Enbridge Energy, Limited Partnership
1601 Pratt Avenue
Marshall, Michigan

May 20, 2011

Mr. Ralph Dollhopf
Federal On-Scene Coordinator and Incident Commander
U.S. Environmental Protection Agency
801 Garfield Avenue, #229
Traverse City, MI 49686

Re: In the Matter of Enbridge Energy Partners, L.P., *et al*,
Docket No. CWA 1321-5-10-001

Dear Mr. Dollhopf:

On May 12, 2011, Enbridge Energy Partners, LP, et al, (Enbridge) indicated by letter that a Reassessment Report will be submitted to the United State Environmental Protection Agency (U.S. EPA) on May 20, 2011 to show our overall progress with the Overbank and Poling Reassessment.

The Reassessment Report is completed and enclosed for your review. The report is presented in two parts, one each on the Overbank and Poling Reassessments.

If you have any questions, please contact either John Sobojinski at 269.781.1142 or the undersigned at 715.398.4670.

Sincerely,

ENBRIDGE ENERGY, LIMITED PARTNERSHIP
By Enbridge Pipelines (Lakehead) L.L.C.
Its General Partner

Richard Adams
Vice President, U.S. Operations

CC: Joel W. Kanvik, Enbridge
John Sobojinski, Enbridge
Leon Zupan, Enbridge
Bob Steede, Enbridge
Brian Kelly, EPA Region 5 [kelly.brian@epa.gov]
Jeff Kimble, EPA Region 5 [kimble.jeff@epa.gov]

Enbridge Line 6B MP 608
Marshall, MI Pipeline Release

Summary of Findings
Shoreline and Overbank Reassessment Report
MP 0.0 through MP 15.75
(Binder 1 of 2)

Prepared for United States Environmental Protection Agency

Enbridge Energy, Limited Partnership

Submitted: May 20, 2011

Table of Contents

1.0 SORT Objective / Executive Summary.....1

1.1 SORT Objective.....1

1.2 SORT Procedures.....1

1.3 Executive Summary.....2

TABLE

Table 1 SORT Metric Quick Guide

FIGURES

Figure 1 MP 0.0 to MP 15.75 Data Overview Map

Figure 2 MP 0.0 to MP 15.75 Inundation Model and Topographic Contours

ATTACHMENTS

Segment Summary

Segment Figures

YUMA Output Summary

Photo Logs

SORT Data Sign Off Documentation

LIST OF ACRONYMS

Enbridge	Enbridge Energy, Limited Partnership
FEMA	Federal Emergency Management Agency
FLS	Fluorescent LIDAR System
GIS	Geographic Information System
I	Island
LDB	Left Descending Bank
LIDAR	Light Detection And Ranging
Line 6B	The pipeline owned by Enbridge Energy, Limited Partnership that runs just south of Marshall, Michigan
MDEQ	Michigan Department Environmental Quality
MDNR	Michigan Department of Natural Resources
MP	Mile Post
NOAA	National Oceanic and Atmospheric Administration
PI	Polarimetric Imaging
RDB	Right Descending Bank
SCAT	Shoreline Cleanup Assessment Technique
SORT	Shoreline and Overbank Reassessment Technique
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WP	Work Plan

1.0 SORT Objective / Executive Summary

1.1 SORT Objective

The assessment area detailed in this report details the results of assessment activities from MP 0.0 to MP 15.75 and encompasses all areas inundated at the time of the spill as defined by the United States Geological Survey (USGS) Inundation Model (for most of Calhoun County) and the Federal Emergency Management Agency (FEMA) 100 year flood elevation (for the portion of Calhoun County and Kalamazoo County not included in the USGS model). Please note that prior to final submission of this report, the new 2011 inundation model will be incorporated into the data set and all areas not assessed based on the USGS Inundation Model or the FEMA 100 year flood elevation data will have been completed and incorporated. The objective of this assessment is to determine the presence of oil along the shoreline and overbank area from Talmadge Creek (starting at MP 0.00) to the dam at Morrow Lake (ending at MP 40.00 and is in response to the requirements of the United States Environmental Protection Agency (USEPA) Notice to Enbridge dated March 7, 2011. The notice directs Enbridge to perform assessment activities pursuant to the Administrative Order issued by the USEPA on July 27, 2010 and a Supplement to Order for Compliance under Section 311(c) of the Clean Water Act issued ("Supplement") by the USEPA on September 23, 2010.

The Shoreline and Overbank Reassessment Technique (SORT) was used to locate and categorize the visual occurrences of remaining oil. Presentation of remediation or cleanup options is not presented in this document.

1.2 SORT Procedures

The SORT developed for this project, uses techniques from the National Oceanic and Atmospheric Administration (NOAA) Shoreline Cleanup and Assessment Technique (SCAT) survey system for rapid assessment of oil impact to shoreline habitats in a marine setting, and the assessment procedure was utilized for this assessment of a riverine environment. Surveys were conducted by boat and/or foot and target shoreline and accessible overbank areas. Shorelines were identified in the cleanup reports as "Left Bank While Facing Downstream (LDB)" or "Right Bank While Facing Downstream (RDB)".

The following procedures were followed:

- Identify and estimate the areas (labeled numerically so not to conflict with initial SCAT efforts in 2010) of specific oiling and substrate conditions observed during current conditions.

- Areas found to have been inundated by the USGS Inundation Model within each 0.25-mile segment of river.
- Characterize oiling conditions and substrate types using a standardized terminology (SORT Metric Quick Guide included in Table 1).
- Characterize shoreline and overbank habitat types and the degree and characteristics of any oiling conditions.
- Record percent cover of a specific oiling condition within a point/zone on field maps and data collection forms.
- Collect a waypoint and/or polygon, using a GPS unit with sub-meter accuracy, for each of the oiled points/zones identified as potentially needing additional response activities. The extent of residual oil will be flagged for ease of future identification.

Observations were captured on field forms in digital tablets (Trimble YUMA). The field form contains a signatory area for the START representative, Michigan Department of Environmental Quality (MDEQ) representative and Enbridge representative to verify the data collected on the sheet is accurate. Assessment data is provided for each segment (Attachments).

In addition to the SORT process, Enbridge completed a suite of remote sensing/aerial imagery tasks to supplement and guide the field data collection. These activities included:

- Photometric Imagery (PI)
- Light Detecting and Ranging (LIDAR)
- Fluorescent LIDAR System (FLS)
- High Resolution Aerial Photographs

This information was incorporated into the data base and used to guide and supplement the reassessment.

1.3 Executive Summary

This report and Executive Summary details the results of SORT activities from MP 0.0 to MP 15.75. All of the data collected by the SORT teams have been captured and downloaded to a Geographic Information System (GIS) and summarized in the segment summaries of this report.

Oiling observations were made in most segments and the degrees of oiling ranged from cover to trace in oiling thickness and from tar balls to asphalt pavements in types of occurrences. Generally, observations made on Talmadge Creek (MP 0.0 to MP 2.0) consisted of areas of oil sheen along the creek and in overbank areas. Less common observations of stain and coat on

vegetation and other small oil occurrences were noted on the shoreline and overbank of Talmadge Creek. Along the Kalamazoo River (MP 2.0 to MP 15.75) the shoreline and overbank habitat and amount of inundation varied dependent upon the elevation leading away from the river. The oiling occurrences also varied and ranged from cover to trace in oiling thickness and most types of oiling occurrences were observed. The most common observation was trace staining on debris and on trunks and stems. Film (sheen) observations were generally in trace and sporadic distribution.

In overbank areas where the SORT process was unable to adequately assess the areas due to ponded water, the area was subsequently assessed using poling techniques. This data is also captured in the data set; however, a detailed description of these locations and results will be presented under separate cover along with other poling information.

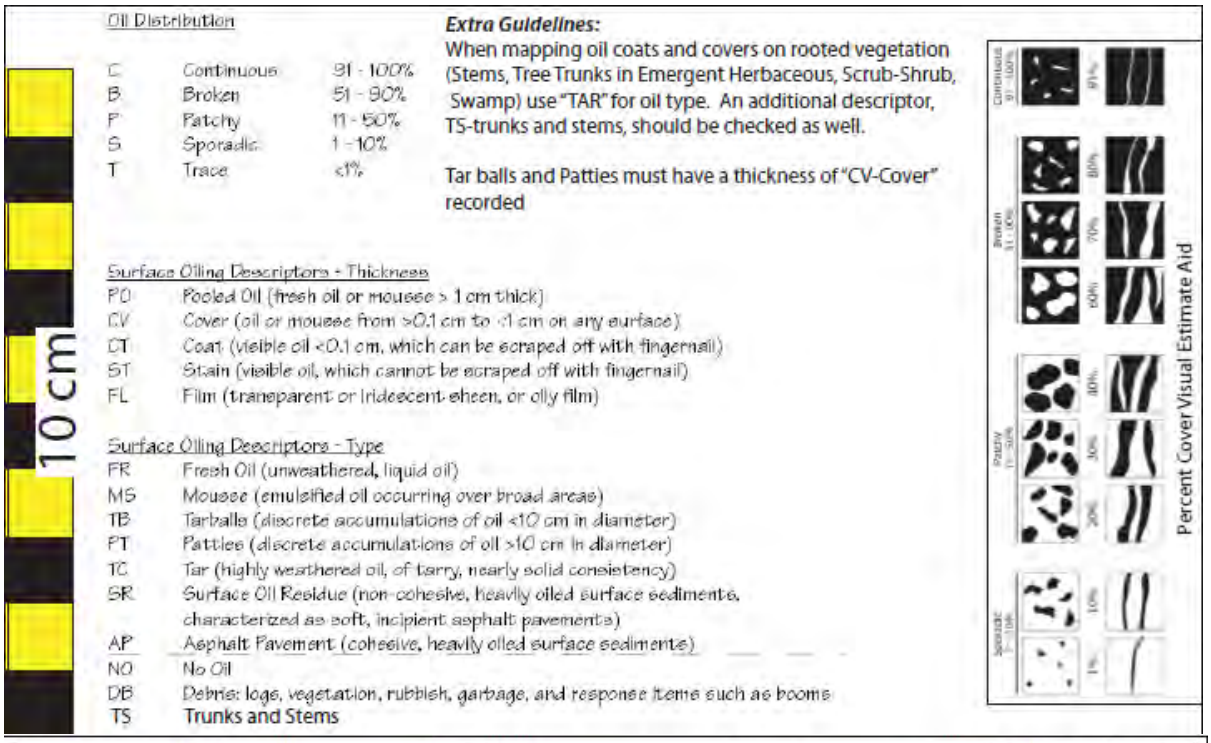
As noted above, prior to final submission of this report, the new 2011 inundation model will be incorporated into the data set and all areas not assessed, based on the USGS Inundation Model or the FEMA 100 year flood elevation data, will have been completed and incorporated.

Table

Table 1. SORT Metric Quick Guide

Enbridge Line 6B MP 608 Marshall, MI Pipeline Release

Enbridge Energy, Limited Partnership

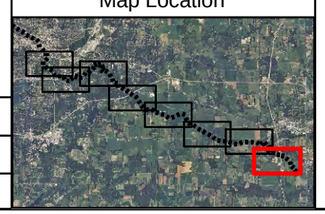


Figures

ENBRIDGE

Drawn:	JW	05/18/2011
Approved:	DD	05/18/2011
Project #:	60162778	

Map Location



Legend

2010 USGS Inundation Model

Poling Data - Submerged Oil

- Heavy
- Moderate
- Light
- None

Quarter Mile Grid Segments

- Reassess Areas
- Completed Reassess Areas
- SORT - No Oil
- SORT - Pooled Oil
- SORT - Film/Sheen
- SORT - Remaining Observations

Revised PI Points

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest
- FLS - Oil Signature Detected
- FLS - Oil Signature Suspected

N

0 300 600 1,200

Scale in Feet

FIGURE 1
MP 0.0 TO MP 15.75
DATA OVERVIEW
SHEET 1 OF 8

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

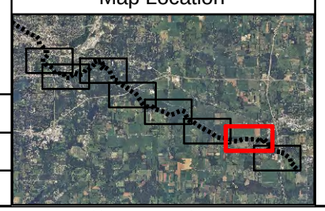
Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_data.mxd

Aerial Photo Date: April 2011

ENBRIDGE

Drawn:	JW	05/18/2011
Approved:	DD	05/18/2011
Project #:	60162778	

Map Location



Legend

- 2010 USGS Inundation Model

Poling Data - Submerged Oil

- Heavy
- Moderate
- Light
- None

- Quarter Mile Grid Segments
- Reassess Areas
- Completed Reassess Areas
- SORT - No Oil
- SORT - Pooled Oil
- SORT - Film/Sheen
- SORT - Remaining Observations

Revised PI Points

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest
- FLS - Oil Signature Detected
- FLS - Oil Signature Suspected

N

0 300 600 1,200

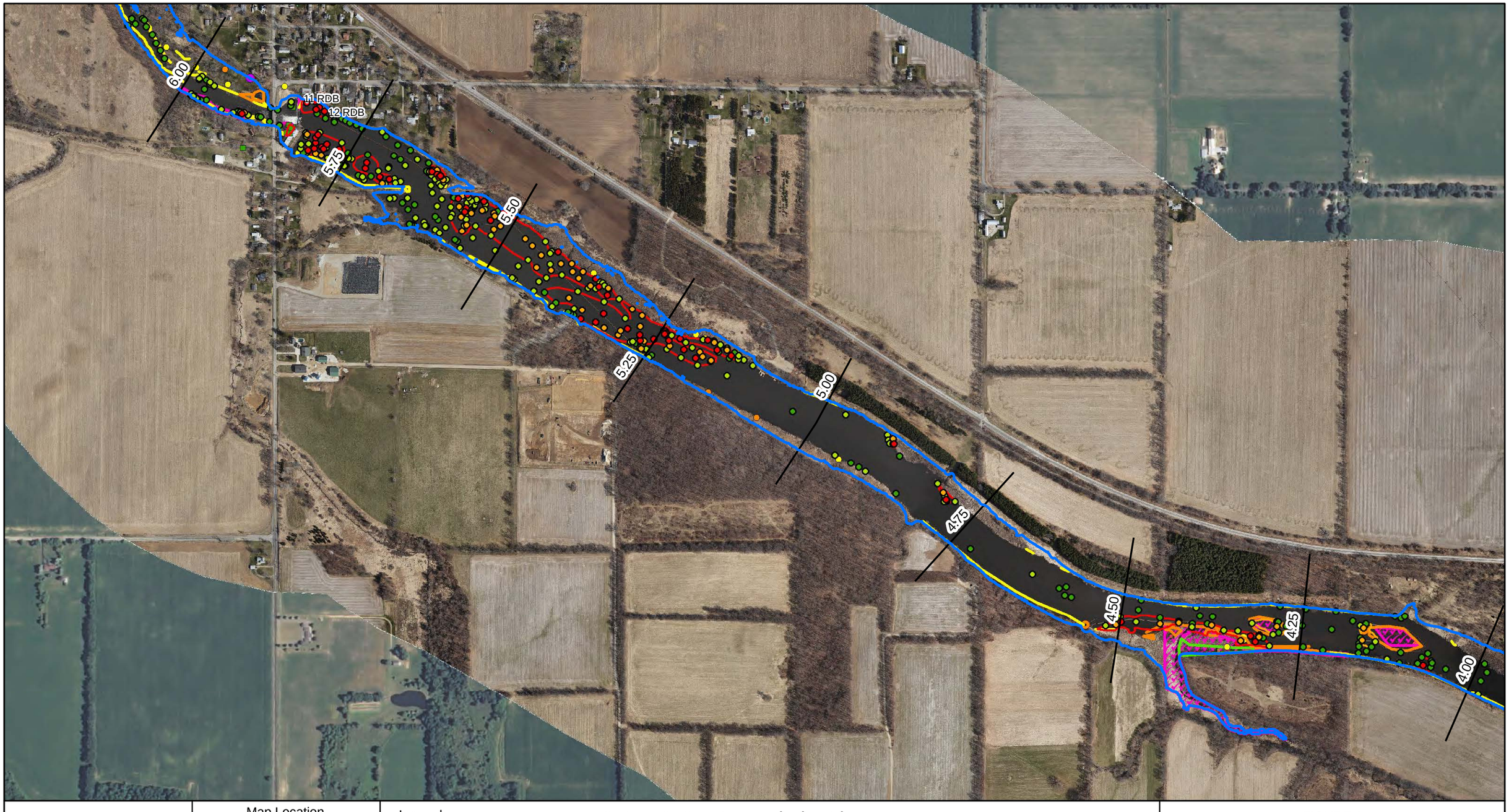
Scale in Feet

FIGURE 1
MP 0.0 TO MP 15.75
DATA OVERVIEW
SHEET 2 OF 8

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_data.mxd

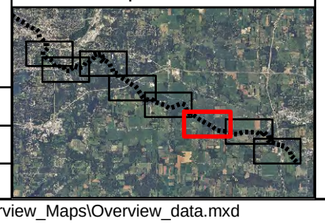
Aerial Photo Date: April 2011



ENBRIDGE

Drawn:	JW	05/18/2011
Approved:	DD	05/18/2011
Project #:	60162778	

Map Location



Legend

- 2010 USGS Inundation Model

Poling Data - Submerged Oil

- Heavy
- Moderate
- Light
- None

- Quarter Mile Grid Segments
- Reassess Areas
- Completed Reassess Areas
- SORT - No Oil
- SORT - Pooled Oil
- SORT - Film/Sheen
- SORT - Remaining Observations

Revised PI Points

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest
- FLS - Oil Signature Detected
- FLS - Oil Signature Suspected

N

0 300 600 1,200

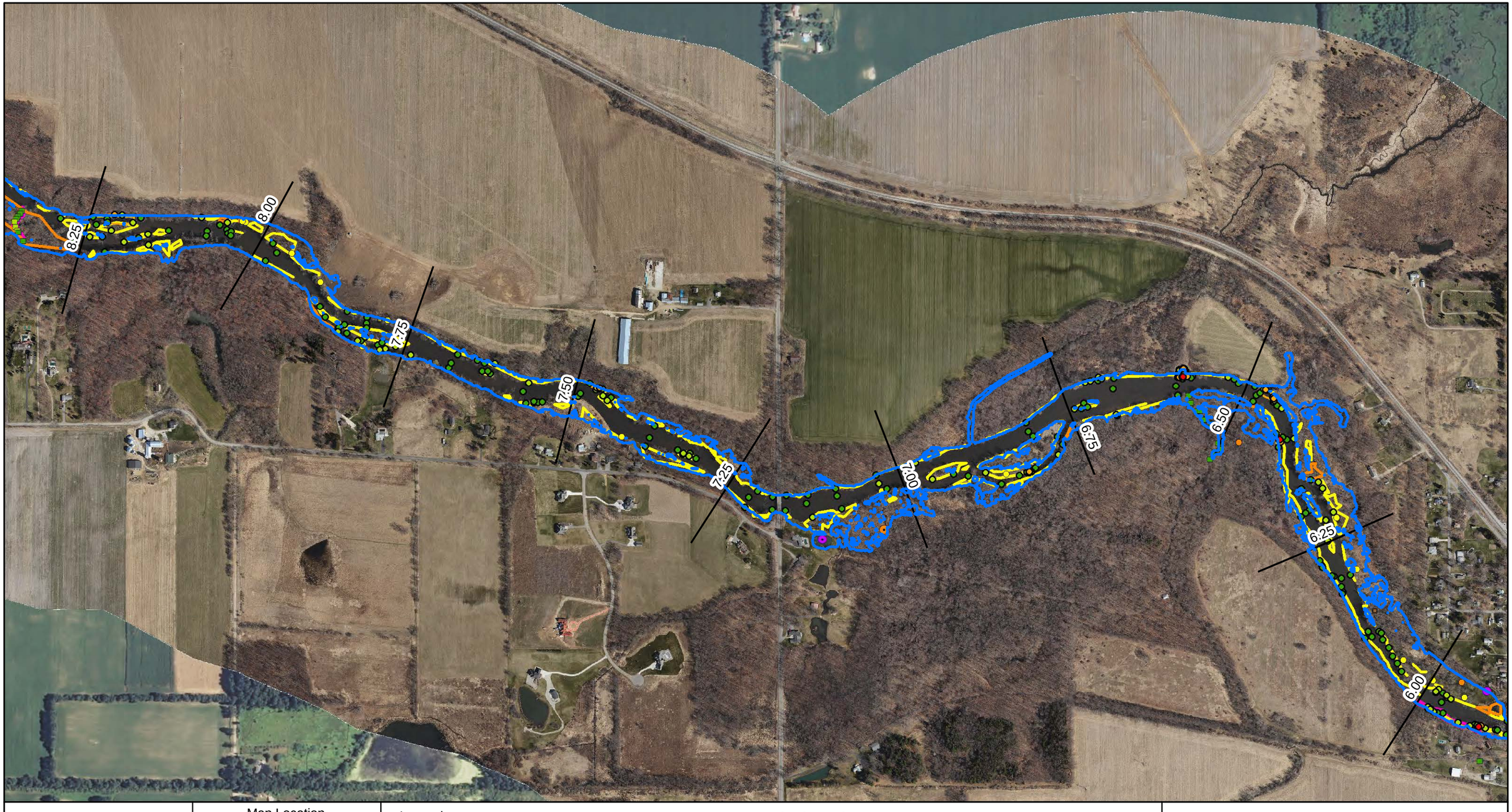
Scale in Feet

FIGURE 1
MP 0.0 TO MP 15.75
DATA OVERVIEW
SHEET 3 OF 8

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_data.mxd

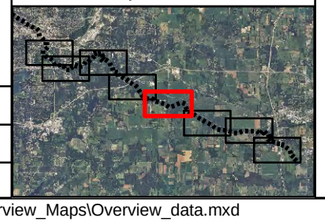
Aerial Photo Date: April 2011



ENBRIDGE

Drawn:	JW	05/18/2011
Approved:	DD	05/18/2011
Project #:	60162778	

Map Location



Legend

- 2010 USGS Inundation Model

Poling Data - Submerged Oil

- Heavy
- Moderate
- Light
- None

- Quarter Mile Grid Segments
- Reassess Areas
- Completed Reassess Areas
- SORT - No Oil
- SORT - Pooled Oil
- SORT - Film/Sheen
- SORT - Remaining Observations

Revised PI Points

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest
- FLS - Oil Signature Detected
- FLS - Oil Signature Suspected

N

0 300 600 1,200

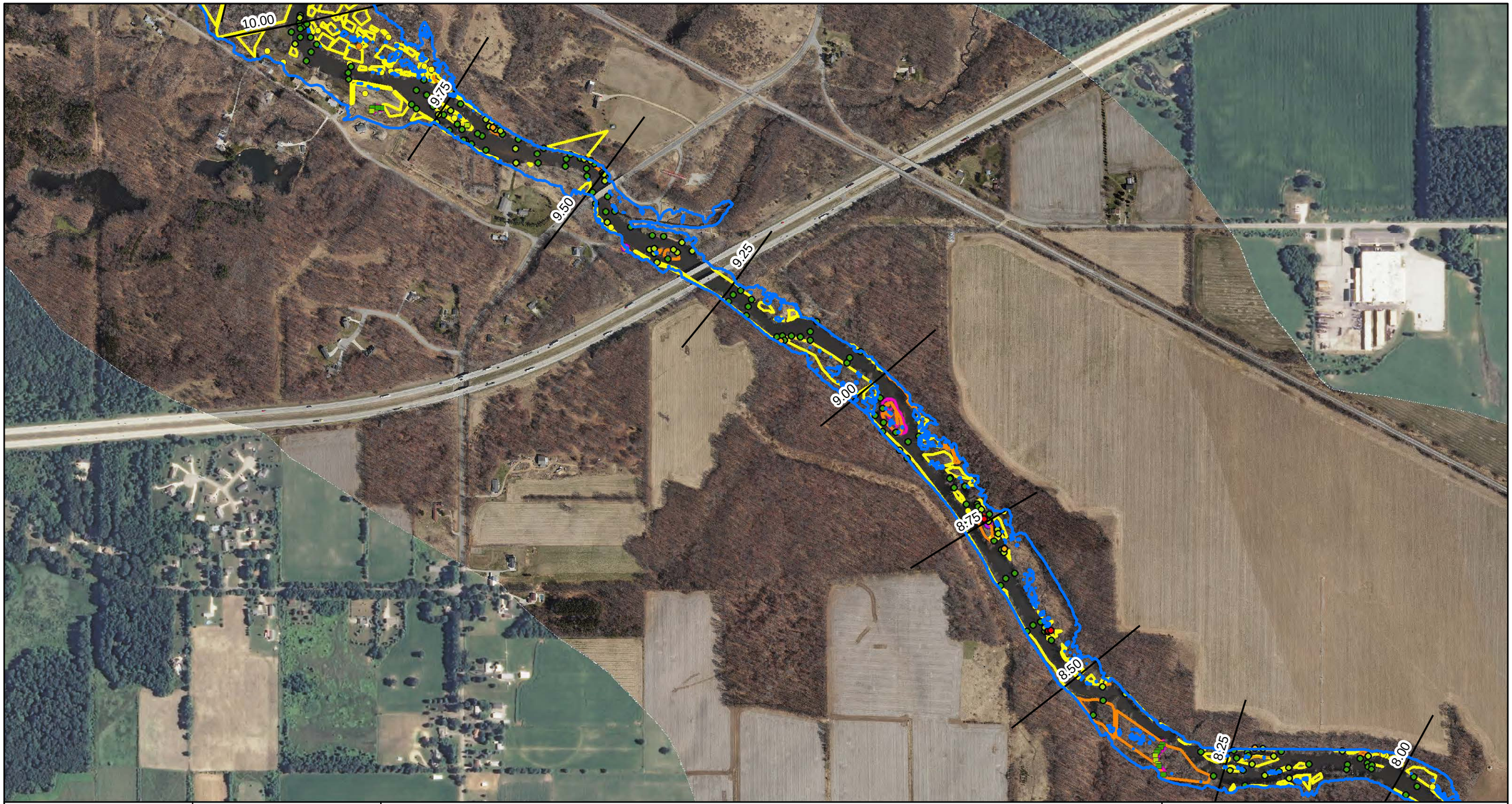
Scale in Feet

FIGURE 1
MP 0.0 TO MP 15.75
DATA OVERVIEW
SHEET 4 OF 8

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_data.mxd

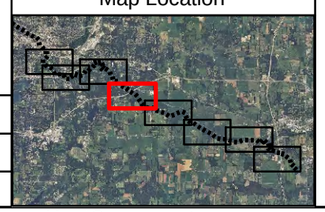
Aerial Photo Date: April 2011



ENBRIDGE

Drawn:	JW	05/18/2011
Approved:	DD	05/18/2011
Project #:	60162778	

Map Location



Legend

- 2010 USGS Inundation Model

Poling Data - Submerged Oil

- Heavy
- Moderate
- Light
- None

- Quarter Mile Grid Segments
- Reassess Areas
- Completed Reassess Areas
- SORT - No Oil
- SORT - Pooled Oil
- SORT - Film/Sheen
- SORT - Remaining Observations

Revised PI Points

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest
- FLS - Oil Signature Detected
- FLS - Oil Signature Suspected

N

0 300 600 1,200

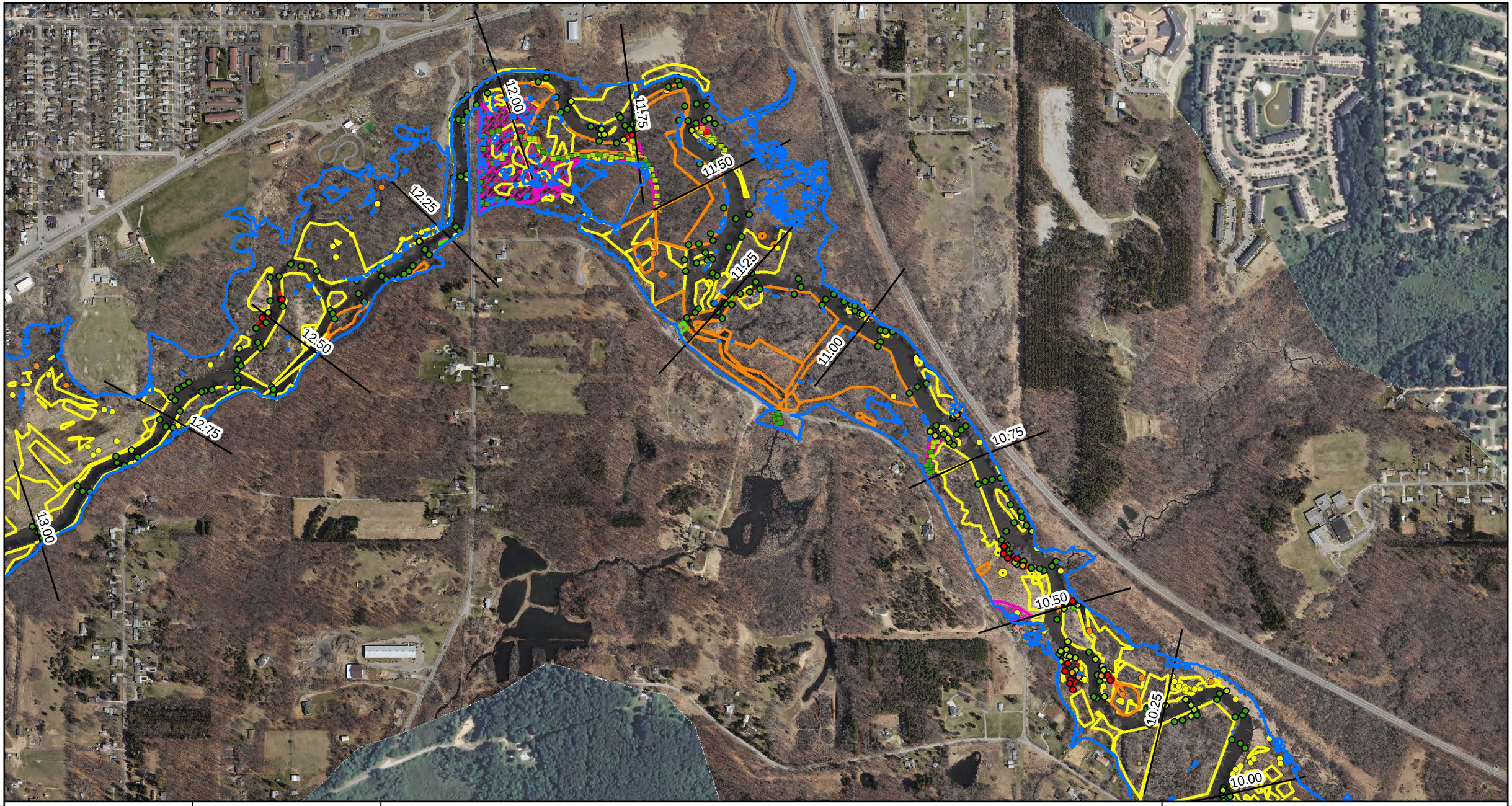
Scale in Feet

FIGURE 1
MP 0.0 TO MP 15.75
DATA OVERVIEW
SHEET 5 OF 8

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_data.mxd

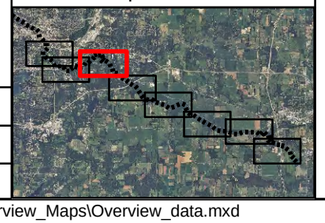
Aerial Photo Date: April 2011



ENBRIDGE

Drawn:	JW	05/18/2011
Approved:	DD	05/18/2011
Project #:	60162778	

Map Location



Legend

- 2010 USGS Inundation Model

Poling Data - Submerged Oil

- Heavy
- Moderate
- Light
- None

- Quarter Mile Grid Segments
- Reassess Areas
- Completed Reassess Areas
- SORT - No Oil
- SORT - Pooled Oil
- SORT - Film/Sheen
- SORT - Remaining Observations

Revised PI Points

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest
- FLS - Oil Signature Detected
- FLS - Oil Signature Suspected

N

0 300 600 1,200

Scale in Feet

FIGURE 1
MP 0.0 TO MP 15.75
DATA OVERVIEW

SHEET 6 OF 8

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_data.mxd

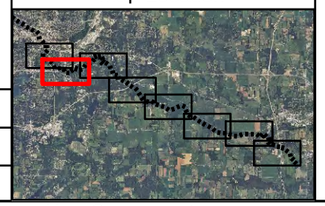
Aerial Photo Date: April 2011

15.00
14.75
14.50
14.25
14.00
13.75
13.50
13.25
13.00
12.75
12.50

ENBRIDGE

Drawn:	JW	05/18/2011
Approved:	DD	05/18/2011
Project #:	60162778	

Map Location



Legend

2010 USGS Inundation Model

Poling Data - Submerged Oil

- Heavy
- Moderate
- Light
- None

Quarter Mile Grid Segments

- Reassess Areas
- Completed Reassess Areas
- SORT - No Oil
- SORT - Pooled Oil
- SORT - Film/Sheen
- SORT - Remaining Observations

Revised PI Points

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest
- FLS - Oil Signature Detected
- FLS - Oil Signature Suspected

N

0 300 600 1,200

Scale in Feet

FIGURE 1
MP 0.0 TO MP 15.75
DATA OVERVIEW
SHEET 7 OF 8

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_data.mxd

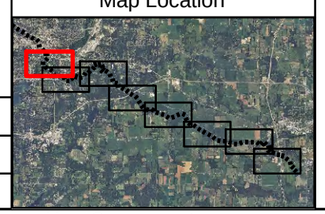
Aerial Photo Date: April 2011

15.75
15.50
15.25
15.00
14.75
14.50
14.25

ENBRIDGE

Drawn:	JW	05/18/2011
Approved:	DD	05/18/2011
Project #:	60162778	

Map Location



Legend

2010 USGS Inundation Model

Poling Data - Submerged Oil

- Heavy
- Moderate
- Light
- None

Quarter Mile Grid Segments
Reassess Areas
Completed Reassess Areas
SORT - No Oil
SORT - Pooled Oil
SORT - Film/Sheen
SORT - Remaining Observations

Revised PI Points

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS - Oil Signature Detected
FLS - Oil Signature Suspected

N

0 300 600 1,200

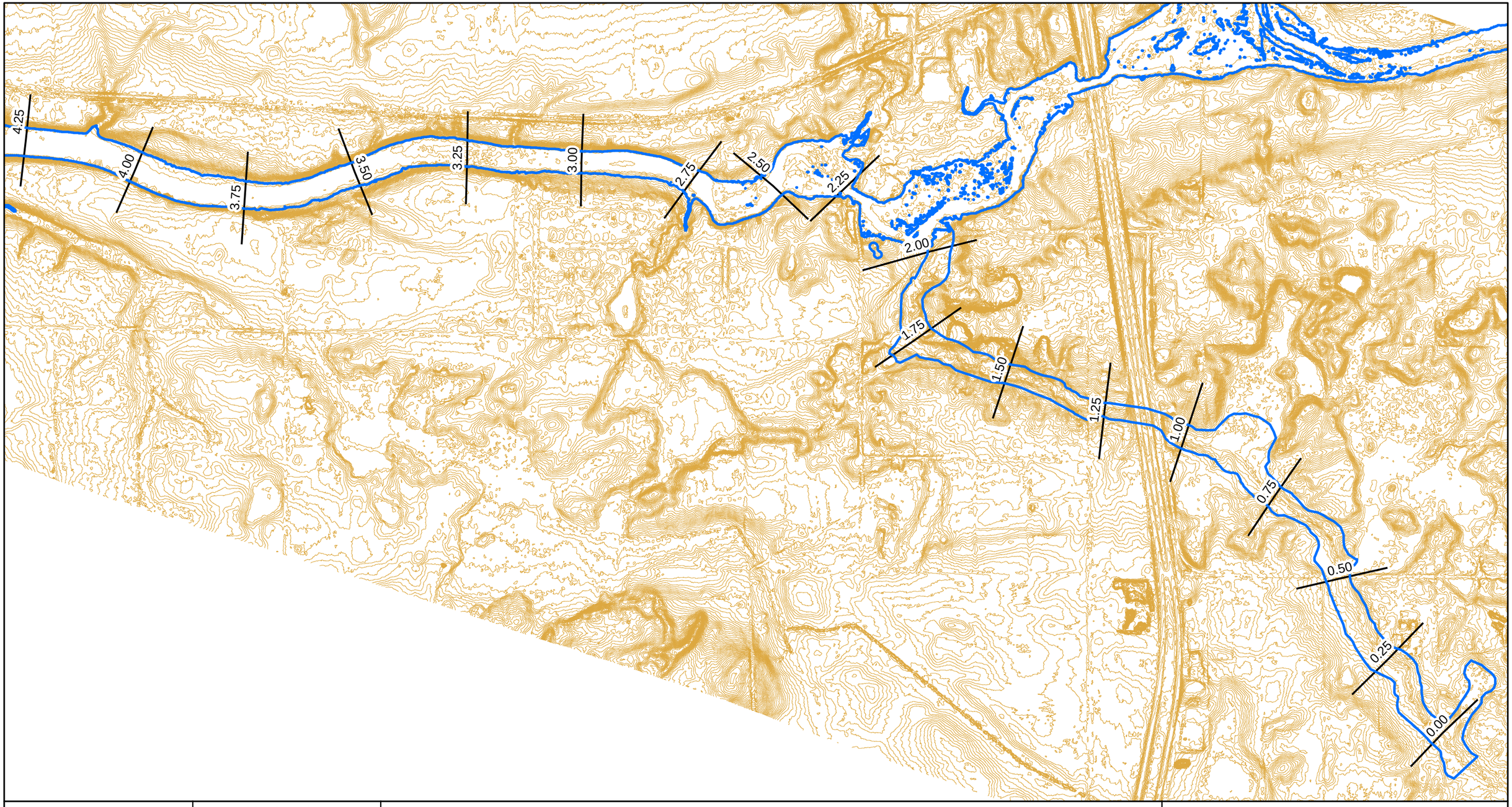
Scale in Feet

FIGURE 1
MP 0.0 TO MP 15.75
DATA OVERVIEW
SHEET 8 OF 8

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_data.mxd

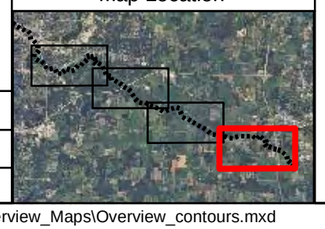
Aerial Photo Date: April 2011



ENBRIDGE

Drawn:	JW	05/19/2011
Approved:	DB	05/19/2011
Project #:	60162778	

Map Location



Legend

- 2010 USGS Inundation Model
- Quarter Mile Grid Segments
- 2011 Contours - 1 Foot Interval

N

0 500 1,000 2,000

Scale in Feet

FIGURE 2
MP 0.0 TO MP 15.75 INUNDATION MODEL
AND TOPOGRAPHIC CONTOURS
SHEET 1 OF 4

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

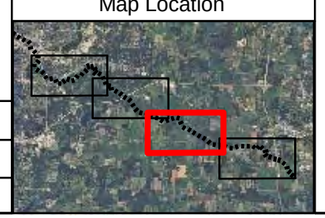
Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_contours.mxd

7.75
7.50
7.25
7.00
6.75
6.50
6.25
6.00
5.75
5.50
5.25
5.00
4.75
4.50
4.25

ENBRIDGE

Drawn:	JW	05/19/2011
Approved:	DB	05/19/2011
Project #:	60162778	

Map Location



Legend

- 2010 USGS Inundation Model
- Quarter Mile Grid Segments
- 2011 Contours - 1 Foot Interval

N

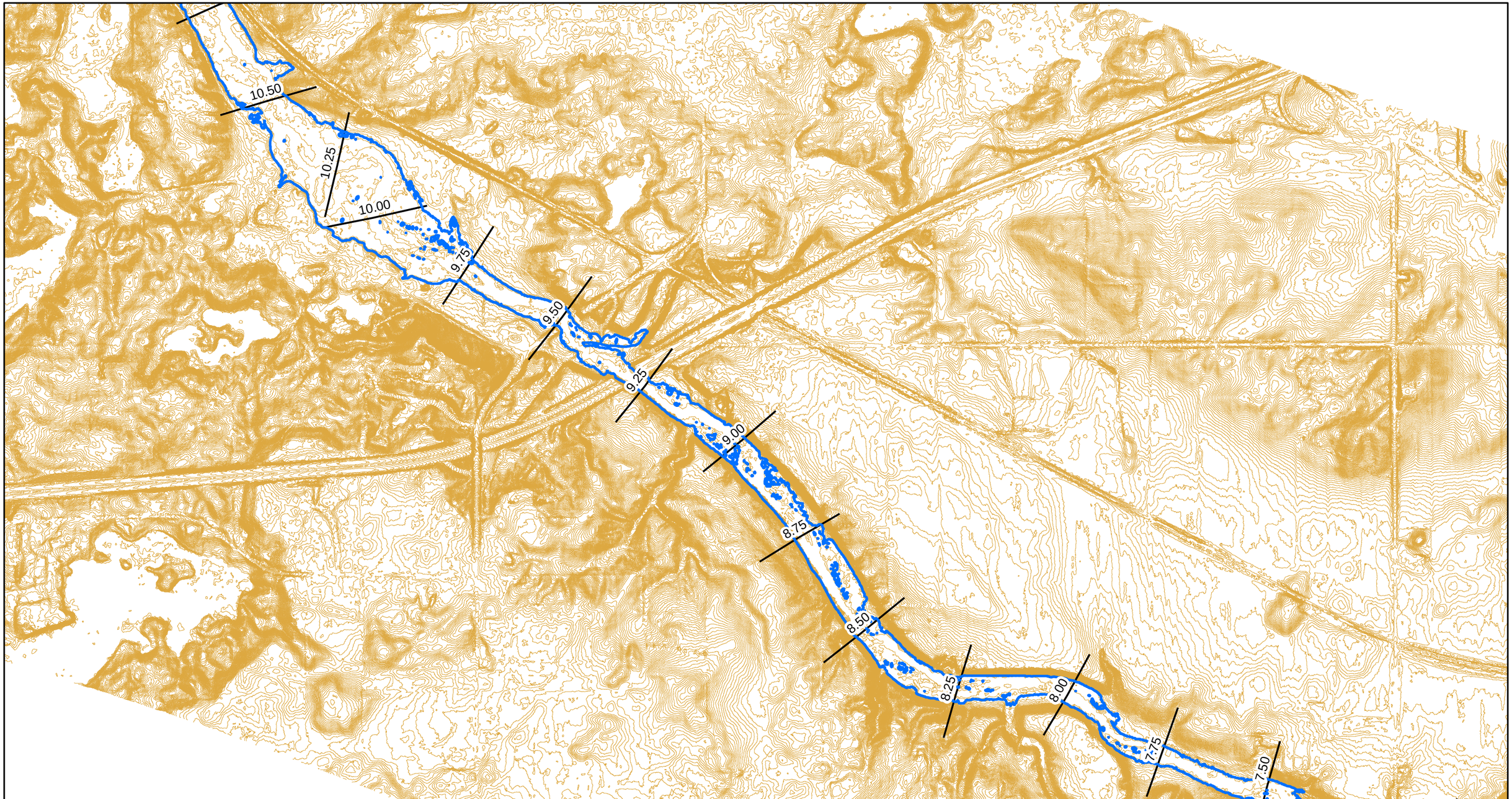
0 500 1,000 2,000

Scale in Feet

FIGURE 2
MP 0.0 TO MP 15.75 INUNDATION MODEL
AND TOPOGRAPHIC CONTOURS
SHEET 2 OF 4

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

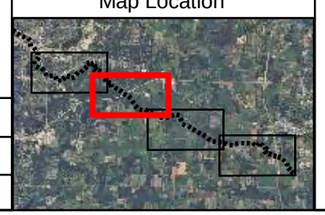
Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_contours.mxd



ENBRIDGE

Drawn:	JW	05/19/2011
Approved:	DB	05/19/2011
Project #:	60162778	

Map Location



Legend

- 2010 USGS Inundation Model
- Quarter Mile Grid Segments
- 2011 Contours - 1 Foot Interval

N

0 500 1,000 2,000

Scale in Feet

FIGURE 2
MP 0.0 TO MP 15.75 INUNDATION MODEL
AND TOPOGRAPHIC CONTOURS
SHEET 3 OF 4

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

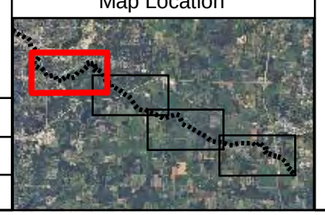
Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_contours.mxd

15.75
15.50
15.25
15.00
14.75
14.50
14.25
14.00
13.75
13.50
13.25
13.00
12.75
12.50
12.25
12.00
11.75
11.50
11.25
11.00
10.75
10.50

ENBRIDGE

Drawn:	JW	05/19/2011
Approved:	DB	05/19/2011
Project #:	60162778	

Map Location



Legend

- 2010 USGS Inundation Model
- Quarter Mile Grid Segments
- 2011 Contours - 1 Foot Interval

N

0 500 1,000 2,000

Scale in Feet

FIGURE 2
MP 0.0 TO MP 15.75 INUNDATION MODEL
AND TOPOGRAPHIC CONTOURS
SHEET 4 OF 4

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Overview_Maps\Overview_contours.mxd

Talmadge Creek

The reassessment of Talmadge Creek was completed in two phases. The initial reassessment was completed and after reviewing the data it was determined that a portion of the data was in non-consensus regarding characterizing petroleum and biological sheen (noted as film (FL)) within the data. As a result, a second phase was completed to reassess those polygons and points in non-consensus. At those areas that both reassessment teams agreed with the petroleum sheen description, the polygon and point designations for both reassessment teams are provided on the segment map. In those areas where the reassessment teams provided different descriptions, only the second reassessment team's point designation is provided on the segment map. If oil was identified at a location by the first reassessment team but could not be documented during the second reassessment, it was considered as a "no oil" location and was not included on the segment map. Consequently, the numerical sequence between the initial and second reassessments will not be coincident.

MP 0.00 to MP 0.25

The LDB of segment 0.25 generally consists of a re-engineered emergent herbaceous overbank with erosion control blankets (ECB) covering the overbank and coir logs lining the shoreline along the segment. Of the five polygons and SORT points identified on LDB, multiple observations were made within three polygons (1 LDB, 2 LDB and 3 LDB) of trace film in pooled water during initial reassessment. Sporadic sheen was observed in polygon 4 LDB. The second reassessment also identified trace film but reduced the sizes of polygons 2 LDB and 3 LDB.

The RDB of segment 0.25 also consists of re-engineered emergent herbaceous overbank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified a sporadic distribution of an oil film within at least nine polygons and SORT points. The second reassessment could not confirm the existence of an oil film on ponded water at one location (1 RDB) and confirmed an oil film at the eight other locations. In general, the shoreline and overbank had sporadic distributions of oil film on ponded water along the segment. A continuous point distribution of oil film was identified at 4 RDB and a trace oil film was observed at polygon 9 RDB.

No islands are located within 0.25 of Talmadge Creek and the FLS did not identify any oil signatures within this segment.

No PI observations were identified in this segment

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

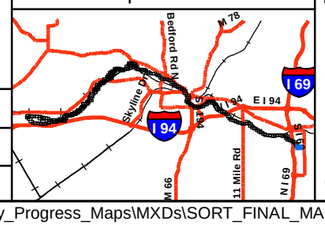
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP0.00-MP0.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 0.25																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	**Time**																	**Latitude**	**Longitude**		**Enbridge Team Lead**
1	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		RSB; SHEEN IN POOLED WATER	Johnson, Rex
																					Conn, Chris
4/11/2011	13:08																	42.24151	-84.97337		Kytta, Ken
1a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLYGON FOR 0.25LDB1. ALL PARTIES INVOLVED WERE IN AGREEMENT THAT POLYGON HAD SIGNS OF OIL SHEEN. ENTIRE AREA COULD NOT BE OBSERVED DUE TO SOFT SINKING SOIL.	Wagner, Greg
																					Zimont, Ben
4/26/2011	10:18																	42.24155	-84.97335		Standen, John
2a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLYGON 0.25LDB2 FROM UPSTREAM STARTING POINT TO THIS POINT HAD NO SIGNS OF VISIBLE OIL SHEEN. THIS POINT IS THE FIRST SIGN OF VISIBLE OIL INSIDE THIS POLYGON.	Wagner, Greg
																					Zimont, Ben
4/26/2011	10:36																	42.24238	-84.97424		Standen, John
3	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		RSB; SHEEN IN POOLED WATER	Johnson, Rex
																					Conn, Chris
4/11/2011	14:00																	42.24297	-84.97477		Kytta, Ken

2011 Reassessment

Bank: LDB

Mile Marker: 0.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
4	Overbank	4/11/2011	14:25	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank	42.24371	-84.97538	RSB; SHEEN IN POOLED WATER	Johnson, Rex Conn, Chris Kytta, Ken
4a	Overbank	4/26/2011	11:04	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous	42.24310	-84.97471	THIS POINT IS THE FIRST SIGN OF OIL FROM THE START OF THE UPSTREAM SIDE OF POLYGON 0.25LDB3. NO OTHER OIL OR SHEN OBSERVED IN THIS POLYGON TO THIS POINT.	Wagner, Greg Zimont, Ben Standen, John
5a	Overbank	4/26/2011	11:21	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous	42.24365	-84.97478	ALL PARTIES ARE IN AGREEMNT THAT OIL HAS BEEN OBSERVED IN POLYGON 0.25LDB4	Wagner, Greg Zimont, Ben Standen, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 0.25																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	Time																	Latitude	Longitude		Enbridge Team Lead
2	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		RESTORED CREEK BANK; SHEEN IN STANDING WATER	Johnson, Rex
																					Conn, Chris
4/11/2011	09:33																	42.24247	-84.97411		Kytta, Ken
2a	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		POLY 0025R2, SOME OF THE SHEEN DID MAKE DEFINED SWIRLING OF OIL SHEEN OVERALL JUST GREATER THAN 1% OF POLYGON	Childs, Jessica
																					Matthews, Rachel
4/26/2011	10:25																	42.24241	-84.97421		Juntilla, John
3	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		RESTORED STREAM BANK, SHEEN IN STANDING WATER	Johnson, Rex
																					Conn, Chris
4/11/2011	09:46																	42.24272	-84.97452		Kytta, Ken
3a	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		POLY 0025R3, MOSTLY ORGANIC SHEEN OBSERVED MORE THAN ONE FOOT FROM BANK, ABOUT 2% SHEEN WITH STRONG OIL CHARACTERISTICS	Childs, Jessica
																					Matthews, Rachel
4/26/2011	10:40																	42.24262	-84.97441		Juntilla, John
4	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	C	Low Vegetated Bank		RESTORED STREAM BANK; HEAVY SHEEN IN STANDING WATER	Johnson, Rex
																					Conn, Chris
4/11/2011	09:51																	42.24267	-84.97451		Kytta, Ken

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character															
Mile Marker: 0.25																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
5a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		POINT 0025R6, JUST MORE THAN 1% SHEEN THAT SWIRLS AND STREAKS LIKE OIL SHEEN	Childs, Jessica	Matthews, Rachel
4/26/2011	11:03																	42.24320	-84.97460			Juntilla, John
6	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	P	Low Vegetated Bank		RESTORED STREAM BANK; SHEEN IN STANDING WATER	Johnson, Rex	Conn, Chris
4/11/2011	10:05																	42.24321	-84.97459			Kytta, Ken
6a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		POINT 0025R7, JUST OVER 1% SHEEN THAT SWIRLS AND STREAKS LIKE OIL SHEEN	Childs, Jessica	Matthews, Rachel
4/26/2011	11:10																	42.24328	-84.97461			Juntilla, John
7	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		RSB (RESTORED STREAM BANK); SHEEN	Johnson, Rex	Conn, Chris
4/11/2011	10:08																	42.24328	-84.97462			Kytta, Ken
7a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		POLY 0025R8, SMALL AMOUNT OF SWIRLING AND STREAKING IN PLACES INSIDE POLYGON JUST MORE THAN 1%	Childs, Jessica	Matthews, Rachel
4/26/2011	11:22																	42.24356	-84.97455			Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 0.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
8	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		RSB; SHEEN	Johnson, Rex / Conn, Chris
4/11/2011	10:21																	42.24354	-84.97452		Kytta, Ken
8a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLY 0025R9, LESS THAN 1% SHEEN OBSERVED WITH SOME SWIRLING AND STRINGING	Childs, Jessica / Matthews, Rachel
4/26/2011	12:14																	42.24402	-84.97541		Juntilla, John
9	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		RSB; SHEEN IN STANDING WATER	Johnson, Rex / Conn, Chris
4/11/2011	10:37																	42.24406	-84.97532		Kytta, Ken

Photo Logs

Field Photographs MP 0.00 – MP 0.25

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 0.00 – MP 0.25

LDB Zone ID 1, Photo 003

LDB Zone ID 1a, Photo 1

Field Photographs MP 0.00 – MP 0.25

LDB Zone ID 1a, Photo 2

LDB Zone ID 2a, Photo 001

Field Photographs MP 0.00 – MP 0.25

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 0.00 – MP 0.25

LDB Zone ID 4, Photo 001

LDB Zone ID 4, Photo 002

Field Photographs MP 0.00 – MP 0.25

LDB Zone ID 4a, Photo 001

LDB Zone ID 5a, Photo 001

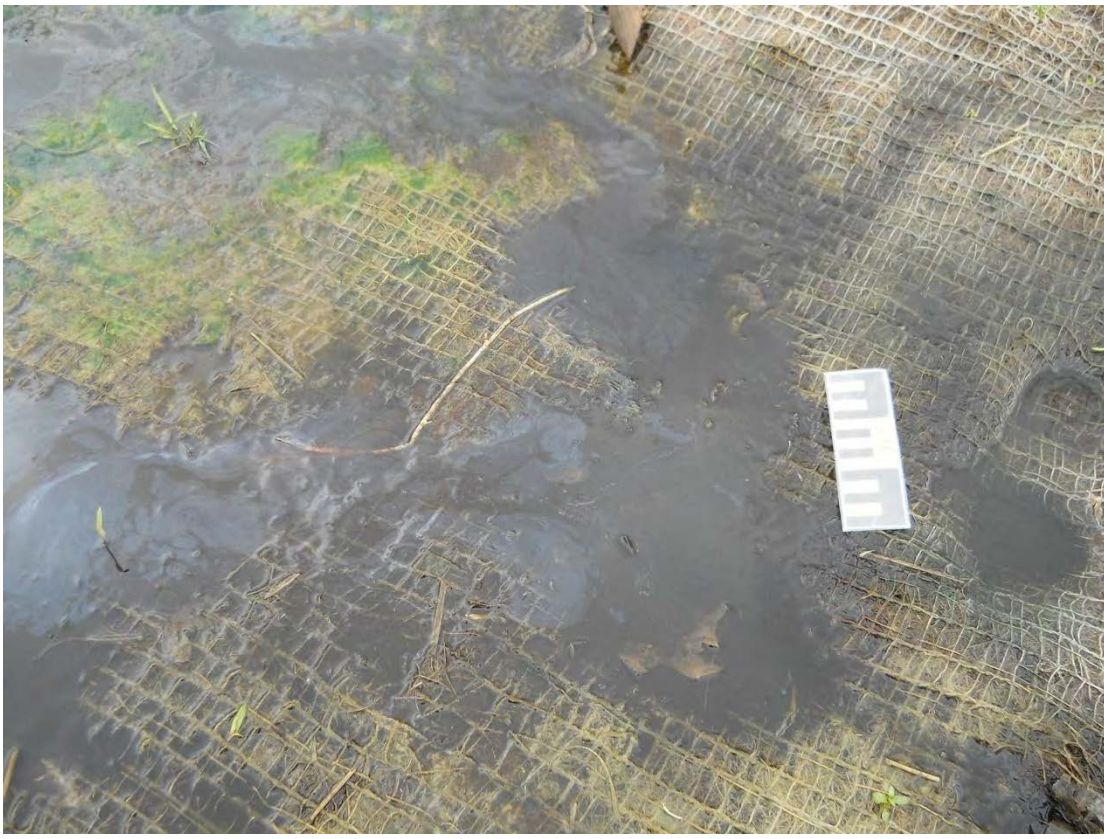
Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 2, Photo 001

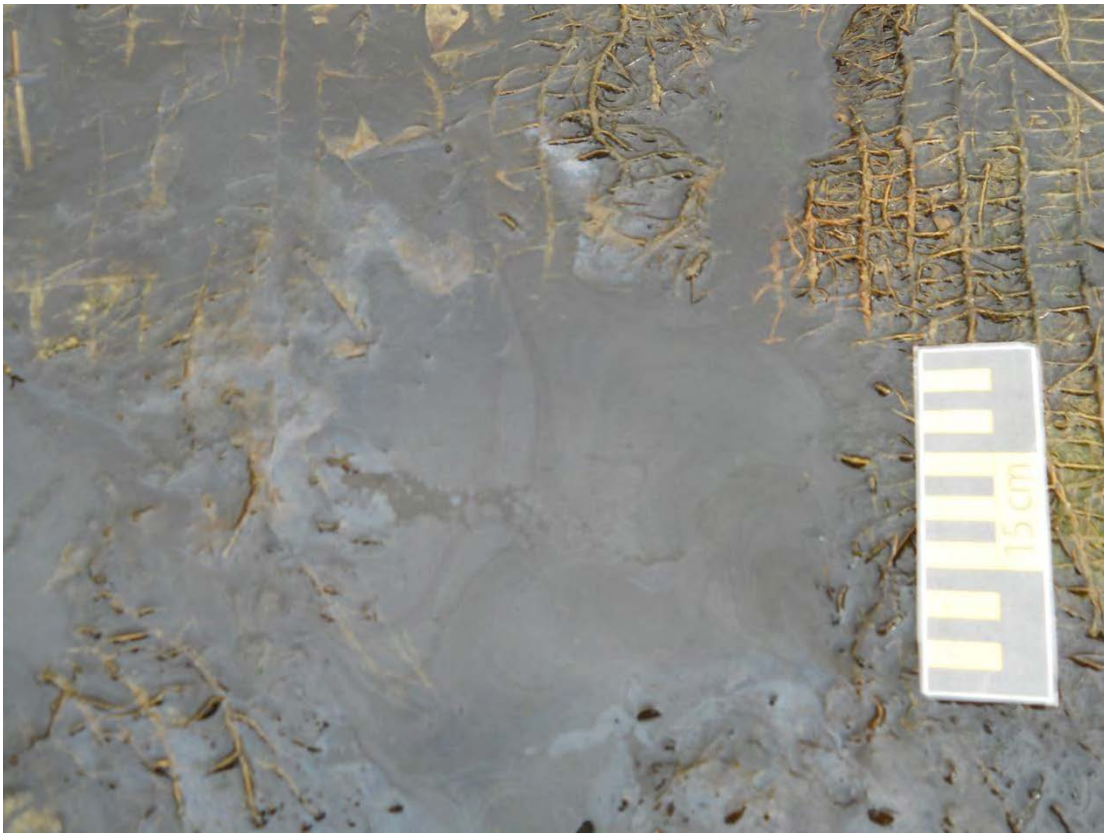
RDB Zone ID 2, Photo 002

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 2a, Photo 001



RDB Zone ID 2a, Photo 002



Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 2a, Photo 003

RDB Zone ID 2a, Photo 004

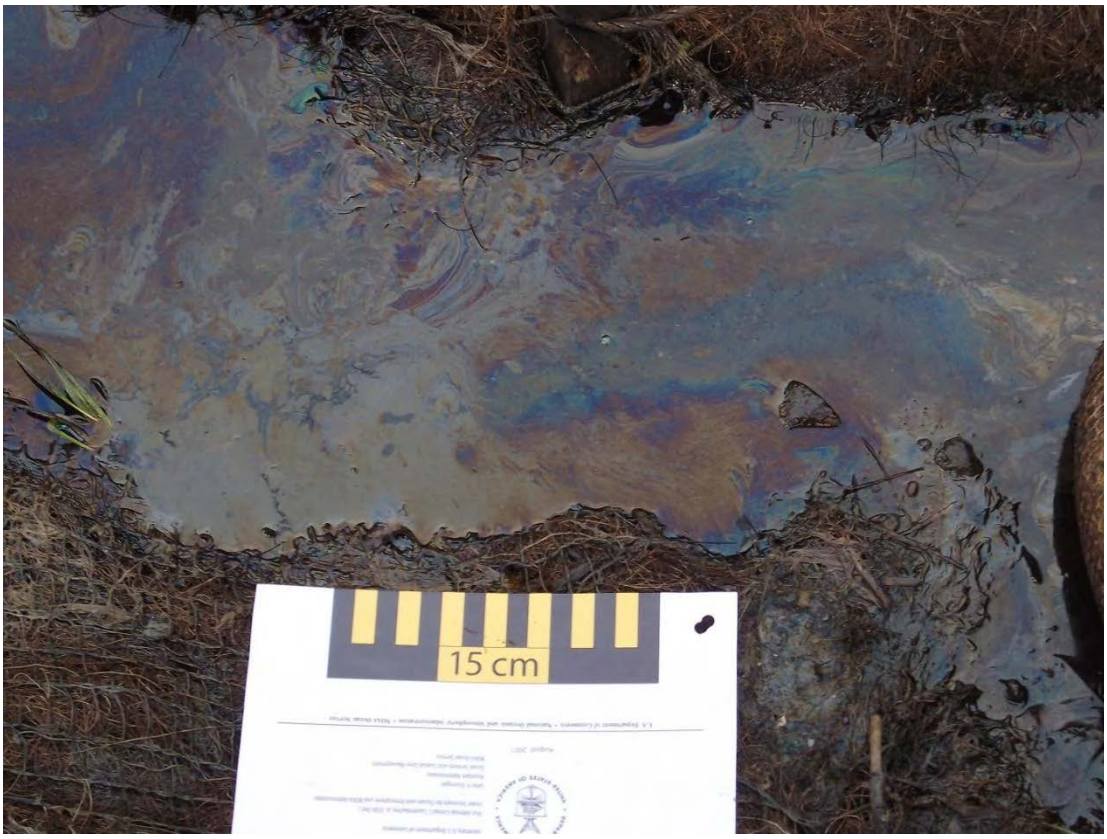
Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 3, Photo 003



