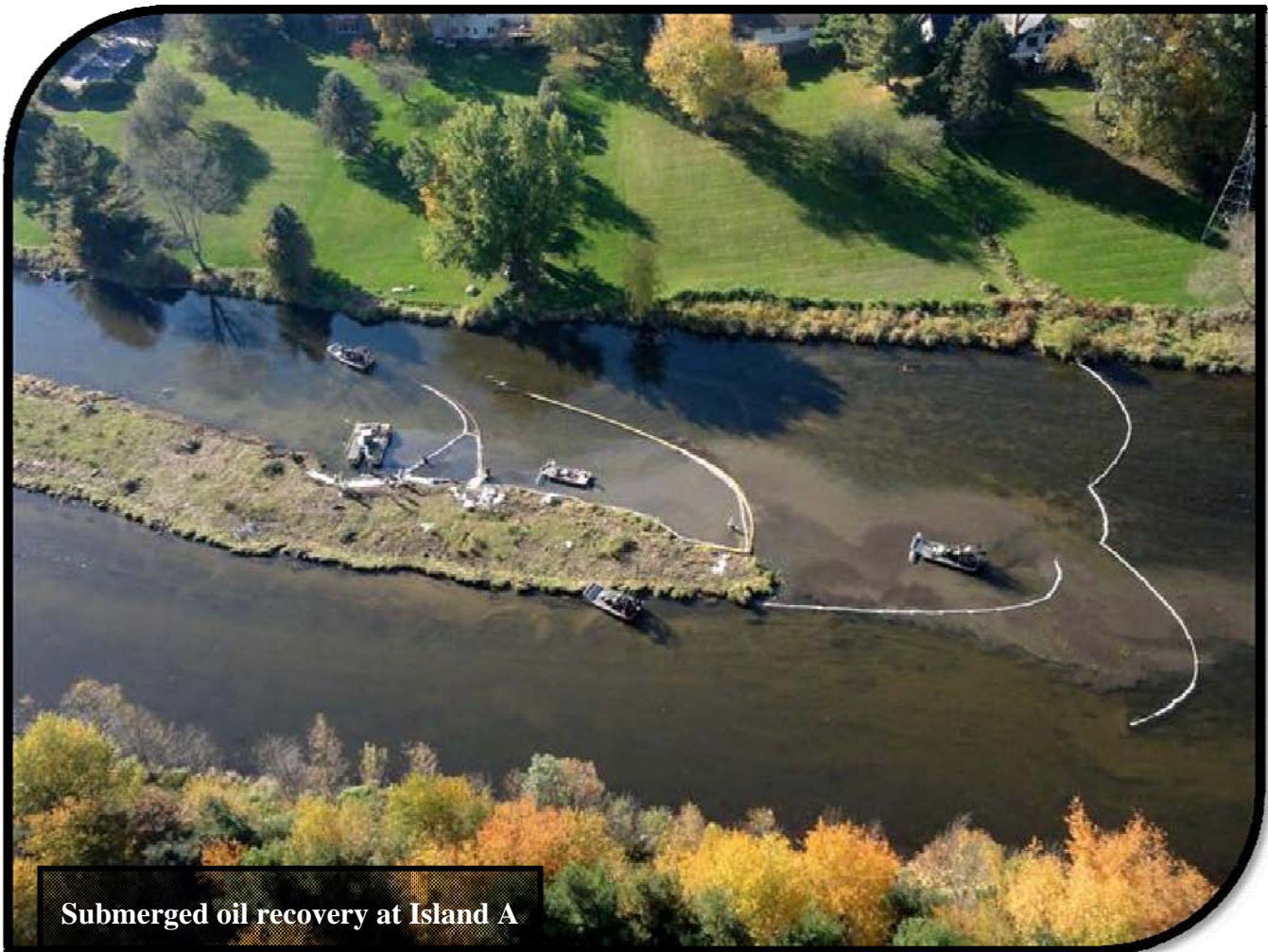


US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #119**



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



Submerged oil recovery at Island A

US EPA ARCHIVE DOCUMENT

To: Susan Hedman, U.S. EPA Regional Administrator
James Sygo, MDEQ
Mark DuCharme, MDEQ
Mike Alexander, MDEQ
Lt. Barry Reber, Michigan State Police, Emergency Management
Linda Buzas, Kalamazoo County
Lt. Paul Baker, Kalamazoo County Sheriff's Office
James Rutherford, Calhoun County Public Health Department
Durk Dunham, Calhoun 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: 10/13/2011

