

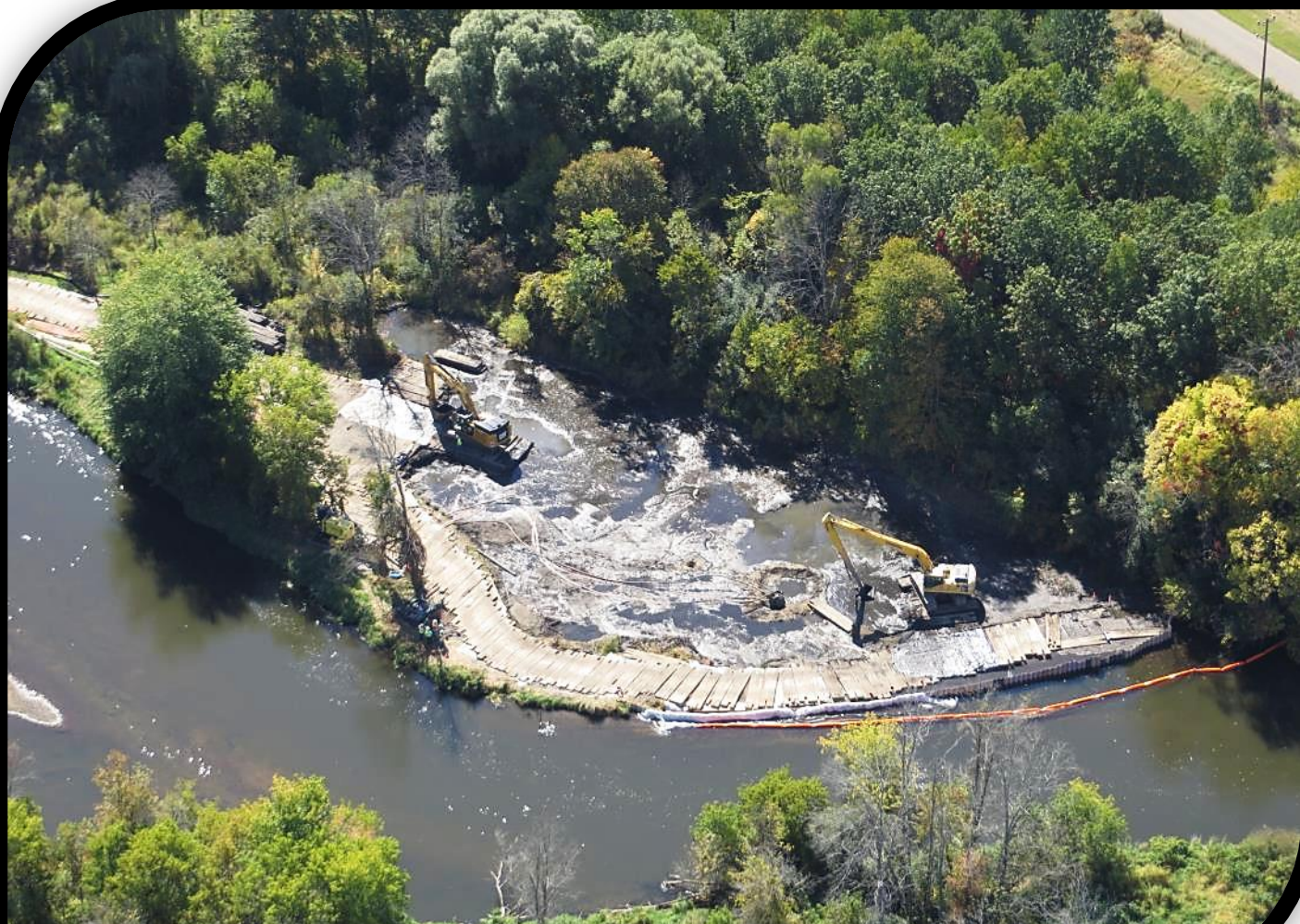
US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V  
POLLUTION/SITUATION REPORT #190



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

US EPA ARCHIVE DOCUMENT



Excavation Activities at MP 10.5 Sediment Trap (09/30/2013)

