

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #144



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

US EPA ARCHIVE DOCUMENT

Installation of Sediment Trap at MP 10.75



To: Susan Hedman, U.S. EPA Regional Administrator
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 Deb Cardiff, Kalamazoo County
 Lt. Paul Baker, Kalamazoo County Sheriff's Office
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 Durk Dunham, Calhoun County Emergency Management
 Scott Corbin, Allegan County Emergency Management
 Mike McKenzie, City of Battle Creek
 Cheryl Vosburg, City of Marshall
 Christine Kosmowski, City of Battle Creek

From: Ralph Dollhopf, U.S. EPA, Federal On-Scene Coordinator
Date: 05/09/2012
Reporting/Operational Period: 0700 hours 04/26/2012 through 0700 hours 05/03/2012

1. Site Data

Site Number:	Z5JS	Response Type:	Emergency
Response Authority:	OPA	Incident Category:	Removal Action
Response Lead:	PRP	NPL Status:	Non-NPL
Mobilization Date:	7/26/2010	Start Date:	7/26/2010
FPN#:	E10527		

2. Operations Section

- The organizational response structure consisted of the following Branches: 1) Overbank; 2) Submerged Oil; 3) Containment; 4) River Opening; 5) Kalamazoo River System; 7) Air Operations; and 8) Waste Management.

2.1 Overbank Branch

2.1.1 OSCAR Group

- The Outstanding Sites Characterization and Reconciliation (OSCAR) Group completed reviewing the Spring 2012 Shoreline and Overbank Reassessment Technique (SORT) results. Out of the total of 98 sites which were reviewed, 36 sites were transferred to the Submerged Oil Branch, 13 sites were transferred the Containment Branch, 1 and site was transferred to the Kalamazoo River Branch. Additionally, 48 sites were determined to be consistent with the EPA Order and are up for the MDEQ Part 201 Program consideration.

2.1.2 Overbank Science Group

- Review of close out reports for OB 13.40 RDB, OB 8.97 Island, OB 9.10 Island, and OB 10.37 RDB was completed.

- Operations Section Chiefs completed the final site inspections and sign off for the above referenced sites, as well as OB 5.92 RDB and OB 14.97 I.

2.1.3 Overbank Compliance Group

- No activities were conducted during this reporting period.

2.1.4 Overbank Recovery Group

- No activities were conducted during the reporting period.

2.1.5 Overbank Monitoring Group

- Enbridge continued to maintain an odor response team; however, no odor complaints were received during this operational period.
- Air monitoring and sampling information is included in Tables 1 and 2.

2.2 Submerged Oil Branch

2.2.1 Submerged Oil Assessment Group

- The Group developed the strategy and sequencing for the Spring 2012 Submerged Oil reassessment.

2.2.2 Submerged Oil Science Group

- Enbridge's re-submittal of the Morrow Lake Monitoring, Assessment, and Management Plan is currently under review.
- Results of the chemical fingerprinting analysis from the Rock Tenn oil sheen and globule samples are pending.
- Enbridge's Hydrodynamic Model Report containing baseline model calibration results (e.g. riverine and floodplain grids) and various baseline scenario results is currently under review by U.S. EPA.

2.2.3 Submerged Oil Compliance Group

- The Group developed a permit application for Toolbox Agitation for potential recovery at various locations throughout the Kalamazoo River system.

2.2.4 Submerged Oil Recovery Group

- No activities were conducted during this operational period.

2.2.5 Submerged Oil Monitoring Group

- One crew continued daily submerged oil poling in the Morrow Lake Fan and Morrow Lake Delta to monitor potential submerged oil movement.

2.3 Containment Branch

2.3.1 *Containment Science Group*

- The group is utilizing the hydrodynamic model to evaluate which of the 14 sediment trap locations included in the MDEQ permit application will require installation of active sediment containment structures.
- The Group continued to develop strategies for evaluating and enhancing the planned sediment traps.

2.3.2 *Containment Compliance Group*

- Enbridge submitted a permit application for sediment trap structure placement at 14 locations based on HEC-RAS modeling requirements set forth by the MDEQ.

2.3.3 *Containment Recovery Group*

- Crews completed the installation of the sediment traps at MP 19.25, MP 14.75, and MP 10.75 during this operational period. Installation of the sediment trap at MP 36.01 is pending a signed access agreement with the land owner.
- Crews continued to maintain 1,950 feet of surface hard boom at 11 protective containment sites, and 3,475 feet of surface hard boom at 3 control points. Teams removed debris accumulated within the boomed areas and recorded observations and estimates of surface area of accumulated petroleum sheen at the control points.

