

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #106



KALAMAZOO RIVER/ENBRIDGE SPILL – REMOVAL
SITE # Z5JS
MARSHALL, MICHIGAN
LATITUDE: 42.2395273; LONGITUDE: -84.9662018

US EPA ARCHIVE DOCUMENT



Sediment Trap at B5 Being Cleaned

To: Lt. Paul Baker, Kalamazoo County Sheriff's Office
James Rutherford, Calhoun County Public Health Department
Durk Dunham, Calhoun County Emergency Management
Lt. Barry Reber, Michigan State Police, Emergency Management.
Mark DuCharme, MDEQ
Mike Alexander, MDEQ
Mike McKenzie, City of Battle Creek
Susan Hedman, U.S. EPA Regional Administrator
James Sygo, MDEQ
Cheryl Vosburg, City of Marshall
Christine Kosmowski, City of Battle Creek

From: Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator
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Date: 7/7/2011

Reporting Period: 0700 hours 6/27/2011 through 0700 hours 7/4/2011

1. Site Data

Site Number:	Z5JS	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	OPA	Response Type:	Emergency
Response Lead:	PRP	Incident Category:	Removal Action
NPL Status:	Non-NPL	Operable Unit:	
Mobilization Date:	7/26/2010	Start Date:	7/26/2010
Demobilization Date:		Completion Date:	
CERCLIS ID:		RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:	E10527	Reimbursable Account:	

2. Previous Response Actions and Current Response Governance

- Previous response actions performed to date may be found in SITREPs #1 through #105.
- Governance for the project is provided by the U.S. Environmental Protection Agency (U.S. EPA) Federal On-Scene Coordinator (FOSC) and the Michigan Department of Environmental Quality (MDEQ). The structure of the response is the Incident Command System (ICS), with the FOSC serving as the Incident Commander (IC).
- The Operational Period covered in this report is: 0700 hours on 6/27/2011 through 0700 hours on 7/4/2011.

3. Operations

- This operational phase of the response consisted of: 1) Air Operations; 2) Waste Management; 3) Environmental Compliance including Operations and Maintenance (O&M); 4) Response Action including Overbank Excavation, Overbank Surface Cleanup, and Submerged Oil Recovery in Talmadge Creek and Kalamazoo River; 5) Monitoring; and 6) Wildlife Operations.
- The majority of operations were shut down from July 2 through July 4, 2011 due to the federal holiday on July 4, 2011.

3.1 Air Operations Branch

- During this operational period, five overflights were conducted for situational awareness. Air Operations personnel observed and documented progress in all operational areas and continued to assess areas of interest such as observations of oil sheen, oil removal and decontamination activities.

3.2 Waste Management Branch

3.2.1 Decontamination Unit

- Equipment and boom that were decontaminated during this operational period as reported by Enbridge are presented in Table 1.

3.2.2 Transportation and Disposal Unit

- Enbridge continued phased decommissioning of the waste management area at Site A. Throughout the operational period, Enbridge removed mats, liners, and water from Cells 4 and 5, scraped impacted soil from the cells, and removed water from outside these cells with a pump truck.
- Waste management, characterization, and coordination of transportation and disposal efforts continued according to approved plans. Minimal amounts of oil and debris were shipped off site during the reporting period, as depicted in Tables 2 through 6.
- EPA continued oversight of waste characterization, transportation, and disposal activities.
- On June 29, 2011, EPA conducted oversight of the collection of soil samples from Cell B and Cell 4, oily debris samples from roll off containers, and a decanted water sample from a SWAT roll off container.

3.3 Environmental Compliance Branch

3.3.1 Operations and Maintenance (O&M)

- During the operational period, Enbridge continued to monitor Operations and Maintenance sites. Daily activity and progress information is presented in Table 7.
- Teams continued inspections of control points, containment boom locations, and protective boom locations. Teams evaluated boom placement, boom effectiveness, and presence of readily visible oil or oil-saturated soils.
- Teams continue to install and enhance surface and subsurface containment as necessary. Hard boom, X-Tex curtain, absorbent boom, and absorbent pads were installed at existing and new locations throughout the Kalamazoo River from MP 1.75 through MP 37.75. Boom information is presented in Table 8.
- Teams continued to perform sheen sweeps along the Kalamazoo River from MP 5.55 to MP 19.25 and in Morrow Lake as far west as Control Points E4 and E5.
- On June 29 and July 1, 2011, teams cleaned the B5 Sediment Trap. The removed sediment was transported and staged in a cell at Frac Tank City for sampling and final disposal. Enbridge will begin to clean the B5 Sediment Trap weekly and install downstream turbidity monitors to ensure that the containment is effective.

