

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #110**



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



Overview of MP 4.5 Excavation Site

US EPA ARCHIVE DOCUMENT

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
Linda Buzas, Kalamazoo County

From: Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator

Date: 8/3/2011

Reporting Period: 0700 hours 7/25/2011 through 0700 hours 8/1/2011

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 #109.
- 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 Periods covered in this report are: 0700 hours on 7/25/2011 through 0700 hours on 7/28/2011 and 0700 hours on 7/28/2011 through 0700 hours on 8/1/2011.

3. Operations

- This operational phase of the response consisted of: 1) Air Operations; 2) Waste Management; 3) Environmental Compliance including Control Point Management; 4) Response Action including Overbank Excavation, Overbank Surface Cleanup, and Submerged Oil Recovery in the Kalamazoo River; 5) Monitoring; and 6) Wildlife Operations.

3.1 Air Operations Branch

- During the operational periods, six overflights were conducted for situational awareness.

3.2 Waste Management Branch

3.2.1 Decontamination Unit

- Equipment and boom decontaminated during the operational periods are presented in Table 1.

3.2.2 Transportation and Disposal Unit

- Enbridge completed phased decommissioning of the waste management area at Soil Staging Area A, conducted restoration activities, and demobilized from the site.
- Waste management, characterization, and coordination of transportation and disposal continued according to approved plans. Quantities of oil and debris shipped off site during the reporting period are presented in Tables 2 through 5.
- EPA continued oversight of waste characterization, transportation, and disposal activities including composite sampling during live loading operations at the Mile Post (MP) 11.25 R2 excavation site.

3.3 Environmental Compliance Branch

3.3.1 Operations and Maintenance (O&M)

- During the operational periods, Enbridge continued to monitor O&M sites. Teams continued inspections of control points, containment boom locations, and protective boom locations. Teams evaluated boom placement, boom effectiveness, and presence of accumulated visible oil or oil-saturated soils. Daily O&M activity and progress tracking information is presented in Table 6.
- O&M personnel continued to install and enhance surface and subsurface containment as necessary. Hard boom, X-Tex curtain, absorbent boom, t-posts, and cinder block anchors were installed at existing and new locations throughout the Talmadge Creek and the Kalamazoo River from MP 0.3 through MP 22.75.
- Teams continued to perform sheen sweeps along the Kalamazoo River between MP 10.5 and MP 19.25 and between Control Points E4 and E6.

3.4 Response Action Branch

3.4.1 Overbank Surface Cleanup Unit

- During the operational periods, overbank surface cleanup work was conducted along the Kalamazoo River and islands within the Kalamazoo River from MP 3.0 to MP 33.0. Enbridge teams removed tar patties using approved techniques to eliminate visible surface contamination. Recovered materials were handled in accordance with the management practice for proper disposal. Erosion control and stabilization measures were implemented as required at each area of tar patty removal. Overbank surface cleanup progress information is presented in Table 7.

3.4.2 Overbank Excavation Unit

- During the operational periods, teams completed excavation activities at MP 11.25 R2, maintained temporary restoration, began final restoration, and demobilized excavation equipment from the site. Teams also mobilized to MP 4.5 L1 and MP 21.5 Oxbow excavation sites, installed sheet piling, set up the GAC systems, and began setting up work areas at the sites.

3.4.3 Submerged Oil Recovery and Cleanup Unit

- Submerged oil recovery operations continued on the Kalamazoo River, Morrow Lake Delta, and in areas surrounding the islands adjacent to Morrow Lake. Recovery operations followed the approved submerged oil recovery tool box techniques including flushing and other mechanical agitation techniques.
- During the operational periods, teams conducted site preparation and recovery operations along the Kalamazoo River from MP 2.55 to MP 23.0. Teams also continued submerged oil recovery, site preparation, woody debris removal, and vegetation removal activities using aquatic vegetation cutters in the Morrow Lake Delta. Submerged oil recovery and cleanup progress information is presented in Table 8.

3.5 Monitoring Branch

3.5.1 Surface Water and Sediment Sampling

- Under MDEQ direction, soil, sediment and surface water sampling were performed in accordance with the existing Sampling and Analysis Plan (SAP) with a reduced sampling frequency as approved by the MDEQ. Samples collected as reported by Enbridge are provided in Table 9.
- Enbridge continued to conduct turbidity and dissolved oxygen monitoring throughout the Kalamazoo River, focusing on active submerged oil recovery work locations.