Reporting Period: 0700 hours 10/03/2011 through 0700 hours 10/10/2011

1. Site Data

Site Number:	Z5JS	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	OPA	Response Type:	Emergency
Response Lead:	PRP	Incident Category:	Removal Action
NPL Status:	Non-NPL	Operable Unit:	
Mobilization Date:	7/26/2010	Start Date:	7/26/2010
Demobilization Date:		Completion Date:	
CERCLIS ID:		RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:	E10527	Reimbursable Account:	

2. Previous Response Actions and Current Response Governance

- Previous response actions performed to date may be found in SITREPs #1 through #118.
- Governance for the project is provided by the U.S. Environmental Protection Agency (U.S. EPA) Federal On-Scene Coordinator (FOSC) and the Michigan Department of Environmental Quality (MDEQ). The structure of the response is the Incident Command System (ICS), with the FOSC serving as the Incident Commander (IC).
- The Operational Periods covered in this report are as follows:
 - 0700 hours on 10/03/2011 through 0700 hours on 10/06/2011, and
 - 0700 hours on 10/06/2011 through 0700 hours on 10/10/2011.

3. Operations Section

- This organizational response structure consisted of the following Branches: 1) Response Action; 2) Control Point Management; 3) Environmental Compliance; 4) River Reopening; 5) Monitoring; 6) Talmadge Creek Remediation; 7) Air Operations; 8) Waste Management; and 9) Wildlife.
- Review staffing plans for project transition into winter operations.

3.1 Response Action Branch

3.1.1 Overbank Action Group

- The Overbank Excavation Group and the Overbank Surface Cleanup Group consolidated to form the Overbank Action Group.
- Overbank surface cleanup sites are included in the Outstanding Sites Characterization and Reconciliation (OSCAR) sites. Additional information is provided in Section 3.4.1.
- Continued demobilization from and restoration of the staging area for former Islands E and F.

3.1.2 Submerged Oil Group

- Submerged Oil Kalamazoo River and Delta/Morrow Lake Groups consolidated to form the Submerged Oil Group.
- Coordinated with the Oil Recovery Effectiveness Evaluation Group teams and conducted submerged oil recovery and woody debris removal at sites identified during the Late Summer 2011 Reassessment.
- Seven teams conducted submerged oil recovery and woody debris removal on the Kalamazoo River working at sites including MP 2.55 to MP 5.80, the Mill Ponds (MP 15.00 to MP 15.75), MP 21.50 to MP 28.75 and MP 30.00 to MP 36.50.
- Seven teams conducted submerged oil recovery and woody debris removal within the Morrow Lake Delta.
- One team conducted submerged oil recovery and woody debris removal from Delta Channels 1 through 6 and Morrow Lake.
- Submerged oil recovery and cleanup progress information is presented in Tables 1 and 2.

3.1.3 Response Support Group

- Continued maintenance and stabilization of access and staging areas.
- Continued implementation of river bank erosion restoration and stabilization.

3.2 Control Point Management Branch

- Teams continued to install and enhance surface and subsurface containment as necessary. Hard boom, X-Tex curtain, and absorbent boom were installed at existing and new locations throughout the Kalamazoo River, the Morrow Lake Delta, and Morrow Lake. Teams also continued to perform sheen sweeps along the Kalamazoo River, the Morrow Lake Delta, and Morrow Lake.
- Boom information is presented in Table 3.