- Throughout the previous operational period, EPA noted deficiencies in control point and protective containment point management. In response, Enbridge dedicated two additional SWAT crews to O&M locations during this operational period.
- On June 27, 2011, EPA responded to a resident complaint regarding weathered material and debris within sorbent boom immediately upstream of Ceresco Dam. EPA contacted Enbridge regarding the complaint and Enbridge responded within two hours to clean the boom location.

3.4 Response Action Branch

3.4.1 Overbank Surface Cleanup Unit

- Overbank surface cleanup operations along Talmadge Creek and the Kalamazoo River continued in accordance with the schedule outlined in Enbridge's proposed Strategic Plan for Summer 2011 operations.
- Enbridge teams removed tar patties using approved techniques to eliminate visible surface contamination. All site conditions were documented before and after cleanup activities. All recovered materials were handled in accordance with the management practice for proper disposal. All cleaned areas were restored and/or seeded to prevent erosion.
- During this operational period, overbank surface cleanup work was conducted at 71 sites in the Kalamazoo River from MP 1.25 to MP 33.25. Overbank surface cleanup progress information is presented in Table 9.

3.4.2 Overbank Excavation Unit

- During this operational period, teams continued to construct the access road at MP 11.25 R1 and R2. Teams completed preparation and testing of the GAC system and began installing sheet piling at MP 11.25.

3.4.3 Submerged Oil Recovery and Cleanup Unit

- Submerged oil recovery operations continued on the Kalamazoo River. Recovery operation techniques followed the approved submerged oil recovery tool box and included raking, flushing and other mechanical agitation techniques.
- EPA continued coordination with MDEQ, particularly with regard to MDEQ concurrence for work contemplated by Enbridge in ecologically sensitive areas during operations.
- During this operational period, teams conducted site preparation and recovery at 23 sites from MP 4.15 through MP 37.75. Teams also conducted pre-inspection poling and staking at 8 sites from MP 14.28 through MP 21.92.
- EPA emphasized monitoring of containment at submerged oil recovery locations based on observations of sheen and sediment escaping the containment. Corrective actions were required as containment issues were noted through aerial and water observations.

3.5 Monitoring Branch

- Under MDEQ direction, soil, sediment and surface water sampling were performed in accordance with the existing U.S. EPA-approved Sampling and Analysis Plan (SAP) (adopted by MDEQ) with a reduced sampling frequency as approved by the MDEQ. Samples collected as reported by Enbridge are provided in Table 10.

- Enbridge continued to implement a comprehensive air monitoring and sampling program. The program includes routine monitoring and sampling in work area, work area perimeter, community locations, and at 10% of tar patty cleanup sites. The program also includes response to odor complaints as necessary. Weather conditions are continually monitored and recorded by a weather station near MP 13.0 and Ceresco Dam. The quantity of monitoring and sampling locations is provided in Table 11.
- EPA personnel continued to perform oversight of the air monitoring and sampling program. On June 30, EPA deployed three Summa Canisters as duplicates of Enbridge sample locations. Laboratory results for these samples are currently pending.
- On June 30, 2011, Enbridge presented the findings of the air monitoring and sampling program to the members of the Multi Agency Coordination Group (MAC). No detections above action levels have been found in the work area or work area perimeter locations. No detections above community based risk levels have been found in the community locations.

3.6 Wildlife Branch

- Under Michigan Department of Natural Resources (MDNR) direction, the Wildlife Branch continued to provide medical health assessment, treatment, and release of rehabilitated wildlife.
- Throughout the operational period, the Wildlife Branch conducted turtle collection along the Kalamazoo River.

