods, e.g., EPA, ASTM, NIOSH, OSHA, etc. Respondents shall ensure that all laboratories they use for analysis of samples taken pursuant to this Order have a documented Quality System that complies with ASQ/ANSI E4:2014 “Quality management systems for environmental information and technology programs – Requirements with guidance for use” (American Society for Quality, February 2014), and “EPA Requirements for Quality Management Plans (QA/R-2)” EPA/240/B-01/002 (March 2001, reissued May 2006), or equivalent documentation as determined by EPA. EPA may consider Environmental Response Laboratory Network (ERLN) laboratories, laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP), or laboratories that meet International Standardization Organization (ISO 17025) standards or other nationally recognized programs (<http://www.epa.gov/fem/accredit.htm>) as meeting the Quality System requirements. Respondents shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Order are conducted in accordance with the procedures set forth in the QAPP approved by EPA.

b. Upon request, Respondents shall provide split or duplicate samples to EPA or its authorized representatives. Respondents shall notify EPA as soon as possible in advance of any sample collection activity. In addition, EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall provide to Respondents split or duplicate samples of any samples it takes as part of EPA’s oversight of Respondents’ implementation of the Work.

c. Respondents shall submit to EPA, in the next monthly progress report as described in Paragraph 30 (Progress Reports) copies of the results of all sampling and/or tests or other data obtained or generated by or on behalf of Respondents with respect to the Site and/or the implementation of this Order.

XIII. PROPERTY REQUIREMENTS

35. Agreements Regarding Access and Non-Interference. Respondents shall, with respect to any Affected Property, use best efforts to secure access through an agreement, enforceable by Respondents and EPA, providing that the owner of the Affected Property: (i) provide EPA, Respondents, and their representatives, contractors, and subcontractors with access at all reasonable times to such Affected Property to conduct any activity regarding the Order, including those activities listed in Paragraph 35.a (Access Requirements); and (ii) refrain from using such Affected Property in any manner that EPA determines will pose an unacceptable risk to human health or to the environment due to exposure to Waste Material, or interfere with or adversely affect the implementation, integrity, or protectiveness of the removal action,

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

- i. Monitoring the Work;
- ii. Verifying any data or information submitted to EPA;
- iii. Conducting investigations regarding contamination at or near the Otsego Township Dam Area;
- iv. Obtaining samples;
- v. Assessing the need for, planning, implementing, or monitoring response actions;
- vi. Assessing implementation of quality assurance and quality control practices as defined in the approved quality assurance quality control as defined in the approved QAPP;
- vii. Implementing the Work pursuant to the conditions set forth in Section XIX (Enforcement/Work Takeover);
- viii. Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Respondents or their agents, consistent with Section XIV (Access to Information);
- ix. Assessing Respondents' compliance with the Order;
- x. 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 Order; and
- xi. 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. The following is a list of land, water, or other resource use restrictions applicable to the Affected Property:

- i. Prohibiting the following activities that could interfere with the removal action;
- ii. Ensuring that any new structures on the Affected Property will not be constructed in a manner that could interfere with the removal action; and

36. Best Efforts. As used in this Section, "best efforts" means the efforts that a reasonable person in the position of Respondents would use so as to achieve the goal in a timely manner, including the cost of employing professional assistance and the payment of reasonable sums of money to secure access and/or use restriction agreements, as required by this Section. If,

within 60 days after the Effective Date, Respondents are unable to accomplish what is required through “best efforts” they shall notify EPA, and include a description of the steps taken to comply with the requirements. If EPA deems it appropriate, it may assist Respondents or take independent action in obtaining such access and/or use restrictions. EPA reserves the right to seek payment from Respondents for all costs, including cost of attorneys’ time, incurred by the United States in obtaining such access or agreements to restrict land, water, or other resource use.

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

38. In the event of any Transfer of the Affected Property, unless EPA otherwise consents in writing, Respondents shall continue to comply with their obligations under this Order, including their obligation to secure access and ensure compliance with any land, water, or other resource use restrictions regarding the Affected Property.

39. Notwithstanding any provision of this Order, EPA retains all of its access authorities and rights, as well as all of its rights to require land, water, or other resource use restrictions, including enforcement authorities related thereto under CERCLA, RCRA, and any other applicable statute or regulations.

XIV. ACCESS TO INFORMATION

40. Respondents shall provide to EPA, upon request, copies of all records, reports, documents, and other information (including records, reports, documents, and other information in electronic form) (hereinafter referred to as “Records”) within Respondents’ possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Order, 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. Respondents shall also make available to EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

41. Privileged and Protected Claims.

a. Respondents may assert that all or part of a Record requested by EPA is privileged or protected as provided under federal law, in lieu of providing the Record, provided Respondents comply with Paragraph 41.b, and except as provided in Paragraph 41.c.

b. If Respondents assert a claim of privilege or protection, they shall provide EPA 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, Respondents shall provide the Record to EPA in redacted form to mask the privileged or protected portion only. Respondents shall retain all Records that they claim to be privileged or protected until EPA has

had a reasonable opportunity to dispute the privilege or protection claim and any such dispute has been resolved in Respondents' favor.

c. Respondents 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 Respondents are required to create or generate pursuant to this Order.

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

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

XV. RETENTION OF RECORDS

44. During the pendency of this Order and for a minimum of 10 years after Respondents' receipt of EPA's notification pursuant to Section XXVII (Notice of Completion of Work), each Respondent shall preserve and retain all non-identical copies of Records (including Records in electronic form) now in its possession or control, or that come into its possession or control, that relate in any manner to its liability under CERCLA with respect to the Site, provided, however, that Respondents who are potentially liable as owners or operators of the Site must retain, in addition, all Records that relate to the liability of any other person under CERCLA with respect to the Site. Each Respondent must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above, all non-identical copies of the last draft or final version of any Records (including Records in electronic form) now in its possession or control or that come into its possession or control that relate in any manner to the performance of the Work, provided, however, that each Respondent (and its contractors and agents) must retain, in addition, copies of all data generated during 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.

45. At the conclusion of this document retention period, Respondents shall notify EPA at least 90 days prior to the destruction of any such Records, and, upon request by EPA, and except as provided in Paragraph 41, Respondents shall deliver any such Records to EPA.

46. Within 30 days after the Effective Date, each Respondent shall submit a written certification to EPA's OSC 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 its potential liability by the United States, and that it has fully complied with any and all EPA requests for information regarding the Site pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927. Any Respondent unable to so certify shall submit a modified certification that explains in detail why it is unable to certify in full with regard to all Records.

XVI. COMPLIANCE WITH OTHER LAWS

47. Nothing in this Order limits Respondent's obligations to comply with the requirements of all applicable state and federal laws and regulations, except as provided in Section 121(e) of CERCLA, 42 U.S.C. § 6921(e), and 40 C.F.R. §§ 300.400(e) and 300.415(j). In accordance with 40 C.F.R. § 300.415(j), all on-site actions required pursuant to this Order shall, to the extent practicable, as determined by EPA, considering the exigencies of the situation, attain applicable or relevant and appropriate requirements (ARARs) under federal environmental or state environmental or facility siting laws. Respondents shall identify ARARs in the Removal Work Plan subject to EPA approval.

48. No local, state, or federal 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), including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work that is not on-site requires a federal or state permit or approval, Respondents shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Order is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XVII. EMERGENCY RESPONSE AND NOTIFICATION OF RELEASES

49. Emergency Response. If any event occurs during performance of the Work that causes or threatens to cause a release of any Waste Material on, at, or from the Site that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release. Respondents shall take these actions in accordance with all applicable provisions of this Order, including, but not limited to, the Health and Safety Plan. Respondents shall also immediately notify the OSC or, in the event of his/her unavailability, the Regional Duty Officer at 312-353-2318, of the incident or Site conditions. In the event that Respondents fail to take appropriate response action as required by this Paragraph, and EPA takes such action instead, EPA reserves the right to pursue cost recovery.

50. Release Reporting. Upon the occurrence of any event during performance of the Work that Respondents are required to report pursuant to Section 103 of CERCLA, 42 U.S.C.

§ 9603, or Section 304 of the Emergency Planning and Community Right-To-Know Act (EPCRA), 42 U.S.C. § 11004, Respondents shall immediately orally notify the OSC, or, in the event of his/her unavailability, the Regional Duty Officer at 312-353-2318, and the National Response Center at (800) 424-8802. This reporting requirement is in addition to, and not in lieu of, the reporting required by CERCLA § 103 or EPCRA § 304.

51. For any event covered under this Section, Respondents shall submit a written report to EPA within seven days after the onset of such event, setting forth the action or event that occurred and the measures taken, and to be taken, to mitigate any release or threat of release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release or threat of release.

XVIII. PAYMENT OF RESPONSE COSTS

52. Upon EPA's written demand, Respondents shall pay EPA all Response Costs incurred or to be incurred in connection with this Order. On a periodic basis, EPA will send Respondents a bill requiring payment of all Response Costs incurred by the United States with respect to this Order that includes an itemized cost summary which includes direct and indirect costs incurred by EPA, its contractors, and the Department of Justice.

53. Respondents shall make all payments within 30 days after receipt of each written demand requiring payment. Payment made to EPA by Fedwire Electronic Funds Transfer (EFT) shall be made as follows:

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

and shall reference Site/Spill ID Number MID006007306 and the EPA docket number for this action.

For ACH payment:

Payment by Respondents to EPA by Automated Clearinghouse (ACH) shall be made out to:

PNC Bank
808 17th Street, NW
Washington, DC 20074
Contact – Jesse White 301-887-6548
ABA = 051036706
Transaction Code 22 - checking
Environmental Protection Agency
Account 310006

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and shall reference Site/Spill ID Number MID006007306 and the EPA docket number for this action.

For online payment:

Payments made online shall be made at <https://www.pay.gov> to the U.S. EPA account in accordance with instructions to be provided to Respondents by EPA in its written demand.

54. At the time of payment, Respondents shall send notice that payment has been made to Paul Ruesch, EPA Region 5, 77 W. Jackson Blvd., Mail Code SE-5J, Chicago, IL 60604, and to the EPA Cincinnati Finance Office by email at cinwd_acctsreceivable@epa.gov, or by mail to

EPA Cincinnati Finance Office
26 W. Martin Luther King Drive
Cincinnati, Ohio 45268

Such notice shall reference Site/Spill ID Number MID006007306 and EPA docket number for this action.

55. In the event that the payments for Response Costs are not made within 30 days after Respondents' receipt of a written demand requiring payment, Respondents shall pay Interest on the unpaid balance. The Interest on Response Costs shall begin to accrue on the date of the written demand and shall continue to accrue until the date of payment. Payments of Interest made under this Paragraph shall be in addition to such other remedies or sanctions available to the United States by virtue of Respondents' failure to make timely payments under this Section. Respondents shall make all payments required by this Paragraph in the manner described in Paragraphs 53 and 54.

