

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 # 48
Kalamazoo River/Enbridge Spill
Z5JS
Marshall, MI
Latitude: 42.2395273 Longitude: -84.9662018

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Date: 9/12/10

Reporting Period: 1900 hours 9/10/10 to 1900 hours 9/11/10

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 10, 2010, 0700 to September 12, 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. Develop a plan to ensure thorough assessment of overbank and areas of concern.
3. Complete necessary grade restoration and stabilization work plans along Talmadge Creek in accordance with MDNRE guidance.
4. Finalize a Ground Water Monitoring Plan to facilitate lifting of the Bottled Water Advisory.

1.3 Strategic Considerations

- 1) Begin implementing tactics for submerged oil recovery.
- 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 10, 2010 to 1900 hours on September 11, 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:

- Updating and maintaining the EPA hot list along Locations A4, A6, and B2.
- Ongoing maintenance of silt fences.
- Backfilling and restoration of Talmadge creek at Location A5.
- Continuing testing and clearing of sections on the west side of Location A5.
- Continuing backfilling operations at Location A6.

EPA observed the following:

- Continuing hauling operations from soil staging area adjacent to the source. Tandem dump trucks are staged at the construction entrance and hauling is ongoing.
- Continuing as needed operation of wood chipper depending on quantity of mats and trees delivered at any given time.
- Staging of contaminated log boom, sorbent pads, and collection bags are staged adjacent to the wood chipper.
- Collection bags and contaminated materials were observed being put through the chipper and hauled off with wood material and contaminated soil.
- 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.
 - Ninety-six sections have been prepared.
 - Seventy-two, 6-hour test pit sections have been cleared.
 - Twenty-two, 48 hour test pit sections have been cleared.
- Resumption of backfilling operations on the west side of Talmadge Creek at Location A5 and A6.

Division B

Enbridge reported the following:

- Mobilization of equipment and testing at Location B2.7.
- Ongoing maintenance of mat roads in Divisions A and B.
- Installation of pull offs on mat road at Location B2.
- Installation of mat road at Location B2.7 for testing purposes.
- Ongoing hot spot cleanup at Location B3.
- Preparation for construction of material storage area on 16 Mile Road north of Location B3.
- Addressed safety issues on the mat roads.
- Maintenance of silt fences and booms at Locations B4 and B5.
- Installation of liner for relocation of DECON area at Location B5.
- Installation of safety fence around every test hole along 15 ½ Mile Road around the culvert.
- Excavation of test holes at Location B4.
- Sheen test failure by an area due to presence of a natural spring west of I-69 and east of 15 ½ Mile Road.

EPA observed the following:

- Excavation of contaminated soil at Location B4.
- Excavation of test pits at Location B2.7 with START oversight.
- Repair and replacement of log and snare booms.
- Suspension of backfilling along Talmadge Creek pending approval work plan by MDNRE.
- Approval of the interim stream bank and floodplain restoration by MDNRE.
- Unknown number of test pits in Division B. The RP is expected to report the number of test pits by 1100 on September 12:
 - No sections have been prepared,
 - No sections cleared by 6 hour test,
 - No sections cleared by 48 hour test.
- Ongoing repair of silt fences throughout Division B.
- 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 B3 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:

- Suspension of vacuum truck operations at Location B5.
- Snare boom in need of replacement at Location B5.
- Backfilling operations on hold pending MDNRE approval.
- Ongoing backfilling, test pit, and clearance operations in coordination with EPA in Locations A5 through A6.
- Ongoing silt fence and boom operations at Locations B2, B2.5, B2.7, and B3.
- Continuing suspension of excavation activities at Location B2, B2.5, B2.7, and B5.
- Hand skimming operations are ongoing.
- Aggregate was observed to be placed at Division Road and Talmadge Creek to elevate the northwest entrance to the mat road.
- Vacuum trucks were skimming rainbow sheen and dense free product from Talmadge Creek at Location B3.
- Boom maintenance operations are ongoing.

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:

- At Location C0.
 - Strong focus on shoreline cleanup.
 - Continuation of boat operations and shoreline cleanup.
 - Maintenance of sorbent snare and sweep booms in several sections.
- Removal and disposal of containment boom deployed at Location C0.4.
- Continuing skimming operations at Location C1.
- Decontamination of equipment as necessary at Location C3.
- Clean up on islands at Location C3.2.
- Continuing cleanup of island and shorelines at Locations C3.7 and C0.3.
- Construction of containment area for soil crate storage at Location C3.7.
- Cleanup of shoreline and hot spots at Location C4.85, C3.9, C0.5.
- Collection of debris at Location C4.8, C5, and C1.5.
- Collection of debris and maintenance of booms at Locations C5 and C1.

EPA observed or reported the following:

- From MP2.25 to MP6 (Group 1):
 - Over flushing on Islands A to F
 - Per SCAT guidelines, crews have been clearing vegetation and flushing.
 - Progress gained is overshadowed by the damage being caused by workers trampling the islands.
 - Presence of new growth on the unnamed island upstream of Island A.

- Suspension of all flushing operations except for a minimal amount of work on Island F.
- Reinforcement of boom around all islands.
- Removal of equipment, debris bags, or trash from the islands
- Hot spot on left descending bank between MP2.0 and MP2.5:
 - Area consists of 3 pools of contamination inside floodplain but beyond 10 foot shoreline.
 - Flushing operations have reached equilibrium.
 - Reinforcement of booms.
 - Continuing overbank activities.
- MP 4.25 to 4.5
 - Heavily contaminated.
 - Characterized by marsh grasses, bull rush, and lily pads.
 - Continuing operations may be too damaging due to soft soils.
 - Suspension of work in this area for this operational period.

