

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



Subject: **SITREP # 46**  
**Kalamazoo River/Enbridge Spill**  
**Z5JS**  
**Marshall, MI**  
**Latitude: 42.2395273 Longitude: -84.9662018**

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**Date:** 9/9/10

**Reporting Period:** 1900 hours 9/8/10 to 1900 hours 9/9/10

## 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 8, 2010, 0700 to September 10, 2010, 0700.

### Incident Objectives

1. Ensure health and safety of the public and response and recovery personnel.
2. Ensure effective transition of regulatory oversight of the oil impacted areas from EPA to MDNRE jurisdiction as appropriate.
3. Maintain the isolation of the Kalamazoo River from up-gradient source area.
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. Finalize submerged oil containment and recovery tactics for highest priority targets in the Kalamazoo River and at Morrow Lake.
2. Finalize and implement assessment procedures and review criteria for evaluation of clean-up and intermediate restoration along Talmadge Creek.
3. Complete necessary sampling, grade restoration and stabilization work along Talmadge Creek as appropriate in accordance with MDNRE guidance.

## 1.3 Strategic Considerations

- 1) Air-lift support for operations on the impacted area along the Kalamazoo River will be occurring.
- 2) Emphasis with Enbridge to implement submerged oil recovery plan. Focus remains on Ceresco Dam area.
- 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 8, 2010 to 1900 hours on September 9, 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: (No new activities reported.)

- Confirmed that there was no product at Location A4.
- Scraping at Location A5 under the guidance of AECOM.
- Assignment of crew to walk and address hot spots per EPA map and visual inspection.

EPA observed the following:

- Hauling operations from soil staging area adjacent to the source. Tandem dump trucks are staged at the construction entrance and hauling is ongoing.
- Modification of excavation operations per “Approach for Source Contamination Removal, Verification, and Backfill” addendum to the work plan.
  - Four excavation and test pit construction crews are operational.
- Suspension of backfilling operations in the first three cells on the west side of Talmadge Creek at Location A5. RP is requesting guidance from a restoration specialist.
- Ongoing maintenance and installation of silt fence.
- Continuing vacuum truck operations at Location A5 on the south side of Talmadge Creek.
- Continuing as needed operation of wood chipper depending on quantity of mats and trees delivered at any given time.
- Continuing staging of peat fill material near source in preparation for future back filling operations.

EPA reported the following:

- Performed oversight and verification of conformance to the Approach for Source Contamination Removal, Verification, and Backfill plan.
- Instructed RP to document analytical analysis of imported fill materials. RP is responsible for providing documentation of the environmental quality of imported materials.

**Division B**

Enbridge reported the following:

- Removed contaminated soil from creek bank at Location B4.
- Maintained boom and silt fence at Location B5.
- Collected sheen along creek at Location B5.
- Reviewed DECON procedure. DECON may move to Yard 4, Cell2.

EPA observed the following:

- Suspension of grade restoration and stabilization activities along Talmadge Creek pending approval of the Approach for Source Contamination Removal, Verification, and Backfill plan by MDNRE. EPA has approved the plan.
- Ongoing silt fence maintenance.
- Continuing ongoing as-needed repair and replacement of log boom throughout Division B as recommended by START and EPA.
- Continuing suspension of excavation operations in Locations B2, B3, B4, and B5.
- 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 backfilling and seeding/mulching operations from Location A1 to A4.
  - Distribution of hay over seeded/mulched areas.
  - No construction activities in seeded/mulched areas.
  - Rainbow sheen in standing water adjacent and to the north of the A2/A3berm.
    - RP has been informed.
    - RP requested phone notification of hot spots in Locations A1 through A6 so that immediate corrective action can be taken.
- Ongoing hand excavation operations at Location B2.5.
- Ongoing excavation activities at Location A5.
- Removal of silt fence and sorbent log boom at Location A6.
- Continuing suspension of excavation activities at Location B2, B2.7, B4 and B5.
- Continuing hand excavation at Location B2.5.
- Continuing boom repair and maintenance at Location B3.
- Continuing vacuum truck operations at Location B5.

River Branch Task Force 1 reported the following:

- START GIS will continue to provide hot spot location maps for Locations A5, A6, B2, B4, and B5. RP is provided with these maps.

## Division C

### Enbridge reported the following:

- Continuing shoreline cleanup at Locations C0.3, C0.5, C1.5 from MP8.5 to 9.0, C3.2, C4.8, and C4.85.
- Completion of cleanup activities at Location C3.9. Site is awaiting SCAT approval.
- Debris collection at Locations C3.2, C3.7, C3.9, C4.8, C4.85, and C5.
- Demobilization of Location C0.4.
- Removal of sorbent boom along the north and south shorelines at Location C0.5.
- Boom maintenance at Locations C0.5 and C5.
- Relocation of DECON station in Location C5.
- Ongoing skimming operations at Location C1.

