

US EPA ARCHIVE DOCUMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
Kalamazoo River/Enbridge Spill - Removal POLREP-SITREP



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region V



Submerged oil sampling at Ceresco Dam

**Subject: SITREP # 44**  
**Kalamazoo River/Enbridge Spill**  
**Z5JS**  
**Marshall, MI**  
**Latitude: 42.2395273 Longitude: -84.9662018**

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**Date:** 9/7/10

**Reporting Period:** 1900 hours 9/6/10 to 1900 hours 9/7/10

## 1 Introduction

### 1.1 Background

#### 1.1.1 Site History

##### Background Information

**Site Number:** Z5JS

**D.O. Number:**

**Response Authority:** OPA

**Response Lead:** PRP

**NPL Status:** Non NPL

**Mobilization Date:** 7/26/2010

**Demob Date:**

**CERCLIS ID:**

**ERNS No.:**

**FPN#:** E10527

**Contract Number:**

**Action Memo Date:**

**Response Type:** Emergency

**Incident Category:** Removal Action

**Operable Unit:**

**Start Date:** 7/26/2010

**Completion Date:**

**RCRIS ID:**

**State Notification:**

**Reimbursable Account**

#### 1.1.2 Incident Category

Emergency Response - Pipeline Rupture

#### 1.1.3 Site Description

A 30-inch pipeline ruptured, releasing crude oil (NRC report of 19,500 barrels) into a culvert leading to Talmadge Creek. Talmadge Creek is a tributary to the Kalamazoo River. The response site is along Talmadge Creek and the Kalamazoo River running from Marshall, Michigan, to downstream of Battle Creek, Michigan. The Kalamazoo River is bordered by marshland and developed properties for the approximate 30-mile stretch of the response site.

#### 1.1.4 Preliminary Removal Assessment/Removal Site Inspection Results

Approximately 30 miles of the Kalamazoo River have been impacted. The Kalamazoo River experienced flooding before and after the spill. The river levels later fell and stranded oil in some backwaters, wetlands and floodplains. Talmadge Creek was boomed off at the confluence to the Kalamazoo River. Containment and absorbent boom were deployed along the Kalamazoo River and Talmadge Creek. Containment and absorbent boom also were deployed in Morrow Lake.

### 1.1.5 Enforcement Activities, Identity of Potentially Responsible Parties

Enbridge is the RP.

On July 27, 2010, EPA issued an Administrative Order under section 311(c) of the Clean Water Act to Enbridge. Enbridge has submitted and EPA has approved the following deliverables required by the Order including but not limited to: *Operational Health and Safety Plan; Pipeline Repair Workplan; Sampling and Analysis Plan; Quality Assurance Project Plan; Oil Containment and Recovery Plan; Source Area Remediation Plan; Remediation Plan for Downstream Impacted Areas; and Waste Treatment, Transportation, and Disposal Plan.*

## 1.2 Incident Objective and Command Emphasis

The following incident objectives and command emphasis are taken from the IAP for the Operational Period September 6, 2010, 0700 to September 8, 2010, 0700.

### Incident Objectives

1. Ensure health and safety of the public and response and recovery personnel.
2. Maintain the isolation of the Kalamazoo River from up-gradient source area.
3. Ensure effective transition of regulatory oversight of the oil impacted areas from EPA to MDNRE jurisdiction as appropriate.
4. Contain and recover oil and contaminated vegetation in Talmadge Creek and Kalamazoo River.
5. Maintain effective unified communications with cooperating and assisting agencies and the public.
6. Perform remediation and restoration of all affected public and private areas of river and river systems.
7. Provide protection of environmentally and culturally sensitive areas including wildlife and historic properties.
8. Protect threatened and endangered species and continue to recover and rehabilitate injured wildlife.
9. Continue to collect, coordinate, manage and communicate environmental and public health data including maintenance of Joint Information Center function.

### Command Emphasis

1. Continue to evaluate and enhance submerged oil monitoring in the Kalamazoo River and at Morrow Lake, including assessment, mapping and development of near and long-term capture and management options.
2. Determine final assessment approach for evaluation of clean-up effectiveness along Talmadge Creek.
3. Develop and implement plans to augment the identification and documentation of overbank areas of concern.

## 1.3 Strategic Considerations

- 1) Emphasize need for awareness of local traffic and back-to-school safety considerations across all site work locations.
- 2) Emphasis with Enbridge to get submerged oil recovery going at Ceresco Dam.

- 3) Develop and implement plans to augment the identification and documentation of overbank areas of concern.

## **2 Current Activities**

### **2.1 Operations Section**

#### **2.1.1 Narrative**

The response site extends from the pipeline break to the dam at the end of Morrow Lake. Operationally, the response has been divided into two Oil Recovery and Cleanup Branches: East and West. These branches have been geographically divided into five Divisions, A through E, with Division A starting at the pipeline break and Division E ending at the western edge of Morrow Lake (see attached map). The East Branch includes Divisions A and B and the West Branch includes Divisions C, D and E. Division C is currently an area of command emphasis and has been further subdivided into four groups performing similar response activities in order to accelerate cleanup progress in that Division. Certain control points are denoted by division letter then control point number (i.e., C3 refers to control point three within Division C). Additionally the entire length of the site is now divided into one-quarter mile sections.

The Unified Command organizational charts (ICS 207 forms) are presented in Figures 1- 4. The ICS 207 Forms describe in detail the work breakdown structure for the response action.

The following activities occurred during the reporting period from 1900 hours on September 6, 2010 to 1900 hours on September 7, 2010:

#### **Division A**

Division A has been extended to incorporate the portion of Talmadge Creek from Location A4 to Division Drive.

#### Enbridge reported the following:

- Addressing EPA areas of concern from Locations A5 and B3.
- Continuing removal of several hot spots.
- Repair of silt fence at Locations A5 and A6.

#### EPA observed the following:

- Postponement of excavation, hauling, and vacuum truck activities pending the completion of field soil screening throughout Division A.
- Extension of mat road by excavator at Location A5.
- Intermittent operation of wood chipper depending on quantity of mats and trees delivered at any given time.
- Ongoing repair and maintenance of silt fences.
- Location A4/A5 boundary line:
  - Minor damage to silt fence. RP has been advised.
  - Two areas of disrepair along the south bank.
- Staging of peat fill material near source in preparation for future back filling operations.
- Identification of sporadic hot spots during night shift at Locations A5 and A6.
- Identification of rainbow sheen at various locations during the night shift.



- Completion of soil screening. EPA requested the written results from the RP.

## **Division B**

### Enbridge reported the following:

- Cleanup of contaminated soil at Locations B4 and between 15 ½ Mile Road and I-69. Areas passed Barr re-test.
- Maintenance of boom and silt fence at Locations B4 through B5.
- Reduction of staffing and resources and combination of reporting sites to simplify structure.
- Moving excess equipment from Locations B3, B4, and B5.
- Reopening of 15 ½ Mile Road and Location B3 for two way traffic.
- Stand-down at 1500 to conduct spot check of site safe work permit list. One discrepancy noted which was explainable.