3.5.2 Air Monitoring and Sampling

- Enbridge continued to implement the 2011 Air Monitoring and Sampling program, currently consisting of air monitoring at work area locations for worker safety and maintaining an odor response team. Air sampling information is provided in Table 9.
- On July 29, 2011 EPA conducted oversight of an Enbridge odor complaint response from a resident in Battle Creek. A slight odor of decaying organic matter was noted. Air monitoring was conducted for benzene, H₂S, and VOCs. No detections were observed. A Summa canister was deployed for 24 hour sampling in the backyard of the residence. A grab sample was also collected at the riverbank. As of the close of the reporting period, sample results were pending.

3.6 Wildlife Branch

- The Wildlife Branch continued to provide medical health assessment, treatment, and release of rehabilitated wildlife under US Fish and Wildlife Service (USFWS) direction.
- Throughout the operational period, the Wildlife Branch conducted turtle trapping and release along the Kalamazoo River. Trapping information is presented in Table 10.

4. Planning

4.1 Situation Unit

- Situation Unit 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. Significant observations during the operational periods are as follows:
 - River levels rose throughout the Kalamazoo River due to rain events, resulting in mud flats becoming re-submerged and partially delaying surface cleanup activities. Additionally, on July 29, 2011, water levels exceeded the top of the containment at the B5 sediment trap. The containment was enhanced the following day to prevent future containment breaches during high flow events.
 - Sheen was observed within containment at Ceresco Dam.
 - Sheen was observed within containment at MP 14.35 in the alternative boom configuration pilot test area.
 - Sheen was observed in the river channel at MP 15.25 above the control point
 - Minor sheen was noted outside of containment at Control Point E4.5.

4.2 Environmental Unit

- The Public Health Group (PHG) under the Environmental Unit continues to be led by the Michigan Department of Community Health (MDCH).
- The Recovery Task Force conducted coordination of oil recovery activities including overbank surface recovery 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 periods, GIS personnel continued to support operations with the generation of site maps.

5. Command

6.1 Safety

- Safety personnel continued to conduct work site visits along the Kalamazoo River, focusing on mobilization activities at MP 4.5 and demobilization activities at MP 9.25. No major safety issues were observed.
- Throughout the operational periods, minor incidents occurred, including a fall into the Kalamazoo River, 3 instances of heat stress, 2 insect bites, a cut, a muscle spasm, and a burn. All the affected personnel were able to return to work.
- On July 29, 2011, the fan guard of an air boat was caught on an overhanging tree, forcing the back of the boat into the water and submerging the air boat. No injuries resulted.

6.2 Public Information

- During these two operational periods, the Public Information Officer (PIO) coordinated media interviews, developed fact sheets, and prepared for public meetings.
- The quantity of public inquires reported by Enbridge for this period is presented in Table 11.

6. Landowner Environmental Issues

- Landowner environmental issues, as reported by Enbridge for this period are presented in Table 12.

7. Finance

- The current National Pollution Funds Center (NPFC) issued ceiling is \$34.2 Million. Approximately 89.8% of the ceiling has been spent through July 31, 2011. As of July 24, 2011, the latest average 7-day burn rate was \$81,188 per day. These cost summaries reflect only EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 13.

8. Participating Entities

- A Multi-Agency Coordination (MAC) Group continues to meet 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 Public Health Department
 - 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 14.

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						
		31	30	29	28	27	26	25
Frac Tanks	0	0	0	0	0	0	0	0
Vac Trucks-Tankers	1	0	0	0	0	1	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)	1	0	0	0	1	0	0	0
Boats	34	14	6	3	2	1	4	4
Vehicles	2	0	2	0	0	0	0	0
Boom (feet)	6650	0	1000	600	900	1300	1650	1200
Miscellaneous Items	13	0	6	6	0	1	0	0

Table 2 - Soil and Debris Shipped Off Site (as of 7/31/2011)

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)	16,473	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)	906	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	3,308	

Shaded and italicized items are discontinued waste streams.

Table 3 – Oil/Water Collected by Location (as of 7/31/2011)

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	1,888,922
Site A	316,464
Other Locations*	1,327,658
Subtotal	15,817,588
Sludge**	474,215
Total Oil/Water	15,343,373

* 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 - Liquid Shipped Off-Site (as of 7/31/2011)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
Hazardous Water	Dynecol	Detroit, MI	3,594,579
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	893,980
Non-Haz Water	Dynecol	Detroit, MI	913,654
Non-Haz Water	Liquid Industrial Waste	Holland, MI	219,501
Non-Haz Water	Plummer	Kentwood, MI	40,000
<i>Oil</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	<i>766,288</i>
<i>Other Material</i>			<i>1,405,525</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>
<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>
Total			15,300,092