3.3 Environmental Compliance Branch

3.3.1 Operations and Maintenance (O&M) Inspections Group

- Teams continued inspections of control points, containment boom locations, and protective boom locations. Teams evaluated boom placement, boom effectiveness, and presence of accumulated visible oil or oil-saturated soils at various locations identified by the OSCAR Group.

3.3.2 Site Characterization Group

- Teams conducted visual and ecological assessments of overbank sites from MP 11.50 to MP 13.5, MP 21.5 to MP 25.5, and sites indentified by OSCAR teams (see Section 3.4.1).
- Begin implementation of Hydrodynamic Assessment work plan by locating sites for velocity monitoring, installation of Walling Suspended Sediment traps and poling.
- Collected and logged sediment cores for background sediment study.

3.3.3 Oil Recovery Effectiveness Evaluation Group

- Post recovery poling teams continued to evaluate effectiveness of submerged oil recovery techniques using qualitative evaluation methods.
- Teams continued to perform mid-recovery and post-recovery poling at submerged oil recovery locations throughout the Kalamazoo River, the Morrow Lake Delta, and Morrow Lake fan.

3.4 River Reopening Branch

3.4.1 Outstanding Sites Characterization and Reconciliation (OSCAR) Group

- Personnel continued to consolidate and prioritize outstanding overbank ponded sites, O&M sites, sheening bank sites, and tar patty sites.
- Throughout the operational periods, teams conducted further assessments of OSCAR sites along the Kalamazoo River.
- OSCAR sites status information, as of October 9, 2011, is presented in Table 4.

3.4.2 River Poling Reassessment Group

- Teams continued Late Summer 2011 Reassessment poling in areas where submerged oil recovery activities were performed. Teams worked on locations primarily between MP 28.00 and MP 36.50. Areas of light, moderate, and heavy submerged oil remain throughout these areas and were delineated for further recovery activities.

3.4.3 River Reopening Coordination Group

- The River Reopening Coordination Group continued to ensure all work is conducted in accordance with the proposed plan for opening segments of the Kalamazoo River.

3.5 Monitoring Branch

3.5.1 Water Quality Monitoring Group

- Enbridge continued to conduct turbidity, dissolved oxygen, and temperature monitoring throughout the Kalamazoo River, focusing on active submerged oil recovery work locations.

3.5.2 Potable Water Sampling Group

- Teams continued sampling residential wells following the monthly and quarterly frequencies in accordance with the MDEQ SAP. No potable water sampling was conducted during this reporting period.
- Samples collected as reported by Enbridge are provided in Table 5.

3.5.3 Air Monitoring and Sampling Group

- Enbridge continued to implement the 2011 Community Air Monitoring and Sampling Plan. Teams also conducted air monitoring and sampling at work area locations for worker safety and maintained an odor response team. No odor responses were conducted during the reporting period. EPA performed oversight of air monitoring and sampling plan implementation.
- Air sampling and monitoring information is provided in Tables 5 and 6.

3.5.4 Surface Water and Sediment Sampling Group

- Enbridge continued soil, sediment, and surface water sampling in accordance with the MDEQ Sampling and Analysis Plan (SAP). Surface water samples are collected monthly from 9 locations along the Kalamazoo River and 18 locations on Morrow Lake.
- Sediment samples are collected quarterly from 2 locations along the Kalamazoo River and 1 location on Morrow Lake. No samples were collected during this reporting period.
- Samples collected as reported by Enbridge are provided in Table 5.

3.6 Talmadge Creek Remediation Branch

3.6.1 Remedial Investigation Group

- Under the direction of MDEQ, Enbridge continued defining the nature and extent of remaining crude oil impacts to the sediment, bank, and floodplain area of the Talmadge Creek.
- Two teams collected background soil and sediment samples from the Source Area to MP 0.5
- From MP 0.5 to MP 2.25 nine teams collected and logged soil and sediment cores, and collected samples.
- Two teams collected groundwater samples and abandoned temporary wells.

3.6.2 Remedial Action Group

- Enbridge continued mobilization, site preparation, and temporary road mat installation for remedial action at Talmadge Creek.

