

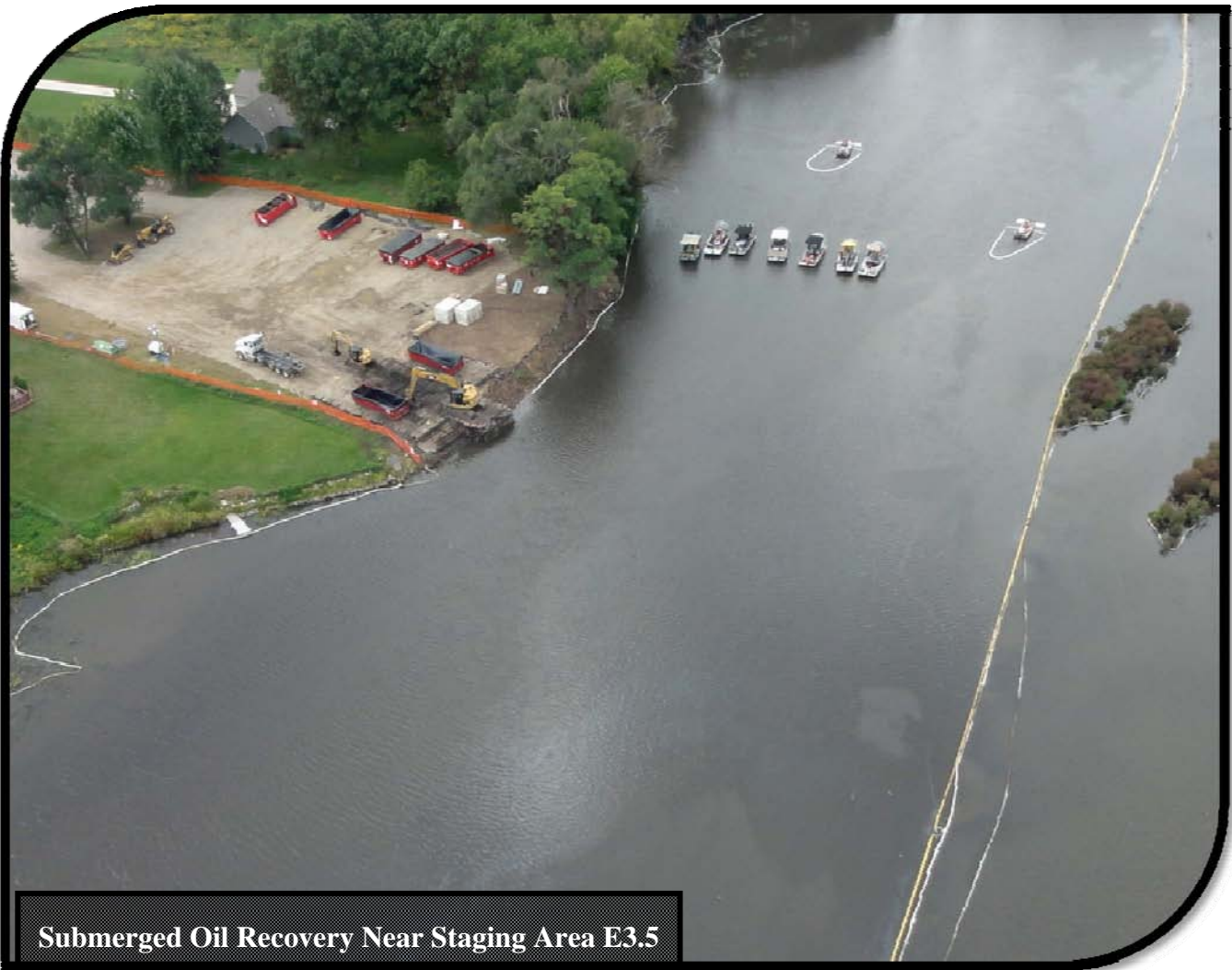
US EPA ARCHIVE DOCUMENT

**U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION V
POLLUTION/SITUATION REPORT #117**



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

US EPA ARCHIVE DOCUMENT



Submerged Oil Recovery Near Staging Area E3.5

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: 9/30/2011

Reporting Period: 0700 hours 9/19/2011 through 0700 hours 9/26/2011

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 #116.
- 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 9/19/2011 through 0700 hours on 9/22/2011
 - 0700 hours on 9/22/2011 through 0700 hours on 9/26/2011.