RDB Zone ID 3a, Photo 001

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 3a, Photo 002

RDB Zone ID 3a, Photo 003

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 3a, Photo 004

RDB Zone ID 4, Photo 001

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 5a, Photo 001

RDB Zone ID 5a, Photo 002

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 6, Photo 001

RDB Zone ID 6, Photo 002

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 6a, Photo 001

RDB Zone ID 6a, Photo 002

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 7, Photo 001

RDB Zone ID 7a, Photo 001

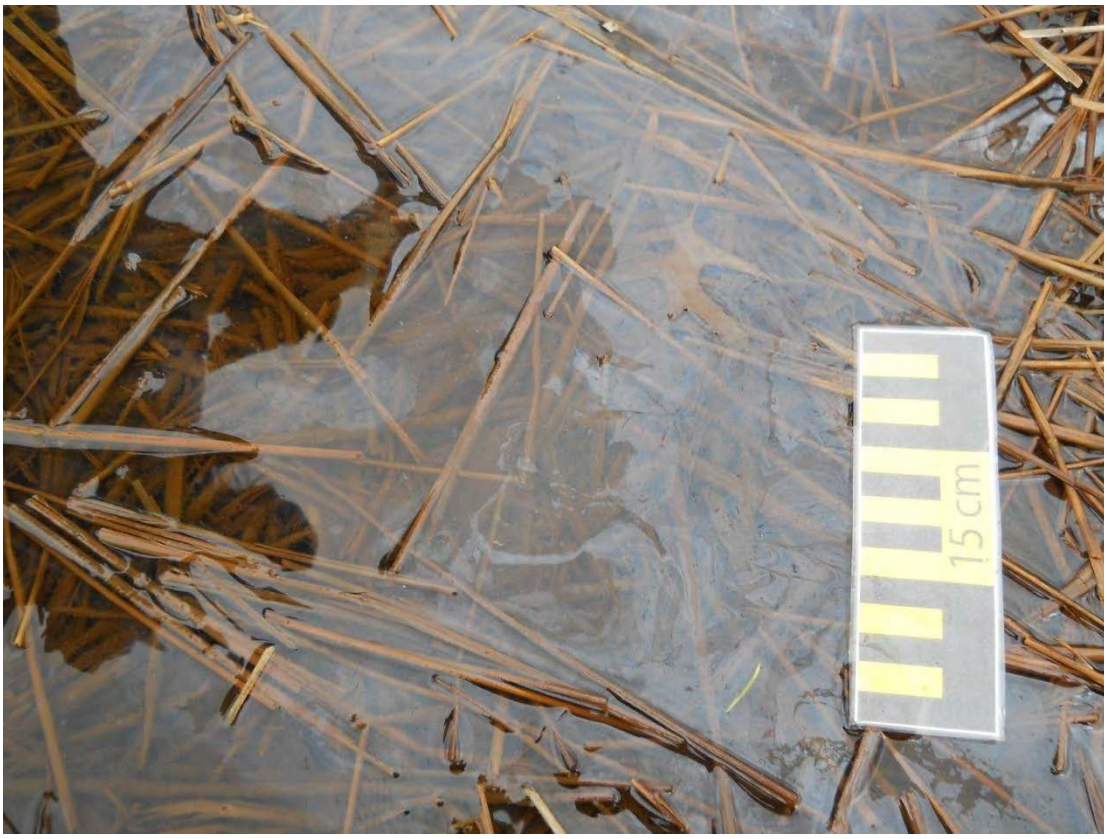
Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 7a, Photo 002

RDB Zone ID 7a, Photo 003

Field Photographs MP 0.00 – MP 0.25

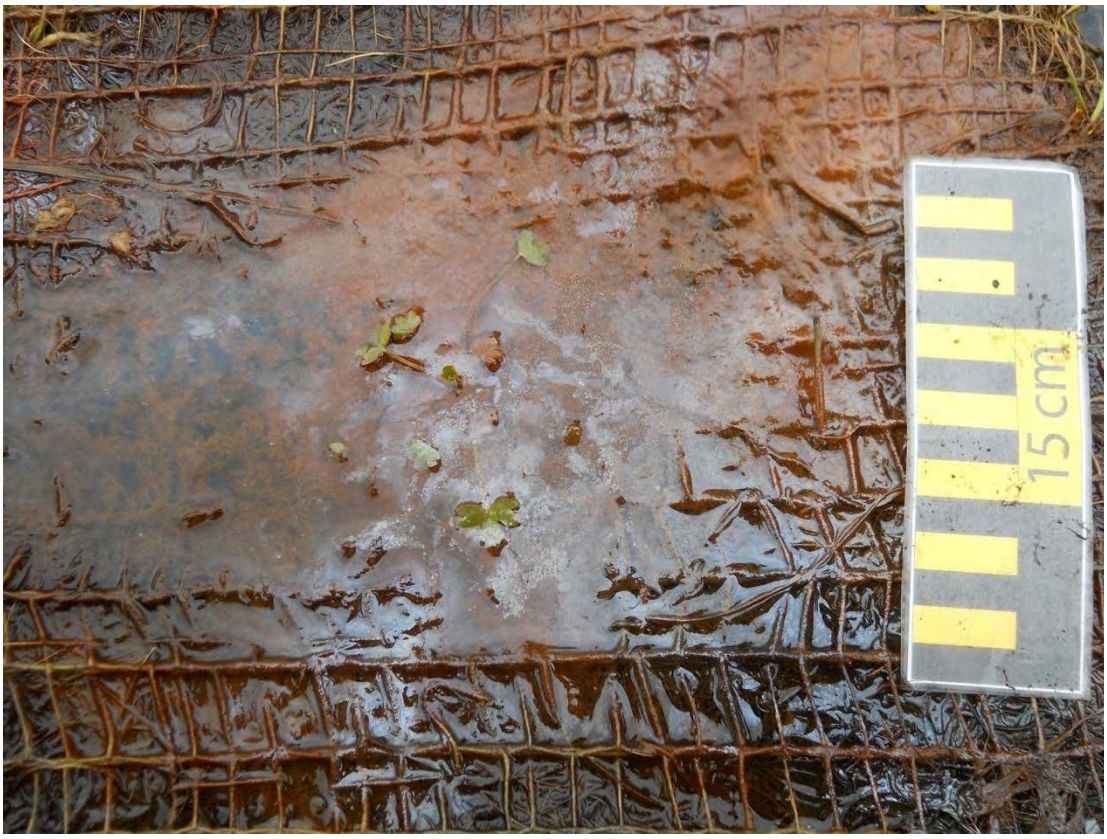
RDB Zone ID 7a, Photo 004



RDB Zone ID 7a, Photo 005

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 7a, Photo 006



RDB Zone ID 8, Photo 001

Field Photographs MP 0.00 – MP 0.25

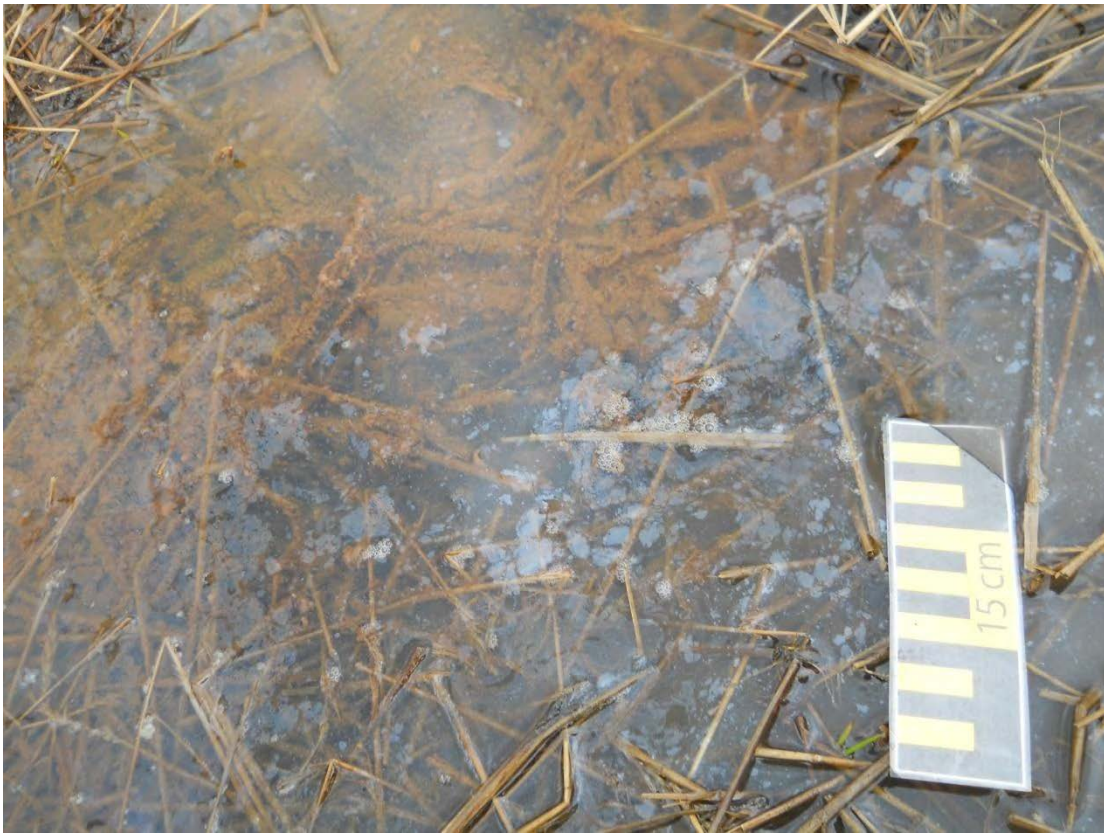
RDB Zone ID 8, Photo 002

RDB Zone ID 8a, Photo 001

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 8a, Photo 002

RDB Zone ID 8a, Photo 003



Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 9, Photo 001

RDB Zone ID 9, Photo 002

Field Photographs MP 0.00 – MP 0.25

RDB Zone ID 9, Photo 003

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0 to MP 0.25, Bank or Island: RIGHT (DESCENDING), Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson	START	4/11/11 Date
REX JOHNSON	Printed Name	
	MDEQ	4/11/11 Date
Chris Conn	Printed Name	
	Enbridge	4/11/11 Date
KENNETH KYTTA	Printed Name	

DELINEATED ALL SHEENING AREAS: QUESTIONS ON SOME SHEENS ON ORGIN OF NATURE (ORGANIC VS PETROLEUM)

Team 8

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.00 to MP 0.25 RDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/20/11 Date

Jessica Childs Printed Name

_____ MDEQ — 4-26-2011 Date

Rachel Mathews Printed Name

_____ Enbridge — 4-26-2011 Date

John W. Juntilla Printed Name

8 features revisited

6 features had oil identified

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0 to MP 0.25, Bank or Island: LEFT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson	START	4/11/11 Date
Rex Johnson	Printed Name	
Chris Conn	MDEQ	4/11/11 Date
Chris Conn	Printed Name	
	Enbridge	4/11/11 Date
Kenneth Kytta	Printed Name	

Team 7

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.00 to MP 0.25, Bank or Island: LDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 4/26/2011 Date

Gregory D. Wagner Printed Name

[signature] MDEQ — 4/26/11 Date

Ben A. Zimont Printed Name

JOSEPH STANDER Enbridge — 4/26/11 Date

[signature] Printed Name

IDENTIFIED 4 POLYGONS IN SEGMENT. ALL CONTAINED TRACE AMOUNTS OF FILM.

Talmadge Creek

The reassessment of Talmadge Creek was completed in two phases. The initial reassessment was completed and after reviewing the data it was determined that a portion of the data was in non-consensus regarding characterizing petroleum and biological sheen (noted as film (FL)) within the data. As a result, a second phase was completed to reassess those polygons and points in non-consensus. At those areas that both reassessment teams agreed with the petroleum sheen description, the polygon and point designations for both reassessment teams are provided on the segment map. In those areas where the reassessment teams provided different descriptions, only the second reassessment team's point designation is provided on the segment map. If oil was identified at a location by the first reassessment team but could not be documented during the second reassessment, it was considered as a "no oil" location and was not included on the segment map. Consequently, the numerical sequence between the initial and second reassessments will not be coincident.

MP 0.25 to MP 0.50

The LDB of segment 0.50 consists of a re-engineered low vegetated bank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified a trace to sporadic distribution of an oil film at multiple locations. The second reassessment could not confirm the existence of oil film on ponded water at seven locations (1 LDB, 2 LDB, and 4 LDB through 8 LDB) and confirmed an oil film at two locations (3 LDB and 10 LDB). A trace point distribution was identified at 3 LDB and a trace distribution of an oil film was identified throughout polygon 10 LDB. A coating of oil on the soil was identified at 9 LDB.

The RDB of segment 0.50 also consists of re-engineered low vegetated bank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified at least one SORT point (2 RDB) and two polygons (3 RDB and 4 RDB) that contained a film of oil on ponded water. The second reassessment confirmed the polygons contained a trace amount of oil film on ponded water.

No islands are located within 0.5 of Talmadge Creek and the FLS did not identify any oil signatures within this segment.

One PI location was identified in this segment. The location noted as an unconfirmed area of interest was located within one of the soil cells outside of the inundation line on the RDB.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

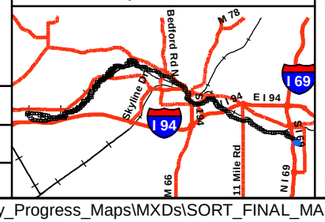
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP0.25-MP0.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 0.5																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	**Time**																	**Latitude**	**Longitude**		Enbridge Team Lead
10	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		RSB; SHEEN IN POOLED WATER	Johnson, Rex
																					Conn, Chris
4/11/2011	17:02																	42.24626	-84.97761		Kytta, Ken
3	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		SMALL POOL WITH LIGHT SHEEN	Johnson, Rex
																					Conn, Chris
4/11/2011	15:40																	42.24417	-84.97639		Kytta, Ken
3a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		TRACE AMOUNT OF SHEEN FROM OIL. ALL PARTIES IN AGREEMENT. POINT IS FOR 0.50LDB3.	Wagner, Greg
																					Zimont, Ben
4/26/2011	13:16																	42.24415	-84.97640		Standen, John
6	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Other (comments)		SHEEN RELEASED FROM COCONUT LOG ON SHORE; EXTENDS ALONG SHORE	Johnson, Rex
																					Conn, Chris
4/11/2011	15:59																	42.24454	-84.97627		Kytta, Ken
8a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		TRACE OIL SHEEN WAS OBSERVED BY ALL PARTIES IN POLYGON 0.50LDB10.	Wagner, Greg
																					Zimont, Ben
4/26/2011	13:55																	42.24605	-84.97749		Standen, John

2011 Reassessment

Bank:	LDB	Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker:	0.5																				
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
9	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		SMALL OIL COAT ON SOIL	Johnson, Rex
																					Conn, Chris
4/11/2011	16:49																	42.24581	-84.97734		Kytta, Ken

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 0.5																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
2	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	P	Low Vegetated Bank		RSB; SMALL AREA OF SHEEN	Johnson, Rex
																					Conn, Chris
4/11/2011	10:59																	42.24420	-84.97600		Kytta, Ken
2a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLY 0050R3, ONLY SMALL AMOUNTS OF TRACE OIL SHEEN NOTED IN POLYGON	Childs, Jessica
																					Matthews, Rachel
4/26/2011	12:51																	42.24515	-84.97642		Juntilla, John
3	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		RSB; SHEEN	Johnson, Rex
																					Conn, Chris
4/11/2011	11:18																	42.24529	-84.97659		Kytta, Ken
3a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLY 0050R4, LESS THAN 1% SHEEN WITH SOME STRINGING AS OIL SHEEN	Childs, Jessica
																					Matthews, Rachel
4/26/2011	13:08																	42.24594	-84.97702		Juntilla, John
4	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		RSB; SHEEN IN POOLED WATER	Johnson, Rex
																					Conn, Chris
4/11/2011	11:33																	42.24600	-84.97718		Kytta, Ken

Photo Logs

Field Photographs MP 0.25 – MP 0.50

LDB Zone ID 3, Photo 001

LDB Zone ID 3a, Photo 001

Field Photographs MP 0.25 – MP 0.50

LDB Zone ID 6, Photo 001

LDB Zone ID 6, Photo 002

Field Photographs MP 0.25 – MP 0.50

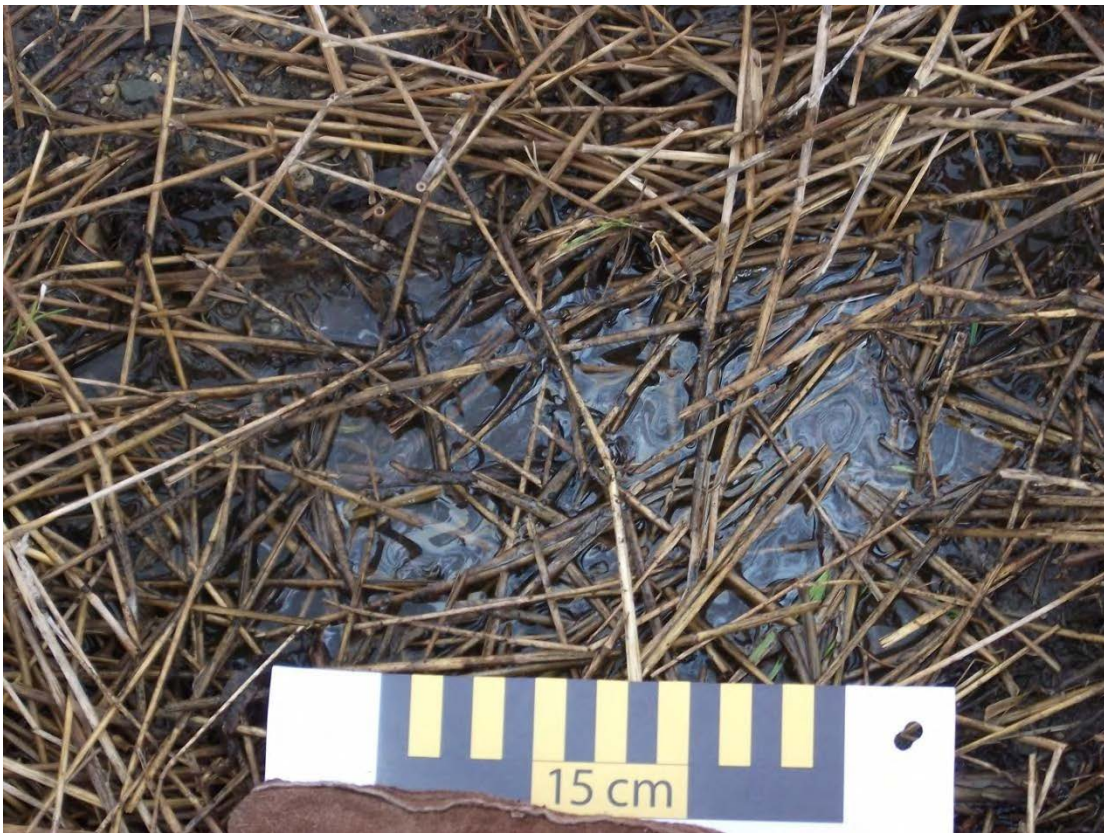
LDB Zone ID 8a, Photo 001

LDB Zone ID 9, Photo 001

Field Photographs MP 0.25 – MP 0.50

LDB Zone ID 9, Photo 002

LDB Zone ID 10, Photo 001



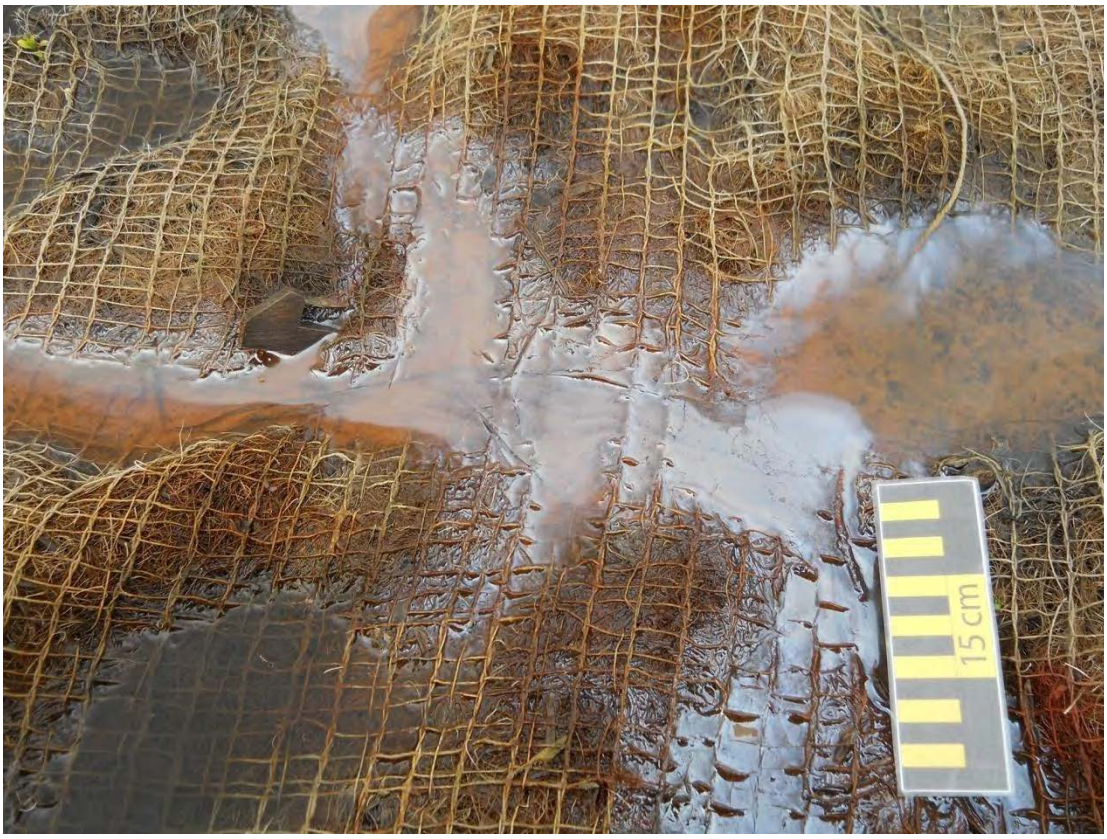
Field Photographs MP 0.25 – MP 0.50

RDB Zone ID 2, Photo 001

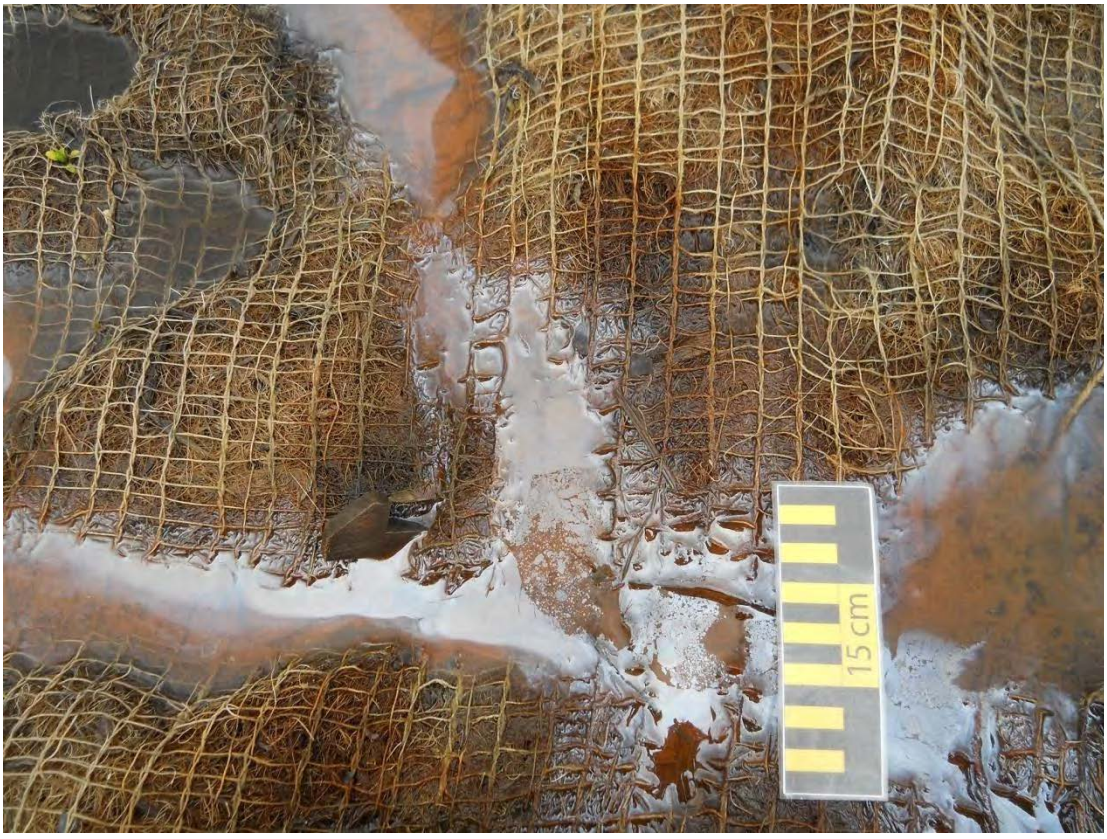
RDB Zone ID 2, Photo 002

Field Photographs MP 0.25 – MP 0.50

RDB Zone ID 2a, Photo 001



RDB Zone ID 2a, Photo 002



Field Photographs MP 0.25 – MP 0.50

RDB Zone ID 2a, Photo 003

RDB Zone ID 2a, Photo 004

Field Photographs MP 0.25 – MP 0.50

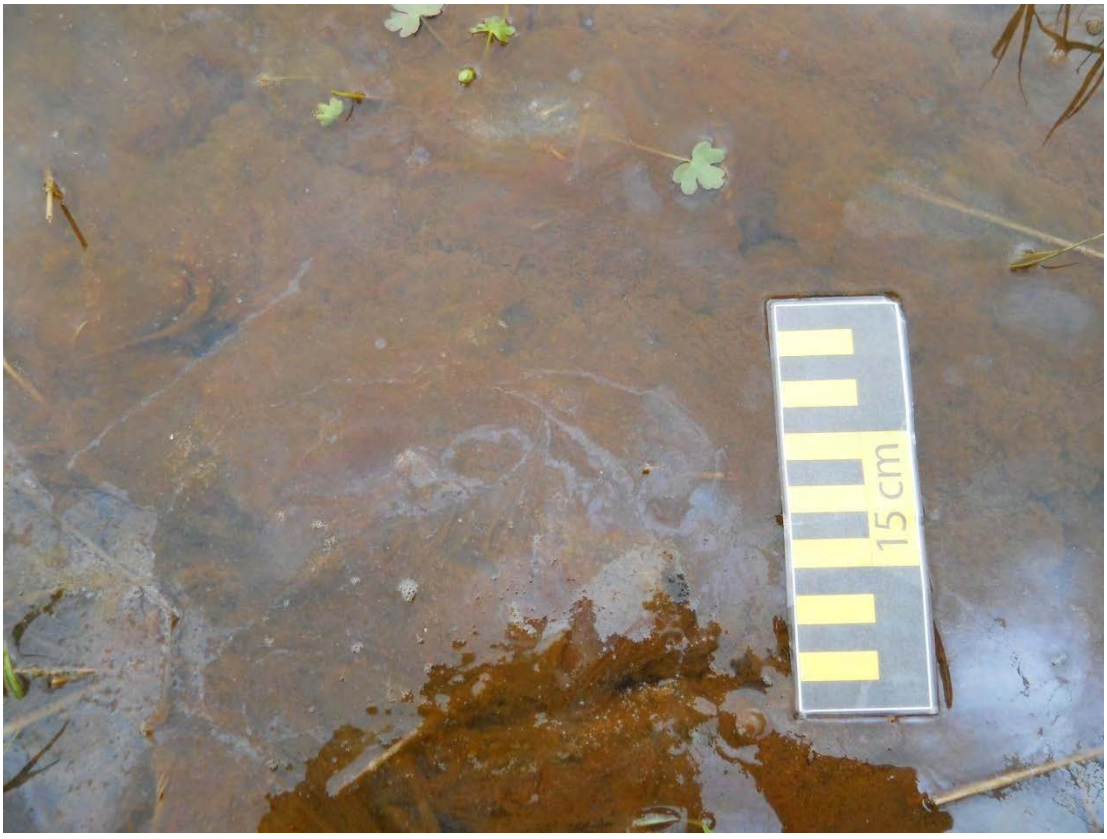
RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 0.25 – MP 0.50

RDB Zone ID 3a, Photo 001

RDB Zone ID 3a, Photo 002



Field Photographs MP 0.25 – MP 0.50

RDB Zone ID 3a, Photo 003

RDB Zone ID 3a, Photo 004

Field Photographs MP 0.25 – MP 0.50

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.25 to MP 0.50, Bank or Island: River, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson — START — 4/11/11 — Date

Rex Johnson — Printed Name

Chris Conn — MDEQ — 4/11/11 — Date

Chris Conn — Printed Name

KENNETH KYTTA — Enbridge — 4/11/11 — Date

Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.25 to MP 0.50 RDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/26/11 Date

Jessica Childs Printed Name

_____ MDEQ — 4-26-2011 Date

Rachel Matthews Printed Name

_____ Enbridge — 4-26-2011 Date

John V. Juntilla Printed Name

4 features revisited

2 features had oil identified

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.25 to MP 0.30, Bank or Island: LEFT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson — START — 4/11/11 — Date

Rex Johnson — Printed Name

Chris Conn — MDEQ — 4/11/11 — Date

Chris Conn — Printed Name

Enbridge — 4/11/11 — Date

KENNETH KUTTA — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.25 to MP 0.50, Bank or Island: LDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/26/2011 Date

Gregory D. Wagner Printed Name

_____ MDEQ 4/26/11 Date

Ben A. Zimont Printed Name

_____ Enbridge 4/26/11 Date

Joseph Stawden Printed Name

REASSESSED 4 POLYGONS AND 4 POINTS. CONFIRMED PETROLEUM FILM AT 1 POINT AND 1 POLYGON

Talmadge Creek

The reassessment of Talmadge Creek was completed in two phases. The initial reassessment was completed and after reviewing the data it was determined that a portion of the data was in non-consensus regarding characterizing petroleum and biological sheen (noted as film (FL)) within the data. As a result, a second phase was completed to reassess those polygons and points in non-consensus. At those areas that both reassessment teams agreed with the petroleum sheen description, the polygon and point designations for both reassessment teams are provided on the segment map. In those areas where the reassessment teams provided different descriptions, only the second reassessment team's point designation is provided on the segment map. If oil was identified at a location by the first reassessment team but could not be documented during the second reassessment, it was considered as a "no oil" location and was not included on the segment map. Consequently, the numerical sequence between the initial and second reassessments will not be coincident.

MP 0.50 to MP 0.75

The LDB of segment 0.75 generally consists of a re-engineered low vegetated bank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified a sporadic distribution of an oil film at two points (1 LDB and 2 LDB). The second reassessment confirmed the existence of an oil film on ponded water at these locations but described 1 LDB as trace and 2 LDB as patchy.

The RDB of segment 0.75 also consists of re-engineered low vegetated bank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified multiple locations with a trace to sporadic distribution of an oil film on ponded water. The second reassessment concluded that a trace distribution of oil film is present at three polygons.

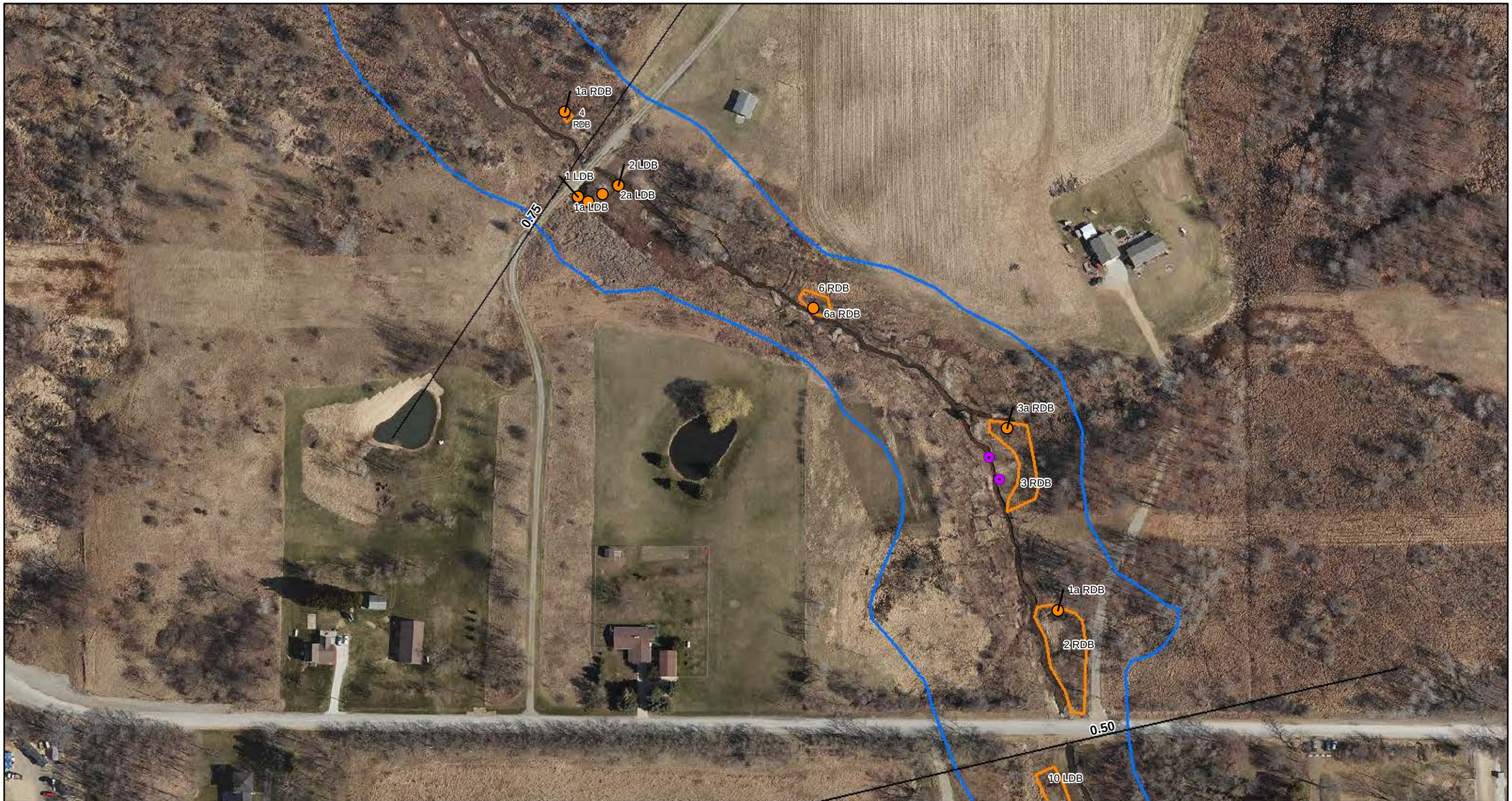
No islands are located within 0.75 of Talmadge Creek and the FLS did not identify any oil signatures within this segment.

Two PI observations noted as unconfirmed areas of interest were identified in this segment along the LDB. The points are located in close proximity to Polygon 3 RDB.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

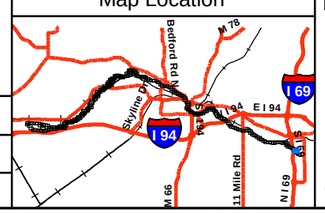
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP0.50-MP0.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 0.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START	MDEQ	Enbridge Team Lead
1	Overbank	4/12/2011	10:11	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous	42.24886	-84.98044	SHEEN IN WETLAND POND	Johnson, Rex	Conn, Chris	Kytta, Ken
1a	Overbank	4/26/2011	14:26	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous	42.24884	-84.98038	ALL PARTIES OBSERVED TRACE OIL SHEEN FOR POINT 0.75LDB1	Wagner, Greg	Zimont, Ben	Standen, John
2	Overbank	4/12/2011	10:15	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous	42.24891	-84.98020	SHEEN IN POOLED WATER	Johnson, Rex	Conn, Chris	Kytta, Ken
2a	Overbank	4/26/2011	14:30	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	P	Wetland-emergent/herbaceous	42.24888	-84.98029	ALL PARTIES OBSERVED TRACE OIL SHEEN FOR POINT 0.75LDB2	Wagner, Greg	Zimont, Ben	Standen, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 0.75																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLY 0075R2, TRACE AMOUNT OF SHEEN EXIBITING OIL TYPE CHARACTERISTICS	Childs, Jessica
																					Matthews, Rachel
4/26/2011	13:48																	42.24707	-84.97759		Juntilla, John
2	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		SHEEN IN POOLED WATER; POSSIBLY ORGANIC SHEEN; SHEEN FROM COCONUT LOGS	Johnson, Rex
																					Conn, Chris
4/12/2011	08:59																	42.24713	-84.97757		Kytta, Ken
3	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		SHEEN IN POOLED WATER	Johnson, Rex
																					Conn, Chris
4/12/2011	09:17																	42.24781	-84.97800		Kytta, Ken
3a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLY 0075R3, TRACE AMOUNT OF SHEEN WITH OIL TYPE CHARACTERISTICS	Childs, Jessica
																					Matthews, Rachel
4/26/2011	14:14																	42.24786	-84.97790		Juntilla, John
6	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank			Johnson, Rex
																					Conn, Chris
4/12/2011	09:40																	42.24847	-84.97916		Kytta, Ken

2011 Reassessment

Bank:	RDB	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker:	0.75																				
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
6a	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLY 0075R6, TRACE AMOUNT OF OIL SHEEN OBSERVED	Childs, Jessica
																					Matthews, Rachel
4/26/2011	14:37																	42.24838	-84.97905		Juntilla, John

Photo Logs

Field Photographs MP 0.50 – 0.75

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 0.50 – 0.75

LDB Zone ID 1a, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 0.50 – 0.75

LDB Zone ID 2, Photo 002

LDB Zone ID 2a, Photo 001

Field Photographs MP 0.50 – 0.75

RDB Zone ID 1a, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 0.50 – 0.75

RDB Zone ID 2, Photo 002

RDB Zone ID 3, Photo 001

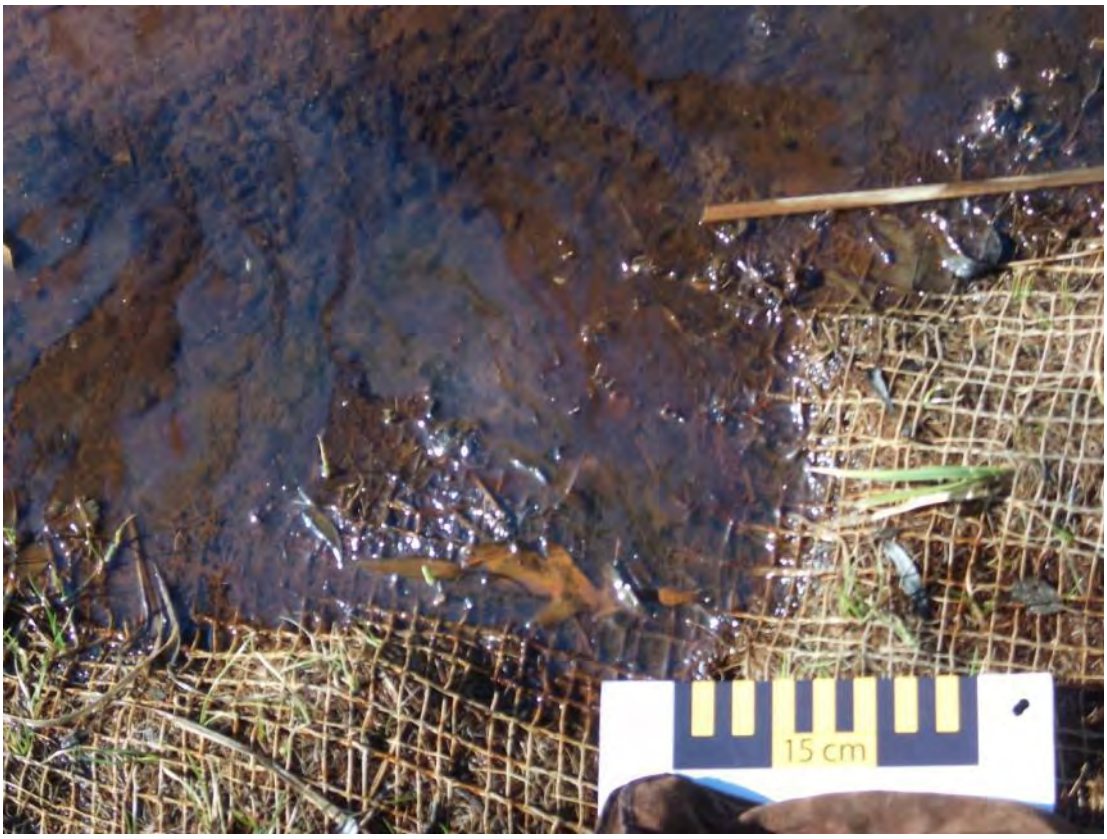
Field Photographs MP 0.50 – 0.75

RDB Zone ID 3, Photo 002

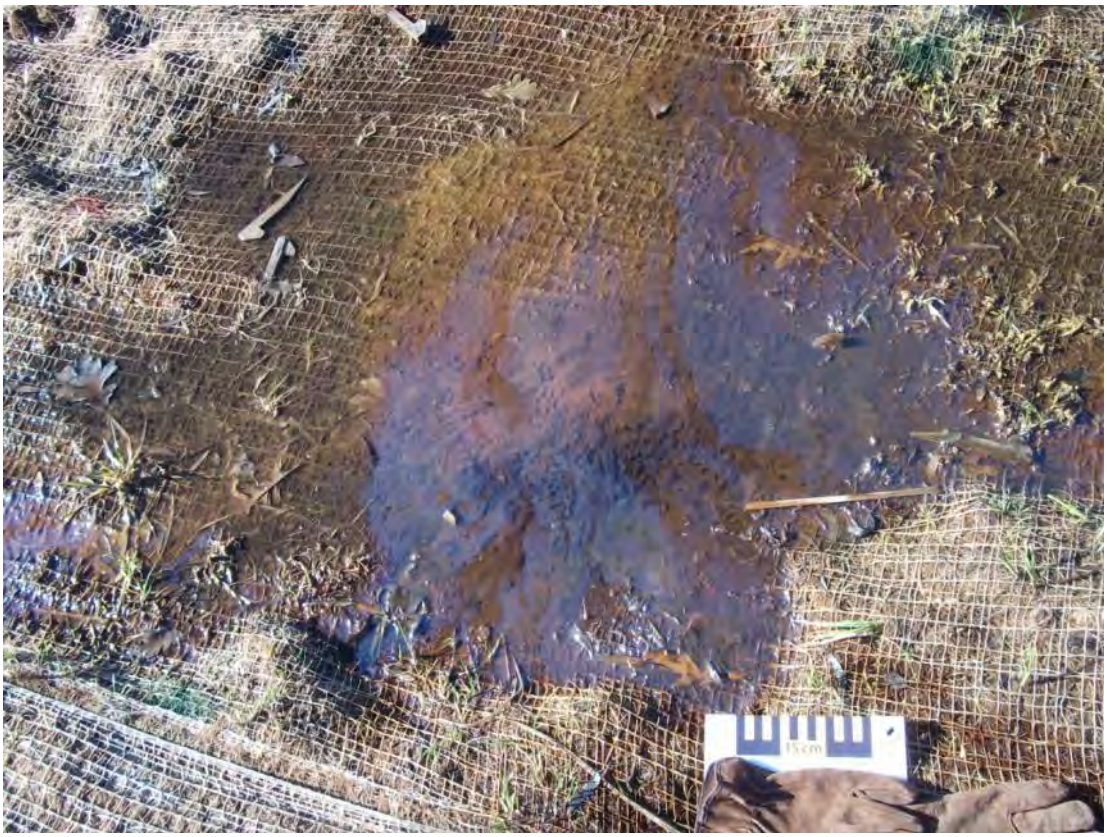
RDB Zone ID 3a, Photo 001

Field Photographs MP 0.50 – 0.75

RDB Zone ID 6, Photo 001



RDB Zone ID 6, Photo 002



Field Photographs MP 0.50 – 0.75

RDB Zone ID 6a, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.5 to MP 0.75, Bank or Island: RIGHT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson	START	3/12/11 Date
Rex Johnson	Printed Name	
	MDEQ	4/11/11 Date
Chris Cohen	Printed Name	
	Enbridge	4/12/11 Date
KEN KYTTA	Printed Name	

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.50 to MP 0.75, Bank or Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 4/20/11 Date

Jessica Childs Printed Name

[signature] MDEQ — 4-26-2011 Date

Rachel Matthews Printed Name

[signature] Enbridge — 4-26-2011 Date

John W. Juntilla Printed Name

6 features revisited

JWJ ~~3~~ 3 features had oil identified.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.50 to MP 0.75, Bank or Island: LEFT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson — START — 4/12/11 — Date

Rex Johnson — Printed Name

Chris Conn — MDEQ — 4/12/11 — Date

Chris Conn — Printed Name

KEN KYTTA — Enbridge — 4/12/11 — Date

KEN KYTTA — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 6.50 to MP 6.75, Bank or Island: LOB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/26/2011 Date

Gregory D. Wagner Printed Name

_____ MDEQ — 4/26/11 Date

Ben A. Zimont Printed Name

_____ Enbridge — 4/26/11 Date

Joseph Strawder Printed Name

REASSESSED TWO POINTS. CONFIRMED PETROLEUM FILM AT BOTH POINTS

Talmadge Creek

The reassessment of Talmadge Creek was completed in two phases. The initial reassessment was completed and after reviewing the data it was determined that a portion of the data was in non-consensus regarding characterizing petroleum and biological sheen (noted as film (FL)) within the data. As a result, a second phase was completed to reassess those polygons and points in non-consensus. At those areas that both reassessment teams agreed with the petroleum sheen description, the polygon and point designations for both reassessment teams are provided on the segment map. In those areas where the reassessment teams provided different descriptions, only the second reassessment team's point designation is provided on the segment map. If oil was identified at a location by the first reassessment team but could not be documented during the second reassessment, it was considered as a "no oil" location and was not included on the segment map. Consequently, the numerical sequence between the initial and second reassessments will not be coincident.

MP 0.75 to MP 1.00

The LDB of segment 1.00 generally consists of a re-engineered low vegetated bank with ECB covering the overbank and coir logs lining the shoreline along the segment. No oil was identified in this segment of the LDB.

The RDB of segment 1.00 also consists of re-engineered low vegetated bank with ECB covering the overbank, emergent/herbaceous wetlands, and coir logs lining the shoreline along the segment. The initial reassessment identified at least three points (1 RDB, 3 RDB and 4 RDB) with a trace to sporadic distribution of an oil film on ponded water. The reassessment confirmed that an oil film was present on ponded water at 4 RDB.

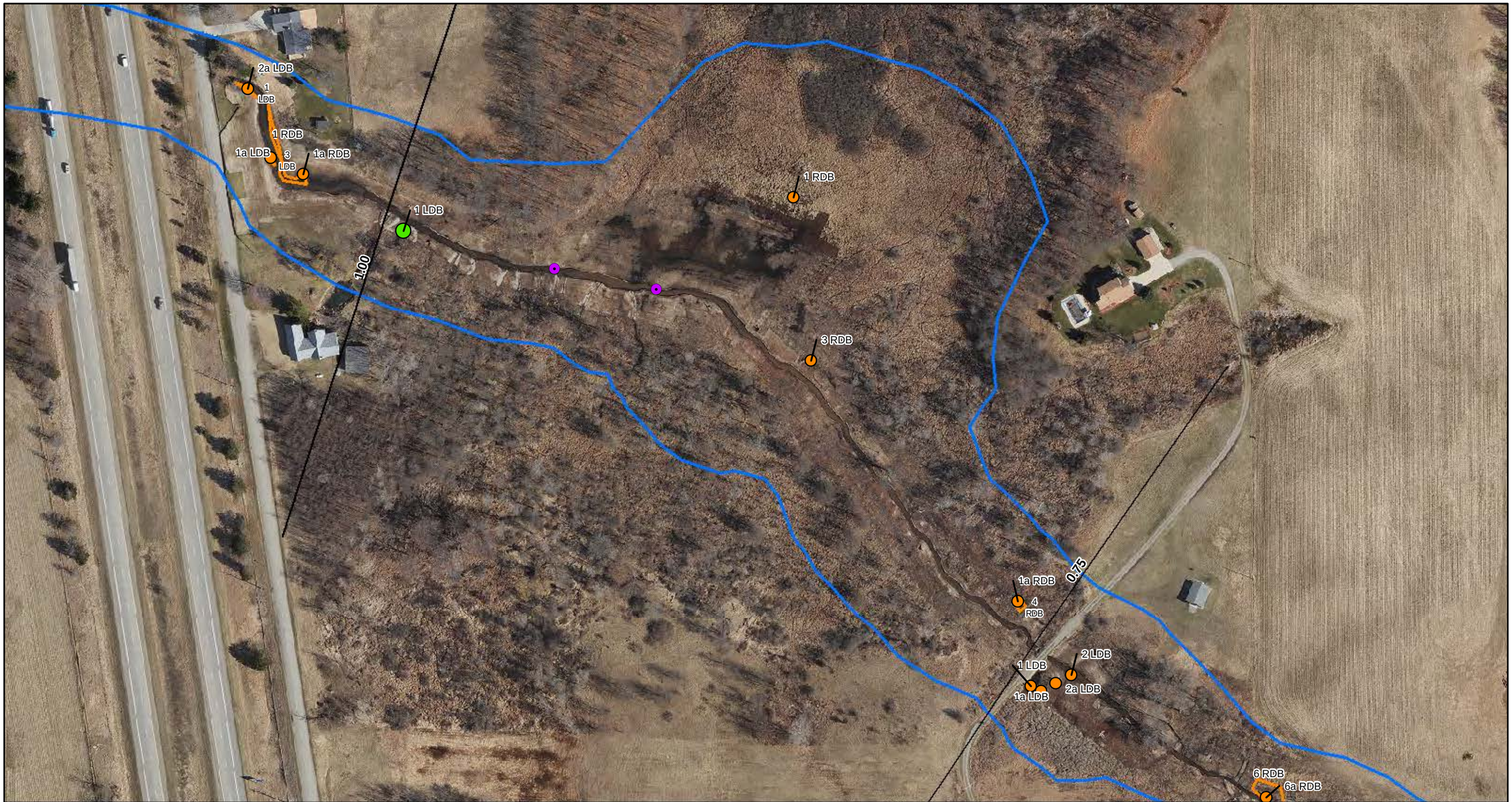
No islands are located within 1.00 of Talmadge Creek and the FLS did not identify any oil signatures within this segment.

Two PI observations noted as unconfirmed areas of interest were identified in this segment along the RDB. The SORT program did not identify surface oiling in these areas.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

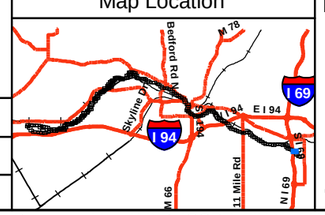
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP0.75-MP1.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 1																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Shoreline and Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	T	Low Vegetated Bank		SECTION FREE OF OIL (1.00 LDB)	REX JOHNSON
																					CHRIS CONN
4/12/2011	14:34																	42.25084	-84.98416		KEN KYTTA

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 1																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		SHEEN IN WETLAND	Johnson, Rex Conn, Chris
4/12/2011	12:42																	42.25100	-84.98186		Kytta, Ken
1a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLY 0100R4, MAINLY BIOLOGICAL SHEEN OBSERVED, POSIBLE COMBINATION WITH OIL SHEEN NOTED IN VARIOUS PLACES	Childs, Jessica Matthews, Rachel
4/26/2011	14:55																	42.24924	-84.98052		Juntilla, John
3	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		OIL SHEEN WHEN DISTURED IN SMALL POOL	Johnson, Rex Conn, Chris
4/12/2011	13:18																	42.25028	-84.98175		Kytta, Ken
4	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		SHEEN IN POOLED WATER	Johnson, Rex Conn, Chris
4/12/2011	13:43																	42.24902	-84.98035		Kytta, Ken

Photo Logs

Field Photographs MP 0.75 – MP 1.00

LDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 001

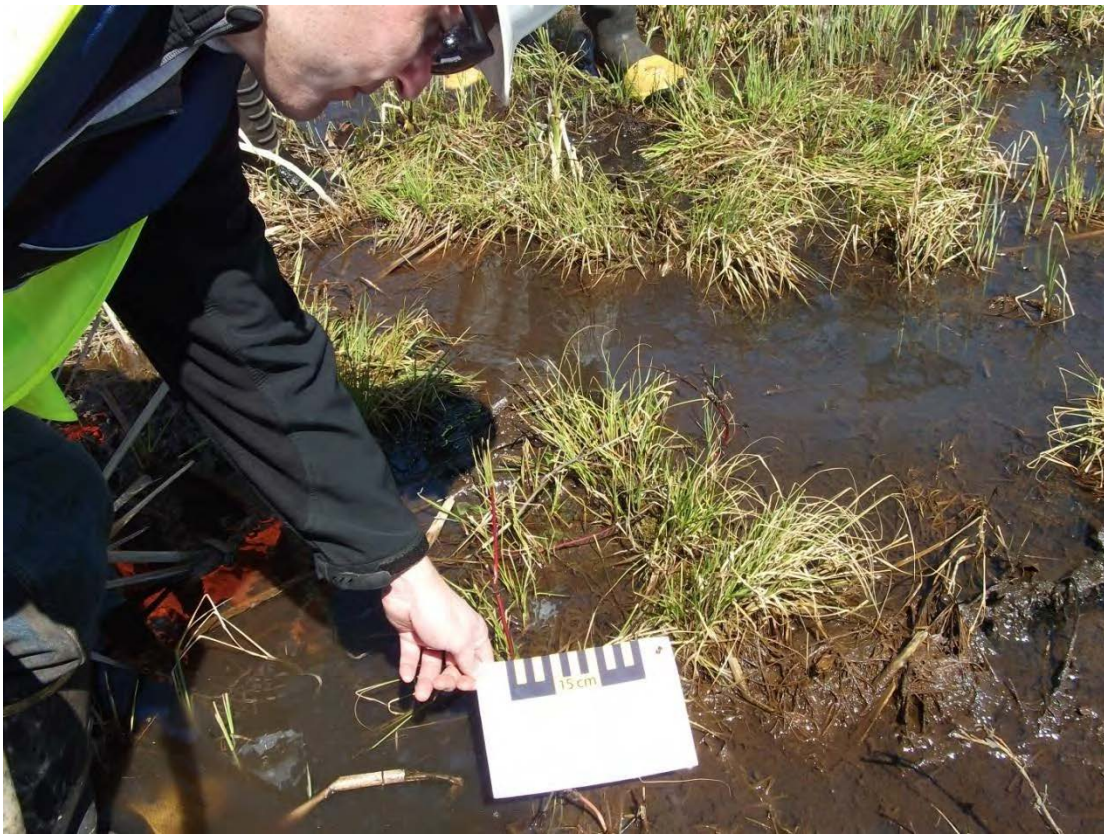
Field Photographs MP 0.75 – MP 1.00

RDB Zone ID 1a, Photo 001

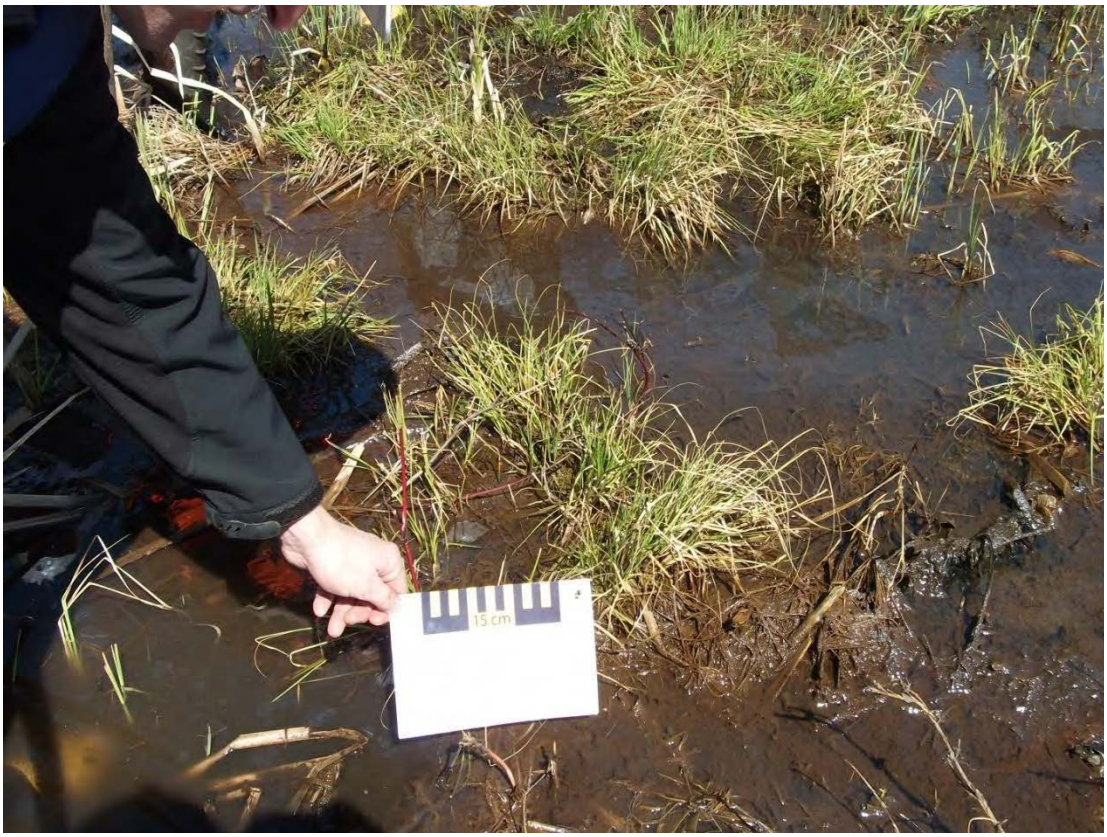
RDB Zone ID 3, Photo 001

Field Photographs MP 0.75 – MP 1.00

RDB Zone ID 4, Photo 001



RDB Zone ID 4, Photo 002



SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.75 to MP 1.06, Bank or Island: RIGHT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson — START — 4/12/11 Date

Rex Johnson — Printed Name

[signature] — MDEQ — 4/12/11 Date

Chris Conn — Printed Name

[signature] — Enbridge — 4/12/11 Date

KEN KYTTA — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.75 to MP 1.00 RDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/26/11 Date

Jessica Childs Printed Name

_____ MDEQ 4-26-2011 Date

Rachel Matthews Printed Name

_____ Enbridge 4-26-2011 Date

John W. Juntilla Printed Name

2 features revisited

1 features had oil identified

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.75 to MP 1.00, Bank or Island: LEFT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson — START — 4/12/11 — Date

Rex Johnson — Printed Name

Chris Conn — MDEQ — 4/12/11 — Date

Chris Conn — Printed Name

Ken Kytta — Enbridge — 4/12/11 — Date

Ken Kytta — Printed Name

Talmadge Creek

The reassessment of Talmadge Creek was completed in two phases. The initial reassessment was completed and after reviewing the data it was determined that a portion of the data was in non-consensus regarding characterizing petroleum and biological sheen (noted as film (FL)) within the data. As a result, a second phase was completed to reassess those polygons and points in non-consensus. At those areas that both reassessment teams agreed with the petroleum sheen description, the polygon and point designations for both reassessment teams are provided on the segment map. In those areas where the reassessment teams provided different descriptions, only the second reassessment team's point designation is provided on the segment map. If oil was identified at a location by the first reassessment team but could not be documented during the second reassessment, it was considered as a "no oil" location and was not included on the segment map. Consequently, the numerical sequence between the initial and second reassessments will not be coincident.

MP 1.00 to MP 1.25

The LDB of segment 1.25 generally consists of a re-engineered lawn with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial assessment identified two polygons (1 LDB and 3 LDB) east of I-69 and a third polygon (2 LDB) west of I-69 exhibiting traces of oil film on ponded water between the coir logs and ECB. At the time of the reassessment no ponded water was observed at 3 LDB, but spots of sheen were observed.

The RDB of segment 1.25 consists of re-engineered low vegetated bank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified one polygon (1 RDB) located east of I-69 exhibiting traces of oil film on ponded water behind the coil logs. A second polygon (2 RDB) was located west of I-69 exhibiting sporadic occurrences of oil film on ponded water behind the coir logs. An area of broken tar patties was identified just west of the outfall for the culvert under I-69. The reassessment confirmed the previous descriptions for 1 RDB and 2 RDB.

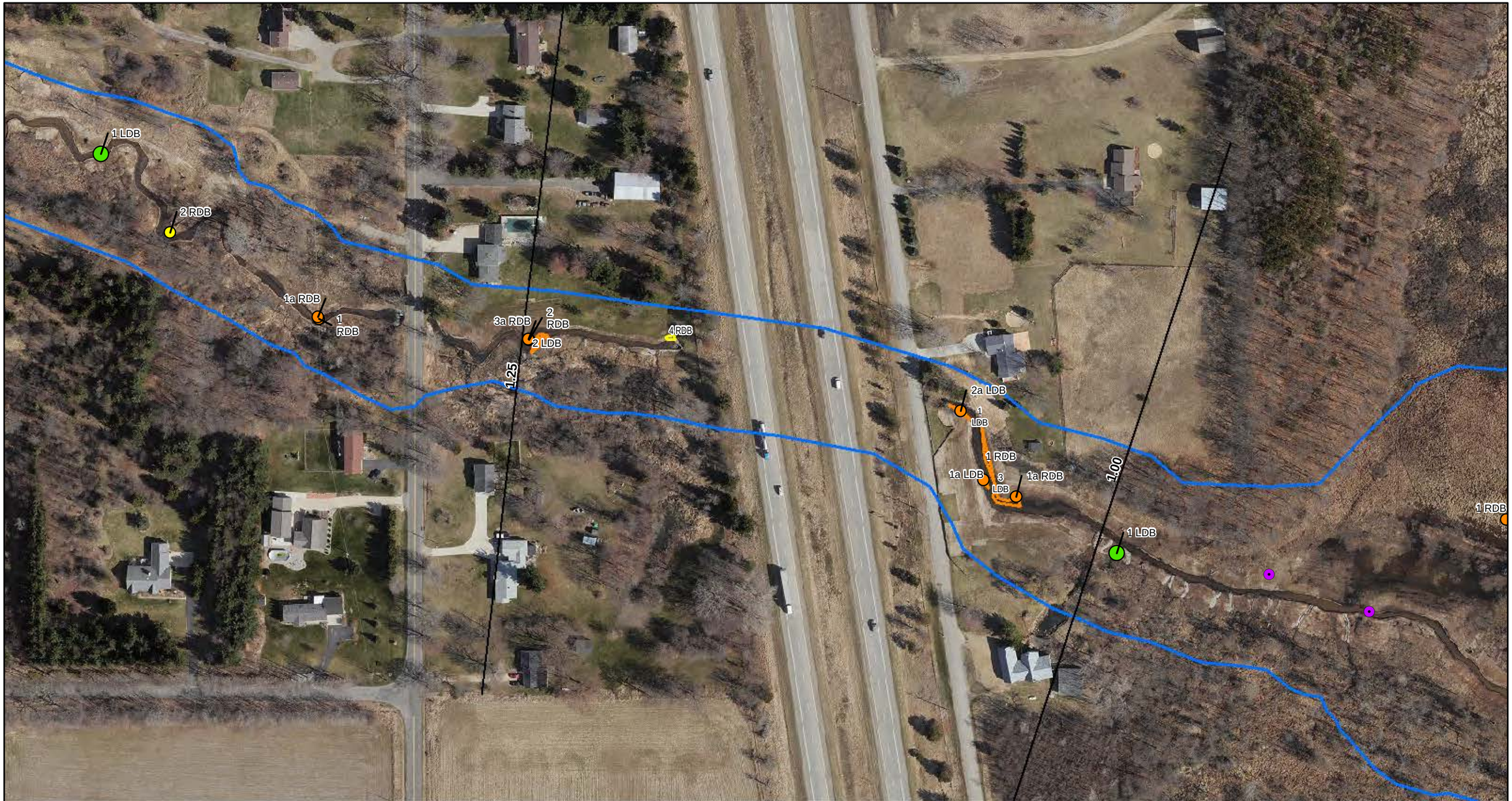
No islands are located within 1.25 of Talmadge Creek and the FLS did not identify any oil signatures within this segment.