### EPA observed the following:

- No removal activities in Locations A5 and A6 during the night shift.
- Accumulation of oil at boom locations through Locations B2 and B3 during the night shift.
- Oiled booms at Location B during the night shift.
- Concerning conditions at the soil stockpile and DECON area including tears in liners, untapped liners, and uncovered soil during the night shift.
- Removal of soiled excavator from site. EPA expressed concern about proper DECON and transportation of equipment. Enbridge assured START that the situation would be resolved.
- Removal of silt fence along Location B2.7 to facilitate soil scraping operations.
- Silt fences at Locations B2 and B3 appear to be in good condition.
- Ongoing repair and maintenance of silt fences at Locations B4 and B5 as needed.
- Ongoing as-needed repair and replacement of log boom throughout Division B as recommended by START and EPA.
- Removal of sorbent log boom at Location B2.
- Suspension of grade restoration and stabilization activities along Talmadge Creek pending receipt and review of soil screening results by EPA.
- Completion of excavation at bypass pumping area at Location B2.5.
  - Aqua barrier removed.
  - Termination of bypass pump operations.
- No excavation activities at Location B3.
- Continuing excavation at Location B4 upstream of 15 ½ Mile Road. Dump trucks are staged and hauling operations are ongoing.
- Continuing soil staging and processing at staging area next to Location B4.

## **Oversight Monitoring Group**

### River Branch Task Force 1 observed the following:

- Completion of seeding and mulching operations at Locations A1 through A4. No construction activity in these areas.
- Hold on soil screening operations at Locations A1 through A5.
- Removal of silt fence and sorbent log boom at Location A6.
- Completion of field screening of soil at Location A6. Results are pending.

- Continuing silt fencing operations at Location B2.
- Continuing booming operations at Location B2.
- Continuing suspension of excavation activities at Location B2, B2.7, and B5.
- Termination of bypass pumping and removal of aqua barriers at Location B2.5.
- Ongoing boom repair and maintenance at Location B3.
- Ongoing vacuum truck operations at Locations B5 and B2.7.

START GIS provided map of East Branch Division for day and night shift use in identifying hot spot locations at Location A5, A6, B2, B3, B4, and B5. Maps were delivered to RP who is reviewing and will perform necessary remediation.

## Division C

### Enbridge reported the following:

- At Location C0:
  - Continuing demobilization of CMC.
  - Collection and removal of debris.
  - Maintenance of boom as required.
- Cleanup of shorelines and islands at Locations C0.3 and C1.5.
- Removal of equipment and supplies from Location C0.4.
- Site closure at Locations C2 and C6.
- Removal of sorbent boom along north shoreline at Location C0.5.
- Addition of 200-300 foot of containment boom as a gate at Location C0.5.
- Search by EPA to identify hot spots at Location C0.5.
- Skimming operations at Location C1.
- Continuing cleanup of shoreline and removal of debris at Locations C3, C3.2, C3.9, C4.8, C4.85 and C5.
- Hotspot cleanup at Locations C3.2 and C3.9.

### EPA observed or reported the following:

- From MP2.25 to MP6 (Group 1):
  - Evaluation of oiled area identified yesterday on left descending bank near a private dock between MP2.5 and MP2.75. EPA and Enbridge contractors performed a full investigation and determined that the sheen is primarily biological sheen with small amounts of oil sheen and is not as serious as was originally considered.
  - Presence of small amounts of oil on private residential lawn at MP2.75. EPA and Enbridge contractors are coordinating to gain access.
  - At Island D at MP 3.75:
    - Continuing vegetation removal.
    - Installation of additional sorbent booms.
    - Preparation for possible flushing activities by covering area with snares.
  - Continuing flushing activities on Island E at MP4.0.
  - Identification of small source of sheen near an unnamed island near MP4.75. Sorbent boom has been placed around the island in response.
  - Identification of unknown sheen at MP5.25. Sheen was investigated and identified as natural biological sheen.
  - Soil sampling at MP5.5.



- Oil skimming operations near Ceresco Dam at MP5.75.
- MP6.5 to MP10 (Group 2):
  - Discovery of a large overbank pool of oil as a result of overbank assessment at MP8. An Enbridge cleanup team is scheduled to respond in the next several days.
  - Continuation of boom maintenance at MP8.25.
  - Suspension of all operations as per Safety's instructions on island at MP8.5.
  - Presence of "Do Not Enter" and "Off Limits" signs along right descending bank of MP8.5. Ongoing investigation to determine if this is a private property access issue.
  - Assessment of cleanup activities by EPA and Enbridge on Island 8.5 at MP8.75 where a thick tar area was discovered several days ago. Flushing per SCAT guidelines is creating sheen. Island is surrounded by sorbent boom which requires changing every several hours. These findings have highlighted the need to possibly adjust SCAT guidelines for pockets of product.
  - Inspection of cut wetland area by EPA and Enbridge at MP9.0. Yesterday, it was reported that the area was seeping oil despite having been cleaned. EPA recommended deployment of sorbent boom. Boom has been deployed.
- From MP10 to MP15 (Group 3 and 4):
  - Identification of 5 foot pool of oil 20 feet inland of right descending bank at MP10.25.
  - Escape of sheen through booms resulting from vegetation clearing activities. Enbridge responded with pom-pom deployment.
  - Identification of two large oil pools on island between MP10.5 and MP10.75. One pool extended to the shoreline producing sheen. Crews in vicinity were cleaning vegetation but not addressing oil or sheen. Enbridge responded by directing booming crews to address the sheen.
  - Identification of pooling and seeping oil inland of the left descending bank 50 yards downstream of MP10.75. Contractors appeared unfamiliar with guidelines for vegetation removal. Strong vapors and contractors were complaining of headaches. Enbridge removed one contractor from the site due to headache symptoms.
  - Identification of scattered oil pools up to 100 yards inland of right descending bank in area where contractors are removing vegetation at MP11.5.

USCG observed the following:

- Soiled sorbent booms and lack of felt on walkways 200-300 feet downstream on right descending bank of MP12.5. Enbridge responded with installation of felt on walkways. Confirmation of boom replacement is pending.
- Continuing presence of trash and vegetation pile up on island near left descending bank at MP 13.75.
- Emanation of sheen from unknown source at island near MP14.5. SCAT maps note sheen and pooled oil emanating from this island.
- Escape of sheen past hard boom and soiled sorbent boom at island near right descending bank between MP14.75 and MP15.0.

**Division D**

Enbridge reported the following:

- Cleaning of shorelines at Location D1.

- Installation of 120 feet of sorbent boom along shore at Location D1.
- Ongoing replacement of snare and sweep booms at Location D2.5.

EPA observed the following:

- Operation and maintenance of both lines of gabion baskets.
- Continuing presence of heavy oiling on boom throughout Division D. Boom need decontamination and/or replacement.
- Ongoing maintenance of boom in all areas.
- Presence of large sheen traveling downstream of Location D2. Likely the result of damaged boom with 6 foot sediment curtain cut by pontoon boat.
- Continuing cleanup of shoreline at MP16.5 to MP16.75, Location D2.5, and near the Angell Street Bridge.
- Approval of four ¼ mile sections by step 4 ReSCAT.
- Submittal of several ¼ mile sections for Step 3 SCAT approval downstream of Location D3 at MP17.25, MP17.5, MP19, and MP20.25.
- Installation of boom along the oxbow at Location D5. Additional equipment and materials required to complete sorbent booming and sediment curtain installation.
- Johnboat stuck on boom just below Location D3. Personnel cut string/rope and proceeded forward.
- Sheeting attached to new boom deployed at D5 (Custer Street Bridge) was observed to be disconnected and floating in river.