3. Operations Section

- This operational phase of the response 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.

3.1 Response Action Branch

3.1.1 Submerged Oil Kalamazoo River and Delta/Morrow Lake Groups

- Submerged oil recovery teams conducted site preparation and recovery operations at sites identified throughout the Kalamazoo River during the Spring 2011 Reassessment, focusing on the Mill Ponds and sites between MP 21.0 and MP 36.5. Teams also conducted bulk oil recovery and woody debris removal in the Morrow Lake Delta and the Morrow Lake fan area.
- Submerged oil recovery teams resumed recovery operations between the Talmadge Creek/Kalamazoo River confluence and Ceresco Dam at sites identified during the Late Summer 2011 Reassessment.
- Submerged oil recovery and cleanup progress information is presented in Tables 1 and 2.

3.1.2 Overbank Surface Cleanup Group

- Teams conducted oil recovery in overbank ponded areas from MP 28.32 to MP 32.15. Post-recovery poling assessments were performed following recovery operations.
- Teams also remobilized resources to sites between MP 2.25 and MP 6.0 to conduct oil recovery in remaining overbank sites.
- Teams conducted tar patty recovery work activities in overbank areas from MP 2.25 to MP 5.50, pursuant to MDEQ work plans and permits.
- Overbank surface cleanup sites are included in the Outstanding Sites Characterization and Reconciliation (OSCAR) sites.

3.1.3 Overbank Excavation Group

- Teams continued demobilization from Islands E and F and completed removal of sheet piling from Island A.

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 sheening bank sites.
- Teams assessed sheening bank sites to determine the necessary course of action and transferred sites to the appropriate response group.

3.3.2 Site Characterization Group

- Teams conducted visual and ecological assessments of overbank sites from MP 7.5 to MP 10.5.
- Teams conducted NRDA Habitat Assessment and Floodplain and Shoreline Vegetation Assessment along Talmadge Creek and the Kalamazoo River.
- Teams conducted decommissioning soil sampling at MP 21.5 Oxbow and groundwater sampling for Augusta and Kalamazoo wells.

3.3.3 Oil Recovery Effectiveness Evaluation Group

- Teams continued to implement methodology to evaluate effectiveness of various submerged oil tool box techniques through quantitative evaluation of oil recovered.
- Teams continued to perform mid-recovery and post-recovery poling at submerged oil recovery location throughout the Kalamazoo River, the Morrow Lake Delta, and Morrow Lake.
- Teams performed river velocity measurements at select locations.

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 September 26, 2011, is presented below:

Pending Review	120
Standard O&M Monitoring	35
Visual Assessment in Process or Pending	15
Site Plan Development (Action Beyond Normal Toolbox Required)	3
Site Plan Execution	0
Submerged Oil Recovery Execution (Using Toolbox Techniques)	6
Permitting (Administratively Complete Permit Application Submitted to MDEQ)	0
Consistent with EPA Order	27
Total Sites	206

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 upstream of Ceresco Dam from MP 4.0 to MP 5.75 and in the area between MP 21.5 Oxbow and MP 25.0. Areas of light, moderate, and heavy submerged oil remain throughout these areas and were delineated for further removal 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 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 4 and 5.

3.5.3 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 4.

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.
- Samples collected as reported by Enbridge are provided in Table 4.

3.6 Talmadge Creek Remediation Branch

3.6.1 Remedial Investigation Group

- Under 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. Teams conducted visual observations, conducted poling, collected soil and sediment cores from the banks of the Talmadge Creek, delineated floodplain areas, and collected ground water samples from temporary wells.
- Enbridge continued to upgrade resource commitment for the remedial investigation activities at Talmadge Creek.

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, five overflights were conducted for situational awareness.
- The overflight for September 19, 2011 was cancelled due to inclement weather.

3.8 Waste Management Branch

3.8.1 Decontamination Group

- Equipment and boom decontaminated during the operational periods are presented in Table 6.

3.8.2 Transportation and Disposal Group

- Teams continued to haul contaminated soil, water, media, 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 7 through 10.