XIX. ENFORCEMENT/WORK TAKEOVER

56. Any willful violation, or failure or refusal to comply with any provision of this Order may subject Respondents to civil penalties of up to \$37,500 per violation per day, as provided in Section 106(b)(1) of CERCLA, 42 U.S.C. § 9606(b)(1), and the Civil Monetary Penalty Inflation Adjustment Rule, 69 Fed. Reg. 7121, 40 C.F.R. Part 19.4. In the event of such willful violation, or failure or refusal to comply, EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604, and/or may seek judicial enforcement of this Order pursuant to Section 106 of CERCLA, 42 U.S.C. § 9606. In addition, nothing in this Order shall limit EPA's authority under Section XXIII (Financial Assurance). Respondents may also be subject to punitive damages in an amount up to three times the amount of any costs incurred by the United States as a result of such failure to comply, as provided in Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3).

XX. RESERVATIONS OF RIGHTS BY EPA

57. Nothing in this Order shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the

environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants, or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing in this Order shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Order, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA or any other applicable law. EPA reserves the right to bring an action against Respondents under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to this Order or the Site and not paid by Respondents.

XXI. OTHER CLAIMS

58. By issuance of this Order, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents. The United States or EPA shall not be deemed a party to any contract entered into by Respondents or their directors, officers, employees, agents, successors, representatives, assigns, contractors, or consultants in carrying out actions pursuant to this Order.

59. Nothing in this Order constitutes a satisfaction of or release from any claim or cause of action against Respondents or any person not a party to this Order, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

60. Nothing in this Order shall be deemed to constitute preauthorization of a claim within the meaning of Section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2), or 40 C.F.R. § 300.700(d).

61. No action or decision by EPA pursuant to this Order shall give rise to any right to judicial review, except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

XXII. INSURANCE

62. No later than 10 days before commencing any on-site Work, Respondents shall secure, and shall maintain for the duration of this Order, commercial general liability insurance with limits of 2 million dollars, for any one occurrence, and automobile insurance with limits of 2 million dollars, combined single limit, naming EPA as an additional insured with respect to all liability arising out of the activities performed by or on behalf of Respondents pursuant to this Order. Within the same time period, Respondents shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondents shall submit such certificate and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Order, Respondents shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing Work on behalf of Respondents in furtherance of this Order. If Respondents demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in a lesser amount, then, with respect to that contractor or subcontractor,

Respondents need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XXIII. FINANCIAL ASSURANCE

63. In order to ensure completion of the Work, Respondents shall secure financial assurance, initially in the amount of \$25 million (“Estimated Cost of the Work”). The financial assurance must be one or more of the mechanisms listed below, in a form substantially identical to the relevant sample documents available under the “Financial Assurance-Orders” category in the Cleanup Enforcement Model Language and Sample Documents Database at <http://cfpub.epa.gov/compliance/models/>, and satisfactory to EPA. Respondents may use multiple mechanisms if they are limited to trust funds, surety bonds guaranteeing payment, and/or letters of credit.

a. A trust fund: (1) established to ensure that funds will be available as and when needed for performance of the Work; (2) 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; and (3) governed by an agreement that requires the trustee to make payments from the fund only when the Director of the Region 5 Superfund Division advises the trustee in writing that: (i) payments are necessary to fulfill the affected Respondents’ obligations under the Order; or (ii) funds held in trust are in excess of the funds that are necessary to complete the performance of Work in accordance with this Order;

b. A surety bond, 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, guaranteeing payment or performance in accordance with Paragraph 68 (Access to Financial Assurance);

c. An irrevocable letter of credit, 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, guaranteeing payment in accordance with Paragraph 68 (Access to Financial Assurance);

d. A demonstration by one or more Respondents that each such Respondent meets the relevant financial test criteria of 40 C.F.R. § 264.143(f)) and reporting requirements of this Section for 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

e. A guarantee to fund or perform the Work executed by one or more of the following: (1) a direct or indirect parent company of a Respondent; or (2) a company that has a “substantial business relationship” (as defined in 40 C.F.R. § 264.141(h)) with a Respondent; provided, however, that any company providing such a guarantee must demonstrate to EPA’s satisfaction that it meets the relevant financial test criteria of 40 C.F.R. § 264.143(f) and reporting requirements of this Section for 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.

64. Standby Trust. If Respondents seek to establish financial assurance by using a surety bond, a letter of credit, or a corporate guarantee, Respondents shall at the same time establish and thereafter maintain a standby trust fund, which must meet the requirements specified in Paragraph 63.a, and into which payments from the other financial assurance mechanism can be deposited if the financial assurance provider is directed to do so by EPA pursuant to Paragraph 68 (Access to Financial Assurance). An originally signed duplicate of the standby trust agreement must be submitted, with the other financial mechanism, to EPA in accordance with Paragraph 65. Until the standby trust fund is funded pursuant to Paragraph 68 (Access to Financial Assurance), neither payments into the standby trust fund nor annual valuations are required.

65. Within 30 days after the Effective Date, Respondents shall submit to EPA proposed financial assurance mechanisms in draft form in accordance with Paragraph 63 for EPA's review. Within 60 days after the Effective Date, or 30 days after EPA's approval of the form and substance of Respondents' financial assurance, whichever is later, Respondents shall secure all executed and/or otherwise finalized mechanisms or other documents consistent with the EPA-approved form of financial assurance and shall submit such mechanisms and documents to Cynthia Mack-Smelter, Regional Financial Assurance Specialist, United States Environmental Protection Agency, Region 5, 77 W. Jackson Boulevard, MF-10J, Chicago, Illinois 60604 and the OSC.

66. If Respondents provide financial assurance by means of a demonstration or guarantee under Paragraph 63.d or 63.e, the affected Respondents shall also comply, and shall ensure that their guarantors comply, with the other relevant criteria and requirements of 40 C.F.R. § 264.143(f) and this Section, including: (a) the initial submission to EPA of required documents from the affected entity's chief financial officer and independent certified public accountant no later than 90 days after the Effective Date; (b) the annual resubmission of such documents within 90 days after the close of each such entity's fiscal year; and (c) the notification to EPA no later than 30 days, in accordance with Paragraph 67, after any such entity determines that it no longer satisfies the financial test criteria and requirements set forth at 40 C.F.R. § 264.143(f)(1). For purposes of this Section, references in 40 C.F.R. Part 264, Subpart H, to: (1) the terms "current closure cost estimate," "current post-closure cost estimate," and "current plugging and abandonment cost estimate" include the Estimated Cost of the Work; (2) "the sum of the current closure and post-closure cost estimates and the current plugging and abandonment cost estimates" mean the sum of all environmental obligations (including obligations under CERCLA, RCRA, and any other federal, state, or tribal environmental obligation) guaranteed by such company or for which such company is otherwise financially obligated, in addition to the Estimated Cost of the Work under this Order; (3) the terms "owner" and "operator" include each Respondent making a demonstration or obtaining a guarantee under Paragraph 63.d or 63.e; and (4) the terms "facility" and "hazardous waste management facility" include the Site.

67. Respondents shall diligently monitor the adequacy of the financial assurance. If any Respondent becomes aware of any information indicating that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, such Respondent shall notify EPA of such information within 30 days. If EPA determines that the financial assurance provided under this Section is inadequate or otherwise no longer satisfies the requirements of this Section, EPA will notify the affected Respondent of such

determination. Respondents shall, within 30 days after notifying EPA or receiving notice from EPA under this Paragraph, secure and submit to EPA for approval a proposal for a revised or alternative financial assurance mechanism that satisfies the requirements of this Section. Respondents shall follow the procedures of Paragraph 69 in seeking approval of, and submitting documentation for, the revised or alternative financial assurance mechanism. Respondents' inability to secure and submit to EPA financial assurance in accordance with this Section shall in no way excuse performance of any other requirements of this Order, including, without limitation, the obligation of Respondents to complete the Work in accordance with the terms of this Order.

68. Access to Financial Assurance.

a. If EPA determines that Respondents (1) have ceased implementation of any portion of the Work, (2) are seriously or repeatedly deficient or late in their performance of the Work, or (3) are implementing the Work in a manner that may cause an endangerment to human health or the environment, EPA may issue a written notice ("Performance Failure Notice") to both Respondents and the financial assurance provider regarding the affected Respondents' failure to perform. Any Performance Failure Notice issued by EPA will specify the grounds upon which such notice was issued and will provide Respondents a period of 10 days within which to remedy the circumstances giving rise to EPA's issuance of such notice. If, after expiration of the 10-day period specified in this Paragraph, Respondents have not remedied to EPA's satisfaction the circumstances giving rise to EPA's issuance of the relevant Performance Failure Notice, then, in accordance with any applicable financial assurance mechanism, EPA may at any time thereafter direct the financial assurance provider to immediately: (i) deposit any funds assured pursuant to this Section into the standby trust fund; or (ii) arrange for performance of the Work in accordance with this Order.

b. If EPA is notified by the provider of a financial assurance mechanism that it intends to cancel the mechanism, and the affected Respondent fails to provide an alternative financial assurance mechanism in accordance with this Section at least 30 days prior to the cancellation date, EPA may, prior to cancellation, direct the financial assurance provider to deposit any funds guaranteed under such mechanism into the standby trust fund for use consistent with this Section.

69. Modification of Amount, Form, or Terms of Financial Assurance. Respondents may submit, on any anniversary of the Effective Date or following Respondents' request for, and EPA's approval of, another date, a request to reduce the amount, or change the form or terms, of the financial assurance mechanism. Any such request must be submitted to the EPA individual referenced in Paragraph 65, and must include an estimate of the cost of the remaining Work, an explanation of the bases for the cost calculation, a description of the proposed changes, if any, to the form or terms of the financial assurance, and any newly proposed financial assurance documentation in accordance with the requirements of Paragraphs 63 and 64 (Standby Trust). EPA will notify Respondents of its decision to approve or disapprove a requested reduction or change. Respondents may reduce the amount of the financial assurance mechanism, or make any other change, only in accordance with EPA's approval. Within 30 days after receipt of EPA's approval of the requested modifications pursuant to this Paragraph, Respondents shall submit to the EPA individual referenced in Paragraph 65 all executed and/or otherwise finalized

documentation relating to the amended, reduced, or alternative financial assurance mechanism. Upon EPA's approval, the Estimated Cost of the Work shall be deemed to be the estimate of the cost of the remaining Work in the approved proposal.

70. Release, Cancellation, or Discontinuation of Financial Assurance. Respondents may release, cancel, or discontinue any financial assurance provided under this Section only: (a) after receipt of documentation issued by EPA certifying completion of the Work; or (b) in accordance with EPA's written approval of such release, cancellation, or discontinuation.