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 5 - Oil/Water Remaining On-Site (as of 7/31/2011)

Item	Cumulative (gallons)
Oil/Water Collected	15,343,373
Oil/Water Shipped Off-Site	15,300,092
Total Oil/Water Remaining On-Site	43,281

Table 6 – Daily Activity/Progress

	July 2011						
	31	30	29	28	27	26	25
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	107	107	107
Boom Locations							
Control Points	11	11	11	11	11	11	11
Protective Containment Sites	36	36	36	36	36	36	36
River Erosion Sites	26	26	26	26	26	26	26
Total Surface Hard Boom (ft)	43,725	43,725	43,725	43,525	45,375	45,625	45,625
[Control Point Surface Hard Boom]	[27,300]	[27,300]	[27,300]	[27,300]	[29,150]	[29,150]	[29,150]

Table 7 – Overbank Surface Cleanup Progress (as of 7/31/2011)

Quarter – mile Segments Identified for Cleanup	237
Cleanup Complete and Completeness Check Form Signed	164
Percent Complete	69.2%

Table 8 – Submerged Oil Recovery and Cleanup Progress (as of 7/31/2011)

Quarter – mile Segments Identified for Cleanup	208*
Cleanup Complete and Completeness Check Form Signed	31
Percent Complete	14.9%

*This number reflects the transfer of Talmadge Creek to a Remedial Investigation site and consolidation of the Delta polygons to channels.

Table 9 – Samples Collected By Enbridge

Sample Type	Total	July 2011						
		31	30	29	28	27	26	25
Surface Water	57	0	0	5	24	12	12	4
Private Well	0	0	0	0	0	0	0	0
Groundwater	0	0	0	0	0	0	0	0
Sediment	2	0	0	0	0	0	2	0
Soil	66	0	3	2	8	15	16	22
Air (Odor Complaint)	2	0	1	1	0	0	0	0

Table 10 – Wildlife

Location/Media	Total	July 2011						
		31	30	29	28	27	26	25
Turtles in Captivity	75	75	70	65	68	64	63	56
Turtles Captured Oiled– Field Cleaned	43	11	6	5	5	1	7	8
Turtles Captured Oiled– Admitted to Wildlife Center	37	3	5	7	9	1	7	5
Turtles Captured – Un-oiled and Field Released	164	24	26	20	34	9	32	19
Turtles Released from Captivity	6	0	0	0	6	0	0	0

Table 11 – Public Inquiries Received by EPA and Enbridge

Location/Media	Total	July 2011						
		31	30	29	28	27	26	25
Marshall Community Center	56	0	0	4	8	20	12	12
Oil Spill Public Information Hotline	30	0	0	6	1	5	6	12
Website	2	0	0	0	0	0	1	1
Total Public Inquiries	88	0	0	10	9	25	19	25

Table 12 – Landowner Environmental Issues (as of 7/31/2011)

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
0	12	0

Table 13 - Financial Summary

Item	Expended (Cumulative) as of 7/25/2011)
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	\$ 14,203,596
T032-Sampling	\$ 183,597
T037-Doc Support	\$ 907,395
Total START Contractor	\$ 15,294,588
Response Contractor Sub-Totals	\$ 19,620,197
EPA Funded Costs: Total EPA Costs	\$ 5,043,040
Pollution Removal Funding Agreements – Total Other Agencies	\$ 1,823,682
Sub-Totals	\$ 26,486,919
Indirect Cost (16.00%)	\$ 4,237,907
Total Est. Oil Spill Cost	\$ 30,724,826
Oil Spill Ceiling Authorized by USCG	\$ 34,200,000
Oil Spill Ceiling Available Balance	\$ 3,475,174

Table 14 - Personnel On-Site

Agency/Entity	July 2011						
	31	30	29	28	27	26	25
U.S. EPA	1	5	6	8	9	8	7
START	6	38	42	48	50	45	41
MDEQ	0	1	4	6	4	4	4
MDEQ Contractors	0	4	7	8	8	8	8
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	0	0	0	0
Village of Augusta	0	0	0	1	0	0	0
Kalamazoo County Public Health	0	0	0	1	0	0	0
Kalamazoo Sheriff	0	0	0	1	0	0	0
MDCH	0	0	0	1	0	0	0
USGS	0	0	0	0	0	0	0
Michigan State Police EMD	0	0	0	0	0	0	0
Enbridge – Operations	30	72	156	163	158	163	144
Enbridge – Field	83	446	485	481	499	478	470
Total	119	566	700	721	728	706	674

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