**To:** Susan Hedman, U.S. EPA Regional Administrator  
James Sygo, MDEQ  
Michelle DeLong, MDEQ  
Dr. Linda Dykema, MDCH  
Deb Cardiff, Kalamazoo County Public Health  
Richard Fuller, Kalamazoo County Sheriff's Office  
James Rutherford, Calhoun County Public Health Department  
Durk Dunham, Calhoun County Emergency Management  
Scott Corbin, Allegan County Emergency Management  
Tiffany Eichorst, City of Battle Creek  
Cheryl Vosburg, City of Marshall  
Christine Kosmowski, Calhoun County Water Resources Commissioner

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

**Date:** 10/21/2013

**Operational Period:** 0700 hours 09/23/2013 through 0700 hours 09/30/2013  
0700 hours 09/30/2013 through 0700 hours 10/07/2013

**Reporting Period:** 0700 hours 09/23/2013 through 0700 hours 10/07/2013

### *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 Branches: 1) Environmental Field Teams; and 2) Dredge Operations.

#### **2.1 Environmental Field Teams Branch**

##### *2.1.1 Science Division*

- Sediment trap monitoring continued throughout the reporting period in accordance with the approved Sediment Trap Monitoring and Maintenance Plan (July 10, 2012). Quarterly bathymetry surveys continued throughout the reporting period.
- Monthly Walling tube sampling was conducted on September 26 – 27, 2013 in accordance with the 2013 Submerged Oil Removal and Assessment Work Plan (May 13, 2013).
- E4.0 Containment System monitoring and maintenance continued in accordance with the 2012 Morrow Lake Delta and Morrow Lake Monitoring and Management Work Plan (November 15, 2012). Monthly poling was conducted upstream and downstream of the containment structures from September 23 – 26, 2013.
- Enbridge conducted legacy core collection and sampling at the MP 26.00 RDB sediment trap on September 30 – October 2, 2013.



### ***2.1.2 Water Operations Division***

- Enbridge monitored and maintained 800 feet of surface hard boom at the Ceresco Dam control point, and 4,900 feet of surface hard boom and 4,250 feet of subsurface half-curtain at the E 4.0 Containment System.
- Pursuant to the Emerging Oil Management Program (EOMP), Enbridge and U.S. EPA continued to track the 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. Refer to Section 3.1 for locations of oil sheen and globule observations.
- Management of oil sheen and/or globules continued throughout the period. Two responses were conducted during this reporting period. Refer to Table 1 for a summary of sheen responses by day.

### ***2.1.3 Compliance Division***

- As of the close of the reporting period, Enbridge was supplementing the previously issued MDEQ dredging permit for the MP 10.4 sediment trap.
- As of the close of the reporting period, Enbridge was preparing a dredging permit application for recovery actions at the MP 28.25 sediment trap. The permit application will require a full review by MDEQ and a public notice period, which may affect whether oil recovery activities can be completed before the U.S. EPA Order deadline of December 31, 2013.
- As of the close of the reporting period, Enbridge's dredging supplements to the previously issued MDEQ permits for agitation toolbox recovery at the MP 26.00 and MP 36.10 sediment traps were in review with MDEQ.
- U.S. EPA outlined in Section 47 of the March 14, 2013 Administrative Order and subsequently verbally communicated to Enbridge that it is Enbridge's responsibility to apply for MDEQ dredging permits and to modify existing permits to include dredging as the submerged oil recovery method, in a timeframe which allows for compliance with the U.S. EPA Order deadline of December 31, 2013. Enbridge has elected to wait for triggers to occur before applying for or modifying the existing MDEQ dredging permits.

