

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #215



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

**US EPA ARCHIVE DOCUMENT**



**Transportation of Dredged Sediment from Geotubes for Disposal (09/17/2014)**

**To:** Susan Hedman, U.S. EPA Regional Administrator  
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Tiffany Eichorst, City of Battle Creek  
Cheryl Vosburg, City of Marshall  
Christine Kosmowski, Calhoun County Water Resources Commissioner  
Ann Nieuwenhuis, Comstock Township

**From:** Jeffrey Kimble, U.S. EPA, Federal On-Scene Coordinator

**Date:** 10/27/2014

**Operational Periods:** 0700 hours 09/15/2014 through 0700 hours 10/31/2014

**Reporting Period:** 0700 hours 09/15/2014 through 0700 hours 10/06/2014

### **1. Site Data**

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

### **2. Operations Section**

- The organizational response structure consisted of the following Divisions/Groups: 1) Morrow Lake; and 2) Waste Management.

#### **2.1 Morrow Lake Division**

- Enbridge completed demobilization of on-water dredging equipment and infrastructure from the Morrow Lake Delta and Morrow Lake.
- Morrow Lake Delta dredge pad operations continued throughout the reporting period. Approximately 187,147,100 gallons of water have been treated and discharged in accordance with Enbridge's NPDES permit during the 2014 dredging operations in the Morrow Lake Division.
- Enbridge continued daily dredge pad perimeter air monitoring for particulates throughout the reporting period. U.S. EPA also conducted periodic perimeter air monitoring for particulates. No exceedances of the MDCH or U.S. EPA 24-hour average concentration for particulates occurred during the reporting period related to dredge pad operations.
- Enbridge continued daily air monitoring using a 5-gas meter throughout the community immediately adjacent and east of the Morrow Lake Delta dredge pad. U.S. EPA conducted air monitoring within the community using handheld particulate monitoring units.

- On September 27, 2014 all closed portions of the Kalamazoo River were reopened to the public.

## **2.2 Waste Management Division**

- Transportation and disposal of dredged sediment from the Del Tank and Geotubes continued throughout the reporting period.
- Cumulative quantities of soil, debris, and liquid shipped off-site during the response are presented in Tables 1 and 2.
- 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 3.

## **3. Planning Section**

### **3.1 Situation Unit**

- During the reporting period, a final overflight was conducted on September 17, 2014 to document all operational areas and river conditions. Photographs were taken and distributed to project participants in a weekly Situation Update photograph log.

### **3.2 Environmental Unit**

- U.S. EPA, USGS, and the U.S. Army Corps of Engineers held weekly meetings to discuss Hydrodynamic Model (HDM) activities.
- Planned hydrodynamic and sediment transport model runs were completed for the 2D model of the river, the 3D model of the Morrow Lake Delta and Morrow Lake, and the detailed model of the MP 14.75 sediment trap area. Summary reports for each respective task were submitted to U.S. EPA for review. Development and coding of an algorithm to add Oil Particle Aggregates (OPA) as three separate sediment classes to the EFDC and SEDZLJ models has been completed and trial model runs of the 2D models with the added OPA algorithm are in progress. Summary documentation for the OPA algorithm and trial runs is scheduled for delivery by October 30, 2014.

### **3.3 Documentation Unit**

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

### **3.4 Resource Unit**

- The final site Incident Action Plan (IAP) was produced for the operational period of September 15 through October 31, 2014.
- The Resources Unit continued to support 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.
- The USCG is providing the U.S. EPA with on-site support by monitoring safety throughout all active work areas.

### **4.2 Public Information**

- The number of public inquires reported by Enbridge for this period is presented in Table 5.

## ***5. Finance***

- The current National Pollution Funds Center (NPFC) ceiling is \$69.25 million. Approximately 92.9% of the ceiling has been spent through September 28, 2014. The latest average 14-day burn rate was \$11,057 per day. These cost summaries reflect only U.S. EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 6.