No PI observations were identified in this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

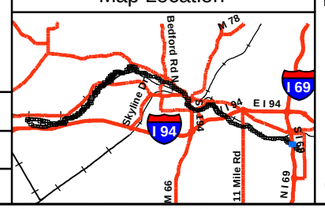
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP1.00-MP1.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 1.25																					MDEQ
Source: 2011 Reassessment		Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Oil Zone ID	**Feature**																				
Date	**Time**																				
1	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		SHEEN ALONG CREEK BANK	Johnson, Rex Conn, Chris
4/12/2011	14:55																	42.25142	-84.98509		Kytta, Ken
1a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Lawn (maintained land)		ALL PARTIE IN AGREEMENT POLYGON 1.25LDB3 HAS TRACE OIL WITH SPOTSCOF SHEEN IN MUD	Wagner, Greg Zimont, Ben
4/26/2011	15:18																	42.25112	-84.98500		Standen, John
2	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		OIL SHEEN IN POOLED WATER NEAR BANK	Johnson, Rex Conn, Chris
4/12/2011	17:53																	42.25177	-84.98751		Kytta, Ken
2a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Lawn (maintained land)		ALL PARTIES AGREE THAT SHEEN IN POLYGON 1.25LDB1 WAS FROM OIL	Wagner, Greg Zimont, Ben
4/26/2011	15:37																	42.25140	-84.98505		Standen, John
3	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		AREA OF SHEEN ALONG STREAM BANK *CHANGE ID TO 1.25L1a*	Johnson, Rex Conn, Chris
4/12/2011	14:49																	42.25116	-84.98498		Kytta, Ken

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 1.25																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		SHEEN IN WATER ALONG BANK	Johnson, Rex
																					Conn, Chris
4/12/2011	15:13																	42.25169	-84.98509		Kytta, Ken
1a	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		POLY 0125R1, OIL SHEEN OBSERVED IN WATER AND ON DIRT OUTSIDE OF SILT FENCE	Childs, Jessica
																					Matthews, Rachel
4/26/2011	15:38																	42.25108	-84.98475		Juntilla, John
2	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		SHEEN ALONG BANK	Johnson, Rex
																					Conn, Chris
4/12/2011	15:54																	42.25175	-84.98763		Kytta, Ken
3a	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		POINT 0125R2, OIL SHEEN ON WATER ON THE BANK SIDE OF THE SILT FENCE	Childs, Jessica
																					Matthews, Rachel
4/26/2011	16:53																	42.25175	-84.98763		Juntilla, John
4	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☐	☐	B	Low Vegetated Bank		TAR PATTIES COATING SOIL NEAR CULVERT UNDER I-69	Johnson, Rex
																					Conn, Chris
4/12/2011	16:06																	42.25177	-84.98683		Kytta, Ken

Photo Logs

Field Photographs MP 1.00 – MP 1.25

LDB Zone ID 1, Photo 001

LDB Zone ID 1a, Photo 001

Field Photographs MP 1.00 – MP 1.25

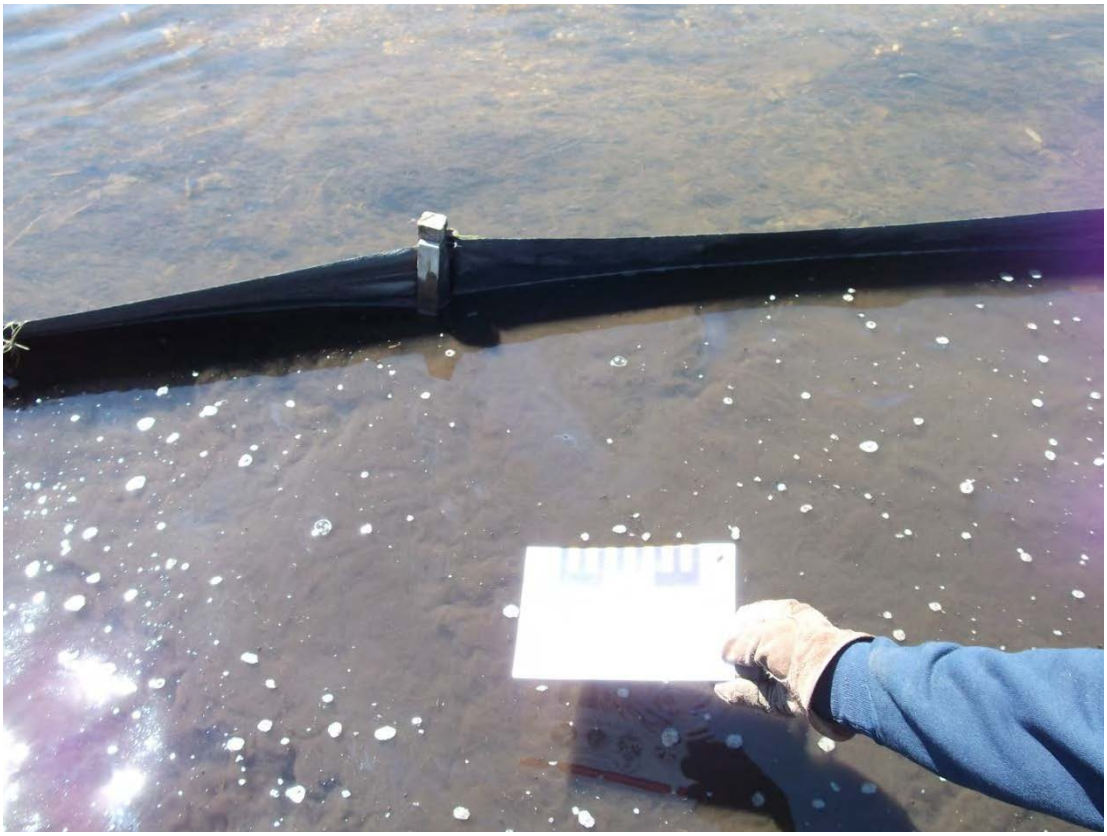
LDB Zone ID 2, Photo 001

LDB Zone ID 2a, Photo 001

Field Photographs MP 1.00 – MP 1.25

LDB Zone ID 3, Photo 001

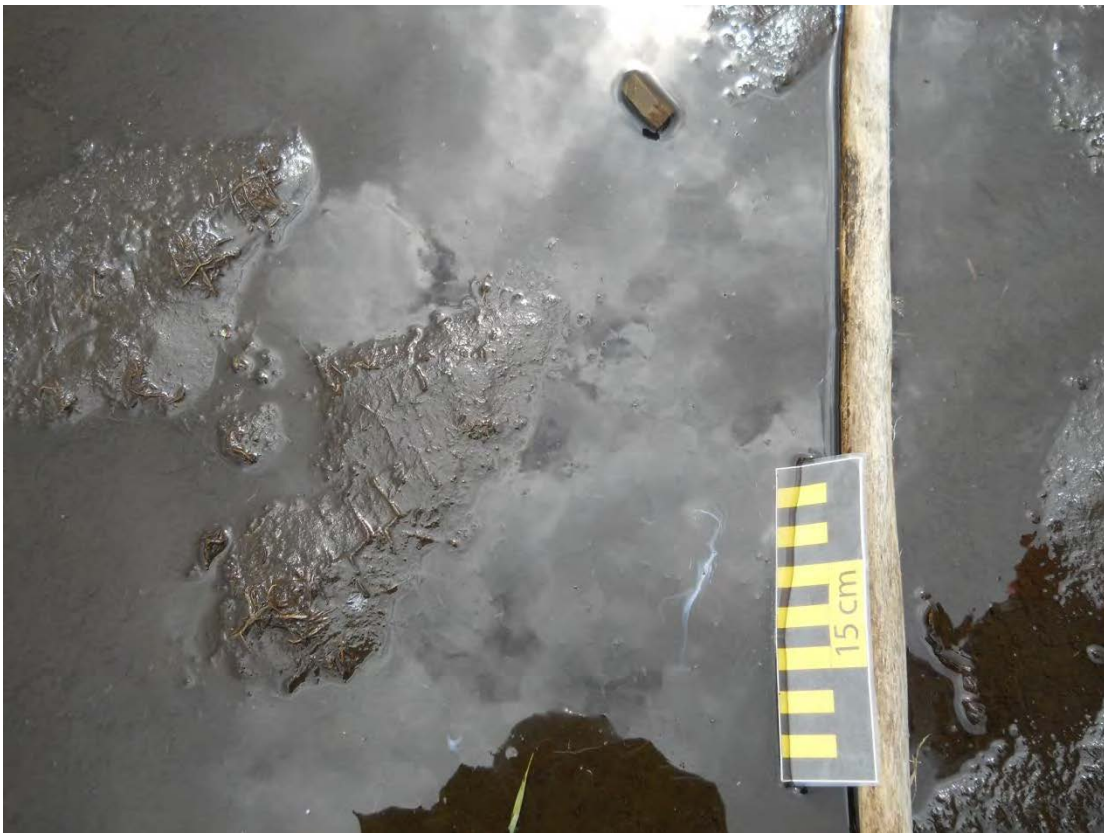
RDB Zone ID 1, Photo 001



Field Photographs MP 1.00 – MP 1.25

RDB Zone ID 1, Photo 002

RDB Zone ID 1a, Photo 001



Field Photographs MP 1.00 – MP 1.25

RDB Zone ID 2, Photo 001

RDB Zone ID 3a, Photo 001

Field Photographs MP 1.00 – MP 1.25

RDB Zone ID 4, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.00 to MP 1.25, Bank or Island: ~~Both~~, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson — START — 4/12/11 — Date

Rex Johnson — Printed Name

Chris Conn — MDEQ — 4/12/11 — Date

Chris Conn — Printed Name

Ken Kytta — Enbridge — 4/12/11 — Date

Ken Kytta — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.00 to MP 1.25 RDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/20/11 Date

Jessica Childs Printed Name

_____ MDEQ — 4-26-11 Date

Rachel Mathews Printed Name

_____ Enbridge — 4-26-2011 Date

John W. Juntilla Printed Name

3 features revisited

2 features had oil Identified

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.00 to MP 1.25, Bank or Island: LEFT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson — START — 4/12/11 — Date

Rex Johnson — Printed Name

Chris Conn — MDEQ — 4/12/11 — Date

Chris Conn — Printed Name

Ken Kytta — Enbridge — 4/12/11 — Date

Ken Kytta — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.00 to MP 1.25, Bank or Island: LOB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/26/2011 Date

Gregory D. Wagner Printed Name

_____ MDEQ — 4/26/11 Date

Ben A. Zimont Printed Name

_____ Enbridge — 4/26/11 Date

Joseph Stauder Printed Name

REASSESSED 1 POINT AND 1 POLYGON. A PETROLEUM FILM WAS CONFIRMED AT BOTH AREAS.

Talmadge Creek

The reassessment of Talmadge Creek was completed in two phases. The initial reassessment was completed and after reviewing the data it was determined that a portion of the data was in non-consensus regarding characterizing petroleum and biological sheen (noted as film (FL)) within the data. As a result, a second phase was completed to reassess those polygons and points in non-consensus. At those areas that both reassessment teams agreed with the petroleum sheen description, the polygon and point designations for both reassessment teams are provided on the segment map. In those areas where the reassessment teams provided different descriptions, only the second reassessment team's point designation is provided on the segment map. If oil was identified at a location by the first reassessment team but could not be documented during the second reassessment, it was considered as a "no oil" location and was not included on the segment map. Consequently, the numerical sequence between the initial and second reassessments will not be coincident.

MP 1.25 to MP 1.50

The LDB of segment 1.50 generally consists of a re-engineered emergent/herbaceous overbank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified a point (1 LDB) where a combination of biological and petroleum sheen was observed. The second reassessment concluded that the sheen was biological and petroleum sheen was not present.

The RDB of segment 1.50 consists of re-engineered low vegetated bank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified three points (1 RDB, 2 RDB and 3 RDB). A sporadic sheen on ponded water was observed at 1 RDB; a man-made concrete structure with patchy staining was identified at 2 RDB; and tar patties and a cover of oil was observed on a tree root at 3 RDB. The second reassessment confirmed the presence of sporadic occurrences of oil sheen on ponded water at 1 RDB.

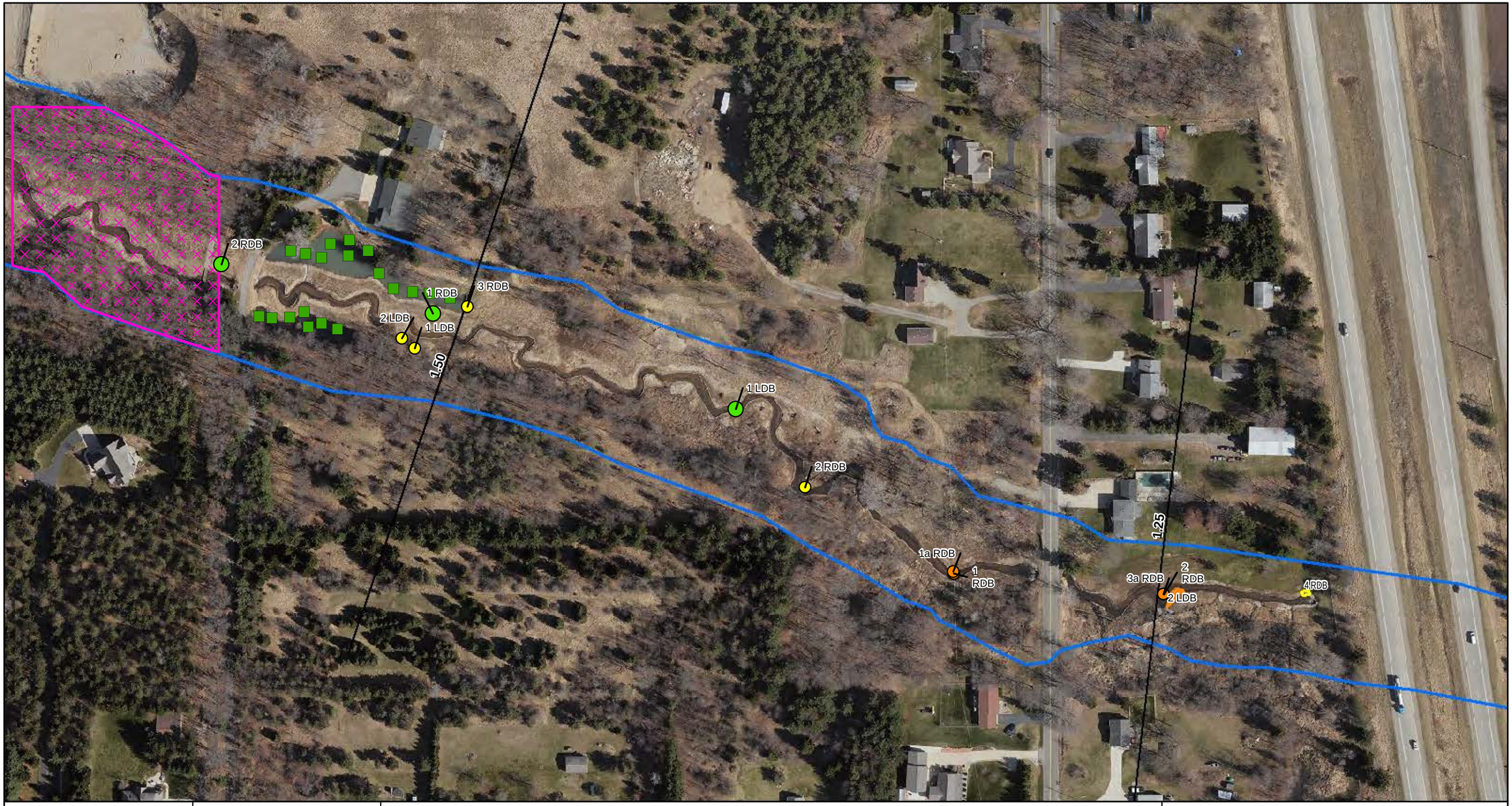
No islands are located within 1.5 of Talmadge Creek and the FLS did not identify any oil signatures within this segment.

No PI observations were identified in this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

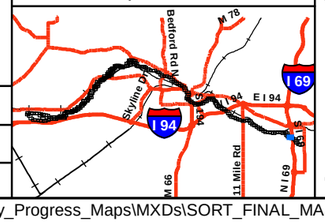
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP1.25-MP1.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 1.5																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐		Wetland-emergent/herbaceous		ALL PARTIES IN AGREEMENT THAT SHEEN IN POINT 1.50LDB1 WAS BIOLOGICAL SHEEN. NO OIL PRESENT	Wagner, Greg
																					Zimont, Ben
4/26/2011	16:10																	42.25255	-84.99016		Standen, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 1.5																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		SHEEN IN POOL NEAR BANK	Johnson, Rex
																					Conn, Chris
4/12/2011	17:01																	42.25184	-84.98887		Kytta, Ken
1a	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		POINT 0150R1, OIL SHEEN ON WATER ON THE BANK SIDE OF THE SILT FENCE	Childs, Jessica
																					Matthews, Rachel
4/26/2011	17:01																	42.25185	-84.98887		Juntilla, John
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	P	Man-Made Structure		OIL STAINED CONCRETE FROM HISTORIC STRUCTURE	Johnson, Rex
																					Conn, Chris
4/12/2011	17:10																	42.25221	-84.98975		Kytta, Ken
3	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☐	S	Low Vegetated Bank		SMALL TAR PATTIES AND STAINED ROOT	Johnson, Rex
																					Conn, Chris
4/12/2011	17:34																	42.25299	-84.99175		Kytta, Ken

Photo Logs

Field Photographs MP 1.25 – MP 1.50

LDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 1.25 – MP 1.50

RDB Zone ID 1a, Photo 001

RDB Zone ID 1a, Photo 002

Field Photographs MP 1.25 – MP 1.50

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.25 to MP 1.5, Bank or Island: RIGHT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson — START — 4/12/11 — Date

Rex Johnson — Printed Name

Chris Conn — MDEQ — 4/12/11 — Date

Chris Conn — Printed Name

KEN KITTA — Enbridge — 4/12/11 — Date

Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.25 to MP 1.50, Bank or Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/26/11 Date

Jessica Childs Printed Name

_____ MDEQ — 4-26-2011 Date

Rachel Matthews Printed Name

_____ Enbridge — 4-26-2011 Date

John W. Juntilla Printed Name

1 feature revisited

1 feature had oil identified

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.25 to MP 1.50, Bank or Island: LEFT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Rex Johnson START 4/12/11 Date

Rex Johnson Printed Name

MDEQ 4/12/11 Date

Chris Conn Printed Name

Enbridge 4/12/11 Date

KEN KATTA Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.25 to MP 1.50, Bank or Island: OB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/26/2011 Date

Gregory D. Wagner Printed Name

_____ MDEQ — 4/26/11 Date

Ben A. Zimont Printed Name

_____ Enbridge — 4/26/11 Date

JOSEPH STANDEN Printed Name

REASSESSED ONE POINT AND NO PETROLEUM WAS OBSERVED.

Talmadge Creek

The reassessment of Talmadge Creek was completed in two phases. The initial reassessment was completed and after reviewing the data it was determined that a portion of the data was in non-consensus regarding characterizing petroleum and biological sheen (noted as film (FL)) within the data. As a result, a second phase was completed to reassess those polygons and points in non-consensus. At those areas that both reassessment teams agreed with the petroleum sheen description, the polygon and point designations for both reassessment teams are provided on the segment map. In those areas where the reassessment teams provided different descriptions, only the second reassessment team's point designation is provided on the segment map. If oil was identified at a location by the first reassessment team but could not be documented during the second reassessment, it was considered as a "no oil" location and was not included on the segment map. Consequently, the numerical sequence between the initial and second reassessments will not be coincident.

MP 1.50 to MP 1.75

The LDB of segment 1.75 generally consists of a combination of low vegetated bank and re-engineered emergent/herbaceous overbank with ECB covering the overbank and coir logs lining the shoreline along the segment. Approximately one-third of the segment was not assessed due to property access issues. The initial reassessment identified two points (1 LDB and 2 LDB) upstream of the inaccessible property that were characterized as areas with tar coated branches, stems and debris. A pond was identified in this section of the LDB and no oil was observed. Two polygons (3 LDB and 5 LDB) and a point (4 LDB) were identified downstream of the inaccessible property. Polygon 3 LDB was characterized as traces of oil sheen on ponded water, and patchy areas of tar covered sticks and debris were observed at Polygon 5 LDB. An oil sheen on ponded water was identified as point 4 LDB. The second reassessment identified an oil sheen on ponded water at point 2 LDB and spot traces of oil within the mud at 4 LDB.

The RDB of segment 1.75 consists of re-engineered low vegetated bank with ECB covering the overbank and coir logs lining the shoreline along the segment. As noted above, approximately one-third of the segment was not assessed due to property access issues. No oil was identified in either the upstream or downstream sections of the inaccessible areas.

Poling of the two ponds within this segment was completed to fully assess the overbank. The detailed results of the poling activities will be presented under separate cover.

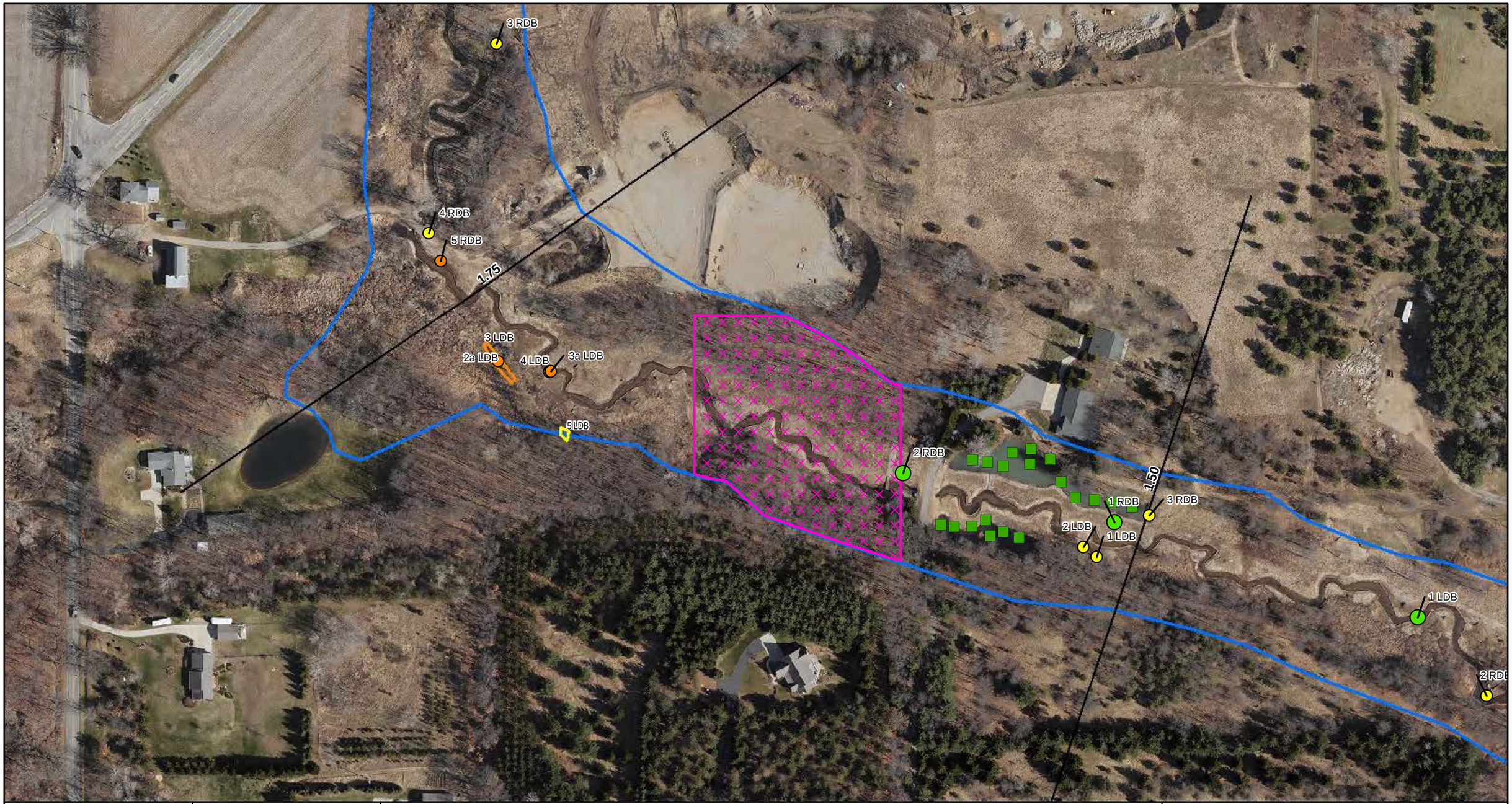
No islands are located within Talmadge Creek and the FLS did not identify any oil signatures within this segment.

No PI observations were identified in this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

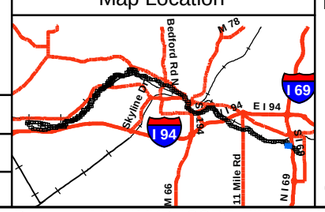
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP1.50-MP1.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 1.75																					
Source: 2011 Reassessment																					MDEQ
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	**Time**																	**Latitude**	**Longitude**		**Enbridge Team Lead**
1	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	S	Low Vegetated Bank		TAR COATED DEBRIS/STICKS	Johnson, Rex
																					Conn, Chris
4/12/2011	18:39																	42.25281	-84.99206		Kytta, Ken
2	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	S	Low Vegetated Bank		TAR COATED STEMS/BRANCHES	Johnson, Rex
																					Conn, Chris
4/12/2011	18:44																	42.25285	-84.99214		Kytta, Ken
2a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		ALL PARTIES IN AGREEMENT THAT SHEEN FROM POLYGON 1.75LDB2 IS FROM OIL	Wagner, Greg
																					Zimont, Ben
4/26/2011	17:23																	42.25373	-84.99554		Standen, John
3	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		SHEEN ON POOLED WATER	Johnson, Rex
																					Conn, Chris
4/13/2011	10:59																	42.25356	-84.99551		Kytta, Ken
3a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		ALL PARTIES IN AGREEMENT THAT POINT 1.75LDB4 HAS OIL IN THE MUD WITH A BIOLOGICALSHEEN	Wagner, Greg
																					Zimont, Ben
4/26/2011	17:30																	42.25354	-84.99535		Standen, John

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character														
Mile Marker: 1.75																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
																					Enbridge Team Lead
4	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		SHEEN ON POOLED WATER NEAR BANK	Johnson, Rex
																					Conn, Chris
4/13/2011	11:02																	42.25360	-84.99529		Kytta, Ken
5	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☐	P	Low Vegetated Bank		TAR/OIL COVERED STICKS/DEBRIS	Johnson, Rex
																					Conn, Chris
4/13/2011	10:42																	42.25333	-84.99520		Kytta, Ken

2011 Reassessment

Bank: RDB

Mile Marker: 1.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START	MDEQ	Enbridge Team Lead
1	Overbank	4/15/2011	17:16	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	T	Low Vegetated Bank	42.25296	-84.99195	NO OIL IN SECTION; PORTION OF SECTION NOT REASSESSED DUE TO PROPERTY ACCESS ISSUES	Johnson, Rex	Conn, Chris	Kytta, Ken
2	Shoreline and Overbank	5/11/2011	17:01	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐		Other (comments)	42.25317	-84.99320	PERIMETER SURVEY OF NO ACCESS PROPERTY; NORMAL CONDITIONS OBSERVED; NO OIL OBSERVED	Hadwin, Eric	Wesener, Matt	Kytta, Ken

Photo Logs

Field Photographs MP 1.50 – MP 1.75

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 1.50 – MP 1.75

LDB Zone ID 2a, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 1.50 – MP 1.75

LDB Zone ID 3a, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 1.50 – MP 1.75

LDB Zone ID 5, Photo 001

LDB Zone ID 5, Photo 002

Field Photographs MP 1.50 – MP 1.75

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 1.50 – MP 1.75

RDB Zone ID 2, Photo 002

RDB Zone ID 2, Photo 003

Field Photographs MP 1.50 – MP 1.75

RDB Zone ID 2, Photo 004

RDB Zone ID 2, Photo 005

Field Photographs MP 1.50 – MP 1.75

RDB Zone ID 2, Photo 006

RDB Zone ID 2, Photo 007

Field Photographs MP 1.50 – MP 1.75

RDB Zone ID 2, Photo 008

RDB Zone ID 2, Photo 009

Field Photographs MP 1.50 – MP 1.75

RDB Zone ID 2, Photo 010

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.50 to MP 1.75, Bank or Island: LEFT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.
W/ EXCEPTION OF PARCEL TC-B-080.001 WHERE NO ACCESS WAS GRANTED

[signature]	START	4/13/11 Date
Rex Johnson	Printed Name	
[signature]	MDEQ	4/13/11 Date
Chris Conn	Printed Name	
[signature]	Enbridge	4/13/11 Date
KEN KYTTA	Printed Name	

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.50 to MP 1.75, Bank or Island: CDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/26/2011 Date

Gregory D. Wagner Printed Name

_____ MDEQ — 4/26/11 Date

Ben A. Zimont Printed Name

_____ Enbridge — 4/26/11 Date

Joseph Stauden Printed Name

REASSESSED 3 POINTS AND 1 POLYGON. IDENTIFIED FILM AT POLYGON AND ONE POINT

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 1.50 to MP 1.75, Unique ID LDB Inland Water, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Rex Johnson — START — 5/7/11 — Date

Rex Johnson — Printed Name

MDEQ — 5/7/11 — Date

MATTHEW D WESENER — Printed Name

Enbridge/TT — 5/7/11 — Date

Craig A Wiemans — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.50 to MP 1.75, Bank or Island: Right, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

W/ EXCEPTION OF PARCEL TC-B-080.001 WHERE NO ACCESS WAS GRANTED

Rex Johnson — START — 4/13/11 — Date

Rex Johnson — Printed Name

[signature] — MDEQ — 4/13/11 — Date

Chris Cowan — Printed Name

[signature] — Enbridge — 4/13/11 — Date

KEN KYTTA — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.50 to MP 1.75, Bank or Island: RDB; Segment Length: 0.25 mile

* The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

W/ EXCEPTION OF PROPERTY TC-B-080.001 WITH NO PROPERTY ACCESS.

Rex Johnson — START — 4/15/11 — Date

Rex Johnson — Printed Name

Chris Cavin — MDEQ — 4/15/11 — Date

Chris Cavin — Printed Name

Ken Kytta — Enbridge — 4/15/11 — Date

KEN KYTTA — Printed Name

* NO POINTS WERE RECORDED IN SEGMENT DURING ASSESSMENT. POINT WAS RECORDED ON 4/15/11.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 1.50 to MP 1.75, Unique ID RDB PONDED WATER, Bank RDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Rex Johnson — START — 5/7/11 — Date

Rex Johnson — Printed Name

MDEQ — 5/7/11 — Date

MATTHEW D WESENER — Printed Name

Enbridge/TT — 5/7/11 — Date

Craig A Wieman — Printed Name

CREATED POLYGON FOR PONDED WATER NOT PREVIOUSLY MARKED.

Talmadge Creek

The reassessment of Talmadge Creek was completed in two phases. The initial reassessment was completed and after reviewing the data it was determined that a portion of the data was in non-consensus regarding characterizing petroleum and biological sheen (noted as film (FL)) within the data. As a result, a second phase was completed to reassess those polygons and points in non-consensus. At those areas that both reassessment teams agreed with the petroleum sheen description, the polygon and point designations for both reassessment teams are provided on the segment map. In those areas where the reassessment teams provided different descriptions, only the second reassessment team's point designation is provided on the segment map. If oil was identified at a location by the first reassessment team but could not be documented during the second reassessment, it was considered as a "no oil" location and was not included on the segment map. Consequently, the numerical sequence between the initial and second reassessments will not be coincident.

MP 1.75 to MP 2.00

The LDB of segment 2.00 generally consists of a combination of sand and gravel shoreline and re-engineered emergent/herbaceous overbank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified three points (1 LDB, 2 LDB and 3 LDB) with a range of trace to sporadic occurrences of oil sheen on ponded water. The second reassessment identified a combination of biological and oil sheen at 3 LDB and confirmed, but reduced the occurrence of oil to trace amounts at 2 LDB.

The RDB of segment 1.75 consists of re-engineered low vegetated bank with ECB covering the overbank and coir logs lining the shoreline along the segment. The initial reassessment identified three points (1 RDB, 2 RDB and 3 RDB) with patchy to sporadic occurrences of tar on sticks, branches, a root and debris. A single tar patty was identified on a gravel road at 4 RDB and a small tar ball and oil sheen were identified at 5 RDB

No islands are located within 2.00 of Talmadge Creek and the FLS did not identify any oil signatures within this segment.

One PI observation was identified in this segment on the RDB near the end of the segment. The observation was noted as a high priority area and corresponds to a known area of oil occurrence.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

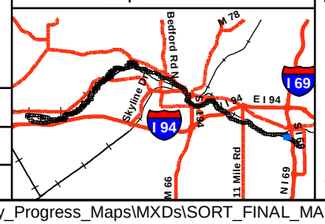
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP1.75-MP2.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character															
Mile Marker: 2																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
1a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		ALL PARTIES IN AGREEMENTTHAT SHEEN IN POINT 2.00LDB3 WAS A MIX OF BIOLOGICAL AND OIL	Wagner, Greg	Zimont, Ben
4/26/2011	16:56																	42.25661	-84.99506			Standen, John
2	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		SHEEN ON POOLED WATER	Johnson, Rex	Conn, Chris
4/13/2011	11:50																	42.25590	-84.99561			Kytta, Ken
2a	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		POLYGON 2.00LDB2 IS IN AGREEMENT WITH ALL PARTIES THAT SHEEN IS FROM OIL	Wagner, Greg	Zimont, Ben
4/26/2011	17:06																	42.25588	-84.99559			Standen, John
3	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Sand-Gravel shoreline		SHEEN IN POOLED WATER	Johnson, Rex	Conn, Chris
4/13/2011	11:58																	42.25660	-84.99500			Kytta, Ken

2011 Reassessment

Bank: RDB

Mile Marker: 2

Source: 2011 Reassessment

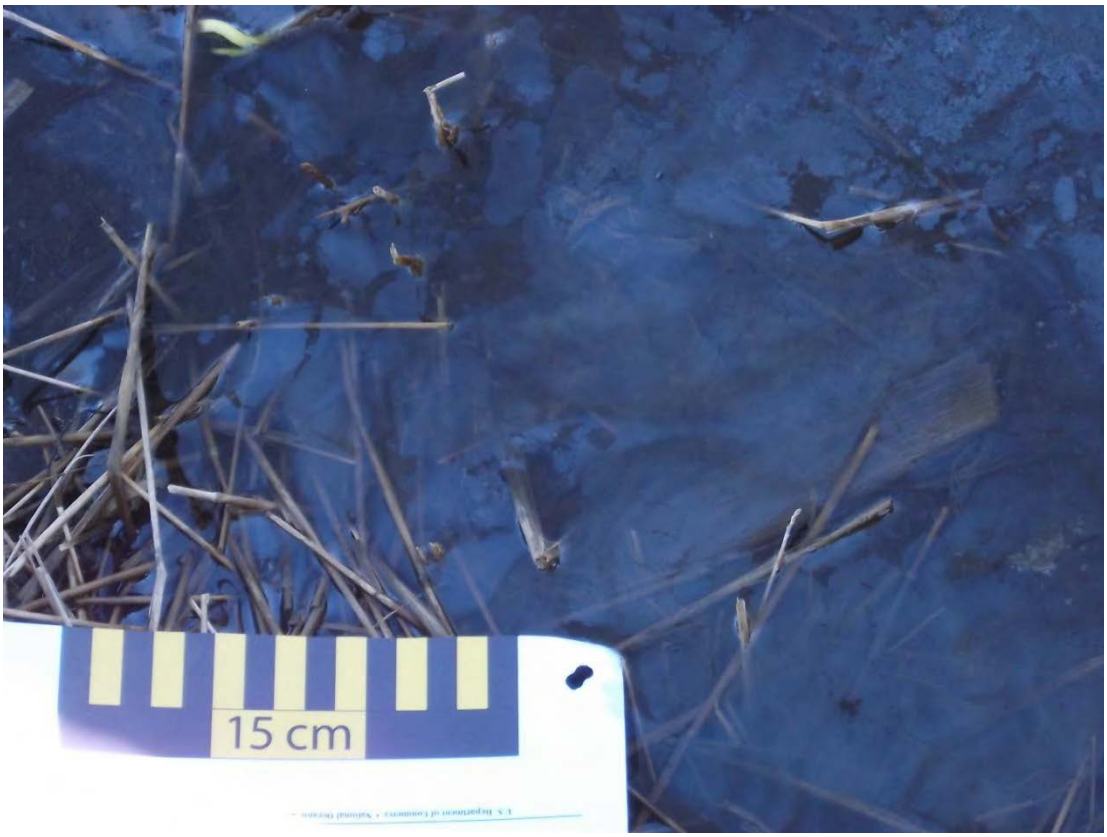
Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
1	Overbank	4/13/2011	09:20	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	P	Low Vegetated Bank	42.25559	-84.99540	ONE OIL COATED ROOT	Johnson, Rex / Conn, Chris / Kytta, Ken
2	Overbank	4/13/2011	09:27	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	P	Low Vegetated Bank	42.25549	-84.99547	OIL COVERED STICKS/BRANCHES ON HIGH BANK	Johnson, Rex / Conn, Chris / Kytta, Ken
3	Overbank	4/13/2011	09:41	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Low Vegetated Bank	42.25503	-84.99562	OIL COATED AND STAINED DEBRIS	Johnson, Rex / Conn, Chris / Kytta, Ken
4	Overbank	4/13/2011	09:54	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	B	Other (comments)	42.25420	-84.99601	SMALL TAR PATTY ON GRAVEL ROAD	Johnson, Rex / Conn, Chris / Kytta, Ken
5	Shoreline	4/13/2011	09:59	☐	☐	☑	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank	42.25408	-84.99594	SMALL TAR BALL ON BANK	Johnson, Rex / Conn, Chris / Kytta, Ken

Photo Logs

Field Photographs MP 1.75 – MP 2.00

LDB Zone ID 1a, Photo 001

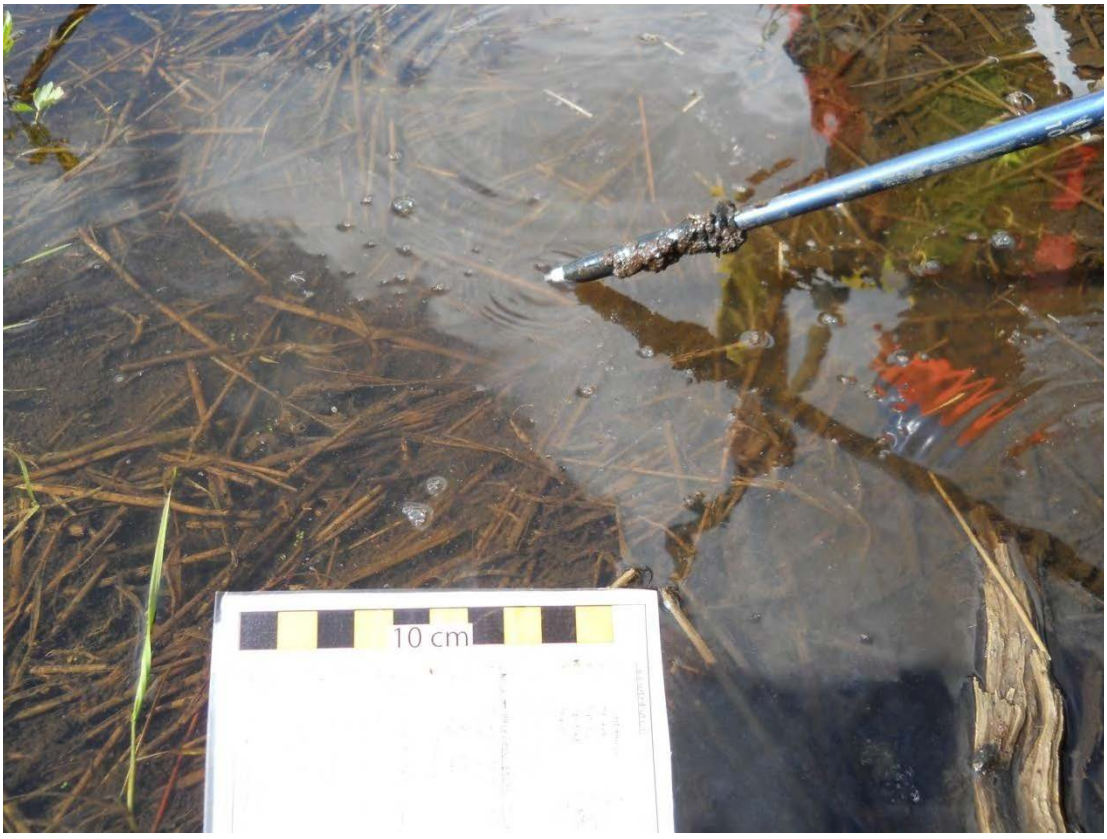
LDB Zone ID 2, Photo 001



Field Photographs MP 1.75 – MP 2.00

LDB Zone ID 2, Photo 002

LDB Zone ID 2a, Photo 001



Field Photographs MP 1.75 – MP 2.00

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 1.75 – MP 2.00

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 1.75 – MP 2.00

RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 1.75 – MP 2.00

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 1.75 – MP 2.00

RDB Zone ID 4, Photo 001

RDB Zone ID 5, Photo 001

Field Photographs MP 1.75 – MP 2.00

RDB Zone ID 5, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.75 to MP 2.00, Bank or Island: Right, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4/13/11 Date
Rex Johnson	Printed Name	
[signature]	MDEQ	4/13/11 Date
Chris Conn	Printed Name	
[signature]	Enbridge	4/13/11 Date
KEN KITTA	Printed Name	

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.75 to MP 2.00, Bank or Island: LEFT, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____	START	4/13/11 Date
Rex Johnson	Printed Name	
_____	MDEQ	4/13/11 Date
Chris Conn	Printed Name	
_____	Enbridge	4/13/11 Date
KEN KITTA	Printed Name	

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 1.75 to MP 2.00, Bank or Island: OOB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/26/2011 Date

Gregory D. Wagner Printed Name

_____ MDEQ 4/26/11 Date

Brian A. Zimont Printed Name

_____ Enbridge 4/26/11 Date

Joseph Standen Printed Name

REASSESSED 2 POINTS AND 1 POLYGON. PETROLEUM ~~SHEEN~~ IDENTIFIED AT ONE POINT AND ONE POLYGON. FILM

MP 2.00 to MP 2.25

The LDB of segment 2.25 generally includes a small reach of Talmadge Creek, it's confluence with the Kalamazoo River and approximately 1,200 feet along the Kalamazoo River. The LDB of Talmadge Creek is described as maintained lawn. In general, the LDB along the Kalamazoo River originates as a low vegetated bank and emergent/herbaceous wetland along the shoreline to a scrub-shrub wetland and forested wetland swamp in the overbank. The reassessment identified one point on Talmadge Creek, and two points, one linear transect, and four polygons on the Kalamazoo River. Sporadic staining was identified on two willow trees (1 LDB) and on trunks and stems approximately 300 feet along the Kalamazoo River (2 LDB). A film was identified at Point 4 LDB. The polygons ranged in size from small areas (8 LDB) to large areas (5 LBD) which is approximately one-third the length of the section. The oil thickness ranged from staining on trunks and stems at 6 LDB to asphalt pavement, staining on trunks and stems and oil sheen on ponded water at 5 LDB. The inundation model also identified low relief approximately 150 feet off of the river which was a cultivated field (3 LDB). No oil was identified in this area.

The RDB of segment 2.25 consists of a forested wetland swamp habitat. The reassessment identified two points (1 RDB and 2 RDB) with coated and stained trunks.

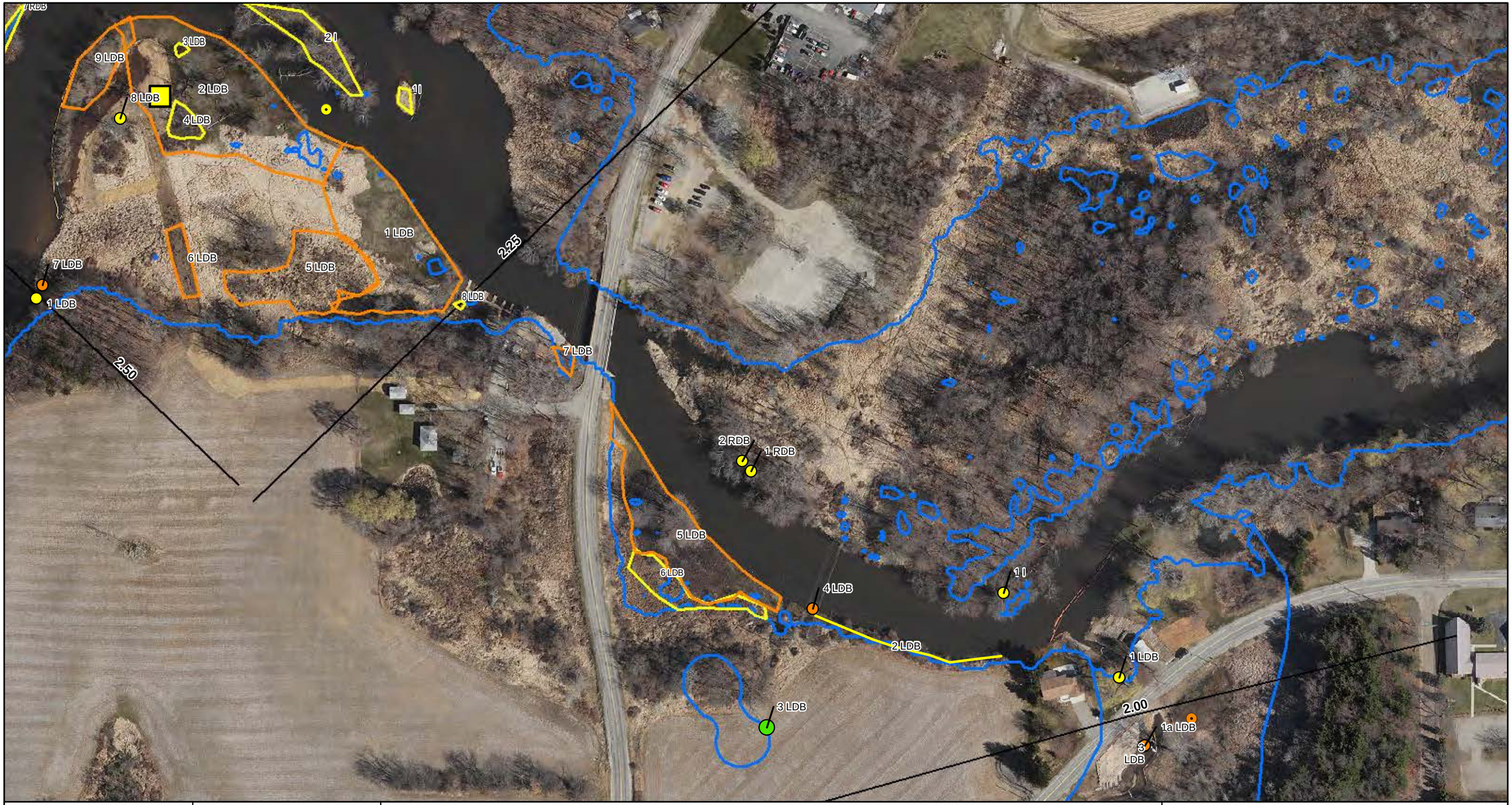
One island is located within segment 2.25 consisting of a forested wetland swamp habitat. One small area of oil staining was identified on trunks and stems at Point 1 I.

The FLS did not identify any oil signatures within this segment and no PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

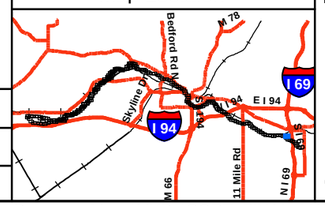
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP2.00-MP2.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 2.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START MDEQ Enbridge Team Lead
1	Overbank	4/11/2011	09:39	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Lawn (maintained land)	42.25691	-84.99516	2 LARGE WILLOW TREES	Thomas Graan / Brian Flickinger / Derreck Senn
2	Shoreline	4/11/2011	09:55	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank	42.25715	-84.99682	SPORADIC STAINS ON LIMBS	Thomas Graan / Brian Flickinger / Derreck Senn
3	Overbank	4/11/2011	10:03	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	T	Other (comments)	42.25668	-84.99723	IN CULTIVATED FIELD NOT IN INUNDATION	Thomas Graan / Brian Flickinger / Derreck Senn
4	Shoreline	4/11/2011	10:14	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	P	Wetland-emergent/herbaceous	42.25720	-84.99697	LESS THAN 1 SQ FT HOLE W/ SHEEN	Thomas Graan / Brian Flickinger / Derreck Senn
5	Shoreline and Overbank	4/11/2011	10:34	☐	☑	☐	☑	☑	☑	☐	☐	☐	☐	☑	☑	☐	☐	☑	B	Wetland-emergent/herbaceous	42.25743	-84.99755	SHEEN ON PONDED WATER, MIXTURE OF SURFACE OIL RESIDUE AND ASPHALT PAVEMENT ON GROUND	Thomas Graan / Brian Flickinger / Derreck Senn

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character												
Mile Marker: 2.25																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**	**Comments**	**START**
Date	**Time**																	**Latitude** / **Longitude**		**MDEQ** / **Enbridge Team Lead**
6	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	P	Wetland-scrub/shrub	DISCUSSION POSSIBLY 1-10%, EXTENDS BEYONDS INUNDATION LINE BY AS MUCH AS 40 FT	Thomas Graan / Brian Flickinger
4/11/2011	11:00																	42.25747 / -84.99798		Derreck Senn
7	Overbank	☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)		Thomas Graan / Brian Flickinger
4/11/2011	11:16																	42.25835 / -84.99842		Derreck Senn
8	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	P	Wetland-scrub/shrub		Thomas Graan / Brian Flickinger
4/11/2011	11:28																	42.25853 / -84.99908		Derreck Senn

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character												
Mile Marker: 2.25																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Habitat**	**Comments**	**Latitude**	**Longitude**
Date	**Time**																**START**	**MDEQ**	**Enbridge Team Lead**	
1	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Wetland-swamp (forested)		42.25781	-84.99733
4/11/2011	11:13																Sean Kane	Ben Zimont	Laura Newmeier	
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Wetland-swamp (forested)	staining on tree	42.25784	-84.99739
4/11/2011	11:26																Sean Kane	Ben Zimont	Laura Newmeier	

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 2.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/13/2011	08:11																	42.25728	-84.99584		Neumeier, Laura

Photo Logs

Field Photographs MP 2.0 – MP 2.25

I Zone ID 1, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 2.0 – MP 2.25

RDB Zone ID 2, Photo 001

LDB Zone ID 1, Photo 001

Field Photographs MP 2.0 – MP 2.25

LDB Zone ID 1, Photo 002

LDB Zone ID 1, Photo 003

Field Photographs MP 2.0 – MP 2.25

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 2.0 – MP 2.25

LDB Zone ID 2, Photo 003

LDB Zone ID 3, Photo 001

Field Photographs MP 2.0 – MP 2.25

LDB Zone ID 4, Photo 001

LDB Zone ID 5, Photo 001

Field Photographs MP 2.0 – MP 2.25

LDB Zone ID 5, Photo 002

LDB Zone ID 5, Photo 003

Field Photographs MP 2.0 – MP 2.25

LDB Zone ID 5, Photo 004

LDB Zone ID 5, Photo 005

Field Photographs MP 2.0 – MP 2.25

LDB Zone ID 6, Photo 001

LDB Zone ID 7, Photo 001

Field Photographs MP 2.0 – MP 2.25

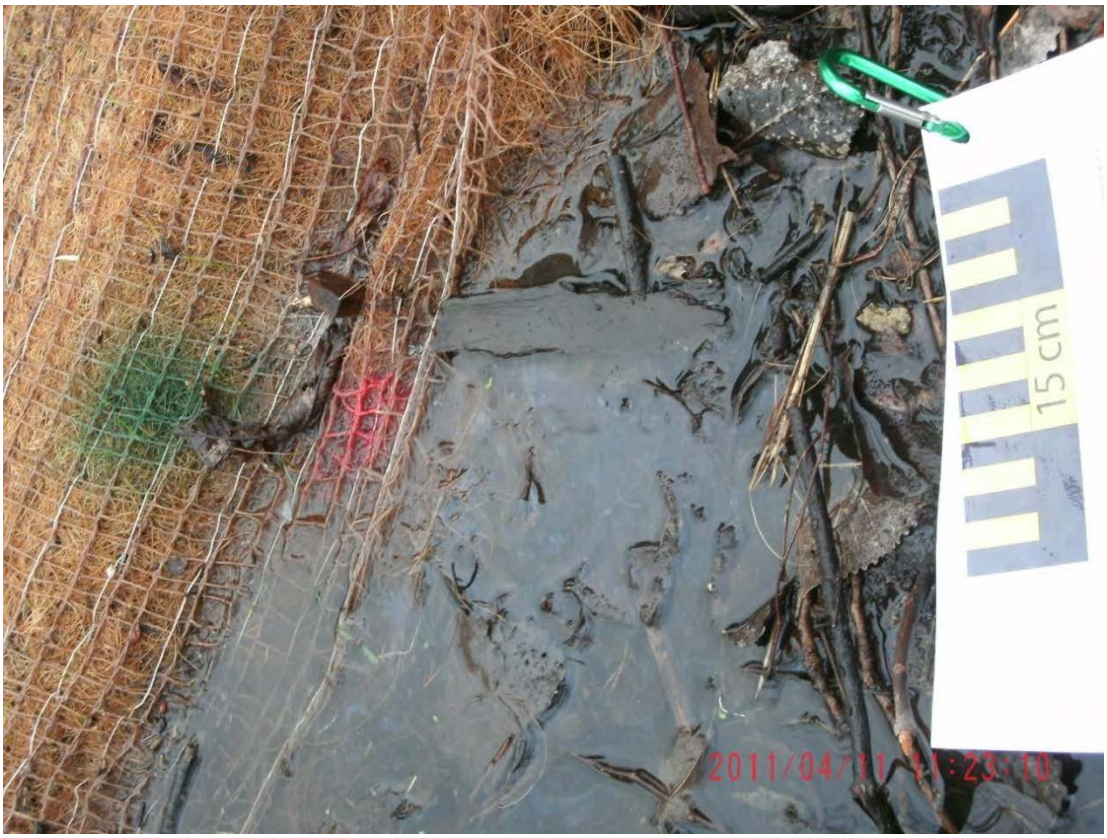
LDB Zone ID 7, Photo 002

LDB Zone ID 7, Photo 003

Field Photographs MP 2.0 – MP 2.25

LDB Zone ID 7, Photo 004

LDB Zone ID 7, Photo 005



Field Photographs MP 2.0 – MP 2.25

LDB Zone ID 8, Photo 001

LDB Zone ID 8, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 2 to MP 2.25, Bank or Island: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/11/11 Date

Jason Kane Printed Name

_____ MDEQ 4/11/11 Date

Ben A. Zimont Printed Name

_____ Enbridge 4/11/11 Date

Laura Neumeier Printed Name

_____ MDEQ 4/11/11

William Keiper

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

* Start at A Drive Culvert

Segment ID: From MP 2.0* to MP 2.25, (Bank) or Island: LB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Gram — START — 4/11/07 — Date

THOMAS GRAM — Printed Name

[signature] — MDEQ — 4/11/11 — Date

Brian Flickinger / MATTHEW D WESENER — Printed Name

[signature] — Enbridge — 4/11/11 — Date

Derek Senn — Printed Name

1 Point

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 2.0 to MP 2.25, Bank or Island: Island* only, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Sean Kane — START — 4-13-11 — Date

S-K — Printed Name

Ben A. Zimont — MDEQ — 4/12/11 / 4/13/11 — Date

William Kaiper — Printed Name

Laura Neumeier — Enbridge — 4/13/11 — Date

Laura Neumeier — Printed Name

* 1 Island

MP 2.25 to MP 2.50

The LDB of segment 2.50 is a point bar that is characterized as an emergent/herbaceous wetland and a small area of forested wetland swamp along the shoreline, that transitions to a scrub-shrub in the overbank. The reassessment identified two points (7 LDB and 8 LDB) with sporadic distribution of stained trunks and stems, and oil sheen at Point 7 LDB. Five relatively large polygons and two smaller polygons were identified. Broken cover, coating and staining were identified on trees and shrubs within Polygons 1 LDB and 2 LDB. Tar, fresh oil, and oil film on ponded water were identified in both of these polygons. Note that the fresh oil/film designation is an observation of oil sheen. Surface oil residue was also identified in Polygon 2 LDB as well as a petroleum odor. Polygons 3 LDB and 4 LDB, located within 2 LDB, were noted as having a continuous cover of surface oil residue. Polygon 5 LDB was noted as having a patchy distribution of coated and stained vegetation and an oil film on ponded water. Polygon 9 LDB was similar except with a patchy distribution with fresh oil film and surface oil residue also present. Polygon 6 LDB was a haul road with sporadic occurrences of fresh oil film on ponded water.

The RDB of segment 2.50 is characterized as a forested wetland swamp, emergent/herbaceous wetland and low vegetated bank along the shoreline that transitions to scrub-shrub and emergent/herbaceous wetlands in the overbank. The reassessment identified four points, three polygons, and one linear transect. All areas contained traces of coated debris and vegetation and trace tar on the ground surface.

Two islands are located within segment 2.50 consisting of an emergent/herbaceous wetland habitat. A continuous oil coat on trunks, stems and debris with an oil residue on the ground surface was identified at Polygon 1 I. A patchy distribution of coated and stained vegetation and patties were identified within Polygon 2 I on the second island.