**Division E**

Enbridge reported the following:

- At Location E0.5:
  - DECON of gabion basket inserts by small team.
  - Maintenance of booms and clearing of debris.
  - Continuing construction and maintenance of gabion baskets. 37 gabion baskets deployed upstream.
- Closure of work sites at Locations E1 and E3.
- Inactivity at Location E2. Site operates as a boat launch only.
- Sample collection taken upstream of dam in between silt curtain and boom at Location E4.
- Storage of silt skirt at Location E4.
- Boom maintenance throughout Division E from Location E4.5. Replacement of 2200 feet of boom.
- Patrol by skimmer boats from Location E4.5.

EPA observed the following:

- Investigation of two areas of reported sheen between MP26.25 and MP26.50 near Location E0.5.
  - Areas are marshy coves characterized by flat topography and thick sedimentation.
  - Impacted sediments are at a depth of approximately 6-8 inches.
  - Impacted sediments have potentially trapped product.
  - Significant sheen is being produced in these areas.
  - Strong odors observed at both areas.

- Proximity of one area to seemingly unoccupied residential structures.
- Initiation of booming of both areas has commenced.
- These areas merit immediate attention.

### **2.1.2 Branch Operations**

In addition to the East and West Recovery Branches, EPA, USCG and Enbridge Operations have five Branches that conduct activities in all Divisions: DECON, Environmental Compliance and Oversight; Monitoring; Wildlife Environmental/Damage Assessment; and Air Ops.

#### **Technical Services Group**

##### EPA reported the following:

- No update provided.

#### **Environmental Compliance and Oversight Branch**

##### Enbridge reported the following:

- Continuing soil scraping and documentation collection in Locations A6, B2 and B5.
- Ongoing hot spot cleanup in Divisions A and B.
- Continuing oversight of SCAT inspection teams.

##### EPA reported the following:

- Two START teams continued oversight of CTEH air monitoring crews in Divisions A, B, D, and E.
- One START team provided oversight of surface water sampling teams and collected one split samples on Morrow Lake.

##### Transportation and Disposal took the following actions:

- Conducted QA/QC on data prior to its presentation at the 0830 Command and General Staff Meeting.
- Discussion with Barr Engineering pertaining to acquisition of weight tickets and total mass on an individual truck load basis for each waste stream to off-site disposal facilities.
- Conducted QA/QC on data presented on the EPA website for the Marshall Oil Spill Response.
- Assembled internal EPA solid and liquid projections for IC and EPA.
- Visual Assessment of operations within Frac City and the soil staging area in Division A.

#### **DECON Branch**

##### Enbridge reported the following:

- Continuing construction of central DECON area in Location C0.5 is 25% complete.
- Central roll off staging in Location C0.5 can handle 40 roll off boxes.
- Establishment of a new cleaning area for large equipment in Division A.

##### EPA reported the following:

- Review of decontamination procedures with Enbridge and EPA representatives.

As of September 7, 2010, T&D and DECON are combined under the same division supervisor.

## Monitoring Branch

Primary responsibility for sampling air sampling activities was turned over to Enbridge personnel on 08/28/10.

### Enbridge reported the following:

- Focused air sampling programs are continuing around the Baker Estates Mobile Home Park, the Day Care, Ceresco Dam, and the source area.
- Ongoing real time monitoring for benzene and VOCs.
- Continuation of air sampling program to collect 24-hour summa mini-can samples, grab samples, and passive dosimeter samples in addition to the real-time air monitoring samples.
- Collection of samples as indicated in Table 1:

**Table 1 - Samples Collected as of 9/7/10 1515**

Sample Type	Number collected
Surface Water	30
Vertical Water Column Samples	0
Private Well Samples	9
Sediment Samples	10
Sheen Samples	0
Other	0
Soil Samples	0

### EPA reported the following actions or observations:

- Duplicate air monitoring conducted at 25 locations with no benzene or other air contaminants detected.
- Collection of samples as indicated in Table 2.

**Table 2 - Samples Documented in SCRIBE as of 9/7/10**

Media	Sample Type	Number collected
Air	Summa Canister	0
Air	Tedlar Bags	0
Air	Monitoring Samples	24
Surface Water	Grab	0
Sediment	Grab	0

Four SCAT teams reported the following:

- Conducted ReSCAT evaluations and cleared 6 segments.

Three Submerged Oil Task Force teams reported the following activities:

- Deployment of three teams to Division C:
  - Collection of 7 cores from the silt curtain above Ceresco Dam by Team A:
    - Bathymetry not completed.
    - Performed oversight of sediment coring collection for qualitative and quantitative analysis of sediment impact.
    - Observed pilot testing conducted at silt fence.
  - Oversight of sediment coring and qualitative/quantitative analysis of sediment impact by Team B:
    - 13 core samples from potential submerged oil areas.
    - 11 polling transects completed. 10 of 11 reported at MP14.7 area of interest.
  - Oversight of sediment core logging of 4 core samples by Team C.
    - Oversight of TetraTech processing, data logging, and visual observations of sediment cores.
    - Processing of one cores upstream of Ceresco Dam from the south bank at MP5.65 with no visual evidence of free product and/or sheen.
    - Processing of one cores upstream of Ceresco Dam from the north bank at MP5.72 with visual evidence of free product and/or sheen in the top six inches of the core.
    - Processing of three cores upstream of Ceresco Dam at MP5.81 with visual evidence of free product and/or sheen in the top six inches of the core. Contamination was greater than previous core samples from upstream of the dam.
- Presence of high volume of sheen/tar flecks in ponded area behind the Ceresco Dam. Anchor and boat fan caused submerged oil to surface and dissipate into sheen.
- Soil agitation pilot testing conducted at silt fence above Ceresco Dam.
- Surfacing of sheen/tar caused by anchoring and boat fans.

**Wildlife Environmental Damage Assessment Branch**

USFWS reported the following:

- Briefing for Unified Command on turtle hibernation as it relates to likely locations of submerged oil.
- Assisting in preparation for September 15 congressional testimony.
- Planning for deer hunter education and outreach.
- Distribution of business card sized handout with hotline number for workers.
- Reinstallation of deterrence fence that disappeared several days ago and installation of signage with fences.
- Review of water quality data to determine if/when another collection should be done.
- Operation of approximately 80 traps.
- Preparation for fish survey on September 8<sup>th</sup> that will require closure of all boat traffic in Division C for several hours.
- Turtle, heron, and beaver trapping continue.

As of September 6, 2010 at 0700, the wildlife center reported 279 animals in captivity and 693 released to date.

### **Air Ops Branch**

Since August 23, 2010, both the EPA START Situation Unit FOB and Enbridge have been using the Enbridge funded helicopter for their daily over-flights. The EPA helicopter will be available, as needed, for IC and other federal needs.