4. Planning

4.1 Situation Unit

- On June 28 and June 30, 2011, personnel observed sediment escaping from containment at the submerged oil work location at MP 4.8. On June 30, the sediment trap breach was reported to operations personnel by O&M and Air Operations personnel. Work was stopped and the area was reinforced with T-posts and cinder blocks. On June 29, 2011, sediment was observed escaping from the containment at the submerged oil work location at MP 13.5. Crews were notified by overflight operations personnel of the breach.
- Periodically, sheen was observed outside of the boom upstream of Ceresco Dam at MP 5.75, in the Morrow Lake Delta, and within Morrow Lake along the southern bank.
- Personnel observed construction of a decontamination station at the E4 boat launch and the new field trailers which were staged at E4.

4.2 Environmental Unit

- The Public Health Group under the Environmental Unit is being led by Dr. Linda Dykema, Michigan Department of Community Health (MDCH). The Public Health Group continues to review report submittals received from Enbridge and evaluate a path forward for the reopening of public parks, bridges and public access points along the Kalamazoo River and Morrow Lake.
- On June 30, 2011, MDCH presented the results of their health risk exposure study to the members of the MAC. The study used a conservative approach and the MDCH reported the following:
 - Recreational contact with submerged oil would not cause an unreasonable increase in cancer risks;
 - Individuals may experience dermal irritation from contact with submerged oil;

- The inhalation pathway was not evaluated as an exposure route.
- The Oil Recovery Task Force conducted daily coordination of oil recovery activities including overbank surface recovery overbank excavation and submerged oil recovery activities.

4.3 Documentation Unit

- Documentation Unit personnel continued organization and archiving of electronic and paper files.

4.4 GIS Support

- During the operational period, EPA GIS personnel reviewed and mapped Enbridge Poling Delineation Re-assessment Data. In addition, EPA GIS supported Operations with the generation of numerous site maps.

5. Command

6.1 Safety

- Throughout the operational period, minor incidents occurred. The incidents included a slip and fall into the Kalamazoo River, three instances of heat stress, and an allergic reaction to gloves. All of the personnel were able to return to work.
- On June 29, 2011 EPA mobilized an Assistant Safety Officer (ASO) to assist with safety operations in the Morrow Lake area.
- On June 30, Enbridge equipped all Jon Boats with push-to-talk phones to enhance communication, thereby allowing boats to work independently as opposed to requiring two boats within shouting distance.

6.2 Public Information

- The quantity of public inquires reported by Enbridge for this period is presented in Table 12.

6. Landowner Environmental Issues

- Landowner environmental issues, as reported by Enbridge for this period are presented in Table 13.

7. Finance

- The current National Pollution Funds Center (NPFC) issued ceiling is \$34.2 Million. Approximately 84.0% of the ceiling has been spent through July 3, 2011. As of June 26, 2011, the latest average 7-day burn rate was \$64,969 per day. These cost summaries reflect only EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 14.

8. Participating Entities

- A Multi-Agency Coordination (MAC) Group meets weekly regarding the progress of the response. Entities participating in the MAC include:
 - U.S. Environmental Protection Agency
 - Michigan Department of Environmental Quality
 - Michigan State Police Emergency Management Division

- City of Battle Creek
 - City of Marshall
 - Calhoun County Public Health Department
 - Calhoun County Emergency Management
 - Kalamazoo County Sheriff
 - Enbridge (Responsible Party)
- For a list of cooperating and assisting agencies and the congressional presence, see SITREP #51 (Sections 3.2 and 3.3).

9. Personnel On-Site

- Staffing numbers for the entities and agencies active in the response are presented in Table 15.

10. Source of Additional Information

- For additional information, refer to <http://www.epa.gov/enbridgespill>. For sampling analysis data, see <http://response.enbridge.com/response/main.aspx?id=13168>.

11. Clean-up Progress Metrics

Table 1 - Equipment Decontamination

Location/Media	Total	July 2011			June 2011			
		3	2	1	30	29	28	27
Frac Tanks	1	0	0	1	0	0	0	0
Vac Trucks-Tankers	0	0	0	0	0	0	0	0
Roll-Off Boxes	0	0	0	0	0	0	0	0
Yellow Iron (light)	0	0	0	0	0	0	0	0
Yellow Iron (heavy)	0	0	0	0	0	0	0	0
Boats	2	0	0	2	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
Boom (feet)	0	0	0	0	0	0	0	0

Table 2 - Soil and Debris Shipped Off Site (as of 7/5/2011)

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd³)</i>	19,644	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil & Debris (yd ³) (Excluding Ceresco Dredge)	10,595	Terra/C&C
<i>Non-Haz Soil & Debris (yd³) (Excluding Ceresco Dredge)</i>	64,815	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd³) (Ceresco Dredge Only)</i>	5,562	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd³)</i>	12,075	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	812	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	2,333	

Shaded and italicized items are discontinued waste streams.