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) direction.
- Throughout the operational periods, the Wildlife Branch conducted turtle trapping and release along the Kalamazoo River. Trapping information is presented in Table 11.
- The Wildlife Branch performed fish relocation from submerged oil recovery and excavation sites based on dissolved oxygen and turbidity monitoring results.

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. Significant observations during the operational periods include:

4.1.1 GIS Specialists

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

4.2 Environmental Unit

- 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

- Safety personnel continued to conduct work site safety inspections, focusing on seasonal weather changes, traffic, and hazards associated with the opening of hunting season.
- Throughout the reporting period, minor incidents occurred including three insect stings, an airboat taking on water, a hydraulic leak from a marsh buggy, a head injury from a wooden post, and a cut. All the affected personnel were able to return to work.
- On September 23, 2011, an Enbridge contractor sustained deep tissue bruising to his hand and wrist after being hit by a broken cable bracket while attempting to load a roll-off container onto a truck. The employee was transported to Emergency Room. The Job Safety Assessment was revised following an investigation of the incident.

5.2 Public Information

- The Public Information Officer (PIO) coordinated media interviews and prepared for the upcoming availability session in Kalamazoo County.
- The number of public inquires reported by Enbridge for this period is presented in Table 12.

6. Landowner Environmental Issues

- Landowner environmental issues reported by Enbridge for the operational periods are presented in Table 13.

7. Finance

- The current National Pollution Funds Center (NPFC) ceiling is \$41.2 Million. Approximately 85.0% of the ceiling has been spent through September 25, 2011. The latest average 7-day burn rate was \$84,163 per day. These cost summaries reflect only EPA-funded expenditures for the incident. A summary of these expenses is presented in Table 14.

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 15.

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/main.aspx?id=13168>.

11. Clean-up Progress Metrics

Table 1 – Submerged Oil Recovery Progress for Spring 2011 Reassessment Sites (as of 9/26/2011)

Sites Identified for Recovery Operations	218
Recovery Complete and Completeness Check Form Signed	151
Percent Complete	69.3%

Table 2 – Submerged Oil Recovery Progress for Late Summer 2011 Reassessment Sites (as of 9/26/2011)

Sites Identified for Recovery Operations	96
Recovery Complete and Completeness Check Form Signed	0
Percent Complete	0.0%

Table 3 – Boom Information

	September 2011						
	25	24	23	22	21	20	19
Total Surface Hard Boom (ft)	45,175	45,175	45,025	44,875	45,375	45,375	45,375
[Control Point Surface Hard Boom]	[30,600]	[30,600]	[30,100]	[30,100]	[30,100]	[30,100]	[30,100]

Table 4 – Samples Collected By Enbridge

Sample Type	Total	September 2011						
		25	24	23	22	21	20	19
Surface Water	27	0	0	0	0	8	9	10
Private Well	0	0	0	0	0	0	0	0
Groundwater	57	0	6	4	6	14	14	13
Sediment	3	0	0	0	0	2	1	0
Soil	325	0	50	57	44	48	61	65
Air (Community and Odor Complaint)	133	19	19	19	19	19	19	19

Table 5 – Real Time Air Monitoring Counts By Enbridge

Monitoring Location	Total	September 2011						
		25	24	23	22	21	20	19
Community	1968	96	326	292	327	360	243	324
Odor Response	0	0	0	0	0	0	0	0
Work Area	1098	0	182	208	188	200	144	176
Tar Patty Study	1	0	0	0	0	0	1	0

Table 6 - Equipment Decontamination

Location/Media	Total	September 2011						
		25	24	23	22	21	20	19
Frac Tanks	0	0	0	0	0	0	0	0
Vac Trucks-Tankers	1	0	0	0	0	0	0	1
Roll-Off Boxes	0	0	0	0	0	0	0	0
Yellow Iron (light)	1	0	0	0	1	0	0	0
Yellow Iron (heavy)	2	0	1	0	0	1	0	0
Jon Boats	4	0	1	2	0	1	0	0
Air Boats	4	0	1	3	0	0	0	0
Vehicles	10	0	1	0	6	2	1	0
Boom (feet)	6600	0	120	850	1100	1100	1200	1150
Miscellaneous Items	39	0	18	1	14	1	5	0

Table 7 - Soil and Debris Shipped Off Site (as of 9/26/2011)

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)	42,846	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)	998	EQ/Republic (Marshall, MI); C&C
Non-Haz Impacted Debris (ton)	5,137	

Shaded and italicized items are discontinued waste streams.