#### Enbridge reported observing the following during two over flights:

- Changes in Sheen:
  - Minor sheen upstream of culvert crossings in Locations A5 and A6.
  - Absence of sheen at pond area before Interstate 69 in Division B.
  - Absence of sheen on banks at Locations B4.7, B5, and downstream of B5.
  - Scattered areas of boom contained sheen throughout Division C.
  - Absence of sheen downstream of containment booms surrounding islands in Division C.
  - Continuing presence of sheen upstream and downstream of peninsula at Ceresco Dam.
  - Continuing containment of sheen at both north and south areas upstream of the Ceresco Dam.
  - Continuing presence of sheen south of a small island at Location C10.75.
  - Continuing containment of sheen by boom at island upstream of Location C5.
  - Absence of sheen at the confluence, Baker Estates, and downstream of Ceresco Dam.
  - Absence of sheen discharging from a culvert downstream of Kendall Street in Division C. Sheen was reported discharging from this location yesterday.
  - Absence of sheen upstream of boat launch at Location D2 where sheen was reported yesterday.
  - Continuing containment of sheen on water at the oxbow at MP21.5. Still no sheen on main waterway.
  - Continuing presence of sheen upstream of E0.5 at one of the river bends near MP26.5.
  - Diminished sheen and floating debris at the Morrow Lake Delta contained by boom upstream of Location E4 at the mouth of Morrow Lake.
  - Absence of sheen on Morrow Lake.
- Operational Observations:
  - Addition of top soil at source area in areas of pooled water.
  - Accumulation of creek water reservoir at location of bypass pump at Location A6.
  - No activity at Location B2.7.
  - Continuing absence of sorbent pads at the confluence of Talmadge Creek and Kalamazoo River at Location B5.
  - Construction of scaffolding at Frac Tank City.
  - Work on cells at yard next to Location B5. Addition of sand berm to previously removed soil cell at.
  - Continuation of heavy boat and manpower activity in Location C.
  - Accumulation of floating matter and sheen at boom downstream of Location C0.3.



- Construction of DECON/roll off area at Location C0.5. Some equipment already in place. Installation of orange security fence.
- Sediment curtain and experimental submerged oil treatment cells upstream of Ceresco Dam at Location C5.
- Boat activity on Morrow Lake included four manned boats.

EPA observed the following during one over flight:

- Changes in sheen:
  - Absence of oil and sheen in Division A1 through A4.
  - Diminished sheen along southern shoreline of Talmadge Creek at Location A5.
  - Diminished presence of intermittent sheen along shoreline of Talmadge Creek throughout Locations A5 and A6.
  - Presence of intermittent sheen in Talmadge Creek at the intersection of Interstate 69 and Talmadge Creek.
  - Absence of sheen in ponds adjacent to Talmadge Creek east of Interstate 69 at Location B3.
  - Absence of sheen at or downstream of the scraping activities in Location B2.7.
  - Absence of sheen at confluence of Kalamazoo River and Talmadge Creek at Location B5.
  - Significantly diminished sheen along the south shoreline of the peninsula upstream of Ceresco Dam.
  - Diminished sheen in the Mill Pond near Location C6. Sheen was effectively contained.
  - Presence of sheen near island at MP14.5. No sheen was noted at this location yesterday.
  - Absence of sheen emanating from culvert on the north side of the Kalamazoo River just west of the Angell Street Bridge.
  - Significant sheen in the oxbow area at MP21.5 in Location D4.25. Amount of sheen has diminished relative to yesterday.
  - Absence of sheen downstream of the oxbow at 21.75.
  - Presence of sheen along the northern shore near Location E0.5.
  - Little to no sheen in several locations of the Morrow Lake Delta. No sheen was observed on the delta yesterday.
  - Absence of oil and sheen on Morrow Lake.

Overall, less sheen was visible in Divisions A, B, and C than yesterday.

- Operational Observations:
  - Standing water on the ground cover throughout Division A.
  - Grading of topsoil that was added to the area immediately southwest of the release Site yesterday.
  - Relocation of several pieces of heavy equipment to Location A5.
  - Deployment of sorbent pads along the southern shoreline between Locations A5 and A6.2.
  - Movement of soil in eastern soil staging area.
  - Active DECON of several frac tanks at the south end of Frac Tank City. No loading trucks were observed.
  - Staging of one excavator and one truck east of the scraping area at Location B2.7.

- Booming strategy at the confluence of Talmadge Creek and the Kalamazoo River appeared unchanged.
- Absence of sorbent pads at the confluence.
- Heavy cleanup activities on Islands A, B, E, and F Division C.
- Approximately 75% coverage of Island E in sorbent pads.
- One sampling boat and three submerged oil test cells along the southern shoreline above Ceresco Dam.
- Island that had been cordoned off due to health and safety concerns.
- Heavy cleanup between MP11 and MP12.25 in Division C.
- Sorbent boom throughout the oxbow at MP21.5 in Division D.

### 2.1.3 Progress Metrics

All progress metrics in Section 2.1.2 are as reported by Enbridge unless otherwise indicated.

#### Boom Report

**Table 3 - Boom Report (9/7/10 1900)**

Number of Locations	25
Boom Deployed (feet)	147,472

#### Soil and Debris Waste Tracking

**Table 4 - Soil and Debris Waste Tracking (9/7/10)**

Waste Stream*	Quantity Shipped	Cumulative Quantity Shipped
Haz Soil (yd <sup>3</sup> ) <sup>a</sup>	0	15,344
Non Haz Soil (yd <sup>3</sup> ) <sup>b</sup>	0	15,288
Haz Debris (yd <sup>3</sup> ) <sup>c</sup>	0	12,075
Non Haz Debris (ton) <sup>c</sup>	0	651

\* Information for water (other than daily quantity shipped) is reported in other tables below. Quantity awaiting disposal is estimated.

a. Haz (Benzene)-impacted soil is being sent to EnviroSafe (Oregon, OH).

b. Non Haz soil is being sent to Westside Recycling (Three Rivers, MI) and EQ/Republic (Marshall, MI).

c. Roll-off boxes containing waste sorbents, boom, pads, plastic, PPE, and oiled vegetation and biomass are being sent to EQ facility (Michigan Disposal) in Wayne, MI and Republic (Marshall, MI).

## Oil/Water Recovery Tracking

Note: Some of the values in the tables below have been audited and reconciled by Enbridge and may not correlate with previously reported values.

**Table 5 –Oil water collected by location (9/6/10, 0700)**

Location	Cumulative Total Collected (gallons)
Division A	4,805,618
Division B	3,397,775
Division C	795,350
Division D	117,825
Division E	49,950
Other Locations*	263,678
<b>TOTAL</b>	<b>9,430,196</b>

\* Includes Frac, DECON, and Wildlife Center.