Table 3 – Oil/Water Collected by Location (as of 7/5/2011)

Location	Cumulative (gallons)
Division A	5,356,315
Division B	4,868,279
Division C	1,891,406
Division D	121,106
Division E	47,438
Decontamination	1,726,983
Site A	316,464
Other Locations*	1,295,334
Subtotal	15,623,325
Sludge**	474,215
Total Oil/Water	15,149,110

* Wildlife Center Operations, Sediment Trap Cleaning, Hydro-Vacuuming.

** Sludge collected is tracked as a liquid waste inbound; however, after stabilization, the sludge is disposed of as solid waste. Therefore, the volume of sludge is not included within the cumulative oil/water totals. Stabilized sludge is included in the solid waste disposal metrics.

Table 4 – Oil/Water Separation at Enbridge Facility in Griffith, IN (as of 7/5/2011)

Item	Cumulative (gallons)
Oil	766,288
Other Material	1,405,525
Total	2,171,813

Table 5 - Liquid Shipped Off-Site (as of 7/5/2011)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
<i>Hazardous Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	<i>3,594,579</i>
<i>Oil/Water</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	<i>2,171,813</i>
<i>Treated Non-Haz Water</i>	<i>Liquid Industrial Waste</i>	<i>Holland, MI</i>	<i>370,200</i>
<i>Treated Non-Haz Water</i>	<i>Plummer</i>	<i>Kentwood, MI</i>	<i>4,976,140</i>
<i>Hazardous Water</i>	<i>Safety Kleen^a</i>		<i>825</i>
Non-Haz Water	Dynecol	Detroit, MI	867,722
Non-Haz Water	Liquid Industrial Waste	Holland, MI	152,301
<i>Treated Non-Haz Water*</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	<i>150,700</i>
<i>Treated Non-Haz Water*</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	<i>1,968,700</i>
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	893,980
Total			15,146,960

Shaded and italicized items are discontinued waste streams.

† Cumulative quantities may not reconcile with previous reports (due to auditing).

a New Age lab water and methanol mix generated by mobile laboratory.

* Treated Non-Haz Water no longer sent to this location.

Table 6 - Oil/Water Remaining On-Site (as of 7/5/2011)

Item	Cumulative (gallons)
Oil/Water Collected	15,149,110
Oil/Water Shipped Off-Site	15,146,960
Total Oil/Water Remaining On-Site	2,150

Table 7 – Daily Activity/Progress

Type of Site	July 2011			June 2011			
	3	2	1	30	29	28	27
Parks Assessment Sites	3	3	3	3	3	3	3
Bridge Assessment Sites	21	21	21	21	21	21	21
High Use Access Points Assessment Sites	9	9	9	9	9	9	9
Operations & Maintenance Site	107	107	107	107	106	106	106
Control Points	10	10	10	10	10	10	10
Protective Containment Sites	37	37	37	37	38	38	38
River Erosion Sites	26	26	26	26	26	26	26
Monitoring Well Installation Sites	3	3	3	3	3	3	3

Table 8 - Boom and Aqua Dam Report

Metric	July 2011			June 2011			
	3	2	1	30	29	28	27
# Boom Locations	50	50	50	49	49	49	49
Total Surface Boom Deployed (ft)	38,800	38,800	38,800	38,800	38,800	40,000	39,600
[ft of control point surface boom]	[18,500]	[18,500]	[22,810]	[19,450]	[19,450]	[19,450]	[19,450]
Sand-Super Sacks	33	33	33	33	33	33	33
[Sand Bags]	[526]	[526]	[526]	[526]	[526]	[526]	[526]

Table 9 – Overbank Surface Cleanup Progress (as of 7/6/2011)

Quarter – mile Segments Completed: 144	144 of 240 locations (60.0% of planned locations)
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*This reflects implementation of a new completion verification process.