XXIV. MODIFICATION

71. The OSC may make modifications to any plan or schedule in writing or by oral direction. Any oral modification will be memorialized in writing by EPA within 5 days, but shall have as its effective date the date of the OSC's oral direction. Any other requirements of this Order may be modified in writing by signature of the Director of the Region 5 Superfund Division.

72. If Respondents seek permission to deviate from any approved Work Plan or schedule, Respondents' Project Coordinator shall submit a written request to EPA for approval outlining the proposed modification and its basis. Respondents may not proceed with the requested deviation until receiving approval from the OSC pursuant to Paragraph 71.

73. No informal advice, guidance, suggestion, or comment by the OSC or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondents shall relieve Respondents of their obligation to obtain any formal approval required by this Order, or to comply with all requirements of this Order, unless it is formally modified.

XXV. DELAY IN PERFORMANCE

74. Respondents shall notify EPA of any delay or anticipated delay in performing any requirement of this Order. Such notification shall be made by telephone and email to the OSC within 48 hours after Respondents first knew or should have known that a delay might occur. Respondents shall adopt all reasonable measures to avoid or minimize any such delay. Within 7 days after notifying EPA by telephone and email, Respondents shall provide to EPA written notification fully describing the nature of the delay, the anticipated duration of the delay, any justification for the delay, all actions taken or to be taken to prevent or minimize the delay or the effect of the delay, a schedule for implementation of any measures to be taken to mitigate the effect of the delay, and any reason why Respondents should not be held strictly accountable for failing to comply with any relevant requirements of this Order. Increased costs or expenses associated with implementation of the activities called for in this Order is not a justification for any delay in performance.

75. Any delay in performance of this Order that, in EPA's judgment, is not properly justified by Respondents under the terms of Paragraph 74 shall be considered a violation of this Order. Any delay in performance of this Order shall not affect Respondents' obligations to fully perform all obligations under the terms and conditions of this Order.

XXVI. ADDITIONAL REMOVAL ACTIONS

76. Unless otherwise stated by EPA, within 30 days of receipt of notice from EPA that additional removal actions are necessary to protect public health, welfare, or the environment, Respondents shall submit for approval by EPA a Work Plan for the additional removal actions. The Work Plan shall conform to the applicable requirements of Section XI (Work to Be Performed) of this Order. Upon EPA's approval of the Work Plan pursuant to Section XI, Respondents shall implement the Work Plan for additional removal actions in accordance with the provisions and schedule contained therein. This Section does not alter or diminish the OSC's authority to make oral modifications to any plan or schedule pursuant to Section XXIV (Modification).

XXVII. NOTICE OF COMPLETION OF WORK

77. When EPA determines, after EPA's review of the final report, that all Work has been fully performed in accordance with this Order, with the exception of any continuing obligations required by this Order, including post-removal site controls, land, water, or other resource use restrictions, reimbursement of Response Costs, and Record Retention, EPA will provide written notice to Respondents. If EPA determines that any Work has not been completed in accordance with this Order, EPA will notify Respondents, provide a list of the deficiencies, and require that Respondents modify the Work Plan, if appropriate, in order to correct such deficiencies within 30 days after receipt of the EPA notice. The modified Work Plan shall include a schedule for correcting such deficiencies. Within 30 days after receipt of written approval of the modified Work Plan, Respondents shall implement the modified and approved Work Plan and shall submit a modified Final Report in accordance with the EPA notice. Failure by Respondents to implement the approved modified Work Plan shall be a violation of this Order.

XXVIII. ADMINISTRATIVE RECORD

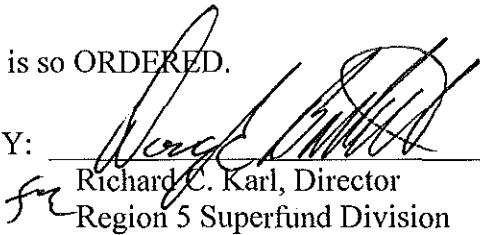
78. EPA has established an administrative record that contains the documents that form the basis for the issuance of this Order. It is available for review by appointment on weekdays between the hours of 8:00 a.m. and 4:30 p.m. at the EPA offices at 77 W. Jackson Boulevard, 7th Floor, Chicago, Illinois 60604. To review the administrative record, please contact Todd Quesada at 312-886-4465 to make an appointment. An index of the administrative record is attached here as Appendix 3.

XXIX. SEVERABILITY

79. If a court issues an order that invalidates any provision of this Order or finds that Respondents have sufficient cause not to comply with one or more provisions of this Order, Respondents shall remain bound to comply with all provisions of this Order not invalidated or determined to be subject to a sufficient cause defense by the court's order.

It is so ORDERED.

BY:



for Richard C. Karl, Director
Region 5 Superfund Division
U.S. Environmental Protection Agency

DATE:

4/14/2016

EFFECTIVE DATE: _____

APPENDIX 1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

US EPA RECORDS CENTER REGION 5



494931

REPLY TO THE ATTENTION OF:

MEMORANDUM

SUBJECT: Approval for a Time-Critical Removal Action at the Otsego Township Dam Area of the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site, Allegan County, Michigan (EPA ID MID006007306)

FROM: Paul Ruesch, On-Scene Coordinator *Paul Ruesch*
Emergency Response Branch 2 - Section 3

THRU: Samuel Borries, Chief *Sam Borries*
Emergency Response Branch 2

TO: Richard C. Karl, Director
Superfund Division

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the time-critical removal action (TCRA) described herein for the "Otsego Township Dam Area," an area of contamination within Area 3 of Operable Unit #5 (OU5) of the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site (the Site). The Site, which is located in Kalamazoo and Allegan Counties, Michigan, is primarily and pervasively contaminated with polychlorinated biphenyls (PCBs).

The response action described in this Action Memorandum will mitigate threats to public health, welfare, and the environment upstream of the Otsego Township Dam¹ posed by the ongoing uncontrolled releases of PCBs and potential for further uncontrolled release of high levels of PCBs into the food chain from instream sediments and riverbank/floodplain soils of the Kalamazoo River at the Otsego Township Dam Area. For the purposes of this Action Memorandum, the "Otsego Township Dam Area" is the areal extent of PCB-contaminated material along the 1.7 mile stretch of the Kalamazoo River between the M-89 (Lincoln Road) bridge and the Otsego Township Dam (see Figure 1), and includes instream sediments and riverbank/floodplain soils.

The Otsego Township Dam Area contains contaminated sediment and soil with high levels of PCBs. Riverbank erosion and instability cause the continued release of PCBs into the Kalamazoo River. The Otsego Township Dam was in very poor condition and on the brink of

¹ The Otsego Township Dam is located in Otsego Township of Allegan County at River Mile (RM) 49.6 of the Kalamazoo River.

failing. In response to the failure risk, the State of Michigan (the State) installed a temporary water control structure that is engineered to last approximately three years. Installation of the temporary water control structure was completed in March 2016. Failure or removal of the temporary water control structure prior to the implementation of the removal action described in this Action Memorandum would lead to highly concentrated PCB-contaminated sediments being released to the riverbanks, floodplains, and instream sediments where contamination does not currently exist or exists at lower levels.

Due to these circumstances (sediments and soils contaminated with high levels of PCBs, potential for erosion, and risk of actual or potential exposure to animals or the food chain) the response action set forth in this Action Memorandum is time-critical. The TCRA includes dredging and/or excavation of sediment and soil; containment of PCB-contaminated material; water treatment; shoreline and riverbank stabilization; off-site disposal of removed PCB-contaminated materials managed in accordance with EPA's Toxic Substances Control Act (TSCA) (40 C.F.R. Part 761) and the off-site rule (40 CFR § 300.440); and monitoring. EPA estimates that the TCRA will remove approximately 120,000 yd³ of PCB-contaminated material.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # MID006007306

A. Site Description

1. Removal Site Evaluation

The Administrative Record (found in Attachment 2) contains numerous reports which summarize investigations at the Site. EPA bases its decision to implement the TCRA described in this Action Memorandum in large part on the three investigations and two risk assessments described below:

a) State-lead Remedial Investigation/Feasibility Study (RI/FS)

Between 1990 and 2003, the State and various potentially responsible parties (PRPs) conducted Site-wide remedial investigation (RI) and feasibility study (FS) work. The RI field work included an assessment of the physical characteristics of the riverbanks across OU5, including what is now referred to as Area 3. Based on the State's early field work, EPA has concluded that the riverbanks are a source of ongoing loading of exposed PCB-contaminated soils and sediments to the Kalamazoo River.

EPA bases its determination of an imminent and substantial endangerment in this Action Memorandum in part on the risk analysis set forth in the State's RI. The risk analysis associated with the RI identified some ways PCBs are released into the Kalamazoo River from the riverbanks. In particular, the RI report concludes that the cohesive nature of the exposed sediments allows significant portions of the riverbanks to remain in vertical-to-near-vertical repose. The fine-grained exposed sediments, however, generally overlie non-cohesive sandy sediments and soils. As a result, the faces of the banks are susceptible to erosion by river flow

during higher water stages and to undercutting by erosion of the underlying non-cohesive sediments and soils. Undercutting progresses until the overlying sediments fall into the river, typically in blocks. These blocks, or portions thereof, remain along the toe of the river at the Otsego Township Dam Area (see photographs in Attachment 3).

b) United States Geological Survey (USGS) Study

In 2005, USGS, in cooperation with EPA and the State, conducted an additional study of the channel characteristics of the Kalamazoo River. This study concluded that the erosion of the “toe” of the riverbank widens the river, resulting in steeper bank angles. Once the bank undercut exceeds its critical bank angle, the inability of the sediments to support themselves results in bank failure. EPA and State field personnel observed both significant erosion and failure of riverbanks into the river channel in May 2015 (see photographs in Attachment 3).

c) Supplemental Remedial Investigation/Feasibility Study

Beginning in 2007, and continuing through 2013, additional investigations in Area 3 of OU5, which includes the Otsego Township Dam Area, were conducted as part of the Supplemental Remedial Investigation/Feasibility Study (SRI/FS). The SRI found levels of PCBs in riverbank/floodplain soils and instream sediments as high as 156 milligrams per kilogram (mg/kg) PCBs in soil and 120 mg/kg PCBs in sediments.

The SRI investigations also indicate riverbank erosion and sloughing were contributing PCB-contaminated sediments to the Kalamazoo River. The draft SRI report concluded that the erosion and sloughing would continue to occur under both ‘dam-in’ and ‘dam-out’ scenarios.

A summary of the investigation results is presented in the ‘OU5 Kalamazoo River Superfund Site Area 3 Draft Supplemental Remedial Investigation Report’ (AMEC Foster Wheeler, 2015). This report was conditionally approved by EPA in February 2016.

d) Baseline Human Health Risk Assessments

In 1977, the State issued a public health advisory related to the PCB contamination in the Kalamazoo River. This advisory remains in place today and warns against eating a variety of fish species from the river because of PCB contamination.