**Table 6 - Oil water Separation (9/6/10, 0000)**

Oil-Water Separation at Tank 1605, Enbridge Facility in Griffith, IN Facility (gallons)	
Oil	699,823
Other Material	1,382,983
<b>TOTAL</b>	<b>2,082,806</b>

**Table 7 – Liquid Shipped Off-site (9/6/10, 0000)**

Oil/Water leaving Site	Destination	Daily Quantity Shipped (Gallons)	Cumulative Quantity Shipped (Gallons)
Haz Water	Dynecol, Detroit, MI	0	2,019,037
Oil/Water	Tank 1605, Enbridge Facility, Griffith, IN	-243,194 †	2082806
Treated Non Haz Water	Liquid Industrial Waste Services, Holland, MI	0	370,200
Treated Non Haz Water	Plummer, Kentwood, MI	0	1,625,800
Haz Water	Safety Kleen <sup>a</sup>	0	550
Treated Non Haz Water *	Dynecol, Detroit, MI	0	134,200
Treated Non Haz Water *	Battle Creek POTW	0	1,968,700
<b>Totals</b>		<b>0</b>	<b>8,201,293</b>

\* Treated Non Haz Water no longer sent to this location.

a. New Age lab water and methanol mix generated by mobile laboratory.

† Volumes have decreased due to an EPA audit conducted 09/03 through 09/06. Results concurred with Enbridge

**Table 8 - Oil/Water Volume Summary (Gallons)**

Oil/Water Collected <sup>a</sup>	9,430,196
Oil/Water Shipped Off-site <sup>b</sup>	8,201,293
<b>OIL/WATER REMAINING ON-SITE</b>	<b>1,228,903</b>

a. As of 9/7/10, 0700

b. As of 9/6/10

## 2.2 Planning Section

### Data Management Unit

The Data Management Unit reported the following:

The DMU continued processing surface water sampling data, importing preliminary and validated analytical results into SCRIBE.

### Situation Unit Field Observers

Situation Unit FOB observed the following:

- At Division B
  - Opening of 16 Mile Road to two way traffic. No traffic control personnel present.
  - Removal of swamp mats and dead trees in preparation for dredging operations.
  - Sorbent pads in Talmadge Creek to collect oil near culvert.
  - Presence of oily sheen in depressed area on right descending bank.
  - Growth of reseeded grass on right descending bank.
  - Repositioning of segments of crane fence using heavy equipment (log loader).
  - Maintenance/replacement of sorbent boom underway at two locations.
  - Emanation of brown sheen from wetland areas collecting in standing water. Sheen is likely biological.
  - Pump around system is gone and water is flowing freely from Division A to culvert dam at MP0.75. No worker activity in this area.
- At Division C.
  - Coring crew on bank after collecting three cores from agitation test cells. Crews returned to the water to continue taking cores from outside the agitation cells.
  - Presence of vacuum truck and leaf blower crews to skim at two locations within the quiescent backwater area upstream of the dam's descending right bank.
  - Lack of boat activity upstream of the dam on the Kalamazoo River.
- At Wildlife Center
  - Public tour by Enbridge contractors of the response center. Tours are advertised by television and newspaper for September 7, 14, 18 and 25. Eight visitors in attendance.
  - Rescue and recovery operations are continuing with four stages of response: intake, stabilization, wash and conditioning.
  - Most animals currently at the center are turtles or Canadian geese.
  - All wildlife treated and released from the center are tagged prior to release,

- Wash water is stored on site and hauled off by vacuum truck. Water for clean animals is discharged into the sanitary sewer.
- At Brooks (Air) Field at Incident Lab Station
  - Lab area for core samples.
  - Three core samples are delivered from this mornings' sampling at Ceresco Dam.
  - Cores have been split open for physical observation and volatiles measurement. Core sub-samples are being collected into sample bottles for further analysis.

### **2.2.1 Anticipated Activities for Next Reporting Period**

In the next operational period, Operations anticipates final clearance of Division A and bank stabilization in Division B as well as performing the same or similar activities as in the previous operational period, with a focus on activities in Division C.

### **2.2.2 Issues**

Calhoun County public health reported the following:

- No report filed.

### **2.3 Logistics Section**

COML initiated a new radio check call down procedure for all radios assigned to personnel.

### **2.4 Safety Officer**

The following health and safety concerns were expressed:

- Enbridge requested EPA assistance for air monitoring in area MP4.5 after reports of strong odors and workers having headaches. Air monitoring was performed and all readings were normal.
- Strong odors reported above Ceresco Dam.
- Boat traffic in the area above Ceresco Dam should be limited to only workers in that area.
- Inconsistent levels of PPE at Location B2.5. One worker in Tyvek, waders, and life jacked assisting bypass pump removal. Spotters on mat road did not have matching levels of PPE.
- Deployment of traps downstream of Location D3. Signage warning of traps and any precautions could be useful for workers in the area safety.

Enbridge reported the following Health and Safety issues:

- Right to know
  - Reiterated the need to ensure all employees are receiving and understanding the instructions given to them. If there is a language barrier it must be overcome.
- Site transitioning:
  - Reminder to workers on respecting personal property and to conduct themselves appropriately.
- Back to School:
  - Back to school means more children walking and biking on the roads. All motorists need to take special care while driving.

EPA reported the following Health and Safety issues:

- Finalization of the Fatigue Management Plan.
- Initiation of development of medical plan and securing Medical unit Leader (Nurse).
- Development of expectations for medical screening program.
- Follow up from article in Michigan Messenger in regards to allegations of violations.
- Boating Safety Orientation and review of boat checklist.
- Review of Decontamination of Equipment and Personnel Work Plan.

## **2.5 Liaison Officer**

The Liaison Officer reported the following actions:

- The LNO scheduled and confirmed personnel resources to the LNO position in the ICP through September 20, 2010 ensuring smooth transition between deployment.

## **2.6 Finance Section**

The current NPFC issued ceiling was \$16 million. Approximately 92.7% of the ceiling had been spent through September 6, 2010, with a burn rate of \$192,134 per day. These cost summaries reflect only EPA-funded expenditures for the incident.



**Table 9 - FPN E10527 - Enbridge Pipeline Oil Spill (09/06/10)**

<b>ERRS Contractors</b>		<b>Est. Expended</b>	<b>Est Burn Rate (Lastest Daily)</b>
EQM (EPS50802)	T057	\$1,251,054	\$0
	T060	221,890	1,600
LATA (EPS50804)		1,451,396	0
ER LLC (EPS50905)		723,669	0
<b>ERRS Contractors</b>		<b>\$3,648,009</b>	<b>\$1,600</b>
TNT Bisso		712,000	27,000
<b>START Contractor</b>			
WESTON (EPS50604)		4,782,227	74,116
<b>Response Contractor Sub-Totals</b>		<b>\$9,142,236</b>	<b>\$102,716</b>
<b>EPA Funded Costs:</b>			
Total EPA Costs		2,679,574	46,250
<b>Pollution Removal Funding</b>			
<b>Total Other Agencies</b>		<b>\$970,040</b>	<b>\$16,667</b>
Sub-Totals		\$12,791,850	\$165,633
Indirect Cost (14.15%)		2,046,696	26,501
<b>Total Est. Oil Spill Cost</b>		<b>\$14,838,546</b>	<b>\$192,134</b>

**2.7 Information Officer**

The Public Information Office reported the following activities:

The PIO staff operated the media inquiry line and performed media monitoring.