Table 10 – Samples Collected By Enbridge

Sample Type	Total	July 2011			June 2011			
		3	2	1	30	29	28	27
Surface Water	39	0	0	8	7	6	8	10
Private Well	0	0	0	0	0	0	0	0
Groundwater	3	0	0	0	0	0	3	0
Sediment	30	0	0	11	10	9	0	0
Soil	61	0	0	23	15	7	11	5
Air (Community Locations)	24	0	0	0	6	6	6	6
Air (Response Work Area Locations)	120	0	0	0	32	31	30	27
Air (Odor Complaint)	0	0	0	0	0	0	0	0

Table 11 – Real-Time Air Monitoring Conducted By Enbridge

Sample Type	Total	July 2011			June 2011			
		3	2	1	30	29	28	27
Community Locations	1042	0*	0*	213	242	205	197	185
Response Work Area Perimeter	61	0*	0*	0	0	28	0	33
Response Work Area	795	0*	0*	76	201	176	207	135
Tar Patty Study	4	0*	0*	0	4	0	0	0

*Air monitoring was not conducted due to the Fourth of July Federal Holiday.

Table 12 – Public Inquiries Received by EPA and Enbridge

Location/Media	Total	July 2011			June 2011			
		3	2	1	30	29	28	27
Marshall Community Center	15	0*	0*	1	1	5	7	1
Oil Spill Public Information Hotline	18	0*	0*	1	5	2	5	5
Website	0	0	0	0	0	0	0	1
Total Public Inquiries	34	0	0	2	6	7	12	7

*The Community Center was closed from July 2 through July 4 for the Fourth of July Federal Holiday.

Table 13 – Landowner Environmental Issues (as of 7/4/2011)

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
1	11	1

Table 14 - Financial Summary

Item	Expended (Cumulative) as of 7/5/2011
ERRS Contractors	
EQM (EPS50802) T057	\$ 1,199,522
T060	\$ 213,636
LATA (EPS50804) T019	\$ 1,161,082
ER LLC (EPS50905) T040	\$ 683,330
Total ERRS Contractors	\$ 3,257,571
Other Contractors	
Lockheed Martin (EPW09031) – TAGA Support	\$ 185,951
T&T Bisso (EPA:HS800008)	\$ 882,087
Total Other Contractors	\$ 1,068,038
START Contractor – WESTON (EPS50604)	
T030-Response	\$ 12,605,996
T032-Sampling	\$ 180,214
T037-Doc Support	\$ 864,075
Total START Contractor	\$13,650,285
Response Contractor Sub-Totals	\$17,975,894
EPA Funded Costs: Total EPA Costs	\$ 4,952,636
Pollution Removal Funding Agreements – Total Other Agencies	\$ 1,823,682
Sub-Totals	\$24,752,212
Indirect Cost (16.00%)	\$ 3,960,354
Total Est. Oil Spill Cost	\$28,712,566
Oil Spill Ceiling Authorized by USCG	\$34,200,000
Oil Spill Ceiling Available Balance	\$ 5,487,434

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Table 15 - Personnel On-Site

Agency/Entity	July 2011			June 2011			
	3	2	1	30	29	28	27
U.S. EPA	0	0	2	4	3	4	3
START	0	0	43	44	45	44	43
Calhoun County Public Health	0	0	0	2	0	0	0
Calhoun County (CC) EM	0	0	0	0	0	0	0
City of Battle Creek	0	0	0	1	0	0	0
City of Marshall	0	0	0	1	0	0	0
Village of Augusta	0	0	0	0	0	0	0
Kalamazoo County Public Health	0	0	0	2	0	0	0
Kalamazoo Sheriff	0	0	0	0	0	0	0
MDCH	0	0	0	1	0	0	0
MDEQ	0	0	6	6	4	4	4
MDEQ Contractors	0	0	5	8	8	9	9
Michigan State Police EMD	0	0	0	0	0	0	0
NOAA – National Weather	0	0	0	0	0	0	0
USFWS	0	0	0	0	0	0	0
Enbridge – Operations	3	0	129	149	149	148	139
Enbridge – Field	27	27	309	313	334	335	321
Total	30	27	494	531	543	544	519

*Enbridge Operations and Field include Enbridge and contractors as reported by Enbridge