

US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #177**



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



Sediment Trap Bathymetry Operations (03/27/2013)

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Cheryl Vosburg, City of Marshall
Christine Kosmowski, Calhoun County Water Resources Commissioner

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

Date: 04/18/2013

Reporting/Operational Period: 0700 hours 03/25/2013 through 0700 hours 04/08/2013

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) Submerged Oil; 2) Containment; and 3) Waste Management.

2.1 Submerged Oil Branch

2.1.1 Submerged Oil Science Group

- Quarterly Sediment Trap Bathymetry began on March 26, 2013, pursuant to Sediment Trap Monitoring and Maintenance Plan.
- On March 25 and 26, 2013, Cylindrical Sampling Device (CSD) sampling was conducted.
- Morrow Lake Monitoring (poling) resumed on April 8, 2013, pursuant to the 2012 Morrow Lake Delta and Morrow Lake Monitoring and Management Work Plan.
- From March 26 – 28, 2013, the US Geological Survey (USGS) installed stage recorders to monitor and record river elevation and temperature at MP 5.85 RDB, MP 14.85 RDB, MP 36.50 LDB, MP 37.80 Island, and MP 38.55 RDB.

2.1.2 Submerged Oil Compliance Group

- No activities were conducted during this operational period.

2.2 Containment Branch

2.2.1 Containment Compliance Group

- No activities were conducted during this operational period.

2.2.2 Containment Recovery Group

- Pursuant to the Emerging Oil Management Program (EOMP), Enbridge and U.S. EPA continued to track the location, response, and sheen differentiation test results (when necessary) of each identified location of sheen and/or oil globules in the main channel and overbank areas. Observations of sheen and/or oil globules were reported back to Operations Section Chiefs for response, if appropriate. No sheen tests were conducted during this operational period. Refer to Table 1.
- Management of oil sheen and/or globules continued. A sheen response was conducted on March 26, 2013 at the Ceresco Dam impoundment. Refer to Table 2.

2.4 Waste Management Branch

- Cumulative quantities of soil, debris, and liquid shipped off-site during the response are presented in Tables 3 and 4.
- The cumulative quantity of recovered oil 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 5.

3. Planning

3.1 Situation Unit

- Situation Unit personnel conducted field observations and overflights to document all operational areas, including the locations and integrity of CSDs, buoys and sediment trap structures; and locations of oil sheen and/or globules. During this operational period, overflights were conducted on March 28 and April 4, 2013. See Section 2.2.2 for additional details regarding the EOMP.
- During this operational period, oil sheen and/or globules were observed at:
 - Ceresco Dam Impoundment at various locations between MP 5.10 RDB and MP 5.89 RDB on March 25 – 27, March 29 – 30; and April 2 – 6;
 - C3.2 Boat Launch (MP 10 LDB) on March 25 – 26;
 - MP 11.5 LDB on March 28;
 - MP 15.25 South Mill Pond on March 25 – 26; March 29 – 30; and April 6;
 - MP 21.5 RDB on March 30 and April 6;
 - E 2 Boat Launch (MP 30 LDB) on April 6; and
 - MP 36.25 LDB on April 1 and 6.
- Photographs were taken and distributed to project participants during the weekly Consolidated ICS Meetings.

3.2 Environmental Unit

- US EPA, USGS, and the US Army Corps of Engineers resumed weekly meetings to discuss upcoming Hydrodynamic Model (HDM) activities.
- On April 4, 2013, Enbridge submitted the 2013 Consolidated Work Plan. The plan is currently in review with US EPA.
- Enbridge's Quantification of Submerged Oil Report (March 21, 2013) is currently in review with US EPA.

3.3 Documentation Unit

- The Documentation Unit continued organizing and archiving electronic and paper files for post-incident use.

3.4 Resource Unit

- The Resources Unit continued to support production of the Incident Action Plan (IAP), supported the planning efforts of operations, and provided information to Logistics personnel in order to properly prepare and procure resources.

4. Command

4.1 Safety Officers

- Enbridge safety personnel continued conducting work-site safety inspections and implementing the plan for integration of public safety and worker safety on the Kalamazoo River. Navigational stakes and markers were reinstalled throughout the river beginning on March 22, 2013.

4.2 Public Information

- The number of public inquiries reported by Enbridge for this period is presented in Table 7.

5. Finance

- The current National Pollution Funds Center (NPFC) ceiling is \$56.25 Million. Approximately 91.4% of the ceiling has been spent through April 7, 2013. The latest average 14-day burn rate was \$23,639 per day. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 8.

6. Scientific Support Coordination Group (SSCG)

- No activities were conducted during this operational period.