**Media Inquiry Line (877-440-7157)<sup>a</sup>**

Calls received during reporting period: 0

Enbridge reported the following call volume and community center visits:

**Oil Spill Public Information Hotline (800-306-6837)<sup>b</sup>**

Calls received during reporting period: 13

<sup>a</sup> No update provided for the Media Inquiry Line

<sup>b</sup> No update provided for the Oil Spill Public Information Hotline

**Community Center Visits<sup>c</sup>: 4**

Visits by location during reporting period:

Battle Creek	3
Marshall	1

Enbridge reported that it received 2 inquiries from its [www.response.enbridgeUS.com](http://www.response.enbridgeUS.com) website bringing the total to 554 comments.

**2.8 Response Actions to Date**

Response Actions to date may be found in Situation Reports 1 through 43.

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<sup>c</sup> No update provided for the Community Center Visits

### **3 Participating Entities**

#### **3.1 Unified Command**

U.S. EPA  
MDNRE  
Michigan State Police Emergency  
Management Division  
City of Battle Creek  
Cooperating and Assisting Agencies

Calhoun County Public Health  
Department  
Calhoun County Emergency Management  
Kalamazoo County Sheriff  
Enbridge (Responsible Party)

#### **3.2 Cooperating and Assisting Agencies**

ATSDR  
Calhoun Conservation District  
Calhoun County Commission  
City of Kalamazoo  
City of Marshall  
Emmett Township  
Fredonia Township  
Kalamazoo County Office of Emergency  
Management  
Marshall Area Firefighters Ambulance  
Authority

Marshall Police Department  
Marshall Township Government and Fire  
Department  
Michigan Department of Agriculture  
MDCH  
NOAA  
Oakland County HAZMAT/RRTN  
PHMSA  
USCG  
U.S. Department of the Interior/USGS  
USFW

#### **3.3 Congressional Presence**

State Representative Jase Bolger  
State Representative Kate Segal  
State Representative Ken Kurtz  
State Representative Phil Browne  
State Representative Phyllis Browne  
State Representative Bob Geuck  
State Representative Tanya Schuitmaker  
State Senator Mike Nofs  
U.S. Congressman Mark Schauer  
U.S. Senator Carl Levin  
U.S. Senator Debbie Staben

#### 4 Personnel On Site

**Table 10. Personnel On Site 9/7/10**

Agency/Entity	Numbers Reported
EPA	46
START	42
Calhoun County Public Health Dept. (CCPH)	2
Calhoun County (CC) Sheriff	6
City of Battle Creek	3
Kalamazoo Sheriff	2
MDNRE	7
Michigan State Police (MSP)	1
NOAA - National Weather Service	2
NOAA- NRDA	2
USCG	7
USFWS	3
USFWS Contractors	0
Enbridge	8
Enbridge Contractors	1123
<b>Total</b>	<b>1,254</b>

## 5 Definition of Terms

ATSDR	Agency for Toxic Substances and Disease Registry
CCPH	Calhoun County Public Health
CIC	Community Involvement Coordinator
CTEH	Center for Toxicology and Environmental Health
DMU	Data Management Unit
EMT	Emergency Medical Technician
ENVL	Environmental Unit Leader
EPA	Environmental Protection Agency
EQM	Environmental Quality Management
ER	Environmental Restoration
ERRS	Emergency and Rapid Response Services
ERT	Emergency Response Team
EU	Environmental Unit
FOB	Field Observer
GLNPO	Great Lakes National Program Office
H <sub>2</sub> S	Hydrogen Sulfide
HASP	Health and Safety Plan
IAP	Incident Action Plan
IC	Incident Commander
ICP	Incident Command Post
IN	Indiana
JIC	Joint Information Center
LEL	Lower Explosive Limit
LNO	Liaison Officer
LSC	Logistics Section Chief
MDA	Michigan Department of Agriculture
MDCH	Michigan Department of Community Health
MDMB	Michigan Department of Management and Budget
MDNRE	Michigan Department of Natural Resources and Environment
MI	Michigan
MIOSHA	Michigan Occupational Safety and Health Administration
MP	Mile Post
NOAA	National Oceanic and Atmospheric Administration
NPFC	National Pollution Fund Center
NRC	National Response Center
NRG	National Response Group
OSHA	Occupational Safety and Health Administration
PHMSA	Pipeline and Hazardous Materials Administration
PIO	Public Information Officer
POTW	Publicly Owned Treatment Works
Ppbv	Parts Per Billion Volume
PPE	Personal Protective Equipment
ppm	Parts Per Million
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
RP	Responsible Party
SCAT	Shoreline Contamination Assessment Team
START	Superfund Technical Assessment and Response Team
T&D	Transfer and Disposal
UC	Unified Command
USCG	United States Coast Guard

USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
U.S. EPA	United States Environmental Protection Agency
VOCs	Volatile Organic Compounds
yd <sup>3</sup>	Cubic Yards

## **6 Source of Additional Information**

### **6.1 Additional Information**

For additional information please refer to <http://www.epa.gov/enbridgespill.html>. For sampling analysis data, please see <http://response.enbridge.com/response/main.aspx?id=13168>.