### EPA observed or reported the following:

- From MP2.25 to MP6 (Group 1):
  - At MP2.5:
    - Flushing in three hot spots in marsh areas on left descending bank. Sorbent materials are being used to collect the flushed product.
    - Surveying by MDNRE along the right descending bank for future fish electro shock activities
  - Continuation of flushing hot spots as needed at MP2.75. Sorbent pads changed as needed.
  - Small amount of vegetation removal along the left descending bank at MP3.0
  - Removal of cut debris and hot spot clean up on Island A at MP3.0.
  - Deployment of wildlife traps on left descending bank by USFWS at MP3.25.
  - Flushing operations with pom-pom support to capture oil on Island D at MP3.75. Misting also being used to minimize root damage.
  - Vegetation removal and installation of flushing system in lily pad area at MP4.25.
  - Flushing on two tiny islands with containment booms deployed to capture run-off at MP4.5.
  - Sediment sampling between MP5.0 and MP5.25 near Ceresco Dam.
  - Skimming operations at MP5.75 near Ceresco Dam. Crew was using leaf blower to keep debris away from vacuum truck.
  - Operation of Swamp Thing for surface vegetation removal between MP4.0 and MP5.0. Subsurface vegetation removal has not yet commenced but is slated pending completion of surface vegetation removal. EPA is discussing the soundness of this strategy with Enbridge.
- MP6.5 to MP10 (Group 2):
  - Several green flagged areas are ready for SCAT assessment between MP8.0 and MP9.75.
  - Inspection of work between MP9.75 and MP8.25 by EPA.
    - Approximately 80% of work remaining is at MP8.25 and 20% is at MP8.5.
    - Minimal “punch list” items in MP8.75 through 9.75.
- From MP10 to MP15 (Group 3 and 4):
  - Collection of bags of debris from left descending bank at MP10.25.
  - Slight rainbow sheen from beneath a set of containment booms, pom-poms, and sorbent pads at MP10.5. Enbridge has been informed.



- Removal activities on two pools of oil on an island at MP10.5. One has been addressed by surface scraping; the second was addressed with the application of pom-poms and vegetation removal. Work on the second one is approximately 75% complete.
- Delineation of perimeter of known 1000 x 1000 foot pooled oil location using hand augers and GPS at MP11.25. There are pockets of pure product throughout the area.
- Final cleanup of MP12.25 through 12.5 in preparation for SCAT review. START advised site supervisor about air monitoring equipment. Supervisor responded that no power tools will be used until air monitoring equipment arrives.

USCG observed the following:

- Vegetation removal on right descending bank at MP12.5. Air monitoring is being conducted as instructed by the IAP.
- Sorbent booms in need of replacement at MP13.5. Sheen in vicinity may indicate small area of subsurface oil.
- Identification of small hot spot along left descending bank at MP14.25. Hot spot has been removed by Enbridge.
- Vegetation clearing by small overbank crew along left descending bank at MP14.25.
- Completion of boat DECON operations at Collection Point C0. Site is still being used to launch boats for MP2.25 through 4.5.
- Operation of two vacuum trucks at Ceresco Dam.
- Operations as normal at Collection Point C5.
- USCG advised site supervisor at Location C11.25 that this location is unfavorable for equipment and super sack helicopter drops due to heavy forestry in the area.
- Ongoing boat operations at Collection Point 12.25.

**Division D**

Enbridge reported the following:

- Ongoing cleanup activities at MP22.75
- Ongoing maintenance of booms and debris collection as needed.
- Construction, replacement, and DECON of snare baskets at Location D3.

EPA observed the following:

- Completion of boom deployment at area east of Location D2. Area has been designated as a “NO GO” area for all propeller boats.
- Installation of double silt fences at each oxbow mouth and single silt fences at two additional points within the oxbow at Location D5. Sorbent boom was deployed on each side of every silt fence.
- Collaboration with technical services pertaining to cleanup options for the oxbow at Location D5. Emphasis was placed on the cleanup of the top two inches of very fine sediments that demonstrate contamination and produce sheen.
- Scraping and collection of soiled vegetation from beneath the Angell Street Bridge.
- Installation of boom along the oxbow at Location D5.
- Discussion of general safety issues as well as IAP tasks specific to Division D at the IAP/Safety tailgate at Location D3.

- Investigation of oxbows within Divisions D and E.
  - Eleven oxbows/marshy areas that merit additional attention were identified at the following:
    - MP20.25, MP27.5, MP27.75, MP26.25, MP26.0, MP25.5, MP22.75, MP22.75, MP21.5, and MP20.5.
  - Development of a tier system to address most serious issues first.
    - Location D5, Location E0.5, and from MP27.5 to MP26.5 are in the first tier to be addressed.
- Continuing cleanup of shoreline at MP16.5 to MP16.75.
- Continuing removal of soil from Location D2.5.
- Continuing operation and maintenance of both lines of gabion baskets.
- Continuing presence of heavy oiling on booms throughout Division D. As reported in previous two reports, booms need decontamination and/or replacement.

## Division E

### Enbridge reported the following:

- Maintenance of gabion baskets upstream of Location E0.5.
- Construction, replacement, and DECON of gabion baskets at Location E0.5.
- Debris removal and boom maintenance of Locations E0.5, E1.0, E3, E4, and E5 from personnel stationed at Location E4.5.
- Patrol of Morrow Lake for sheen from personnel stationed at Location E4.5.

### EPA observed the following:

- Demobilization of Location E4. A guard remains on duty for sign in/out. Boom and garbage are still staged on-site.
- Investigation of conflicting reports of sheen on Morrow Lake. Reconnaissance from MP34.25 to downstream of Morrow Lake revealed the following:
  - Identified random sheens ranging from silver to iridescent and varying in size ranging from quarter size up to four feet from MP34.25 to MP37.0.
  - Identification of heavy sheen, tar flakes, and globules in several places along the river as follows:
    - Right descending bank of MP34.5:
      - No boom in place for containment.
      - Strong odor and heavy sheen in marshy swamp area upriver of the Time Out Lounge and Restaurant at 11447 E. Michigan Street.
    - Sheen at MP34.75.
    - Right descending bank at MP 35 near Location E3:
      - Boomed area.
      - Significant sheen outside the boom.
      - Odor and significant sheen upon agitation.
    - Product globules on sand bar at MP35.75 through MP36.0.
    - 200 yard long ribbon sheen between MP35.75 and MP36.0.
    - Sheen, tar flakes, and globules at MP37.5 on SE section of Morrow Lake.
    - Large sheen notes on lake near residential homes on lakeshore (Miller Road).
    - Blue poly drum noted at MP37.0 on an island.