7. 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
 - Calhoun County Water Resources Commission
 - Kalamazoo County Health and Community Services Department
 - Kalamazoo County Sheriff
 - Enbridge (Responsible Party)
- For a list of cooperating and assisting agencies, see SITREP #51 (Sections 3.2 and 3.3).

8. Personnel On-Site

- Staffing numbers for the entities and agencies active in the response are presented in Table 9.

9. Source of Additional Information

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

10. Clean-up Progress Metrics

Table 1 – Sheen Differentiation Test Results

| Description | Total | April 2013 | | | | | | | March 2013 | | | | | | |
|------------------------------------|-------|------------|---|---|---|---|---|---|------------|----|----|----|----|----|----|
| | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 31 | 30 | 29 | 28 | 27 | 26 | 25 |
| Sheen Tests Performed | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Results Indicated Petroleum Source | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Results Indicated Biogenic Source | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Inconclusive Test Results | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2 – Sheen Responses

| Total | April 2013 | | | | | | | March 2013 | | | | | | |
|-------|------------|---|---|---|---|---|---|------------|----|----|----|----|----|----|
| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 31 | 30 | 29 | 28 | 27 | 26 | 25 |
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |

Table 3 - Soil and Debris Shipped Off Site (as of 4/7/2013)

| Waste Stream | Cumulative | Disposal Facility |
|--|------------|--|
| Haz Soil (yd ³) | 19,644 | Envirosafe (Oregon, OH) |
| Non-Haz Soil (yd ³) (Excluding Ceresco Dredge) | 78,112 | 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) | 1,805 | SET/C&C |
| Non-Haz Impacted Debris (ton) | 7,162 | |

Shaded items are discontinued waste streams.

Table 4 - Liquid Shipped Off-Site (as of 4/7/2013)

| Stream | Destination Company | Destination Location | Cumulative Volume (gallons)† |
|------------------------------|---------------------------------|-----------------------------|-------------------------------------|
| Non-Haz Water | Liquid Industrial Waste | Holland, MI | 1,376,757 |
| Non-Haz Water | Plummer | Kentwood, MI | 611,726 |
| <i>Non-Haz Water</i> | <i>Dynecol</i> | <i>Detroit, MI</i> | <i>981,792</i> |
| <i>Non-Haz Water</i> | <i>Battle Creek POTW</i> | <i>Battle Creek, MI</i> | <i>1,143,280</i> |
| <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 | | | 17,346,512 |

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.

Table 5 – Estimated Recovered Oil (as of 4/8/2013)

| 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 | 14,034 |
| | Envirosafe/ Westside RDF | Oregon, OH | 278,665 |
| <i>Geotube Sediment - (Impacted Sediment)</i> | <i>Envirosafe/ Westside RDF</i> | <i>Oregon, OH</i> | <i>1,298</i> |
| Debris - (Roll Off Boxes with Impacted Sorbents, boom, pads, plastic, PPE, vegetation, and biomass) | EQ Michigan | Belleville, MI | 34,510 |
| <i>Frac Tank City - Influent to Carbon Filtration System</i> | <i>C&C Landfill</i> | <i>Marshall, MI</i> | <i>8,109</i> |
| Frac Tank City - Water | Dynecol | Detroit, MI | 46,176 |
| | Liquid Industrial Waste Services, Inc. | Kentwood, MI | |
| | Plummers Env. Inc. | Holland, MI | |
| | BC POTW | Battle Creek, MI | |
| <i>Ceresco Pretreatment System</i> | <i>C&C Landfill</i> | <i>Marshall, MI</i> | <i>90</i> |
| <i>A-1 Pretreatment System</i> | <i>C&C Landfill</i> | <i>Marshall, MI</i> | <i>9</i> |
| Oily Water - RPP | Enbridge Facility | Griffith, IN | 766,288 |
| Total | | | 1,149,180 |

Shaded and italicized items represent discontinued waste streams.