## **2.2 Dredge Operations Branch**

### ***2.2.1 Ceresco, Mill Ponds, Morrow Lake and Sediment Trap Divisions***

- Dredging continued at the Ceresco Dam impoundment. During the reporting period, a total of 42,457,216 gallons of water was treated at the Ceresco Dredge water treatment facility. Throughout the period, 3,850 feet of dredging containment was maintained, installed, and relocated as appropriate. At the close of the reporting period, a total of 35,069 yd<sup>3</sup> of dredged sediment was onsite in Geotube bags and a cumulative total of approximately 66,000 yd<sup>3</sup> of sediment has been dredged from the pilot channel at Ceresco to date. Once adequately dewatered, sediment is solidified and transported off-site for disposal. As of the close of the reporting period, a cumulative total of 31,475 tons of waste from the Ceresco dredge pad has been shipped off site for disposal.

- Dredging continued at the Mill Ponds impoundment. During the reporting period, a total of 5,119,090 gallons of water was treated at the Mill Ponds water treatment facility. Throughout the period, 1,125 feet of dredging containment was installed, maintained, and relocated as appropriate. At the close of the reporting period, a total of 3,448 yd<sup>3</sup> of dredged sediment was onsite in the Geotube bags and a cumulative total of approximately 4,000 yd<sup>3</sup> of sediment has been dredged at the Mill Ponds impoundment to date. Once adequately dewatered, sediment is solidified and transported off-site for disposal. As of the close of the reporting period, a cumulative total of 85 tons of waste (woody and oily debris) from the Mill Ponds has been shipped off site for disposal.
- Excavation of the MP 10.5 sediment trap was completed on October 3, 2013 and crews began demobilizing site equipment. Post-excavation bathymetry was conducted on October 5, 2013. Throughout the period, 200 feet of dredging containment was maintained, installed, and relocated as appropriate at the MP 10.5 Sediment Trap.
- Preparations continued throughout the period for dredging activities at the MP 21.50 RDB sediment traps; de-watering began on October 2, 2013. Throughout the period, 525 feet of dredging containment was maintained, installed, and relocated as appropriate at the MP 21.5 Oxbow.
- During the reporting period, a total of 5,796,238 gallons of water was treated at the sediment trap water treatment facilities. At the close of the reporting period, a cumulative total of approximately 2,070 yd<sup>3</sup> of sediment has been dredged from the sediment traps. As of the close of the reporting period, a cumulative total of 1,950 tons of waste has been shipped from the sediment trap dredge pads off site for disposal.
- Work area air monitoring, dissolved oxygen water quality monitoring, and turbidity water quality monitoring were conducted during dredging activities.
- Enbridge has not shown U.S. EPA evidence of substantive progress for oil removal in Morrow Lake or the Morrow Lake Delta.

### ***2.2.2 Waste Management Division***

- Cumulative quantities of soil, debris, and liquid shipped off-site during the response are presented in Tables 2 and 3.
- 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 4.

## ***3. Planning Section***

### **3.1 Situation Unit**

- Situation Unit personnel conducted field observations and overflights to document all operational areas, including the dredging activities; locations and integrity of CSDs, buoys and sediment trap structures; and locations of oil sheen and/or globules. During the reporting period, overflights were conducted on September 25 and 30, 2013. See Section 2.1.2 for additional details regarding the EOMP.
- During the reporting period, oil sheen and/or globules were observed at:
  - Ceresco Dam impoundment at multiple locations between MP 4.5 and MP 5.89 on September 23 – 28 and September 30 – October 5;
  - MP 10.5 sediment trap on September 24;

- Mill Ponds impoundment at multiple locations between MP 14.5 and MP 15.65 on September 23 – 24, and October 4;
  - Multiple locations between MP 21.5 and MP 36.5 on September 24 and 28; October 1, 2 and 5;
  - Morrow Lake Delta and/or Neck on September 23 – 28 and September 30 – October 5; and
  - Morrow Lake North and/or South Coves on September 23, 24, and 30; October 3 and 5.
- Photographs were taken and distributed to project participants during the weekly Consolidated ICS Meetings.

### **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.
- U.S. EPA continued review of sediment sample analytical results from legacy cores collected by Enbridge.
- U.S. EPA continued review of oil fingerprinting analytical results from sheen and globule samples collected by Enbridge to determine the presence/absence of Line 6B oil.

### **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.

### **4.2 Public Information**

- The number of public inquires reported by Enbridge for this period is presented in Table 6.