2.3.4 *Containment Monitoring Group*

- Water level gauges were monitored at multiple locations along the Kalamazoo River, Morrow Lake Delta, and Morrow Lake. In addition, daily water and sediment temperature readings were collected at 10 locations.
- Two crews monitored control points, protective containment points, and tracked sheen observations in Talmadge Creek and the Kalamazoo River.
- Enbridge's re-submittal of the Sediment Trap Monitoring and Maintenance Plan is currently under review.

2.4 River Opening Branch

2.4.1 *River Opening Media Group*

- Media relations personnel continued to ensure appropriate posting of kiosk materials and river signage in River Opening Segment 1 (Perrin Dam to Saylor's Landing).

2.4.2 *River Opening Assessment Group*

- The Group conducted review of SORT data to evaluate potential remaining impacts in Segments 3 – 8 and 10.

2.4.3 River Opening Implementation Group

- Maintenance activities, acquisition, and staging of buoys and signage continued.

2.4.4 River Opening Monitoring & Security Group

- Security personnel were stationed at the Perrin Dam and Saylor's Landing access locations for 12 hours per day through May 2, 2012. Enbridge conducted routine monitoring of buoys and signage in River Opening Segment 1.

2.5 Kalamazoo River System Branch

2.5.1 Talmadge Creek/Kalamazoo River Remedial Investigation Group

- Implementation of the Kalamazoo River Remedial Investigation (RI) Work Plan for Enbridge-owned properties between MP 5.8 to Morrow Lake Dam continued.

2.5.2 Kalamazoo River Compliance Group

- Restoration and stabilization activities were conducted at various Kalamazoo River Bank Erosion Assessment (KRBEA) sites.

2.5.3 Kalamazoo River Remedial Action Group

- No activities were conducted during the reporting period.

2.5.4 Talmadge Creek/Kalamazoo River Monitoring Group

- Monitoring of erosion control devices continued.
- The Spring 2012 Talmadge Creek Monitoring and Maintenance Plan is under review by U.S. EPA.
- Monitoring of the confluence continued using a remote web-based camera and remote turbidity monitors. Additional monitoring was conducted according to the Spring 2012 Talmadge Creek Monitoring and Maintenance Plan.

2.7 Air Operations Branch

- One over-flight was conducted for situational awareness during this reporting period.
- Photographs were taken during the over-flights for presentation during Operations, Command and General Staff, and Multi-Agency Coordination (MAC) Group meetings.

2.8 Waste Management Branch

2.8.1 Decontamination Group

- A summary of equipment and boom decontaminated during this reporting period is presented in Table 3.

2.8.2 Transportation and Disposal Group

- Enbridge continued to reduce the footprint of Frac-Tank City, due to a decrease in the amount of waste being generated as a result of cleanup activities. Crews consolidated materials, continued gravel removal, and conducted restoration of disturbed areas.
- Contaminated soil, water, and debris continue to be removed to staging areas. Samples are collected for oil recovery determination prior to off-site disposal.
- The total amount of recovered oil from the inception of the response has been estimated using actual waste stream volumes, analytical data, and physical parameters of oil-containing media. A summary of the estimated volume of recovered oil is presented in Table 8.
- Quantities of oil and debris shipped off-site during the reporting period are presented in Tables 4 through 7.

2.8.3 Waste Management Characterization Group

- Waste management characterization, manifesting, and coordination of transportation and disposal continued according to approved plans.

3. Planning

3.1 Situation Unit

- Situation Unit personnel observed and documented progress in operational areas, and continued to assess areas of interest including locations of tar flecks, oil globules, oil sheen, and turbidity.
- Daily situation photo logs were prepared and distributed to project participants.

3.1.1 GIS Specialists

- GIS personnel continued to support operations with the generation of site maps.

3.2 Environmental Unit

- U.S. EPA continued coordination with United States Geological Survey (USGS) regarding the Kalamazoo River geomorphology evaluation and the impact on strategy and tactics for future oil recovery efforts.

3.3 Documentation Unit

- Documentation Unit personnel continued organizing and archiving electronic and paper files.

3.4 Resource Unit

- Personnel continued to produce Incident Action Plans (IAPs), support the planning efforts of operations, and provide information to Logistics personnel in order to properly prepare and procure resources.

4. *Command*

4.1 Safety Officers

- Safety personnel continued conducting work-site safety inspections and implementing the plan for integration of public safety and worker safety on the Kalamazoo River.
- One minor safety incident occurred during the reporting period. An Enbridge worker was stung by a bee while performing restoration work. First aid was administered and the employee returned to work.

4.2 Public Information

- The number of public inquires reported by Enbridge for this period is presented in Table 9.

5. *Landowner Environmental Issues*

- Landowner environmental issues, as reported by Enbridge, are presented in Table 10.