### **6.2 Reporting Schedule**

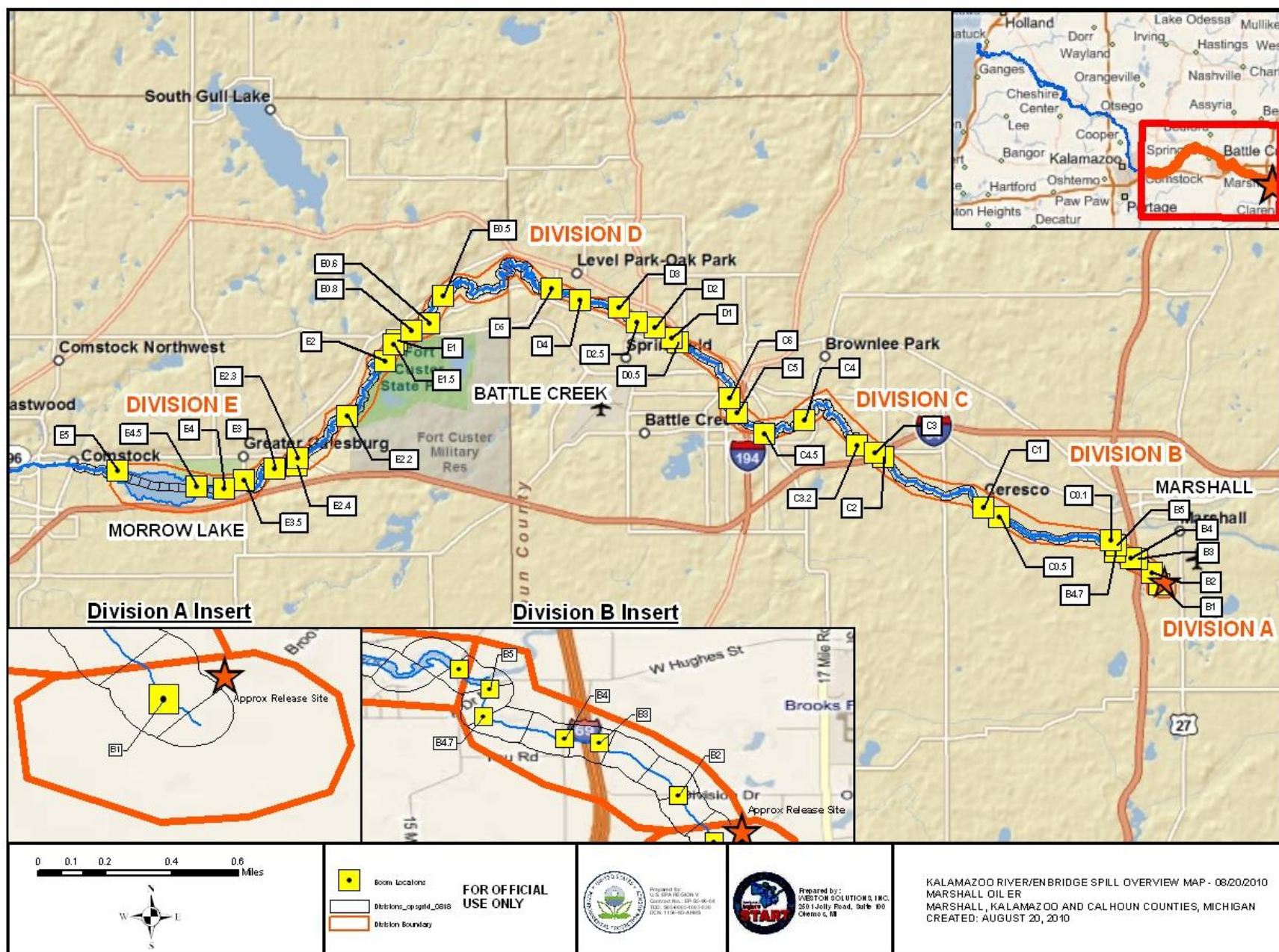
SITREPs have been created daily and will continue until the UC establishes a different reporting schedule, in conjunction with the planning cycle.

## **7 Situational Reference Materials**

See attached Map, entitled “Kalamazoo River/Enbridge Spill Overview Map,” for more information.

See attached Unified Command Organizational Charts (ICS 207) entitled, “Enbridge Pipelines Response Unified Command”, “Planning Section”, “Operations”, and “Division C.”

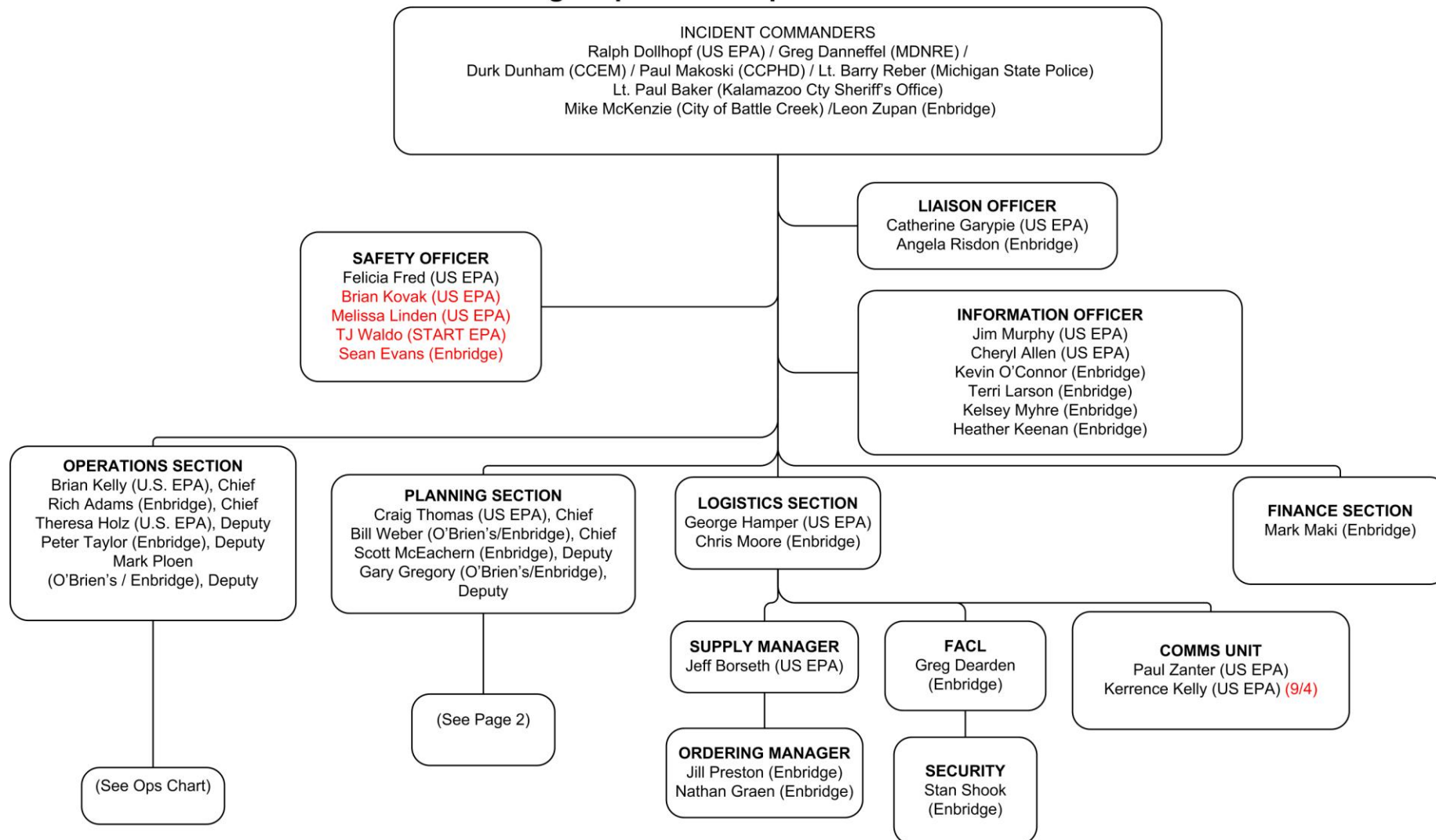




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## Enbridge Pipelines Response Unified Command