- Investigation is incomplete but is slated to be completed tomorrow.
- Identification of no air quality issues by CTEH air monitoring personnel at Location E0.5. EPA has requested the area be retested on another day when air speeds are lower and also requests that CTEH provide locations, time intervals, constituents tested, and detection limits.
- Response to resident's concern as to the nature and extent of the cleanup along the river.

### **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:

- Surveyed various sections of suspected submerged oil in Division D.
- Evaluated containment strategies and recovery methods.
- Surveyed overbank areas in Division C.
- Researched more efficient cleanup methods.

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

##### Enbridge reported the following:

- Hot spot cleanup in Divisions A and B.
- Continuing collection of soil scraping and documentation collection in Locations A6, B2 and B5.
- Continuing collection of soil samples and documentation at Location A6 and B2.
- Continuing implementation of MDNRE and EPA approved Source Contamination Removal, Verification, and Backfill Plan.
- Continuing oversight of SCAT inspection teams.

##### EPA reported the following:

- Two START teams continued oversight of CTEH air monitoring crews in Divisions A through E.
- Met with TetraTech to discuss sharing of submerged oil poling and sediment sampling data.
- Briefed command and general staff on the Environmental Advisory Group.
- Obtained 25-year flood plain shape file.
- Reviewed supplement and QAPP for the Response Plan for Downstream impacted Area.
- Discussed excavation alternatives at the Environmental Advisory Group meeting.
- Attended several meetings and briefings

##### Transportation and Disposal reported the following:

- Reviewed and provided comments to the Enbridge draft DECON Water Sampling Plan.

- Met with Enbridge contractors to finalize approach and formulas to be used to determine oil volumes in soil and debris. Continued discussions on soil and debris where data is limited.
- Provided Enbridge contractors with TSCA disposal criteria for PCB as it relates to sediment disposal.
- Working with Enbridge to plan for the recycling of RCRA empty drums.
- Ongoing daily QA/QC of data.
- Visually assessed debris grinding operations within the soil staging area (Division A) to determine the degree of fugitive plastic generated during the process. Findings indicated the process was successful in not generating wind-blown plastic and debris, including: PPE, boom, sorbent pads, and materials generated as per the clean-up.

### **DECON Branch**

#### Enbridge reported the following:

- No changes in activity to report.

#### EPA reported the following:

- Received and continues to review the Enbridge Line 6B MP 608 Decontamination of Equipment and Personnel Work Plan
- (Revised September 5, 2010).
- Performed a visual assessment of DECON operations within Frac Tank City, confirming adherence to the Enbridge Decontamination of Equipment and Personnel Work Plan and documenting activities using the DECON checklist.
- Observed confined space entries into frac tanks.
- Observed the approximately 90 x 160-foot DECON area established in Division A for use in decontamination of large equipment.
- Continued reconnaissance of DECON sites within Divisional locations
- Continued follow-up on tracking the DECON water generated during CTEH operations at Morrow Lake for inclusion into waste streams.
- Reviewed draft Enbridge DECON water sampling plan.

### **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 9/9/10 1515**

<b>Sample Type</b>	<b>Number collected</b>
Surface Water	36
Vertical Water Column Samples	0
Private Well Samples	6
Sediment Samples	17
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 9/9/10**

<b>Media</b>	<b>Sample Type</b>	<b>Number collected</b>
Air	Summa Canister	0
Air	Tedlar Bags	0
Air	Monitoring Events	24
Surface Water	Grab	0
Sediment	Grab	0

Four SCAT teams reported the following:

- Conducted ReSCAT evaluations
  - 10 segments cleared.
  - 1 segment rejected.

Three Submerged Oil Task Force teams reported the following:

- Deployment of three teams to Division C:
  - Oversight of sediment coring and qualitative/quantitative analysis of sediment impact by Team A :
    - Collected four sediment cores from the agitation cells inside the silt curtain of Ceresco Dam.
    - Collected ten quantitative samples from MP4.99 to MP5.49.
    - Observed some sheen.



- No oversights performed by Team B. Priority and secondary areas in Division C have been characterized according to Tetra Tech.
- Oversight of sediment coring collection for qualitative/quantitative analysis of sediment impact by Team C.
  - Collected six sediment cores between MP37 and MP37.5.
  - Collected forty poling locations between MP35.5 to MP37.5. Sheen observed at twenty two of these locations.
  - No discrepancies were observed in the field.

#### Environmental Unit Observations:

- Observed logging of sediment core SOTF-C-Q LO5B.
- Collected split sample from above core TPH analysis at Kar Laboratories.
- Pre-agitation sediment analytical results received by Tetra Tech.
- Post-agitation sediment samples submitted to New Age for 12 hour TAT.

#### The Overbank Group reported the following:

- Referred six areas for re-SCAT
  - MP22.5
  - MP23.25
  - MP23.5
  - MP23.75
  - MP24.0
- Assessed overbanks in Location C3 and MP10.25 through 11.75.
- Observed overbank work in multiple areas at Location C3.
- Observed reemerging product in at least three overbank areas. Suggested Enbridge look into alternative techniques.