SCAT assessments have been completed; however, oil is trapped in the subsurface and continues to leach. Heavy equipment and/or excavation in this area is not practical due to sensitive environmental areas (shoreline, islands, and turtle habitats).

- MP6.5 to MP10 (Group 2):
 - Small pockets of product in bog area along right descending bank at MP8.25. Hot shot team called in by SCAT to address this area.
 - Removal of matted vegetation along right descending bank at MP8.8. Area orange flagged by SCAT team for possible Phase 2 cleanup.
 - Island red flagged by SCAT at MP9.5:
 - Presence of several “patties” of contamination.
 - Enbridge contractor contested SCAT decision because area was addressed according to SCAT guidelines.
 - Site supervisor raised the issue at the Operations briefing on September 10, 2010.
 - SCAT step 4 clearance of MP10.0.

Work in this group will likely slow considerably in the next several days until SCAT can perform assessments in the area.

- From MP10 to MP15 (Group 3 and 4):
 - Vegetation removal along left descending bank at MP10.
 - Overbank vegetation clearing along right descending bank at MP10.25
 - Overbank activities along left descending bank at MP10.75 and MP 11.0
 - Preparation for dewatering and excavation activities along right descending bank at MP11.25
 - Identified multiple gullies and pockets of pooled oil deep in overbank area along the right descending bank between MP11.5 and MP11.75.

USCG observed the following:

- Shoreline and overbank activities along right descending bank at MP13.5.

- Identified pooled oil in backwater area near path leading to a residence along the left descending bank at MP13.75. Contractor supervisor informed.
- Shoreline and overbank cleanup appears complete along right descending bank at MP14.25.
- MP14.75: Removal of snare boom at MP14.75.
- Vegetation removal and soil raking on island upstream of MP15.0.
- Presence of sheen on left descending bank near EPA-C-0420. No activity in marsh/wetland area on right descending bank.
- Maintenance of booms at MP15.25. Sheen observed in boomed collection points on left descending bank.
- Presence of oiled vegetation approximately 5 feet above water level on both left and right descending banks at MP15.75.

Division D

Enbridge reported the following:

- Presence of three boats at Location D2.

EPA observed the following:

- Ongoing maintenance of both lines of gabion boxes.
- Ongoing boom maintenance in all areas.
- Shoreline cleanup:
 - Hot washing of rocks at MP16.5 through MP16.75
 - Removal of upper 2 inches of impacted soil at Location D1.5. Sorbent boom remains to catch any sheen remnants.

Division E

Enbridge reported the following:

- Maintenance of booms and clean up of shorelines per SCAT recommendation at Location E0.5.
- Shoreline cleanup activities at Location E2 per SCAT document

EPA observed the following:

- At Location E0.5:
 - 200-300 gallon poly tank for the collection and storage of vacuum truck skimmer boat collections from Morrow Lake.
 - The poly layer surrounded by an absorbent pad is inadequate secondary containment for a tank located adjacent to a navigable waterway or in the vicinity of residential/campground areas.
- Reconnaissance of the shoreline from MP 27.25 to MP 28.25:
 - Sheen, tar flakes, tar globules, and odor at silt bar on the left descending bank and in the cove on the right descending bank along MP27.50.
 - Pronounced sheen and tar flakes in the river channel and along the right descending bank at MP27.75.
 - Pronounced sheen and tar flakes on a large 100 foot silt bar leading to a mudflat inland along the left descending bank just below MP27.75.

- Pronounced sheen and odor in a small cove/tributary on the right descending bank at MP28.0. The cove/tributary runs inland from the shoreline and has the potential to trap significant amount of product. Sheen emanated into the river channel.
- Significant sheen along the right descending bank and in a small cove directly across the river (left descending bank) at MP28.0 (2nd tributary/cove downstream from above).
- Sheen in cove on left descending bank at MP28.5. Cove led to a mud flat.
- Sheen at small cove on right descending bank at MP28.5 downstream from above.
- Sheen with floating product in a small tributary leading to mudflat on right descending bank directly adjacent to Michigan Street Bridge at MP28.75.
- Sheen on Morrow Lake:
 - Heavy sheen with oil globules approximately 100 x 100 yards was noted at N 42 16.462, W 85 26.523.
 - Seven swans with yellowish staining from the neck up. Wildlife center has been informed.
 - Sheen and oil are moving towards a clean area of the southwest lakeshore containing approximately six residential homes.
 - Source may be tied up in the grass islands on the southwest portion of the lake in the grass islands and silt bars –
 - Recommend and request deployment of sorbent boom around the aforementioned areas.
 - Additional request and emphasis from UC for response resources would be appreciated.
- Skimmer, sampling and Submerged Oil Task Force operations in Morrow Lake.

Mudflats areas may not be captured by assessments conducted by Overbank, SCAT, or Submerged Oil Task Force because they have been overlooked by SCAT and have the potential to be missed by overbank. Most of the overbank assessments are being conducted in Division C. There are some mudflats that introduce significant sheen, tar flakes, and tar globules into the river and are easily overlooked since they are trapped in the very fine sediments and not released until disturbance of sediments. These areas may also be significant since turtles, etc tend to be found here.

EPA has requested additional air monitoring information in response to air quality issues near Location E0.5 or at the Time Out Lounge. The requested information including; sampling locations, sampling time intervals, constituents tested, and the detection limits, have not been provided by CTEH.

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:

- Survey of overbank areas in Division C:
 - Multiple instances of cleaned areas continue to leach oil.
 - Continuing removal may jeopardize tree roots and create erosion issue along the river bank.
 - Recommend identifying alternatives to soil and vegetation removal. One consideration may be raking peat moss into these areas then cover with sediment curtain and stake in place.