3.7 Air Operations Branch

- During the operational periods, six overflights were conducted for situational awareness.
- Photographs were taken during overflights for presentation during various meetings.

3.8 Waste Management Branch

3.8.1 Decontamination Group

- Equipment and boom decontaminated during the operational periods are presented in Table 7.

3.8.2 Transportation and Disposal Group

- Teams continued to haul contaminated soil, water, and debris to staging areas for waste characterization and oil recovery sampling prior to offsite disposal.
- Quantities of oil and debris shipped off site during the reporting period are presented in Tables 8 through 11.

3.8.3 Waste Management Characterization Group

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

3.9 Wildlife Branch

- The Wildlife Branch continued to provide medical health assessment, treatment, and release of rehabilitated wildlife under US Fish and Wildlife Service (USFWS) and Michigan Department of Natural Resources direction.
- Prepared for transfer of animals requiring long-term care to rehabilitation at Albion College, Albion Michigan.
- Trapping information is presented in Table 12.

4. Planning

4.1 Situation Unit

- Situation Unit personnel observed and documented progress in all operational areas, and continued to assess areas of interest including locations of oil sheen, oil removal, and decontamination activities.

4.1.1 GIS Specialists

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

4.2 Environmental Unit

- Completed the 'Hydrodynamic Assessment Model Work Plan' evaluation.
- Continued evaluation of the 'Temperature Effect on Submerged Oil Work Plan for Bench-Scale Study'.
- EPA personnel continued directing Enbridge efforts to estimate the quantity of submerged oil remaining as of Spring 2011.
- EPA continued coordination with USGS regarding the evaluation of the geomorphology of the Kalamazoo River.

4.2.1 Plans/Permitting Group

- Personnel continued to develop MDEQ plans and permit applications, focusing on permit applications for dry former overbank submerged oil sites and tar patty sites.

4.3 Documentation Unit

- Documentation Unit personnel continued organization and archiving of electronic and paper files.

4.4 Resource Unit

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

5. Command

5.1 Safety Officers

- Safety personnel continued to conduct work site safety inspections, focusing on seasonal weather changes, traffic, and hazards associated with the opening of hunting season.
- Four minor safety incidents occurred during the reporting period and were addressed by field safety officers.

5.2 Public Information

- The Public Information Officer (PIO) coordinated media inquiries related to the October 6, 2011 EPA directive to Enbridge regarding the schedule of activities to be conducted from Fall 2011 to Fall 2012.
- The number of public inquiries reported by Enbridge for this period is presented in Table 13.

6. Landowner Environmental Issues

- Landowner environmental issues reported by Enbridge for the operational periods are presented in Table 14.

7. Finance

- The current National Pollution Funds Center (NPFC) ceiling is \$41.2 Million. Approximately 87.7% of the ceiling has been spent through October 9, 2011. The latest average 7-day burn rate was \$76,709 per day. These cost summaries reflect only EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 15.

8. Participating Entities

- The Multi-Agency Coordination (MAC) Group continues to meet weekly to discuss the progress of the response. Entities participating in the MAC include:
 - U.S. Environmental Protection Agency
 - Michigan Department of Environmental Quality
 - City of Battle Creek
 - City of Marshall

- 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 16.

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 – Submerged Oil Recovery Progress for Spring 2011 Reassessment Sites (as of 10/09/2011)

Sites Identified for Recovery Operations	222
Recovery Complete and Completeness Check Form Signed	184
Percent Complete	82.9%

Table 2 – Submerged Oil Recovery Progress for Late Summer 2011 Reassessment Sites (as of 10/09/2011)

Sites Identified for Recovery Operations	143
Recovery Complete and Completeness Check Form Signed	2
Percent Complete	1.4%

Table 3 – Boom Information

	October 2011						
	9	8	7	6	5	4	3
Total Surface Hard Boom (linear ft)	43,675	43,675	43,675	43,525	43,425	43,425	43,425
[Control Point Surface Hard Boom]	[29,750]	[29,750]	[29,750]	[29,750]	[29,750]	[29,750]	[29,750]