#### **Wildlife Environmental Damage Assessment Branch**

##### USFWS reported the following:

- Briefed media on current operations on weekly 3pm media call.
- Discussed at Ops briefing that our crews overheard Ops crews talking about putting clean vegetation in bags to meet perceived “bag quotas”.
- Arranged for NRDA teams to use data collected by JFNew for additional tree and vegetation surveys for the peninsula at MP11.25 that will now be cleaned by excavation.
- Safely completed fish survey near 11 Mile Road Bridge which showed reduced numbers of young fish relative to the reference stream.
- Received four oiled goose carcasses
- Planning for deer hunter education and outreach.
- Began planning for fish survey on September 14 that will require boat traffic closure near the end of division C for several hours in the morning.
- Distribution of business card sized handout with hotline number for workers.
- Review of water quality data to determine if/when another collection should be done.
- Baiting for herons by heron team.
- Capture and release of un-oiled beaver.
- Search for turtle release sites.
- Turtle, heron, and beaver trapping continue.

As of September 8, 2010 at 0700, the wildlife center reported 317 animals in captivity and 750 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:
  - No sheen observed through Location B2 and B3.
  - No sheen at Control Point B5.
  - No sheen at pond area before Interstate 69 in Division B where minor sheen was reported yesterday.
  - No sheen at Location B4.7 and B5.
  - Containment of sheen upstream of Location C5.
  - No sheen at confluence point between Kalamzoo and Battale Creek river.
  - No sheen at the confluence, Baker Estates, and downstream of Ceresco Dam.
  - No sheen upstream of boat launch at Location D2.
  - No sheen upstream of culvert crossings in Locations A5 and A6.
  - No sheen and floating debris observed at the Morrow Lake Delta.
  - Less sheen observed upstream of E0.5 at the border between MP26.25 and 26.50.
  - 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 on water at the oxbow at MP21.5. Still no sheen on main waterway.
  - No sheen on Morrow Lake and its' shores.
- Operational Observations:
  - Presence of new vegetation in the seeded areas across Division A. Standing water on ground cover at several locations.
  - No activity at Location B2.7 and B4.7.
  - Operations at the test pits upstream of Division Drive at Location B2.
  - Discontinuation of bypass pump operations in Division B.
  - Removal of soil from the south central and south east cells at Frac Tank City. The two central cells show less soil than yesterday and the northeast cell was empty.
  - Significant activity at Frac Tank City DECON area
  - Heavy activity in Division C.
  - Booming around islands in Division C remains effective.
  - Continuing boom activity at the peninsula above Ceresco Dam and at the dam itself.
  - Operation of experimental submerged oil treatment cells upstream of Ceresco Dam.
  - Installation of silt fence at Location D1.
  - Replacement of boom at 35<sup>th</sup> Street at the Morrow Lake delta.
  - Boat activity on Morrow Lake included seven manned boats.

#### EPA observed the following during one over flight:

- Changes in sheen:

- No sheen was observed at Locations A1 through A4.
- No sheen was observed at Location A5.
- No evidence of sheen at Locations A5, A6, the pond north of Talmadge Creek just east of I-69 in B2.7, the ponds north of Talmadge Creek west of I-69 in B4, or at the confluence of Talmadge creek and the Kalamazoo River.
- Some boom contained sheen near the island in the Mill Pond at MP14.5 in Location C6.
- Sheen at MP21.0 in Division D.
- Continuing presence of significant sheen in the oxbow area at MP21.5 in Location D4.25. Amount of sheen is similar to yesterday.
- Continuing presence of sheen along the northern shoreline of the Kalamazoo River near Location E0.5 north of Shady Oaks Campgrounds.
- Continuing absence of oil and sheen on Morrow Lake.
- Operational Observations:
  - Sprouts of new vegetation visible across Locations A3 and A4. Standing water on ground cover at several locations.
  - Heavy equipment operation as well as several confirmation test pits at Location A5.
  - Loading of soil into trucks in the eastern soil staging area at Frac Tank City.
  - Active decontamination of frac tanks and vacuum trucks at the south end of Frac Tank City.
  - Deployment of additional boom at the confluence of Talmadge Creek and the Kalamazoo River. No sorbent pads were observed.
  - Heavy cleanup on Islands A, B, E, and F in Division C. Workers were observed pumping water from the Kalamazoo River onto the last two islands above Ceresco Dam to saturate the surface and recover oil/sheen.
  - Heavy shoreline cleanup along the south shore of the Kalamazoo River upstream of the peninsula and Ceresco Dam.
  - Boom replacement upstream of the Ceresco Dam.
  - Observed the island at MP8.5 that has been cordoned off due to H&S concerns. No changes or activity noted.
  - Heavy cleanup between MP11 and MP12.25 in Division C.
  - Installation of sheen skimmer in the Mill Pond at MP14.5.
  - Initiation of new booming strategy just west of Custer Road in the oxbow area at MP21.5. Sorbent boom was placed across the channel at several locations.

### 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 (9/9/10 1900)**

Number of Locations	25
Boom Deployed (feet)	124,982

## Soil and Debris Waste Tracking

**Table 4 - Soil and Debris Waste Tracking (9/8/10)**

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>	963	17,133
Haz Debris (yd <sup>3</sup> ) <sup>c</sup>	0	12,075
Non Haz Debris (ton) <sup>c</sup>	81.34	909

\* 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 (9/8/10, 0700)**

Location	Cumulative Total Collected (gallons)
Division A	4,826,618
Division B	3,406,975
Division C	814,750
Division D	117,825
Division E	49,950
DECON	100,240
Other Locations*	169,138
<b>TOTAL</b>	<b>9,485,496</b>

\* Includes Frac, DECON, and Wildlife Center.