In December 1991, the federal Agency for Toxic Substances and Disease Registry (ATSDR) and the State prepared a Public Health Assessment (PHA) for the Site (ATSDR, 1991). The PHA indicated that the Site was a public health hazard because of the probable exposure to hazardous substances at concentrations that might result in adverse health effects. Potential human exposure pathways of concern included incidental ingestion, inhalation of contaminated soils, and ingestion of contaminated biota, primarily fish.

In April 2003, the State completed a Baseline Human Health Risk Assessment (HHRA) for the Site (CDM, 2003), which is relevant to EPA’s determination of imminent and substantial endangerment in this Action Memorandum. The State’s assessment identified the following primary human health risk:

- Cancer risks and non-carcinogenic Hazard Quotients (HQ) exceed EPA and/or State acceptable risk limits² (cumulative carcinogenic risk > 10^{-4} and non-carcinogenic hazard quotient > 1) for both sport and subsistence fishermen. Carcinogenic risk from the consumption of fish ranges from 1.4×10^{-4} to 1.2×10^{-3} for the river segment (designated in the assessment as 'ABSA 7') encompassing the Otsego Township Dam Area. Non-carcinogenic HQs for the consumption of fish range from 2.3 to 20 for reproductive effects and 7.9 to 70 for immunological effects.

Subsequent updates to the HHRA in 2012 and 2015 concluded that unacceptable risks and hazards to human health continue to be associated with the fish ingestion pathway (ARCADIS, 2012, AMEC Foster Wheeler, 2015).

e) Ecological Risk Assessment

The State finalized its Ecological Risk Assessment (ERA) for the Kalamazoo River in April 2003. The State's ERA findings are also relevant to EPA's determination of imminent and substantial endangerment at the Otsego Township Dam Area.

The ERA focused primarily on assessing population-level risks associated with PCB contamination in abiotic media and biota. Because of the potential for PCBs to accumulate in biological tissues and exert adverse effects in upper trophic level biota, the ERA specifically considered bioaccumulation, food chain effects, and adverse effects in upper trophic level organisms. The ERA also focused on assessing the risks from PCB exposures via direct contact with contaminated surface water, streambed sediment, floodplain (exposed) sediment, and surface soil, as well as ingestion of PCB-contaminated food items.

The ERA concluded that PCB contamination at the Site presents a high to moderate ecological risk for eight animal species. Table 5.3 of the ERA identifies the estimated risks for all representative species of concern, based on estimated PCB dose (birds and mammals) or on the Site-wide average PCB concentration (aquatic receptors).

The ERA also found that PCB contamination of surface water and streambed sediment (and floodplain soils that are frequently inundated or have the potential to erode into the river) is likely to adversely affect sensitive piscivorous predators, such as mink, through consumption of PCB-contaminated prey, especially fish. Other piscivorous predators, such as bald eagles, also appear to be at high risk based on the exposure assumptions presented in the assessment. More recently, the Terrestrial Baseline Ecological Risk Assessment, updated as part of the SRI, concluded that there continues to be a potential risk to moderate to low-sensitivity insectivorous and vermivorous birds (AMEC Foster Wheeler, 2015). Terrestrial and semi-aquatic biota may

² The State has established a cancer risk target value of 1 in 100,000 (10^{-5}). Where cumulative cancer risks exceed this threshold, State risk managers may determine that some action to reduce exposure and risk may be necessary. The State risk target falls in the middle of EPA's risk range of 1 in 1,000,000 (10^{-6}) to 1 in 10,000 (10^{-4}). EPA generally considers risks within this range "acceptable," but considerations such as size of affected population may indicate that some action to reduce risk is appropriate. Above this range, EPA risk managers will ordinarily determine that such action is necessary. Both the State and EPA have HQ thresholds of 1.

also be at risk from PCB-contaminated riverbank/floodplain soils, depending on life history (e.g. foraging behavior, diet and mobility) and sensitivity to PCBs. Omnivorous birds (represented by the robin) that consume substantial numbers of soil invertebrates, such as earthworms, appear to be at moderate but still significant risk.

Finally, the United States Fish and Wildlife Service has identified two federally endangered species, three federally threatened species, and one federal candidate species that can be present in Allegan County. The Karner Blue Butterfly and the Indiana Bat both are endangered. The Bald Eagle, Northern Long-Eared Bat, and Pitcher's Thistle (a plant) are threatened in this region. The Eastern Massasauga Rattlesnake is the lone candidate species (BBL 2000b).

The State lists seven species as endangered or threatened (not including the federally-listed species) in or near the Site. Endangered species in this area include the Zigzag Bladderwort, wild American Ginseng, and the Log Fern (plants), the Creek Chubsucker (fish), Prairie Warbler (bird), Ottoe Skipper (insect), and the Spotted Turtle (reptile) (BBL, 2000).

2. Physical Location

For purposes of this Action Memorandum, the "Otsego Township Dam Area" is the areal extent of PCB contaminated instream sediments and riverbank/floodplain soils along the 1.7 mile stretch of the Kalamazoo River between the M-89 (Lincoln Road) bridge and the Otsego Township Dam (see Figure 1). The geographical coordinates of the Otsego Township Dam are 42.464996 north latitude and -85.749654 west longitude.

An Environmental Justice (EJ) analysis for the Otsego Township Dam Area is contained in Attachment 1. Screening of the surrounding area used EPA's EJ Screen Tool. EPA has reviewed environmental and demographic data for a one-mile radius surrounding the Otsego Township Dam Area, and determined there is a potential for EJ concerns at this location.

3. Site Characteristics

As stated above, the Otsego Township Dam Area is an area of contamination within Area 3 of OU5 of the Site. The Site includes approximately 77 miles of the Kalamazoo River between Morrow Dam and Lake Michigan and approximately 3 miles of Portage Creek, floodplains and wetlands adjacent to the river and creek, four paper waste disposal areas and several former paper mill properties.

The Site lies within the Great Lakes Basin in the Kalamazoo River watershed of Michigan's Lower Peninsula. The watershed drains 2,020 square miles of southwest Michigan. It reaches 162 miles into south-central Michigan, and ranges in width from 11 to 29 miles. The main channel of the Kalamazoo River flows northwest for 123 miles before ultimately emptying into Lake Michigan near Saugatuck, Michigan. EPA studies have estimated that the Kalamazoo River contributes approximately 42 pounds of PCBs to Lake Michigan per year (EPA, 2004).

The Otsego Township Dam was initially constructed as a hydro-electric dam in 1903. The dam was utilized to generate hydroelectric power until approximately 1960. The State took ownership of the dam in 1970. Since that time, the dam slowly deteriorated and fell into a state

of disrepair. Field inspections conducted in 2010 and 2011 identified several observed deficiencies and areas of concern with the structure and the reports for those years conclude that the dam was in 'very poor' condition (SME, 2010/2011). Subsequent field inspections in 2012-2014 identify additional deterioration in concrete as well as the presence of sinkholes adjacent to the spillway. Photographs of deteriorating conditions at the dam are found in Attachment 3. Emergency actions were identified to prevent failure of the dam (SME, 2012/2013/2014).³

In April 2015, the State concluded that the dam had inadequate spillway capacity and could fail as result of a storm event, internal erosion, or deterioration of structural components. The State further concluded that there was not enough time to implement emergency measures to stabilize the affected area(s), and recommended installation of a temporary water control structure prior to dam removal. (SME, 2015).

In July 2015, the State notified EPA of plans to remove the Otsego Township Dam and install a temporary water control structure. EPA approved the request in August 2015 along with plans to remove and dispose of any PCB-contaminated sediments or soils related to the project (EPA, 2015). The State initiated the project in late 2015, and work was completed in March 2016. For purposes of the work described in this Action Memorandum, the temporary water control structure will serve to maintain current water levels in the Kalamazoo River while PCB-contaminated instream sediments and riverbank/floodplain are dredged and/or excavated. A photograph of the temporary water control structure can be found in Attachment 3.

The structure has an estimated lifespan of 3 years (AECOM/MDNR, 2015). The design life of the steel and wooden structure is expected to be impacted by deterioration due to scour of steel sheet pile coating from water velocity and local corrosion over time. In addition, the structure is likely to be damaged by large debris, ice, and flooding impacts. As such, EPA plans to complete the work described herein within the next two years.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

A release to the environment of a hazardous substance, pollutant, and/or contaminant has occurred and continues to occur at the Otsego Township Dam Area due to ongoing riverbank erosion (see photographs in Attachment 3). EPA documented the presence of high levels of PCBs, a hazardous substance, as defined by Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), within instream sediments and riverbank/floodplain soils at the Otsego Township Dam Area. The human health impacts from high PCB levels are described in Section III. Possible exposure routes for wildlife contact with hazardous substances includes direct contact with contaminated riverbank/floodplain soils, and consumption of fish and earthworms that accumulate PCBs.

³ In response to a request from the State, the EPA Great Lakes Regional Program Office sponsored a stakeholder meeting and design workshop in January 2014 to develop engineering plans for construction of a temporary sediment control structure to (1) allow for removal of the existing dam, and (2) limit downstream transport of sediments (CH2MHILL, 2014).

Samples taken at the Otsego Township Dam Area show PCB concentrations in riverbank/floodplain soils up to 120 mg/kg and instream sediments up to 156 mg/kg. These levels are orders of magnitude higher than the clean-up goals established for other response actions at OU5.

EPA has not yet selected remediation goals for Area 3 of OU5, but at this time believes that those remediation goals will be consistent with the final remediation goals selected for Area 1, which are 0.33 mg/kg (surface-weighted average concentration⁴) for instream sediments, 2.5 mg/kg for residential floodplain soils, and 11 mg/kg for non-residential floodplain soils (CDM, 2003).

5. NPL Status

The Site was listed on the NPL on August 30, 1990. In 2002, EPA assumed the enforcement lead from the State for most operable units of the Site, including OU5.

6. Maps and Pictures

The following figures can be found attached to this Action Memorandum:

Figure 1. Location of Otsego Township Dam Area

Figure 2. Estimated Excavation Area Map for Otsego Township Dam Area

The following photographs depicting site conditions can be found in Attachment 3 of this Action Memorandum:

Photograph 1. Riverbank erosion of contaminated soils on south bank (May 2015)

Photograph 2. Riverbank erosion of contaminated soils on south bank (May 2015)

Photograph 3. Deterioration of concrete spillway structure and sinkhole (May 2015)

Photograph 4. Deterioration of earthen/concrete portion of dam (May 2015)

Photograph 5. Temporary water control structure in operation (March 2016)

⁴ A surface-weighted average concentration (SWAC), is a method of spatially calculating the mean (average) concentration of a constituent (i.e., total PCBs) in the sediment surface. Samples are collected throughout the area of concern, representative sub-areas are generated for each sample location, and a subarea-weighted concentration is calculated to produce the SWAC. The subareas may be generated using several different methods, such as grids or stream tubes.

