

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #170



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



Ceresco Dam Control Point Boom Removal

US EPA ARCHIVE DOCUMENT

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Christine Kosmowski, Calhoun County Water Resources Commissioner

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

Date: 12/28/2012

Reporting/Operational Period: 0700 hours 12/10/2012 through 0700 hours 12/24/2012

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) Submerged Oil; 2) Containment; 3) Kalamazoo River System; and 4) Waste Management.

2.1 Submerged Oil Branch

2.1.1 Submerged Oil Science Group

- Teams continued to conduct quarterly sediment trap bathymetry monitoring utilizing a total station system, pursuant to the Sediment Trap Monitoring and Maintenance Plan.
- Teams conducted post removal bathymetry at the former E4.0 containment system area in the Morrow Lake Delta.
- Monitoring of Phase I and II sediment traps, including cylindrical sampling device (CSD) sampling, was completed during this operational period, pursuant to the Sediment Trap Monitoring and Maintenance Plan.
- Enbridge partially completed seasonal poling activities downstream of Morrow Lake Dam between December 10 and 13, 2012, pursuant to the 2012 Consolidated Work Plan. The minimum water temperature of 60 degrees F did not exist during the poling, however Enbridge conducted the poling at EPA's request despite the water temperatures.

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. See Table 1 for information regarding the total number of sheen differentiation tests conducted, and the results of those tests.
- Management of oil sheen and/or globules continued with sweep boats conducting responses as determined necessary. During this reporting period, sheen responses were conducted at the Ceresco impoundment, and the north and south coves of Morrow Lake. Enbridge also continued routine sweep boat recovery activities at Ceresco Dam (MP 5.25 to Ceresco Control Point), MP 21.5 to MP 28.25, and the Morrow Lake Delta/Morrow Lake. See Table 2 for information regarding the total number of responses to oil sheen and/or globules by date.
- On December 20, 2012, the Ceresco Control Point boom was removed for the winter season, pursuant to the U.S. EPA authorization on December 20, 2012.
- Teams performed weekly visual inspections of the 5 currently-installed Phase I and II enhanced sediment trap structure locations.

2.3 Kalamazoo River System Branch

2.3.1 Talmadge Creek/Kalamazoo River Remedial Investigation Group

- Enbridge continued Kalamazoo River remedial investigation activities, including hydrocarbon fingerprint evaluation of overbank soils and collection of soil samples for background metals analyses.

2.3.2 Kalamazoo River Compliance Group

- No activities were conducted during this operational period.

2.3.3 Kalamazoo River Remedial Action Group

- No activities were conducted during this operational period.

2.3.4 Talmadge Creek/Kalamazoo River Monitoring Group

- Throughout the operational period, teams conducted monthly surface water monitoring, quarterly sediment monitoring, quarterly and semi-annual drinking water sampling, and quarterly groundwater sampling at the Village of Augusta and the City of Kalamazoo Well Field No. 39.
- Water level and flow rate information was downloaded daily from three USGS gauging stations at Marshall, Battle Creek, and Comstock.
- Collection of daily water and sediment temperature readings continued at locations where operational tasks were being performed.

2.5 Waste Management Branch

- Quantities of soil, debris, and liquid shipped off-site during the reporting period are presented in Tables 3 and 4.
- 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 5.

3. Planning

3.1 Situation Unit

- Situation Unit personnel observed and documented progress in operational areas, and documented locations of oil sheen and/or globules through field observations and weekly overflights. Personnel reported observations of oil sheen and/or globules to Operations for follow-up testing and/or response, consistent with the EOMP. See Section 2.2.2 for additional details regarding the EOMP.
- Specific observations during this period include the continued observations of oil sheen and globules at the Ceresco Dam impoundment from MP 4.5 to the Ceresco Control Point, the north and south coves and the main channel of the Morrow Lake fan, and the Morrow Lake Delta.
- Situation Unit personnel continued documenting occurrences of ice formation throughout the river system.
- Photographs were taken and distributed to project participants during the weekly Consolidated ICS Meetings.

3.2 Environmental Unit

- U.S. EPA continued to track the progress of the Oil Quantification process by reviewing core logs submitted by Enbridge and tracking the samples submitted for laboratory analysis.
- Review of bathymetry data submitted by Enbridge from the E4.0 Containment System and quarterly sediment trap bathymetry tasks continued.
- Review of field data collected from the Cylindrical Sampling Devices (CSDs) as part of the monthly sediment trap monitoring and maintenance program continued.
- Enbridge and MDEQ continued to review and track RI progress.

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

- Safety personnel continued conducting work-site safety inspections and implementing the plan for integration of public safety and worker safety on the Kalamazoo River.

5. Finance

- The current National Pollution Funds Center (NPFC) ceiling is \$56.25 Million. Approximately 87.8% of the ceiling has been spent through December 17, 2012. The latest average 7-day burn rate was \$28,236 per day. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 7.

6. Scientific Support Coordination Group (SSCG)

- SSCG and Enbridge forensic chemists continued regular conference calls to examine the oil chemical fingerprinting results and compare procedures for applying oil fingerprinting results to measuring Line 6B oil remaining in the Kalamazoo River sediments.

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
 - 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 8.