**Table 6 - Oil water Separation (9/8/10, 0000)**

Oil-Water - 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 (9/8/10, 0000)**

<b>Oil/Water leaving Site</b>	<b>Destination</b>	<b>Daily Quantity Shipped (Gallons)</b>	<b>Cumulative Quantity Shipped (Gallons)</b>
Haz Water	Dynecol, Detroit, MI	13,500	2,061,098
Oil/Water	Enbridge Facility, Griffith, IN	0	2,082,806
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>13,500</b>	<b>8,243,354</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>	9,485,496
Oil/Water Shipped Off-site <sup>b</sup>	8,243,354
<b>OIL/WATER REMAINING ON-SITE</b>	<b>1,242,142</b>

a. As of 9/9/10, 0700

b. As of 9/8/10

## 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 A:
  - Evaluation of banks for free phase oil by four excavation and testing crews. Sampling was conducted in 50-foot intervals using a series of evaluations, approve by MDNRE and EPA.



- Demarcation of test pits where holes were dug to test for the presence of free phase oil.
  - Replacement of sorbent booms with coconut fiber sediment logs in several areas.
  - Backfill of left descending bank at Location A4.
- Buildup of sheen and scum in front of pom-pom boom, 100 feet downstream of culvert in Division B.
- At Division C:
  - Collection of bagged debris by boat operators at Location C3.7.
  - Staging of 5 roll off boxes at Collection Point C3.7.
  - Preparation to increase operations on right descending bank at MP11.75
  - Hot spots in overbank areas at MP11.75.
    - Oil deposits on vegetation.
    - Accumulation of product in low lying areas.
    - Pooling of oil in the depression caused by a recently uprooted tree.
  - Hot spots in overbank areas along left descending bank of the Kalamazoo River at MP 11.75. These areas are marked for clean up.

### 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 new activities to report.

### 2.3 Logistics Section

Logistics reported the following:

- Provided comments to Facility Emergency Response Plan.
- Had a radio meeting with a Wildlife Damage Assessment Branch Specialist.

### 2.4 Safety Officer

The following health and safety concerns were expressed:

- Start team is advised to exercise caution when using stairs to the OSC trailer. Stairs are not level and secure.
- START team is advised to exercise caution walking on the wood mat road. Heavy equipment traveling on the mat road can cause a pinch hazard for pedestrians.
- Observed workers eating lunch with Nitrile gloves donned while inside the hot zone area of B5NP2.0 DECON.
- Strong odors noted above Ceresco Dam.
- Boat traffic above Ceresco Dam should be limited to only workers in the area.

Enbridge reported the following Health and Safety issues:

1. 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.
2. Site transitioning:
  - Reminder to workers on respecting personal property and to conduct themselves appropriately.
3. 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:

- One minor injury to female employee getting off boat. Worker was evaluated by EMA, but did not require medical transport. Worker returned to “light duty” for remainder of day.
- Assisted Enbridge H&S with special briefing for the UC on the Severe Weather Plan.
- Continued working with Enbridge on completing the Fatigue Management Plan.
- Submitted Decision Memos to Documentation for Fatigue Management Plan and Medical Unit Leader.
- Reviewed Enbridge’s Industrial Hygiene Exposure Assessment of the Island at Division C8.5.
- The following two incidents were reported:
  - Worker at the DECON area in Location C0.5 strained their back while pulling on a plastic liner. Worker was transported to a medical facility for evaluation. Two days of rest/recuperation.
  - Worker slipped getting out of boat at Location C3.9. Worker was treated for minor abrasions and returned to work.

## **2.5 Liaison Officer**

The Liaison Officer reported the following actions:

- The LNO coordinated with assisting and coordinating agencies and local stakeholders addressing methodology of ongoing situation updates.

## **2.6 Finance Section**

The current NPFC issued ceiling was \$18 million. Approximately 83.8% of the ceiling had been spent through September 8, 2010, with a burn rate of \$196,296 per day. These cost summaries reflect only EPA-funded expenditures for the incident.

**Table 9 - FPN E10527 - Enbridge Pipeline Oil Spill (09/08/10)**

<b>ERRS Contractors</b>		<b>Est. Expended</b>	<b>Est Burn Rate (Lastest Daily)</b>
EQM (EPS50802)	T057	\$1,250,017	\$0
	T060	218,834	1,600
LATA (EPS50804)		1,451,396	0
ER LLC (EPS50905)		723,669	0
<b>ERRS Contractors</b>		<b>\$3,643,916</b>	<b>\$1,600</b>
TNT Bisso		762,000	27,000
<b>START Contractor</b>			
WESTON (EPS50604)		4,901,900	73,004
<b>Response Contractor Sub-Totals</b>		<b>\$9,307,816</b>	<b>\$101,604</b>
<b>EPA Funded Costs:</b>			
Total EPA Costs		2,790,874	50,950
<b>Pollution Removal Funding</b>			
<b>USFWS</b>		<b>291,240</b>	<b>2,500</b>
<b>Total Other Agencies</b>		<b>909,240</b>	<b>16,667</b>
Sub-Totals		\$13,007,930	\$169,221
Indirect Cost (14.15%)		2,081,269	27,075
<b>Total Est. Oil Spill Cost</b>		<b>\$15,089,199</b>	<b>\$196,296</b>

## 2.7 Information Officer

The Public Information Office reported the following activities:

- Facilitated weekly news and media advisory update.
- Contacted Marshall school superintendent about tree dedication.
- Followed up with numerous media questions.
- Collected air samples with CCPH and contractors at Baker Estates.
- Contacted five churches to determine interest in EPA presentation.
  - Two interested.
  - Three unresponsive.