B. Other Actions to Date

1. Previous actions

Previous actions have been documented in Section II.A.1.

2. Current Actions

The Site continues to be addressed through the Superfund remedial process. Subsequent to completion of the TCRA and through the Superfund remedial process, EPA will complete its evaluation of the risks to human health and the environment presented by the presence of PCBs within Area 3 of OU5. This evaluation will consider data collected and analyses performed as part of the TCRA described in this Action Memorandum. EPA will then issue a Record of Decision (ROD) for Area 3 of OU5.

C. State and Local Authorities' Roles

1. State and local actions to date

Previous actions by the State have been documented in Section II.A.1.

2. Potential for continued state/local response

EPA has taken the lead on CERCLA response activities at the Site. EPA will continue working in consultation with the State during the proposed removal and remedial activities associated with the Site.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions present at the Otsego Township Dam Area constitute a threat to public health, welfare or the environment based upon the factors set forth in 40 C.F.R. Part 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). These include, but are not limited to, the following:

- **Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;**

PCBs are a hazardous substance, as defined by Section 101(14) of CERCLA. PCBs are listed as a hazardous substance under Section 311(b)(2) of the Clean Water Act, as set forth in 40 C.F.R. Part 116.4, Table A. EPA has determined that PCBs are a probable human carcinogen. In addition, exposure to PCBs is widely associated with measurable adverse immunological and developmental effects in humans, particularly developing fetuses (MDPH, 2012). These

chemicals have the potential to bio-magnify, which means that they have the potential to increase in concentration as they are transferred from one link in the food chain to another.

The Otsego Township Dam Area has PCB levels up to 156 mg/kg for instream sediments and 120 mg/kg for riverbank/floodplain soils. The ongoing, uncontrolled erosion of soils from the riverbanks is a significant source of PCB loading to the Kalamazoo River. The 2015 draft SRI report documented PCB-containing wastepaper residuals and soils sloughing off the riverbanks into the Kalamazoo River and transported downstream. Erosion pins installed in 2000 along transects at 10 different locations were utilized to establish riverbank/floodplain soils and PCB erosion rates, which are reported in the Area 3 SRI document. The 2015 draft SRI report described the erosion along the riverbanks to be greater than previously understood (see photographs in Attachment 3). Instream sediments and riverbank/floodplain soils are primary sources of an ongoing release of PCBs into the Kalamazoo River.

Although the 1977 State fish consumption advisory is still in effect, it is not legally binding. State personnel and local officials have reported that anglers fishing at the Site are taking home fish in amounts that may be inconsistent with consumption advisories issued by the State (MDPH, 2015). It has also been reported that turtles have been taken from the river for human consumption, which would provide for another potential human exposure pathway.

The most significant outcome of the ecological and human health risk assessments is the conclusion that fish consumption is the primary exposure pathway for receptors that may be at risk from PCB within media of the Kalamazoo River. Therefore, the key to reducing exposure and potential risks to important receptors (e.g. fish-eating birds, fish-eating wildlife, and humans) is to reduce PCB concentrations in the fish tissue consumed by these receptors. The SRI concluded the greatest factor controlling PCB levels in fish is bioavailability of PCB in surface sediments and the water column where fish and their prey come in contact with or ingest PCBs.

- **High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;**

The Otsego Township Dam Area has PCB levels up to 156 mg/kg for instream sediments and 120 mg/kg in riverbank/floodplain soils. As explained above, sediments and riverbank/floodplain soils located instream or near the river's edge are susceptible to erosion and scouring. During high water events, increases in river velocity create conditions cause additional releases of PCB to the Kalamazoo River, and ultimately, Lake Michigan (EPA, 2004).

Further, if the temporary water control structure were to fail, contaminated instream sediments would be transported downriver. These contaminated sediments would spread PCB-contaminated sediments onto riverbanks and floodplains previously characterized as not having PCB contamination above risk-based levels. This may also require EPA to conduct response actions to address either human health threats related to direct exposure of residents or recreational users to riverbank/floodplain soils or exacerbated ecological threats at areas where responses may not otherwise be necessary.

- **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;**

The Kalamazoo River is often subjected to extreme weather conditions in the winter and spring which increase the threat of a release of PCBs. The breakup of ice in the late winter, and the movement of ice floes downstream, causes scouring of the banks and river bottom and may adversely impact the temporary water control structure. Likewise, heavy spring rains and/or summer storms increase stream volume and flow velocity, which lead to increased scouring of the river bottom and riverbanks. All of these forces cause an increase in the volume and extent of PCB contamination in the Kalamazoo River and Lake Michigan.

IV. ENDANGERMENT DETERMINATION

EPA concludes that unless addressed by implementing the response action detailed in this Action Memorandum, the conditions at the Otsego Township Dam Area, the nature of the hazardous substances found there, the potential exposure pathways described in Sections II and III above, and the actual or threatened release of PCBs from the Otsego Township Dam Area, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS

A. Description of the Proposed Action

The preferred response action to mitigate threats associated with PCB-contaminated sediments and soils in the Otsego Township Dam Area consists of removing contaminated instream sediments and riverbank/floodplain soils. The TCRA will include, but may not be limited to, the following tasks:

- 1) Dredging and/or excavation of PCB-contaminated instream sediments and riverbank/floodplain soils with elevated PCB concentrations (see estimated excavation area map in Figure 2);
- 2) Cut-back and stabilization of riverbanks to mitigate exposures to PCB-contaminated riverbank/floodplain soils and future erosion;
- 3) Dewatering, as necessary, and disposal off-site of all PCB-contaminated instream sediments and riverbank/floodplain soils removed pursuant to tasks 1 & 2 above. PCB-contaminated material with PCB concentrations ≥ 50 mg/kg shall be transported off-site to a TSCA waste landfill that is in compliance with all state and federal regulatory requirements. PCB-contaminated material with PCB concentrations < 50 mg/kg shall be transported off-site and disposed in an appropriately licensed and permitted commercial landfill in compliance with all state and local laws;
- 4) Ensuring that a stable river channel exists post-removal, including backfilling as appropriate and re-vegetation with native plant species; and

- 5) Conducting appropriate monitoring and maintenance both during and for a defined time period after completion of the work described above.

The TCRA will be conducted in a manner not inconsistent with the NCP. The OSC has initiated planning for provision of post-removal site controls consistent with the provisions of Section 300.415(l) of the NCP.

The actions described in this Action Memorandum directly address actual or threatened releases of hazardous substances, pollutants, or contaminants at the Otsego Township Dam Area which pose an imminent and substantial endangerment to public health, welfare and the environment. The activities related to the TCRA will require an estimated two construction seasons on-site to complete, with continued post-removal monitoring and maintenance for a defined time period, typically 12 months.

B. Cleanup Standards

EPA has established the following cleanup standards for the Otsego Township Dam Area:

- Instream sediments: ≤ 1.0 mg/kg.
- Riverbank/floodplain soils: ≤ 5.0 mg/kg.

The standards are based on preliminary remediation goals (PRGs) expected to be sufficiently protective of human (anglers, recreationists and residents) as well as ecological (wildlife) receptors set forth in the updated Human Health Risk Assessment (HHRA) (CDM, 2003) and are consistent with prior TCRAs conducted in Area 1 of OU5 of the Site. The PRGs were established based on risk-based concentration (RBC) values for fish tissue, soil and sediment defined in the human health and ecological risk assessments conducted at this Site and referenced in Section II.A of this Action Memorandum. RBCs are calculated, chemical-specific concentrations below which no significant health risks are anticipated for a receptor. The PRGs are also based on the State's screening and target level for PCBs.

EPA anticipates that the cleanup standards for PCBs in Area 3 of OU5 will be consistent with the cleanup standards set forth in the ROD for Area 1 of OU5, which was issued in September 2015. EPA expects to achieve a surface weighted average concentration of 0.33 mg/kg total PCBs (set forth in the HHRA) for instream sediments by removing contaminated riverbank/floodplain soil with PCBs greater than 5 mg/kg and instream sediments with PCBs at levels greater than 1 mg/kg. Additionally, past work with PCB-contaminated soils has found a "neat line" exists in subsurface riverbank/floodplain soils above which contamination is present and below which it is not. Sampling data along this "neat line" has been found to be at the 5.0 mg/kg cleanup goal, making 5.0 mg/kg a practicable cleanup goal.

C. Orderly Transition to Remedial Response

The NCP requires that, if EPA determines that a removal action will not fully address a release, and that subsequent remedial action may be necessary, then the Agency must ensure an orderly

transition from removal to remedial response activities (40 C.F.R. Part 300.415(g)). As noted above, subsequent to the TCRA described in this Action Memorandum, EPA will complete its evaluation, through the Superfund remedial process, of risks to human health and the environment within Area 3 of OU5 (which includes the Otsego Township Dam Area). Residual risks to human health and the environment remaining within Otsego Township Dam Area after completion of the removal action will be evaluated as part of that process. If EPA determines that additional response work is necessary in the Otsego Township Dam Area, such work will be required by the ROD.

D. Applicable or Relevant and Appropriate Requirements

Pursuant to 40 C.F.R. Part 300.415, removal actions shall, to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements (ARARs) of federal and state law. Federal ARARs for this TCRA may include:

- Clean Air Act requirements related to emission of air contaminants in quantities that can cause harmful effects to human health, animal life, plant life, and/or property found at 40 C.F.R. Part 50.
- Clean Water Act (CWA) requirements at 40 C.F.R. Part 231 and 33 C.F.R. Parts 320 - 330 apply to all existing, proposed, or potential areas for discharges of dredged or fill materials into the Kalamazoo River.

If water is treated during removal action and discharged to a publicly-owned treatment works (POTW), the influent requirements of these facilities must be met prior to discharging to the POTW, as prescribed 40 C.F.R. Parts 136 and 403. These regulations also provide guidelines establishing test procedures for the analysis of pollutants.

If water is treated during the removal action and discharged back into the river, on-site discharges from the Site must meet the substantive National Pollutant Discharge Requirements (NPDES) requirements related to ambient water quality standards and effluent standards, both of which are set by the State in relation to the Kalamazoo River.

- TSCA requirements for the dewatering of PCB-contaminated sediment and for the storage and transport of PCBs found at 40 C.F.R. Part 761.61(b) (specifies cleanup and disposal options for PCB remediation waste including sediment and dredged materials), 40 C.F.R. Part 761.65 (establishes technical requirements for temporary storage of PCB wastes prior to treatment or disposal), and 40 C.F.R. Part 761.79 (provides decontamination standards and procedures for removing PCBs that are regulated for disposal from water, organic liquids, and other materials).