Table 4 – OSCAR Site Status

Pending Review	48
Standard O&M Monitoring	44
Visual Assessment in Process or Pending	23
Site Plan Development (Action Beyond Normal Toolbox Required)	10
Site Plan Execution	1
Submerged Oil Recovery Execution (Using Toolbox Techniques)	9
Permitting (Administratively Complete Permit Application Submitted to MDEQ)	2
Consistent with EPA Order	69
Total Sites	206

Table 5 – Samples Collected By Enbridge

Sample Type	Total	October 2011						
		9	8	7	6	5	4	3
Surface Water	0	0	0	0	0	0	0	0
Private Well	0	0	0	0	0	0	0	0
Groundwater	29	0	4	4	5	3	7	6
Sediment	125	0	33	48	33	0	7	4
Soil	376	0	61	53	36	81	80	65
Air (Community and Odor Complaint)	137	20	20	20	20	19	19	19

Table 6 – Real Time Air Monitoring Counts By Enbridge

Monitoring Location	Total	October 2011						
		9	8	7	6	5	4	3
Community	1774	92	257	294	297	286	228	320
Odor Response	0	0	0	0	0	0	0	0
Work Area	1171	0	185	231	180	187	188	200
Tar Patty Study	0	0	0	0	0	0	0	0

Table 7 - Equipment Decontamination

Location/Media	Total	October 2011						
		9	8	7	6	5	4	3
Frac Tanks	0	0	0	0	0	0	0	0
Vac Trucks-Tankers	0	0	0	0	0	0	0	0
Roll-Off Boxes	1	0	0	1	0	0	0	0
Yellow Iron (light)	6	0	0	2	2	2	0	0
Yellow Iron (heavy)	5	0	2	1	1	1	0	0
Jon Boats	12	0	0	6	1	1	2	2
Air Boats	13	0	1	0	2	2	5	3
Vehicles	5	0	3	1	0	0	1	0
Boom (linear ft)	6650	0	1100	1500	1200	0	1550	1300
Miscellaneous Items	86	0	32	1	26	2	17	8

Table 8 - Soil and Debris Shipped Off Site (as of 10/09/2011)

Waste Stream	Cumulative	Disposal Facility
<i>Haz Soil (yd³)</i>	<i>19,644</i>	<i>Envirosafe (Oregon, OH)</i>
Non-Haz Soil & Debris (yd ³) (Excluding Ceresco Dredge)	43,086	Terra/C&C
<i>Non-Haz Soil & Debris (yd³) (Excluding Ceresco Dredge)</i>	<i>64,815</i>	<i>Westside Recycling (Three Rivers, MI)</i>
<i>Non-Haz Soil (yd³) (Ceresco Dredge Only)</i>	<i>5,562</i>	<i>EQ/Republic (Marshall, MI)</i>
<i>Haz Debris (yd³)</i>	<i>12,075</i>	<i>EQ/Michigan Disposal (Wayne, MI) and Republic (Marshall, MI)</i>
Non-Haz Household Debris (ton)	1,023	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	5,844	

Shaded and italicized items are discontinued waste streams.

Table 9 – Oil/Water Collected by Location (as of 10/09/2011)

Location	Cumulative (gallons)
Division A	5,356,315
Division B	4,868,279
Division C	1,891,406
Division D	121,106
Division E	52,631
Decontamination	2,098,887
Site A	316,464
Other Locations*	1,397,524
Subtotal	16,102,612
Sludge**	474,215
Total Oil/Water	16,576,827

* 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 10 - Liquid Shipped Off-Site (as of 10/09/2011)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
<i>Non-Haz Water</i>	<i>Battle Creek POTW</i>	<i>Battle Creek, MI</i>	<i>1,968,700</i>
Non-Haz Water	Dynecol	Detroit, MI	913,642
Non-Haz Water	Liquid Industrial Waste	Holland, MI	480,807
Non-Haz Water	Plummer	Kentwood, MI	90,000
<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			16,686,106