A PI observation noted as inconclusive was also identified on the LDB within Polygon 2 LDB in relatively close proximity to an FLS location. The FLS data identified a suspected oil signature within Polygon 2 LDB and within close proximity to 4 LDB.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

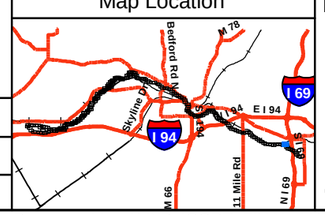
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP2.25-MP2.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character														
Mile Marker: 2.5																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☑	☑	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☑	B	Wetland-emergent/herbaceous			Thomas Graan / Brian Flickinger
4/11/2011	12:37																	42.25861	-84.99929		Derreck Senn
2	Shoreline and Overbank	☐	☑	☑	☑	☑	☑	☐	☐	☐	☑	☑	☐	☐	☐	☑	B	Wetland-emergent/herbaceous		ODOR SCATTERED TREES AND SHRUBS	Thomas Graan / Brian Flickinger
4/11/2011	13:50																	42.25967	-85.00079		Derreck Senn
3	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	C	Wetland-emergent/herbaceous		LESS WEATHERED OIL	Thomas Graan / Brian Flickinger
4/11/2011	14:01																	42.25966	-85.00074		Derreck Senn
4	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	C	Wetland-emergent/herbaceous		LESS WEATHERED OIL	Thomas Graan / Brian Flickinger
4/11/2011	14:08																	42.25941	-85.00075		Derreck Senn
5	Overbank	☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	P	Wetland-scrub/shrub			Thomas Graan / Brian Flickinger
4/11/2011	14:24																	42.25873	-85.00064		Derreck Senn

2011 Reassessment

Bank: LDB

Mile Marker: 2.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
6	Overbank	4/11/2011	14:33	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	P	Other (comments)	42.25866	-85.00065	HAUL ROAD	Thomas Graan / Brian Flickinger / Derreck Senn
7	Shoreline	4/11/2011	14:44	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous	42.25860	-85.00153		Thomas Graan / Brian Flickinger / Derreck Senn
8	Overbank	4/11/2011	15:11	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Wetland-scrub/shrub	42.25933	-85.00107		Thomas Graan / Brian Flickinger / Derreck Senn
9	Shoreline and Overbank	4/11/2011	15:21	☐	☑	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)	42.25963	-85.00119		Thomas Graan / Brian Flickinger / Derreck Senn

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 2.5																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/11/2011	13:56																	42.26004	-84.99985		Neumeier, Laura
10	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	T	Wetland-emergent/herbaceous		REASSESSMENT OF AREA; NO OIL PRESENT	Johnson, Rex
																					Washburn, Bruce
5/2/2011	14:54																	42.26051	-84.99791		Kytta, Ken
2	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous		tree branch 2-inch diameter	Kane, Sean
																					Zimont, Ben
4/11/2011	14:10																	42.26014	-85.00030		Neumeier, Laura
3	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)		possible from oily rope	Kane, Sean
																					Zimont, Ben
4/11/2011	14:18																	42.26017	-85.00058		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)		coating on vegetation	Kane, Sean
																					Zimont, Ben
4/11/2011	14:26																	42.26018	-85.00083		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 2.5																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	Time																	Latitude	Longitude		Enbridge Team Lead
5	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	T	Low Vegetated Bank			Kane, Sean
																					Zimont, Ben
4/11/2011	14:36																	42.26015	-85.00109		Neumeier, Laura
6	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub			Kane, Sean
																					Zimont, Ben
4/11/2011	14:51																	42.25992	-85.00154		Neumeier, Laura
7	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☐	T	Low Vegetated Bank		coating on vertical vegetation and debris	Kane, Sean
																					Zimont, Ben
4/11/2011	15:13																	42.25943	-85.00186		Neumeier, Laura
8	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☐	T	Low Vegetated Bank		coating on vegetation and debris	Kane, Sean
																					Zimont, Ben
4/11/2011	15:29																	42.25907	-85.00216		Neumeier, Laura
9	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	T	Wetland-emergent/herbaceous		REASSESSMENT OF 2 AREAS NOT COVERED PREVIOUSLY; NO OIL OBSERVED	Johnson, Rex
																					Washburn, Bruce
5/2/2011	14:42																	42.26080	-84.99802		Kytta, Ken

2011 Reassessment

Bank: I		Oil Thickness					Oil Character									Oil Distribution	Habitat		Comments	START
Mile Marker: 2.5																				
Source: 2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems				MDEQ
Date	Time																Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	C	Wetland-emergent/herbaceous			Sean Kane
																				Ben Zimont
4/12/2011	08:18																	42.25938	-84.99938		Laura Neumeier
2	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	P	Wetland-emergent/herbaceous		wetland emergent and forest mix vegetation staining 8% tar patties 10 to 20%	Sean Kane
																					Ben Zimont
4/12/2011	08:40																	42.25974	-85.00005		Laura Neumeier

Photo Logs

Field Photographs MP 2.25 – MP 2.50

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 2.25 – MP 2.50

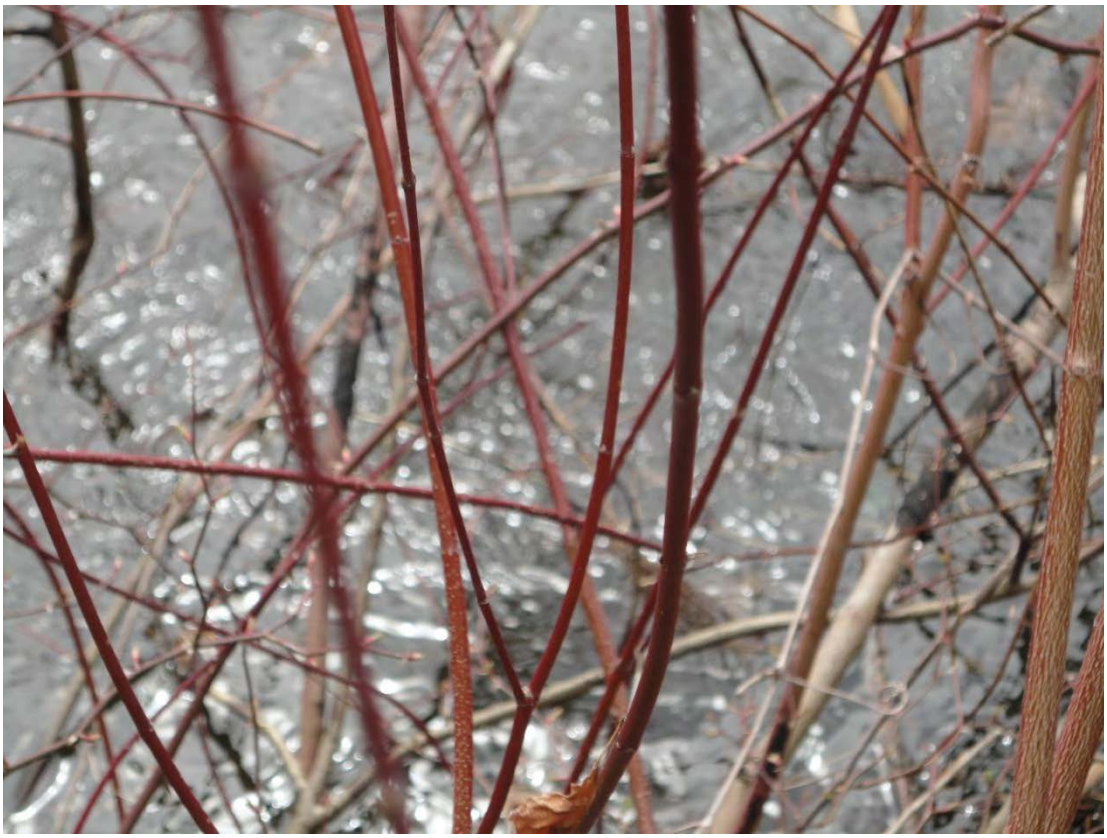
I Zone ID 2, Photo 001

I Zone ID 2, Photo 002

Field Photographs MP 2.25 – MP 2.50

I Zone ID 2, Photo 003

RDB Zone ID 1, Photo 001



Field Photographs MP 2.25 – MP 2.50

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

Field Photographs MP 2.25 – MP 2.50

RDB Zone ID 4, Photo 001

RDB Zone ID 5, Photo 001

Field Photographs MP 2.25 – MP 2.50

RDB Zone ID 6, Photo 001

RDB Zone ID 7, Photo 001

Field Photographs MP 2.25 – MP 2.50

RDB Zone ID 7, Photo 002

RDB Zone ID 8, Photo 001

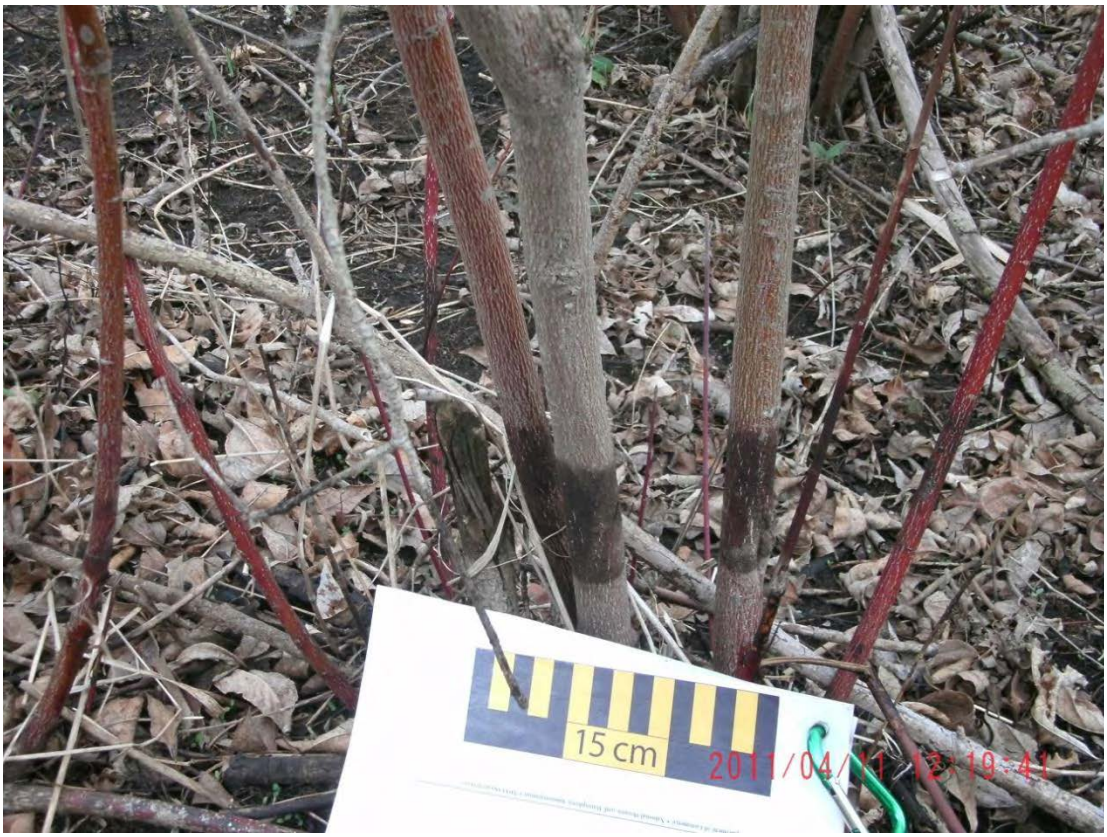
Field Photographs MP 2.25 – MP 2.50

RDB Zone ID 9, Photo 001

RDB Zone ID 10, Photo 001

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 1, Photo 001



LDB Zone ID 1, Photo 002

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 1, Photo 003

LDB Zone ID 1, Photo 004

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 1, Photo 005

LDB Zone ID 1, Photo 006

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 1, Photo 007

LDB Zone ID 2, Photo 001

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 2, Photo 002

LDB Zone ID 2, Photo 003

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 2, Photo 004

LDB Zone ID 2, Photo 005

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 4, Photo 002

LDB Zone ID 5, Photo 001

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 6, Photo 001

LDB Zone ID 6, Photo 002

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 7, Photo 001

LDB Zone ID 8, Photo 001

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 9, Photo 001

LDB Zone ID 9, Photo 002

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 9, Photo 003

LDB Zone ID 9, Photo 004

Field Photographs MP 2.25 – MP 2.50

LDB Zone ID 9, Photo 005

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 2.25 to MP 2.5, Bank or Island: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4-11-11 Date

Sean Kane Printed Name

_____ 4/11/11

Ben A. Zimont MDEQ _____ Date

_____ Printed Name

_____ Enbridge 4/11/11 Date

Laura Neumeier Printed Name

_____ mDEQ 4/11/11

William Kuiper

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 2.25 to MP 2.5, (Bank) or Island: LB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graham — START — 4/11/11 — Date

THOMAS P. GRAHAM — Printed Name

Brian Flickinger / [signature] — MDEQ — 4/11/11 — Date

[signature] / MATTHEW D WESENER — Printed Name

[signature] — Enbridge — 4/11/11 — Date

Derek Senn — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 2.25 to MP 2.5, Bank or (Island): Islands* Segment Length: 0.25 mile
only

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-12-11 Date
[signature]	Printed Name	
[signature]	MDEQ	4/12/11 Date
for William Keiper	Printed Name	4/12/11
[signature]	Enbridge	4/12/11 Date
Laura Neumeier	Printed Name	

*2 islands reassessed.

MP 2.50 to MP 2.75

The LDB of segment 2.75 generally consists of a low vegetated bank. The reassessment identified five points, one polygon, and three linear transects. A sporadic to broken coverage of stained trunks and stems was identified at seven locations (1 LDB, 2 LDB, 3 LDB, 4 LDB, 5 LDB, 8 LDB and 9 LDB). Surface oil residue was identified within 5 LDB, 6 LDB, 9 LDB and 10 LDB. FLS data also detected a suspected oil signature in close proximity to 5 LDB. Film was observed at Linear Transect 6 LDB.

The RDB of segment 2.75 is a point bar that generally consists of a relatively large expanse of scrub-shrub wetland and forested wetland swamp habitat. The reassessment identified four points, and nine polygons. The shoreline and overbank had trace distribution of oil coat and stain on vegetation and trace to patchy tar on the ground surface. Patchy surface oil residue was also observed at Polygon 7 RDB, and broken amounts of sheen were observed within a depression in Polygon 4 RDB.

Two islands are located within segment 2.75. The smaller of the two islands (1 I) has an emergent/herbaceous wetland habitat with the larger island (2 I) characterized as a forested wetland swamp. A patchy distribution of tar patties and stained or covered vegetation was observed on both islands.

No PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

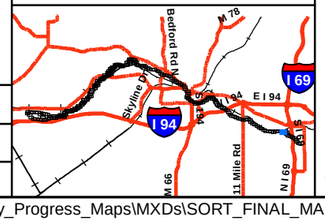
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP2.50-MP2.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 2.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character											Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		MDEQ Enbridge Team Lead
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank			Thomas Graan
																					Brian Flickinger
4/11/2011	15:43																	42.25853	-85.00156		Derreck Senn
10	Shoreline	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	P	Sand-Gravel shoreline			Thomas Graan
																					Brian Flickinger
4/11/2011	16:56																	42.25860	-85.00515		Derreck Senn
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank		SMALL CLUSTER OVERHANGING TREES	Thomas Graan
																					Brian Flickinger
4/11/2011	15:48																	42.25810	-85.00207		Derreck Senn
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Low Vegetated Bank			Thomas Graan
																					Brian Flickinger
4/11/2011	16:01																	42.25769	-85.00330		Derreck Senn
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank			Thomas Graan
																					Brian Flickinger
4/11/2011	16:07																	42.25764	-85.00351		Derreck Senn

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character													
Mile Marker: 2.75																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
5	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Low Vegetated Bank			Thomas Graan / Brian Flickinger
4/11/2011	16:11																	42.25757	-85.00404		Derreck Senn
6	Shoreline	☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	P	Man-Made Structure			Thomas Graan / Brian Flickinger
4/11/2011	16:18																	42.25772	-85.00442		Derreck Senn
8	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank			Thomas Graan / Brian Flickinger
4/11/2011	16:32																	42.25838	-85.00505		Derreck Senn
9	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	B	Sand-Gravel shoreline		ODOR	Thomas Graan / Brian Flickinger
4/11/2011	16:38																	42.25839	-85.00511		Derreck Senn

2011 Reassessment

Bank: RDB

Mile Marker: 2.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
1	Shoreline	4/11/2011	15:47	☐	☐	✓	☐	☐	☐	☐	☐	☐	✓	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub	42.25900	-85.00226		Kane, Sean; Zimont, Ben; Neumeier, Laura
10	Overbank	4/12/2011	09:45	☐	☐	✓	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	✓	T	Wetland-emergent/herbaceous	42.25853	-85.00393	under grass	Kane, Sean; Zimont, Ben; Neumeier, Laura
11	Shoreline	4/12/2011	10:10	☐	☐	✓	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	✓	☐	T	Low Vegetated Bank	42.25921	-85.00498		Kane, Sean; Zimont, Ben; Neumeier, Laura
12	Shoreline and Overbank	4/11/2011	15:56	☐	☐	✓	☐	☐	☐	☐	☐	☐	✓	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub	42.25888	-85.00240		Kane, Sean; Zimont, Ben; Neumeier, Laura
2	Overbank	4/11/2011	16:10	☐	☐	☐	✓	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub	42.25877	-85.00284		Kane, Sean; Zimont, Ben; Neumeier, Laura

Column groups: Oil Thickness = Pooled Oil, Cover, Coat, Stain, Film; Oil Character = Fresh Oil, Mousse, Tarballs, Patties, Tar, Surface Oil Residue, Asphalt Pavement, No Oil, Debris, Trunks and Stems.

2011 Reassessment

Bank: RDB

Mile Marker: 2.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
				Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		MDEQ
																							Enbridge Team Lead
3	Overbank			☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub		3-inch long by 0.5 cm stick?	Kane, Sean
																							Zimont, Ben
		4/11/2011	16:20																	42.25881	-85.00285		Neumeier, Laura
4	Overbank			☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	B	Wetland-scrub/shrub		possible sheen only shows up when someone walks through depression	Kane, Sean
																							Zimont, Ben
		4/11/2011	16:26																	42.25880	-85.00267		Neumeier, Laura
5	Overbank			☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-scrub/shrub			Kane, Sean
																							Zimont, Ben
		4/11/2011	16:49																	42.25875	-85.00270		Neumeier, Laura
6	Overbank			☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	P	Wetland-scrub/shrub		15% distribution ap or pt? mostly 1 ft by 1 ft	Kane, Sean
																							Zimont, Ben
		4/11/2011	16:56																	42.25869	-85.00271		Neumeier, Laura
7	Overbank			☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	P	Wetland-swamp (forested)		staining on vegetation 1 to 10% - ST Coats 1 to 10% - ct and sr cover - patties 1 to 10 % -cv and Pt Collectively 15%To 20%	Kane, Sean
																							Zimont, Ben
		4/11/2011	17:14																	42.25841	-85.00261		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 2.75																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
8	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/11/2011	17:41																	42.25828	-85.00299		Neumeier, Laura
9	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/11/2011	17:48																	42.25825	-85.00289		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 2.75																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☐	P	Wetland-emergent/herbaceous		tar patties staining on debris	Sean Kane
																					Ben Zimont
4/12/2011	09:02																	42.25882	-85.00210		Laura Neumeier
2	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	P	Wetland-swamp (forested)		tar patties < 20 % vegetation staining 1 to 10 %	Sean Kane
																					Ben Zimont
4/12/2011	09:16																	42.25864	-85.00225		Laura Neumeier

Photo Logs

Field Photographs MP 2.50 – MP 2.75

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 2.50 – MP 2.75

I Zone ID 2, Photo 001

I Zone ID 2, Photo 002

Field Photographs MP 2.50 – MP 2.75

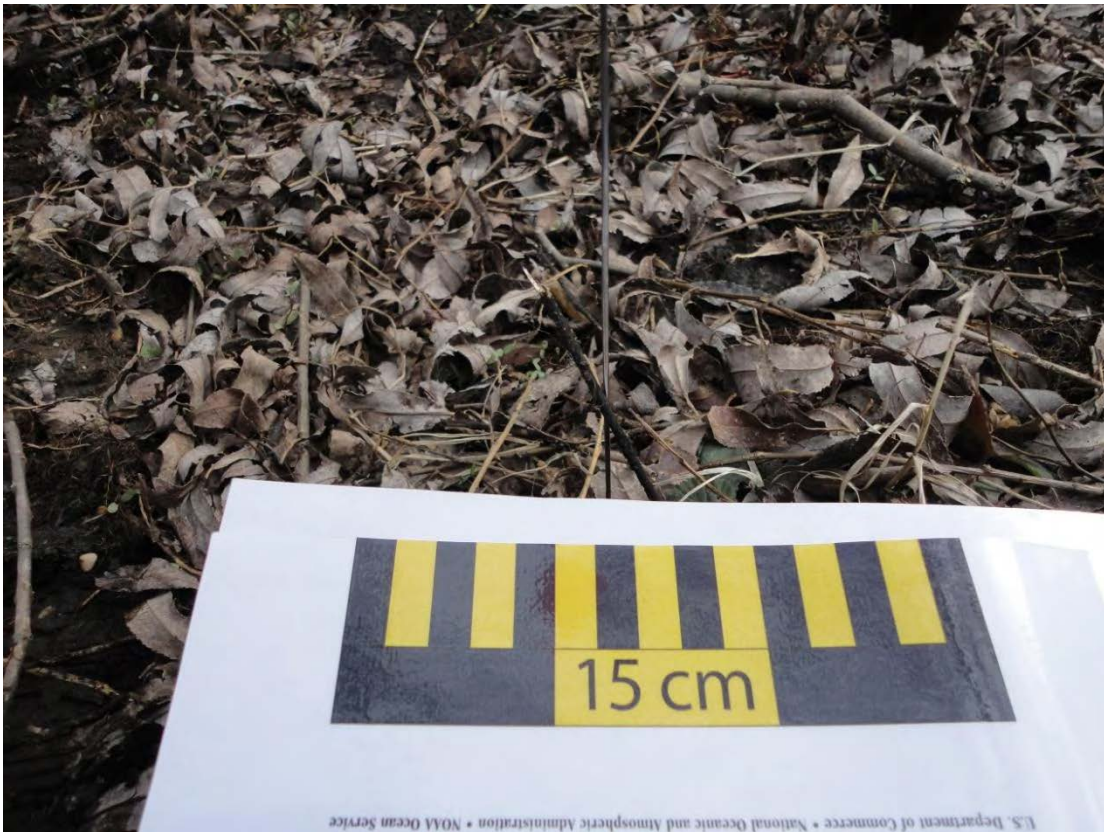
RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001



Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 5, Photo 001

RDB Zone ID 6, Photo 001

Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 6, Photo 002

RDB Zone ID 7, Photo 001

Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 7, Photo 002

RDB Zone ID 7, Photo 003

Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 7, Photo 004

RDB Zone ID 8, Photo 001

Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 8, Photo 002

RDB Zone ID 9, Photo 001

Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 10, Photo 001

RDB Zone ID 10, Photo 002

Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 10, Photo 003

RDB Zone ID 10, Photo 004

Field Photographs MP 2.50 – MP 2.75

RDB Zone ID 11, Photo 001

RDB Zone ID 12, Photo 001

Field Photographs MP 2.50 – MP 2.75

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 2.50 – MP 2.75

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 2.50 – MP 2.75

LDB Zone ID 3, Photo 003

LDB Zone ID 3, Photo 004

Field Photographs MP 2.50 – MP 2.75

LDB Zone ID 4, Photo 001

LDB Zone ID 5, Photo 001

Field Photographs MP 2.50 – MP 2.75

LDB Zone ID 6, Photo 001

LDB Zone ID 6, Photo 002

Field Photographs MP 2.50 – MP 2.75

LDB Zone ID 6, Photo 003

LDB Zone ID 7, Photo 001

Field Photographs MP 2.50 – MP 2.75

LDB Zone ID 8, Photo 001

LDB Zone ID 9, Photo 001

Field Photographs MP 2.50 – MP 2.75

LDB Zone ID 9, Photo 002

LDB Zone ID 10, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 2.58 to MP 2.75 (Bank) or Island: L, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Crimmins — START — 9/11/11 — Date

Thomas P. Crimmins — Printed Name

MDEQ — 9/11/11 — Date

Matthew S. Wessell / Brian Fleckinger — Printed Name

Enbridge — 9/11/11 — Date

Derek Sean — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 2.5 to MP 2.75, Bank ~~or~~ and Island: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Sean Kane	START	4-12-11	Date
Sean Kane	Printed Name		
Ben A. Zimont	MDEQ	4/12/11 4/12/11	Date
William Keiper	Printed Name		
Laura Neumeier	Enbridge	4/12/11	Date
Laura Neumeier	Printed Name		

MP 2.75 to MP 3.00

The LDB of segment 3.00 generally consists of a relatively steep vegetated bank and emergent/herbaceous wetland habitats. The reassessment identified six polygons and one linear transect. Sporadic and patchy oil staining and coating was observed on vegetation and rip rap throughout these areas. Surface oil residue was also noted at Polygons 2 LDB, 5 LDB and 7 LDB, as was fresh oil/film in Polygon 4 LDB.

The RDB of segment 3.00 consists of low vegetated bank and emergent/herbaceous wetland. The reassessment identified two points and one linear transect. Traces of oil were documented at all three areas consisting of oil coatings on vegetation and debris.

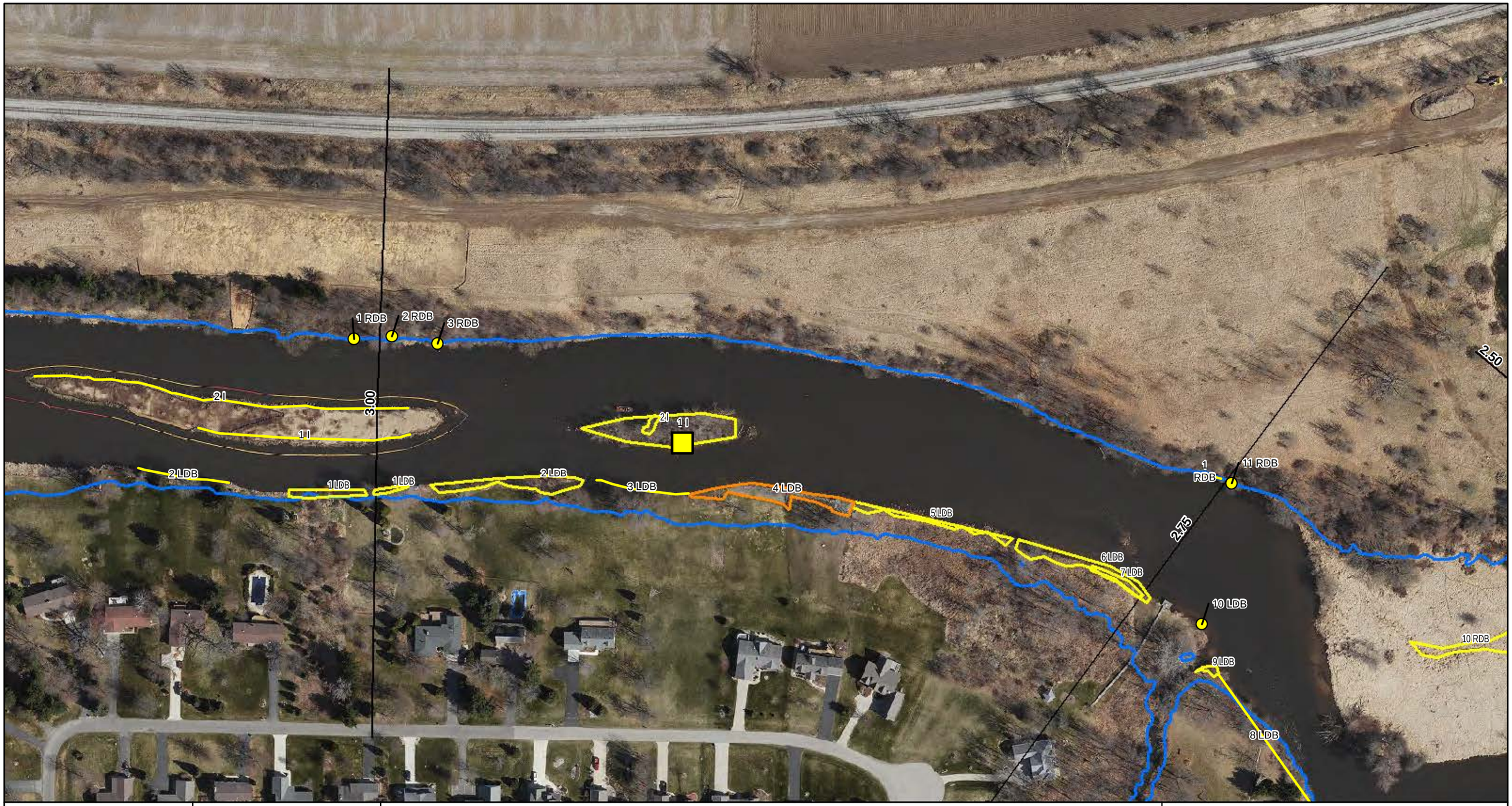
One island is located within segment 3.00 that consists of forested wetland swamp habitat. In general, the island is covered with a patchy distribution of surface oil residue and patties on the ground surface and coat and stain on trunks and stems. A nearly continuous cover of asphalt pavement was observed within a small area (2 l) on the island. FLS data also detected a suspected oil signature on the island.

No PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

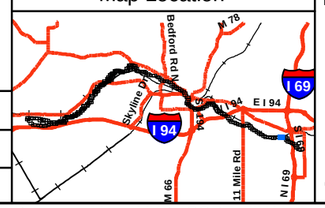
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP2.75-MP3.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 3

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		MDEQ / Enbridge Team Lead
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank		SOME ROCKS HAVE TAR COAT	Thomas Graan
																					Brian Flickinger
4/11/2011	17:30																	42.25918	-85.00983		Derreck Senn
2	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	P	Wetland-emergent/herbaceous			Thomas Graan
																					Brian Flickinger
4/11/2011	17:40																	42.25919	-85.00879		Derreck Senn
3	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	T	Rip Rap			Thomas Graan
																					Brian Flickinger
4/11/2011	17:47																	42.25915	-85.00818		Derreck Senn
4	Shoreline and Overbank	☐	☐	☑	☑	☑	☑	☐	☐	☐	☑	☑	☐	☐	☐	☑	S	Rip Rap			Thomas Graan
																					Brian Flickinger
4/11/2011	17:56																	42.25913	-85.00724		Derreck Senn
5	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☑	☐	☐	☐	☑	S	Wetland-emergent/herbaceous		POLYGON EXTENDS TO RIVERS EDGE	Thomas Graan
																					Brian Flickinger
4/11/2011	18:06																	42.25897	-85.00628		Derreck Senn

2011 Reassessment

Bank:	LDB	Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker:	3																				
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
6	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	S	Wetland-emergent/herbaceous			Thomas Graan
																					Brian Flickinger
4/11/2011	18:15																	42.25876	-85.00554		Derreck Senn
7	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	B	Wetland-emergent/herbaceous			Thomas Graan
																					Brian Flickinger
4/11/2011	18:21																	42.25873	-85.00551		Derreck Senn

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 3																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-emergent/herbaceous			Sean Kane Ben Zimont
4/12/2011	10:23																	42.25926	-85.00515		Laura Neumeier
2	Shoreline and Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Low Vegetated Bank			Sean Kane Ben Zimont
4/12/2011	11:10																	42.25983	-85.00994		Laura Neumeier
3	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Sean Kane Ben Zimont
4/12/2011	11:22																	42.25980	-85.00967		Laura Neumeier

2011 Reassessment

Bank: I	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 3																				MDEQ
Source: 2011 Reassessment																				
Oil Zone ID / Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
Date / Time																				
1 Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	P	Wetland-swamp (forested)		staining on vegetation 1% surface residue (mainly on south end of island) 11 to 20% tar patties 1 to 10%	Sean Kane Ben Zimont
4/12/2011 10:40																	42.25938	-85.00813		Laura Neumeier
2 Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	C	Wetland-swamp (forested)			Sean Kane Ben Zimont
4/12/2011 10:59																	42.25949	-85.00837		Laura Neumeier

Photo Logs

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 1, Photo 003

LDB Zone ID 2, Photo 001

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 2, Photo 002

LDB Zone ID 2, Photo 003

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 2, Photo 004

LDB Zone ID 2, Photo 005

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 4, Photo 001

LDB Zone ID 4, Photo 002

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 4, Photo 003

LDB Zone ID 4, Photo 004

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 4, Photo 005

LDB Zone ID 4, Photo 006

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 4, Photo 007

LDB Zone ID 5, Photo 001

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 5, Photo 002

LDB Zone ID 5, Photo 003

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 5, Photo 003

LDB Zone ID 5, Photo 004

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 5, Photo 005

LDB Zone ID 6, Photo 001

Field Photographs MP 2.75 – MP 3.00

LDB Zone ID 7, Photo 001

LDB Zone ID 7, Photo 002

Field Photographs MP 2.75 – MP 3.00

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 2.75 – MP 3.00

RDB Zone ID 3, Photo 001

I Zone ID 1, Photo 001

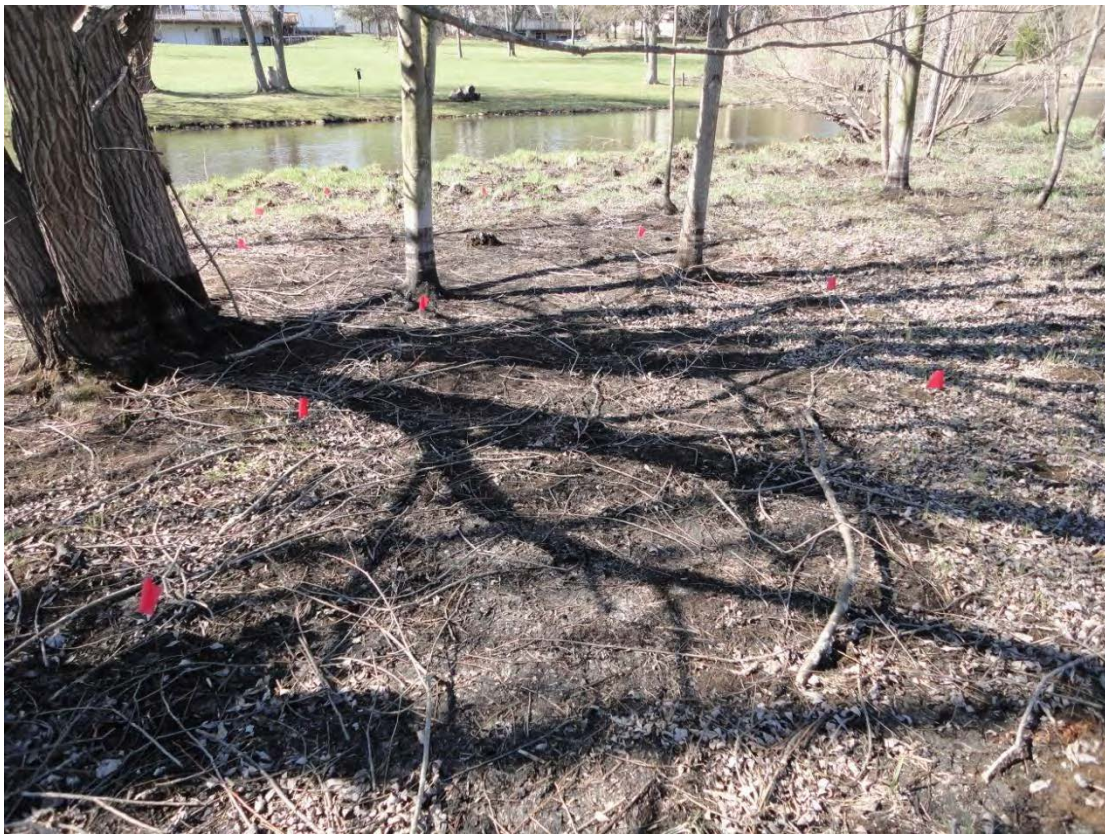
Field Photographs MP 2.75 – MP 3.00

I Zone ID 1, Photo 002

I Zone ID 1, Photo 003

Field Photographs MP 2.75 – MP 3.00

I Zone ID 2, Photo 001



SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 2.75 to MP 3.0, Bank ~~or~~ and Island: RB*, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-12-11 Date
Jeremy Hance	Printed Name	
[signature]		4-12-11
William Keiper	MDEQ	4/12/11 Date
[signature]		
Ben A. Zimont	Printed Name	
[signature]	Enbridge	4/12/11 Date
Laura Neumeier	Printed Name	

* 1 island

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 2.75 to MP 3.0, (Bank) or Island: LB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Gran — START — 4/11/11 — Date

THOMAS P. GRAHN — Printed Name

MDEQ — 4/11/11 — Date

MATTHEW D WASCHER / Brian Flickinger — Printed Name

Enbridge — 4/11/11 — Date

Derek Senn — Printed Name

MP 3.00 to MP 3.25

The LDB of segment 3.25 generally consists of rip rap and scrub-shrub wetland habitat. The reassessment identified one point, four polygons, and one linear transect. Trace oil staining and coating was identified on the rip rap in Polygons 1 LDB and 2 LDB. Trunks and stems, coated and stained, with traces of oil were also observed in 2 LDB. Trunks and stems within the scrub-shrub habitat in Polygon 6 LDB were stained and coated with a sporadic to broken distribution of oil. Surface oil residue was identified on the ground surface in Polygons 4 LDB, 5 LDB and 6 LDB, and petroleum odors were noted at Polygon 4 LDB which is partially within Polygon 5 LDB.

The RDB of segment 3.25 consists of a low vegetated bank that transitions downstream to emergent/herbaceous and scrub-shrub wetland habitats. The reassessment identified three points, one polygon, and three linear transects. Trunks and stems along the shoreline were coated and stained with traces of oil. Surface oil residue was noted on the ground surface in Linear Transect 4 RDB and Point 3 RDB. Trace patties were identified at Point 6 RDB and a film of oil on ponded water was observed at trace occurrences in Polygon 7 RDB.

One island is located within segment 3.25 that consists of an emergent/herbaceous wetland habitat. The ground surfaces along the shorelines on both sides of the island were covered with a sporadic distribution of patties and the trunks and stems were coated and covered with oil.

The FLS did not identify any oil signatures within this segment and no PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

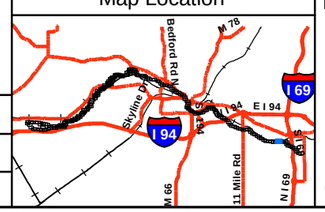
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP3.00-MP3.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 3.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
1	Shoreline	4/12/2011	08:33			✔	✔						✔						T	Rip Rap	42.25913	-85.01055		Graan, Tom Flickinger, Brian Senn, Derek
2	Shoreline	4/12/2011	08:47			✔	✔						✔					✔	T	Rip Rap	42.25924	-85.01143		Graan, Tom Flickinger, Brian Senn, Derek
3	Overbank	4/12/2011	08:57				✔											✔	S	Wetland-scrub/shrub	42.25925	-85.01288		Graan, Tom Flickinger, Brian Senn, Derek
4	Shoreline and Overbank	4/12/2011	09:08		✔		✔							✔				✔	B	Wetland-scrub/shrub	42.25927	-85.01383	ODOR	Graan, Tom Flickinger, Brian Senn, Derek
5	Overbank	4/12/2011	09:18				✔							✔				✔	S	Wetland-scrub/shrub	42.25931	-85.01414		Graan, Tom Flickinger, Brian Senn, Derek

2011 Reassessment

Bank:	LDB	Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker:	3.25																				
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
6	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	P	Wetland-scrub/shrub			Graan, Tom
																					Flickinger, Brian
4/12/2011	09:24																	42.25934	-85.01453		Senn, Derek

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 3.25																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Low Vegetated Bank		on debris	Sean Kane Ben Zimont
4/12/2011	13:35																	42.25982	-85.01017		Laura Neumeier
2	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous		from polyline to river	Sean Kane Ben Zimont
4/12/2011	13:51																	42.25997	-85.01310		Laura Neumeier
3	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-scrub/shrub		several spots in 1 meter almost fresh ?	Sean Kane Ben Zimont
4/12/2011	13:54																	42.25994	-85.01310		Laura Neumeier
4	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Wetland-scrub/shrub		covering on vegetation staining on trees	Sean Kane Ben Zimont
4/12/2011	14:21																	42.25995	-85.01381		Laura Neumeier
5	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous			Sean Kane Ben Zimont
4/12/2011	14:29																	42.25991	-85.01398		Laura Neumeier

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 3.25																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	Time																	Latitude	Longitude		Enbridge Team Lead
6	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Sean Kane
																					Ben Zimont
4/12/2011	14:34																	42.25990	-85.01426		Laura Neumeier
7	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		agency walked through and possible small sheen	Sean Kane
																					Ben Zimont
4/12/2011	14:38																	42.25998	-85.01439		Laura Neumeier

2011 Reassessment

Bank: I

Mile Marker: 3.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START	MDEQ	Enbridge Team Lead
1	Shoreline and Overbank	4/12/2011	12:52	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	S	Wetland-emergent/herbaceous	42.25942	-85.01109	tar patties <1% vegetation covering - 1 to 2% each node represents oil observation represents 3 to 5 foot polyline	Sean Kane	Ben Zimont	Laura Neumeier
2	Shoreline and Overbank	4/12/2011	13:16	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	S	Wetland-emergent/herbaceous	42.25959	-85.01195	polyline represents about 3 to 5 feet tar patties 1 to 10 % vegetation covering <1% surface residue <1%	Sean Kane	Ben Zimont	Laura Neumeier

Photo Logs

Field Photographs MP 3.00 – MP 3.25

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 3.00 – MP 3.25

LDB Zone ID 2, Photo 002

LDB Zone ID 2, Photo 003

Field Photographs MP 3.00 – MP 3.25

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 3.00 – MP 3.25

LDB Zone ID 4, Photo 002

LDB Zone ID 5, Photo 001

Field Photographs MP 3.00 – MP 3.25

LDB Zone ID 6, Photo 001

LDB Zone ID 6, Photo 002

Field Photographs MP 3.00 – MP 3.25

LDB Zone ID 6, Photo 003

RDB Zone ID 1, Photo 001

Field Photographs MP 3.00 – MP 3.25

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

Field Photographs MP 3.00 – MP 3.25

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

Field Photographs MP 3.00 – MP 3.25

RDB Zone ID 5, Photo 001

RDB Zone ID 5, Photo 002

Field Photographs MP 3.00 – MP 3.25

RDB Zone ID 6, Photo 001

RDB Zone ID 7, Photo 001

Field Photographs MP 3.00 – MP 3.25

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 3.00 – MP 3.25

I Zone ID 2, Photo 001

I Zone ID 2, Photo 002

Field Photographs MP 3.00 – MP 3.25

I Zone ID 2, Photo 003

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 3.0 to MP 3.25, (Bank) or Island: LB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Gramm — START — 4/12/11 — Date

THOMAS P. GRAMM — Printed Name

B. Flicking, RD / Matthew D Wesener — MDEQ — 4/12/11 — Date

Brian Flicking, RD / MATTHEW D WESENER — Printed Name

Enbridge — 4/12/11 — Date

Derek Senn — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 3.0 to MP 3.25, Bank ~~of~~ 2nd Island: *RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Sean Keane	START	4-12-11 Date
Sean Keane	Printed Name	
William Keiper	MDEQ	4-12-11 Date
Ben A. Limont	Printed Name	4/12/11
Laura Quinn	Enbridge	4/12/11 Date
Laura Nemmeier	Printed Name	

*Island A

MP 3.25 to MP 3.50

The LDB of segment 3.50 generally consists of low vegetated bank and sand-gravel shore line that transition downstream to an emergent/herbaceous wetland. The reassessment identified one polygon and two linear transects. Trunks and stems throughout all the areas were sporadically coated and stained with tar. A sporadic distribution of surface oil residue and or tar was observed on the ground surface at all three locations.

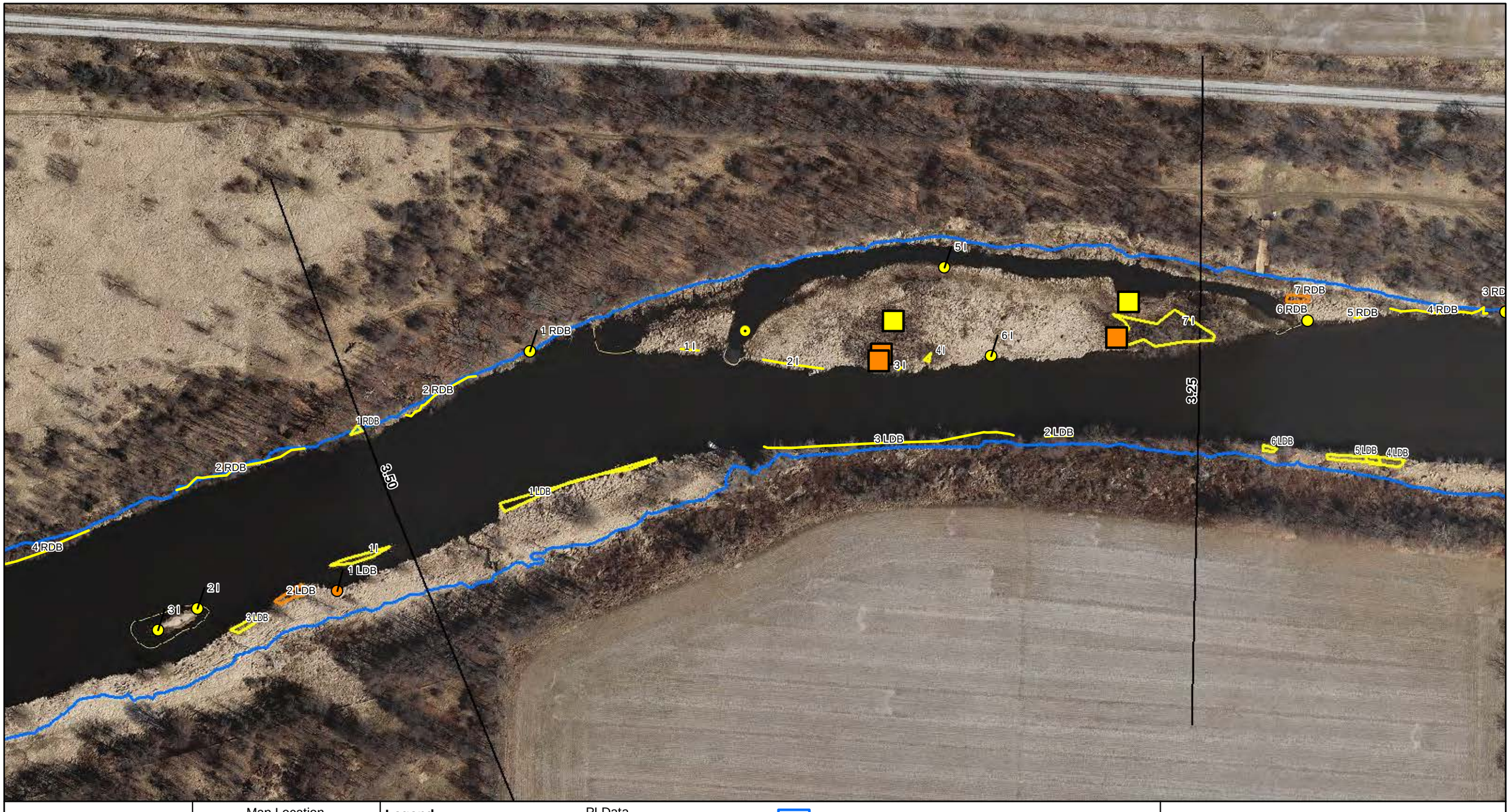
The RDB of segment 3.50 consists of scrub-shrub wetlands. The reassessment identified one point and one linear transect. A trace distribution of patties was observed on the ground surface and trunks and stems were stained to covered, with traces of oil at Linear Transect 2 RDB. Trunks and stems were also coated with traces of oil at Point 1 RDB.

One island is located within segment 3.50, in very close proximity to the RDB, and is almost two-thirds the length of the segment. The island consists of emergent/herbaceous and scrub-shrub wetlands. The reassessment identified two points, one polygon, and four linear transects. In general, traces of oil coated and stained debris and trunks and stems were in these areas. FLS data detected two oil signatures near Linear Transect 3 I and a third oil signature near Polygon 7 I. A suspected oil signature was also located near Polygon 7 I. A second suspected oil signature was located towards the center of the island. One PI observation noted as inconclusive, was identified on the island near Linear Transect 1 I.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

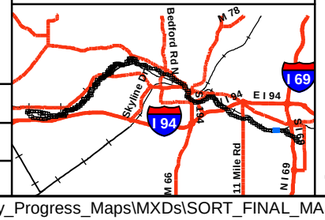
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP3.25-MP3.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 3.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	S	Wetland-emergent/herbaceous			Graan, Tom Flickinger, Brian
4/12/2011	10:57																	42.25880	-85.01953		Senn, Derek
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Low Vegetated Bank			Graan, Tom Flickinger, Brian
4/12/2011	10:17																	42.25939	-85.01580		Senn, Derek
3	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	S	Sand-Gravel shoreline			Graan, Tom Flickinger, Brian
4/12/2011	10:35																	42.25930	-85.01774		Senn, Derek

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character									Oil Distribution	Habitat		Comments	START
Mile Marker: 3.5																				MDEQ
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Latitude**	**Longitude**		Enbridge Team Lead
Date	**Time**																			
1	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Sean Kane
																					Ben Zimont
4/12/2011 15:42																		42.25974	-85.01885		Laura Neumeier
2	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub		coating on vegetation tar patties stain on vegetation from point to river - < 1 meter	Sean Kane
																					Ben Zimont
4/12/2011 15:58																		42.25938	-85.01983		Laura Neumeier

2011 Reassessment

Bank: I

Mile Marker: 3.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
1	Shoreline and Overbank	4/12/2011	16:12	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous	42.25975	-85.01786	from polyline to shore - <1 meter	Sean Kane / Ben Zimont / Laura Neumeier
2	Shoreline and Overbank	4/12/2011	16:32	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-emergent/herbaceous	42.25970	-85.01693	from polyline to river <1 m	Sean Kane / Ben Zimont / Laura Neumeier
3	Shoreline and Overbank	4/12/2011	16:43	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub	42.25970	-85.01657		Sean Kane / Ben Zimont / Laura Neumeier
4	Overbank	4/12/2011	16:51	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub	42.25970	-85.01650		Sean Kane / Ben Zimont / Laura Neumeier
5	Shoreline	4/12/2011	17:03	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-scrub/shrub	42.26011	-85.01641	possible floating tarball in water?	Sean Kane / Ben Zimont / Laura Neumeier

2011 Reassessment

Bank:	I																				
Mile Marker:	3.5																				
Source: 2011 Reassessment																					
		Oil Thickness					**Oil Character**														
Oil Zone ID / **Date**	**Feature** / **Time**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat** / **Latitude**	**Longitude**	**Comments**	**START** / **MDEQ** / **Enbridge Team Lead**
6	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous		1 inch on grass stem	Sean Kane Ben Zimont
4/12/2011	17:18																	42.25973	-85.01613		Laura Neumeier
7	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Wetland-scrub/shrub		1 to 5 %	Sean Kane Ben Zimont
4/12/2011	17:40																	42.25979	-85.01533		Laura Neumeier

Photo Logs

Field Photographs MP 3.25– MP 3.50

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 3.25– MP 3.50

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 3.25– MP 3.50

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 3.25– MP 3.50

RDB Zone ID 2, Photo 002

RDB Zone ID 2, Photo 003

Field Photographs MP 3.25– MP 3.50

I Zone ID 1, Photo 001

I Zone ID 2, Photo 001

Field Photographs MP 3.25– MP 3.50

I Zone ID 3, Photo 001

I Zone ID 4, Photo 001

Field Photographs MP 3.25– MP 3.50

I Zone ID 5, Photo 001

I Zone ID 6, Photo 001

Field Photographs MP 3.25– MP 3.50

I Zone ID 7, Photo 001

I Zone ID 7, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 3.25 to MP 3.50 (, Bank or Island: LB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graham — START — 4/12/11 — Date

THOMAS P GRAHAM — Printed Name

[illegible] / B Flicking RD — MDEQ — 4/12/11 — Date

MATT WESCHKE / Brian Flicking - RD — Printed Name

[signature] — Enbridge — 4/12/11 — Date

Derek Senn — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 3.25 to MP 3.5, Bank ~~or~~ and Island: * RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Jean Vance	START	4-12-11 Date
Jean Vance	Printed Name	
Ben A. Zimont	MDEQ	4/12/11 Date
William Kasper	Printed Name	4/12/11
Laura Neumeier	Enbridge	4/12/11 Date
Laura Neumeier	Printed Name	

* Island 3.25RI and small island to west

Please note waterway between Island 3.25RI and right bank was not assessed. However, some indications of sheen and tar patches were noted in waterway. Agree BZ

MP 3.50 to MP 3.75

The LDB of segment 3.75 generally consists of emergent/herbaceous and scrub-shrub wetlands that transition downstream to a low vegetated bank. The reassessment identified three points, two polygons, and one linear transect. In general, trunks and stems were stained or coated with traces to sporadic distributions of oil. A continuous surface oil residue covered the ground surface at Point 6 LDB, and a film was observed at Point 1 LDB and Polygon 2 LDB.

The RDB of segment 3.75 consists of a low vegetated bank that transitions downstream to scrub-shrub wetlands and then to emergent/herbaceous wetlands. The reassessment identified two polygons and three linear transects. Patchy distributions of patties and asphalt pavement were observed at Polygon 1 RDB. A trace distribution of patties was also noted at Linear Transect 2 RDB. Trunks and stems coated or stained with traces of oil were identified in the other areas.

Three islands consisting of emergent/herbaceous or scrub-shrub wetland habitats are located within segment 3.75. The reassessment identified one polygon (1 I) on the most upstream island, and one polygon (4 I) on the most downstream island. Two points (2 I and 3 I) were identified on the island located between the two other islands. A patchy distribution of patties and surface oil residue was observed on the ground surface within Polygon 1 I. The conditions observed within Polygon 4 I were similar except the distribution was sporadic. In addition, trunks and stems were sporadically stained to covered in oil. Trace patties and tar balls were also observed on the ground surface of the middle island (Points 2 I and 3 I).

No PI observations were noted and the FLS did not identify any oil signatures within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

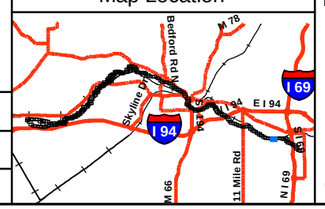
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP3.50-MP3.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 3.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
1	Overbank			☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous			Graan, Tom Flickinger, Brian
		4/12/2011	11:17																		42.25868	-85.01998		Senn, Derek
2	Shoreline and Overbank			☐	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous			Graan, Tom Flickinger, Brian
		4/12/2011	11:25																		42.25856	-85.02036		Senn, Derek
3	Overbank			☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			4 TREES	Graan, Tom Flickinger, Brian
		4/12/2011	11:29																		42.25850	-85.02061		Senn, Derek
4	Overbank			☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	P	Wetland-emergent/herbaceous			Graan, Tom Flickinger, Brian
		4/12/2011	11:55																		42.25801	-85.02290		Senn, Derek
5	Shoreline			☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	S	Low Vegetated Bank			Graan, Tom Flickinger, Brian
		4/12/2011	12:12																		42.25796	-85.02434		Senn, Derek

2011 Reassessment

Bank:	LDB	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker:	3.75																				
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
6	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	C	Low Vegetated Bank			Graan, Tom
																					Flickinger, Brian
4/12/2011	12:15																	42.25796	-85.02431		Senn, Derek

2011 Reassessment

Bank: I		Oil Thickness					Oil Character														
Mile Marker: 3.75																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	P	Wetland-emergent/herbaceous		possible sheen on upstream left bank	Kane, Sean / Zimont, Ben
4/13/2011	10:58																	42.25881	-85.01989		Neumeier, Laura
2	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub			Kane, Sean / Zimont, Ben
4/13/2011	11:11																	42.25860	-85.02080		Neumeier, Laura
3	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub			Kane, Sean / Zimont, Ben
4/13/2011	11:13																	42.25850	-85.02104		Neumeier, Laura
4	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	S	Wetland-emergent/herbaceous		tar patties and coating and staining on vegetation staining some shrubs	Kane, Sean / Zimont, Ben
4/13/2011	11:26																	42.25828	-85.02405		Neumeier, Laura

2011 Reassessment

Bank: RDB

Mile Marker: 3.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character											Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
1	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☐	☐	P	Low Vegetated Bank			Kane, Sean
																					Zimont, Ben
4/13/2011	09:05																	42.25940	-85.01987		Neumeier, Laura
2	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Kane, Sean
																					Zimont, Ben
4/13/2011	09:39																	42.25867	-85.02425		Neumeier, Laura
3	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Kane, Sean
																					Zimont, Ben
4/13/2011	10:07																	42.25864	-85.02345		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Kane, Sean
																					Zimont, Ben
4/13/2011	10:52																	42.25904	-85.02106		Neumeier, Laura
5	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous		zone 3	Kane, Sean
																					Zimont, Ben
4/13/2011	09:57																	42.25863	-85.02369		Neumeier, Laura

Photo Logs

Field Photographs MP 3.50 – MP 3.75

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 3.50 – MP 3.75

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 3.50 – MP 3.75

LDB Zone ID 5, Photo 001

LDB Zone ID 6, Photo 001

Field Photographs MP 3.50 – MP 3.75

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 3.50 – MP 3.75

RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 3.50 – MP 3.75

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 3.50 – MP 3.75

RDB Zone ID 3, Photo 003

RDB Zone ID 4, Photo 001

Field Photographs MP 3.50 – MP 3.75

RDB Zone ID 5, Photo 001

I Zone ID 1, Photo 001

Field Photographs MP 3.50 – MP 3.75

I Zone ID 1, Photo 002

I Zone ID 2, Photo 001

Field Photographs MP 3.50 – MP 3.75

I Zone ID 3, Photo 001

I Zone ID 4, Photo 001

Field Photographs MP 3.50 – MP 3.75

I Zone ID 4, Photo 002

I Zone ID 4, Photo 003

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 3.50 to MP 3.75, (Bank) or Island: LB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan — START — 4/12/11 — Date

THOMAS P. GRAAN — Printed Name

MDEQ — 4/12/11 — Date

MATTHEW D WESSNER / Brian Flicky RD — Printed Name

Enbridge — 4/12/11 — Date

Derek Senn — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 3.5 to MP 3.75, Bank ~~or~~ and Island: *RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Sean Kane — START — 4-13-11 — Date

Sean Kane — Printed Name

Ben A. Zimont — MDEQ — 4/13/11 — Date

William Keiper — Printed Name

Laura Neumeier — Enbridge — 4/13/2011 — Date

Laura Neumeier — Printed Name

*3 islands → 1 island-polygon
1 island - 2 points
1 island - polygon

Right Bank → 3 poly-lines
2 polygons

MP 3.75 to MP 4.00

The LDB of segment 4.00 consists predominantly of low vegetated bank with an area of forested wetland swamp. The reassessment identified two points and three linear transects. In general, trace to sporadic occurrences of surface oil residue was present on the ground surface in all areas. Traces of stained and coated debris were also present along Linear Transect 5 LDB.

The RDB of segment 4.00 consists predominantly of scrub-shrub wetlands and an area of emergent/herbaceous wetlands. The reassessment identified one point, one polygon, and four linear transects. Traces of oil stained or coated on trunks and stems were present in all areas. Traces of patties or tar balls were observed in Polygon 2 RDB and Linear Transects 4 RDB, 5 RDB, and 6 RDB. The FLS data detected an oil signature near Polygon 2 RDB and Linear Transect 3 RDB.

The SORT program did not identify surface oiling on the island located within segment 4.0.

No PI observations were noted in the segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

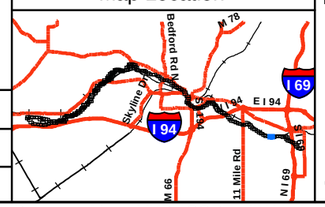
ENBRIDGE

Drawn: DE 5/17/2011

Approved:

Project #: 60162778

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP3.75-MP4.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character														
Mile Marker: 4																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-swamp (forested)		steep bank	Macus Muccianti / Chris Bauer
4/11/2011	10:13																	42.25796	-85.02496		Hans Wronka
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Low Vegetated Bank		debris	Macus Muccianti / Chris Bauer
4/11/2011	10:25																	42.25802	-85.02546		Hans Wronka
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Low Vegetated Bank		debris	Macus Muccianti / Chris Bauer
4/11/2011	10:30																	42.25802	-85.02579		Hans Wronka
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Low Vegetated Bank		debris and vegetation	Macus Muccianti / Chris Bauer
4/11/2011	10:41																	42.25805	-85.02644		Hans Wronka
5	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	T	Low Vegetated Bank			Macus Muccianti / Chris Bauer
4/11/2011	11:03																	42.25875	-85.02911		Hans Wronka

2011 Reassessment

Bank: RDB

Mile Marker: 4

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
1	Overbank	4/13/2011	12:23	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous	42.25870	-85.02524		Kane, Sean / Zimont, Ben / Neumeier, Laura
2	Shoreline and Overbank	4/13/2011	12:35	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub	42.25871	-85.02541	?? in spots	Kane, Sean / Zimont, Ben / Neumeier, Laura
3	Overbank	4/13/2011	12:51	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub	42.25874	-85.02644		Kane, Sean / Zimont, Ben / Neumeier, Laura
4	Shoreline	4/13/2011	13:00	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub	42.25881	-85.02698		Kane, Sean / Zimont, Ben / Neumeier, Laura
5	Shoreline and Overbank	4/13/2011	13:21	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub	42.25906	-85.02814		Kane, Sean / Zimont, Ben / Neumeier, Laura

2011 Reassessment

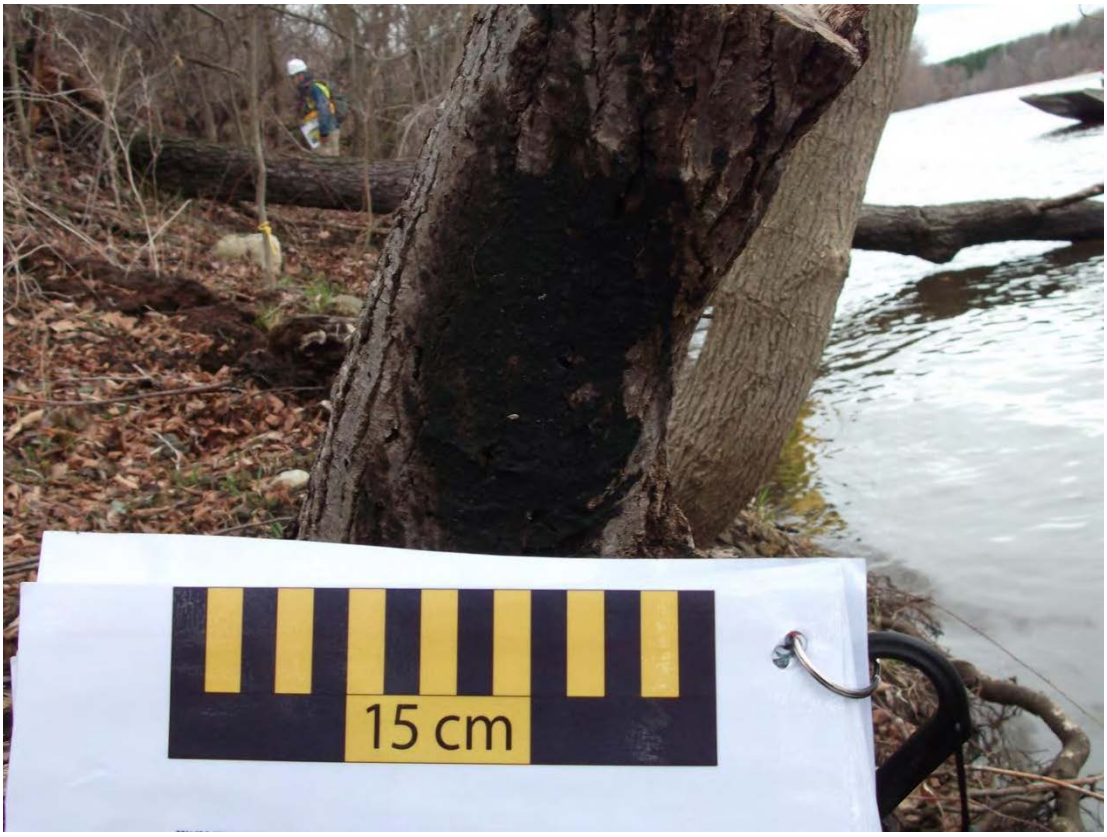
Bank: RDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 4																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
6	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Kane, Sean
																					Zimont, Ben
4/13/2011	13:31																	42.25935	-85.02866		Neumeier, Laura

Photo Logs

Field Photographs MP 3.75 – MP 4.00

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001



Field Photographs MP 3.75 – MP 4.00

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 3.75 – MP 4.00

LDB Zone ID 4, Photo 002

LDB Zone ID 5, Photo 001

Field Photographs MP 3.75 – MP 4.00

LDB Zone ID 5, Photo 002

RDB Zone ID 1, Photo 001

Field Photographs MP 3.75 – MP 4.00

RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 3.75 – MP 4.00

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 3.75 – MP 4.00

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

Field Photographs MP 3.75 – MP 4.00

RDB Zone ID 5, Photo 001

RDB Zone ID 6, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Left Bank

Segment ID: From MP 3.75 to MP 4.0, Bank or Island: bank, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 4/11/11 Date

Marcus Mucciarini Printed Name

Chris Bauer MDEQ — 4/11/11 Date

Chris Bauer Printed Name

James Gamble 4-11-11

James Gamble

[signature] Enbridge — 4-11-11 Date

Hans Wienken Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 3.75 to MP 4.0, (Bank) or Island: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4-13-11 Date

Scott Hane Printed Name

_____ 4-13-11

William Keiser MDEQ 4/13/11 Date

Ben A. Zimont Printed Name

_____ Enbridge 4/13/2011 Date

Laura Neumeier Printed Name

6 zone ID's for RB
- 5 polylines
- 1 polyson

MP 4.00 to MP 4.25

The LDB of segment 4.25 consists of a low vegetated bank along the entire length of the segment. The reassessment identified one linear transect. The shoreline was characterized as having traces of stained and coated debris with surface oil residue on the ground surface.

The RDB of segment 4.25 consists of scrub-shrub and emergent/herbaceous wetlands that transition to low vegetated bank approximately halfway down the segment. The reassessment identified one point and two linear transects. Traces of oil coated trunks and stems were present in Linear Transects 1 RDB and 3 RDB. A trace amount of patties was identified at Point 2 RDB.