Table 8 – Oil/Water Collected by Location (as of 9/26/2011)

Location	Cumulative (gallons)
Division A	5,356,315
Division B	4,868,279
Division C	1,891,406
Division D	121,106
Division E	51,431
Decontamination	2,065,442
Site A	316,464
Other Locations*	1,364,085
Subtotal	16,034,528
Sludge**	474,215
Total Oil/Water	15,560,313

* 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 9 - Liquid Shipped Off-Site (as of 9/26/2011)

Stream	Destination Company	Destination Location	Cumulative Volume (gallons) †
Non-Haz Water	Battle Creek POTW	Battle Creek, MI	905,480
Non-Haz Water	Dynecol	Detroit, MI	913,642
Non-Haz Water	Liquid Industrial Waste	Holland, MI	408,307
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			15,550,386

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 10 - Oil/Water Remaining On-Site (as of 9/26/2011)

Item	Cumulative (gallons)
Oil/Water Collected	15,560,313
Oil/Water Shipped Off-Site	15,550,386
Total Oil/Water Remaining On-Site	9,927

Table 11 – Wildlife

Location/Media	Total	September 2011						
		25	24	23	22	21	20	19
Turtles in Captivity	426	58	58	55	62	64	59	70
Turtles Captured (Oiled) – Field Cleaned	83	0	3	11	23	25	20	1
Turtles Captured (Oiled) – Admitted to Wildlife Center	22	0	3	0	7	9	3	0
Turtles Captured (Un-oiled) – Field Released	252	0	24	32	51	62	66	17
Turtles Released from Captivity	44	0	0	7	9	4	14	10

Table 12 – Public Inquiries Received by EPA and Enbridge

Location/Media	Total	September 2011						
		25	24	23	22	21	20	19
Marshall Community Center	52	0	0	5	5	9	3	30
Oil Spill Public Information Hotline	5	0	0	0	4	0	0	1
Website	2	0	0	0	0	0	1	1
Total Public Inquiries	59	0	0	5	9	9	4	32

Table 13 – Landowner Environmental Issues (as of 9/26/2011)

Issues this Period	Issues Undergoing Evaluation	Issues Considered Addressed
1	15	0

Table 14 - Financial Summary

Item	Expended (Cumulative) (as of 9/26/2011)
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-	\$ 17,555,173
Response	\$ 183,597
T032-Sampling	\$ 996,495
T037-Doc Support	\$ 996,495
Total START Contractor	\$ 18,735,265
Response Contractor Sub-Totals	\$ 23,060,874
EPA Funded Costs: Total EPA Costs	\$ 5,300,513
Pollution Removal Funding Agreements – Total Other Agencies	\$ 1,823,682
Sub-Totals	\$ 30,185,069
Indirect Cost (16.00%)	\$ 4,829,611
Total Est. Oil Spill Cost	\$ 35,014,680
Oil Spill Ceiling Authorized by USCG	\$ 41,200,000
Oil Spill Ceiling Available Balance	\$ 6,185,320

Shaded items are discontinued

Table 15 - Personnel On-Site

Agency/Entity	September 2011						
	25	24	23	22	21	20	19
U.S. EPA	0	3	5	7	6	6	6
START	5	41	41	44	47	52	52
MDEQ	0	0	3	6	4	4	3
MDEQ Contractors	0	9	12	13	12	12	12
Calhoun County Public Health	0	0	0	1	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	0	0	0	0
MDCH	0	0	0	1	0	0	0
USGS	0	0	1	1	1	1	1
Michigan State Police EMD	0	0	0	1	0	0	0
Enbridge – Operations	28	79	137	146	148	153	144
Enbridge – Talmadge Creek	0	58	81	84	85	80	76
Enbridge – Kalamazoo River	22	423	439	432	428	435	429
Enbridge – Frac Tank City/Decon	0	46	46	45	41	36	34
Enbridge – Security & Flaggers	7	7	7	7	7	7	7
Enbridge – Wildlife and Comm.	0	8	14	14	13	12	14
Total	62	674	786	806	792	798	778

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