Environmental Compliance and Oversight Branch

Enbridge reported the following:

- Oversight of backfill operations in Locations A5, A6, and Division B.
- Continuing oversight of SCAT inspection teams.
- Continuing waste management characterization, documentation, and coordination.

Transportation and Disposal reported the following:

- Investigation of waste stream generation at locations within Division C and E as well as Morrow Lake and the Wild Life Center.
- Development of procedure for correlating TPH values and waste stream mass for the purpose of auditing Enbridge's calculation for recovered oil.
- Ongoing daily QA/QC of data.

DECON Branch

Enbridge reported the following: (No new activities reported)

- Continued construction of central DECON area at Location C0.5. Construction is 85% complete.
- Central staging area at C0.5 is currently able to handle 40 roll off boxes and is anticipated to be fully operational within three to four days.

EPA reported the following:

- Investigation of DECON operations at the Wildlife Response Center.
- Received and continues to review the Enbridge Line 6B MP 608 Decontamination of Equipment and Personnel Work Plan, (Revised September 5, 2010).
- Ongoing regular 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.
- Continued reconnaissance of DECON sites within Divisional locations.

Monitoring Branch

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

Enbridge reported the following: (No new activities reported)

- 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 9/11/10 1515

Sample Type	Number collected
Surface Water	29
Vertical Water Column Samples	0
Private Well Samples	5
Sediment Samples	4
Sheen Samples	0
Other	0
Soil Samples	0

EPA reported the following actions or observations:

- Duplicate air monitoring conducted at 10 locations with no benzene or other air contaminants detected.
- One START team continued oversight of CTEH air monitoring crews in Divisions A through E.
- One START oversight team shadowed the Enbridge surface water sampling team and took one split sample in Division C.
- Collection of samples as indicated in Table 2.

Table 2 - Samples Documented in SCRIBE as of 9/11/10

Media	Sample Type	Number collected
Air	Summa Canister	0
Air	Tedlar Bags	0
Air	Monitoring Locations	10
Surface Water	Grab	1
Sediment	Grab	0

Two SCAT teams reported the following:

- Conducted ReSCAT evaluations in Divisions C.

Three Submerged Oil Task Force teams reported the following:

- Team A:
 - Launched at Location C3.2
 - Poling and delineation of priority areas at MP7.0 and MP7.75.
 - Approximately 50 to 55 poling locations.
 - MP7.75 more impacted than MP7.0
 - Oil largely along edges of overflow channel; faster flow and coarser sediment in central part of channel.
 - Noted some pools of oil in overbank areas.
 - Collected 3 Quantitative sample locations
 - Target Depth – 2 feet
 - Predominantly organics and silt over sand.
 - Good recovery, target depth not reached at all locations due to sand/gravel.
 - Submerged oil noted at all three locations.
- Team B:
 - Launched at Location D2
 - Assessment and delineation at MP22.75, MP24.75, MP25.5, MP26, and MP26.25
 - Highest impact at MP26. Results concur with EPA assessment.
 - Collection of 3 quantitative cores
 - Two largely silt and one silt over sand.
 - Presence of sheen and submerged oil at all assessed priority locations.
 - Continued assessment of MP21.5 and MP21.75 to extend range of assessment. Submerged oil identified.
- Team C:
 - Launched at Location E4.5
 - Poling in upstream side of delta area and where river enters Morrow Lake
 - Collection of 31 poling locations
 - Presence of sheen and surface globules in delta area, especially on silty sand islands.
 - Minimal impact in western delta area and on north and south banks at entrance to Morrow Lake.
 - Collection of 5 sample locations.
 - Organic silt with sand below.
 - Significant oil noted. Approximately 70% recovery.

Enbridge Reported:

- Hydrographic Survey of Morrow Lake:
 - Set-up 3 new control points around Morrow Lake.
 - Mobilization of vessel and interface equipment.
 - Setup processing computer station.
- Sediment Core Logging:
 - Sampling and logging of two sediment cores

- Upstream of Ceresco Dam:
 - Submittal of 10 samples from Ceresco Dam area for quantitative analysis
 - Logging of two locations upstream of dam at MP5.80 and MP5.49.
 - No oil noted at MP 5.49. Oil globules and sheen noted in upper 0.2 feet at MP 5.80.
 - Sandy loam to silt loam for both cores.
- Downstream of Ceresco Dam
 - Submittal of 11 samples from MP12.5 and MP14.75 priority areas quantitative analysis.

Environmental Unit

EPA reported the following:

- No oversight of sediment coring performed on September 10, 2010.
- Worked with Data Management/GIS Units on sharing of field poling, sediment core, surface water and bathymetric data.
- Worked with Data Management/GIS Units developing:
 - Surface water and sediment sampling trend maps, and
 - Sediment thickness/oil presence maps.

The Overbank Group reported the following:

- Fourteen areas referred to SCAT.
- Airlifted equipment to MP 11.25.
- Filled 26 (1 cubic yard) bags and 17 (1.5 cubic yard) bags.
- Suspension of work due to inclement weather.
- Assessment of both left and right descending banks overbank areas from MP13.25 to MP14.5. Overbank has now been assessed from MP10.0 to MP14.5.
- Continuing overbank work on the left descending bank between MP11.25 and MP12.0 and on island at MP12.5.
- Continuing overbank activities on the left descending bank at MP10.25.

Wildlife Environmental Damage Assessment Branch

USFWS reported the following:

- Observed oil on top of pond near Location B5 just upstream of the confluence of Talmadge Creek and the Kalamazoo River.
- Deployed skunk traps near the ICP.
- Request for spatially quantified data on area and extent of different removal techniques and operations. No data available.
- Planning and coordination for fish survey to be conducted on September 14.
- All hands meeting for reconnaissance and recovery teams.
- Brought in approximately 80 turtles.
- Participated in Environmental Advisory Group.
- Planning for deer hunter education and outreach.
- Distribution of business card sized handout with hotline number for workers.
- Continuing trap preparation at MP15.