One island is located within segment 4.25 that consists of an emergent/herbaceous wetland. The entire island has a patchy distribution of oil film on ponded water and surface oil residue on the ground surface. One PI observation noted as high priority area, was identified on the island; and a second observation noted west of the island was located within the Kalamazoo River.

The FLS did not identify any oil signatures within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

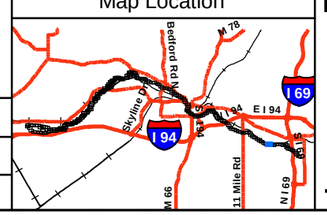
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP4.00-MP4.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 4.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	P	Wetland-emergent/herbaceous		E Island	Macus Muccianti
																					Chris Bauer
4/11/2011	11:56																	42.25985	-85.03055		Hans Wronka

2011 Reassessment

Bank:	LDB	Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker:	4.25																				
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	T	Low Vegetated Bank		visual from bank and boat	Macus Muccianti
																					Chris Bauer
4/11/2011	11:48																	42.25908	-85.02924		Hans Wronka

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 4.25																					MDEQ
Source: 2011 Reassessment																		**Latitude**	**Longitude**		Enbridge Team Lead
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					
1	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub		debris on shoreline	Kane, Sean
																					Zimont, Ben
4/13/2011	13:55																	42.25979	-85.02979		Neumeier, Laura
2	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Kane, Sean
																					Zimont, Ben
4/13/2011	14:09																	42.26028	-85.03100		Neumeier, Laura
3	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank		observation at nodes	Kane, Sean
																					Zimont, Ben
4/13/2011	14:40																	42.26027	-85.03135		Neumeier, Laura

Photo Logs

Field Photographs MP 4.00 – MP 4.25

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 4.00 – MP 4.25

LDB Zone ID 1, Photo 003

LDB Zone ID 1, Photo 004

Field Photographs MP 4.00 – MP 4.25

LDB Zone ID 1, Photo 005

RDB Zone ID 1, Photo 001

Field Photographs MP 4.00 – MP 4.25

RDB Zone ID 1, Photo 002

RDB Zone ID 2, Photo 001

Field Photographs MP 4.00 – MP 4.25

RDB Zone ID 3, Photo 001

I Zone ID 1, Photo 001 Team 3

Field Photographs MP 4.00 – MP 4.25

I Zone ID 1, Photo 002 Team 3

I Zone ID 1, Photo 001 Team 4

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Left Bank

Segment ID: From MP 4.0 to MP 4.25, Bank or Island: Both, Segment Length: 0.25 mile

Island E

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/11/11 Date

MARIUS MUCCIANTI Printed Name

_____ MDEQ 4/11/11 Date

Chris Bauer Printed Name

James Gamble 4-11-11

James Gamble

_____ Enbridge 4-11-11 Date

Hans Wranka Printed Name

Note: Island E was largely submerged and we were not able to traverse the island by foot. There was discussion regarding how to describe the island as the vegetation that was visible appeared ~~to cover~~ "broken to continuously covered" in Matt Gamble's (MDEQ's) opinion.

Also a portion of the shoreline along this segment included tract KS-C-112 which is off limits to land access. The Team consensus was that evaluation along the shore by boat was sufficient.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 4.0 to MP 4.25, Unique ID LDB E, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan _____ START 5/6/11 Date

THOMAS P. GRAAN _____ Printed Name

Kat Fairchild _____ MDEQ 5-6-11 Date

Kathleen Fairchild _____ Printed Name

Laura Neumeier _____ Enbridge 5/6/11 Date

Laura Neumeier _____ Printed Name

1 polyline captured by YUMA

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 4.0 to MP 4.25, Bank ~~or~~ and Island: *RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-13-11 Date
Sean Kane	Printed Name	
[signature]		4-13-11
William Keiper	MDEQ	4/13/11 Date
BG Smith Ben A. Zimont	Printed Name	
[signature]	Enbridge	4/13/2011 Date
Laura Neumeier	Printed Name	

*1 Island - 1 polygon (reassess @ lower river levels)

RB - 3 zones recorded

MP 4.25 to MP 4.50

The LDB of segment 4.50 consists of a low vegetated bank that transitions downstream to a scrub-shrub wetland habitat. The reassessment identified four polygons, one point, and two linear transects. A trace to patchy distribution of stained and coated debris was observed along the shoreline and overbank areas as well as patties and surface oil residue on the ground surface. Traces of oil staining and coatings were identified on trunks and stems and sheens were identified on ponded water. The FLS observed two oil signatures near Polygon 3 LDB and a suspected oil signature at an area marked as “no oil” (Polygon 5 LDB). One PI observation noted as inconclusive, was identified along Linear transect 1 LDB.

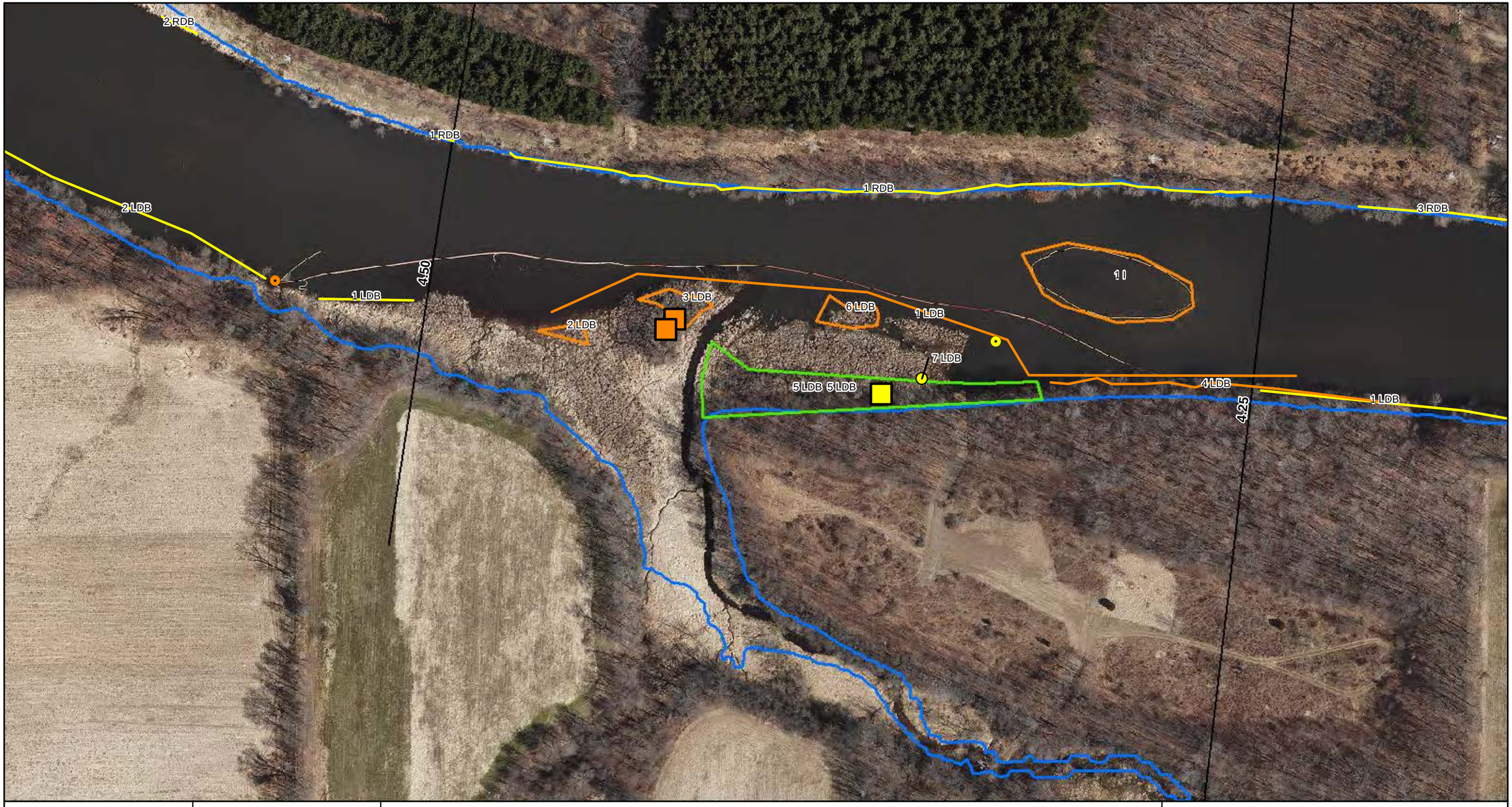
The RDB of segment 4.50 consists of a low vegetated bank. The reassessment identified traces of oil within one linear transect (1 RDB) that extends along almost the entire segment. Oil thicknesses ranged from staining to coating on debris, trunks and stems. In addition, patties were observed on the ground surface and tar was identified on rocks along the shoreline.

One island is located within segment 4.50 that consists of an emergent/herbaceous wetland habitat. The entire island has traces of oil film on ponded water and surface oil residue on the ground surface.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

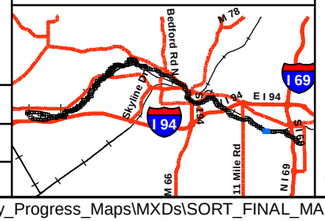
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP4.25-MP4.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 4.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☑	☑	☑	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	P	Low Vegetated Bank		observation from boat	Muccianti, Marcus
																					Bauer, Chris
4/11/2011	13:28																	42.25997	-85.03934		Wronka, Hans
2	Shoreline and Overbank	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	T	Wetland-emergent/herbaceous		water is significantly higher than bank location on map. polygon extends into the river and to 4.50 boundary	Muccianti, Marcus
																					Bauer, Chris
4/11/2011	14:06																	42.25982	-85.03810		Wronka, Hans
3	Shoreline and Overbank	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	S	Wetland-scrub/shrub			Graan, Tom
																					Fairchild, Katie
5/6/2011	12:14																	42.25981	-85.03704		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)			Graan, Tom
																					Fairchild, Katie
5/6/2011	12:58																	42.25955	-85.03541		Neumeier, Laura
5	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐		Wetland-scrub/shrub			Graan, Tom
																					Fairchild, Katie
5/6/2011	13:14																	42.25977	-85.03694		Neumeier, Laura

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 4.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
6	Overbank	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-emergent/herbaceous		TAR COATED/STAINED STEMS; SHEEN ON POOLED WATER	Hadwin, Eric
																					Wesener, Matt
5/12/2011	09:49																	42.25984	-85.03612		Kytta, Ken
7	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Wetland-emergent/herbaceous		TAR COATED/STAINED STEMS AND BRANCHES; SHOULD BE LABELLED 4.5 LDB 2	Hadwin, Eric
																					Wesener, Matt
5/12/2011	10:19																	42.25961	-85.03571		Kytta, Ken

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 4.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☑	☐	☐	☐	☑	☑	T	Low Vegetated Bank		tar on rocks observation at nodes	**Enbridge Team Lead**
																					Kane, Sean
																					Zimont, Ben
4/13/2011	16:10																	42.26055	-85.03829		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character													
Mile Marker: 4.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		high water level	Macus Muccianti
																					Chris Bauer
4/11/2011	13:15																	42.26029	-85.03488		Hans Wronka

Photo Logs

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 1, Photo 003

LDB Zone ID 1, Photo 004

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 1, Photo 005

LDB Zone ID 1, Photo 006

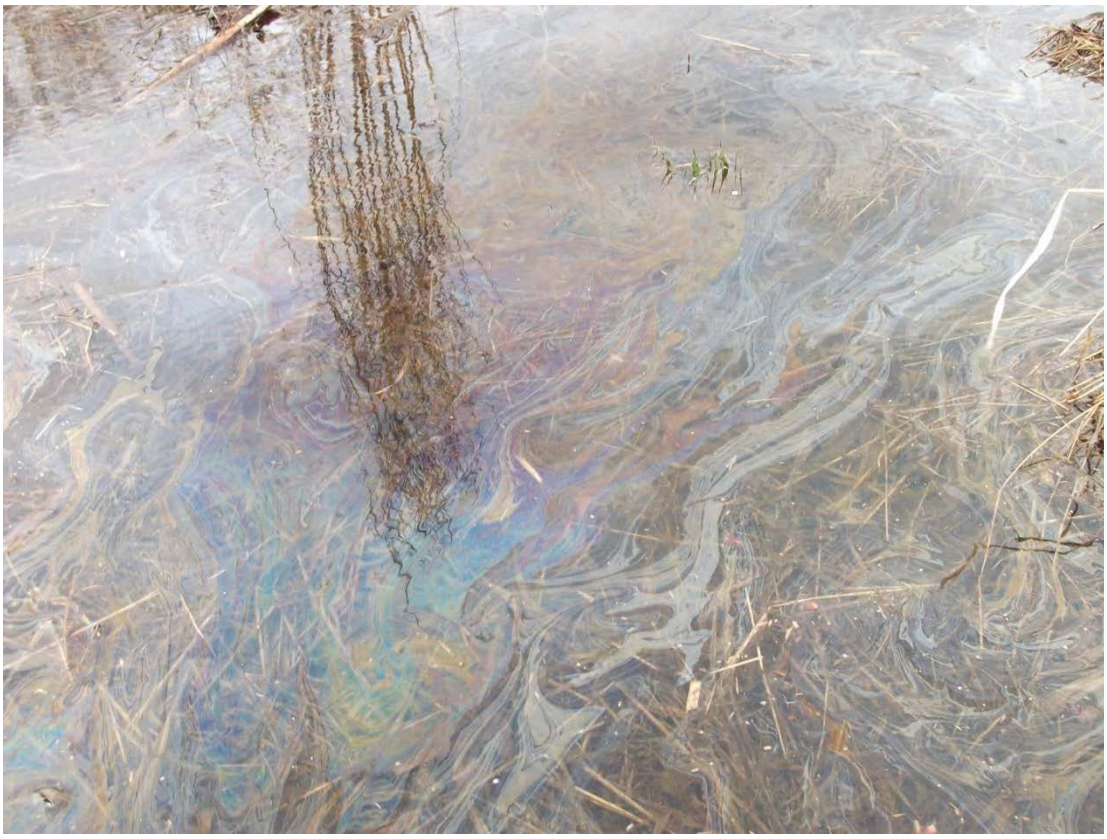
Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 2, Photo 003



LDB Zone ID 3, Photo 001

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 3, Photo 002

LDB Zone ID 3, Photo 003

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 3, Photo 004

LDB Zone ID 3, Photo 005

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 3, Photo 006

LDB Zone ID 4, Photo 001

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 4, Photo 002

LDB Zone ID 4, Photo 003

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 5, Photo 001

LDB Zone ID 6, Photo 001

Field Photographs MP 4.25 – MP 4.50

LDB Zone ID 6, Photo 002

LDB Zone ID 7, Photo 001

Field Photographs MP 4.25 – MP 4.50

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 4.25 – MP 4.50

I Zone ID 1, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 4.25 – MP 4.50

RDB Zone ID 1, Photo 002

RDB Zone ID 1, Photo 003

Field Photographs MP 4.25 – MP 4.50

RDB Zone ID 1, Photo 004

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Left Bank

Segment ID: From MP 4.25 to MP 4.5, Bank or Island: Both, Segment Length: 0.25 mile

Island F

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/11/11 Date

Marcus Marchand Printed Name

_____ MDEQ 4-11-11 Date

James Gamble Printed Name 4-11-11

Chris Bauer

Chris Bauer

_____ Enbridge 4-11-11 Date

Hans Wronka Printed Name

Note Island "F" was largely submerged and we were not able to traverse the island by foot. There was discussion regarding how to describe the island, as the vegetation that was visible appeared "broken to continuously covered" in Matt Gamble's (MDEQ's) opinion.

Also, a portion of this shoreline along this segment included tract KS-C-112 which is off limits to land access. the team consensus was that evaluation along the shore by boat was sufficient

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 4.25 to MP 4.50, Unique ID LDB E, Bank LDB* and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/6/11 — Date

THOMAS P. GRAAN — Printed Name

Kathleen Fairchild — MDEQ — 5-6-11 — Date

Kathleen Fairchild — Printed Name

Laura Neumeier — Enbridge — 5/6/11 — Date

Laura Neumeier — Printed Name

Polled within segment and two SORT zones captured by YUMA.

* 1 new polygon created for area that will dry out.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 4.25 to MP 4.50, Unique ID 4.50 LDB 46, Bank:_____ and/or Island _____.
Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START 5/12/11 Date

ERIK HAUWIN Printed Name

_____ MDEQ 5/12/11 Date

MATT WESENER Printed Name

_____ Enbridge 5/12/11 Date

KEN KYTTA Printed Name

Tetra Tech 5/12/2011

Craig A Wieman

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 4.25 to MP 4.5, Bank ~~or~~ and Island: RB*, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-13-11 Date
Sean Kane	Printed Name	
[signature]	MDEQ	4/13/11 Date
Ben A. Zimont		
William Leipo	Printed Name	4/13/11
[signature]	Enbridge	4/13/2011 Date
Laura Neumeier	Printed Name	

* 1 Island (primarily submerged) - 1 polygon (reassess at lower river level)

RB - 1 zone (1 poly-line)

MP 4.50 to MP 4.75

The LDB of segment 4.75 consists of an emergent/herbaceous wetland habitat that transitions downstream to a steep vegetated bank. The reassessment identified two linear transects that extend along most of the shoreline. Traces of coated debris and surface oil residue were observed on the ground surface in the wetlands at Linear Transect 1 LDB. Patchy occurrences of surface oil residue on the ground surface were located along the embankment at Linear Transect 2 LDB. One PI observation noted as a high priority area was identified near the eastern terminus of Linear Transect 2 LDB.

The RDB of segment 4.75 consists of scrub-shrub and emergent/herbaceous wetland habitats. The reassessment identified three linear transects. Traces of stained and coated debris, trunks and stems were observed at Linear Transect 1 LBD. Traces of coated oil on trunks and stems were observed at Linear Transects 2 LDB and 3 LDB.

The SORT program did not identify surface oiling on the island located within this segment.

The FLS did not detect any oil signatures in this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

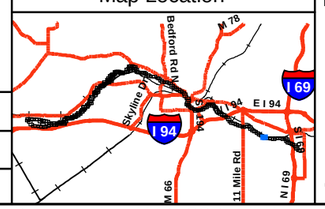
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP4.50-MP4.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 4.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START	MDEQ	Enbridge Team Lead
1	Shoreline	4/11/2011	14:21	☐	☐	✓	☐	☐	☐	☐	☐	☐	☐	✓	☐	☐	✓	☐	T	Wetland-emergent/herbaceous	42.25993	-85.03928	debris along cut edge. high water	Macus Muccianti	Chris Bauer	Hans Wronka
2	Shoreline	4/11/2011	14:42	☐	☐	✓	✓	☐	☐	☐	☐	☐	☐	✓	☐	☐	☐	☐	P	Other (comments)	0.00000	0.00000	Steep wooded embankment with boulders and gravel	Macus Muccianti	Chris Bauer	Hans Wronka

2011 Reassessment

Bank: RDB

Mile Marker: 4.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub		observation at nodes	Kane, Sean
																					Zimont, Ben
4/13/2011	16:34																	42.26106	-85.03982		Neumeier, Laura
2	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous		observation at nodes	Kane, Sean
																					Zimont, Ben
4/13/2011	16:42																	42.26144	-85.04079		Neumeier, Laura
3	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub		observation at nodes	Kane, Sean
																					Zimont, Ben
4/13/2011	17:03																	42.26211	-85.04241		Neumeier, Laura

Photo Logs

Field Photographs MP 4.50 – MP 4.75

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 4.50 – MP 4.75

LDB Zone ID 2, Photo 002

LDB Zone ID 2, Photo 003

Field Photographs MP 4.50 – MP 4.75

LDB Zone ID 2, Photo 004

RDB Zone ID 1, Photo 001

Field Photographs MP 4.50 – MP 4.75

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 4.5 Left Bank to MP 4.75, (Bank) or Island: Bank, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/11/11 Date

Marcus Maccini Printed Name

_____ MDEQ — 4-11-11 Date

James Gamble Printed Name

4-11-11

Chris Bauer

Chris Bauer

_____ Enbridge — _____ Date

Hans Wront Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 4.5 to MP 4.75, Bank ~~or Island~~: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-13-11 Date
Jason Hane	Printed Name	
[signature]	MDEQ	4/13/11 Date
William Kuiper	Printed Name	4/13/11
[signature]	Enbridge	4/13/2011 Date
Laura Neumeier	Printed Name	

3 zones captured by YUMA

MP 4.75 to MP 5.00

The LDB of segment 5.00 consists of a steep wooded embankment with boulders that transitions downstream to a scrub-shrub wetland. The reassessment identified one point and one linear transect. A patchy surface oil residue was observed on the ground surface along Linear Transect 1 LDB, and a trace oil surface residue was observed on the ground surface at Point 2 LDB.

The RDB of segment 5.00 consists of scrub-shrub wetland. The reassessment identified one polygon (1 RDB) that was characterized as having traces of staining on trunks and stems.

The FLS did not detect any oil signatures in this segment and no PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

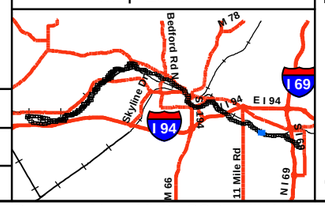
ENBRIDGE

Drawn: DE 5/17/2011

Approved:

Project #: 60162778

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP4.75-MP5.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 5																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Latitude**	**Longitude**		**Enbridge Team Lead**
Date	**Time**																				
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	P	Other (comments)		steep wooded embankment with boulders	Macus Muccianti
																					Chris Bauer
4/11/2011	14:58																	42.26209	-85.04421		Hans Wronka
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-scrub/shrub			Macus Muccianti
																					Chris Bauer
4/11/2011	15:17																	42.26330	-85.04621		Hans Wronka

2011 Reassessment

Bank:	RDB	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker:	5																				MDEQ
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub		photo facing se	Shauna Ross
																					Sara VanDelfzijl
4/11/2011	10:59																	42.26450	-85.04654		Mike VanLoan

Photo Logs

Field Photographs MP 4.75 – MP 5.00

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 4.75 – MP 5.00

LDB Zone ID 2, Photo 001

RDB Zone ID 1, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Left Bank

Segment ID: From MP 4.75 to MP 5.0, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START 4/11/11 Date

Marcus Muchland Printed Name

Chris Bauer MDEQ 4-11-11 Date

Chris Bauer Printed Name

James Gamble 4-11-11

James Gamble

[signature] Enbridge 4-11-11 Date

Hans Wronka Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 4.75 to MP 5.0, (Bank) or Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Marie Ross START 4/11/2011 Date

Shawna Marie Ross Printed Name

Sarah VanDeCreek MDEQ 4/11/11 Date

SARAH VANDECREEK Printed Name

Enbridge 4-11-2011 Date

Michael Van Laan Printed Name

MP 5.00 to MP 5.25

The LDB of segment 5.25 consists of an emergent/herbaceous wetland. The reassessment identified two points. Traces or sporadic occurrences of film on ponded water and surface oil residue on the ground surface were identified at the points.

The RDB of segment 5.0 consists of scrub/shrub wetland. The reassessment identified two points and one polygon. Traces of oil stained rocks and tree stumps were identified throughout Polygon 1 RDB. Patchy oil coatings and or debris were identified at Points 2 RDB and 3 RDB.

The FLS did not detect any oil signatures in this segment and no PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

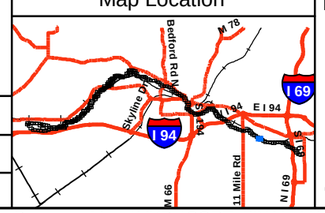
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP5.00-MP5.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character														
Mile Marker: 5.25																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-emergent/herbaceous			Macus Muccianti
																					Chris Bauer
4/11/2011	15:41																	42.26413	-85.04842		Hans Wronka
2	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Other (comments)		pocket inlet	Macus Muccianti
																					Chris Bauer
4/11/2011	15:47																	42.26462	-85.04973		Hans Wronka

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 5.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub		rock and tree stump staining	Shauna Ross / Sara VanDelfzijl
4/11/2011	11:17																	42.26465	-85.04715		Mike VanLoan
2	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	P	Wetland-scrub/shrub			Shauna Ross / Sara VanDelfzijl
4/11/2011	12:03																	42.26571	-85.04983		Mike VanLoan
3	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	P	Wetland-scrub/shrub			Shauna Ross / Sara VanDelfzijl
4/11/2011	12:17																	42.26578	-85.05007		Mike VanLoan

Photo Logs

Field Photographs MP 5.00 – MP 5.25

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 5.00 – MP 5.25

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 5.00 – MP 5.25

RDB Zone ID 1, Photo 003

RDB Zone ID 2, Photo 001

Field Photographs MP 5.00 – MP 5.25

RDB Zone ID 3, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 5.0 to MP 5.25, Bank or Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/11/2011 Date

Shawna Marie Ross Printed Name

_____ MDEQ — 4/11/11 Date

SARAH VANDERZIJL Printed Name

_____ Enbridge — 4-11-2011 Date

Michael Van Loan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 5.0 to MP 5.25, (Left Bank) or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/11/11 Date

Marcus McGraw Printed Name

_____ MDEQ — 4-11-11 Date

James Gamble Printed Name — 4-11-11

Chris Bauer

Chris Bauer

_____ Enbridge — 4-11-11 Date

Hans Wranken Printed Name

MP 5.25 to MP 5.50

The LDB of segment 5.50 consists of various habitats that include: rip rap, scrub/shrub wetland, low vegetated bank and recently regarded bank. The reassessment identified one point and seven polygons. In general, traces to broken occurrences of oil stained or coated rip rap were observed at Point 1 LDB and Polygons 2 LDB, 6 LDB and 7 LDB. Patties also covered a portion of Polygon 2 LDB. Patchy asphalt pavement was observed at Polygons 3 LDB and 5 LDB, and in general, traces of oil stained trunks and stems were observed within the scrub/shrub wetlands and low vegetated bank.

The RDB of segment 5.50 consists of scrub/shrub wetland. The reassessment identified one point where a sporadic distribution of stained trunks and stems was identified.

The FLS did not detect any oil signatures in this segment and no PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

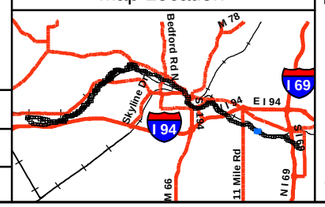
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP5.25-MP5.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 5.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	B	Rip Rap			Shauna Ross
																					Sara VanDelfzijl
4/11/2011	16:06																	42.26687	-85.05512		Mike VanLoan
2	Shoreline	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	S	Rip Rap		one heavier cover in middle of area	Shauna Ross
																					Sara VanDelfzijl
4/11/2011	16:16																	42.26672	-85.05479		Mike VanLoan
3	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	P	Wetland-scrub/shrub			Shauna Ross
																					Sara VanDelfzijl
4/11/2011	16:43																	42.26644	-85.05419		Mike VanLoan
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Shauna Ross
																					Sara VanDelfzijl
4/11/2011	16:53																	42.26639	-85.05411		Mike VanLoan
5	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	P	Other (comments)		recently regraded bank	Shauna Ross
																					Sara VanDelfzijl
4/11/2011	17:07																	42.26614	-85.05349		Mike VanLoan

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 5.5																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
6	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Rip Rap			Shauna Ross
																					Sara VanDelfzijl
4/11/2011	17:16																	42.26597	-85.05327		Mike VanLoan
7	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	S	Rip Rap			Shauna Ross
																					Sara VanDelfzijl
4/11/2011	17:30																	42.26566	-85.05225		Mike VanLoan
8	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			shauna ross
																					Sara VanDelfzijl
4/11/2011	17:42																	42.26532	-85.05142		Mike VanLoan

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 5.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Wetland-scrub/shrub			**Enbridge Team Lead**
																					Ross, Shauna
																					VanDelfzijl, Sarah
4/13/2011	16:32																	42.26689	-85.05287		VanLoan, Mike

Photo Logs

Field Photographs MP 5.25 – MP 5.50

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 5.25 – MP 5.50

LDB Zone ID 2, Photo 002

LDB Zone ID 3, Photo 001

Field Photographs MP 5.25 – MP 5.50

LDB Zone ID 4, Photo 001

LDB Zone ID 5, Photo 001

Field Photographs MP 5.25 – MP 5.50

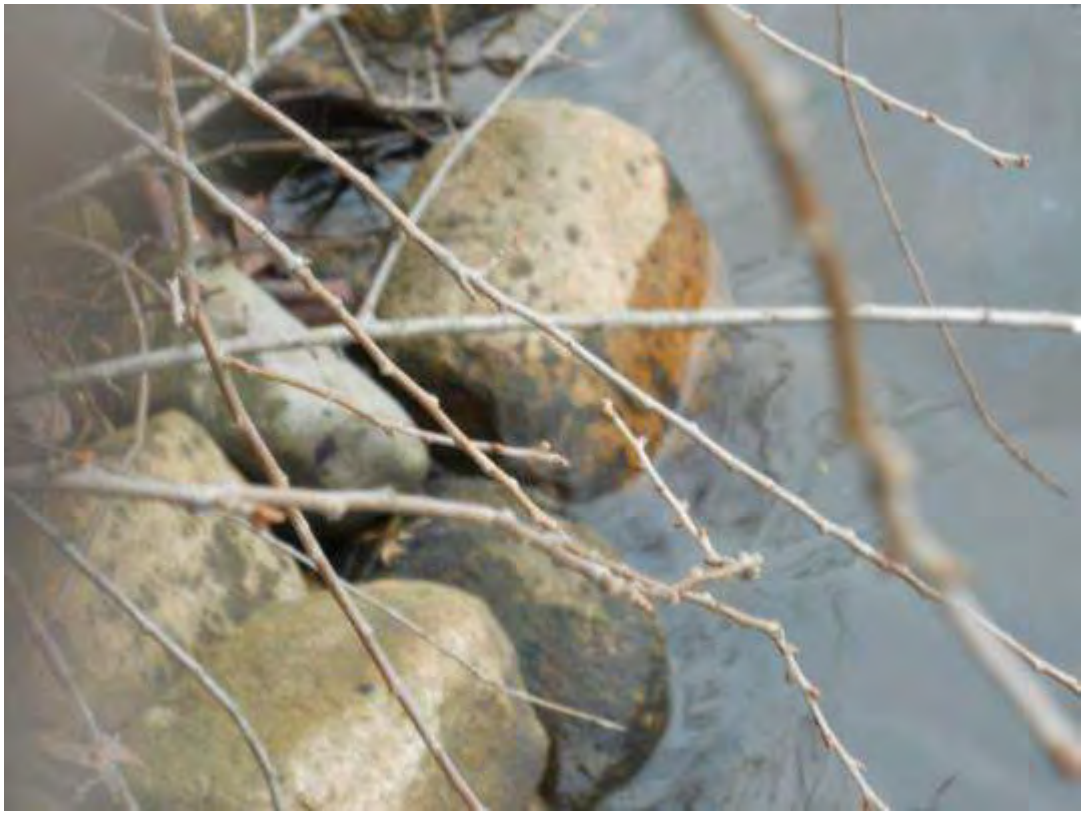
LDB Zone ID 5, Photo 002

LDB Zone ID 6, Photo 001

Field Photographs MP 5.25 – MP 5.50

LDB Zone ID 6, Photo 002

LDB Zone ID 7, Photo 001



Field Photographs MP 5.25 – MP 5.50

LDB Zone ID 8, Photo 001

RDB Zone ID 1, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 5.25 to MP 5.5, Bank or Island: LDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/11/2011 Date

Shawna Marie Ross Printed Name

_____ MDEQ — 4/11/11 Date

Sarah VanDeHey Printed Name

_____ Enbridge — 4-11-2011 Date

Michael Van Loan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 5.25 to MP 5.5, Bank or Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Marie Ross — START — 4/14/2011 — Date

Shawna Marie Ross — Printed Name

Sarah VanDeLeuzl — MDEQ — 4/11/11 — Date

SARAH VANDELEUZL — Printed Name

Michael Van Loan — Enbridge — 4-11-2011 — Date

Michael Van Loan — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 5.25 to MP 5.5, (RDB) Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna M Ross _____ START _____ 4/13/2011 Date

Shawna Marie Ross Printed Name

Chris Vedkamp for Sarah VanDeWiele _____ MDEQ _____ 4/13/11 Date

Chris Vedkamp for Sarah VanDeWiele Printed Name

_____ Enbridge _____ Date

_____ Printed Name

MP 5.50 to MP 5.75

The LDB of segment 5.75 consists of scrub-shrub wetland. The reassessment identified one point and two polygons. In general, traces of oil stained trunks and branches were identified at Polygons 1 LDB and 2 LDB. Stained woody debris that was previously cut and stockpiled was identified at Point 3 LDB.

The RDB of segment 5.75 consists of scrub-shrub wetland. The reassessment identified one point where a trace distribution of tar balls was identified. The FLS detected an oil signature approximately 300 ft upstream and east of Point 1 RDB. The SORT program did not identify surface oiling at this location.

No PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

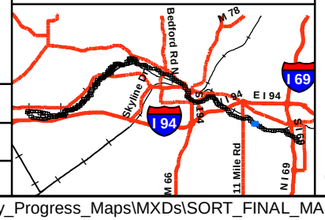
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP5.50-MP5.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 5.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Shauna Ross
																					Sara VanDelfzijl
4/11/2011	15:32																	42.26759	-85.05687		Mike VanLoan
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Shauna Ross
																					Sara VanDelfzijl
4/11/2011	16:00																	42.26711	-85.05594		Mike VanLoan
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-scrub/shrub		Woody debris previously cut and left on the shoreline	Shauna Ross
																					Sara VanDelfzijl
4/11/2011	15:18																	42.26791	-85.05765		Mike VanLoan

2011 Reassessment

Bank:	RDB	Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker:	5.75																				
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub			Shauna Ross
																					Sara VanDelfzijl
4/11/2011	13:29																	42.26871	-85.05687		Mike VanLoan

Photo Logs

Field Photographs MP 5.50 – MP 5.75

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 5.50 – MP 5.75

LDB Zone ID 2, Photo 002

LDB Zone ID 3, Photo 001

Field Photographs MP 5.50 – MP 5.75

RDB Zone ID 1, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 5.5 to MP 5.75, Bank or Island: LDR, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Marie Ross — START — 4/11/2011 — Date

Shawna Marie Ross — Printed Name

Sarah VanBeek — MDEQ — 4/11/11 — Date

Sarah VanBeek — Printed Name

Michael Van Loan — Enbridge — 4-11-2011 — Date

Michael Van Loan — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 5.5 to MP 5.75, (Bank) or Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Marie Ross — START — 4/11/2011 — Date

Shawna Marie Ross — Printed Name

Sarah VanDeWeijl — MDEQ — 4/11/11 — Date

SARAH VANDEWEIJL — Printed Name

Michael Van Loan — Enbridge — 4-11-2011 — Date

Michael Van Loan — Printed Name

MP 5.75 to MP 6.00

The LDB of segment 6.00 consists of scrub-shrub wetland and rip rap on either side of roadway that bisects the river and transitions to forested wetland swamp towards the end of the segment. The reassessment identified one point, four polygons, and one linear transect. In general, trace to patchy staining was present on trunks and stems in all the areas. Sporadic surface oil residue was identified at Polygon 3 LDB and 5 LDB and Linear Transect 6 LDB. A patchy distribution of patties was also observed along Linear Transect 6 LDB.

The RDB of segment 6.00 consists of various habitats including emergent/herbaceous wetland, low vegetated bank, and maintained lawn. The reassessment identified four points, three polygons, and five linear transects. Because of proximity to the dam, observations of Linear Transects 10 RDB, 11 RDB and 12 RDB had to be made with binoculars from a boat. No oil was observed at Linear Transects 11 RDB and 12 RDB. Traces of coatings and stains were observed on trunks and stems at Linear Transect 10 RDB. In general, trunks and stems were stained or coated with traces of oil along the shoreline and trace to sporadic occurrences of patties were documented in the overbank.

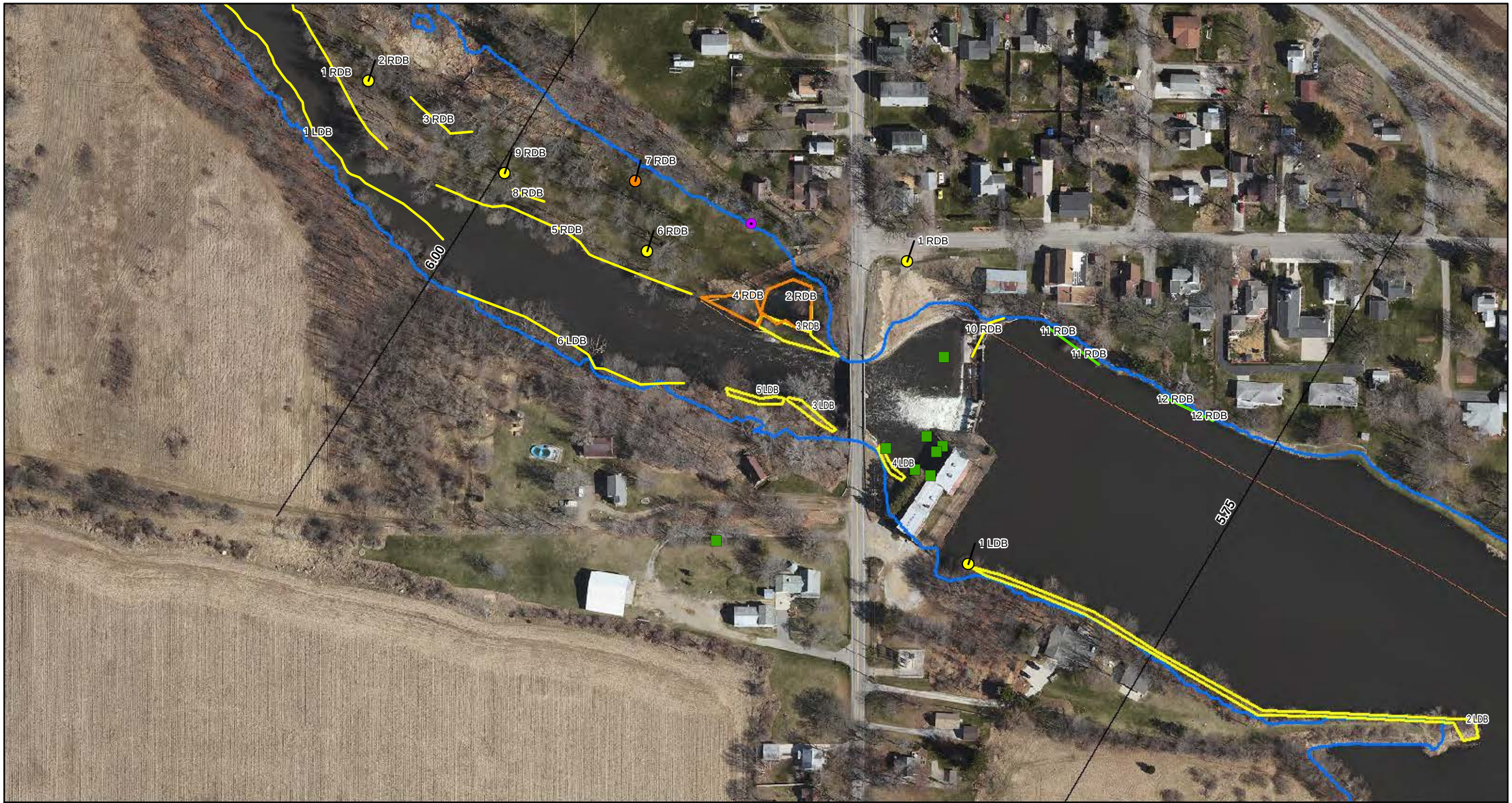
One PI observation, noted as an unconfirmed area of interest was located within the RDB.

The FLS did not detect any oil signatures in this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

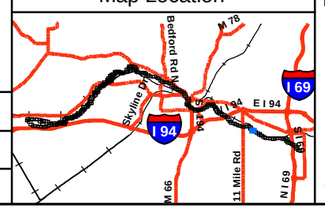
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP5.75-MP6.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character																
Mile Marker: 6																							
Source: 2011 Reassessment																							
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**		
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**		
																					Enbridge Team Lead		
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Ross, Shauna		
																					VanDelfzijl, Sarah		
4/11/2011	14:39																	42.26934	-85.06082		VanLoan, Mike		
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub		AREA IS MOSTLY LIGHT STAINING ON ROCKS	Ross, Shauna		
																					VanDelfzijl, Sarah		
4/11/2011	15:00																	42.26930	-85.06071		VanLoan, Mike		
3	Shoreline	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Rip Rap			Ross, Shauna		
																					VanDelfzijl, Sarah		
4/12/2011	18:34																	42.27006	-85.06182		VanLoan, Mike		
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Rip Rap			Ross, Shauna		
																					VanDelfzijl, Sarah		
4/12/2011	18:11																	42.26979	-85.06133		VanLoan, Mike		
5	Shoreline	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-scrub/shrub			Ross, Shauna		
																					VanDelfzijl, Sarah		
4/12/2011	18:27																	42.27005	-85.06205		VanLoan, Mike		

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 6																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
6	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	P	Wetland-swamp (forested)		11 to 15%	Graan, Tom Fairchild, Katie
5/4/2011	17:34																	42.27054	-85.06391		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 6																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		fence in area no access 90% looks restored	Kane, Sean Zimont, Ben
4/14/2011	08:47																	42.27066	-85.06120		Neumeier, Laura
10	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank		observation from boat at nearest safety point used binoculars	Eric Hadwin Clampitt, Chris
5/7/2011	18:10																	42.27004	-85.05995		Neumeier, Laura
11	Shoreline	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐		Low Vegetated Bank		no oil based on boat assessment with binoculars	Eric Hadwin Clampitt, Chris
5/7/2011	18:17																	42.27004	-85.05995		Neumeier, Laura
12	Shoreline	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐		Lawn (maintained land)		observation from boat	Eric Hadwin Clampitt, Chris
5/7/2011	18:24																	42.26996	-85.05940		Neumeier, Laura
2	Overbank	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Other (comments)		pond or low area with water cover on rocks sheen on water questionable product?	Kane, Sean Zimont, Ben
4/14/2011	09:01																	42.27038	-85.06189		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 6																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
3	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	S	Lawn (maintained land)		coating on rocks staining on vegetation tar patties	Kane, Sean Zimont, Ben
4/14/2011	09:15																	42.27029	-85.06187		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☑	☑	☑	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	T	Wetland-emergent/herbaceous			Kane, Sean Zimont, Ben
4/14/2011	09:32																	42.27051	-85.06244		Neumeier, Laura
5	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Lawn (maintained land)			Kane, Sean Zimont, Ben
4/14/2011	09:51																	42.27097	-85.06390		Neumeier, Laura
6	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Lawn (maintained land)			Kane, Sean Zimont, Ben
4/14/2011	10:02																	42.27071	-85.06272		Neumeier, Laura
7	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Lawn (maintained land)			Kane, Sean Zimont, Ben
4/14/2011	10:04																	42.27101	-85.06278		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 6																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
8	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Lawn (maintained land)			Kane, Sean
																					Zimont, Ben
4/14/2011	10:09																	42.27101	-85.06354		Neumeier, Laura
9	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Lawn (maintained land)			Kane, Sean
																					Zimont, Ben
4/14/2011	10:11																	42.27104	-85.06357		Neumeier, Laura

Photo Logs

Field Photographs MP 5.75 – MP 6.00

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 5.75 – MP 6.00

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 5.75 – MP 6.00

LDB Zone ID 5, Photo 001

LDB Zone ID 6, Photo 001

Field Photographs MP 5.75 – MP 6.00

LDB Zone ID 6, Photo 002

LDB Zone ID 6, Photo 003

Field Photographs MP 5.75 – MP 6.00

LDB Zone ID 6, Photo 004

LDB Zone ID 6, Photo 005

Field Photographs MP 5.75 – MP 6.00

LDB Zone ID 6, Photo 006

RDB Zone ID 1, Photo 001

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 2, Photo 003

RDB Zone ID 3, Photo 001

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 3, Photo 002

RDB Zone ID 3, Photo 003

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 3, Photo 004

RDB Zone ID 4, Photo 001

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 4, Photo 002

RDB Zone ID 4, Photo 003

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 4, Photo 004

RDB Zone ID 4, Photo 005

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 5, Photo 001

RDB Zone ID 5, Photo 002

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 6, Photo 001

RDB Zone ID 7, Photo 001

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 8, Photo 001

RDB Zone ID 9, Photo 001

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 10, Photo 001

RDB Zone ID 11, Photo 001

Field Photographs MP 5.75 – MP 6.00

RDB Zone ID 12, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 5.75 to MP 6* (Above Coreaco Dam), Bank or Island: LPB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4/11/2011 Date
Shawna Marie Ross	Printed Name	
[signature]	MDEQ	4/11/11 Date
Sarah VanDeHey	Printed Name	
[signature]	Enbridge	4-11-2011 Date
Michael Van Loan	Printed Name	

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 5.75 to MP 6.0, (Bank) or Island: LDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Li Ross — START — 4/12/2011 — Date

Shawna Marie Ross — Printed Name

Sarah VanDelEzijl — MDEQ — 4/12/11 — Date

SARAH VANDELEZIJL — Printed Name

[signature] — Enbridge — 4-12-2011 — Date

Michael Van Loan — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 5.75 to MP 6.0, Unique ID LDB Access, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/4/11 — Date

THOMAS P. GRAAN — Printed Name

Kat Fairchild — MDEQ — 5-4-11 — Date

Kathleen Fairchild — Printed Name

Laura Neumeier — Enbridge — 5/4/11 — Date

Laura Neumeier — Printed Name

1 polyline captured by YUMA

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP Cevesco Dam to MP 6.0, (Bank) or Island: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-14-11 Date
Sean Kane	Printed Name	
[signature]	MDEQ	4/14/11 Date
William Keiper	Printed Name	
[signature]	Enbridge	4/14/2011 Date
Laura Neumeier	Printed Name	

9 zones captured by YUMA

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 5.75 to MP 6.0, Unique ID 5.8 LDB South, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/16/11 Date

THOMAS P. GRAAN — Printed Name

Kathleen Fairchild — MDEQ — 5-16-11 Date

Kathleen Fairchild — Printed Name

Don DeWitt — Enbridge — 5/16/11 Date

Don DeWitt — Printed Name

Strikepoints collected by YUMA

MP 6.00 to MP 6.25

The LDB of segment 6.25 consists of forested wetland swamp. The reassessment identified one long linear transect along the shoreline. The shoreline was assessed from the boat because of no access to the property. In general, a sporadic distribution of coated and stained trunks and stems was observed as well as patties on the ground surface.

The RDB of segment 6.25 consists of maintained land (lawn) that transitions downstream to forested swamp and then to scrub-shrub wetlands. The reassessment identified two points, one polygon and five linear transects. In general, a trace distribution of coated and stained debris, trunks and stems were observed in the maintained land areas. Patties were also present near the shoreline of the lawns. Traces of coated and stained trunks and stems were also observed in the wetland habitats. A sporadic distribution of patties was identified at Polygon 7 RDB and a possible sheen was identified at Linear Transect 8 RDB. The FLS detected two oil signatures on the overbank east of Linear Transect 4 RDB. One oil signature is in close proximity to Linear transect 4RDB and may be comparable. However, the SORT program did not identify surface oiling in this area of the segment

No PI observations were noted in this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn: DE 5/17/2011

Approved:

Project #: 60162778

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP6.00-MP6.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 6.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	S	Wetland-swamp (forested)		assessed from boat due to no access	Graan, Tom
																					Fairchild, Katie
5/4/2011																		42.27200	-85.06600		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 6.25																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	T	Lawn (maintained land)			Kane, Sean
																					Zimont, Ben
4/14/2011	10:38																	42.27207	-85.06501		Neumeier, Laura
2	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Lawn (maintained land)			Kane, Sean
																					Zimont, Ben
4/14/2011	10:54																	42.27144	-85.06438		Neumeier, Laura
3	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Lawn (maintained land)			Kane, Sean
																					Zimont, Ben
4/14/2011	11:08																	42.27140	-85.06428		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/14/2011	11:30																	42.27288	-85.06559		Neumeier, Laura
5	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub		0.1 by 0.1 mostly 1 observation at 1 meter x 1 meter observation at nodes	Kane, Sean
																					Zimont, Ben
4/14/2011	12:43																	42.27294	-85.06562		Neumeier, Laura

2011 Reassessment

Bank: RDB

Mile Marker: 6.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
6	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-scrub/shrub			Kane, Sean
																					Zimont, Ben
4/14/2011	13:01																	42.27323	-85.06564		Neumeier, Laura
7	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-scrub/shrub		looks like haul road	Kane, Sean
																					Zimont, Ben
4/14/2011	13:06																	42.27327	-85.06580		Neumeier, Laura
8	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub		possible sheen?	Kane, Sean
																					Zimont, Ben
4/14/2011	13:25																	42.27381	-85.06554		Neumeier, Laura

Photo Logs

Field Photographs MP 6.00 – MP 6.25

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 6.00 – MP 6.25

RDB Zone ID 1, Photo 003

RDB Zone ID 2, Photo 001

Field Photographs MP 6.00 – MP 6.25

RDB Zone ID 3, Photo 001

RDB Zone ID 4, Photo 001

Field Photographs MP 6.00 – MP 6.25

RDB Zone ID 4, Photo 002

RDB Zone ID 4, Photo 003

Field Photographs MP 6.00 – MP 6.25

RDB Zone ID 5, Photo 001

RDB Zone ID 5, Photo 002

Field Photographs MP 6.00 – MP 6.25

RDB Zone ID 6, Photo 001

RDB Zone ID 7, Photo 001

Field Photographs MP 6.00 – MP 6.25

RDB Zone ID 8, Photo 001

LDB Zone ID 1, Photo 001

Field Photographs MP 6.00 – MP 6.25

LDB Zone ID 1, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 6.0 to MP 6.25, Bank or Island: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-14-11 Date
Sean Kane	Printed Name	
[signature]	MDEQ	4/14/11 Date
William Keiper	Printed Name	
[signature]	Enbridge	4/14/11 Date
Laura Neumeier	Printed Name	

8 zones designated on YUMA

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 6.0 to MP 6.25, Unique ID LDB. Access, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan START — 5/4/11 Date

THOMAS P. GRAAN Printed Name

Kathleen Fairchild MDEQ — 5-4-11 Date

Kathleen Fairchild Printed Name

Laura Neumeier Enbridge — 5/4/2011 Date

Laura Neumeier Printed Name

Zone captured by YUMA

MP 6.25 to MP 6.50

The LDB of segment 6.50 consists of forested wetland swamp that transition to a emergent/herbaceous wetland near the downstream end of the segment. The reassessment identified one point, two polygons, and four linear transects. The shoreline was assessed by boat. In general, traces to sporadic distributions of oil covered to stained debris, trunks and stems were observed along the shoreline. Traces of tar balls were also observed on the ground surface at Linear Transects 2 LDB and 4 LDB, and patties were observed at Polygon 5 LDB. A trace of oil film on ponded water was observed at Polygon 7 LDB while sporadic occurrences were observed at Point 3 LDB.

The RDB of segment 6.50 consists mainly of forested wetland swamp with low vegetated bank and scrub-shrub wetland habitats towards the downstream portion of the section. The reassessment identified one point, six polygons, and four linear transects. In general, trace distributions of tar patties were observed along the shoreline in the first half of the segment; and traces to sporadic distributions of oil covered to stained debris, trunks and stems were observed along the entire segment.

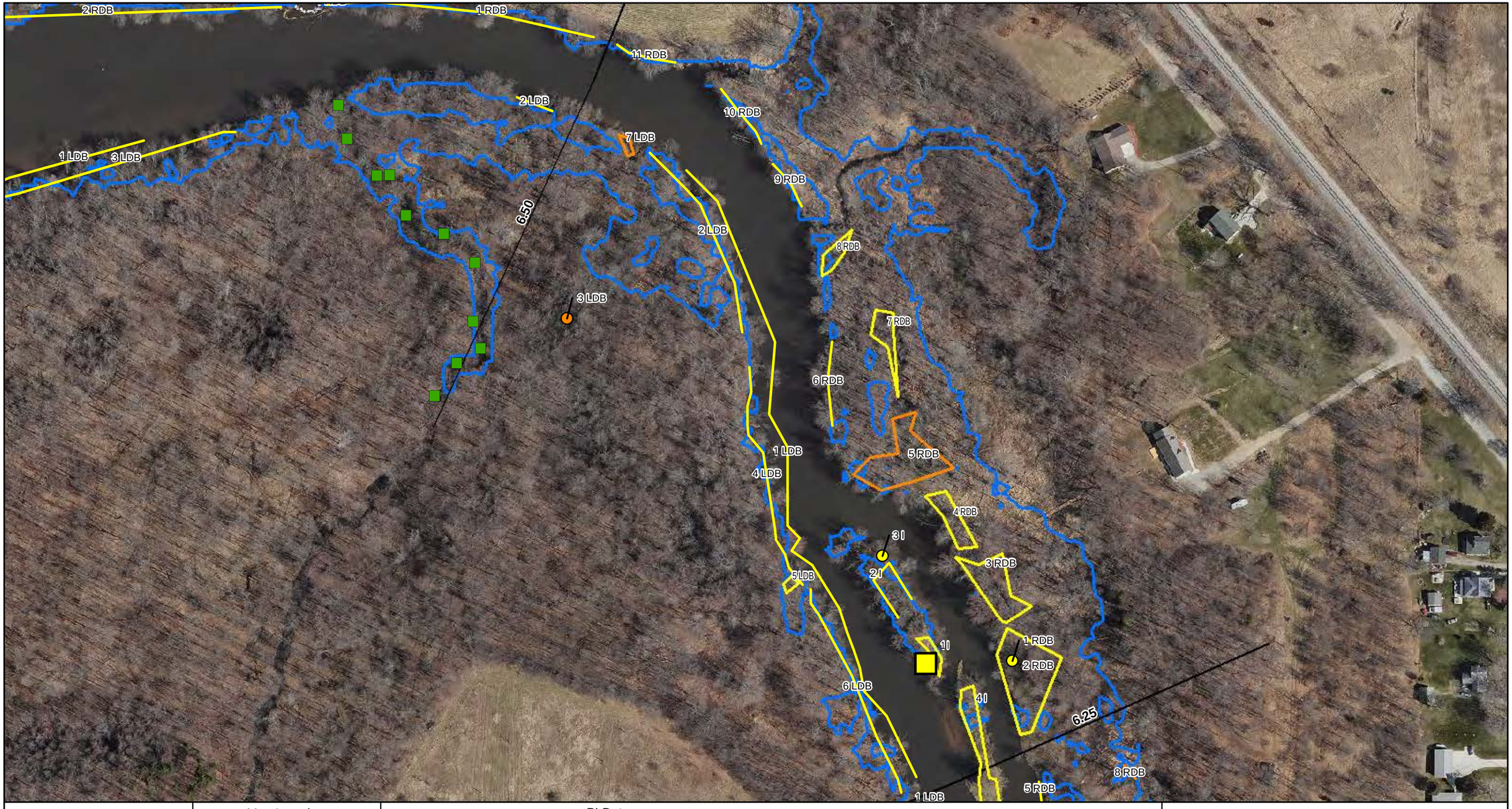
Two islands are located within segment 6.50 that consist of forested wetland swamps. A sporadic distribution of patties was observed on both islands. Oil thicknesses on trunks and stems ranged from cover to coating and the oil distribution ranged from trace to sporadic. Surface oil residue was also observed on the ground surface at Polygon 1 I. The FLS detected one suspected oil signature in close proximity to Polygon 1 I.

No PI observations were noted in this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

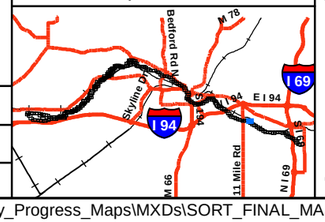
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP6.25-MP6.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character															
Mile Marker: 6.5																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		assessed shoreline from boat due to no access did not assess inland due to no access	Graan, Tom	Fairchild, Katie
5/4/2011	15:12																	42.27347	-85.06664			Neumeier, Laura
2	Shoreline	☐	☑	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		5 observation	Eric Hadwin	Clampitt, Chris
5/7/2011	11:15																	42.27572	-85.06779			Neumeier, Laura
3	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)		film? saw wet area outside In. line	Eric Hadwin	Clampitt, Chris
5/7/2011	11:36																	42.27592	-85.06875			Neumeier, Laura
4	Shoreline	☐	☑	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Eric Hadwin	Clampitt, Chris
5/7/2011	13:01																	42.27461	-85.06749			Neumeier, Laura
5	Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Eric Hadwin	Clampitt, Chris
5/7/2011	13:08																	42.27459	-85.06747			Neumeier, Laura

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character													
Mile Marker: 6.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
6	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Eric Hadwin / Clampitt, Chris
5/7/2011	13:23																	42.27360	-85.06682		Neumeier, Laura
7	Shoreline	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		drying channel	Eric Hadwin / Clampitt, Chris
5/7/2011	10:58																	42.27644	-85.06847		Neumeier, Laura

2011 Reassessment

Bank: RDB

Mile Marker: 6.5

Source: 2011 Reassessment

Oil Thickness: Pooled Oil | Cover | Coat | Stain | Film

Oil Character: Fresh Oil | Mousse | Tarballs | Patties | Tar | Surface Oil Residue | Asphalt Pavement | No Oil | Debris | Trunks and Stems

Oil Zone ID	Feature	Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
1	Shoreline and Overbank	4/14/2011	14:04	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)	42.27426	-85.06620	mostly tree stain tar patties on upstream side of polygon vegetation coating on shoreline	Kane, Sean Zimont, Ben Neumeier, Laura
10	Shoreline	4/14/2011	17:08	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank	42.27675	-85.06786		Kane, Sean Zimont, Ben Neumeier, Laura
11	Shoreline and Overbank	4/14/2011	17:36	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub	42.27687	-85.06821		Kane, Sean Zimont, Ben Neumeier, Laura
2	Shoreline and Overbank	4/14/2011	14:19	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)	42.27429	-85.06628	tar patties on upstream side mostly staining on trees some coating on shoreline	Kane, Sean Zimont, Ben Neumeier, Laura
3	Shoreline and Overbank	4/14/2011	14:37	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.27469	-85.06649	tar patties within 15 ft of shoreline	Kane, Sean Zimont, Ben Neumeier, Laura

2011 Reassessment

Bank: RDB

Mile Marker: 6.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character											Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
4	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/14/2011	14:54																	42.27506	-85.06662		Neumeier, Laura
5	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☑	☑	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)		only 1 tar patties, 1 tar ball, 1 oil residue, 1 film all in one area east area	Kane, Sean
																					Zimont, Ben
4/14/2011	15:16																	42.27519	-85.06715		Neumeier, Laura
6	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/14/2011	15:39																	42.27528	-85.06727		Neumeier, Laura
7	Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/14/2011	15:50																	42.27579	-85.06700		Neumeier, Laura
8	Shoreline and Overbank	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		tar patties on shoreline	Kane, Sean
																					Zimont, Ben
4/14/2011	16:14																	42.27610	-85.06727		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 6.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
9	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Kane, Sean
																					Zimont, Ben
4/14/2011	16:50																	42.27638	-85.06754		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 6.5																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)		mostly tar patties with some staining on trees	Kane, Sean
																					Zimont, Ben
4/14/2011	17:54																	42.27427	-85.06665		Neumeier, Laura
2	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		observation at nodes some questionable	Kane, Sean
																					Zimont, Ben
4/14/2011	18:08																	42.27449	-85.06687		Neumeier, Laura
3	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/14/2011	18:19																	42.27474	-85.06698		Neumeier, Laura
4	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/14/2011	18:34																	42.27370	-85.06628		Neumeier, Laura

Photo Logs

Field Photographs MP 6.25 – MP 6.50

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 6.25 – MP 6.50

I Zone ID 1, Photo 003

I Zone ID 2, Photo 001

Field Photographs MP 6.25 – MP 6.50

I Zone ID 2, Photo 002

I Zone ID 3, Photo 001

Field Photographs MP 6.25 – MP 6.50

I Zone ID 4, Photo 001

I Zone ID 4, Photo 002

Field Photographs MP 6.25 – MP 6.50

I Zone ID 4, Photo 003

I Zone ID 4, Photo 004

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 1, Photo 003

RDB Zone ID 1, Photo 004

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 3, Photo 003

RDB Zone ID 3, Photo 004

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 5, Photo 001

RDB Zone ID 5, Photo 002

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 5, Photo 003

RDB Zone ID 5, Photo 004

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 5, Photo 005

RDB Zone ID 5, Photo 006

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 6, Photo 001

RDB Zone ID 7, Photo 001

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 7, Photo 002

RDB Zone ID 8, Photo 001

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 8, Photo 002

RDB Zone ID 8, Photo 003

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 9, Photo 001

RDB Zone ID 10, Photo 001

Field Photographs MP 6.25 – MP 6.50

RDB Zone ID 11, Photo 001

LDB Zone ID 1, Photo 001

Field Photographs MP 6.25 – MP 6.50

LDB Zone ID 1, Photo 002

LDB Zone ID 1, Photo 003

Field Photographs MP 6.25 – MP 6.50

LDB Zone ID 1, Photo 004

LDB Zone ID 2, Photo 001

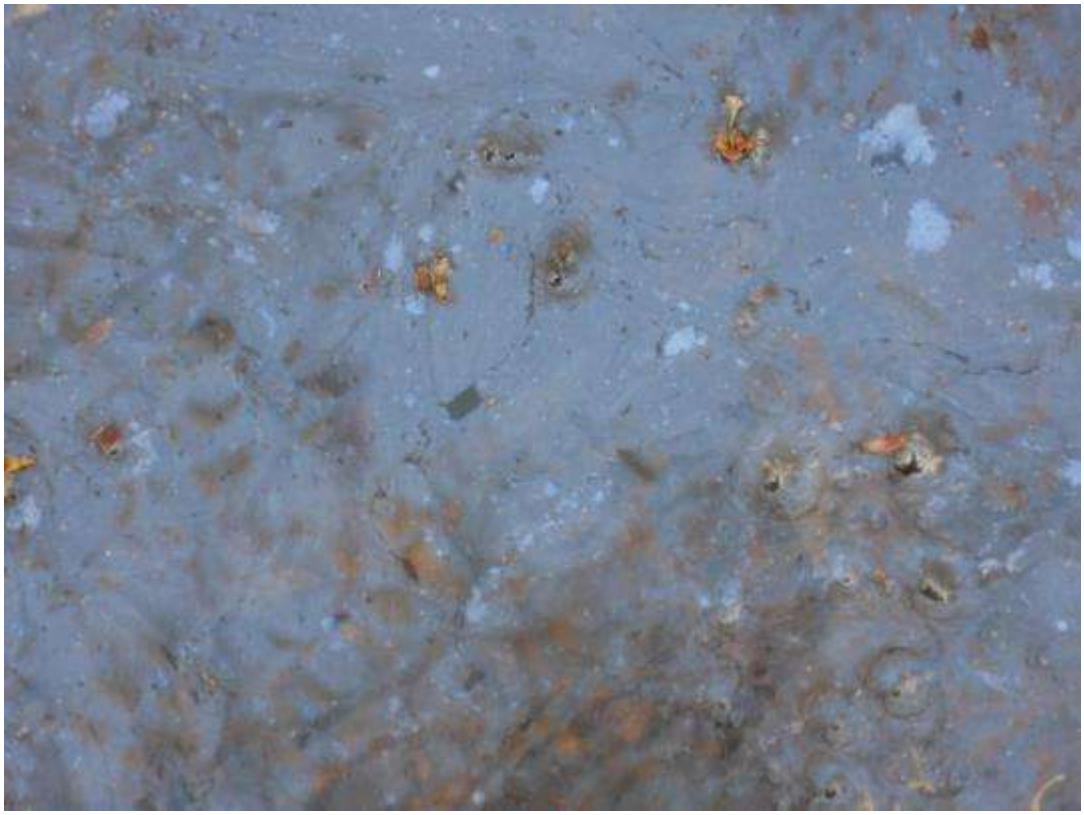
Field Photographs MP 6.25 – MP 6.50

LDB Zone ID 2, Photo 002

LDB Zone ID 3, Photo 001

Field Photographs MP 6.25 – MP 6.50

LDB Zone ID 3, Photo 002

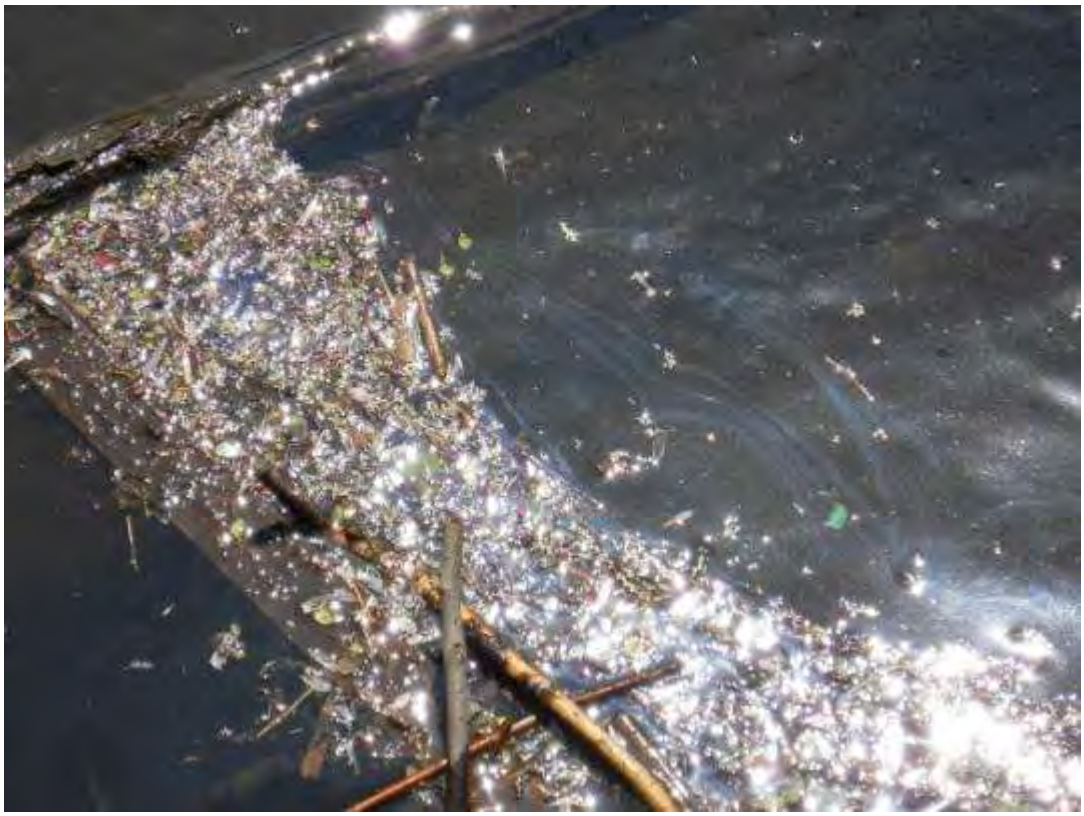


LDB Zone ID 4, Photo 001

Field Photographs MP 6.25 – MP 6.50

LDB Zone ID 4, Photo 002

LDB Zone ID 4, Photo 003



Field Photographs MP 6.25 – MP 6.50

LDB Zone ID 4, Photo 004

LDB Zone ID 5, Photo 001

Field Photographs MP 6.25 – MP 6.50

LDB Zone ID 5, Photo 002

LDB Zone ID 6, Photo 001

Field Photographs MP 6.25 – MP 6.50

LDB Zone ID 7, Photo 001

LDB Zone ID 7, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 6.25 to MP 6.5, Bank ~~or~~ and Island: * RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

S~X~	START	4-14-11 Date
Sean Kane	Printed Name	
Ben A. Zimont	MDEQ	4/14/11 Date
William Kelper	Printed Name	4/14/11
Laura Neumeier	Enbridge	4/14/2011 Date
Laura Neumeier	Printed Name	

11 zones captured on RB

* 2 Islands → 1 - 1 zone
1 - 3 zones

MP 6.50 to MP 6.75

The LDB of segment 6.75 consists of forested wetland swamp. The reassessment identified three linear transects. In general, trace distributions of oil covered to stained debris, trunks and stems were observed along the shoreline. Traces of patties were also observed on the ground surface at Linear Transect 3 LDB.