Table 6 – Samples Collected By Enbridge

| Sample Type | Total | April 2013 | | | | | | | March 2013 | | | | | | |
|---------------|-------|------------|---|----|----|----|----|---|------------|----|----|----|----|----|----|
| | | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 31 | 30 | 29 | 28 | 27 | 26 | 25 |
| Surface Water | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Private Well | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Groundwater | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Sediment | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 18 | 38 |
| Soil | 71 | 0 | 0 | 10 | 10 | 10 | 11 | 0 | 0 | 0 | 0 | 6 | 9 | 8 | 7 |
| Product | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dewatering | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sheen | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 7 – Public Inquiries Received by Enbridge

| Location/Med | April 2013 | | | | | | | March 2013 | | | | | | |
|--------------------------------------|------------|----------|----------|----------|----------|----------|----------|------------|----------|----------|----------|----------|----------|----------|
| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 31 | 30 | 29 | 28 | 27 | 26 | 25 |
| Marshall Community Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oil Spill Public Information Hotline | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Website | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Public Inquiries | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 8 - Financial Summary (as of 4/7/2013)

| Item | Expended (Cumulative) |
|---|-----------------------|
| ERRS Contractors | |
| <i>EQM (EPS50802)</i> T057 | \$ 1,199,522 |
| T060 | \$ 213,636 |
| <i>LATA (EPS50804)</i> T019 | \$ 1,161,082 |
| <i>ER LLC (EPS50905)</i> T040 | \$ 683,330 |
| Total ERRS Contractors | \$ 3,257,571 |
| Other Contractors | |
| <i>Lockheed Martin (EPW09031) – TAGA Support</i> | \$ 198,379 |
| <i>Lockheed Martin (EPW09031) -Biodegradability Study</i> | 31,554 |
| <i>T&T Bisso (EPA:HS800008)</i> | \$ 882,087 |
| Total Other Contractors | \$ 1,112,020 |
| START Contractor – WESTON (EPS50604) | |
| T030-Response | \$ 30,555,349 |
| Community Relations | \$ 114,563 |
| T032-Sampling | \$ 184,992 |
| T037-Doc Support | 1,884,233 |
| Total START Contractor | \$ 32,739,137 |
| Response Contractor Sub-Totals | \$ 37,108,728 |
| U.S. EPA Funded Costs: Total U.S. EPA Costs | \$ 6,315,770 |
| Pollution Removal Funding Agreements | |
| Total Other Agencies | \$ 2,797,081 |
| Indirect Cost (16.00%) | \$ 3,598,252 |
| Indirect Cost (8.36%)-payments after 10/1/2011 | \$ 1,310,859 |
| Indirect Cost (10.15%)-payments after 10/1/2012 | \$ 537,879 |
| Cost Documentation/Billing Admin Fee (2.93%)* | \$ 389,070 |
| Total Est. Oil Spill Cost | \$ 51,389,620 |
| Oil Spill Ceiling Authorized by USCG | \$ 56,250,000 |
| Oil Spill Ceiling Available Balance | \$ 4,860,380 |

Shaded and *italicized* items are discontinued

* Effective on EPA Enbridge costs billed to USCG for bills issued after 6/5/12.

Table 9 - Personnel On-Site*

| Agency/Entity | April 2013 | | | | | | | March 2013 | | | | | | |
|-----------------------------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------|----------|-----------|-----------|-----------|-----------|-----------|
| | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 31 | 30 | 29 | 28 | 27 | 26 | 25 |
| U.S. EPA | 0 | 0 | 2 | 3 | 3 | 2 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 3 |
| START | 0 | 1 | 13 | 14 | 13 | 13 | 5 | 0 | 2 | 4 | 11 | 14 | 14 | 13 |
| MDEQ | 0 | 0 | 4 | 5 | 5 | 4 | 2 | 0 | 0 | 3 | 4 | 4 | 2 | 3 |
| MDEQ Contractors | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 2 | 2 | 3 | 3 | 2 |
| Other Agencies | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 |
| Calhoun County (CC) Public Health | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CC EM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CC Water Resources Commission | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| City of Battle Creek | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| City of Marshall | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kalamazoo County Public Health | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kalamazoo County Sheriff | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MDEQ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MDCH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Michigan State Police EMD | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Allegan County Emergency Mgmt. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MDNR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Enbridge – Kalamazoo River* | 0 | 0 | 4 | 5 | 5 | 4 | 0 | 0 | 0 | 0 | 5 | 8 | 4 | 4 |
| Enbridge – Containment* | 0 | 2 | 2 | 2 | 2 | 2 | 2 | 0 | 2 | 2 | 0 | 0 | 0 | 4 |
| Enbridge – Submerged Oil* | 0 | 0 | 14 | 14 | 14 | 13 | 0 | 0 | 0 | 0 | 10 | 9 | 13 | 8 |
| Enbridge – Waste Management* | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| Enbridge – Marshall Office* | 0 | 7 | 38 | 47 | 49 | 48 | 17 | 0 | 1 | 14 | 45 | 51 | 48 | 47 |
| Total | 0 | 10 | 80 | 93 | 95 | 90 | 26 | 0 | 5 | 28 | 82 | 94 | 89 | 85 |

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