- Turtle, heron, and beaver trapping continue.
- Review of water quality data to determine if/when another collection should be done.

As of September 10, 2010 at 0700, the wildlife center reported 294 animals in captivity and 866 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:
 - Some sheen at Locations A5 and A6. Significant activities in the vicinity.
 - Sheen at various areas between Locations B2 and B3.
 - Contained sheen in boomed area upstream of I-69 in Talmadge Creek.
 - Minor sheen at Locations B4.7 and B5 creek banks. No activity in the immediate vicinity.
 - Contained sheen at Control Point B5.
 - Sheen contained by booms at a few areas in Division C.
 - Increased sheen upstream and downstream of the peninsula at Ceresco Dam.
 - Sheen within containment at north and south areas upstream of Ceresco Dam.
- Operational Observations:
 - Presence of new vegetation in the seeded areas across Division A.
 - Bank stabilization, grade restoration, and test pit activities in Division A.
 - Backfilling operations continue throughout Division A.
 - Two soil cells in Division A were being worked on.
 - Boom DECON at Location B5.
 - Significant activity at Frac Tank City DECON area.
 - Heavy activity in Division C.
 - Continuing booming around islands in Division C.
 - Construction of DECON/Roll-off staging area at Location C0.5.
 - Increase in equipment present.
 - HDPE liner for containment area complete.
 - Installation of sand bedding and aggregate.
 - Continuing boom activity at the peninsula above Ceresco Dam and at the dam itself.
 - Inactivity at experimental submerged oil treatment cells upstream of Ceresco Dam.
 - Flight cut short due to impending storms.

EPA observed the following during one over flight:

The over flight was conducted prior to any rain event.

- Changes in sheen:
 - No evidence of oil or sheen was visible from the air in Locations A1 through A6.
 - No sheen along the shorelines of Talmadge Creek through Location A6.
 - Sheen along the shorelines of Talmadge Creek at Locations B2.3 through B2.7.
 - Sheen along scraped area at Location B2.7.
 - Sheen in the pond north of Talmadge Creek just east of Interstate 69.

- Sheen on the pond north of Talmadge Creek at Location B4.
- Sheen along the southern banks of the Talmadge Creek near Location B4.
- Sheen at the confluence of Talmadge Creek and the Kalamazoo River at Location B5. Sheen was noted within the webbed booming configuration.
- Heavy sheen was noted upstream of the test cells at Ceresco Dam. New booming strategies were deployed upstream from the dam.
- Sheen in the northern pond area downstream of Ceresco Dam.
- Significant sheen up and downstream of the peninsula and along the south and northern shorelines upstream from Ceresco Dam.
- Operational Observations:
 - Standing water was on the ground cover through Division A.
 - Sprouts of new growth in Locations A3 and A4.
 - Restoration of Location A5 with peat soils and erosion preventative matting along the banks of Talmadge creek.
 - Excavators, graders, and trucks between Locations A5 and A6.
 - Several confirmation test pits along the shorelines of Talmadge Creek in Location A5 extending into Location A6.
 - Observed soil staging areas, DECON area and Frac Tank City.
 - Loading of soil in the eastern soil staging area.
 - Active decontamination of frac tanks and vacuum truck at the south end.
 - Heavy cleanup continued on Islands A, B, E, and F in Division C.
 - Shoreline cleanup was observed along the north shore of the Kalamazoo River upstream of the peninsula and Ceresco Dam.
 - The three submerged oil test cells were still in place along the southern shoreline above the dam.
 - Over flight was terminated due to inclement weather. Flight terminated at Ceresco Dam.

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 (9/11/10 1900)

Number of Locations	25
Boom Deployed (feet)	116,416

Soil and Debris Waste Tracking

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

Waste Stream*	Quantity Shipped	Cumulative Quantity Shipped
Haz Soil (yd ³) ^a	0	15,344
Non Haz Soil (yd ³) ^b	1,314	19,509
Haz Debris (yd ³) ^c	0	12,075
Non Haz Debris (ton) ^c	0.0	917

* 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 (9/10/10, 0700)

Location	Cumulative Total Collected (gallons)
Division A	4,902,818
Division B	3,419,775
Division C	817,750
Division D	117,825
Division E	50,030
DECON	111,640
Other Locations*	171,895
TOTAL	9,591,733

* Includes Frac, DECON, and Wildlife Center.

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

Oil-Water - Enbridge Facility in Griffith, IN Facility (gallons)	
Oil	699,823
Other Material	1,382,983
TOTAL	2,082,806

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

Oil/Water leaving Site	Destination	Daily Quantity Shipped (Gallons)	Cumulative Quantity Shipped (Gallons)
Haz Water	Dynecol, Detroit, MI	13,269	2,092,405
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 ^a	165	715
Treated Non Haz Water *	Dynecol, Detroit, MI	0	134,200
Treated Non Haz Water *	Battle Creek POTW	0	1,968,700
Totals		13,434	8,274,826

* 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 ^a	9,591,733
Oil/Water Shipped Off-site ^b	8,274,826
OIL/WATER REMAINING ON-SITE	1,316,907

a. As of 9/11/10, 0700

b. As of 9/10/10

2.2 Planning Section

Data Management Unit

The Data Management Unit reported the following:

- Analysis of sediment data with trend plots of TPH and SVOC's.
- Mapping and analysis of wildlife and sedimentation and oil data.
- Processing and production of maps as requested.
- Ongoing processing of surface water sampling data.
- Ongoing importation of preliminary and validated analytical results into SCRIBE.