The RDB of segment 6.75 consists of a low vegetated bank that transitions downstream to emergent/herbaceous and scrub-shrub wetlands towards the end of the section. The reassessment identified five linear transects. In general, trace distributions of oil covered to stained debris, trunks and stems were observed along the shoreline and overbank. Traces of surface oil residue coatings were observed on rocks in Linear Transects 1 RDB and 5 RDB. A trace distribution of tar patties was also identified in Linear Transect 5 RDB.

One island located within segment 6.75 consists of scrub-shrub wetland. A sporadic distribution of patties was identified on the ground surface on the island. An area of surface oil residue was observed on the south shoreline. Debris, trunks and stems were sporadically covered to stained, with oil throughout the island.

The FLS did not detect any oil signatures in this segment and no PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

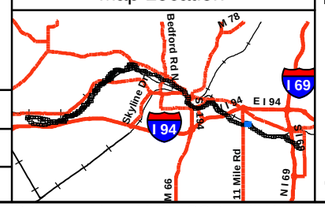
ENBRIDGE

Drawn: DE 5/17/2011

Approved:

Project #: 60162778

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP6.50-MP6.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 6.75																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		faint tree staining 4 points (observations at nodes) shoreline observation from boat due to no access inland not assessed due to no access	Graan, Tom Fairchild, Katie
5/4/2011	14:52																	42.27660	-85.06856		Neumeier, Laura
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Eric Hadwin Clampitt, Chris
5/7/2011	10:40																	42.27649	-85.06890		Neumeier, Laura
3	Shoreline	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		6 pt on polyline eric hadwin was	Eric Hadwin Clampitt, Chris
5/7/2011	09:59																	42.27609	-85.07305		Neumeier, Laura

2011 Reassessment

Bank: RDB

Mile Marker: 6.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Low Vegetated Bank		coating on rocks, and vegetation	Kane, Sean
																					Zimont, Ben
4/15/2011	08:48																	42.27723	-85.07035		Neumeier, Laura
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank		R2	Kane, Sean
																					Zimont, Ben
4/15/2011	09:29																	42.27704	-85.07222		Neumeier, Laura
3	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous			Kane, Sean
																					Zimont, Ben
4/15/2011	09:48																	42.27703	-85.07237		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Kane, Sean
																					Zimont, Ben
4/15/2011	09:53																	42.27705	-85.07264		Neumeier, Laura
5	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	T	Wetland-scrub/shrub		covering on rock	Kane, Sean
																					Zimont, Ben
4/15/2011	10:07																	42.27678	-85.07367		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 6.75																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	S	Wetland-scrub/shrub		mix of shrubs and herbaceous staining on vegetation and tsr patties	Kane, Sean
																					Zimont, Ben
4/15/2011	10:19																	42.27646	-85.07291	1 surface residue on south shoreline (left shoreline)	Neumeier, Laura

Photo Logs

Field Photographs MP 6.50 – MP 6.75

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 6.50 – MP 6.75

RDB Zone ID 2, Photo 002

RDB Zone ID 2, Photo 003

Field Photographs MP 6.50 – MP 6.75

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 6.50 – MP 6.75

RDB Zone ID 4, Photo 001

RDB Zone ID 5, Photo 001

Field Photographs MP 6.50 – MP 6.75

RDB Zone ID 5, Photo 002

RDB Zone ID 5, Photo 003

Field Photographs MP 6.50 – MP 6.75

RDB Zone ID 5, Photo 004

I Zone ID 1, Photo 001

Field Photographs MP 6.50 – MP 6.75

I Zone ID 1, Photo 002

I Zone ID 1, Photo 003

Field Photographs MP 6.50 – MP 6.75

I Zone ID 1, Photo 004

LDB Zone ID 1, Photo 001

Field Photographs MP 6.50 – MP 6.75

LDB Zone ID 1, Photo 002

LDB Zone ID 2, Photo 001

Field Photographs MP 6.50 – MP 6.75

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 6.50 – MP 6.75

LDB Zone ID 3, Photo 003

LDB Zone ID 3, Photo 004

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 6.5 to MP 6.75, Bank ~~or~~ and Island: * RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-15-11	Date
Sean Kane	Printed Name		
[signature]		4/15/11	
William Keiper	MDEQ	4/15/11	Date
[signature]	Printed Name		
[signature]	Enbridge	4/15/11	Date
Laura Neumeier	Printed Name		

5 zones on RB captured by YUMA

1 Island - one zone on island

MP 6.75 to MP 7.00

The LDB of segment 7.00 consists of forested wetland swamp that transitions to a low vegetated bank at the downstream end of the segment. The reassessment identified three polygons and two linear transects. In general, traces to sporadic distributions of surface oil residue were observed on the ground surface on the shoreline and overbank areas.

The RDB of segment 7.00 consists of a low vegetated bank. The reassessment identified four linear transects. In general, trace distributions of oil covered to stained debris, trunks and stems were observed along the shoreline. A trace distribution of tar patties was also identified in Linear Transect 1 RDB.

Three islands are located within segment 7.00 that consist of a combination scrub-shrub and forested swamp wetlands. The reassessment identified one point, one polygon and two linear transects on the large, eastern-most island; one polygon on the downstream western-most island; and one polygon on the small, middle island. In general, a trace to broken distribution of covered to stained debris, trunks and stems were identified on the large island. A trace distribution of patties was identified on the island with a sporadic distribution at Point 3 I. A sporadic distribution of tar balls and surface oil residue was observed on the western-most island as well as coatings and staining on debris, trunks and stems. Most of the oiling was along the shoreline. Trace distributions of patties on the ground surface and coatings to staining on debris, trunks and stems was noted on the small middle island.

The FLS did not detect any oil signatures in this segment and no PI observations were identified.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

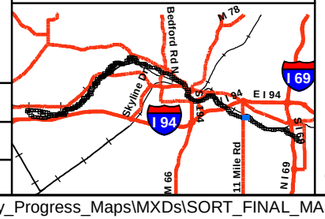
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP6.75-MP7.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character													
Mile Marker: 7																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Macus Muccianti / Chris Bauer
4/11/2011	17:20																	42.27579	-85.07353		Hans Wronka
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)		trees along waters edge	Macus Muccianti / Chris Bauer
4/11/2011	17:33																	42.27498	-85.07443		Hans Wronka
3	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-scrub/shrub			Macus Muccianti / Chris Bauer
4/11/2011	17:39																	42.27487	-85.07482		Hans Wronka
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Macus Muccianti / Chris Bauer
4/11/2011	17:50																	42.27489	-85.07618		Hans Wronka
5	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Low Vegetated Bank			Macus Muccianti / Chris Bauer
4/11/2011	17:55																	42.27485	-85.07648		Hans Wronka

2011 Reassessment

Bank: RDB

Mile Marker: 7

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Kane, Sean
																					Zimont, Ben
4/15/2011	12:21																	42.27606	-85.07473		Neumeier, Laura
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank		rock coating?	Kane, Sean
																					Zimont, Ben
4/15/2011	12:36																	42.27574	-85.07590		Neumeier, Laura
3	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Kane, Sean
																					Zimont, Ben
4/15/2011	13:29																	42.27543	-85.07744		Neumeier, Laura
4	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank		mostly on debris hanging over water	Kane, Sean
																					Zimont, Ben
4/15/2011	13:51																	42.27582	-85.07431		Neumeier, Laura

2011 Reassessment

Bank: I	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 7																				
Source: 2011 Reassessment																				
Oil Zone ID / **Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date / **Time**																	**Latitude**	**Longitude**		**Enbridge Team Lead**
5 / Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)		continue of points on different day (R5?) majority on downstream side surface oil residue and tar balls on shoreline and trace (suspect ?)	Kane, Sean Clampitt, Chris
4/19/2011 09:24																	42.27514	-85.07699		Neumeier, Laura
6 / Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-emergent/herbaceous		continue pt R6?	Kane, Sean Clampitt, Chris
4/19/2011 09:44																	42.27518	-85.07622		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 7																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Kane, Sean
																					Zimont, Ben
4/15/2011	14:12																	42.27562	-85.07377		Neumeier, Laura
2	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/15/2011	14:35																	42.27507	-85.07510		Neumeier, Laura
3	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	B	Wetland-swamp (forested)			Kane, Sean
																					Zimont, Ben
4/15/2011	14:39																	42.27507	-85.07510		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub		observation at nodes	Kane, Sean
																					Zimont, Ben
4/15/2011	14:59																	42.27575	-85.07457		Neumeier, Laura

Photo Logs

Field Photographs MP 6.75 – MP 7.00

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 6.75 – MP 7.00

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 6.75 – MP 7.00

LDB Zone ID 4, Photo 001

LDB Zone ID 4, Photo 002

Field Photographs MP 6.75 – MP 7.00

LDB Zone ID 5, Photo 001

LDB Zone ID 5, Photo 002

Field Photographs MP 6.75 – MP 7.00

LDB Zone ID 5, Photo 003

I Zone ID 1, Photo 001

Field Photographs MP 6.75 – MP 7.00

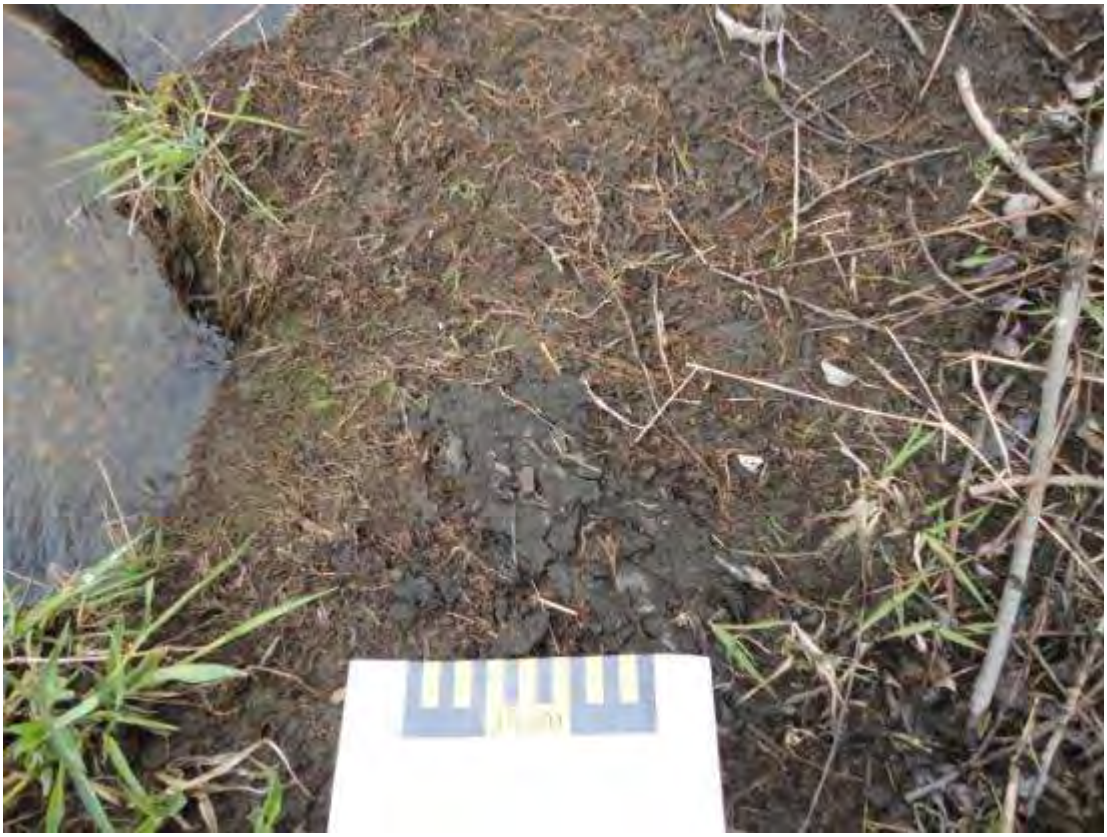
I Zone ID 1, Photo 002

I Zone ID 1, Photo 003

Field Photographs MP 6.75 – MP 7.00

I Zone ID 1, Photo 004

I Zone ID 2, Photo 001



Field Photographs MP 6.75 – MP 7.00

I Zone ID 2, Photo 002

I Zone ID 2, Photo 003

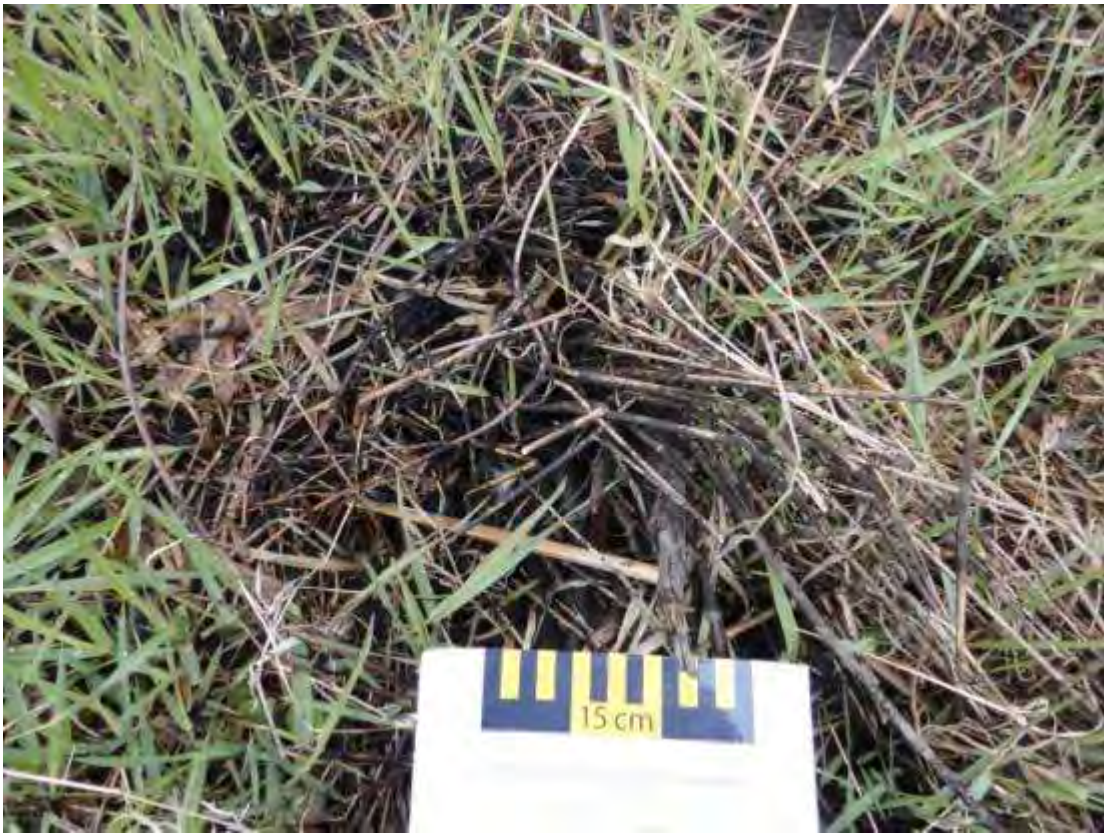
Field Photographs MP 6.75 – MP 7.00

I Zone ID 3, Photo 001

I Zone ID 4, Photo 001

Field Photographs MP 6.75 – MP 7.00

I Zone ID 5, Photo 001



I Zone ID 5, Photo 002

Field Photographs MP 6.75 – MP 7.00

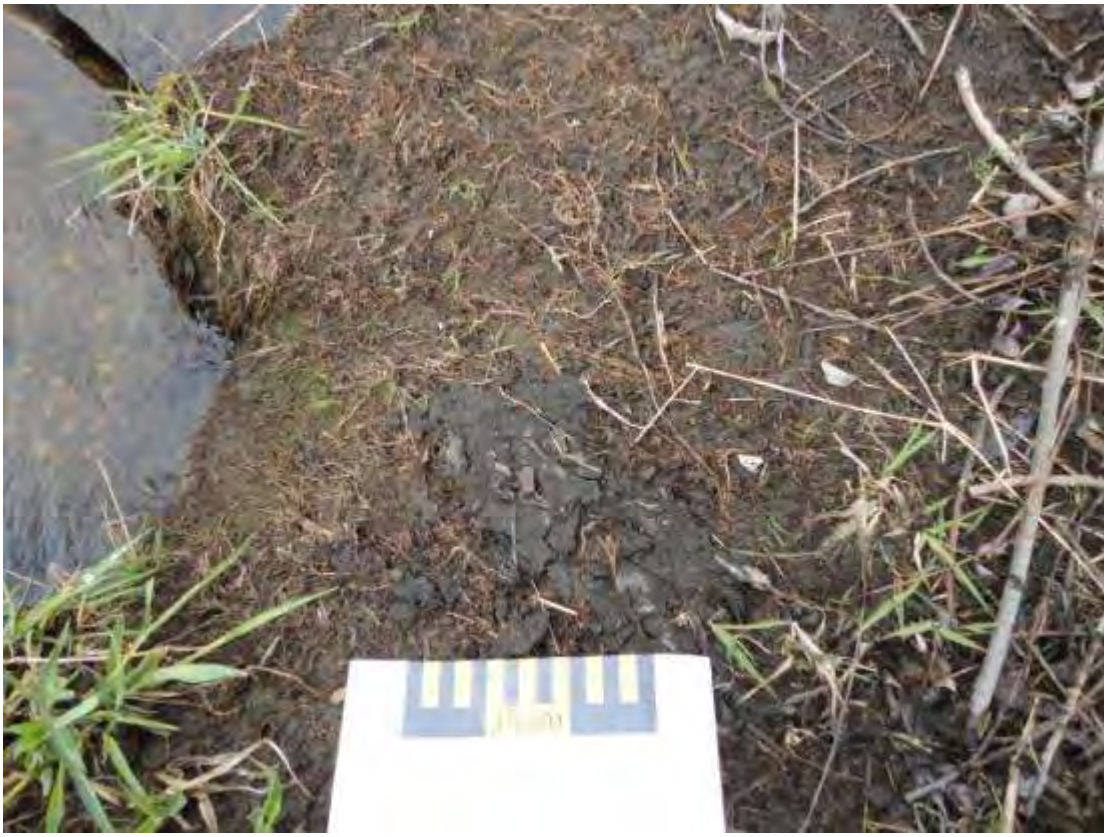
I Zone ID 5, Photo 003

I Zone ID 5, Photo 004

Field Photographs MP 6.75 – MP 7.00

I Zone ID 5, Photo 005

I Zone ID 6, Photo 001



Field Photographs MP 6.75 – MP 7.00

I Zone ID 6, Photo 002

I Zone ID 6, Photo 003

Field Photographs MP 6.75 – MP 7.00

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 6.75 – MP 7.00

RDB Zone ID 1, Photo 003

RDB Zone ID 2, Photo 001

Field Photographs MP 6.75 – MP 7.00

RDB Zone ID 2, Photo 002

RDB Zone ID 2, Photo 003

Field Photographs MP 6.75 – MP 7.00

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 6.75 – MP 7.00

RDB Zone ID 3, Photo 003

RDB Zone ID 4, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Left Bank

Segment ID: From MP 6.75 to MP 7.0, Bank or Island: Bank, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START 4/11/11 Date

Marcus Mulliana Printed Name

Chris Bauer MDEQ 4-11-11 Date

Chris Bauer Printed Name

[signature] 4-11-11

[signature] Enbridge 4-11-11 Date

Hans Wronka Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 0.75 to MP 7.0, Bank ~~or~~ and Island: *RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-15-11 Date
Jenna Kawe	Printed Name	
[signature]	MDEQ	4/15/11 Date
Ben A. Zimont		
William Keiper	Printed Name	
[signature]	Enbridge	4/15/2011 Date
Laura Neumeier	Printed Name	

* 2 Islands, but most downriver island in segment not completed as part of this "Sign-Off Sheet"

4 zones on RB captured by YUMA

4 zones on Island " " "

YUMA7

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 6.75 to MP 7.0, Bank or Island: Island only*, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Sean Hawe — START — 4-19-11 — Date

Printed Name

MDEQ — 4/19/11 — Date

Christopher Clamplit — Printed Name

Laura Neumeier — Enbridge — 4/19/11 — Date

Printed Name

*2 islands in downriver end of 6.75 - 7.0
1 zone on each island captured by YUMA

MP 7.00 to MP 7.25

The LDB of segment 7.25 is bisected by 11-Mile Road and consists of various habitats including scrub-shrub wetland, low vegetated bank and sand-gravel shoreline. The reassessment identified two points, three polygons and two linear transects. In general, trace to sporadic occurrences of surface oil residue and coated to stained debris was identified east of 11-Mile Road. Patchy and broken occurrences of surface oil residue, patties and asphalt pavement were observed west and downstream of 11-Mile Road along the shoreline and overbank. One PI observation noted as a High Priority Area, was identified approximately 300 feet south of 2 LDB. The SORT program did not identify surface oiling in this area. A second PI observation noted as unconfirmed area of interest, was identified approximately 275 feet beyond the inundation model.

The RDB of segment 7.25 is bisected by 11-Mile Road and consists of forested wetland swamp. The reassessment identified three linear transects. In general, trace and sporadic distributions of oil covered and stained rocks, debris, trunks and stems were identified along the shoreline and overbank. Traces of surface oil residue and patties were identified in Linear Transects 2 RDB and 3 RDB, respectively.

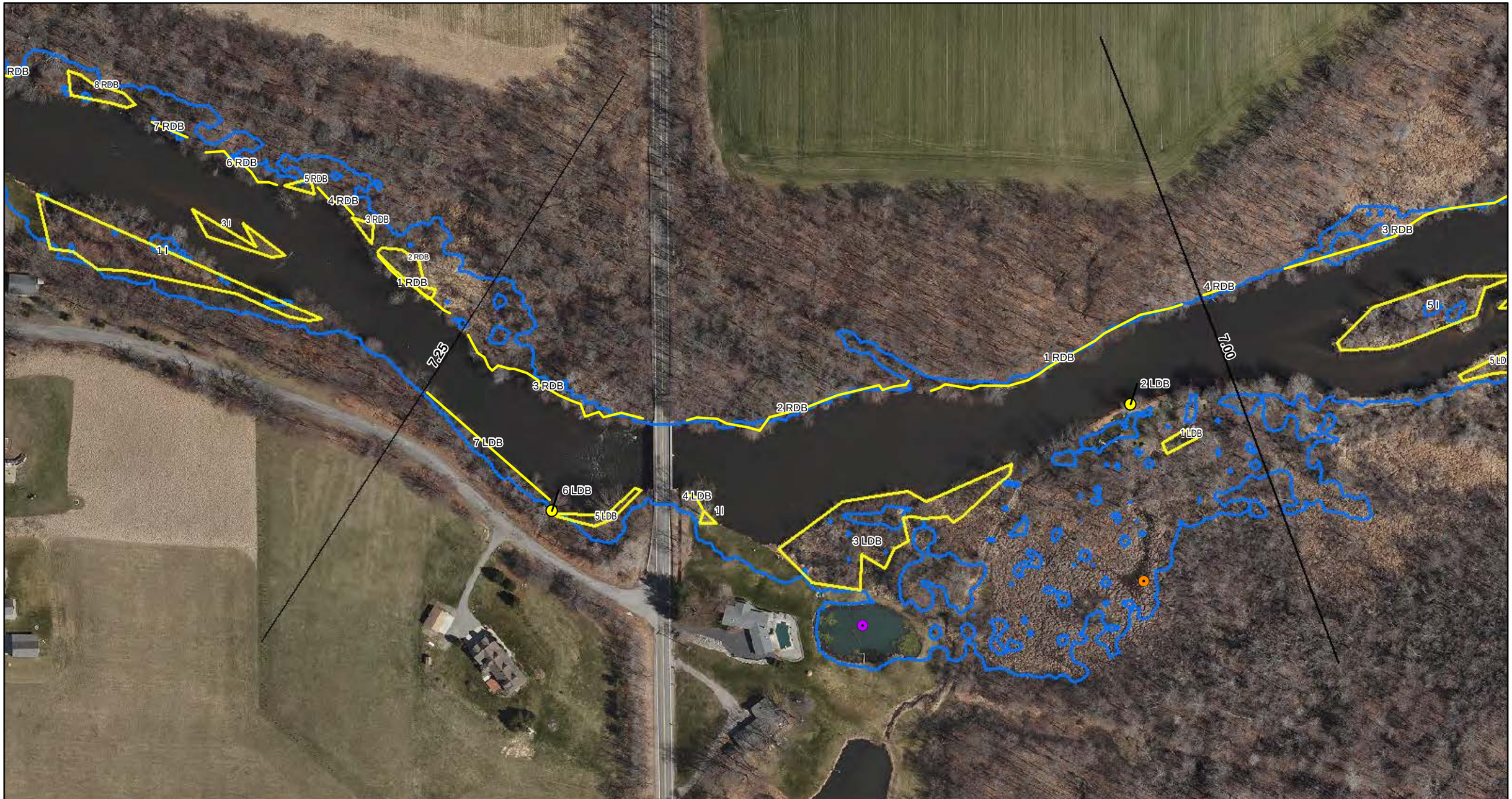
One island is located within segment 7.25 that consisted of a low vegetated bank. Patchy occurrences of tar patties and surface oil residue on the ground surface were identified.

The FLS did not detect any oil signatures in this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

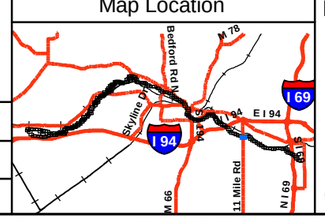
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP7.00-MP7.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 7.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	T	Wetland-scrub/shrub		stained trees	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	08:59																	42.27461	-85.07812		Wronka, Hans
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Low Vegetated Bank		tree	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	09:08																	42.27471	-85.07843		Wronka, Hans
3	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	S	Wetland-scrub/shrub		small tar patties near waters edge	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	09:57																	42.27415	-85.08043		Wronka, Hans
4	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Low Vegetated Bank			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	10:55																	42.27426	-85.08098		Wronka, Hans
5	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	P	Low Vegetated Bank		tar patties along rivers edge	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	11:11																	42.27419	-85.08167		Wronka, Hans

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character														
Mile Marker: 7.25																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**
																					MDEQ
Date	**Time**																	**Latitude**	**Longitude**		**Enbridge Team Lead**
6	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	B	Sand-Gravel shoreline			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	11:21																	42.27421	-85.08185		Wronka, Hans
7	Shoreline	☐	☑	☑	☑	☐	☐	☐	☐	☑	☑	☑	☑	☐	☐	☐	B	Low Vegetated Bank		observations from boat. steep embankment	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	11:32																	42.27429	-85.08186		Wronka, Hans

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 7.25																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		coating on rocks observation at nodes	Kane, Sean Clampitt, Chris
4/19/2011	10:23																	42.27478	-85.07961		Neumeier, Laura
2	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)		surface residue ? staining on rocks observation at nodes	Kane, Sean Clampitt, Chris
4/19/2011	10:51																	42.27466	-85.08098		Neumeier, Laura
3	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		rock staining tar patties <1%	Kane, Sean Clampitt, Chris
4/19/2011	11:28																	42.27504	-85.08230		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 7.25																					
Source: 2011 Reassessment																					MDEQ
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Latitude**	**Longitude**		Enbridge Team Lead
Date	**Time**																				
1	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	P	Low Vegetated Bank			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	10:46																	42.27423	-85.08095		Wronka, Hans

Photo Logs

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 3, Photo 003

LDB Zone ID 3, Photo 004

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 3, Photo 005

LDB Zone ID 4, Photo 001

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 4, Photo 002

LDB Zone ID 4, Photo 003

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 5, Photo 001

LDB Zone ID 6, Photo 001

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 6, Photo 002

LDB Zone ID 6, Photo 003

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 6, Photo 004

LDB Zone ID 6, Photo 005

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 7, Photo 001

LDB Zone ID 8, Photo 001

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 8, Photo 002

LDB Zone ID 8, Photo 003

Field Photographs MP 7.00 – MP 7.25

LDB Zone ID 8, Photo 004

LDB Zone ID 8, Photo 005

Field Photographs MP 7.00 – MP 7.25

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 7.00 – MP 7.25

RDB Zone ID 1, Photo 003

RDB Zone ID 1, Photo 004

Field Photographs MP 7.00 – MP 7.25

RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 7.00 – MP 7.25

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 7.00 – MP 7.25

RDB Zone ID 3, Photo 003

RDB Zone ID 3, Photo 004

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.0 to MP 7.25 LDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/12/11 Date

Markus Muellenhoff Printed Name

_____ MDEQ 4-12-11 Date

James Gamble Printed Name

Chris Bauer 4-12-11

Chris Bauer

_____ Enbridge 4-12-11 Date

Hans Wonder Printed Name

Note: The final ~300 feet of of embankment (downstream) was too steep to access on foot. The team evaluated the shoreline from the boat and made periodic approaches up to the shoreline to verify areas.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.0 to MP 7.25 (Bank) or Island: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-19-11 Date
Seana Hanse	Printed Name	
[signature]	MDEQ	4/19/11 Date
Christopher Clampit	Printed Name	
[signature]	Enbridge	4/19/11 Date
Laura Newmeir	Printed Name	

3 zones collected by YUMA

MP 7.25 to MP 7.50

The LDB of segment 7.50 consists of forested wetland swamp and emergent/herbaceous wetland. The reassessment identified one point and 2 polygons. In general, traces of surface oil residue were present through all three areas.

The RDB of segment 7.50 consists mainly of forested wetland swamp with a small area of scrub-shrub wetland at the beginning of the segment. The reassessment identified one point, five polygons, and five linear transects. In general, trace and sporadic distributions of oil coated and stained debris, trunks and stems were identified along the shoreline and overbank throughout the segment. Traces of patties were identified on the ground surface at Polygons 2 RDB and 11 RDB, and Linear Transects 1 RDB, 4 RDB and 9 RDB. A trace of surface oil residue was identified in Polygon 8 RDB.

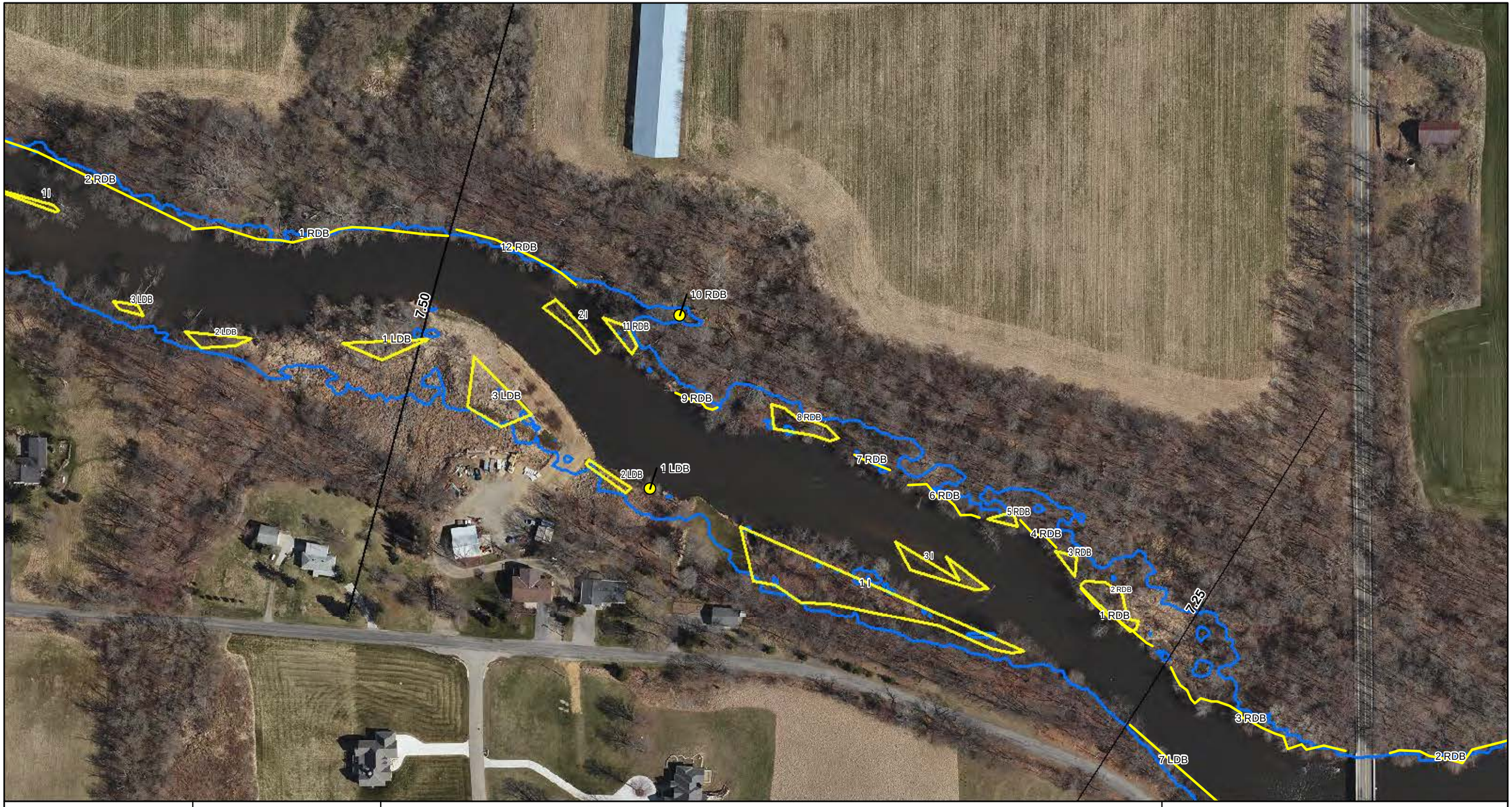
Three islands are located within segment 7.50. The largest of the three islands consists of forested wetland swamp and the other two islands consist of emergent/herbaceous wetland. The reassessment identified Polygon 1 I on the large island situated next to the LDB, Polygon 2 I located on the island next to the RDB, and Polygon 3 I close to the middle of the river. Trace patties and surface oil residue were observed at Polygon 1 I, and a patchy distribution of patties were observed at Polygons 2 I and 3 I. All the trunks were either stained or coated with oil in Polygon 1 I and a patchy distribution of trunks and stems were coated with oil in Polygon 2 I.

The FLS did not detect any oil signatures in this segment and no PI observations were noted.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures



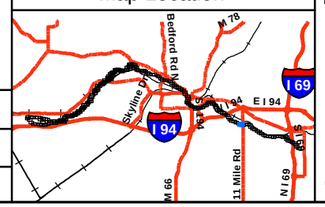
ENBRIDGE

Drawn: DE 5/17/2011

Approved:

Project #: 60162778

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP7.25-MP7.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 7.5																					
Source: 2011 Reassessment																					MDEQ
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	13:38																	42.27576	-85.08543		Wronka, Hans
2	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	13:46																	42.27590	-85.08578		Wronka, Hans
3	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	14:02																	42.27603	-85.08631		Wronka, Hans

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 7.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-scrub/shrub		observation at nodes	Kane, Sean / Clampitt, Chris
4/19/2011	12:25																	42.27534	-85.08288		Neumeier, Laura
10	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-swamp (forested)		on bottle	Kane, Sean / Clampitt, Chris
4/19/2011	14:31																	42.27652	-85.08526		Neumeier, Laura
11	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean / Clampitt, Chris
4/19/2011	14:37																	42.27649	-85.08563		Neumeier, Laura
12	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		staining on rocks	Kane, Sean / Clampitt, Chris
4/19/2011	14:59																	42.27689	-85.08659		Neumeier, Laura
2	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		most < 1 x 1 ft	Kane, Sean / Clampitt, Chris
4/19/2011	12:47																	42.27532	-85.08271		Neumeier, Laura

2011 Reassessment

Bank: RDB

Mile Marker: 7.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
3	Shoreline and Overbank	4/19/2011	13:02	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.27550	-85.08302		Kane, Sean Clampitt, Chris Neumeier, Laura
4	Shoreline and Overbank	4/19/2011	13:09	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)	42.27562	-85.08324		Kane, Sean Clampitt, Chris Neumeier, Laura
5	Shoreline and Overbank	4/19/2011	13:14	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.27562	-85.08343		Kane, Sean Clampitt, Chris Neumeier, Laura
6	Shoreline and Overbank	4/19/2011	13:23	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.27580	-85.08389		Kane, Sean Clampitt, Chris Neumeier, Laura
7	Shoreline and Overbank	4/19/2011	13:50	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.27597	-85.08430		Kane, Sean Clampitt, Chris Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character												
Mile Marker: 7.5																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**	**Comments**
Date	**Time**																	**Latitude** / **Longitude**	
8	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)	1 surface residue
4/19/2011	14:03																	42.27600 / -85.08445	
9	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	
4/19/2011	14:28																	42.27652 / -85.08525	

START
MDEQ
Enbridge Team Lead
Kane, Sean
Clampitt, Chris
Neumeier, Laura
Kane, Sean
Clampitt, Chris
Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 7.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)		all trees are stained. tar patties intermittently located. polygon extends to waters edge	**Enbridge Team Lead**
																					Muccanti, Marcus
																					Bauer, Chris
4/12/2011	13:28																	42.27559	-85.08490		Wronka, Hans

2011 Reassessment

Bank: I		Oil Thickness					Oil Character														
Mile Marker: 7.5																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
2	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	P	Wetland-emergent/herbaceous			Kane, Sean Clampitt, Chris
4/19/2011	15:17																	42.27654	-85.08597		Neumeier, Laura
3	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	P	Wetland-emergent/herbaceous		rain	Kane, Sean Clampitt, Chris
4/19/2011	15:42																	42.27550	-85.08393		Neumeier, Laura

Photo Logs

Field Photographs MP 7.25 – MP 7.50

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 7.25 – MP 7.50

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 7.25 – MP 7.50

LDB Zone ID 3, Photo 002

RDB Zone ID 1, Photo 001

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 1, Photo 002

RDB Zone ID 2, Photo 001

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 2, Photo 002

RDB Zone ID 3, Photo 001

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 3, Photo 002

RDB Zone ID 4, Photo 001

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 4, Photo 002

RDB Zone ID 4, Photo 003

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 5, Photo 001

RDB Zone ID 6, Photo 001

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 6, Photo 002

RDB Zone ID 7, Photo 001

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 7, Photo 002

RDB Zone ID 8, Photo 001

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 8, Photo 002

RDB Zone ID 9, Photo 001

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 9, Photo 002

RDB Zone ID 9, Photo 003

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 10, Photo 001

RDB Zone ID 11, Photo 001

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 11, Photo 002

RDB Zone ID 11, Photo 003

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 12, Photo 001

RDB Zone ID 12, Photo 002

Field Photographs MP 7.25 – MP 7.50

RDB Zone ID 12, Photo 003

I Zone ID 1, Photo 001

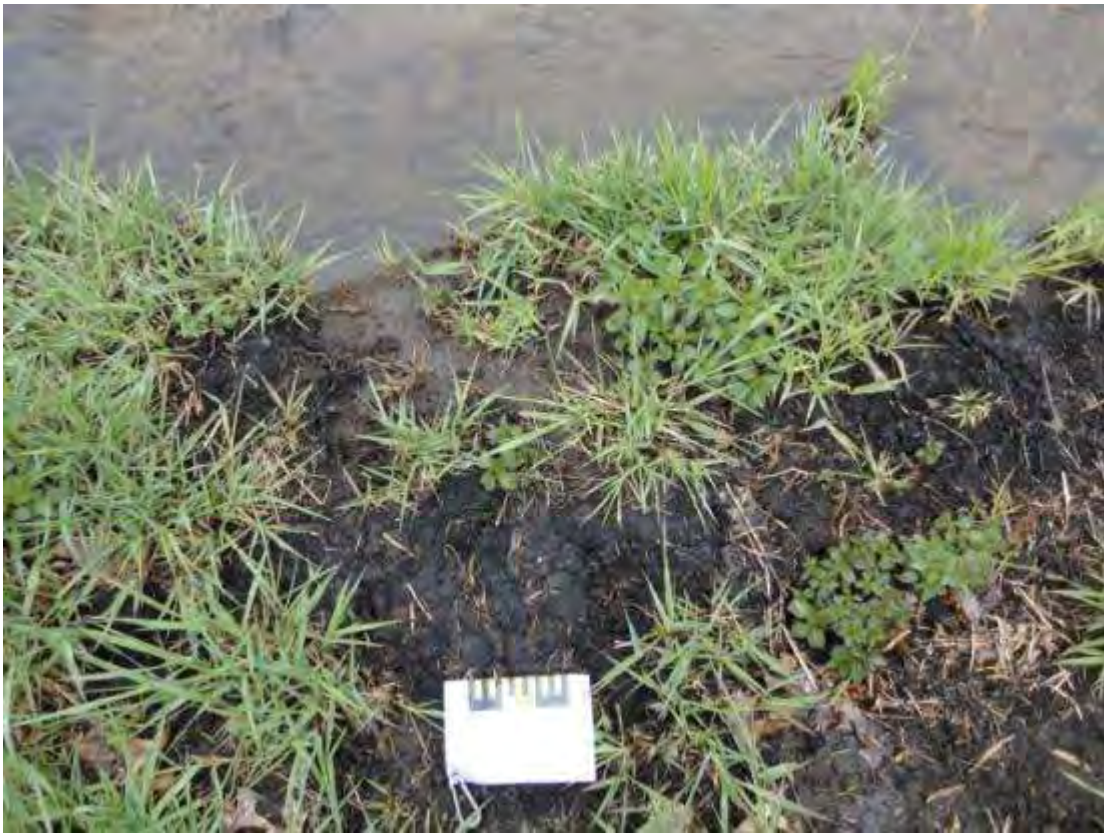
Field Photographs MP 7.25 – MP 7.50

I Zone ID 1, Photo 002

I Zone ID 2, Photo 001

Field Photographs MP 7.25 – MP 7.50

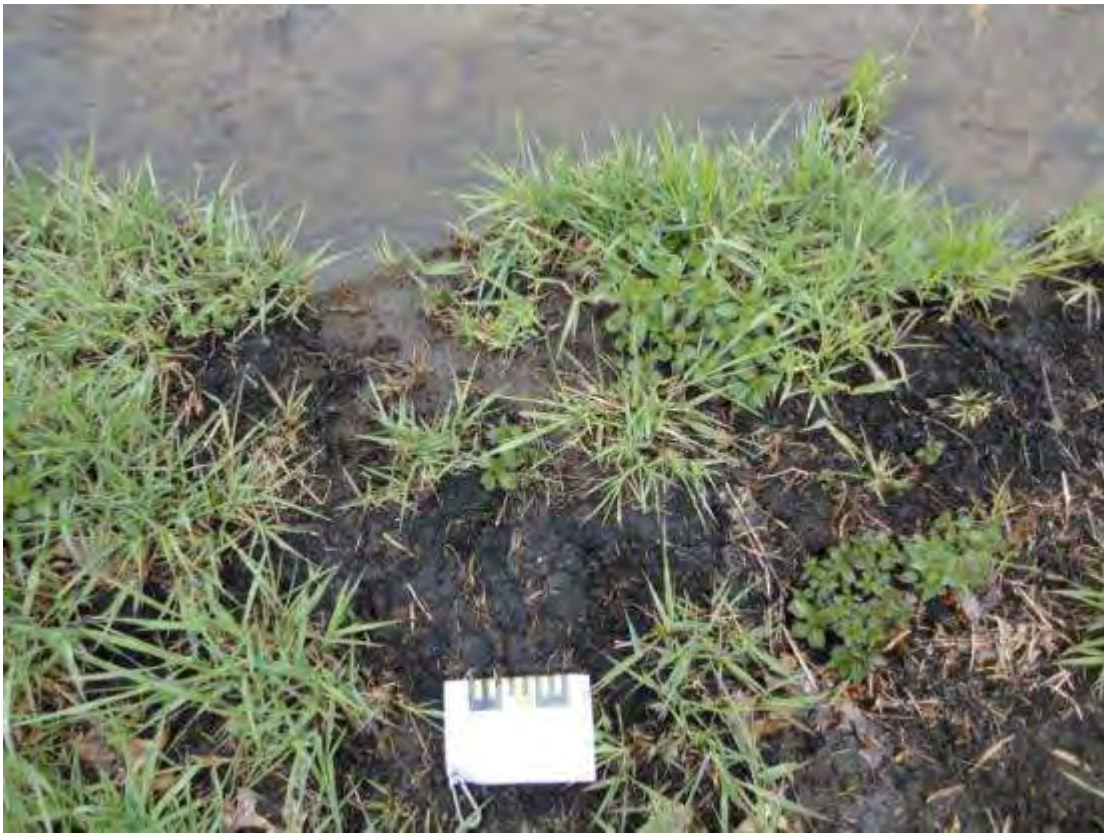
I Zone ID 2, Photo 002



I Zone ID 3, Photo 001

Field Photographs MP 7.25 – MP 7.50

I Zone ID 3, Photo 002



SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.25 to MP 7.5, LDB Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START 4/12/11 Date

Marcus Mucciani Printed Name

James Gamble MDEQ 4-12-11 Date

James Gamble Printed Name 4-12-11

Chris Bauer

Chris Bauer

[signature] Enbridge 4-12-11 Date

Hans Wronka Printed Name

The ~80ft of shoreline downstream of the LDB starting @ MP 7.25 was observed from the boat.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.25 to MP 7.5, Bank ~~or~~ and Island* RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-19-11 Date
Sean Kane	Printed Name	
[signature]	MDEQ	4/19/11 Date
Christopher Clampitt	Printed Name	
[signature]	Enbridge	4/19/11 Date
Laura Neumeier	Printed Name	

*2 islands

13 zones on RB

1 zone for each island

Note: Heavy rain events during segment survey. saturated soil surface conditions.

MP 7.50 to MP 7.75

The LDB of segment 7.75 generally consists of emergent/herbaceous wetlands at Polygon 1 LDB and forested wetland swamp at Polygons 2 LDB and 3 LDB. Trace amounts of surface oil residue was generally observed throughout the shoreline and overbank segment.

The RDB of segment 7.75 consists of forested wetland swamp habitat throughout Linear Transect 1 RDB and emergent/herbaceous wetland habitat throughout Linear Transect 2 RDB. In general, trace coats and stains were observed on trunks, stems and debris throughout most of the shoreline segment. Surface oil residue was also observed in these areas.

One island (1 I) was identified within segment 7.75 that consists of forested wetland swamp habitat. In general, patchy amounts of stain and coats were observed on trunks, stems and debris throughout most of the island. Patties were also observed along the shoreline and overbank at this location.

The FLS did not detect any oil signatures in this segment and no PI observations were noted.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

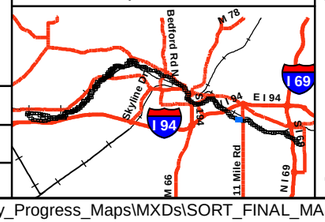
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP7.50-MP7.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 7.75																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Latitude**	**Longitude**		**Enbridge Team Lead**
Date	**Time**																				
1	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Muccianti, Marcus Bauer, Chris
4/12/2011	14:13																	42.27639	-85.08725		Wronka, Hans
2	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus Bauer, Chris
4/12/2011	14:37																	42.27644	-85.08816		Wronka, Hans
3	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)		shallow stagnent backwater was accessible. completed area as left bank	Muccianti, Marcus Bauer, Chris
4/12/2011	14:47																	42.27653	-85.08855		Wronka, Hans

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 7.75																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)		on rocks	Kane, Sean Clampitt, Chris
4/20/2011	10:07																	42.27688	-85.08810		Neumeier, Laura
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	T	Wetland-emergent/herbaceous		polyline issue fixed 1 pt of residue rock staining	Kane, Sean Clampitt, Chris
4/20/2011	11:22																	42.27805	-85.09094		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 7.75																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	P	Wetland-swamp (forested)		tar patties mainly on upstream side	**Enbridge Team Lead**
																					Kane, Sean
																					Clampitt, Chris
4/19/2011	15:58																	42.27700	-85.08911		Neumeier, Laura

Photo Logs

Field Photographs MP 7.50 – MP 7.75

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 7.50 – MP 7.75

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 7.50 – MP 7.75

LDB Zone ID 3, Photo 002

I Zone ID 1, Photo 001

Field Photographs MP 7.50 – MP 7.75

I Zone ID 1, Photo 002

I Zone ID 1, Photo 003

Field Photographs MP 7.50 – MP 7.75

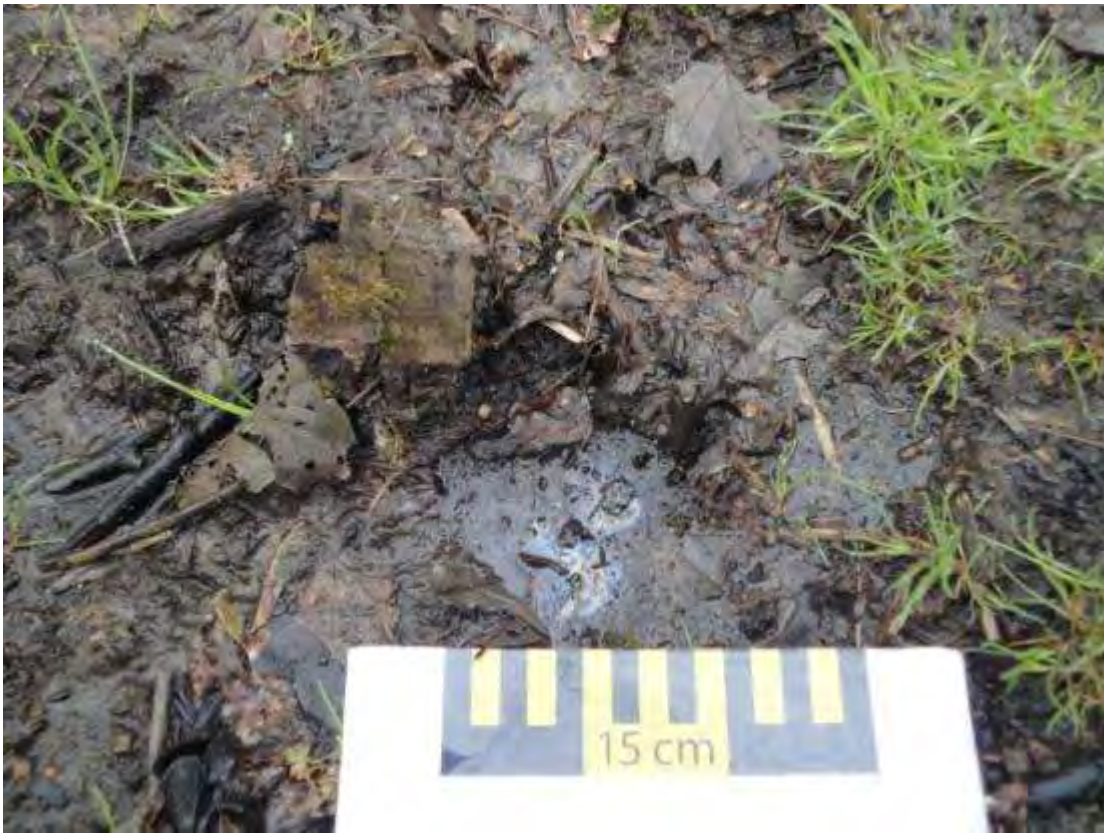
RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 7.50 – MP 7.75

RDB Zone ID 1, Photo 003

RDB Zone ID 1, Photo 004



Field Photographs MP 7.50 – MP 7.75

RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 7.50 – MP 7.75

RDB Zone ID 2, Photo 003

RDB Zone ID 2, Photo 004

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.5 to MP 7.75 LDB, (Bank) or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/12/11 Date

Marcus Mucciarone Printed Name

_____ MDEQ 4-12-11 Date

James Gamble Printed Name

4-12-11

_____ Enbridge 4-12-11 Date

Chris Bauer

Hans Wronken Printed Name

Middle 30-50 feet along shore (LDB) were observed from the Boat.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.5 to MP 7.75, Bank or Island: Island only*, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-19-11 Date
Sean Kane	Printed Name	
[signature]	MDEQ	4/19/11 Date
Christopher Campbell	Printed Name	
[signature]	Enbridge	4/19/11 Date
Laura Neumeier	Printed Name	

* 1 Island

1 zone captured by YUMA

Note: Saturated soil surface conditions due to heavy rain events.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.5 to MP 7.75, Bank ~~or Island~~: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START _____ Date

Sean Kane Printed Name

_____ MDEQ 4/20/11 Date

Christopher Clampitt Printed Name

_____ Enbridge 4/20/11 Date

Laura Neumeier Printed Name

2 zones collected by YUMA
↳ 2 polylines along shoreline

MP 7.75 to MP 8.00

The LDB of segment 8.00 consists mostly of sand and gravel shoreline throughout Linear Transects 3 LDB and 4 LDB. One point (1 LDB) consisted of a forested wetland swamp habitat and a second point (2 LDB) consisted of a low vegetated bank habitat. A trace amount of a surface oil film and patties were observed along the shoreline in Linear Transect 3 LDB. Trace to sporadic amounts of surface oil residue was observed at Linear Transect 4 LDB and Point 2 LDB along the shoreline. A patchy amount of patties and surface oil residue was observed at Point 1 LDB along the shoreline.

The RDB of segment 8.00 consists mostly of forested wetland swamp habitat throughout the segment. The reassessment identified one polygon, two linear transects, and four points. In general, trace to sporadic coats and stains were observed on trunks, stems and debris throughout most of the segment. Trace to sporadic occurrences of patties was observed along the shoreline and overbank in Polygon 6 RDB and at Point 7 RDB. The FLS data identified a suspected oil signature within the proximity of Point 2 RDB.

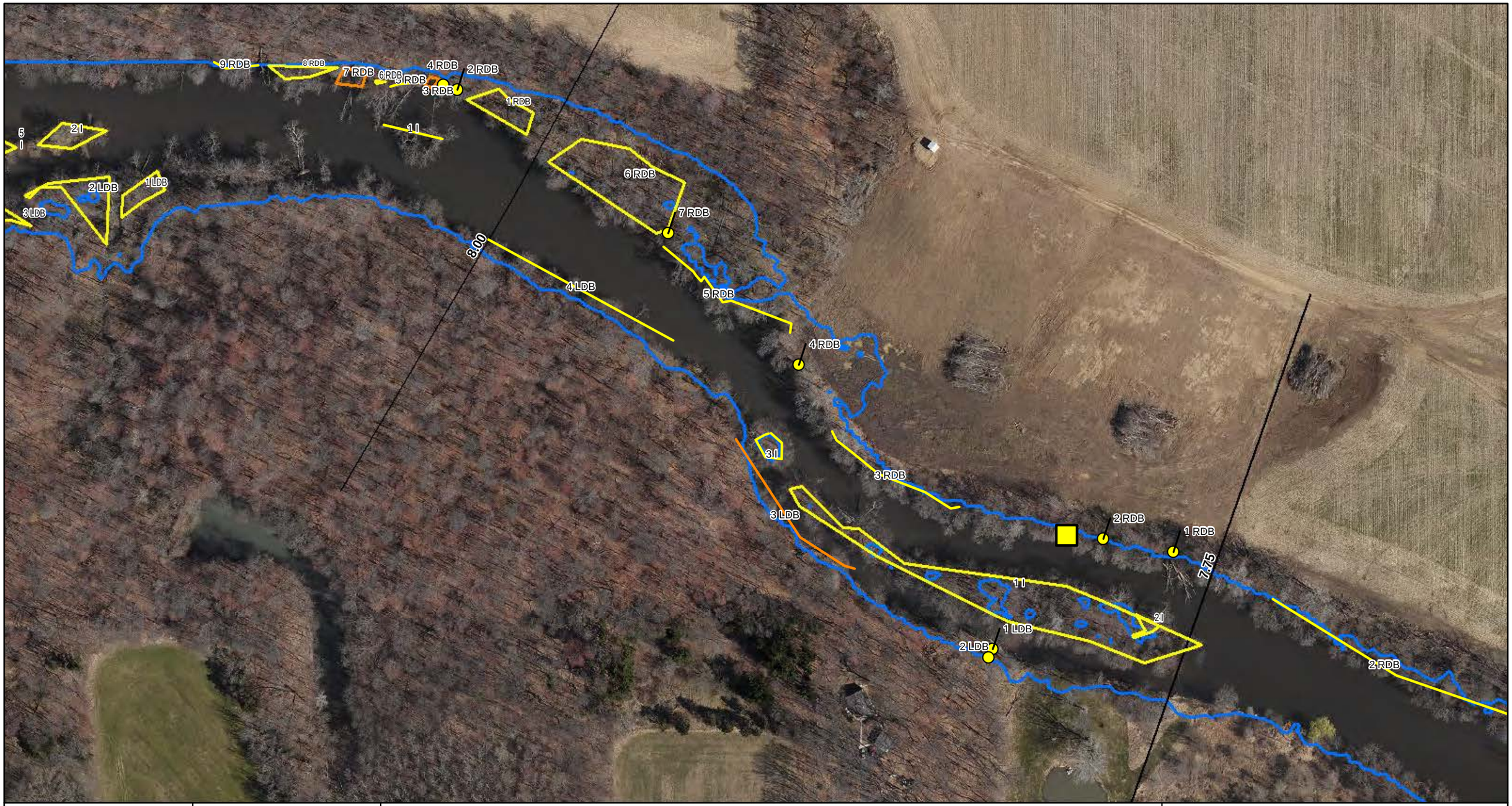
Two island features (1 I and 2 I) were identified within segment 8.00 that consist of forested wetland swamp habitat and 3 I identified as a rocky shoreline. In general, sporadic coats and stains were observed on trunks, stems and debris throughout most of the island. Sporadic occurrences of patties were observed along the shoreline and overbank at Polygons 1 I and 3 I. Broken occurrences of asphalt pavement were observed at Polygon 2 I.