By letter dated August 4, 2015, EPA requested that the State identify potential state ARARs for this TCRA. Any state ARARs identified in a timely manner for this TCRA will be complied with to the extent practicable. To date, the State has not provided EPA with a list of ARARs.

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

Continued risk to public health and the environment will result if the TCRA is delayed or not taken. Delayed action increases the risk of failure of the temporary water control structure before the completion of the TCRA, which would spread the contamination downstream and increase the likelihood for wildlife populations to come into direct contact with PCB-contaminated sediments and riverbank/floodplain soils. In addition to the risks associated with failure of the water control structure, delay or non-action would likely result in erosion of high levels of PCB-contaminated riverbank/floodplain soils and instream sediment to both the water column and surface soils, allowing for easy uptake of PCBs by fish, worms, plants and other organisms of the food chain in this area and downstream.

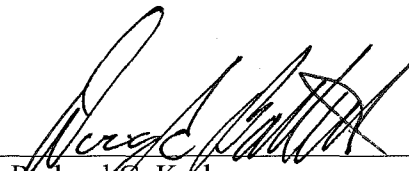
VII. OUTSTANDING POLICY ISSUES

No outstanding policy issues have been identified in relation to the Otsego Township Dam Area.

VIII. RECOMMENDATION

This decision document represents the selected response action for the Otsego Township Dam Area of the Site. It was developed in accordance with CERCLA and is not inconsistent with the NCP. This decision is based upon the Administrative Record for the TCRA, an index of which is attached to this Action Memorandum (Attachment 2).

Conditions at the Otsego Township Dam Area meet the criteria of Section 300.415(b)(2) of the NCP for a TCRA, and I recommend your approval of the TCRA described herein. EPA expects that a PRP (or multiple PRPs) will perform all removal actions under the oversight of the OSC. You may indicate your decision by signing below.

APPROVE:  DATE: 4/6/2016
for Richard C. Karl,
Director, Superfund Division

DISAPPROVE: _____ DATE: _____
Richard C. Karl,
Director, Superfund Division

Enforcement Addendum

Figures:

- 1. Site Location Map
- 2. Site Excavation Area Map

Attachments:

- 1. Environmental Justice Analysis
- 2. Administrative Record Index
- 3. Site Photographs

- cc: B. Schlieger, U.S. EPA, 5203-G
L. Nelson, U.S. DOI, w/o Enf. Addendum
J. Sygo, Michigan DEQ, w/o Enf. Addendum
P. Synk, Michigan AG, w/o Enf. Addendum
M. Sargent, Michigan DNR, w/o Enf. Addendum

BCC PAGE HAS BEEN REDACTED

**NOT RELEVANT TO SELECTION
OF REMOVAL ACTION**

ENFORCEMENT ADDENDUM

HAS BEEN REDACTED – THREE PAGES

ENFORCEMENT CONFIDENTIAL

NOT SUBJECT TO DISCOVERY

FOIA EXEMPT

NOT RELEVANT TO SELECTION

OF REMOVAL ACTION

FIGURE 1

SITE LOCATION MAP
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site –
Otsego Township Dam Area

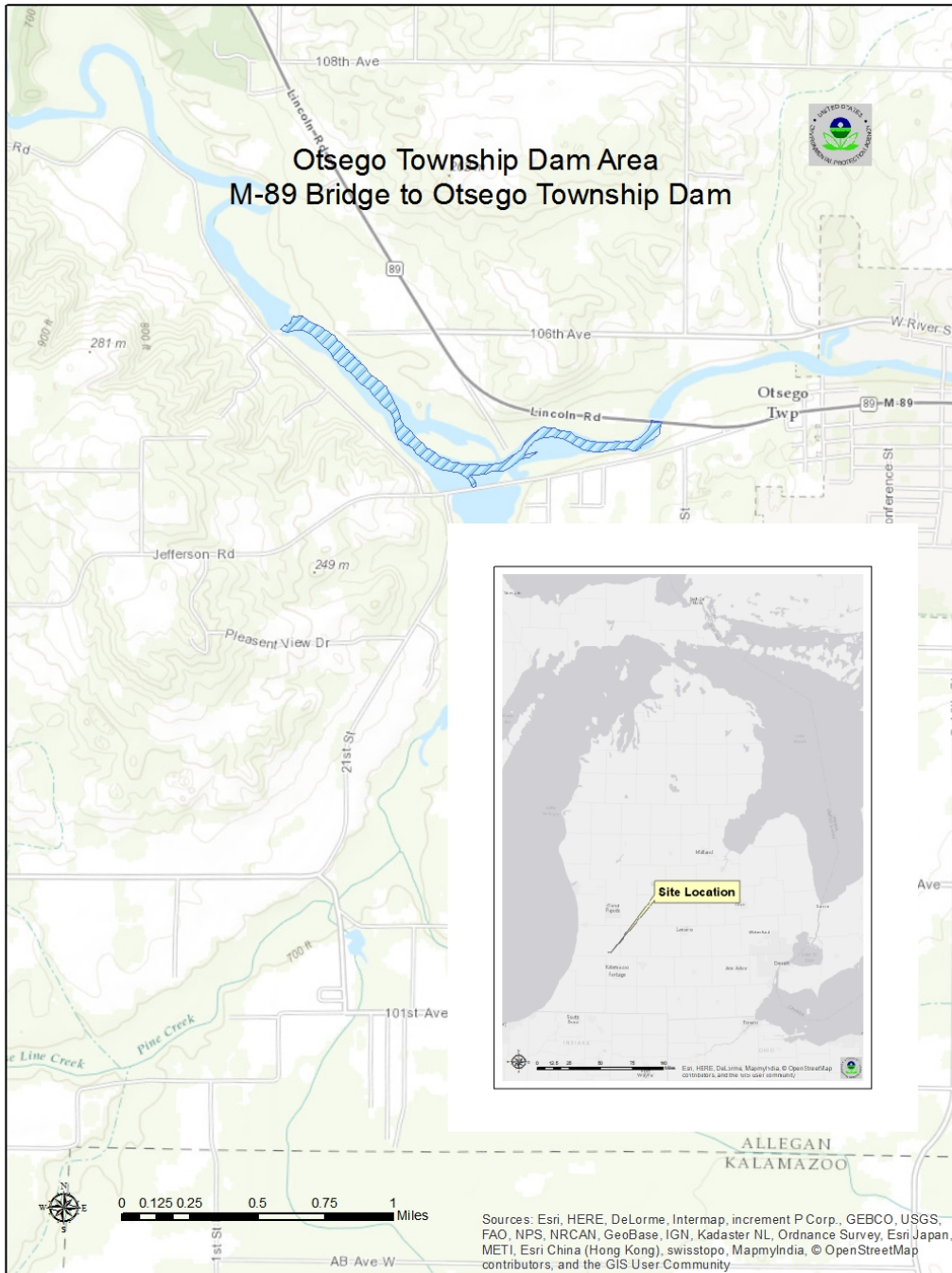
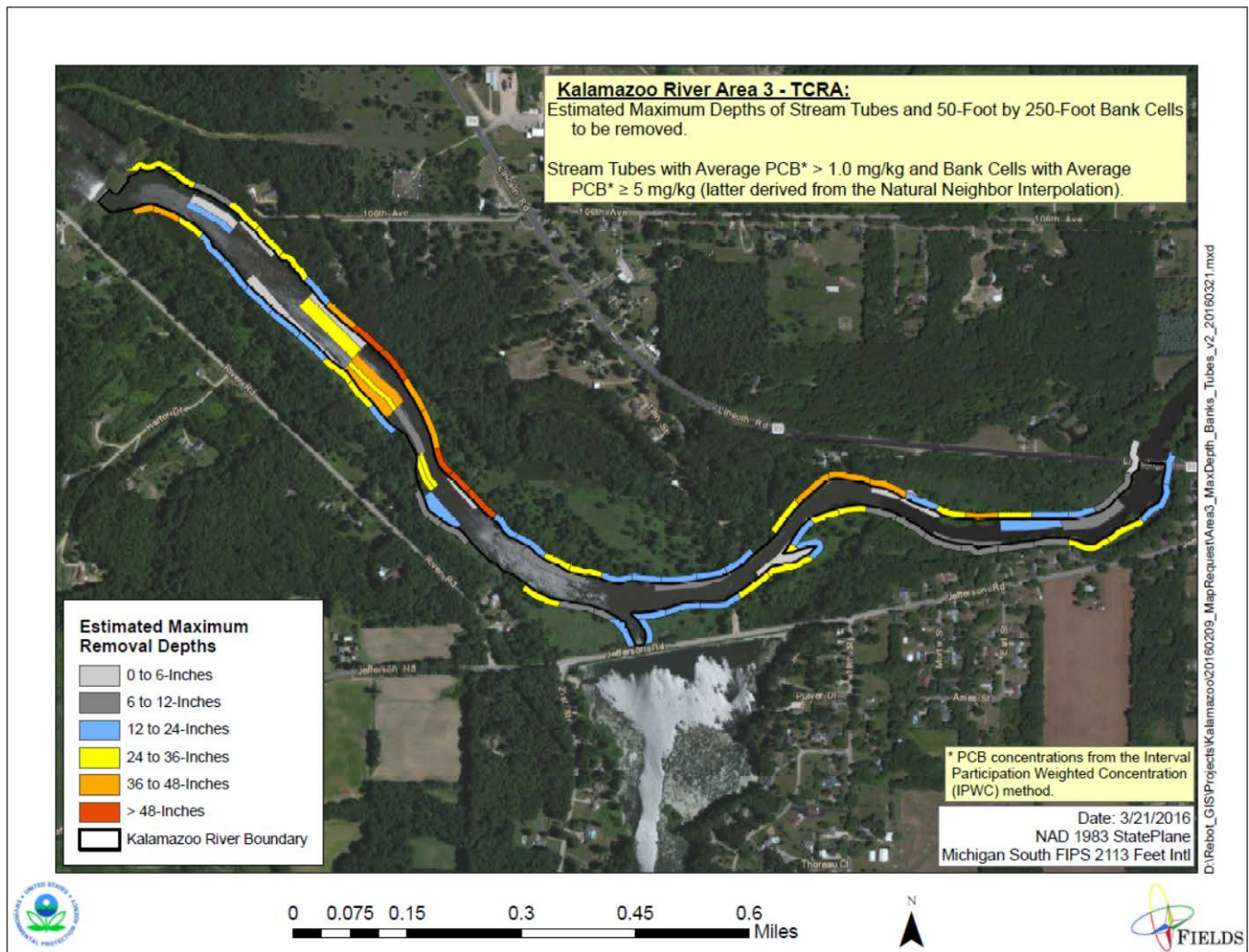


FIGURE 2

SITE EXCAVATION AREA MAP
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site
Otsego Township Dam Area