Situation Unit Field Observers

Situation Unit FOB observed the following:

- At Division A:

- Two crews conducting backfill activities at Location A6.
 - Erosion matting and seeding being placed along Talmadge Creek to prevent backfill erosion.
- At Location B2:
 - Observed 1 crew excavating test pit in Location B 2.7 (Section 43 +75 R).
 - Some free product found in test pit of Section 43 + 75 R.
- At Location B3:
 - Drum Skimmer now being used at 16 Mile Road.
 - No other activities witnessed.
- At Division C near Ceresco Dam:
 - Only skimming operation at spillway. No other activities witnessed.
 - No testing being conducted in the silt containment area.
- At Location D4:
 - Boat and supply area shut down due to muddy conditions creating a slipping hazard. Workers sent home.
 - Question from Site Supervisor about whether trees can survive when oil coats the trunk circumference. Request referred to USFWS
- At Location E3 to Location E4:
 - Sampling crew with Superior Environmental at 35th Street Bridge to take sediment sample (ponar dredge) and water sample.
 - No visible sheen at shoreline below bridge.
 - Sorbent boom in place on shore at MP34 to MP35. Small spots of sheen moving with current inside the boom.
 - Two john boats on shore at Location E3 access point. Guard on duty at road to access point. No other activity. Containment boom and sorbent boom present with light sheen visible at boom collection point.

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:

- Review of CTEH air monitoring samples.

2.3 Logistics Section

Logistics reported the following:

- Arrival of mobile office trailer. Mobile office trailer replaces the USEPA Mobile Command Bus which was relocated to the Enbridge Spill site near Romeoville, Illinois.
- Arrival of Mobile office trailer for the Medical Unit.

2.4 Safety Reports

The following health and safety items were noted:

- The Enbridge and START Health and Safety observed an attorney representing a local property owner in Division A. The attorney was not wearing proper PPE and did not have credentials for entering the site. This individual was asked to leave the site by the Enbridge Health and Safety officer immediately and obtain the proper PPE and credentials before returning.
- Workers failed to adhere to PPE requirements at MP 14.75. Contractors and their supervisor were advised.
- Strong odors noted above Ceresco Dam.
- Boat traffic in area above Ceresco Dam should be limited to workers only.
- Corrective actions including better signage, spotters and flaggers, and traffic barriers, have been implemented by Enbridge to address safety issues with travel on the mat roads.

Enbridge Safety Officer reported the following Health and Safety issues:

- One lost time incident:
 - A worker slipped when stepping into a boat in Division C. Worker was transported to Oaklawn Hospital for treatment.
- Two first aid incidents:
 - A worker slipped in the mud, fell and sprained his wrist. The worker was treated and released at the site in Division C.
 - A worker fell out of a boat when the boat hit a log and it stopped suddenly ejecting the worker. A buddy pulled the worker from the river. The worker was treated and released in Division D at Location D2.
- One near miss:
 - An air boat hit a log in the river in Division C at Location C3.2. The log damaged the fan cage on the boat but none of the five workers on the boat were injured.

EPA Safety Officer reported the following Health and Safety issues:

- EPA had no safety incidents to report.
- Medical Unit Trailer is in place at ICP. A nurse will be on site to staff the trailer..
- Worked with Enbridge Safety Officer on the Facility Emergency Response Plan.
- Observed the Area A waste collection/decon area and made safety improvement recommendations in the areas of:
 - Traffic control,
 - Signage needed,
 - Segregation of hot and cold zones for equipment decontamination;
 - Relocating worker parking areas; and
 - Separating clean and dirty storage areas.

2.5 Liaison Officer

The Liaison Officer reported the following actions:

- The Liaison Office coordinated with EPA and Enbridge regarding property owner concerns about activities under the rental lease for the ICP.

2.6 Finance Section

The current NPFC issued ceiling was \$18 million. Approximately 85.7% of the ceiling had been spent through September 10, 2010, with a burn rate of \$195,496 per day. These cost summaries reflect only EPA-funded expenditures for the incident.

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

ERRS Contractors		Est. Expended	Est Burn Rate (Lastest Daily)
EQM (EPS50802)	T057	\$1,250,017	\$0
	T060	222,034	1,600
LATA (EPS50804)		1,451,396	0
ER LLC (EPS50905)		723,669	0
ERRS Contractors		\$3,647,116	\$1,600
TNT Bisso		812,000	27,000
START Contractor			
WESTON (EPS50604)		5,052,288	72,314
Response Contractor Sub-Totals		\$9,511,404	\$100,914
EPA Funded Costs:			
Total EPA Costs		2,869,203	50,950
Pollution Removal Funding			
Total Other Agencies		913,440	16,667
Sub-Totals		\$13,294,047	\$168,531
Indirect Cost (14.15%)		2,127,048	26,965
Total Est. Oil Spill Cost		\$15,421,095	\$195,496

2.7 Information Officer

The Public Information Office reported the following activities:

- Completed document for distribution to residents with information about how to report suspected missed oil pools/sheens.
- Distributed about 850 copies of fact sheet: Oil Spill: Changes Seen As Cleanup Response Evolves.
- Contacted numerous community groups to determine interest in receiving copies of above fact sheet.
- Posted above fact sheet to Region 5 web site.
- Obtained approval from required Headquarters, Regional Headquarters officials for posting links from Region 5 web site to Enbridge data.

Media Inquiry Line (877-440-7157)¹

Calls received during last reporting period: 0

Enbridge reported the following call volume and community center visits:

Oil Spill Public Information Hotline (800-306-6837)²

Calls received during last reporting period: 13

Community Center Visits³: 19

Visits by location during last reporting period:

Battle Creek	13
Marshall	6

Enbridge reported that it received 2 inquiries from its www.response.enbridgeUS.com website.