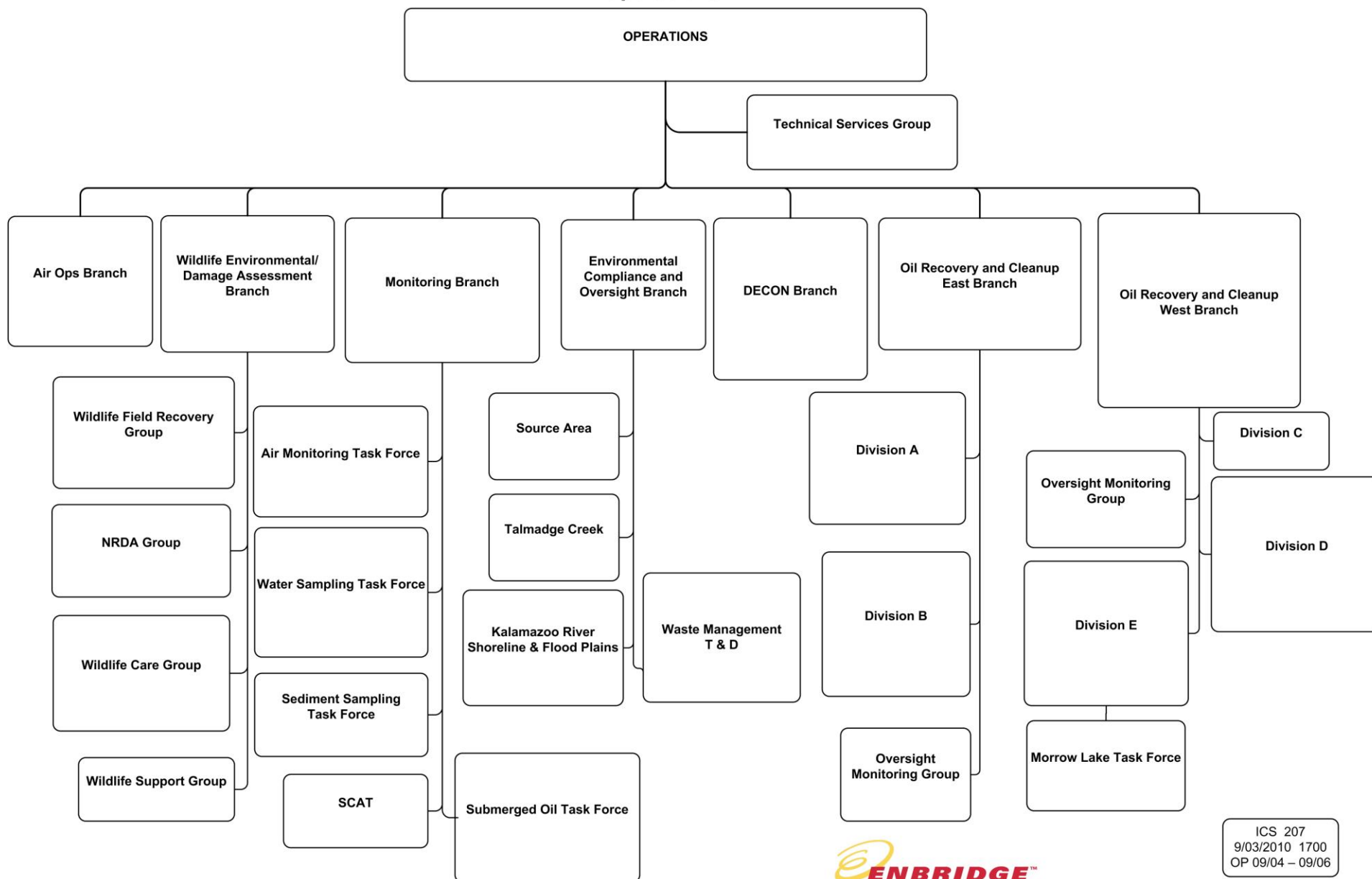


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OP 9/04 – 9/06

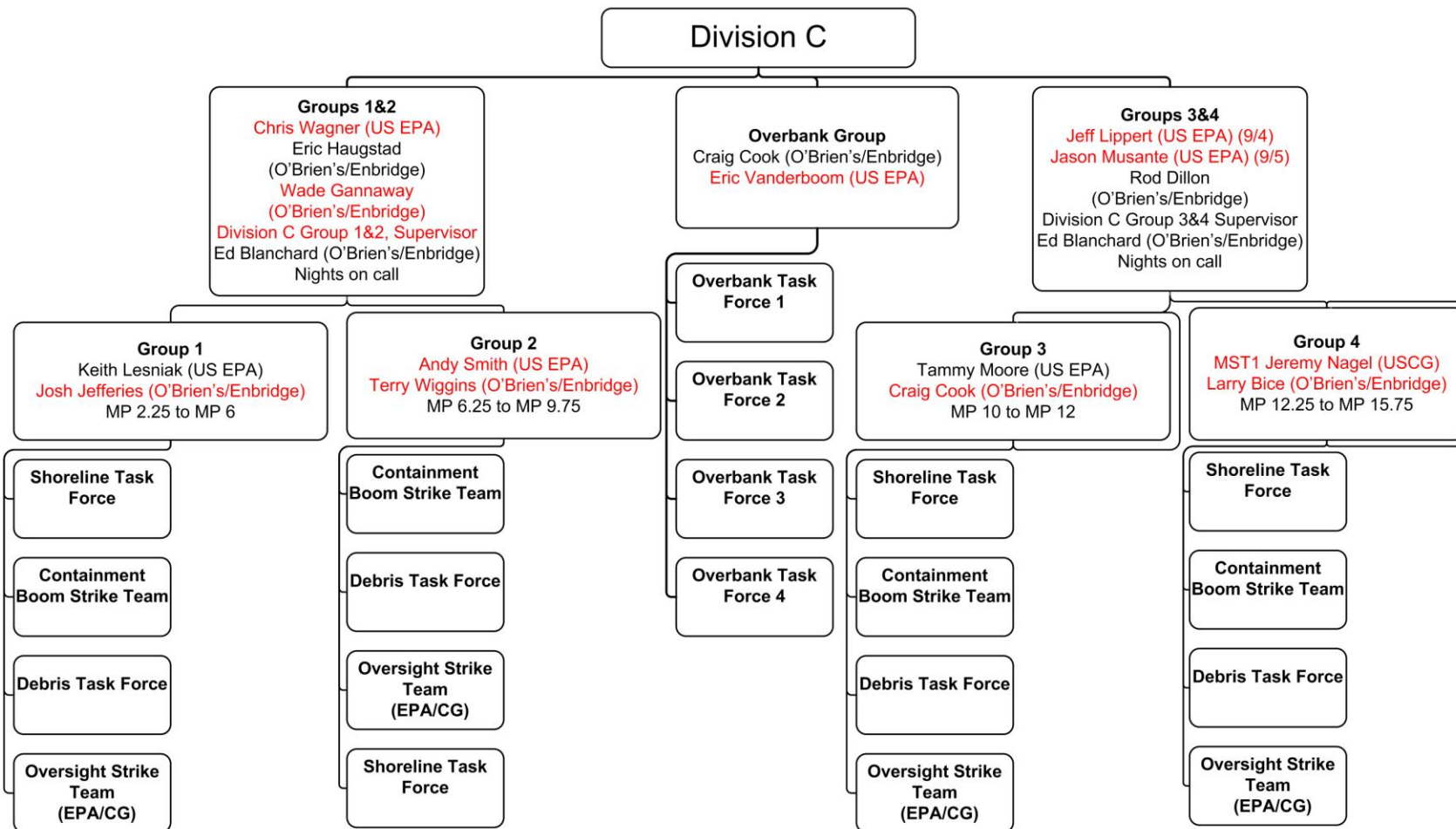




## Operations



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9/03/2010 1700  
OP 9/04 – 9/06