No PI observations were noted within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

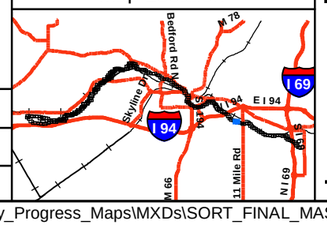
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP7.75-MP8.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 8																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	P	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	15:20																	42.27755	-85.09240		Wronka, Hans
2	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	T	Low Vegetated Bank			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	15:23																	42.27751	-85.09241		Wronka, Hans
3	Shoreline	☐	☐	☐	☑	☑	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	T	Sand-Gravel shoreline		film in river	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	15:50																	42.27845	-85.09392		Wronka, Hans
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Sand-Gravel shoreline		observation from boat	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	16:06																	42.27961	-85.09593		Wronka, Hans

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 8																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	S	Wetland-swamp (forested)		?? organics ??	Kane, Sean
																					Clampitt, Chris
4/20/2011	11:56																	42.27798	-85.09133		Neumeier, Laura
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous			Kane, Sean
																					Clampitt, Chris
4/20/2011	12:05																	42.27804	-85.09174		Neumeier, Laura
3	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Clampitt, Chris
4/20/2011	12:19																	42.27853	-85.09334		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Clampitt, Chris
4/20/2011	12:28																	42.27879	-85.09354		Neumeier, Laura
5	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Clampitt, Chris
4/20/2011	12:42																	42.27924	-85.09416		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 8																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
6	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		1 tar patties pt	Kane, Sean / Clampitt, Chris
4/20/2011	13:09																	42.27969	-85.09501		Neumeier, Laura
7	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)			Kane, Sean / Clampitt, Chris
4/20/2011	13:14																	42.27935	-85.09432		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character														
Mile Marker: 8																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
																					Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			Kane, Sean
																					Clampitt, Chris
4/19/2011	16:35																	42.27804	-85.09328		Neumeier, Laura
2	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	B	Wetland-swamp (forested)			Kane, Sean
																					Clampitt, Chris
4/19/2011	16:48																	42.27761	-85.09154		Neumeier, Laura
3	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	S	Other (comments)		rocky shoreline	Kane, Sean
																					Clampitt, Chris
4/19/2011	17:22																	42.27849	-85.09371		Neumeier, Laura

Photo Logs

Field Photographs MP 7.75 – MP 8.00

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 7.75 – MP 8.00

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 7.75 – MP 8.00

LDB Zone ID 3, Photo 002

LDB Zone ID 4, Photo 001

Field Photographs MP 7.75 – MP 8.00

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 7.75 – MP 8.00

I Zone ID 1, Photo 003

I Zone ID 2, Photo 001

Field Photographs MP 7.75 – MP 8.00

I Zone ID 2, Photo 002

I Zone ID 3, Photo 001

Field Photographs MP 7.75 – MP 8.00

I Zone ID 3, Photo 002

I Zone ID 3, Photo 003

Field Photographs MP 7.75 – MP 8.00

I Zone ID 3, Photo 004

RDB Zone ID 1, Photo 001

Field Photographs MP 7.75 – MP 8.00

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

Field Photographs MP 7.75 – MP 8.00

RDB Zone ID 3, Photo 002

RDB Zone ID 4, Photo 001

Field Photographs MP 7.75 – MP 8.00

RDB Zone ID 5, Photo 001

RDB Zone ID 5, Photo 002

Field Photographs MP 7.75 – MP 8.00

RDB Zone ID 6, Photo 001

RDB Zone ID 6, Photo 002

Field Photographs MP 7.75 – MP 8.00

RDB Zone ID 7, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.75 to MP 8.0 LDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/12/11 Date

Marcus Williams Printed Name

_____ MDEQ 4-12-11 Date

James Gamble Printed Name

Chris Bauer 4-12-11

Chris Bauer

_____ Enbridge 4-12-11 Date

Hans Wranten Printed Name

roughly a 100 foot portion of shoreline was observed from the boat.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.75 to MP 8.0, Bank ~~or Island~~: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-20-11 Date
Sean Hawe	Printed Name	
[signature]	MDEQ	4/20/11 Date
Christopher Clampitt	Printed Name	
[signature]	Enbridge	4/20/2011 Date
Laura Neumeier	Printed Name	

7 Zones captured by YUMA

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 7.75 to MP 8.0, Bank or Island: * only, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-19-11 Date
Sean Lane	Printed Name	
[signature]	MDEQ	4/19/11 Date
Christopher Claypit	Printed Name	
[signature]	Enbridge	4/19/11 Date
Laura Neumeier	Printed Name	

* 2 islands

Note: Saturated soil surface conditions due to heavy rain events.

3 total zones captured by YUMA

MP 8.00 to MP 8.25

The LDB of segment 8.25 consists mostly of a forested wetland swamp throughout the segment. Trace amounts of surface oil residue was observed in the four polygons and one linear transect along the shoreline and overbank.

The RDB of segment 8.25 consists mostly of forested wetland swamp habitat throughout the segment. The reassessment identified five polygons, three linear transects, and two points. In general, trace to sporadic coats, stains and covers were observed on trunks, stems and debris throughout most of the segment. Trace to sporadic occurrences of patties and surface oil residue was observed along the shoreline and overbank in four polygons (4 RDB, 6 RDB, 7 RDB and 8 RDB) and along one linear transects (9 RDB). A surface oiling film was identified at two polygons (4 RDB and 7 RDB) along the shoreline and overbank.

Five island features (1 I, 2 I, 3 I, 4 I and 5 I) were identified within segment 8.25 that consist of forested wetland swamps and scrub-shrub. Islands located at Polygons 2 I, 3 I, and 4 I and Linear Transect 1 I generally consisted of a patchy to broken distribution of patties, surface oil residue, oiled debris, oiled trunks and stems along the shoreline and overbank. Trace staining on debris, trunks and stems were observed at 5 I.

The FLS did not detect any oil signatures in this segment and no PI observations were noted.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

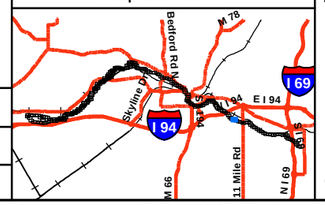
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP8.00-MP8.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 8.25																					
Source: 2011 Reassessment																					MDEQ
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	16:28																	42.27940	-85.09754		Wronka, Hans
2	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)		stained trees	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	16:35																	42.27942	-85.09784		Wronka, Hans
3	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	16:45																	42.27939	-85.09849		Wronka, Hans
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	16:52																	42.27935	-85.09959		Wronka, Hans
5	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	16:56																	42.27928	-85.09978		Wronka, Hans

2011 Reassessment

Bank: I		Oil Thickness					Oil Character													
Mile Marker: 8.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	P	Wetland-scrub/shrub		mainly on upstream side	Kane, Sean Clampitt, Chris
4/20/2011	15:09																	42.27976	-85.09566		Neumeier, Laura
2	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	P	Wetland-swamp (forested)		tar patties mainly on upstream side	Kane, Sean Clampitt, Chris
4/20/2011	15:24																	42.27978	-85.09777		Neumeier, Laura
3	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	B	Wetland-swamp (forested)		assessed by boat puke island	Kane, Sean Clampitt, Chris
4/20/2011	15:37																	42.27976	-85.09969		Neumeier, Laura
4	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☑	☐	☑	☑	B	Wetland-swamp (forested)		tar patties mainly on upstream side	Kane, Sean Clampitt, Chris
4/20/2011	15:44																	42.27971	-85.09969		Neumeier, Laura
5	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Kane, Sean Clampitt, Chris
4/20/2011	16:02																	42.27966	-85.09851		Neumeier, Laura

2011 Reassessment

Bank: RDB

Mile Marker: 8.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Clampitt, Chris
4/20/2011	13:42																	42.27994	-85.09551		Neumeier, Laura
10	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑		Wetland-swamp (forested)		steep bank	Kane, Sean
																					Clampitt, Chris
4/20/2011	15:02																	42.27981	-85.09598		Neumeier, Laura
2	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Clampitt, Chris
4/20/2011	13:48																	42.27997	-85.09558		Neumeier, Laura
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Kane, Sean
																					Clampitt, Chris
4/20/2011	13:51																	42.28001	-85.09566		Neumeier, Laura
4	Shoreline	☐	☑	☑	☐	☑	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Kane, Sean
																					Clampitt, Chris
4/20/2011	13:56																	42.28002	-85.09575		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character												
Mile Marker: 8.25																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**	**Comments**	**START**
Date	**Time**																	**Latitude** / **Longitude**		**MDEQ** / **Enbridge Team Lead**
5	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		Kane, Sean / Clampitt, Chris
4/20/2011	14:03																	42.28000 / -85.09598		Neumeier, Laura
6	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)		Kane, Sean / Clampitt, Chris
4/20/2011	14:08																	42.28001 / -85.09605		Neumeier, Laura
7	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☑	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		Kane, Sean / Clampitt, Chris
4/20/2011	14:13																	42.28002 / -85.09624		Neumeier, Laura
8	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)		Kane, Sean / Clampitt, Chris
4/20/2011	14:21																	42.28008 / -85.09641		Neumeier, Laura
9	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		Kane, Sean / Clampitt, Chris
4/20/2011	14:38																	42.28008 / -85.09725		Neumeier, Laura

Photo Logs

Field Photographs MP 8.00 – MP 8.25

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 8.00 – MP 8.25

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 8.00 – MP 8.25

LDB Zone ID 5, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 1, Photo 002

RDB Zone ID 1, Photo 003

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 4, Photo 003

RDB Zone ID 4, Photo 004

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 4, Photo 005

RDB Zone ID 5, Photo 001

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 6, Photo 001

RDB Zone ID 7, Photo 001

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 7, Photo 002

RDB Zone ID 7, Photo 003

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 8, Photo 001

RDB Zone ID 8, Photo 002

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 8, Photo 003

RDB Zone ID 8, Photo 004

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 9, Photo 001

RDB Zone ID 9, Photo 002

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 9, Photo 003

RDB Zone ID 10, Photo 001

Field Photographs MP 8.00 – MP 8.25

RDB Zone ID 10, Photo 002

I Zone ID 1, Photo 001

Field Photographs MP 8.00 – MP 8.25

I Zone ID 1, Photo 002

I Zone ID 1, Photo 003

Field Photographs MP 8.00 – MP 8.25

I Zone ID 2, Photo 001

I Zone ID 2, Photo 002

Field Photographs MP 8.00 – MP 8.25

I Zone ID 2, Photo 003

I Zone ID 3, Photo 001

Field Photographs MP 8.00 – MP 8.25

I Zone ID 3, Photo 002

I Zone ID 3, Photo 003

Field Photographs MP 8.00 – MP 8.25

I Zone ID 4, Photo 001

I Zone ID 4, Photo 002

Field Photographs MP 8.00 – MP 8.25

I Zone ID 4, Photo 003

I Zone ID 4, Photo 004

Field Photographs MP 8.00 – MP 8.25

I Zone ID 5, Photo 001

I Zone ID 5, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 8.0 to MP 8.25 LDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/12/11 Date

_____ Printed Name

_____ MDEQ — 4-12-11 Date

James Gamble Printed Name — 4-12-11

Chris Bauer

_____ Enbridge — 4-12-11 Date

Hans Wronka Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 8.0 to MP 8.25, Bank ~~or~~ and Island: *RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-20-11 Date
Steve Kane	Printed Name	
[signature]	MDEQ	4/20/11 Date
Christopher Clampitt	Printed Name	
[signature]	Enbridge	4/20/2011 Date
Laura Naumeier	Printed Name	

*5 islands
- 1 zone for each island captured by YUMA

10 zones on RB captured by YUMA

Enbridge Line 6B MP 608
Marshall, MI Pipeline Release

Summary of Findings
Shoreline and Overbank Reassessment Report
MP 0.0 through MP 15.75
(Binder 2 of 2)

Prepared for United States Environmental Protection Agency

Enbridge Energy, Limited Partnership

Submitted: May 20, 2011

MP 8.25 to MP 8.50

The LDB of segment 8.50 is largely comprised mostly of a forested wetland swamp. A surface oiling of film was observed in two polygons (1 LDB and 2 LDB) along the shoreline and overbank. The reassessment of Linear Transect 3 LDB was conducted from a boat and identified the presence of a low vegetated bank with trace surface oil residue.

Poling of ponded water encountered in Polygon 2 LDB was completed to fully assess the overbank conditions. The detailed results of the poling activities will be presented under separate cover.

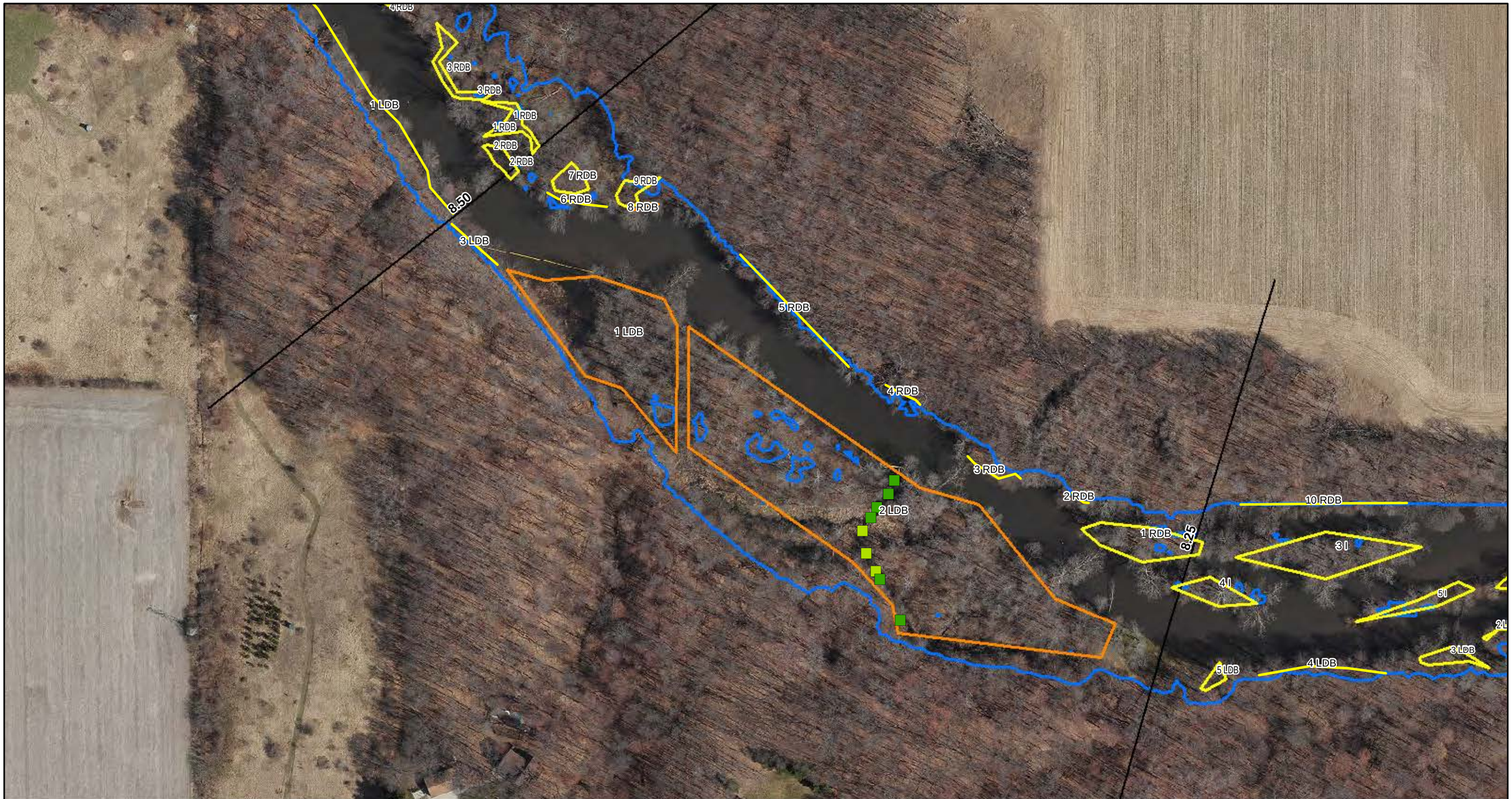
The RDB of segment 8.50 consists mostly of forested wetland swamp habitat transitioning to forested wetland scrub-shrub near the end of the segment. The reassessment identified three polygons, and six linear transects. In general, trace to sporadic coats, stains and covers were observed on trunks, stems and debris throughout most of the segment. Trace to sporadic occurrences of patties was observed along the shoreline and overbank in Polygons 1 RDB and 7 RDB and along Linear Transects 2 RDB, 6 RDB, and 8 RDB.

The FLS did not detect any oil signatures in this segment and no PI observations were noted.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

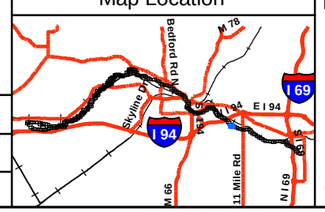
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP8.25-MP8.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 8.5																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	S	Wetland-swamp (forested)		yuma shutdown by windows updates. had to restore tracklog via backup. did not have to re-clear tracklog after startup. visual petroleum sheen observed on property . curtain is in place alongbank. property owner on site for assessment.	Muccianti, Marcus Bauer, Chris
4/14/2011	08:55																	42.28118	-85.10406		Wronka, Hans
2	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	S	Wetland-swamp (forested)		merge with other polygon in 8.50. patties within 20 feet of shore	Muccianti, Marcus Bauer, Chris
4/14/2011	09:42																	42.27955	-85.10008		Wronka, Hans
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Low Vegetated Bank		steep embankment. observation from boat	Muccianti, Marcus Bauer, Chris
4/14/2011	09:57																	42.28133	-85.10412		Wronka, Hans

2011 Reassessment

Bank: RDB

Mile Marker: 8.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
				Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
																				Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	4/20/2011	16:31	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)	42.27995 -85.10038	area inland to innudation is partial under water. see track log	Kane, Sean Clampitt, Chris Neumeier, Laura
2	Overbank	4/20/2011	16:46	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.28020 -85.10055		Kane, Sean Clampitt, Chris Neumeier, Laura
3	Shoreline and Overbank	4/20/2011	16:54	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous	42.28049 -85.10135	staining on rock	Kane, Sean Clampitt, Chris Neumeier, Laura
4	Overbank	4/20/2011	17:02	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)	42.28078 -85.10202	steep banks	Kane, Sean Clampitt, Chris Neumeier, Laura
5	Shoreline	4/20/2011	17:20	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)	42.28131 -85.10323	steep slope	Kane, Sean Clampitt, Chris Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character															
Mile Marker: 8.5																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
6	Shoreline	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Kane, Sean	Clampitt, Chris
4/20/2011	17:40																	42.28152	-85.10387			Neumeier, Laura
7	Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Kane, Sean	Clampitt, Chris
4/20/2011	17:57																	42.28139	-85.10354			Neumeier, Laura
8	Shoreline	☐	☑	☐	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Kane, Sean	Clampitt, Chris
4/20/2011	18:03																	42.28138	-85.10297			Neumeier, Laura
9	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Kane, Sean	Clampitt, Chris
4/20/2011	18:16																	42.28144	-85.10366			Neumeier, Laura

Photo Logs

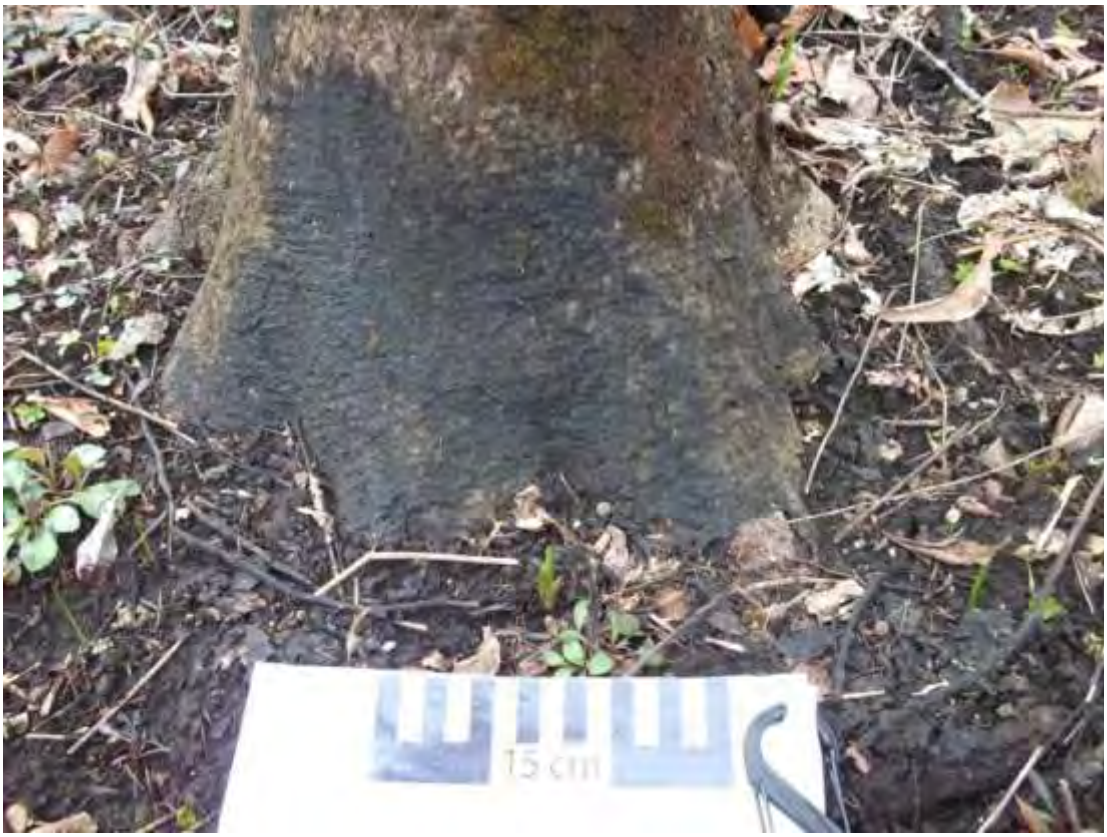
Field Photographs MP 8.25 – MP 8.50

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 8.25 – MP 8.50

LDB Zone ID 1, Photo 003



LDB Zone ID 1, Photo 004

Field Photographs MP 8.25 – MP 8.50

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 8.25 – MP 8.50

LDB Zone ID 3, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 1, Photo 002

RDB Zone ID 1, Photo 003

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 2, Photo 003

RDB Zone ID 3, Photo 001

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 3, Photo 002

RDB Zone ID 4, Photo 001

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 5, Photo 001

RDB Zone ID 6, Photo 001

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 6, Photo 002

RDB Zone ID 6, Photo 003

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 7, Photo 001

RDB Zone ID 7, Photo 002

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 8, Photo 001

RDB Zone ID 8, Photo 002

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 8, Photo 003

RDB Zone ID 9, Photo 001

Field Photographs MP 8.25 – MP 8.50

RDB Zone ID 9, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 8.25 to MP 8.5, Bank or Island: LDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4/14/11	Date
Marcus Murriano	Printed Name		
[signature]	MDEQ	4-14-11	Date
James Gamble	Printed Name	4-14-11	
Chris Bauer Chris Bauer [signature]	Enbridge	4-14-11	Date
Hans Wrong	Printed Name		

*Note the team was accompanied by Victor Cusoni while conducting the assessment on the tract of land that was accessed on foot. (KS-C-145)

*Note the final ~140 feet of LDB bank for this segment was evaluated by boat due to steep embankment.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 8.25 to MP 8.5, Bank ~~or Island~~: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

S-V	START	4-20-11 Date
Sean Kane	Printed Name	
	MDEQ	4/20/11 Date
Christopher Clampitt	Printed Name	
Laura Neumeier	Enbridge	4/20/2011 Date
Laura Neumeier	Printed Name	

9 zones captured by YUMA

No Islands

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 8.25 to MP 8.50, Unique ID LDB 8.50 L1/L2, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan START — 5/16/11 Date

THOMAS P. GRAAN Printed Name

Kathleen Fairchild MDEQ — 5/16/11 Date

Kathleen Fairchild Printed Name

Don DeWitt Enbridge — 5/16/11 Date

Don DeWitt Printed Name

Strike points collected by YUMA

MP 8.50 to MP 8.75

The LDB of segment 8.75 consists mostly of a low vegetated bank throughout the segment. The reassessment was conducted from a boat and one linear transect (1 LDB) was identified. In general, trace staining in the form of surface oil residue on trees was present throughout the area assessed.

The RDB of segment 8.75 consists mostly of wetland scrub-shrub habitat transitioning to forested wetland swamp near the end of the segment. The reassessment identified two points, seven polygons, and one linear transect. In general, trace to sporadic coats and stains were observed on trunks, stems and debris throughout most of the segment. Trace occurrences of patties were observed along the shoreline and overbank in polygons 9 RDB and 10 RDB and shoreline at Point 5 RDB.

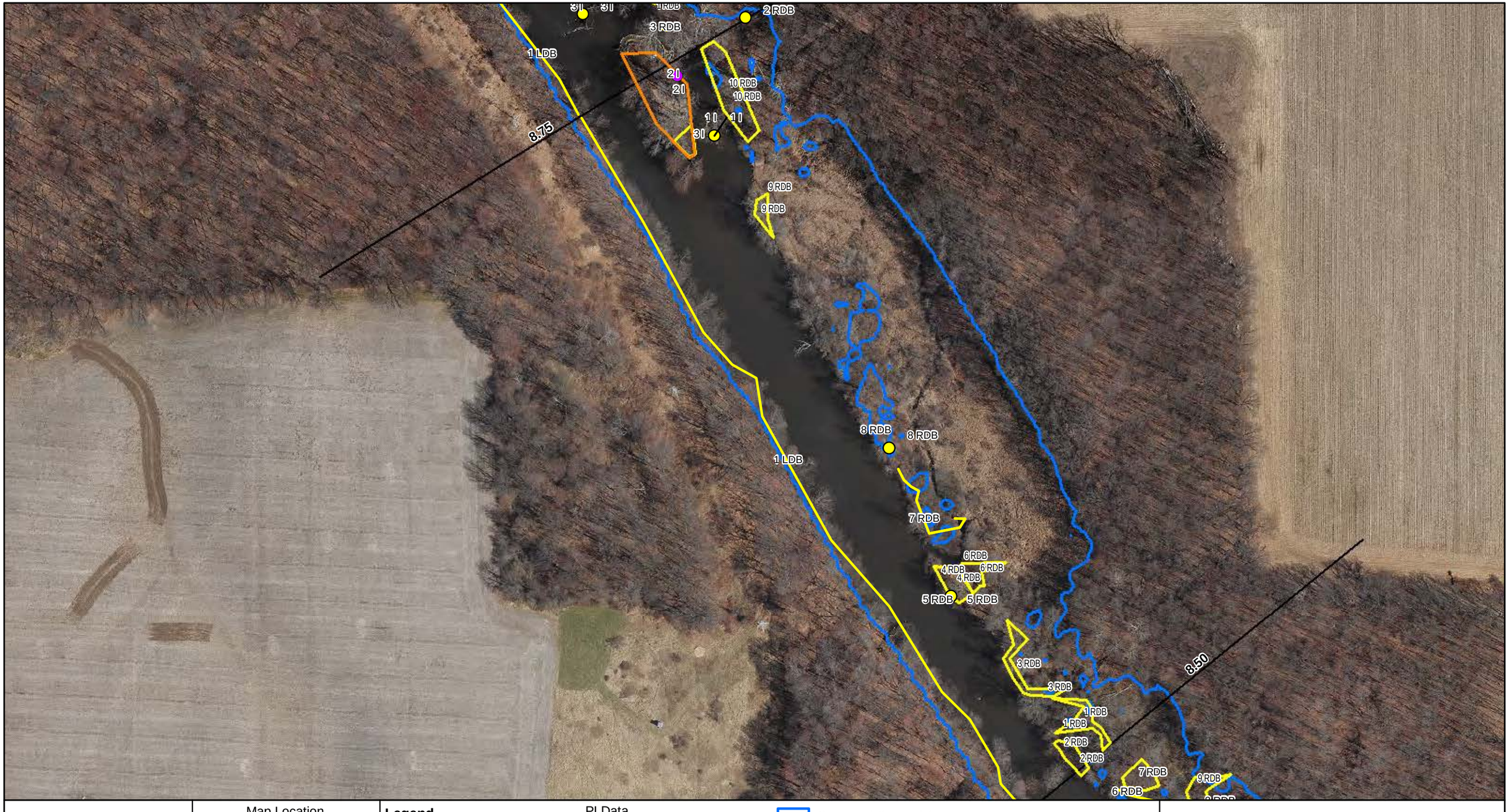
One island is located within segment 8.75 that is largely comprised of a forested wetland swamp. The island consisting of Polygons 2 I and 3 I and Point 1 I generally contained a sporadic distribution of patties, oiled debris, trunks and stems along the shoreline and overbank.

The PI investigation identified one unconfirmed area of interest within Polygon 2 I near the end of the segment. The FLS did not identify any oil signatures within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP8.50-MP8.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank:	LDB	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker:	8.75																				
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Low Vegetated Bank		observations from boat. stained trees	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	17:22																	42.28136	-85.10415		Wronka, Hans

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 8.75																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	P	Wetland-emergent/herbaceous			Kane, Sean Clampitt, Chris
4/21/2011	12:59																	42.28427	-85.10607		Neumeier, Laura
2	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☑	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		tar patties on upstream side small area under restoreation matting under water	Kane, Sean Clampitt, Chris
4/21/2011	13:11																	42.28427	-85.10632		Neumeier, Laura
3	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		tar patties polygon	Kane, Sean Clampitt, Chris
4/21/2011	13:16																	42.28419	-85.10622		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 8.75																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-scrub/shrub			Kane, Sean / Clampitt, Chris
4/21/2011	09:12																	42.28168	-85.10406		Neumeier, Laura
10	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean / Clampitt, Chris
4/21/2011	12:34																	42.28453	-85.10587		Neumeier, Laura
2	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-scrub/shrub			Kane, Sean / Clampitt, Chris
4/21/2011	09:20																	42.28154	-85.10383		Neumeier, Laura
3	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Kane, Sean / Clampitt, Chris
4/21/2011	09:55																	42.28209	-85.10423		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub		1 tar patties	Kane, Sean / Clampitt, Chris
4/21/2011	10:10																	42.28234	-85.10461		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character																
Mile Marker: 8.75																							
Source: 2011 Reassessment																							
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**		
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**		
																					Enbridge Team Lead		
5	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub			Kane, Sean		
																					Clampitt, Chris		
4/21/2011	10:13																	42.28225	-85.10465		Neumeier, Laura		
6	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Kane, Sean		
																					Clampitt, Chris		
4/21/2011	10:50																	42.28236	-85.10446		Neumeier, Laura		
7	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub		area of shrubs walked by others	Kane, Sean		
																					Clampitt, Chris		
4/21/2011	11:17																	42.28279	-85.10495		Neumeier, Laura		
8	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Kane, Sean		
																					Clampitt, Chris		
4/21/2011	11:49																	42.28342	-85.10538		Neumeier, Laura		
9	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			Kane, Sean		
																					Clampitt, Chris		
4/21/2011	12:15																	42.28405	-85.10586		Neumeier, Laura		

Photo Logs

Field Photographs MP 8.50 – MP 8.75

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 1, Photo 003

RDB Zone ID 2, Photo 001

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 2, Photo 002

RDB Zone ID 3, Photo 001

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 3, Photo 002

RDB Zone ID 4, Photo 001

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 4, Photo 002

RDB Zone ID 4, Photo 003

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 5, Photo 001

RDB Zone ID 6, Photo 001

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 6, Photo 002

RDB Zone ID 6, Photo 003

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 7, Photo 001

RDB Zone ID 7, Photo 002

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 8, Photo 001

RDB Zone ID 9, Photo 001

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 9, Photo 002

RDB Zone ID 10, Photo 001

Field Photographs MP 8.50 – MP 8.75

RDB Zone ID 10, Photo 002

I Zone ID 1, Photo 001

Field Photographs MP 8.50 – MP 8.75

I Zone ID 2, Photo 001

I Zone ID 2, Photo 002

Field Photographs MP 8.50 – MP 8.75

I Zone ID 2, Photo 003

I Zone ID 2, Photo 004

Field Photographs MP 8.50 – MP 8.75

I Zone ID 3, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 8.50 to MP 8.75, (Bank) or Island:_____, Segment Length: 0.25 mile

LDB

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/12/11 Date

Marcus Mulligan Printed Name

_____ MDEQ 4-12-11 Date

James Gamble Printed Name 4-12-11

Chris Bluem
Chris Bluem

_____ Enbridge 4-12-11 Date

Hans Wronten Printed Name

Entire segment observed from the boat.

Note some sections along segment had to be observed from approximately 20 to 30 feet from shore due to low overhanging trees.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 8.5 to MP 8.75, Bank ~~or~~ and Island: *RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-21-11 Date
Sean Kane	Printed Name	
[signature]	MDEQ	4/21/11 Date
Christopher Clampitt	Printed Name	
[signature]	Enbridge	4/21/2011 Date
Laura Neumeier	Printed Name	

*2 islands –
3 zones on Islands captured by YUMA
10 zones on RB captured by YUMA

MP 8.75 to MP 9.00

The LDB of segment 9.00 consists mostly of a low vegetated bank and transitions to forested wetland swamp towards the end of the segment. The reassessment identified one point, two polygons and one linear transect. In general, trace to sporadic staining of surface oil residue was present in most of the areas. Trace surface oil residue was identified at Polygon 2 LDB and 4 LDB and Linear Transect 1 LDB. A sporadic distribution of patties was also observed at Point 3 LDB.

The RDB of segment 9.00 consists mostly of forested wetland swamps. The reassessment identified one point, seven polygons, and three linear transects. In general, traces of coats and stains were observed on trunks, stems and debris throughout most of the segment. Trace occurrences of patties were observed in four polygons (1 RDB, 4 RDB, 5 RDB, and 9 RDB) and along the shoreline of Linear Transect 11 RDB. A trace film was documented in the overbank at Polygon 7 RDB and along the shoreline within Linear Transect 11 RDB.

Two islands are located within segment 9.00 that consist of forested wetland swamps. The upstream island (Polygons 1 I, 2 I and 3 I) generally consisted of sporadic to patchy distribution of patties, asphalt pavement, oiled debris, trunks and stems. The downstream island (Polygons 4 I, 5 I, 6 I, 7 I and 8 I) consisted of oil film and occurrences of surface oil residue, patties, tar balls, asphalt pavement on the ground surface, debris, trunks and stems.

The FLS did not detect any oil signatures in this segment and no PI observations were noted.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP8.75-MP9.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 9																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Latitude**	**Longitude**		**Enbridge Team Lead**
Date	**Time**																				
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Low Vegetated Bank		observation from boat	Muccianti, Marcus
																					Bauer, Chris
4/12/2011	17:40																	42.28441	-85.10677		Wronka, Hans
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	17:45																	42.28668	-85.10946		Wronka, Hans
3	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	17:52																	42.28677	-85.10942		Wronka, Hans
4	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/12/2011	18:06																	42.28709	-85.10931		Wronka, Hans

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character												
Mile Marker: 9																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**	**Comments**
Date	**Time**																	**Latitude** / **Longitude**	
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)	1 tar patties
4/26/2011	10:52																	42.28493 / -85.10660	
10	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	
4/26/2011	14:27																	42.28655 / -85.10807	
11	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	shoreline mainly observation at nodes (absorbant boom in creek) 1 tar patties
4/26/2011	14:54																	42.28744 / -85.10901	
2	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)	
4/26/2011	11:03																	42.28476 / -85.10593	
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)	
4/26/2011	11:07																	42.28476 / -85.10633	

START	
MDEQ	
Enbridge Team Lead	
Kane, Sean	
Keiper, Bill	
Neumeier, Laura	
Kane, Sean	
Keiper, Bill	
Neumeier, Laura	
Kane, Sean	
Keiper, Bill	
Neumeier, Laura	
Kane, Sean	
Keiper, Bill	
Neumeier, Laura	
Kane, Sean	
Keiper, Bill	
Neumeier, Laura	

2011 Reassessment

Bank: RDB

Mile Marker: 9

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
4	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	T	Wetland-swamp (forested)		1 surface residue by tar patties	Kane, Sean
																					Keiper, Bill
4/26/2011	11:25																	42.28542	-85.10664		Neumeier, Laura
5	Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		mainly coating	Kane, Sean
																					Keiper, Bill
4/26/2011	11:58																	42.28553	-85.10743		Neumeier, Laura
6	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-emergent/herbaceous			Kane, Sean
																					Keiper, Bill
4/26/2011	12:38																	42.28568	-85.10735		Neumeier, Laura
7	Shoreline and Overbank	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Keiper, Bill
4/26/2011	13:08																	42.28618	-85.10752		Neumeier, Laura
8	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Keiper, Bill
4/26/2011	13:28																	42.28624	-85.10783		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 9																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
9	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			Kane, Sean
																					Keiper, Bill
4/26/2011	13:54																	42.28587	-85.10811		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 9																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☑	☐	☑	☑	S	Wetland-swamp (forested)			Kane, Sean Clampitt, Chris
4/21/2011	13:42																	42.28496	-85.10696		Neumeier, Laura
2	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	P	Wetland-swamp (forested)			Kane, Sean Clampitt, Chris
4/21/2011	13:51																	42.28495	-85.10696		Neumeier, Laura
3	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	S	Wetland-swamp (forested)			Kane, Sean Clampitt, Chris
4/21/2011	14:10																	42.28481	-85.10689		Neumeier, Laura
4	Shoreline and Overbank	☐	☑	☐	☑	☑	☐	☐	☑	☑	☐	☑	☑	☐	☑	☑	P	Wetland-swamp (forested)		continue from thursday April 21,2011 about 50 %	Kane, Sean Keiper, Bill
4/26/2011	09:53																	42.28639	-85.10871		Neumeier, Laura
5	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-swamp (forested)		polygon within polygon	Kane, Sean Keiper, Bill
4/26/2011	10:09																	42.28674	-85.10914		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character												
Mile Marker: 9																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**	**Comments**	**START**
Date	**Time**																	**Latitude** / **Longitude**		**MDEQ** / **Enbridge Team Lead**
6	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)	closer to shore	Kane, Sean Keiper, Bill
4/26/2011	10:15																	42.28653 / -85.10878		Neumeier, Laura
7	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)	polygon within polygon	Kane, Sean Keiper, Bill
4/26/2011	10:20																	42.28691 / -85.10912		Neumeier, Laura
8	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☑	☐	☑	☑	☐	☑	☑	P	Wetland-swamp (forested)	about 50 %	Graan, Tom Fairchild, Katie
5/4/2011	13:57																	42.28642 / -85.10882		Neumeier, Laura

Photo Logs

Field Photographs MP 8.75 – MP 9.00

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 8.75 – MP 9.00

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 1, Photo 003

RDB Zone ID 2, Photo 001

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 3, Photo 001

RDB Zone ID 4, Photo 001

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 4, Photo 002

RDB Zone ID 4, Photo 003

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 5, Photo 001

RDB Zone ID 5, Photo 002

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 5, Photo 003

RDB Zone ID 6, Photo 001

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 6, Photo 002

RDB Zone ID 7, Photo 001

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 7, Photo 002

RDB Zone ID 7, Photo 003

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 8, Photo 001

RDB Zone ID 8, Photo 002

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 8, Photo 003

RDB Zone ID 9, Photo 001

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 9, Photo 002

RDB Zone ID 9, Photo 003

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 9, Photo 004

RDB Zone ID 10, Photo 001

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 10, Photo 002

RDB Zone ID 11, Photo 001

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 11, Photo 002

RDB Zone ID 11, Photo 003

Field Photographs MP 8.75 – MP 9.00

RDB Zone ID 11, Photo 004

RDB Zone ID 11, Photo 005

Field Photographs MP 8.75 – MP 9.00

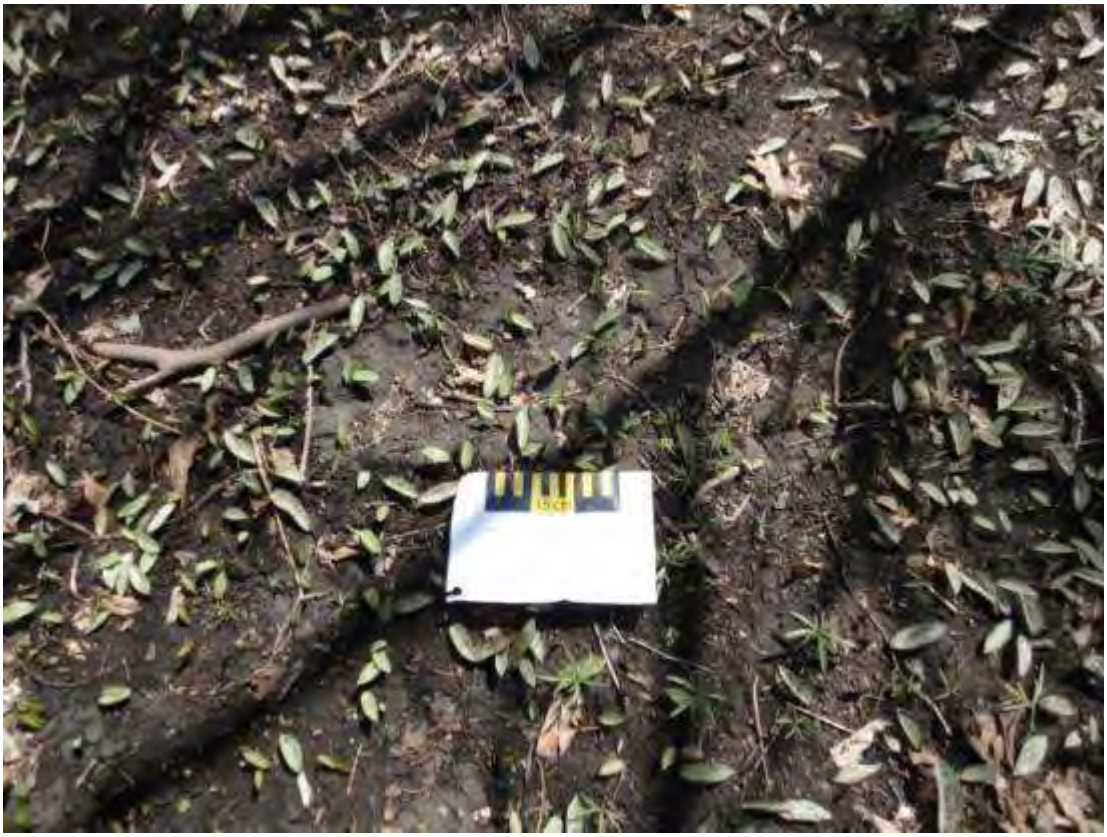
I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 8.75 – MP 9.00

I Zone ID 1, Photo 003

I Zone ID 1, Photo 004



Field Photographs MP 8.75 – MP 9.00

I Zone ID 2, Photo 001

I Zone ID 3, Photo 001

Field Photographs MP 8.75 – MP 9.00

I Zone ID 3, Photo 002

I Zone ID 3, Photo 003

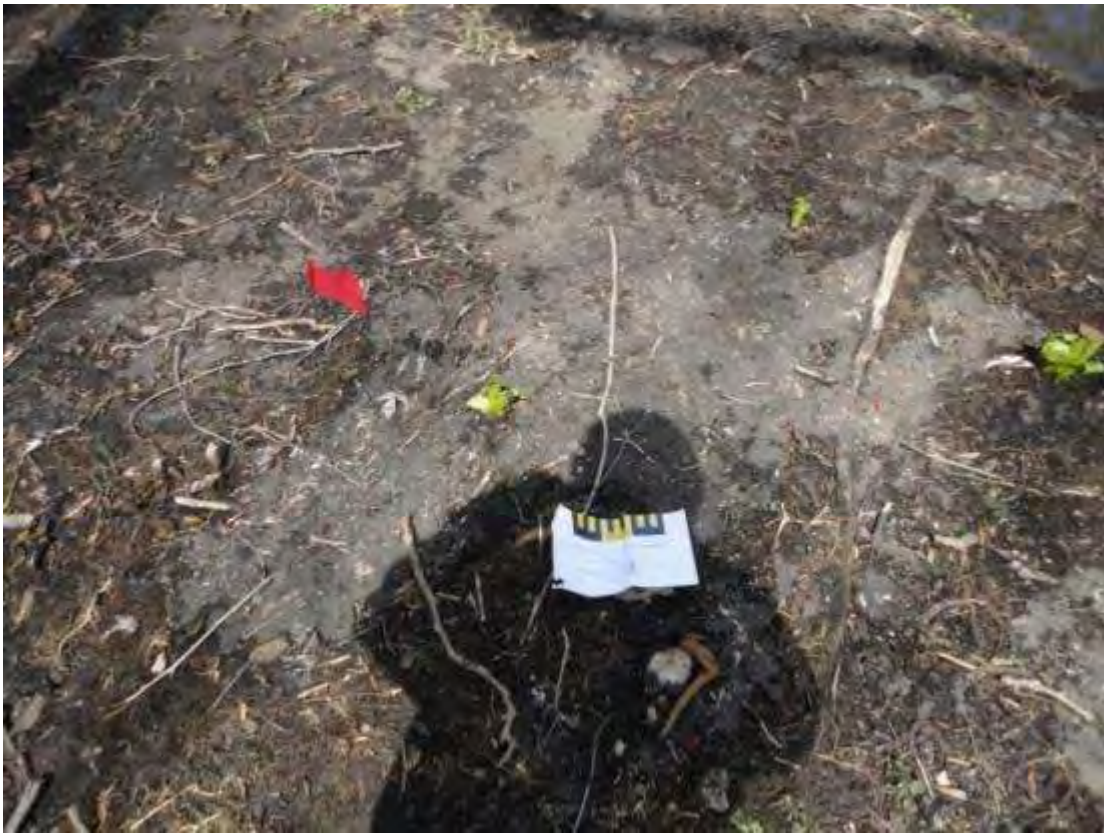
Field Photographs MP 8.75 – MP 9.00

I Zone ID 3, Photo 004

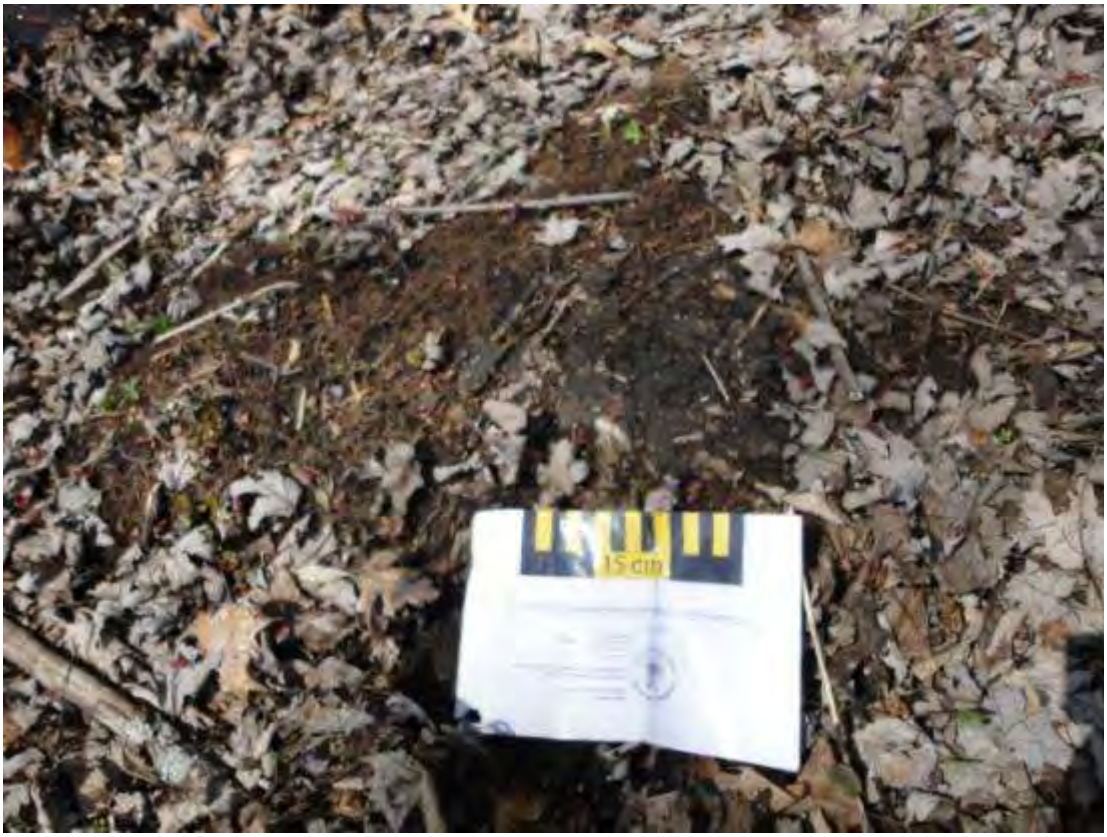
I Zone ID 4, Photo 001

Field Photographs MP 8.75 – MP 9.00

I Zone ID 4, Photo 002



I Zone ID 4, Photo 003



Field Photographs MP 8.75 – MP 9.00

I Zone ID 4, Photo 004

I Zone ID 4, Photo 005

Field Photographs MP 8.75 – MP 9.00

I Zone ID 4, Photo 006

I Zone ID 4, Photo 007

Field Photographs MP 8.75 – MP 9.00

I Zone ID 4, Photo 008

I Zone ID 5, Photo 001

Field Photographs MP 8.75 – MP 9.00

I Zone ID 5, Photo 002

I Zone ID 5, Photo 003

Field Photographs MP 8.75 – MP 9.00

I Zone ID 6, Photo 001

I Zone ID 6, Photo 002

Field Photographs MP 8.75 – MP 9.00

I Zone ID 7, Photo 001

I Zone ID 7, Photo 002

Field Photographs MP 8.75 – MP 9.00

I Zone ID 7, Photo 003

I Zone ID 8, Photo 001

Field Photographs MP 8.75 – MP 9.00

I Zone ID 8, Photo 002

I Zone ID 8, Photo 003

Field Photographs MP 8.75 – MP 9.00

I Zone ID 8, Photo 004

I Zone ID 8, Photo 005

Field Photographs MP 8.75 – MP 9.00

I Zone ID 8, Photo 006

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 8.75 to MP 9.0 LDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/12/11 Date

Printed Name

_____ MDEQ 4-12-11 Date

_____ Printed Name

4-12-11

_____ Enbridge 4-12-11 Date

_____ Printed Name

Majority of LDB observed from boat.
Part of the KS-C-147 property is presently on an island and was not ~~mont~~ assessed at this time.
Only monitored the LDB for this segment.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 8.75 to MP 9.0, Unique ID LDB Access, Bank ____ and/or Island Island only

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan _____ START _____ 5/4/11 Date

THOMAS P. GRAAN _____ Printed Name

Kat Fairchild _____ MDEQ _____ 5-4-11 Date

Kathleen Fairchild _____ Printed Name

Laura Neumeier _____ Enbridge _____ 5/4/11 Date

Laura Neumeier _____ Printed Name

1 Zone captured by YUMA

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 8.75 to MP 9.0, ~~Bank or~~ Island only*: _____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START _____ Date 4-21-11

Sean Kane Printed Name

_____ MDEQ _____ Date 4/21/11

Christopher Clampit Printed Name

_____ Enbridge _____ Date 4/21/2011

Laura Neumeier Printed Name

* 2 islands w/in MP 9.0 completed. One downstream island not completed due to YUMA failure.

3 zones collected by YUMA.

Team 3

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 8.75 to MP 9.0, Bank ~~of~~ and Island: * RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-26-11 Date
Sean Kane	Printed Name	
William Kaiper	MDEQ	4-26-11 Date
[signature]	Printed Name	
[signature]	Enbridge	4/26/2011 Date
Laura Neumeier	Printed Name	

* 1 remaining island (down-river most island) completed
4 zones captured on island by YUMA

RB – 11 zones captured by YUMA

MP 9.0 to MP 9.25

The LDB of segment 9.25 generally consists of a forested wetland swamp lining the upstream portion of the segment transitioning to a steep forested upland bank at the downstream portion of the segment. The initial reassessment identified one polygon and one linear transect (1 LDB and 2 LDB). 1 LDB consists largely of forested wetland swamp habitat with trace amounts of coated and stained debris, patties, and surface residue throughout the polygon. 2 LDB consists of a low vegetated bank with trace amounts of surface oil residue.

The RDB of segment 9.25 consists of three different types of wetland habitats within the floodplain; forested wetland swamp, emergent/herbaceous, and scrub-shrub. The initial reassessment identified three polygons and three linear transects, each with trace amounts of coated and stained debris and trunks.

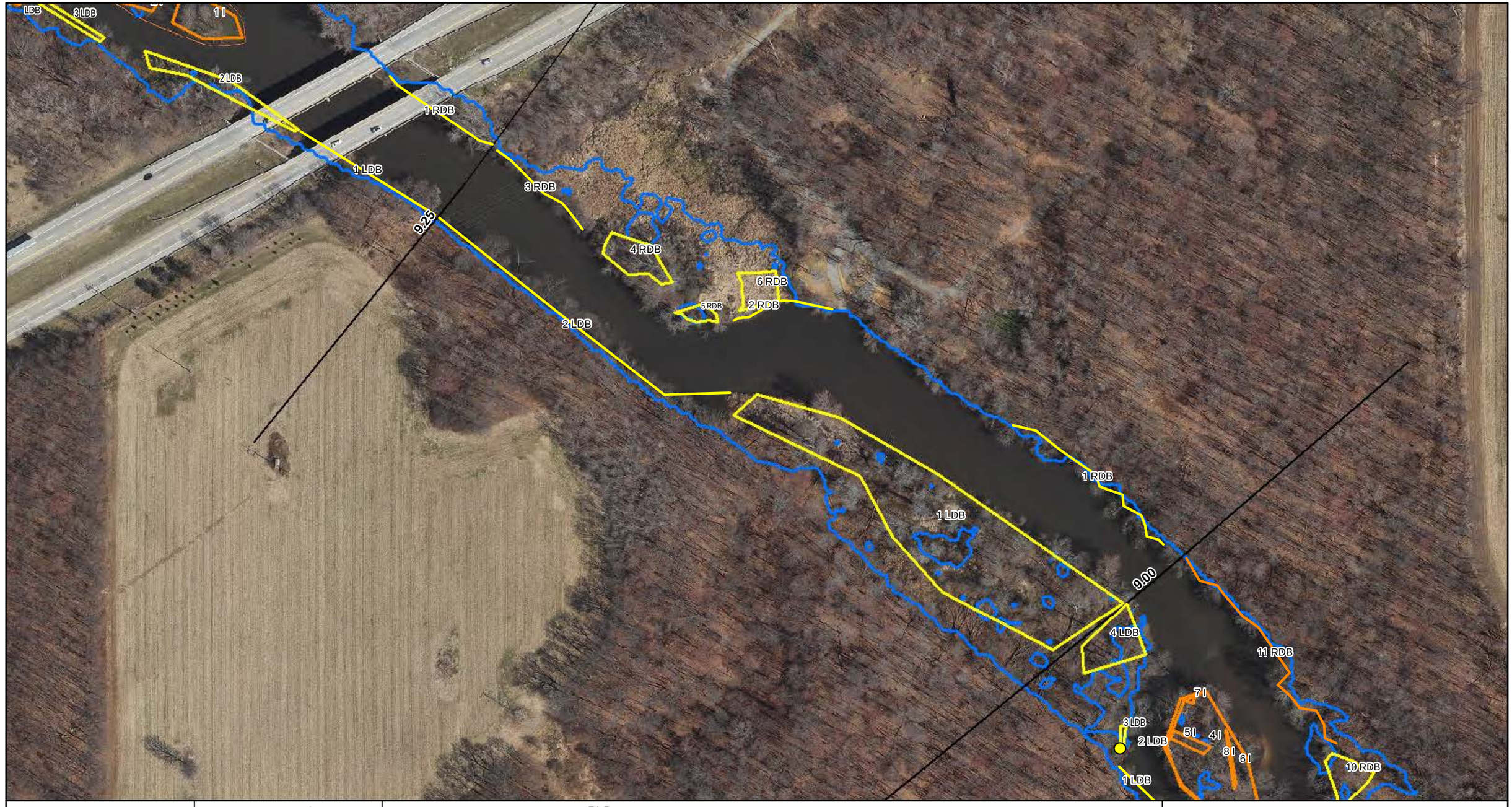
No islands are located within segment 9.25 and the FLS did not identify any oil signatures within this segment.

No PI observations were noted within the segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures



ENBRIDGE

Drawn: DE 5/17/2011

Approved:

Project #: 60162778

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP9.00-MP9.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 9.25																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Latitude**	**Longitude**		**Enbridge Team Lead**
Date	**Time**																				
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	T	Wetland-swamp (forested)		polygon entends to waters edge	Muccianti, Marcus Bauer, Chris
4/13/2011	08:49																	42.28788	-85.11055		Wronka, Hans
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Low Vegetated Bank		steep bank observation from boat	Muccianti, Marcus Bauer, Chris
4/13/2011	09:02																	42.28908	-85.11352		Wronka, Hans

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 9.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
																					Enbridge Team Lead
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Keiper, Bill
4/26/2011	15:26																	42.28800	-85.10993		Neumeier, Laura
2	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	T	Wetland-emergent/herbaceous			Kane, Sean
																					Keiper, Bill
4/26/2011	15:43																	42.28856	-85.11169		Neumeier, Laura
3	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Kane, Sean
																					Keiper, Bill
4/26/2011	16:12																	42.28916	-85.11281		Neumeier, Laura
4	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Kane, Sean
																					Keiper, Bill
4/26/2011	16:36																	42.28880	-85.11244		Neumeier, Laura
5	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Kane, Sean
																					Keiper, Bill
4/26/2011	16:41																	42.28854	-85.11195		Neumeier, Laura

2011 Reassessment

Bank:	RDB	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker:	9.25																				MDEQ
Source:	2011 Reassessment																				
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
Date	Time																				
6	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-emergent/herbaceous			Kane, Sean
																					Keiper, Bill
4/26/2011	16:44																	42.28853	-85.11174		Neumeier, Laura

Photo Logs

Field Photographs MP 9.00 – MP 9.25

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 9.00 – MP 9.25

LDB Zone ID 1, Photo 003

LDB Zone ID 2, Photo 001

Field Photographs MP 9.00 – MP 9.25

LDB Zone ID 2, Photo 002

RDB Zone ID 1, Photo 001

Field Photographs MP 9.00 – MP 9.25

RDB Zone ID 1, Photo 002

RDB Zone ID 1, Photo 003

Field Photographs MP 9.00 – MP 9.25

RDB Zone ID 1, Photo 004

RDB Zone ID 2, Photo 001

Field Photographs MP 9.00 – MP 9.25

RDB Zone ID 2, Photo 002

RDB Zone ID 2, Photo 003

Field Photographs MP 9.00 – MP 9.25

RDB Zone ID 2, Photo 004

RDB Zone ID 2, Photo 005

Field Photographs MP 9.00 – MP 9.25

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 9.00 – MP 9.25

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

Field Photographs MP 9.00 – MP 9.25

RDB Zone ID 5, Photo 001

RDB Zone ID 6, Photo 001

Field Photographs MP 9.00 – MP 9.25

RDB Zone ID 6, Photo 002

RDB Zone ID 6, Photo 003

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 9.0 to MP 9.25 LDB (Bank) or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/13/11 Date

Thomas Macinnis Printed Name

_____ MDEQ 4-13-11 Date

James Dahlke Printed Name

Chris Bauer 4/13/11

_____ Enbridge 4-13-11 Date

Hans Wranta Printed Name

Approximately 1/2 of the section was observed from the boat.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 9.0 to MP 9.25, (Bank) ~~or Island~~: RB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4-26-11 Date

Sean Kane Printed Name

William Keiger MDEQ 4-26-11 Date

_____ Printed Name

_____ Enbridge 4/26/2011 Date

Laura Neumeier Printed Name

6 Zones captured by YUMA

MP 9.25 to MP 9.50

The LDB of segment 9.50 generally consists of a low vegetative bank with scrub-shrub, emergent/herbaceous, or forested wetland swamp habitats. The initial reassessment identified seven polygons, one linear transect, and one point containing staining and surface oil residue. One polygon (4 LDB), occurring within a previous O&M work site (9.50 L1), contained an unconfirmed film across the excavated area. This excavation was completed in the fall of 2010.

The RDB of segment 9.50 consists primarily of Historic Bridge Park. One linear transect (1 RDB) containing trace amounts of staining and coating on trunks and stems was identified on the RDB of segment 9.50.

Two PI observations noted as inconclusive and unconfirmed areas of interest were identified in this segment along the LDB and RDB. The PI data point that was identified on the LDB (6 LDB) coincides with SORT polygon 5 LDB, which consists of surface oil residue and tar patties. A PI data point noted as an unconfirmed area of interest on the RDB appears to correspond to polygon 4 LDB.