2.8 Response Actions to Date

Response Actions to date may be found in Situation Reports 1 through 47.

¹ No update provided for the Media Inquiry Line

² No update provided for the Oil Spill Public Information Hotline

³ 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

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 9/11/10

Agency/Entity	Numbers Reported
EPA	38
START	41
Calhoun County Public Health Dept. (CCPH)	2
Calhoun County (CC) Sheriff	6
City of Battle Creek	3
Kalamazoo Sheriff	2
MDNRE	8
Michigan State Police (MSP)	1
NOAA - National Weather Service	2
NOAA- NRDA	2
USCG	8
USFWS	4
USFWS Contractors	0
Enbridge	16
Enbridge Contractors	1271
Total	1,404

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 ₂ 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 ³	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>.

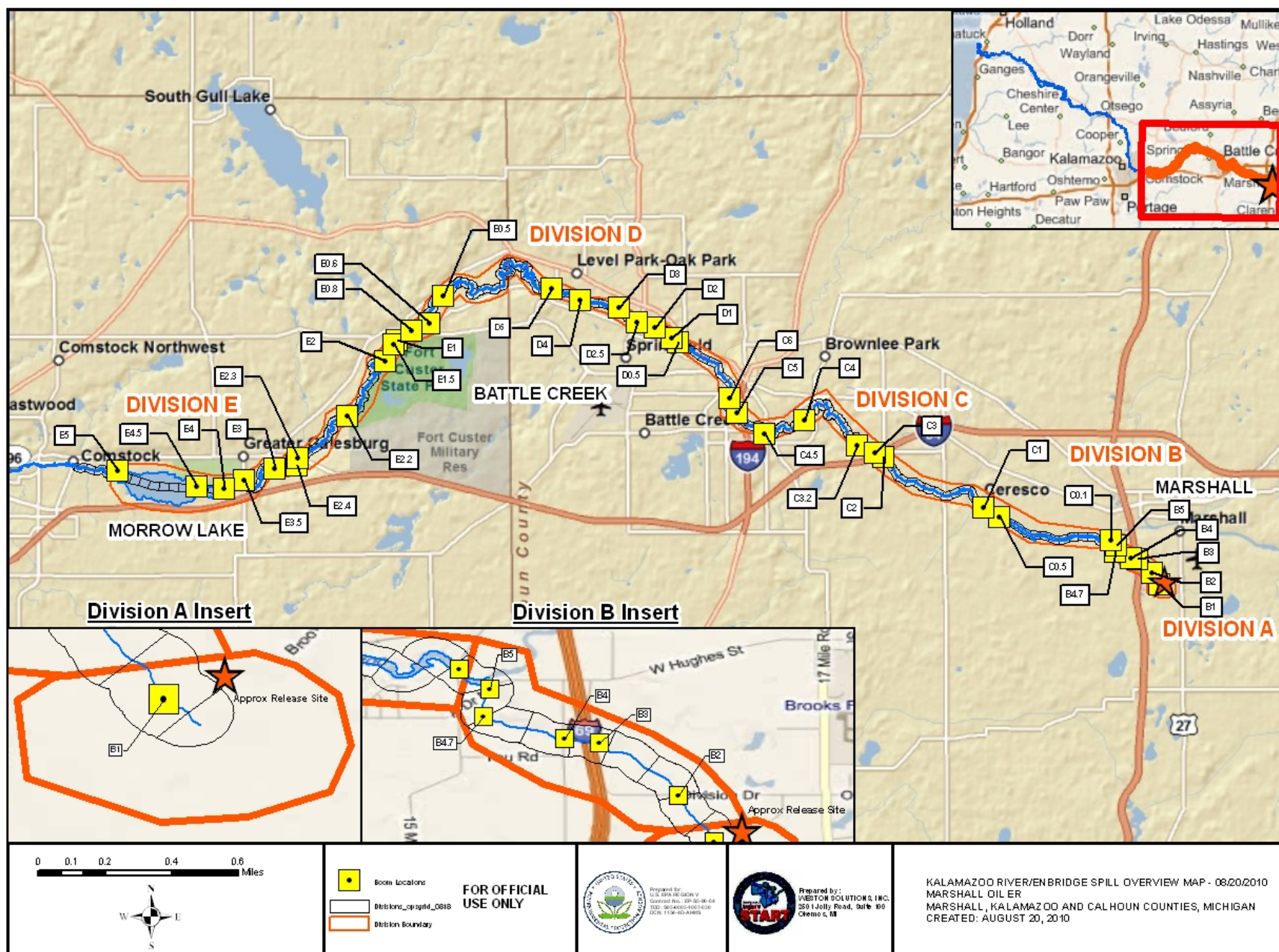
6.2 Reporting Schedule

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.