## ***5. Finance***

---

- The current National Pollution Funds Center (NPFCC) ceiling is \$63.25 million. Approximately 91.2% of the ceiling has been spent through October 7, 2013. The latest average 14-day burn rate was \$35,815 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)

- No activities were conducted during this operational period.

## 7. Participating Entities

- U.S. EPA and MDEQ continued to meet bi-weekly 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.
- On September 30, 2013, the Stakeholder Group participated in a tour of the dredging operations at the Ceresco impoundment.
- 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 Responses**

Total	October 2013						September 2013							
	6	5	4	3	2	1	30	29	28	27	26	25	24	23
2	0	1	0	1	0	0	0	0	0	0	0	0	0	0

\*Beginning August 21, 2013, sheen responses are no longer requested at the Ceresco Dam impoundment if the sheen is identified to be within containment, despite sheen observations meeting response criteria. Sheen collecting within containment is managed by crews maintaining the containment booms.

**Table 2 - Soil and Debris Shipped Off Site (as of 10/6/2013)**

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> )	106,941	SET/C&C
Non-Haz Soil (yd <sup>3</sup> )	3,480	SET/WM Westside
<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)	2,005	SET/C&C
Non-Haz Impacted Debris (ton)	7,984	

*Shaded and italicized items are discontinued waste streams.*

**Table 3 - Liquid Shipped Off-Site (as of 10/6/2013)**

<b>Stream</b>	<b>Destination Company</b>	<b>Destination Location</b>	<b>Cumulative Volume (gallons)†</b>
Non-Haz Water	Liquid Industrial Waste	Holland, MI	1,447,957
Non-Haz Water	Plummer	Kentwood, MI	620,526
<i>Non-Haz Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	981,792
<i>Non-Haz Water</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	1,143,280
<i>Hazardous Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	3,594,579
<i>Oil</i>	<i>Enbridge Facility</i>	<i>Griffith, IN</i>	766,288
<i>Other Material</i>			1,405,525
<i>Treated Non-Haz Water</i>	<i>Liquid Industrial Waste</i>	<i>Holland, MI</i>	370,200
<i>Treated Non-Haz Water</i>	<i>Plummer</i>	<i>Kentwood, MI</i>	4,976,140
<i>Hazardous Water</i>	<i>Safety Kleen<sup>a</sup></i>		825
<i>Treated Non-Haz Water</i>	<i>Dynecol</i>	<i>Detroit, MI</i>	150,700
<i>Treated Non-Haz Water</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	1,968,700
<b>Total</b>			<b>17,426,512</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 4 – Estimated Recovered Oil (as of 10/7/2013)**

<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</b> Impacted Soil & Debris	C&C Landfill	Marshall, MI	15,270*
	Envirosafe/ Westside RDF	Oregon, OH	278,665
<i>Geotube Sediment - (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>	EQ Michigan	Belleville, MI	35,516
<i>Frac Tank City - Influent to Carbon Filtration System</i>	<i>C&amp;C Landfill</i>	<i>Marshall, MI</i>	8,109
<b>Frac Tank City - Water</b>	Dynecol	Detroit, MI	46,178
	Liquid Industrial Waste Services, Inc.	Kentwood, MI	
	Plummers Env. Inc.	Holland, 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
<b>Oily Water - RPP</b>	Enbridge Facility	Griffith, IN	766,288
<b>Total</b>			<b>1,151,424</b>

*Shaded and italicized items represent discontinued waste streams.*

\*Total updated for analytical received after report generation.