Attachment 1

EJ Analysis

(3 pages)



EJSCREEN Report

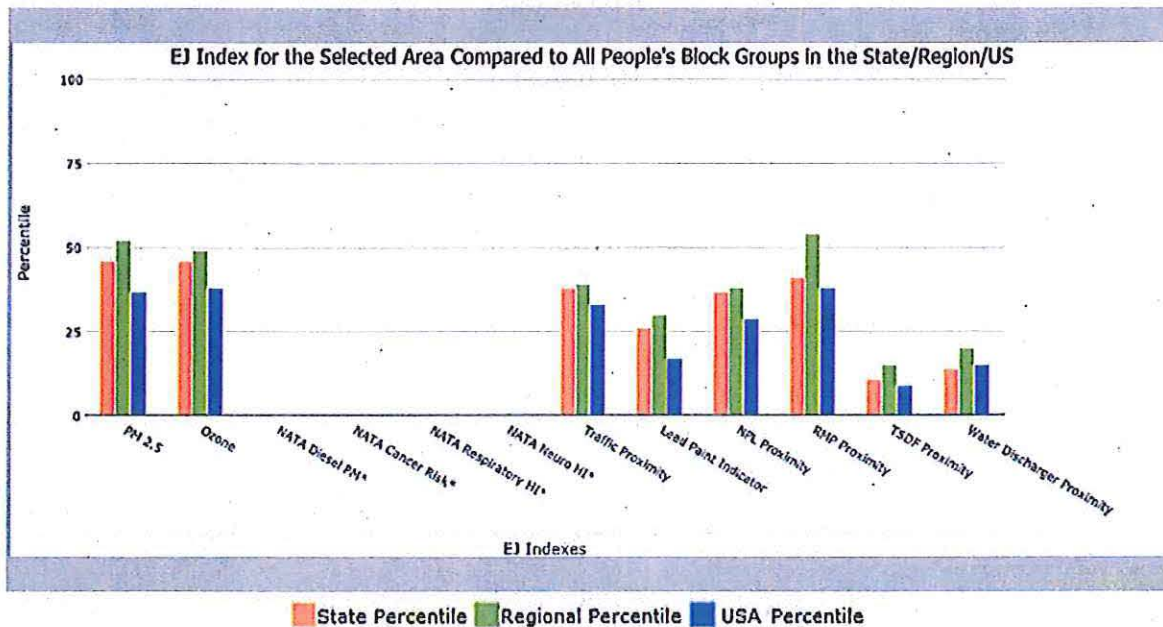


for 1 mile Ring Centered at 42.456978,-85.736836, MICHIGAN, EPA Region 5

Approximate Population: 557

Otsego Township Dam Area

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	46	52	37
EJ Index for Ozone	46	49	38
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	38	39	33
EJ Index for Lead Paint Indicator	26	30	17
EJ Index for Proximity to NPL sites	37	38	29
EJ Index for Proximity to RMP sites	41	54	38
EJ Index for Proximity to TSDFs	11	15	9
EJ Index for Proximity to Major Direct Dischargers	14	20	15



This report shows environmental, demographic, and EJ Indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

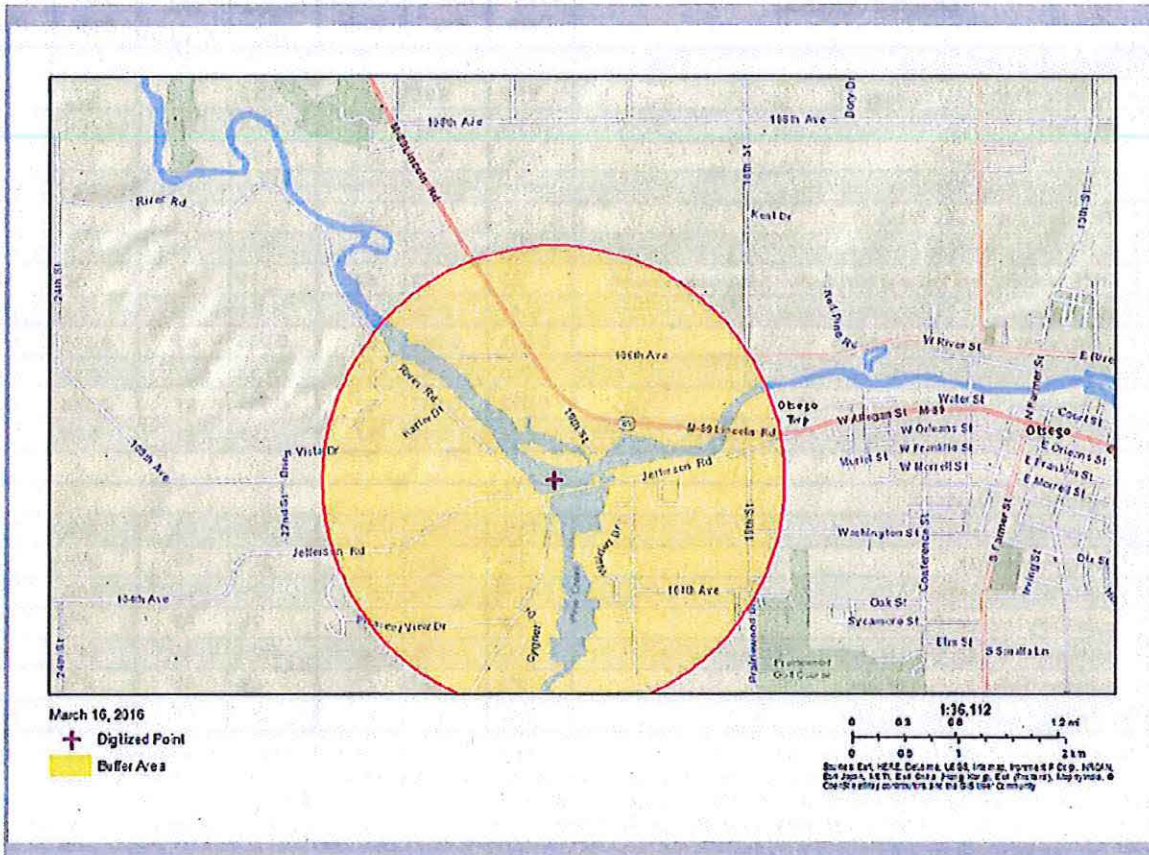
EJSCREEN Report



for 1 mile Ring Centered at 42.456978, -85.736836, MICHIGAN, EPA Region 5

Approximate Population: 557

Otsego Township Dam Area





EJSCREEN Report



for 1 mile Ring Centered at 42.456978,-85.736836, MICHIGAN, EPA Region 5

Approximate Population: 557

Otsego Township Dam Area

Selected Variables	Raw Data	State Avg.	%ile In State	EPA Region Avg.	%ile In EPA Region	USA Avg.	%ile In USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	9.76	9.76	40	10.8	16	9.78	45
Ozone (ppb)	45.6	44.7	54	44.4	60	46.1	45
NATA Diesel PM ($\mu\text{g}/\text{m}^3$)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Cancer Risk (lifetime risk per million)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	23	79	42	69	47	110	39
Lead Paint Indicator (% Pre-1960 Housing)	0.44	0.39	63	0.4	60	0.3	70
NPL Proximity (site count/km distance)	0.058	0.095	63	0.086	62	0.096	57
RMP Proximity (facility count/km distance)	0.095	0.21	46	0.33	27	0.31	33
TSD Proximity (facility count/km distance)	0.092	0.063	82	0.051	87	0.054	86
Water Discharger Proximity (facility count/km distance)	0.34	0.19	87	0.23	82	0.25	82
Demographic Indicators							
Demographic Index	23%	29%	52	28%	55	35%	39
Minority Population	3%	23%	16	24%	19	36%	10
Low Income Population	43%	35%	68	32%	72	34%	68
Linguistically Isolated Population	0%	2%	63	2%	69	5%	45
Population With Less Than High School Education	7%	11%	38	12%	40	14%	35
Population Under 5 years of age	5%	6%	42	6%	38	7%	37
Population over 64 years of age	15%	14%	61	13%	63	13%	65

* The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <http://www.epa.gov/ttn/atw/natamain/index.html>.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

March 16, 2016

3/3

Attachment 2

Administrative Record

(4 pages)

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION**

**ADMINISTRATIVE RECORD
FOR THE
ALLIED PAPER/PORTAGE CREEK/KALAMAZOO RIVER SITE
OTSEGO TOWNSHIP DAM AREA
OTSEGO, ALLEGAN COUNTY, MICHIGAN**

**ORIGINAL
APRIL 6, 2016
SEMS ID: 925254**

<u>NO.</u>	<u>SEMS ID</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	923493	Undated	Michigan Department of Community Health	Public	Fact Sheet - Eat Safe Fish in Michigan	2
2	167821	12/23/91	ATSDR	U.S. EPA	Public Health Assessment for the Allied Corp. Kalamazoo Plant	42
3	249488	10/1/00	Blasland, Bouck & Lee, Inc.	U.S EPA	Draft Phase I Feasibility Study Report for the Allied Paper/Portage Creek/Kalamazoo River Site	407
4	249490	10/1/00	Blasland, Bouck & Lee, Inc.	U.S EPA	Draft Phase I Remedial Investigation Report for the Allied Paper/Portage Creek/Kalamazoo River Site	653
5	205878	2/1/02	Roy F. Weston, Inc.	U.S EPA	Removal Assessment Report for the Allied Paper - Kalamazoo River Site	777
6	249487	4/1/03	Camp, Dresser, & McKee	U.S EPA	Final Revised Baseline Ecological Risk Assessment for the Allied Paper/Portage Creek/Kalamazoo River Site	140
7	249495	4/1/03	CH2M Hill	U.S EPA	Draft Remedial Investigation Report for the Allied Paper/Portage Creek/Kalamazoo River Site	103
8	249486	5/1/03	Camp, Dresser, & McKee	U.S EPA	Human Health Risk Assessment for the Allied Paper/Portage Creek/Kalamazoo River Site	109