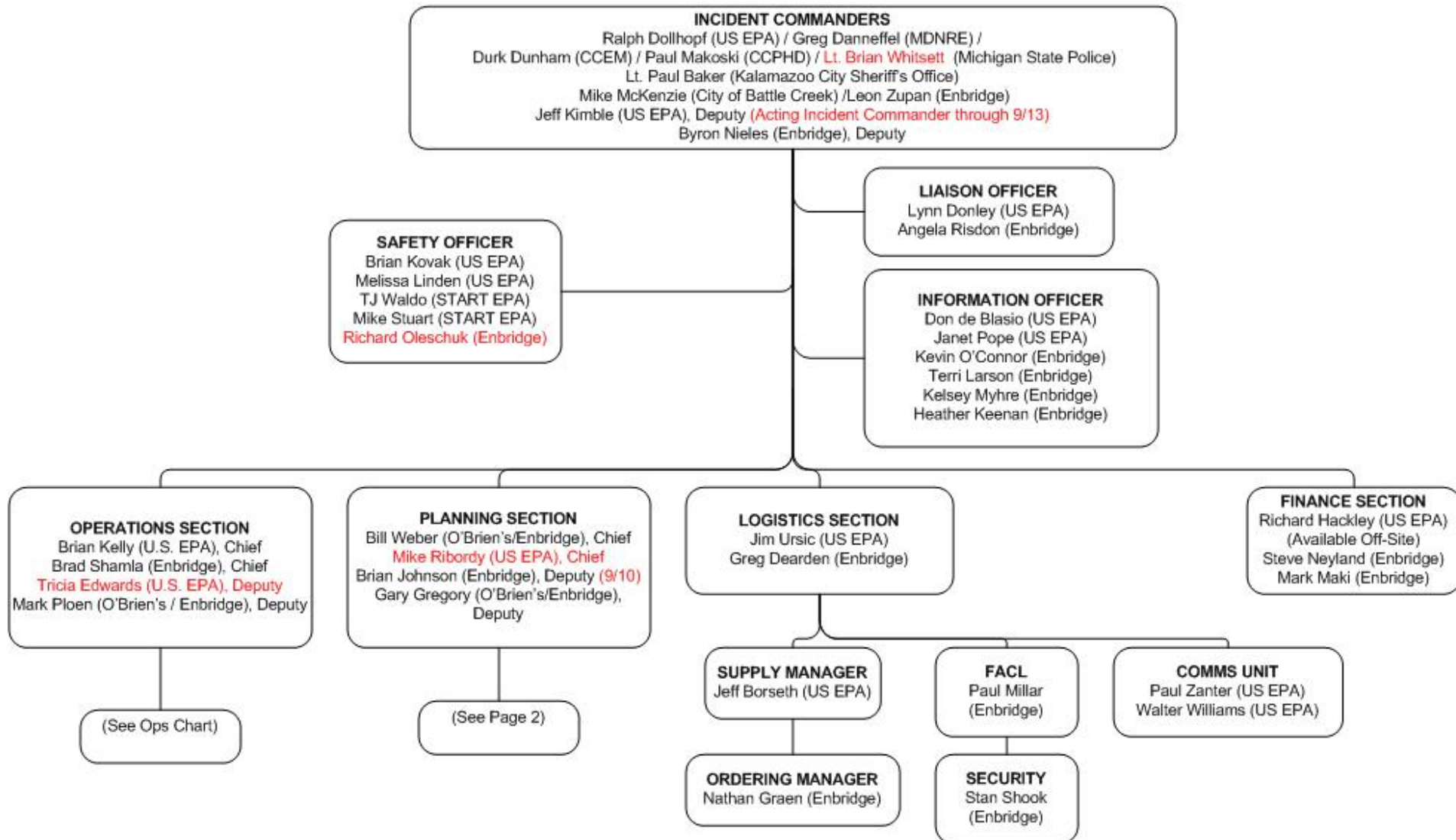
See attached Unified Command Organizational Charts (ICS 207) entitled, “Enbridge Pipelines Response Unified Command”, “Planning Section”, “Operations”, and “Division C.”



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Enbridge Pipelines Response Unified Command