**Table 5 – Samples Collected By Enbridge**

Sample Type	Total	October 2013						September 2013							
		6	5	4	3	2	1	30	29	28	27	26	25	24	23
Surface Water	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
Groundwater	22	0	0	1	0	1	0	2	0	0	3	7	2	3	3
Sediment	56	0	0	1	1	9	0	8	0	0	2	35	0	0	0
Soil	47	0	0	12	14	10	8	0	0	0	0	0	1	2	0
Product	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dewatering	63	0	1	4	2	10	14	0	0	0	0	0	0	7	25
Sheen	7	0	0	0	0	7	0	0	0	0	0	0	0	0	0

**Table 6 – Public Inquiries Received by Enbridge**

Location/Med	October 2013				September 2013											
	4	3	2	1	30	29	28	27	26	25	24	23	22	21		
Marshall Community Center	0	1	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	
Website	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total Public Inquiries</b>	<b>0</b>	<b>1</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 7 - Financial Summary (as of 10/7/2013)\***

<b>Item</b>	<b>Expended (Cumulative)</b>
<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><i>Total ERRS Contractors</i></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>	61,886
<i>T&amp;T Bisso (EPA:HS800008)</i>	\$ 882,087
<b><i>Total Other Contractors</i></b>	<b>\$ 1,142,352</b>
<b>START Contractor – WESTON (EPS50604)</b>	
T030-Response	\$ 35,330,827
Community Relations	\$ 114,563
T032-Sampling	\$ 161,045
T037-Doc Support	2,027,010
<b>Total START Contractor</b>	<b>\$ 37,633,445</b>
<b>Response Contractor Sub-Totals</b>	<b>\$ 42,040,040</b>
<b>U.S. EPA Funded Costs: Total U.S. EPA Costs</b>	<b>\$ 6,684,914</b>
<b>Pollution Removal Funding Agreements</b>	
Total Other Agencies	\$ 3,237,081
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	\$ 1,075,875
Cost Documentation/Billing Admin Fee (2.93%)**	\$ 544,373
<b>Total Est. Oil Spill Cost</b>	<b>\$ 57,668,591</b>
<b>Oil Spill Ceiling Authorized by USCG</b>	<b>\$ 63,250,000</b>
<b>Oil Spill Ceiling Available Balance***</b>	<b>\$ 5,581,409</b>

Shaded and *italicized* items are discontinued

\*Due to the government shutdown, exact expenditures are not available at this time. Some cost categories have been estimated based on recent cost averages. This will be corrected once government operations resume normal business.

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

\*\*\*Reductions to START Level of Effort will be seen in upcoming work cycles as EPA Region 5 has not yet received adequate budget dollars from NPFC to fully fund the approved project plan through 12/31/2013. Therefore, the actual costs of the project are expected to stay below the approved project plan through this date.

**Table 8 - Personnel On-Site**

Agency/Entity	October 2013						September 2013							
	6	5	4	3	2	1	30	29	28	27	26	25	24	23
U.S. EPA	0	0	2	2	2	3	3	0	0	2	4	4	4	4
START	3	11	20	22	22	24	24	3	11	21	23	24	25	23
MDEQ	0	0	5	3	4	4	4	0	0	3	5	3	3	3
MDEQ Contractors	0	0	2	2	3	3	3	0	0	1	2	3	3	3
Other Agencies	2	2	2	0	0	2	2	4	2	2	2	0	0	2
Enbridge – Environmental Field Teams – Science*	7	13	34	36	32	39	42	4	9	35	38	45	45	49
Enbridge – Environmental Field Teams – Water Ops*	21	68	73	74	70	62	64	19	46	58	60	62	61	58
Enbridge – Dredge Operations – Ceresco*	97	127	139	134	155	148	137	81	112	146	155	156	153	142
Enbridge – Dredge Operations – Mill Ponds*	0	30	32	39	43	33	31	0	29	30	28	31	28	28
Enbridge – Dredge Operations – Delta/Morrow Lake*	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Enbridge – Dredge Operations – Sediment Traps*	3	33	32	37	38	39	39	6	32	39	44	44	46	45
Enbridge – Waste Management*	1	41	44	41	58	58	63	0	13	62	58	57	53	50
Enbridge – Office Support*	14	26	50	49	56	53	60	14	26	48	53	58	52	49
<b>Total</b>	<b>148</b>	<b>351</b>	<b>435</b>	<b>439</b>	<b>483</b>	<b>468</b>	<b>472</b>	<b>131</b>	<b>280</b>	<b>447</b>	<b>472</b>	<b>487</b>	<b>473</b>	<b>456</b>

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