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

**Community Center Visits: 19**

Visits by location during reporting period:

Battle Creek	13
Marshall	6

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 45.

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

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

### **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 Stabenow



#### 4 Personnel On Site

Table 10. Personnel On Site 9/9/10

Agency/Entity	Numbers Reported
EPA	41
START	44
Calhoun County Public Health Dept. (CCPH)	3
Calhoun County (CC) Sheriff	6
City of Battle Creek	3
Kalamazoo Sheriff	2
MDNRE	18
Michigan State Police (MSP)	1
NOAA - National Weather Service	2
NOAA- NRDA	2
USCG	8
USFWS	4
USFWS Contractors	0
Enbridge	16
Enbridge Contractors	1100
<b>Total</b>	<b>1,250</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>.

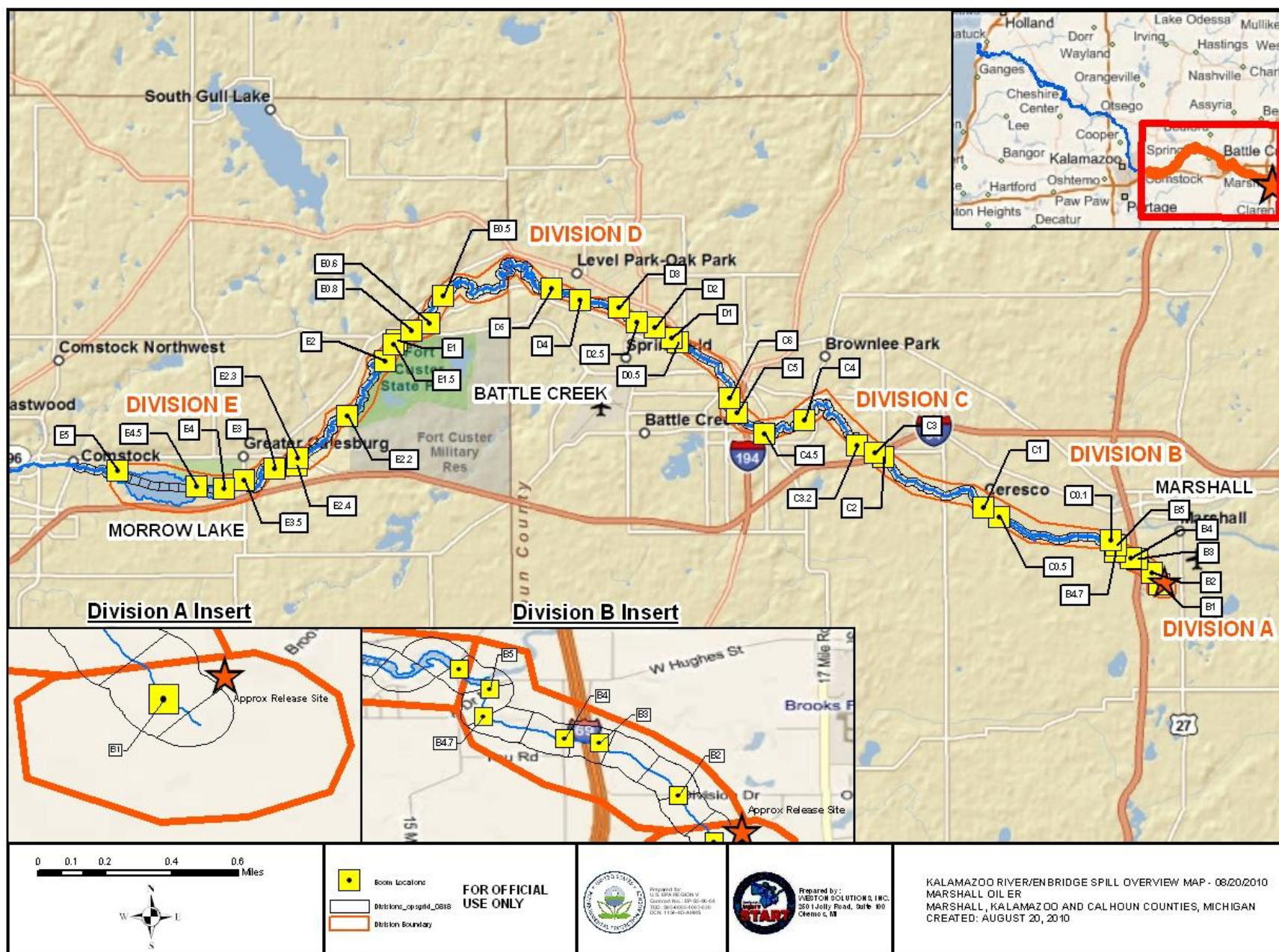
### **6.2 Reporting Schedule**

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.”