## ***6. Scientific Support Coordination Group (SSCG)***

- No activities were conducted during this operational period.

## ***7. Participating Entities***

- U.S. EPA and MDEQ continued meeting with a group of stakeholders to discuss how to continue to effectively communicate, share information about site progress, and receive feedback about the communication needs of the local communities. The final EPA-lead Stakeholder meeting was held on October 2, 2014.
- 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 7.

## ***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 - Soil and Debris Shipped Off Site (as of 10/05/2014)**

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd<sup>3</sup>)</i>	19,644	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil (yd <sup>3</sup> )	294,633	SET/C&C
Non-Haz Soil (yd <sup>3</sup> )	9,231	SET/Ottawa County Farms
Non-Haz Soil (yd <sup>3</sup> )	17,443	SET/WM Westside
Non-Haz Soil (yd <sup>3</sup> )	800	Autumn Hills
<i>Non-Haz Soil &amp; Debris (yd<sup>3</sup>) (Excluding 2010 Ceresco Dredge)</i>	64,815	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd<sup>3</sup>) (2010 Ceresco Dredge Only)</i>	5,562	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd<sup>3</sup>)</i>	12,075	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	2,748	SET/C&C
Non-Haz Impacted Debris (ton)	16,561	

*Shaded and italicized items are discontinued waste streams.*

**Table 2 - Liquid Shipped Off-Site (as of 10/05/2014)**

Stream	Destination Company	Destination Location	Cumulative Volume (gallons)†
Non-Haz Water	Liquid Industrial Waste	Holland, MI	1,557,407
Non-Haz Water	Plummer	Kentwood, MI	936,009
<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<sup>a</sup></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>
<b>Total</b>			<b>17,851,445</b>

*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 3 – Estimated Recovered Oil (as of 10/06/2014)**

<b>Waste Stream Containing Recovered Oil</b>	<b>Destination Company</b>	<b>Destination Location</b>	<b>Estimated Oil Volume in Waste Stream (gallons)</b>
<b>Soil - Sediment</b> Impacted Soil, Sediment, and Debris	C&C Landfill	Marshall, MI	30,773*
	WM Westside Landfill	Three Rivers, MI	
	Ottawa County Farms Landfill	Coopersville, MI	278,665
<i>Geotube Sediment (2010)- (Impacted Sediment)</i>	<i>Envirosafe/ Westside RDF</i>	<i>Oregon, OH</i>	1,298
<b>Debris - (Roll Off Boxes with Impacted Sorbents, boom, pads, plastic, PPE, vegetation, and biomass)</b>	C&C Landfill	Marshall, MI	69,683
<i>Frac Tank City - Influent to Carbon Filtration System</i>	<i>C&amp;C Landfill</i>	<i>Marshall, MI</i>	8,109
<b>Water</b>	Dynecol	Detroit, MI	46,183
	Liquid Industrial Waste Services, Inc.	Holland, MI	
	Plummers Env. Inc.	Byron Center, MI	
	BC POTW	Battle Creek, MI	
<i>Ceresco Pretreatment System</i>	<i>C&amp;C Landfill</i>	<i>Marshall, MI</i>	90
<i>A-1 Pretreatment System</i>	<i>C&amp;C Landfill</i>	<i>Marshall, MI</i>	9
<i>Oily Water - RPP</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	766,288
<b>Total</b>			<b>1,201,098</b>

Shaded and *italicized* items represent discontinued waste streams.