6. *Finance*

- The current National Pollution Funds Center (NPFCC) ceiling is \$49.7 Million. Approximately 85.0% of the ceiling has been spent through April 30, 2012. The latest average 7-day burn rate was \$32,838. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 11.

7. *Scientific Support Coordination Group (SSCG)*

- The Eco-Toxicity Subgroup has completed an interim version of a Net Environmental Benefits Analysis (NEBA) to assess the harm and benefits accompanying oil recovery efforts. This interim document was integrated with the 2012 Tactical Plan for submerged oil recovery. The integration of the two documents will be re-evaluated after the Spring 2012 submerged oil reassessment.
- The U.S. EPA's Environmental Response Team (ERT) completed studies with 14 and 28 day sample incubation periods that provide evidence of biodegradation of submerged oil. A report summarizing the findings is being prepared.
- Interpretation of data from the oil fingerprinting samples analyzed by the off-site laboratory continues.

8. *Participating Entities*

- Entities participating in the MAC include:
 - U.S. Environmental Protection Agency
 - Michigan Department of Environmental Quality
 - Michigan Department of Community Health
 - City of Battle Creek
 - City of Marshall
 - Allegan County Emergency Management
 - Calhoun County Public Health Department
 - Calhoun County Emergency Management

- Kalamazoo County Health and Community Services 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 12.

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/>.

11. Clean-up Progress Metrics

Table 1 – Real Time Air Monitoring Counts Performed by Enbridge

Monitoring Location	Total	May 2012		April 2012				
		2	1	30	29	28	27	26
Odor Response	0	0	0	0	0	0	0	0
Work Area	9	0	0	0	0	1	4	4

Table 2 – Samples Collected By Enbridge

Sample Type	Total	May 2012		April 2012				
		2	1	30	29	28	27	26
Surface Water	4	1	1	0	0	0	2	0
Private Well	0	0	0	0	0	0	0	0
Groundwater	3	0	1	0	0	0	0	2
Sediment	10	4	1	1	0	0	4	0
Soil	78	15	18	14	0	0	17	14
Dewatering	0	0	0	0	0	0	0	0
Air (Odor Complaint)	0	0	0	0	0	0	0	0
Air (Work Area)	0	0	0	0	0	0	0	0

Table 3 - Equipment Decontamination

Location/Media	Total	May 2012		April 2012				
		2	1	30	29	28	27	26
Frac Tanks	0	0	0	0	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
Jon Boats	2	0	0	0	0	0	0	0
Air Boats	0	0	0	0	0	0	0	0
Vehicles	0	0	0	0	0	0	0	0
Boom (linear ft)	1000	600	400	0	0	0	0	0
Miscellaneous Items	6	2	4	0	0	0	0	0

Table 4 - Soil and Debris Shipped Off Site (as of 5/3/2012)

Waste Stream	Cumulative	Disposal Facility
Haz Soil (yd ³)	19,644	Envirosafe (Oregon, OH)
Non-Haz Soil & Debris (yd ³) (Excluding Ceresco Dredge)	75,883	SET/C&C
Non-Haz Soil & Debris (yd ³) (Excluding Ceresco Dredge)	64,815	Westside Recycling (Three Rivers, MI)
Non-Haz Soil (yd ³) (Ceresco Dredge Only)	5,562	EQ/Republic (Marshall, MI)
Haz Debris (yd ³)	12,075	EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)
Non-Haz Household Debris (ton)	1,663	SET/C&C
Non-Haz Impacted Debris (ton)	6,756	

Shaded items are discontinued waste streams.

Table 5 – Oil/Water Collected by Location (as of 5/3/2012)

Location	Cumulative (gallons)
Division A	5,356,315
Division B	5,111,479
Division C	2,096,998
Division D	121,106
Division E	52,631
Decontamination	2,370,969
Site A	322,924
Other Locations*	2,066,901
Subtotal	17,499,323
Sludge**	474,215
Total Oil/Water	17,025,108

* 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 6 - Liquid Shipped Off-Site (as of 5/3/2012)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	1,143,280
Non-Haz Water	Dynecol	Detroit, MI	981,792
Non-Haz Water	Liquid Industrial Waste	Holland, MI	1,306,157
Non-Haz Water	Plummer	Kentwood, MI	360,892
<i>Hazardous Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	<i>3,594,579</i>
<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			17,025,078

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 7 - Oil/Water Remaining On-Site (as of 5/3/2012)

Item	Cumulative (gallons)
Oil/Water Collected	17,025,108
Oil/Water Shipped Off-Site	17,025,078
Total Oil/Water Remaining On-Site	30

Table 8 – Estimated Recovered Oil (as of 4/30/2012)

