

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

NCR Settlement Community Advisory Group

January 7, 2020



- Consent Decree Lodged December 11, 2019
- NCR/DOJ/EPA/EGLE/NR Trustees
- Public Comment Period Extended: February 18, 2020
 - -Send comments to US DOJ per fact sheet
 - -No formal comments today
 - –Information session



- Area 4 Time-Critical Removal Action
- Area 2 Remedial Action: 2017 Record of Decision (ROD)
- Area 3 Remedial Action: ROD anticipated Fall 2020
- \$76.5M to EPA for past and future costs
- \$27M to Natural Resource Trustees
- \$6M to EGLE for past and future costs





SUPERFUND WORK

- Area 4 Time-Critical Removal Action
- Area 2 Remedial Action: 2017 ROD
- Area 3 Remedial Action: ROD anticipated Fall 2020

STATES PROTECTION The Seven Areas of Operable Unit 5 AGENCY (The Kalamazoo River and Portage Creek) City of Wayland Saugatu Area 7 Lake Michigan Area 4 City of Allegan Area 6 ALLEGAN GITY DAM Area 5 Average Area 2 Average Length Water Area Area 4 **River Reach/Area** River (miles) Depth (acres) Area 3 Width (ft) (ft) Area 1 Area 1 - Morrow Dam to 21.9 3.4 487 181 Plainwell Dam Village of Richlanc Area 1 – Portage Creek 2.0 2.3 32 8 Area 2 - Plainwell to Otsego 1.9 2.5 96 450 City of Gobles City Dam Area 3 - Otsego City to 3.4 3.8 83 200 Otsego Dam Area 4 - Otsego to 4.7 5.0 248 131 Trowbridge Dam City of Kalamazoo Area 5 - Trowbridge to 4.3 317 9.1 292 Allegan City Dam City of Portag 9.8 6.7 1.500 1,650 Area 6 - Lake Allegan Area 7 - Allegan Dam to 26 5.5 212 670 ake Michigan



PCB Sample Distribution - Area 4



PCB Sample Distribution - Area 4







Surface Area Weighted Average PCB concentrations for in-stream sediments near the Trowbridge Dam are significantly > 0.33 mg/kg cleanup level

Table ES-2: Sediment Surface-Area Weighted Average PCB Concentrations (mg/kg)*

Depth Interval	Subarea A	Subarea B	Subarea C	Subarea D	Subarea E	Subarea F	Subarea G	Subarea H
Interval 1 (0-6 in)	0.07	0.60	0.25	0.15	1.19	2.39	3.87	1.29
Interval 2 (6-12 in)	0.07	0.23	0.08	0.23	1.85	4.52	20.87	12.42
Interval 3 (12-24 in)	0.04	0.13	0.06	0.17	3.04	2.84	14.45	6.60
Interval 4 (24-36 in)	0.10	0.11	0.04	0.17	5.61	0.43	9.49	0.25
Interval 5 (36-48 in)	0.03	0.03	0.05	0.16	6.83	0.17	0.96	0.04

Subarea E, F & G Looking upstream





Area 4 Bank Erosion







Trowbridge Dam Deteriorating LDB





Proposed Area 4 TCRA



- Sediment: Removal of all stream tubes > 1 mg/kg
 PCB from Subareas E, F & G
- Bank Removal & Stabilization: 25' pull-back (25' x 250' grids) and bank stabilization measures similar to Area 3 TCRA from River Mile 47.25 to the Dam (Subareas C, D & E). Removal of riverbank soil concentrations > 5 mg/kg PCB
- Removal of Trowbridge Dam





Estimated Removal Volumes & Cost Estimates



Bank/Floodplain Soil Remediation: Subareas C, D, E

Width of Bank	Volume of Soil	Volume of	Total Volume
Remediation	>=5 mg/kg	Overburden	for Removal
25 Foot Pullback	10,200 yd ³	4,700 yd ³	14,900 yd ³

Sediment Remediation: Stream Tube Removal in Subareas E, F, G

Remedial Goal	Volume of Sediment	Volume of	Total Volume
	>=1 mg/kg	Overburden	for Removal
Stream Tubes >=1 mg/kg	119,000 yd ³	46,000 yd ³	165,000 yd ³

Total Estimated Cost = \$54.5 m

Area 4 TCRA Dam Removal: MDNR





Figure 4-7 Options 3 and 4: Plan View of Steeel Sheetpiles and Fill Placement



Figure 4-8 Option 3: Conceptualization Cross-Section of Right Embankment

Trowbridge Dam Temporary Stabilization







Area 2 Maximum PCB Concentrations





Area 2: EPA Selected Remedy September 2017





The Seven Areas of Operable Unit 5 (The Kalamazoo River and Portage Creek)



UNITED STATES

Tillage

Richland

ORROW DAM

ENVIRONN





FIGURE

1-2

Checked by: NOB 6/22/2018

Project Number 3293150003

- 3.4 miles
- 3.8 feet average depth



PHOTOGRAPHS

3. ORIGINAL SOURCE OF FIGURE: ARCADIS

MODIFIED WITH PERMISSION BY : AMECFW E&I







Area 3 Time-Critical Removal Action



- **2016-2018**
- UAO with Georgia-Pacific, Weyerhaeuser and International Paper

Bank Soil Removal Approach





Sediment Removal Approach





BRSA 1 Removal work

In-stream, real time turbidity monitoring Threatened Mussel relocation

AGENCY

UNITED STAT

VVIRO





Water Control Structure







- 2016-2018
- 35,000 cubic yards soil/sediment removed
- \$32M



Area 3: Downstream Remediation Areas





Area 3: Downstream Remediation Footprint





Area 3: Upstream Remediation Areas







- 1. No Action (No further action beyond TCRA)
- 2. Capping: \$26.6M
- 3. Combination of Capping and Excavation: \$29.2M
- 4. Excavation: \$34.3M
- 5. Aggressive Excavation (PRG 0.33 mg/kg): \$134M





- Feasibility Study report under review
- Summer 2020: Proposed Plan released
- Fall 2020: Record of Decision



Questions?

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www.epa.gov/superfund/allied-paper-kalamazoo

U.S. Environmental Protection Agency