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 11 - Oil/Water Remaining On-Site (as of 10/09/2011)

Item	Cumulative (gallons)
Oil/Water Collected	16,102,612
Oil/Water Shipped Off-Site	16,097,101
Total Oil/Water Remaining On-Site	5,511

Table 12 – Wildlife

Location	Total	October 2011						
		9	8	7	6	5	4	3
Turtles in Captivity	--	28	28	28	30	30	31	32
Turtles Captured (Oiled) – Field Cleaned	0	0	0	0	0	0	0	0
Turtles Captured (Oiled) – Admitted to Wildlife Center	0	0	0	0	0	0	0	0
Turtles Captured (Un-oiled) – Field Released	0	0	0	0	0	0	0	0
Turtles Released from Captivity	5	0	0	2	0	1	1	1

Table 13 – Public Inquiries Received by EPA and Enbridge

Location/Media	Total	October 2011						
		9	8	7	6	5	4	3
Marshall Community Center	13	0	0	0	0	5	5	3
Oil Spill Public Information Hotline	7	0	0	2	1	1	0	3
Website	0	0	0	0	0	0	0	0
Total Public Inquiries	20	0	0	2	1	6	5	6

Table 14 – Landowner Environmental Issues (as of 10/09/2011)

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
0	14	1

Table 15 - Financial Summary

Item	Expended (Cumulative) (as of 10/9/2011)
ERRS Contractors	
EQM (EPS50802) T057	\$ 1,199,522
T060	\$ 213,636
LATA (EPS50804) T019	\$ 1,161,082
ER LLC (EPS50905) T040	\$ 683,330
Total ERRS Contractors	\$ 3,257,571
Other Contractors	
Lockheed Martin (EPW09031) – TAGA Support	\$ 185,951
T&T Bisso (EPA:HS800008)	\$ 882,087
Total Other Contractors	\$ 1,068,038
START Contractor – WESTON (EPS50604)	
T030-Response	\$ 18,415,611
T032-Sampling	\$ 183,597
T037-Doc Support	\$ 1,016,750
Total START Contractor	\$ 19,615,958
Response Contractor Sub-Totals	\$ 23,941,567
EPA Funded Costs: Total EPA Costs	\$ 5,370,524
Pollution Removal Funding Agreements – Total Other Agencies	\$ 1,823,682
Sub-Totals	\$ 31,135,773
Indirect Cost (16.00%)	\$ 4,981,724
Total Est. Oil Spill Cost	\$ 36,117,497
Oil Spill Ceiling Authorized by USCG	\$ 41,200,000
Oil Spill Ceiling Available Balance	\$ 5,082,503

Shaded items are discontinued

Table 16 - Personnel On-Site

Agency/Entity	October 2011						
	9	8	7	6	5	4	3
U.S. EPA	0	2	4	4	4	3	5
START	2	43	46	46	44	46	42
MDEQ	0	1	4	5	3	3	3
MDEQ Contractors	0	8	11	12	12	10	11
Calhoun County Public Health	0	0	0	3	0	0	0
Calhoun County (CC) EM	0	0	0	1	0	0	0
City of Battle Creek	0	0	0	1	0	0	0
City of Marshall	0	0	0	1	0	0	0
Village of Augusta	0	0	0	0	0	0	0
Kalamazoo County Public Health	0	0	0	1	0	0	0
Kalamazoo Sheriff	0	0	0	1	0	0	0
MDCH	0	0	0	1	0	0	0
USGS	0	0	0	1	1	1	0
Michigan State Police EMD	0	0	0	1	0	0	0
Enbridge – Operations	27	65	112	118	128	146	118
Enbridge – Talmadge Creek	0	79	85	90	88	65	81
Enbridge – Kalamazoo River	17	363	375	370	379	392	386
Enbridge – Frac Tank City/Decon	0	43	48	51	53	50	48
Enbridge – Security & Flaggers	7	7	7	7	7	7	7
Enbridge – Wildlife and Comm.	5	5	9	10	10	11	12
Total	58	616	701	724	729	734	713

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