ICS 207
 9/09/2010 1700
 OP 9/10 - 9/12



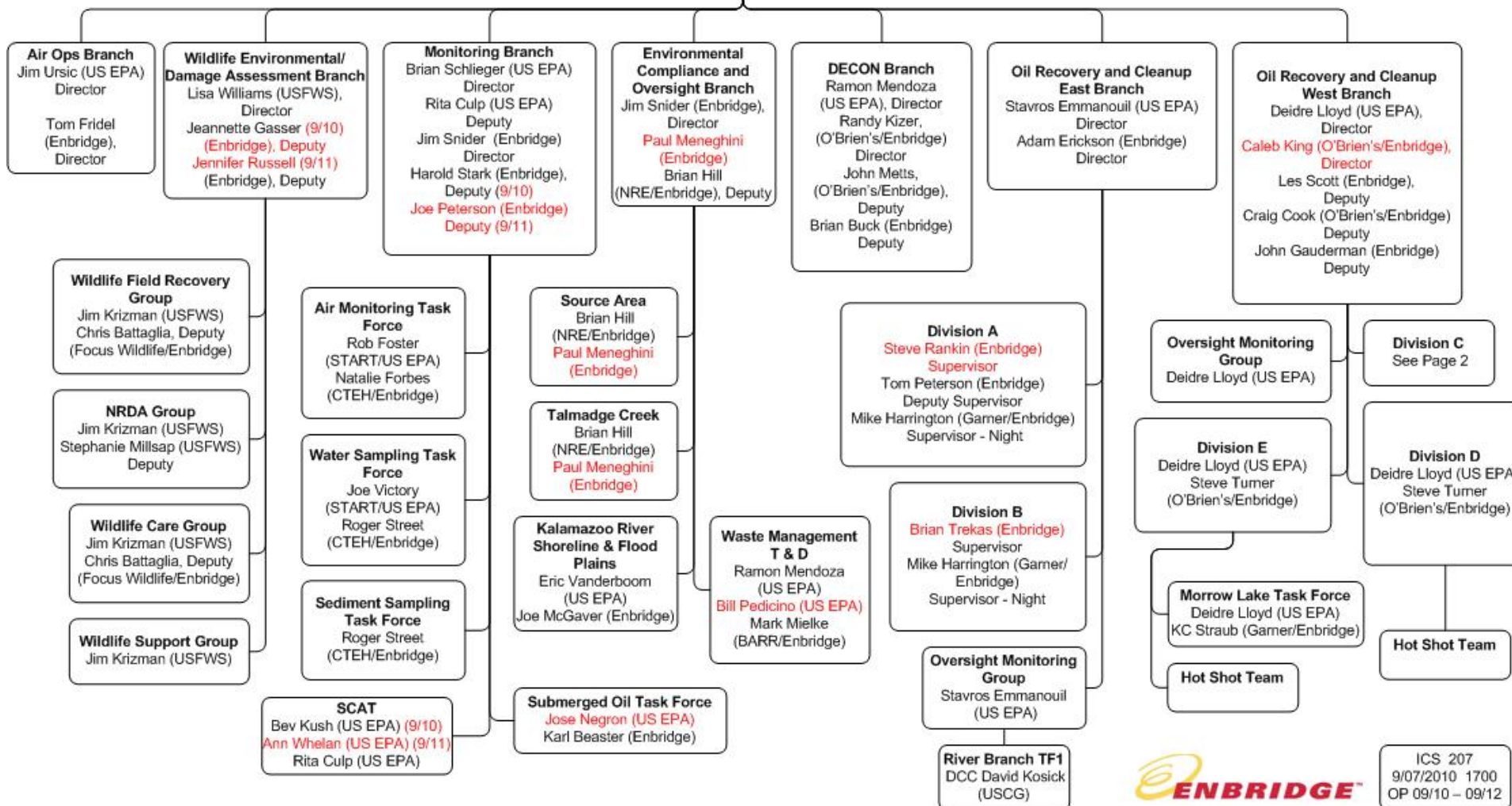
Operations

OPERATIONS

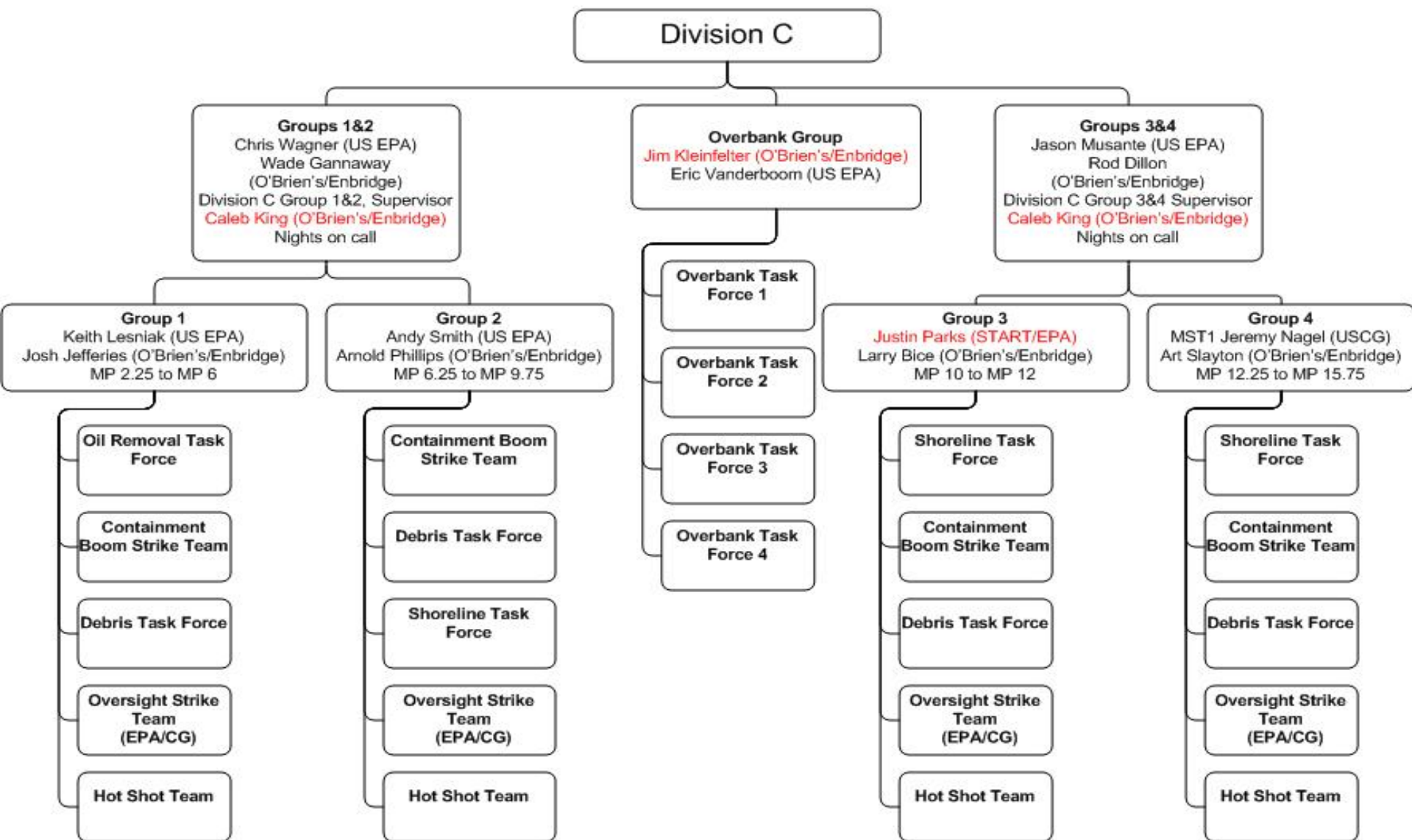
Brian Kelly (US EPA), Chief / Brad Shamla (Enbridge), Chief
 Tricia Edwards (US EPA), Deputy
 Tom Fridel (Enbridge), Deputy / Mark Ploen (O'Brien's/Enbridge), Deputy

Technical Services Group

Mike Popa (T&T Marine/US EPA)
 Dean Sahara (SWAT/Enbridge)
 Kevin Oscar (SWAT/Enbridge)



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