\*Total updated for analytical received after report generation

**Table 4 – Samples Collected By Enbridge**

Sample Type	Total	October 2014				September 2014																	
		4	3	2	1	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	
Surface Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Private Well	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Groundwater	114	0	0	1	0	0	0	0	0	3	12	12	12	13	0	0	11	21	11	9	9	0	0
Sediment	59	0	0	2	3	3	3	0	0	8	7	7	2	7	0	0	0	2	8	3	4	0	0
Soil	55	0	5	7	6	6	7	0	0	0	1	1	5	3	0	0	0	2	2	5	5	0	0
Product	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dewatering	8	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
Sheen	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Table 5 – Public Inquiries Received by Enbridge**

Location/Med	October 2014			September 2014																			
	3	2	1	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13		
Marshall Community Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oil Spill Public Information Hotline	0	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0
<b>Total Public Inquiries</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

**Table 6 - Financial Summary (as of 09/28/2014)**

Item	Expended (Cumulative)
<b><i>ERRS Contractors</i></b>	
<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
<b>Total ERRS Contractors</b>	<b>\$ 3,257,571</b>
<b><i>Other Contractors</i></b>	
<i>Lockheed Martin (EPW09031) – TAGA Support</i>	\$ 198,379
<i>Lockheed Martin (EPW09031) -Biodegradability Study</i>	61,917
<i>T&amp;T Bisso (EPA:HS800008)</i>	\$ 882,087
<b>Total Other Contractors</b>	<b>\$ 1,142,383</b>
<b>START Contractor – WESTON (EPS50604)</b>	
T030-Response	\$ 40,021,745
Community Relations	\$ 114,563
T032-Sampling	\$ 161,045
T037-Doc Support	2,074,012
Cross Over Support	276,229
<b>Total START Contractor</b>	<b>\$ 42,647,594</b>
<b>Response Contractor Sub-Totals</b>	<b>\$ 47,054,220</b>
<b>U.S. EPA Funded Costs: Total U.S. EPA Costs</b>	<b>\$ 7,225,037</b>
<b>Pollution Removal Funding Agreements</b>	
Total Other Agencies	\$ 3,637,081
Indirect Cost (16.00%)	\$ 3,520,519
Indirect Cost (8.36%)-payments after 10/1/2011	\$ 1,310,859
Indirect Cost (10.15%)-payments after 10/1/2012	\$ 1,639,637
Cost Documentation/Billing Admin Fee (2.93%)*	\$ 707,114
<b>Total Est. Oil Spill Cost</b>	<b>\$ 64,325,892</b>
<b>Oil Spill Ceiling Authorized by USCG</b>	<b>\$ 69,250,000</b>
<b>Oil Spill Ceiling Available Balance</b>	<b>\$ 4,924,108</b>

Shaded and *italicized* items are discontinued

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

**Table 7 - Personnel On-Site**

Agency/Entity	October 2014					September 2014															
	5	4	3	2	1	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15
U.S. EPA	0	0	1	2	3	3	2	0	0	2	4	4	2	3	0	0	1	2	2	2	1
START	0	1	4	4	4	4	4	0	3	7	7	7	7	8	0	3	8	8	8	8	9
MDEQ	0	0	-	-	-	-	-	-	0	3	3	3	3	4	0	1	4	4	3	3	4
MDEQ Contractors**	0	0	-	-	-	-	-	-	0	0	2	2	3	3	0	2	2	2	4	2	1
Other Agencies	0	2	2	2	2	2	2	0	2	2	2	2	2	2	0	2	2	2	2	2	2
Enbridge –Delta/Morrow Lake*	0	47	49	52	51	7	7	0	56	61	46	69	70	68	1	7	7	7	8	8	9
Enbridge – Waste Management*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enbridge – Office Support*	2	9	21	24	25	25	27	1	12	28	28	29	31	28	1	12	28	33	28	27	30
<b>Total</b>	<b>2</b>	<b>59</b>	<b>77</b>	<b>84</b>	<b>85</b>	<b>41</b>	<b>42</b>	<b>1</b>	<b>73</b>	<b>103</b>	<b>92</b>	<b>116</b>	<b>118</b>	<b>116</b>	<b>2</b>	<b>27</b>	<b>52</b>	<b>58</b>	<b>55</b>	<b>52</b>	<b>56</b>

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

\*\*As of September 28, 2014, MDEQ will no longer provide project personnel counts