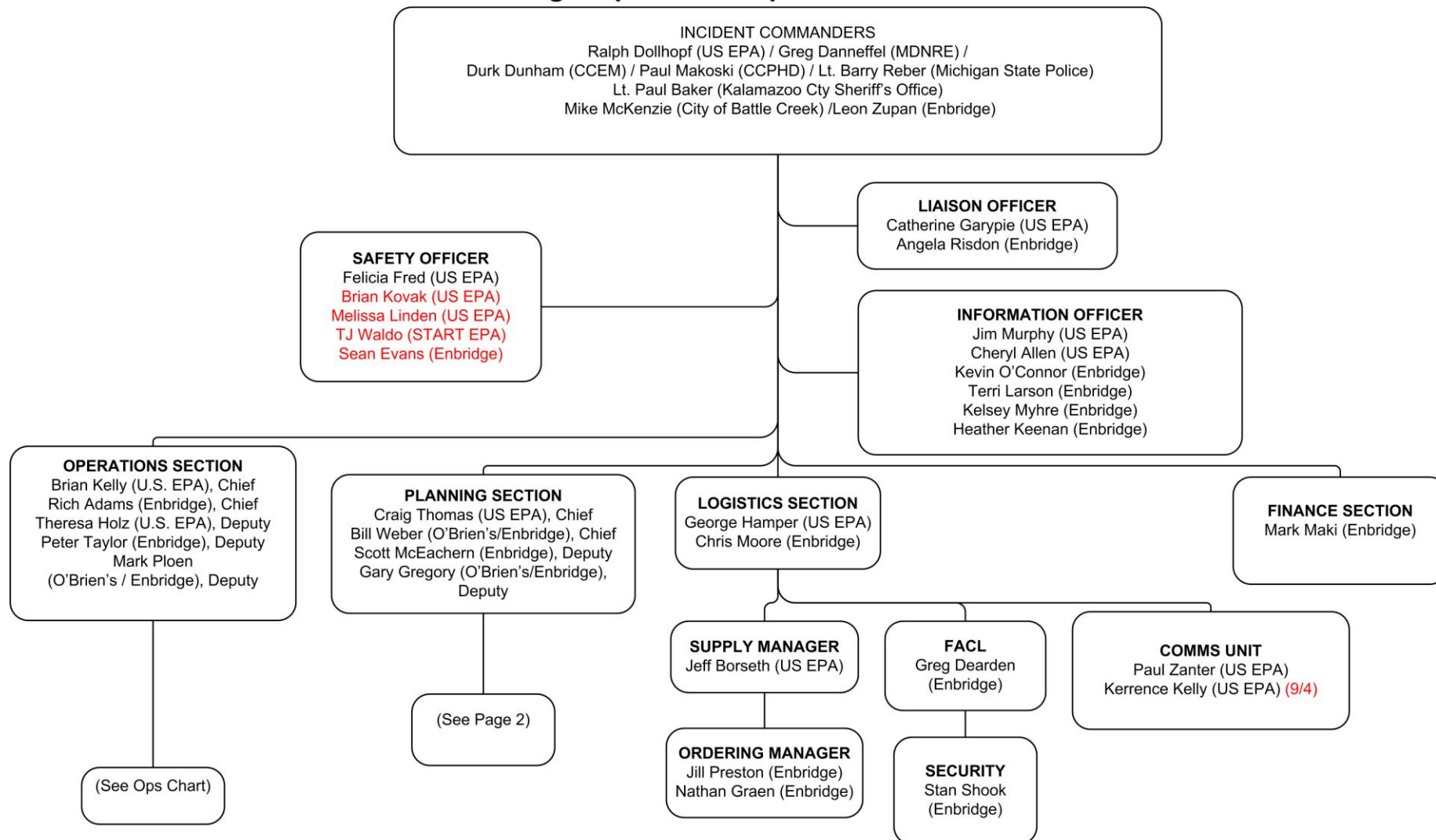


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## Enbridge Pipelines Response Unified Command