<u>NO.</u>	<u>SEMS ID</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
9	921851	2005	USGS	File	Historical and Simulated Changes in Channel Characteristics of the Kalamazoo River, Plainwell to Otsego, Michigan	67
10	923490	3/1/05	Kalamazoo River Natural Resource Trustees	Public	Fact Sheet - 2005 Kalamazoo River Natural Resource Damage Assessment - Summary of the State I Assessment	2
11	923488	3/15/05	Stratus Consulting	MDEQ	Stage I Assessment Report, Volume 1 - Injury Assessment	284
12	923489	3/15/05	Stratus Consulting	MDEQ	Stage I Assessment Report, Volume 2 - Economic Assessment	200
13	923486	9/1/05	Wesley, J., MDNR	File	Kalamazoo River Assessment - Special Report 35	377
14	249492	7/25/06	ATSDR	U.S. EPA	Health Consultation: ATSDR Response to Public Advisory Council for Kalamazoo River Area of Concern RAP Comments on the Public Health Assessment for the Allied Paper/Portage Creek/Kalamazoo River Site	18
15	923467	6/3/10	Krusinga, J., SME, Inc.	Lerg, J., MDNR	Report on Existing Conditions at Otsego Dam	19
16	923482	1/14/11	Krusinga, J., SME, Inc.	MDEQ	Report on Existing Conditions at Otsego Dam	27
17	924225	2/1/12	ARCADIS	Georgia-Pacific, LLC	Area 1 Supplemental Remedial Investigation Report - Final	303
18	923491	11/1/12	Michigan Department of Community Health	File	Health Consultation - Technical Support Document for a Polychlorinated Biphenyl Reference Dose as a Basis for Fish Consumption Screening Values	107
19	923468	11/9/12	MDEQ	File	Otsego Dam Photos	2
20	923472	11/13/12	Trumble, L, MDEQ	Lane, B., and Mills, M., MDEQ	Email re: Concerns Regarding Dam Conditions	4
21	923483	1/7/13	Krusinga, J., SME, Inc.	MDEQ	Report on Existing Conditions at Otsego Dam	25

<u>NO.</u>	<u>SEMS ID</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
22	923485	6/17/13	Trumble, L, MDEQ	File	Dam Safety Inspection Report for the Otsego Dam	20
23	923470	2/21/14	CH2M Hill	U.S. EPA	Technical Memorandum - Engineering Design Team Workshop and Stakeholder Meeting for the Sediment Control Structure near Otsego Township Dam	58
24	923471	3/13/14	CH2M Hill	U.S. EPA	Draft Preliminary Design Technical Memorandum for the Otsego Township Dam Temporary Sediment Control Structure	93
25	923492	1/1/15	Michigan Department of Community Health	Public	2015 Eat Safe Fish Guide for Southwest Michigan	88
26	923484	4/3/15	Krusinga, J., SME, Inc.	MDEQ	Report on Existing Conditions at Otsego Dam	31
27	923469	7/1/15	State of Michigan Department of Technology, Management and Budget	File	Bidding and Contact Specifications for the Installation of Water Control Structure and Stabilization Measures	529
28	920817	7/6/15	AMEC Foster Wheeler	Saric, J., U.S. EPA	OU5 Kalamazoo River Superfund Site Area 3 Draft Supplemental Remedial Investigation Report, Figures & Appendices A-K <i>(Portions of this document have been redacted to protect personally-identifying information)</i>	1107
29	923466	7/29/15	Moritz, W., MDNR	Saric, J., U.S. EPA	Letter re: Amendment to Notification Letter Regarding Off- Site Disposal of Contaminated Sediments	1
30	923465	8/25/15	Karl, R., U.S. EPA	Moritz, W., MDNR	Letter re: Approval of Otsego Township Dam Removal	1
31	920815	10/4/15	Ruesch, P., U.S. EPA	Bucholtz, P., MDEQ	Letter re: Request for State ARARs for the Otsego Township Dam Area Site	4

<u>NO.</u>	<u>SEMS ID</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
32	923464	2/4/16	Saric, J., U.S. EPA	Fortenberry, C., Georgia-Pacific LLC	Letter re: Area 3 Revised Supplemental Remedial Investigation Report Approval	3
33	925251- 925252	4/4/16	Fortenberry, C., Georgia-Pacific LLC	Saric, J., U.S. EPA	Final Supplemental Remedial Investigation Report - Operable Unit 5, Area 3	341
34	925253	4/6/16	Ruesch, P., U.S. EPA	Karl, R., U.S. EPA	Approval for a Time-Critical Removal Action at the Otsego Township Dam Area of the Allied Paper/Portage Creek/Kalamazoo River Site (<i>Portions of this document have been redacted</i>)	31

Attachment 3

Site Photographs

(3 pages)



Site: Otsego Township Dam Area

Photograph No.: 1

Direction: North

Subject: Riverbank erosion of contaminated soils into Kalamazoo River on north bank.

Date: 05/06/2015

Photographer: Paul Ruesch



Site: Otsego Township Dam Area

Photograph No.: 2

Direction: South

Subject: Riverbank erosion of contaminated soils into Kalamazoo River on south bank.

Date: 05/06/2015

Photographer: Paul Ruesch



Site: Otsego Township Dam Area

Photograph No.: 3

Direction: South

Subject: Deterioration of concrete spillway structure and sinkhole (foreground), replaced by a temporary water control structure in 2016.

Date: 05/06/2015

Photographer: Paul Ruesch



Site: Otsego Township Dam Area

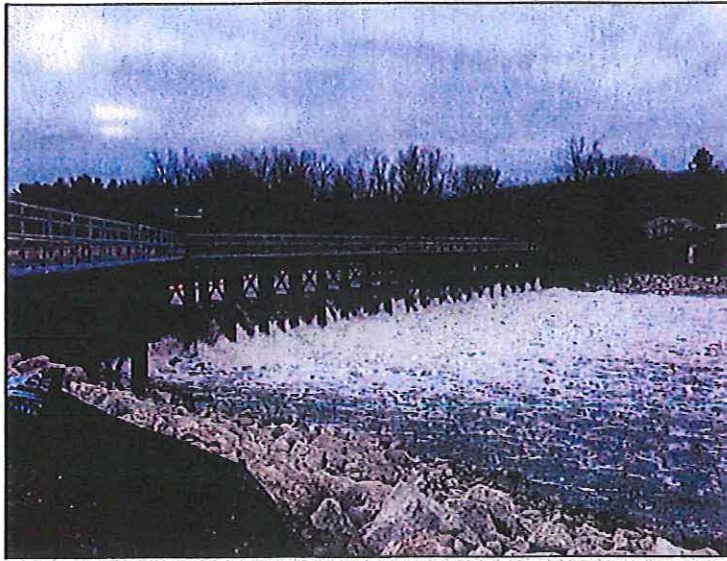
Photograph No.: 4

Direction: North

Subject: Deterioration of earthen/concrete portion of Otsego Township Dam, replaced by a temporary water control structure in 2016.

Date: 05/06/2015

Photographer: Paul Ruesch



Site: Otsego Township Dam Area

Photograph No.: 5

Direction: Northwest

Subject: Temporary water control structure in operation.

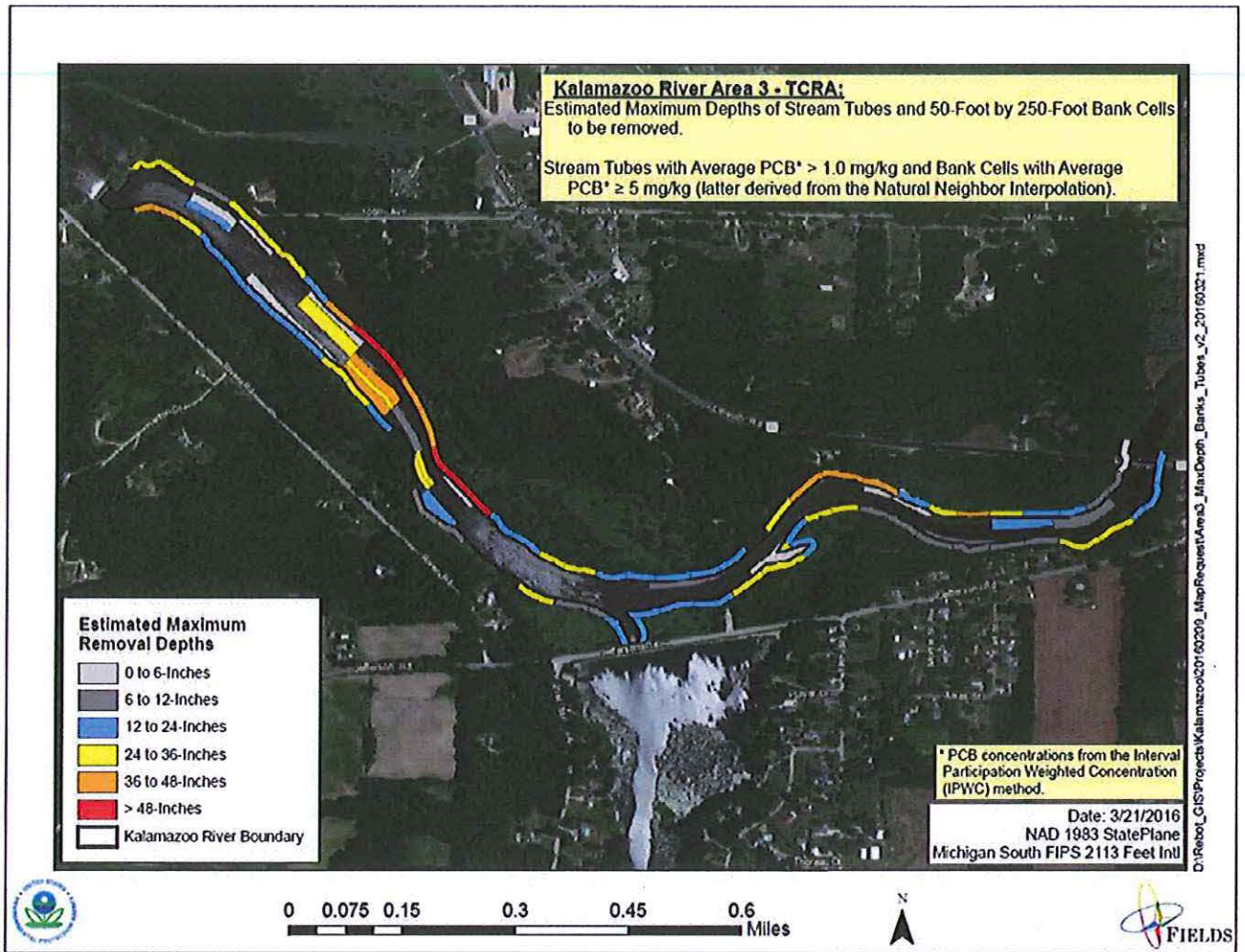
Date: 03/18/2016

Photographer: Paul Ruesch

APPENDIX 2

FIGURE 2

SITE EXCAVATION AREA MAP
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site
Otsego Township Dam Area



APPENDIX 3

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR THE
UNILATERAL ADMINISTRATIVE ORDER FOR TIME-CRITICAL
REMOVAL ACTION AT THE OTSEGO TOWNSHIP DAM AREA
OF THE
ALLIED PAPER/PORTAGE CREEK/KALAMAZOO RIVER SITE
KALAMAZOO, KALAMAZOO COUNTY, MICHIGAN

ORIGINAL
APRIL 11, 2016
SEMS ID:

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