Waste Stream Containing Recovered Oil	Destination Company	Destination Location	Estimated Oil Volume in Waste Stream (gallons)
Soil - (Impacted Soil & Debris)	C&C Landfill	Marshall, MI	13,597
Soil - (Impacted Soil & Debris)	Envirosafe/ Westside RDF	Oregon, OH	278,665
Geotube Sediment - (Impacted Sediment)	Envirosafe/ Westside RDF	Oregon, OH	1,298
Debris - (Roll Off Boxes with Impacted Sorbents, boom, pads, plastic, PPE, vegetation, and biomass)	EQ Michigan	Belleville, MI	33,781
Frac Tank City - Influent to Carbon Filtration System	C&C Landfill	Marshall, MI	8,109
Frac Tank City - Water	Dynecol	Detroit, MI	46,175
	Liquid Industrial Waste Services, Inc.	Kentwood, MI	
	Plummers Env Inc.	Holland, MI	
	BC POTW	Battle Creek, MI	
Ceresco Pretreatment System	C&C Landfill	Marshall, MI	90
A-1 Pretreatment System	C&C Landfill	Marshall, MI	9
Oily Water - RPP	Enbridge Facility	Griffith, IN	766,288
Total	-	-	1,148,012

Shaded items represent discontinued waste streams

Table 9 – Public Inquiries Received by U.S. EPA and Enbridge

Location/Media	Total	May 2012		April 2012				
		2	1	30	29	28	27	26
Marshall Community Center	9	4	2	0	0	0	1	2
Oil Spill Public Information Hotline	7	3	3	1	0	0	0	0
Website	0	0	0	0	0	0	0	0
Total Public Inquiries	16	7	5	1	0	0	1	2

Table 10 – Landowner Environmental Issues (as of 5/3/2012)

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
0	5	0

Table 11 - Financial Summary

Item	Expended (Cumulative) (as of 4/30/2012)
ERRS Contractors	
EQM (EPS50802) T057	\$ 1,199,522
T060	\$ 213,636
LATA (EPS50804) T019	\$ 1,161,082
ER LLC (EPS50905) T040	\$ <u>683,330</u>
Total ERRS Contractors	\$ 3,257,571
Other Contractors	
Lockheed Martin (EPW09031) – TAGA Support	\$ 184,971
T&T Bisso (EPA:HS800008)	\$ <u>882,087</u>
Total Other Contractors	\$ 1,067,058
START Contractor – WESTON (EPS50604)	
T030-Response	\$ 23,959,851
T032-Sampling	\$ 183,567
T037-Doc Support	\$ <u>1,544,531</u>
Total START Contractor	\$ 25,687,949
Response Contractor Sub-Totals	\$ 30,012,578
U.S. EPA Funded Costs: Total U.S. EPA Costs	\$ 5,878,921
Pollution Removal Funding Agreements – Total Other Agencies	\$ 1,622,624
Indirect Cost (16.00%)	\$ 3,598,252
Indirect Cost (8.36%)	\$ 1,126,175
Total Est. Oil Spill Cost	\$ 42,238,550
Oil Spill Ceiling Authorized by USCG	\$ 49,700,000
Oil Spill Ceiling Available Balance	\$ 7,461,450

Shaded items are discontinued

Table 12 - Personnel On-Site

Agency/Entity	May 2012		April 2012				
	2	1	30	29	28	27	26
U.S. EPA	2	2	2	0	1	1	2
START	19	19	17	0	10	18	20
MDEQ	5	5	5	0	0	5	6
MDEQ Contractors	5	5	5	0	0	5	6
Calhoun County Public Health	0	0	0	0	0	0	2
Calhoun County (CC) EM	0	0	0	0	0	0	1
City of Battle Creek	0	0	0	0	0	0	1
City of Marshall	0	0	0	0	0	0	1
Village of Augusta	0	0	0	0	0	0	0
Kalamazoo County Public Health	0	0	0	0	0	0	1
Kalamazoo Sheriff	0	0	0	0	0	0	0
MDCH	0	0	0	0	0	0	1
USGS	1	1	0	0	0	0	0
Michigan State Police EMD	0	0	0	0	0	0	0
Allegan County Emergency Management	0	0	0	0	0	0	0
Michigan Department of Natural Resources	0	0	0	0	0	0	0
Enbridge – Operations Center	44	49	44	0	2	43	44
Enbridge – Kalamazoo River	32	31	36	0	8	32	37
Enbridge – Containment	12	13	11	0	4	16	17
Enbridge – Submerged Oil	2	2	2	0	0	2	2
Enbridge – Overbank	5	5	7	0	2	7	5
Enbridge – River Opening	1	1	1	1	1	1	1
Enbridge – Waste Management	25	20	19	0	2	20	20
Enbridge – Security & Flaggers	5	5	5	4	5	5	5
Enbridge – Communications Center	4	3	4	0	0	3	3
Total	162	161	158	5	35	158	175

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