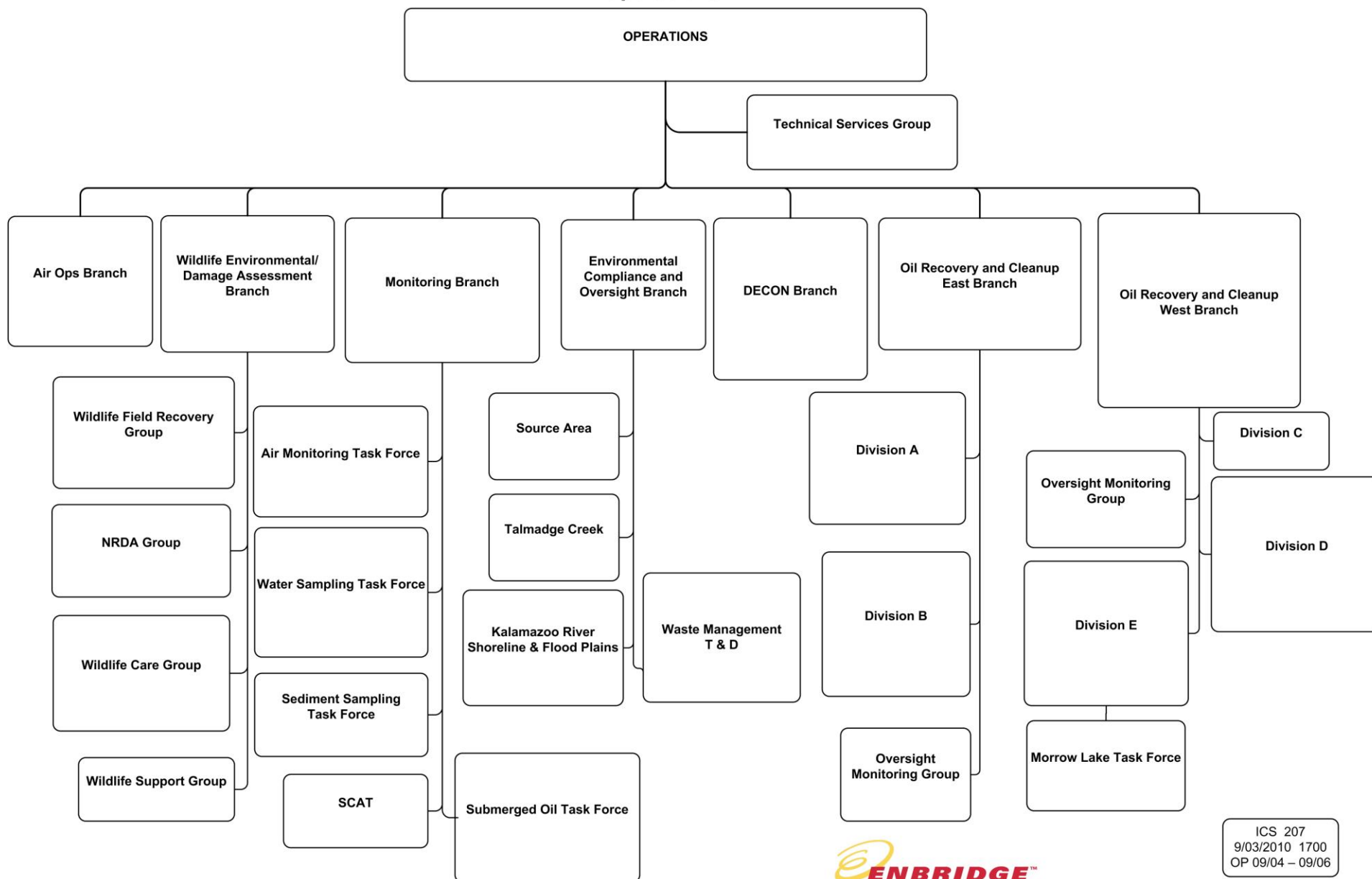


ICS 207  
9/03/2010 1700  
OP 9/04 – 9/06

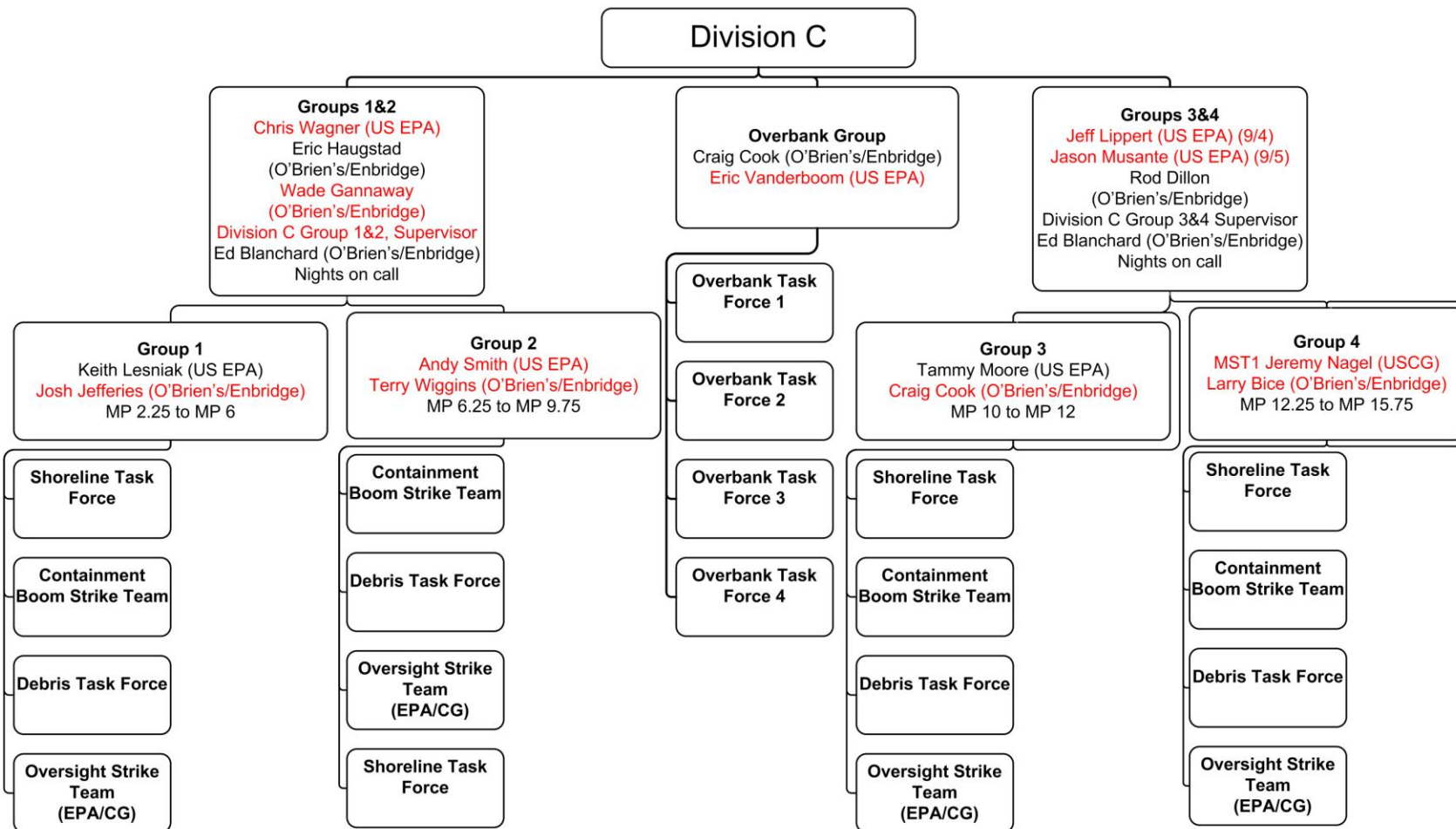




## Operations



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ICS 207  
9/03/2010 1700  
OP 9/04 – 9/06