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 | December 2012 | | | | | | | | | | | | | |
|------------------------------------|-------|---------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
| Sheen Tests Performed | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 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 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Inconclusive Test Results | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 2 – Sheen Responses

| Total | December 2012 | | | | | | | | | | | | | |
|-------|---------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
| 8 | 0 | 0 | 0 | 1 | 1 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

Table 3 - Soil and Debris Shipped Off Site (as of 12/21/2012)

| Waste Stream | Cumulative | Disposal Facility |
|--|------------|--|
| Haz Soil (yd ³) | 19,644 | Envirosafe (Oregon, OH) |
| Non-Haz Soil (yd ³) (Excluding Ceresco Dredge) | 78,109 | 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) | 1,802 | SET/C&C |
| Non-Haz Impacted Debris (ton) | 7,153 | |

Shaded items are discontinued waste streams.

Table 4 - Liquid Shipped Off-Site (as of 12/21/2012)

| Stream | Destination Company | Destination Location | Cumulative Volume (gallons)† |
|------------------------------|---------------------------------|-----------------------------|-------------------------------------|
| Non-Haz Water | Dynecol | Detroit, MI | 981,792 |
| Non-Haz Water | Liquid Industrial Waste | Holland, MI | 1,376,757 |
| Non-Haz Water | Plummer | Kentwood, MI | 521,726 |
| <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 | | | 17,256,512 |

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 12/21/2012)

| 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 | 14,032 |
| | 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 | 34,493 |
| <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 | | | 1,149,160 |

Shaded and italicized items represent discontinued waste streams.

*Total updated for analytical received after report generation.

Table 6 – Samples Collected By Enbridge

| Sample Type | Total | December 2012** | | | | | | | | | | |
|---------------|-------|-----------------|----|----|----|----|----|----|----|----|----|----|
| | | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
| Surface Water | 18 | 4 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Private Well | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 10 | 10 | 11 |
| Groundwater | 10 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sediment | 74 | 1 | 2 | 0 | 0 | 0 | 0 | 12 | 12 | 12 | 12 | 23 |
| Soil | 61 | 6 | 6 | 3 | 8 | 0 | 0 | 8 | 8 | 7 | 8 | 7 |
| Product | 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 |
| Sheen | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**Due to the Holiday Shut-down, sample counts for December 21 – 23, 2012 will be reported in the next SitRep.

Table 7 - Financial Summary (as of 12/17/2012)

| Item | Expended (Cumulative) |
|---|-----------------------|
| ERRS Contractors | |
| <i>EQM (EPS50802) T057</i> | \$ 1,199,522 |
| <i>T060</i> | \$ 213,636 |
| <i>LATA (EPS50804) T019</i> | \$ 1,161,082 |
| <i>ER LLC (EPS50905) T040</i> | \$ 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) | |
| <i>T030-Response</i> | \$ 29,088,418 |
| <i>T032-Sampling</i> | \$ 183,567 |
| <i>T037-Doc Support</i> | \$ 1,842,941 |
| Total START Contractor | \$ 31,114,926 |
| Response Contractor Sub-Totals | \$ 35,484,517 |
| U.S. EPA Funded Costs: Total U.S. EPA Costs | \$ 6,238,433 |
| Pollution Removal Funding Agreements | |
| Total Other Agencies | \$ 2,051,535 |
| 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 | \$ 365,172 |
| Cost Documentation/Billing Admin Fee (2.93%)* | \$ 339,214 |
| Total Est. Oil Spill Cost | \$ 49,387,981 |
| Oil Spill Ceiling Authorized by USCG | \$ 56,250,000 |
| Oil Spill Ceiling Available Balance | \$ 6,862,019 |

Shaded and *italicized* items are discontinued

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

Table 8 - Personnel On-Site

| Agency/Entity | December 2012** | | | | | | | | | | |
|--------------------------------|-----------------|-----------|------------|-----------|----------|-----------|-----------|------------|------------|------------|-----------|
| | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 |
| U.S. EPA | 2 | 1 | 1 | 1 | 0 | 0 | 2 | 2 | 2 | 1 | 1 |
| START | 15 | 12 | 17 | 16 | 0 | 6 | 18 | 20 | 20 | 19 | 17 |
| MDEQ | 5 | 4 | 5 | 4 | 0 | 0 | 4 | 2 | 2 | 3 | 3 |
| MDEQ Contractors | 3 | 3 | 3 | 3 | 0 | 0 | 2 | 3 | 3 | 2 | 2 |
| Other Agencies | 3 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calhoun County Public Health | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Calhoun County (CC) EM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| City of Battle Creek | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| City of Marshall | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Kalamazoo County Public Health | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Kalamazoo Sheriff | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MDCH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Michigan State Police EMD | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Allegan County Emergency Mgmt. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| MDNR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Enbridge – Kalamazoo River* | 5 | 5 | 5 | 4 | 0 | 0 | 5 | 5 | 5 | 5 | 5 |
| Enbridge – Containment* | 6 | 6 | 6 | 6 | 0 | 4 | 6 | 6 | 6 | 6 | 6 |
| Enbridge – Submerged Oil* | 26 | 27 | 26 | 26 | 0 | 17 | 24 | 31 | 29 | 32 | 29 |
| Enbridge – Waste Management* | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Enbridge – Marshall Office* | 30 | 30 | 35 | 38 | 0 | 8 | 34 | 37 | 36 | 38 | 35 |
| Total | 96 | 92 | 100 | 99 | 0 | 36 | 96 | 114 | 104 | 107 | 99 |

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

**Due to the Holiday Shut-down, personnel counts for December 21 – 23, 2012 will be reported in the next SitRep.