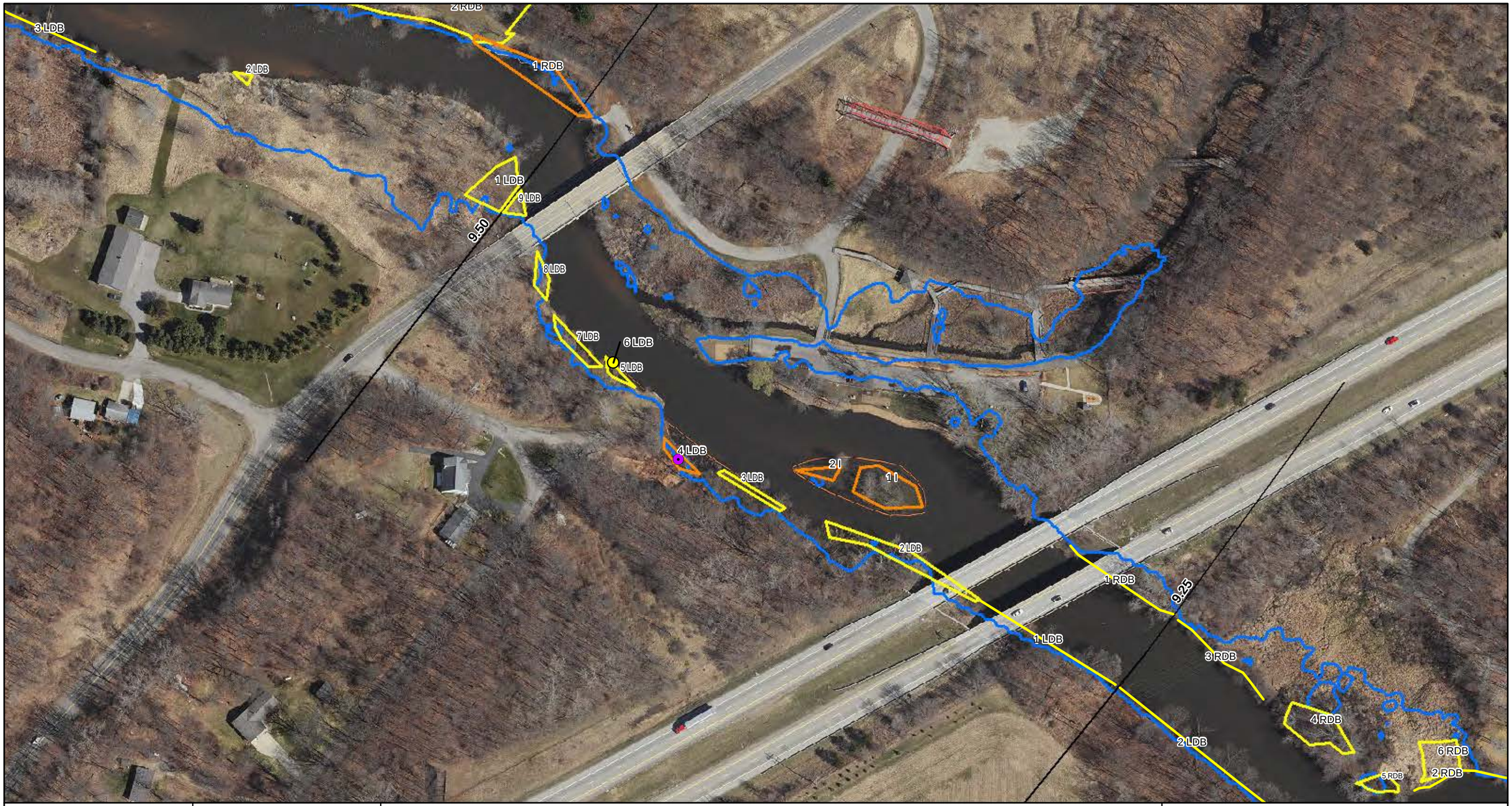
One island (1 I) is located within segment 9.50, consisting of emergent/herbaceous wetland habitat. The initial reassessment identified two polygons. The upstream polygon (1 I), contained a broken distribution of oil occurrence ranging from patties and asphalt pavement on the soil surface to surface oil residue on trunks and stems. The downstream polygon (2 I), contained trace amounts of stained or covered trunks and stems.

The FLS did not identify any oil signatures within this segment.

Segment 9.50 has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

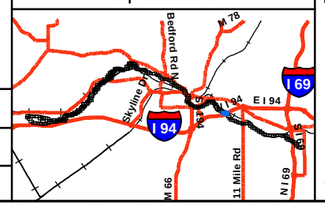
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP9.25-MP9.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 9.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Low Vegetated Bank		steep bank observation from boat	Muccianti, Marcus
																					Bauer, Chris
4/13/2011	09:06																	42.28936	-85.11434		Wronka, Hans
2	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	T	Low Vegetated Bank			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	09:21																	42.28965	-85.11527		Wronka, Hans
3	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	T	Wetland-scrub/shrub			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	09:32																	42.28992	-85.11585		Wronka, Hans
4	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Other (comments)		excavated area isolated by containment boom. possible that film is organic. unable to confirm	Muccianti, Marcus
																					Bauer, Chris
4/13/2011	09:42																	42.29007	-85.11622		Wronka, Hans
5	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	S	Wetland-emergent/herbaceous			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	09:55																	42.29042	-85.11656		Wronka, Hans

2011 Reassessment

Bank: LDB

Mile Marker: 9.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		MDEQ / Enbridge Team Lead
6	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	P	Wetland-scrub/shrub			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	09:57																	42.29039	-85.11651		Wronka, Hans
7	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	10:05																	42.29059	-85.11687		Wronka, Hans
8	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		patties along waters edge	Muccianti, Marcus
																					Bauer, Chris
4/13/2011	10:14																	42.29079	-85.11695		Wronka, Hans
9	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)		patties at waters edge	Muccianti, Marcus
																					Bauer, Chris
4/13/2011	10:25																	42.29110	-85.11710		Wronka, Hans

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 9.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank		coating on I-94 bridge	Kane, Sean
																					Keiper, Bill
4/26/2011	17:36																	42.28993	-85.11427		Neumeier, Laura

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 9.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
																					Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☑	☐	☑	☑	☐	☑	☑	B	Wetland-emergent/herbaceous		about 50% piles of debris with tar	Kane, Sean
																					Keiper, Bill
4/26/2011	17:06																	42.28989	-85.11497		Neumeier, Laura
2	Shoreline and Overbank	☐	☑	☐	☑	☑	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	T	Wetland-emergent/herbaceous			Kane, Sean
																					Keiper, Bill
4/26/2011	17:18																	42.28993	-85.11529		Neumeier, Laura

Photo Logs

Field Photographs MP 9.25 – MP 9.50

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 9.25 – MP 9.50

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 9.25 – MP 9.50

LDB Zone ID 4, Photo 001

LDB Zone ID 5, Photo 001

Field Photographs MP 9.25 – MP 9.50

LDB Zone ID 6, Photo 001

LDB Zone ID 7, Photo 001

Field Photographs MP 9.25 – MP 9.50

LDB Zone ID 8, Photo 001

LDB Zone ID 8, Photo 002

Field Photographs MP 9.25 – MP 9.50

LDB Zone ID 9, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 9.25 – MP 9.50

RDB Zone ID 1, Photo 002

RDB Zone ID 1, Photo 003

Field Photographs MP 9.25 – MP 9.50

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 9.25 – MP 9.50

I Zone ID 1, Photo 003

I Zone ID 1, Photo 004

Field Photographs MP 9.25 – MP 9.50

I Zone ID 1, Photo 005

I Zone ID 1, Photo 006

Field Photographs MP 9.25 – MP 9.50

I Zone ID 2, Photo 001

I Zone ID 2, Photo 002

Field Photographs MP 9.25 – MP 9.50

I Zone ID 2, Photo 003

I Zone ID 2, Photo 004

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

LDB

Segment ID: From MP 9.25 to MP 9.5, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START 4/13/11 Date

Marcus Muccioni Printed Name

Chris Bauer MDEQ 4-13-11 Date

Chris Bauer Printed Name

[signature] 4-13-11

James Gamble

[signature] Enbridge 4-13-11 Date

Hans Wronka Printed Name

Shoreline @ Bridge was observed by boat

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 9.25 to MP 9.5, ~~Bank or~~ Island: RB* ONLY, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4-26-11 Date
Sean Kane	Printed Name	
William Keiper	MDEQ	4-26-11 Date
[signature]	Printed Name	
[signature]	Enbridge	4/26/2011 Date
Laura Neumeier	Printed Name	

* 1 island - 2 zones captured by YVMA

MP 9.50 to MP 9.75

The LDB of segment 9.75 generally consists of emergent/herbaceous wetland habitat on the upstream portion of the LDB, transitioning to a sand/gravel shoreline toward the downstream portion of the LDB. The initial reassessment identified two polygons and one linear transect largely containing staining and surface oil residue, with patties and oiled debris noted.

The RDB of segment 9.75 consists primarily of a low vegetative bank. The initial reassessment identified four polygons containing trace to sporadic amounts of stained and coated trunks and stems. One polygon (1 RDB) located at the start of the segment was identified as containing both organic and petroleum film/sheen.

Two islands are located within segment 9.75, consisting of forested wetland swamp habitat. The initial reassessment identified one polygon (1 I) on the upstream island containing broken amounts of oil occurrence, including sheen and ranging from covered to coated and tar and patties. It was also noted that this island contained a petroleum odor. The initial reassessment of the downstream island identified three polygons containing varying degrees of oil thickness and character.

Poling was also conducted within the segment to fully assess the overbank. The detailed results of the poling activities will be completed under a separate cover.

Two PI observations noted as inconclusive were identified in this segment on the downstream island. The PI data point that was identified as 6 I corresponds to the SORT data collected with polygon 3 I. The PI data point identified as 5 I corresponds with the SORT data collected with polygon 4 I.

The FLS did not identify any oil signatures within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

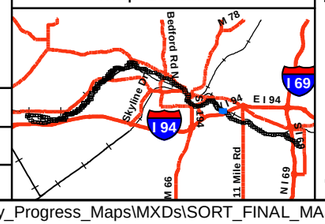
ENBRIDGE

Drawn: DE 5/17/2011

Approved:

Project #: 60162778

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP9.50-MP9.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 9.75																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	**Time**																	**Latitude**	**Longitude**		**Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Muccianti, Marcus Bauer, Chris
4/13/2011	10:35																	42.29129	-85.11710		Wronka, Hans
2	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Muccianti, Marcus Bauer, Chris
4/13/2011	10:55																	42.29165	-85.11877		Wronka, Hans
3	Shoreline	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	T	Sand-Gravel shoreline		landform at end of segment is now an island	Muccianti, Marcus Bauer, Chris
4/13/2011	11:16																	42.29227	-85.12140		Wronka, Hans

2011 Reassessment

Bank: RDB

Mile Marker: 9.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	S	Low Vegetated Bank		sheen mix of natural & petroleum	Johnson, Kevin
																					Flickinger, Brian
4/26/2011	10:27																	42.29179	-85.11735		Oswald, John
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Low Vegetated Bank		2-3 foot bank	Johnson, Kevin
																					Flickinger, Brian
4/26/2011	10:54																	42.29214	-85.11913		Oswald, John
3	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Johnson, Kevin
																					Flickinger, Brian
4/26/2011	11:21																	42.29252	-85.11986		Oswald, John
4	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Johnson, Kevin
																					Flickinger, Brian
4/26/2011	11:39																	42.29255	-85.11988		Oswald, John

2011 Reassessment

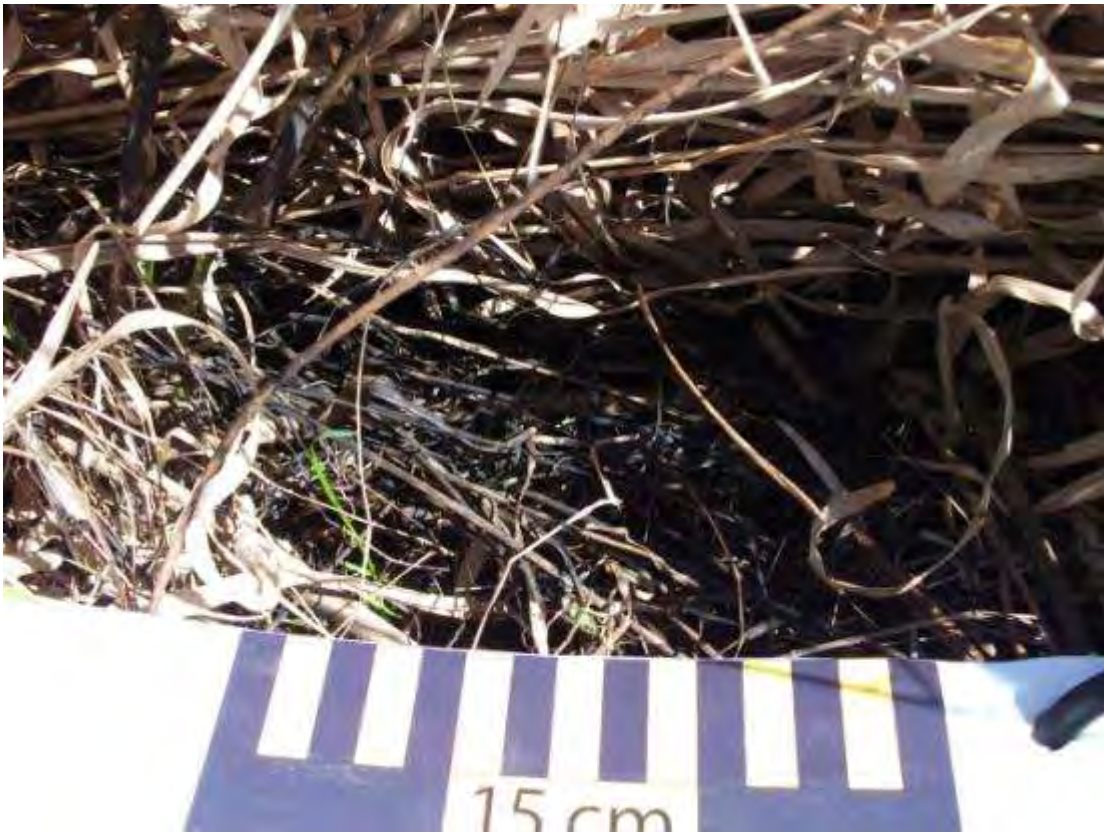
Bank: I		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 9.75																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☑	☑	☐	☑	☐	☐	☐	☑	☑	☑	☐	☐	☑	☑	B	Wetland-swamp (forested)		island; petroleum odor	Johnson, Kevin Flickinger, Brian
4/26/2011	11:05																	42.29229	-85.11965		Oswald, John
3	Shoreline	☐	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☑	☐	☑	☑	P	Wetland-swamp (forested)			Johnson, Kevin Flickinger, Brian
4/26/2011	12:08																	42.29269	-85.12121		Oswald, John
4	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☑	☑	☐	☑	☐	☐	☑	☑	P	Wetland-swamp (forested)		was 9.75 i2 pink polygon 10 to 15 %	Graan, Tom Fairchild, Katie
5/4/2011	12:56																	42.29241	-85.12044		Neumeier, Laura

Photo Logs

Field Photographs MP 9.50 – MP 9.75

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001



Field Photographs MP 9.50 – MP 9.75

LDB Zone ID 3, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 9.50 – MP 9.75

RDB Zone ID 1, Photo 002

RDB Zone ID 2, Photo 001

Field Photographs MP 9.50 – MP 9.75

RDB Zone ID 2, Photo 002

RDB Zone ID 3, Photo 001

Field Photographs MP 9.50 – MP 9.75

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

Field Photographs MP 9.50 – MP 9.75

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 9.50 – MP 9.75

I Zone ID 1, Photo 003

I Zone ID 3, Photo 001

Field Photographs MP 9.50 – MP 9.75

I Zone ID 3, Photo 002

I Zone ID 3, Photo 003

Field Photographs MP 9.50 – MP 9.75

I Zone ID 4, Photo 001

I Zone ID 4, Photo 002

Field Photographs MP 9.50 – MP 9.75

I Zone ID 4, Photo 003

I Zone ID 4, Photo 004

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

LDB

Segment ID: From MP 9.5 to MP 9.75, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4/13/11	Date
M Maccione	Printed Name		
James Gamble	MDEQ	4-13-11	Date
James Gamble	Printed Name	4-13-11	
Chris Bauer Chris Bauer			
[signature]	Enbridge	4-13-11	Date
Hans Wronken	Printed Name		

Team 6

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 9.5 to MP 9.75, Bank or Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 04/26/2011 Date

Kevin Johnson Printed Name

[signature] MDEQ — 4/26/11 Date

Brian Flickinger Printed Name

[signature] Enbridge — 4/26/11 Date

JOHN OSWALD Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 9.5 to MP 9.75, Unique ID 9.75 2 I, Bank ____ and/or Island Island only

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/4/11 — Date

THOMAS P. GRAAN — Printed Name

Kat Fairchild — MDEQ — 5-4-11 — Date

Kathleen Fairchild — Printed Name

Laura Neumeier — Enbridge — 5/4/11 — Date

Laura Neumeier — Printed Name

* 1 polygon collected by YUMA

MP 9.75 to MP 10.00

The LDB of segment 10.00 generally consists of emergent/herbaceous, scrub-shrub, forested wetland swamp and maintained land. The initial reassessment identified five polygons and three points containing primarily trace to sporadic amounts of staining and surface oil residue.

The RDB of segment 10.00 consists primarily of forested wetland swamp with areas of scrub-shrub and emergent/herbaceous wetlands. The initial reassessment identified 39 polygons and/or points containing primarily trace to sporadic occurrences of stained debris, trunks and stems. Two polygons (2 RDB and 18 RDB) were identified as containing trace amounts of petroleum film/sheen.

Two islands are located within segment 10.00, consisting primarily of forested wetland swamp habitat. The initial reassessment identified seven polygons on the two islands containing trace to patchy amounts of staining and film, including one SORT data point (2 I) identified as containing sheen. Additionally, trace to patchy tarballs and patties were noted on the upstream island within the segment.

The FLS did not identify any oil signatures within this segment and no PI observations were made.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

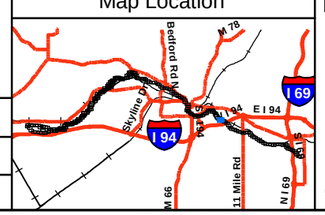
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP9.75-MP10.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 10

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		MDEQ / Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-scrub/shrub			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	11:35																	42.29268	-85.12177		Wronka, Hans
2	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-scrub/shrub			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	11:52																	42.29307	-85.12237		Wronka, Hans
4	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-emergent/herbaceous			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	12:08																	42.29301	-85.12316		Wronka, Hans
5	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-scrub/shrub		creek bed contains material along edge	Muccianti, Marcus
																					Bauer, Chris
4/13/2011	12:18																	42.29282	-85.12354		Wronka, Hans
6	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	13:32																	42.29397	-85.12512		Wronka, Hans

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 10																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
7	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Lawn (maintained land)			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	13:35																	42.29362	-85.12536		Wronka, Hans
8	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Lawn (maintained land)			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	13:38																	42.29384	-85.12579		Wronka, Hans
9	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	13:54																	42.29422	-85.12587		Wronka, Hans

2011 Reassessment

Bank: I		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 10																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Overbank	☐	☐	☑	☑	☐	☐	☐	☑	☑	☐	☑	☐	☐	☐	☑	P	Wetland-swamp (forested)		STAINING AND TAR FAIRLY EVENLY DISTRIBUTED	Kane, Sean
																					ROBIN OEMING
5/9/2011	10:21																	42.29274	-85.12123		Juntilla, John
2	Shoreline	☐	☐	☑	☐	☑	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	T	Low Vegetated Bank		SHEEN AND TAR BALL ON BANK OF ISLAND	Kane, Sean
																					ROBIN OEMING
5/9/2011	10:32																	42.29300	-85.12150		Juntilla, John
3	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☑	☑	☐	☑	☑	☐	☑	☑	P	Wetland-swamp (forested)		TAR ON GROUND AND ON TREES	Kane, Sean
																					ROBIN OEMING
5/9/2011	18:08																	42.29237	-85.12045		Juntilla, John
4	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		SHEEN IN A HOLE	Kane, Sean
																					ROBIN OEMING
5/9/2011	18:13																	42.29240	-85.12040		Juntilla, John
5	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		STAINS ON TREES	Kane, Sean
																					ROBIN OEMING
5/9/2011	18:16																	42.29238	-85.12040		Juntilla, John

2011 Reassessment

Bank: I		Oil Thickness					Oil Character												
Mile Marker: 10																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**	**Comments**
Date	**Time**																	**Latitude** / **Longitude**	**START** / **MDEQ** / **Enbridge Team Lead**
6	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	P	Wetland-swamp (forested)	TAR ON GROUND
5/9/2011	18:20																	42.29254 / -85.12075	Kane, Sean / ROBIN OEMING / Juntilla, John
7	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous	OZID 8 ISLAND 2 IN SEGMENT 10.00 ID #45, STAIN ON TREE
5/10/2011	13:04																	42.29435 / -85.12491	Kane, Sean / ROBIN OEMING / Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 10

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START MDEQ Enbridge Team Lead
1	Overbank	5/9/2011	11:04	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)	42.29327	-85.12124	STAINING SOME TAR	Kane, Sean ROBIN OEMING Juntilla, John
10	Overbank	5/9/2011	14:14	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub	42.29376	-85.12188	STAINING AND TAR	Kane, Sean ROBIN OEMING Juntilla, John
11	Overbank	5/9/2011	14:59	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.29362	-85.12264	STAINING AND TAR ON TREES	Kane, Sean ROBIN OEMING Juntilla, John
12	Overbank	5/9/2011	15:15	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)	42.29399	-85.12261	STAINING AND TAR ON TREES	Kane, Sean ROBIN OEMING Juntilla, John
13	Overbank	5/9/2011	15:29	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub	42.29414	-85.12254	STAINING ON TREES	Kane, Sean ROBIN OEMING Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 10																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
14	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub		STAINING ON TREES	Kane, Sean
																					ROBIN OEMING
5/9/2011	15:40																	42.29427	-85.12264		Juntilla, John
15	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-scrub/shrub		STAINING ON TREES AND STEMS	Kane, Sean
																					ROBIN OEMING
5/9/2011	15:59																	42.29427	-85.12286		Juntilla, John
16	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINING ON TREES	Kane, Sean
																					ROBIN OEMING
5/9/2011	16:08																	42.29425	-85.12314		Juntilla, John
17	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub		STAINING ON TREES AND TAR ON GROUND	Kane, Sean
																					ROBIN OEMING
5/9/2011	16:21																	42.29394	-85.12325		Juntilla, John
18	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		SOME OIL SHEEN ON POOLED WATER	Kane, Sean
																					ROBIN OEMING
5/9/2011	16:25																	42.29396	-85.12333		Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 10

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START MDEQ Enbridge Team Lead
19	Overbank	5/9/2011	16:42	☐	☐	☑	☑	☐	☐	☐	☑	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.29363	-85.12327	TAR AND STAINING ON GROUND AND TREES	Kane, Sean ROBIN OEMING Juntilla, John
2	Shoreline	5/9/2011	11:13	☐	☐	☑	☐	☑	☐	☐	☑	☐	☐	☑	☐	☐	☐	☐	T	Low Vegetated Bank	42.29337	-85.12134	STAINING ON UPSTREAM BANK OF CREEK	Kane, Sean ROBIN OEMING Juntilla, John
20	Overbank	5/9/2011	16:50	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous	42.29361	-85.12358	TAR ON CUT STACKED WOOD	Kane, Sean ROBIN OEMING Juntilla, John
21	Overbank	5/9/2011	16:57	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.29347	-85.12316	TAR ON GROUND AND RINGS ON TREES	Kane, Sean ROBIN OEMING Juntilla, John
22	Overbank	5/9/2011	17:04	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.29346	-85.12270	TAR ON TREES AND GROUND	Kane, Sean ROBIN OEMING Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character														
Mile Marker: 10																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
23	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☑	B	Wetland-swamp (forested)		OIL RESIDUE AND TAR STAINING	Kane, Sean / ROBIN OEMING
5/9/2011	17:06																	42.29342	-85.12274		Juntilla, John
24	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Wetland-swamp (forested)		STAINING ON TREES	Kane, Sean / ROBIN OEMING
5/9/2011	17:12																	42.29346	-85.12247		Juntilla, John
25	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		STAINING ON TREES	Kane, Sean / ROBIN OEMING
5/9/2011	17:18																	42.29346	-85.12218		Juntilla, John
26	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		STAINING ON TREES	Kane, Sean / ROBIN OEMING
5/9/2011	17:24																	42.29344	-85.12197		Juntilla, John
27	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINING ON TREES AND DEBRI	Kane, Sean / ROBIN OEMING
5/9/2011	17:34																	42.29339	-85.12162		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 10																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
28	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID 28, STAINING AND TAR ON TREES	Kane, Sean / ROBIN OEMING
5/10/2011	09:12																	42.29413	-85.12376		Juntilla, John
29	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID29, TAR ON TREES AND GROUND	Kane, Sean / ROBIN OEMING
5/10/2011	09:48																	42.29446	-85.12352		Juntilla, John
3	Overbank	☐	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		SMALL TAR BALL IN STRAW	Kane, Sean / ROBIN OEMING
5/9/2011	11:30																	42.29350	-85.12138		Juntilla, John
30	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID 30, TAR ON TREES AND DEBRI	Kane, Sean / ROBIN OEMING
5/10/2011	09:55																	42.29419	-85.12312		Juntilla, John
31	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID 31, TAR ON TREES AND DEBRI	Kane, Sean / ROBIN OEMING
5/10/2011	10:20																	42.29439	-85.12334		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 10																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
32	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID 32, TAR ON TREES AND DEBRI	Kane, Sean / ROBIN OEMING
5/10/2011	10:37																	42.29463	-85.12366		Juntilla, John
33	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID33, TAR ON TREES	Kane, Sean / ROBIN OEMING
5/10/2011	10:51																	42.29423	-85.12418		Juntilla, John
34	Overbank	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		OZID 34, TAR ON TREES, TRACE TAR BALLS THROUGH	Kane, Sean / ROBIN OEMING
5/10/2011	10:59																	42.29402	-85.12424		Juntilla, John
35	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-swamp (forested)		OZID 35, SURFACE OIL RESIDUE	Kane, Sean / ROBIN OEMING
5/10/2011	11:07																	42.29426	-85.12444		Juntilla, John
36	Overbank	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID 36, TAR ON TREES AND GROUND	Kane, Sean / ROBIN OEMING
5/10/2011	11:19																	42.29435	-85.12425		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 10																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
37	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID 37, TAR ON TREES AND DEBRI	Kane, Sean / ROBIN OEMING
5/10/2011	11:32																	42.29456	-85.12395		Juntilla, John
38	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID 38, TAR ON GROUND AND TREES	Kane, Sean / ROBIN OEMING
5/10/2011	11:46																	42.29419	-85.12456		Juntilla, John
39	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID 39, STAINING AND TAR ON TREES	Kane, Sean / ROBIN OEMING
5/10/2011	11:54																	42.29404	-85.12447		Juntilla, John
4	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub		TAR ON DEBRI	Kane, Sean / ROBIN OEMING
5/9/2011	11:37																	42.29357	-85.12157		Juntilla, John
5	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-scrub/shrub		STAINING ON TREES AND DEBRI	Kane, Sean / ROBIN OEMING
5/9/2011	11:45																	42.29358	-85.12162		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character														
Mile Marker: 10																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
6	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	☑	☐	☐	☑	☑	T	Wetland-emergent/herbaceous		STAINING AND TAR ON VEGITATION, BANK AND GROUND	Kane, Sean / ROBIN OEMING
5/9/2011	11:58																	42.29339	-85.12153		Juntilla, John
7	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)		STAININNG AND TAR	Kane, Sean / ROBIN OEMING
5/9/2011	12:56																	42.29357	-85.12167		Juntilla, John
8	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINING AND TAR	Kane, Sean / ROBIN OEMING
5/9/2011	13:10																	42.29377	-85.12180		Juntilla, John
9	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINING AND TAR	Kane, Sean / ROBIN OEMING
5/9/2011	13:59																	42.29387	-85.12210		Juntilla, John

Photo Logs

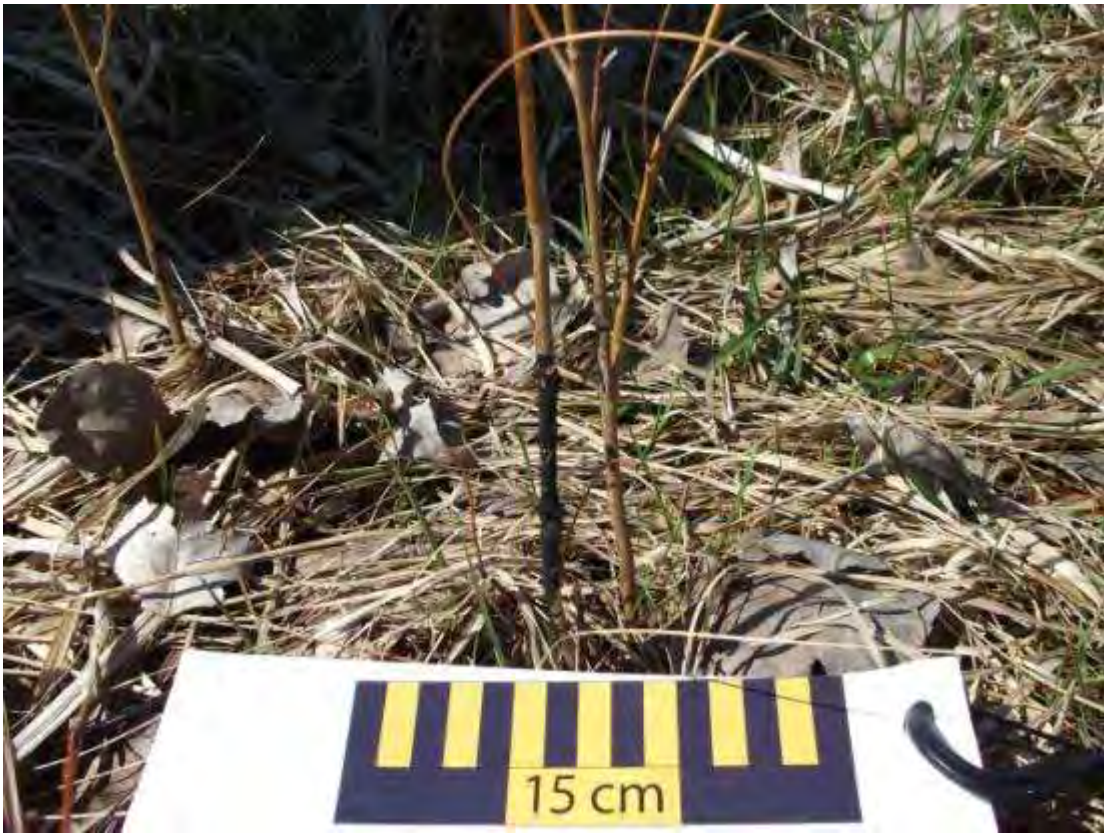
Field Photographs MP 9.75 – MP 10.00

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 9.75 – MP 10.00

LDB Zone ID 2, Photo 002

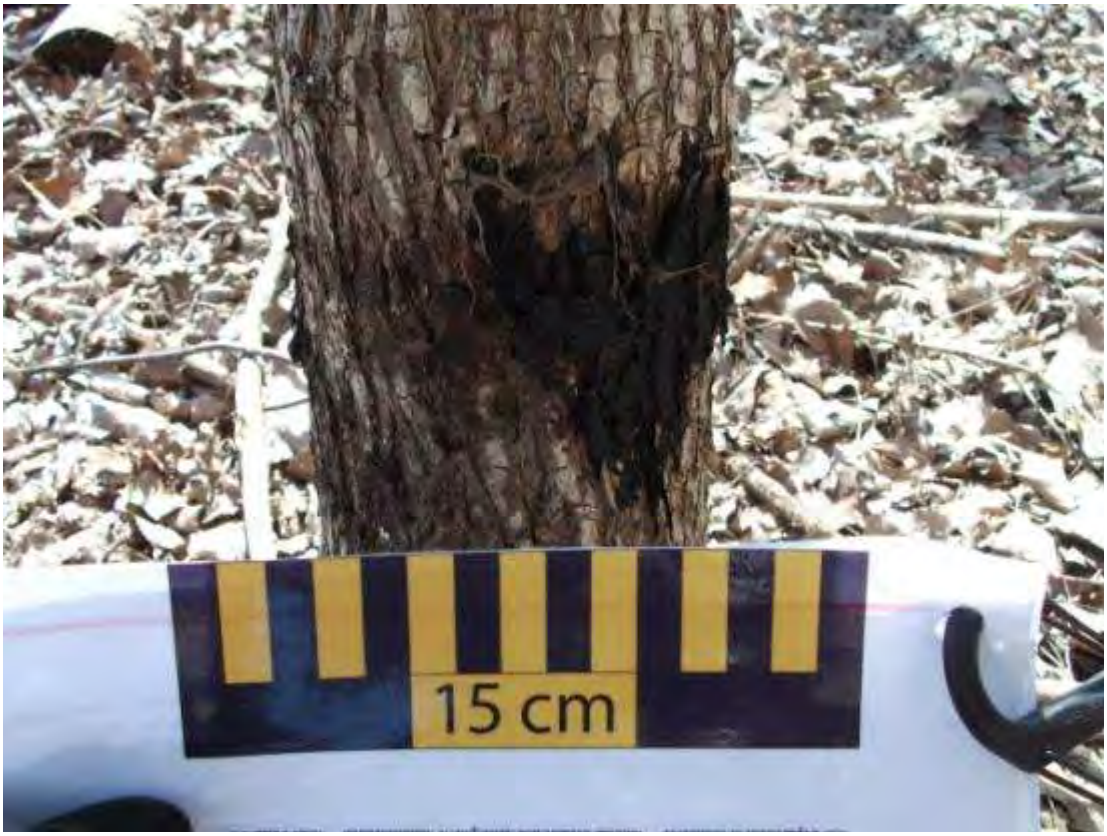


LDB Zone ID 4, Photo 001

Field Photographs MP 9.75 – MP 10.00

LDB Zone ID 5, Photo 001

LDB Zone ID 6, Photo 001



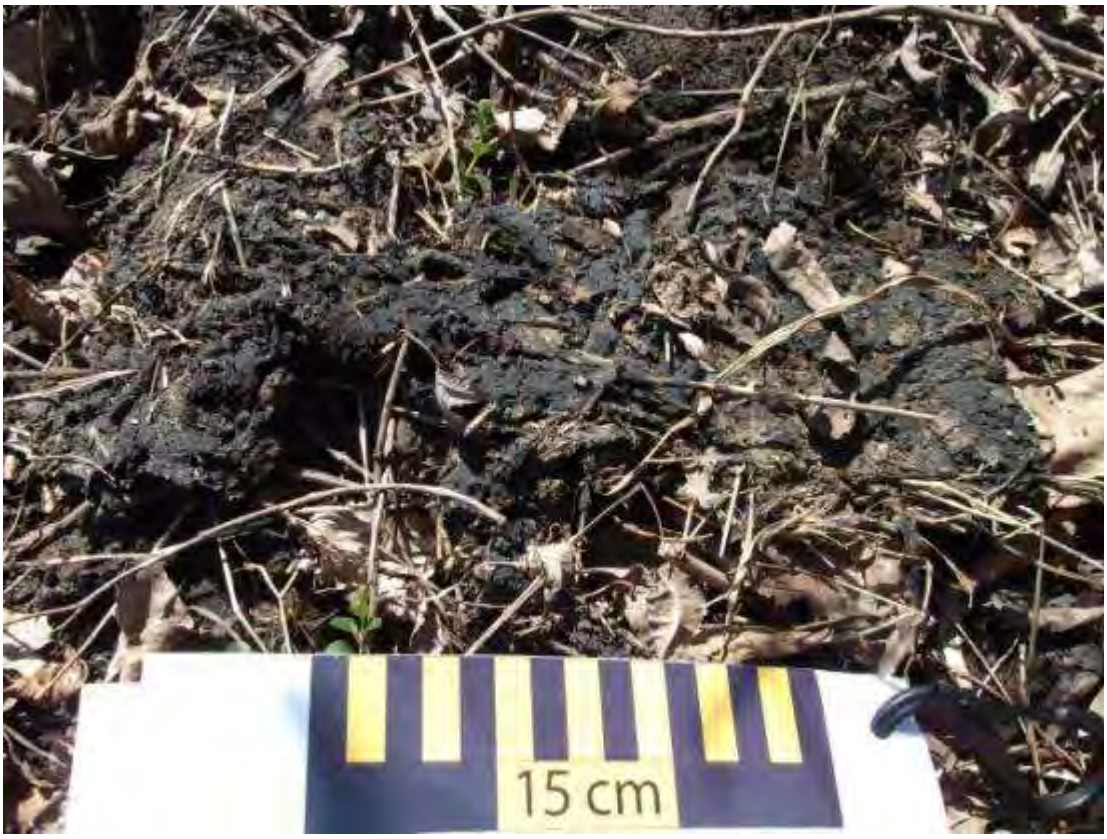
Field Photographs MP 9.75 – MP 10.00

LDB Zone ID 7, Photo 001

LDB Zone ID 8, Photo 001

Field Photographs MP 9.75 – MP 10.00

LDB Zone ID 9, Photo 001



LDB Zone ID 9, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 1, Photo 003

RDB Zone ID 2, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 3, Photo 001

RDB Zone ID 4, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 5, Photo 001

RDB Zone ID 6, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 6, Photo 002

RDB Zone ID 6, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 6, Photo 004

RDB Zone ID 6, Photo 005

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 6, Photo 006

RDB Zone ID 7, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 7, Photo 002

RDB Zone ID 7, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 7, Photo 004

RDB Zone ID 7, Photo 005

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 7, Photo 006

RDB Zone ID 8, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 8, Photo 002

RDB Zone ID 9, Photo 001

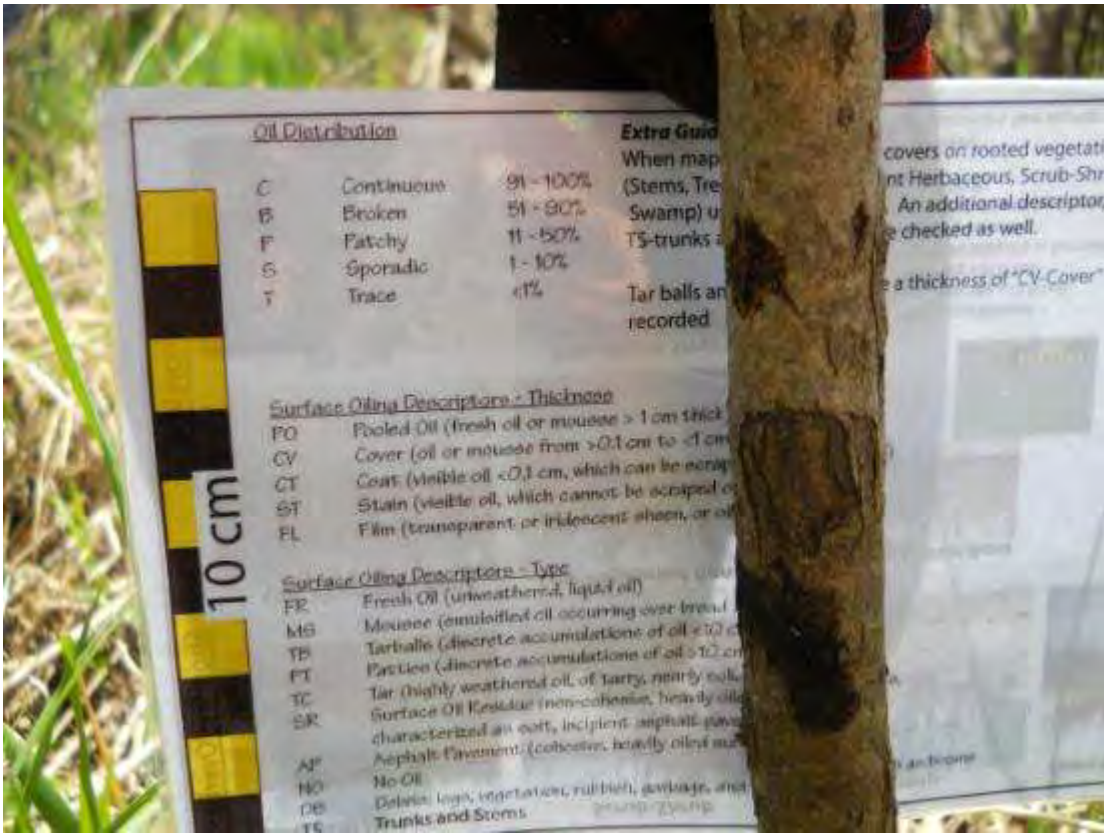
Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 9, Photo 002

RDB Zone ID 10, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 10, Photo 002



RDB Zone ID 11, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 11, Photo 002

RDB Zone ID 11, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 11, Photo 004

RDB Zone ID 12, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 12, Photo 002

RDB Zone ID 12, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 13, Photo 001

RDB Zone ID 13, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 14, Photo 001

RDB Zone ID 14, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 15, Photo 001

RDB Zone ID 15, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 16, Photo 001

RDB Zone ID 16, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 17, Photo 001

RDB Zone ID 17, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 17, Photo 003

RDB Zone ID 17, Photo 004

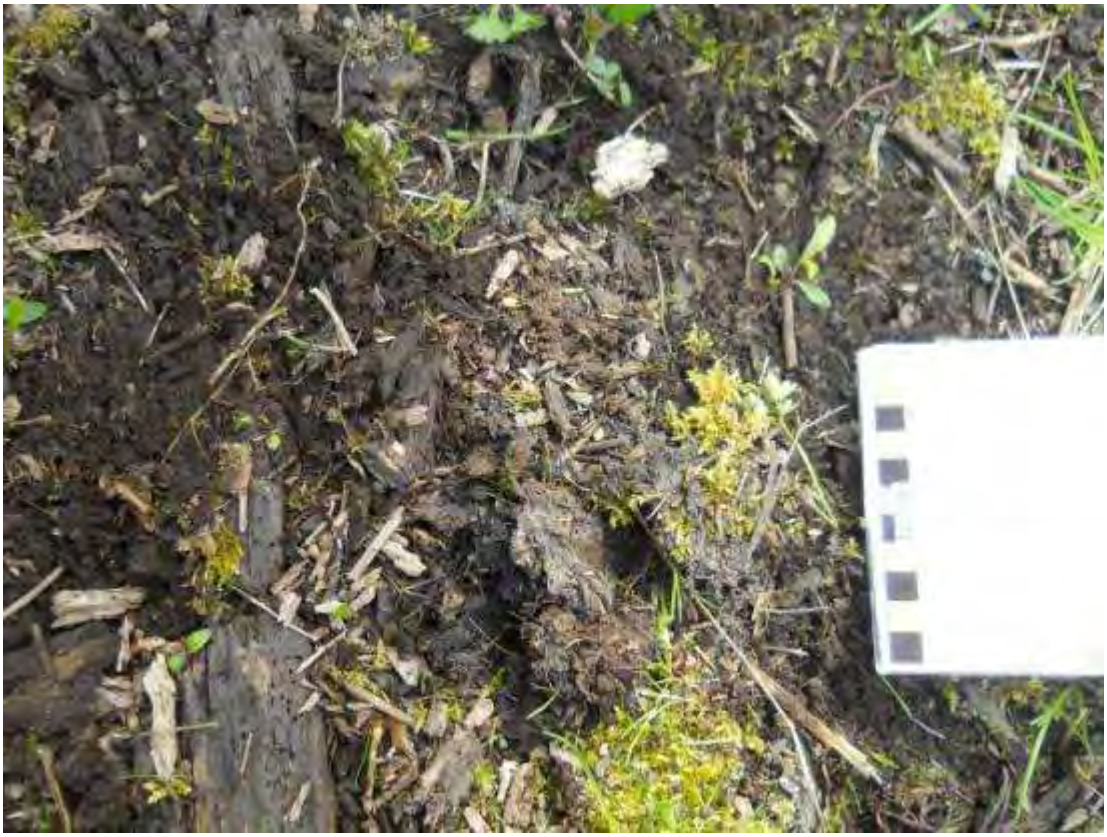
Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 17, Photo 005

RDB Zone ID 18, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 19, Photo 001



RDB Zone ID 19, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 19, Photo 003

RDB Zone ID 19, Photo 004

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 20, Photo 001

RDB Zone ID 21, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 21, Photo 002

RDB Zone ID 22, Photo 001

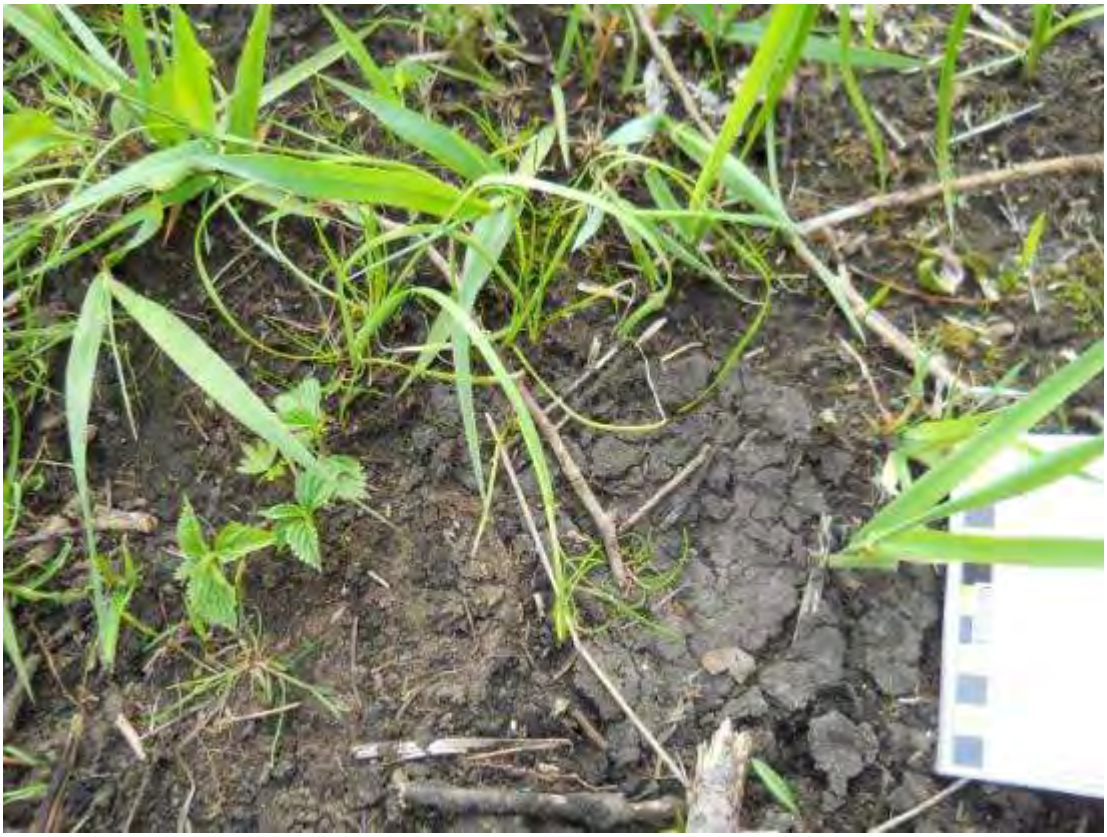
Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 22, Photo 002

RDB Zone ID 22, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 22, Photo 004



RDB Zone ID 23, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 23, Photo 002

RDB Zone ID 24, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 25, Photo 001

RDB Zone ID 25, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 25, Photo 003

RDB Zone ID 25, Photo 004

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 25, Photo 005

RDB Zone ID 26, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 26, Photo 002

RDB Zone ID 26, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 26, Photo 004

RDB Zone ID 26, Photo 005

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 26, Photo 006

RDB Zone ID 27, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 27, Photo 002

RDB Zone ID 27, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 27, Photo 004

RDB Zone ID 28, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 28, Photo 002

RDB Zone ID 28, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 28, Photo 004

RDB Zone ID 29, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 29, Photo 002

RDB Zone ID 29, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 29, Photo 004

RDB Zone ID 29, Photo 005

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 29, Photo 006

RDB Zone ID 30, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 30, Photo 002

RDB Zone ID 30, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 31, Photo 001

RDB Zone ID 31, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 31, Photo 003

RDB Zone ID 31, Photo 004

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 32, Photo 001

RDB Zone ID 32, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 32, Photo 003

RDB Zone ID 32, Photo 004

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 33, Photo 001

RDB Zone ID 33, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 33, Photo 003

RDB Zone ID 33, Photo 004

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 33, Photo 005

RDB Zone ID 33, Photo 006

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 33, Photo 007

RDB Zone ID 34, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 34, Photo 002

RDB Zone ID 34, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 34, Photo 004

RDB Zone ID 35, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 36, Photo 001

RDB Zone ID 36, Photo 002

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 36, Photo 003

RDB Zone ID 37, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 37, Photo 002

RDB Zone ID 37, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 37, Photo 004

RDB Zone ID 38, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 38, Photo 002

RDB Zone ID 38, Photo 003

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 38, Photo 004

RDB Zone ID 38, Photo 005

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 38, Photo 006

RDB Zone ID 39, Photo 001

Field Photographs MP 9.75 – MP 10.00

RDB Zone ID 39, Photo 002

RDB Zone ID 39, Photo 003

Field Photographs MP 9.75 – MP 10.00

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 9.75 – MP 10.00

I Zone ID 1, Photo 003

I Zone ID 2, Photo 001

Field Photographs MP 9.75 – MP 10.00

I Zone ID 3, Photo 001

I Zone ID 3, Photo 002

Field Photographs MP 9.75 – MP 10.00

I Zone ID 3, Photo 003

I Zone ID 3, Photo 004

Field Photographs MP 9.75 – MP 10.00

I Zone ID 3, Photo 005

I Zone ID 3, Photo 006

Field Photographs MP 9.75 – MP 10.00

I Zone ID 3, Photo 007

I Zone ID 3, Photo 008

Field Photographs MP 9.75 – MP 10.00

I Zone ID 3, Photo 009

I Zone ID 3, Photo 010

Field Photographs MP 9.75 – MP 10.00

I Zone ID 3, Photo 011

I Zone ID 4, Photo 001

Field Photographs MP 9.75 – MP 10.00

I Zone ID 4, Photo 002

I Zone ID 5, Photo 001

Field Photographs MP 9.75 – MP 10.00

I Zone ID 6, Photo 001

I Zone ID 6, Photo 002

Field Photographs MP 9.75 – MP 10.00

I Zone ID 7, Photo 001

I Zone ID 7, Photo 002

Field Photographs MP 9.75 – MP 10.00

I Zone ID 7, Photo 003

I Zone ID 7, Photo 004

Field Photographs MP 9.75 – MP 10.00

I Zone ID 7, Photo 005

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 9.75 to MP 10.0, (Bank) or Island:_____, Segment Length: 0.25 mile

LDB

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/13/11 Date

_____ Printed Name

_____ MDEQ — 4-13-11 Date

4-13-11

Jama Gamble Printed Name

Chris Bauer

Chris Bauer

_____ Enbridge — 4-13-1 Date

Hans Wronka Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 9.75 to MP 10.0, Unique ID 10.0 LDB3, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Grahn _____ START _____ 5/4/11 Date

THOMAS P. GRAHN Printed Name

Kathleen Fairchild _____ MDEQ _____ 5-4-11 Date

Kathleen Fairchild Printed Name

Dan DeWitt _____ Enbridge _____ 5/4/11 Date

Dan DeWitt Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 9.75 to MP 10.0, Bank or Island: 2 islands, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	5-10-11 Date
Sean Kane	Printed Name	
[signature]	MDEQ	5/10/11 Date
R.G. Overhuis	Printed Name	
[signature]	Enbridge	5-10-11 Date
John V. Juntilla	Printed Name	

upstream island: 2 features collected from 9.75 - 10.0 - collected May 9th 2011

4 features collected from 9.50 - 9.75 - collected May 8th, 2011

down stream Island: 2 features collected on island near border of MP10.0 line - collected May 10th 2011

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 9.75 to MP 10.0 RDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	5-10-11 Date
Jean Kane	Printed Name	
[signature]	MDEQ	5/10/11 Date
[signature]	Printed Name	
[signature]	Enbridge	5-10-11 Date
John W. Juntilla	Printed Name	

27 Features collected on this segment on May 9th, 2011.

12 Features collected on this segment on May 10th, 2011

Vegitation coverage is increasing. Making it harder to see and to get around.

MP 10.00 to MP 10.25

The LDB of segment 10.25 generally consists of forested wetland swamp. The initial reassessment identified only one large polygon encompassing the LDB, including the entire overbank. This area was identified as having a trace occurrence of staining and surface oil residue throughout.

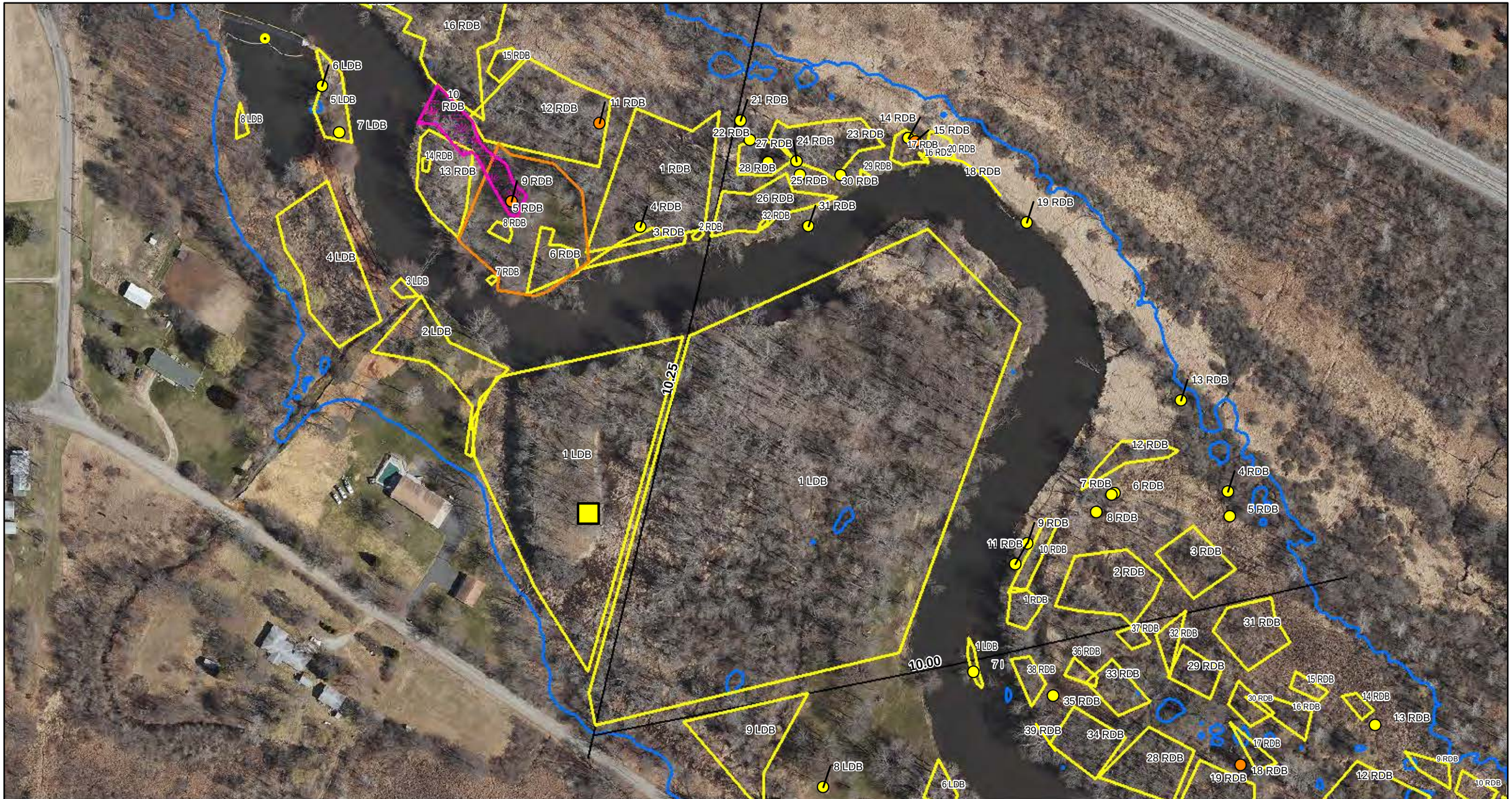
The RDB of segment 10.25 consists primarily of forested wetland swamp with areas of scrub-shrub and emergent/herbaceous wetlands. The initial reassessment identified 32 polygons, linear transects, and/or points containing primarily trace to sporadic occurrences, and localized patchy to broken stained debris, trunks and stems. One of these SORT points contained sheen on pooled water (15 RDB).

No islands are present in this segment. The FLS did not identify any oil signatures within this segment and no PI observations were made.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

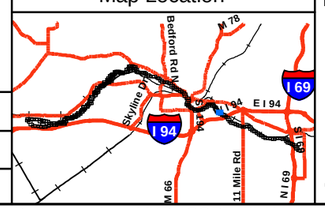
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP10.00-MP10.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 10.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)		observed stain along 10.00 and 10.25 boundary lines. polygon reflects entire section	Muccianti, Marcus Bauer, Chris
4/13/2011	14:19																	42.29585	-85.12657		Wronka, Hans

Enbridge Team Lead

2011 Reassessment

Bank: RDB

Mile Marker: 10.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START MDEQ Enbridge Team Lead
1	Overbank	5/10/2011	13:33	☐	☐	☑	☑	☐	☐	☐	☑	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.29466	-85.12449	TAR AND STAINING ON TREES AND DEBRI	Kane, Sean / ROBIN OEMING / Juntilla, John
10	Overbank	5/10/2011	15:29	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.29470	-85.12472	STAINING ON TREES	Kane, Sean / ROBIN OEMING / Juntilla, John
11	Overbank	5/10/2011	15:35	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	P	Wetland-swamp (forested)	42.29483	-85.12467	TAR ON GROUND	Kane, Sean / ROBIN OEMING / Juntilla, John
12	Overbank	5/10/2011	15:55	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)	42.29527	-85.12387	STAINING ON TREES	Kane, Sean / ROBIN OEMING / Juntilla, John
13	Overbank	5/10/2011	16:04	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.29555	-85.12370	STAINING ON TREE AND TAR ON GROUND	Kane, Sean / ROBIN OEMING / Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 10.25																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	Time																	Latitude	Longitude		Enbridge Team Lead
14	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	P	Wetland-scrub/shrub		OILY RESIDUE IN SEDIMENT	Kane, Sean
																					ROBIN OEMING
5/10/2011	16:49																	42.29669	-85.12532		Juntilla, John
15	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	P	Wetland-scrub/shrub		PETROLEUM SHEEN ON POOLED WATER	Kane, Sean
																					ROBIN OEMING
5/10/2011	16:54																	42.29667	-85.12528		Juntilla, John
16	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	P	Wetland-emergent/herbaceous		OZID 16, TAR ON GROUND	Kane, Sean
																					ROBIN OEMING
5/11/2011	08:32																	42.29661	-85.12524		Juntilla, John
17	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-scrub/shrub		OZID 17, STAINS ON TREES AND DEBRI	Kane, Sean
																					ROBIN OEMING
5/11/2011	08:41																	42.29673	-85.12534		Juntilla, John
18	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-emergent/herbaceous		OZID 18, STAINING ON VEGITATION AND DEBRI, SHEEN NOTED INTERMITENTLY ABOUT THREE FEET INTO RIVER	Kane, Sean
																					ROBIN OEMINNG
5/11/2011	08:59																	42.29643	-85.12477		Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 10.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
19	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank		OZID 19, STAINING ON TREE	Kane, Sean
																					ROBIN OEMING
5/11/2011	09:06																	42.29632	-85.12462		Juntilla, John
2	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINS ON TREES AND DEBRI	Kane, Sean
																					ROBIN OEMING
5/10/2011	13:55																	42.29487	-85.12397		Juntilla, John
20	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-emergent/herbaceous		OZID 20, STAINING ON VEGITATION AND DEBRI	Kane, Sean
																					ROBIN OEMING
5/11/2011	09:24																	42.29667	-85.12511		Juntilla, John
21	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		OZID 21, STAINING ON TREES	Kane, Sean
																					ROBIN OEMING
5/11/2011	09:43																	42.29676	-85.12631		Juntilla, John
22	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		OZID 22, STAINING ON TREES	Kane, Sean
																					ROBIN OEMING
5/11/2011	09:46																	42.29668	-85.12625		Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 10.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
23	Overbank			☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			OZID 23, STAINING ON TREES AND VEGITATION	Kane, Sean / ROBIN OEMING
		5/11/2011	10:00																		42.29671	-85.12579		Juntilla, John
24	Overbank			☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	B	Wetland-swamp (forested)			OZID 24, TAR ON DEBRI	Kane, Sean / ROBIN OEMING
		5/11/2011	10:12																		42.29658	-85.12598		Juntilla, John
25	Overbank			☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	B	Wetland-swamp (forested)			OZID 25, TAR ON DEBRI	Kane, Sean / ROBIN OEMING
		5/11/2011	10:15																		42.29652	-85.12596		Juntilla, John
26	Overbank			☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			OZID 26, STAINING ON TREES AND VEVITATION	Kane, Sean / ROBIN OEMING
		5/11/2011	10:57																		42.29628	-85.12647		Juntilla, John
27	Overbank			☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			OZID 27, STAINING ON TREES AND DEBRI	Kane, Sean / ROBIN OEMING
		5/11/2011	11:10																		42.29655	-85.12615		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 10.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
28	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	P	Wetland-swamp (forested)		OZID 28, TAR ON VEGITATION	Kane, Sean / ROBIN OEMING
5/11/2011	11:14																	42.29658	-85.12615		Juntilla, John
29	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		OZID 29, STAINING ON TREES, TAR ON GROUND	Kane, Sean / ROBIN OEMING
5/11/2011	11:23																	42.29652	-85.12562		Juntilla, John
3	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		STAINS And TAR ON TREES	Kane, Sean / ROBIN OEMING
5/10/2011	14:15																	42.29498	-85.12354		Juntilla, John
30	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		OZID 30, TAR ON GROUND	Kane, Sean / ROBIN OEMING
5/11/2011	11:27																	42.29652	-85.12572		Juntilla, John
31	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank		OZID 31, TAR ON VEGITATION	Kane, Sean / ROBIN OEMING
5/11/2011	11:33																	42.29631	-85.12590		Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 10.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
32	Overbank	5/11/2011	11:43	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	P	Wetland-swamp (forested)	42.29629	-85.12617	OZID 32, TAR ON GROUND AND SURROUNDING VEGITATION	Kane, Sean / ROBIN OEMING / Juntilla, John
4	Overbank	5/10/2011	14:31	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.29515	-85.12342	STAINING ON TREE AND DEBRI	Kane, Sean / ROBIN OEMING / Juntilla, John
5	Overbank	5/10/2011	14:36	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-scrub/shrub	42.29504	-85.12340	STAINING ON DEBRI	Kane, Sean / ROBIN OEMING / Juntilla, John
6	Overbank	5/10/2011	14:52	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-swamp (forested)	42.29514	-85.12408	STAINING ON DEBRI	Kane, Sean / ROBIN OEMING / Juntilla, John
7	Overbank	5/10/2011	14:54	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub	42.29513	-85.12410	TAR PATTY ON GROUND	Kane, Sean / ROBIN OEMING / Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 10.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		MDEQ Enbridge Team Lead
8	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub		STAINING ON TREE AND DEBRI	Kane, Sean ROBIN OEMING
5/10/2011	14:58																	42.29506	-85.12419		Juntilla, John
9	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	☐	☐	P	Wetland-swamp (forested)		TAR ON GROUND	Kane, Sean ROBIN OEMING
5/10/2011	15:19																	42.29492	-85.12460		Juntilla, John

Photo Logs

Field Photographs MP 10.00 – MP 10.25

LDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 1, Photo 002

RDB Zone ID 1, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 1, Photo 004

RDB Zone ID 2, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 2, Photo 002

RDB Zone ID 2, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 2, Photo 004

RDB Zone ID 3, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 3, Photo 002

RDB Zone ID 3, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 3, Photo 004

RDB Zone ID 4, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 5, Photo 001

RDB Zone ID 6, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 7, Photo 001

RDB Zone ID 8, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 8, Photo 002

RDB Zone ID 9, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 9, Photo 002

RDB Zone ID 9, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 10, Photo 001

RDB Zone ID 10, Photo 002

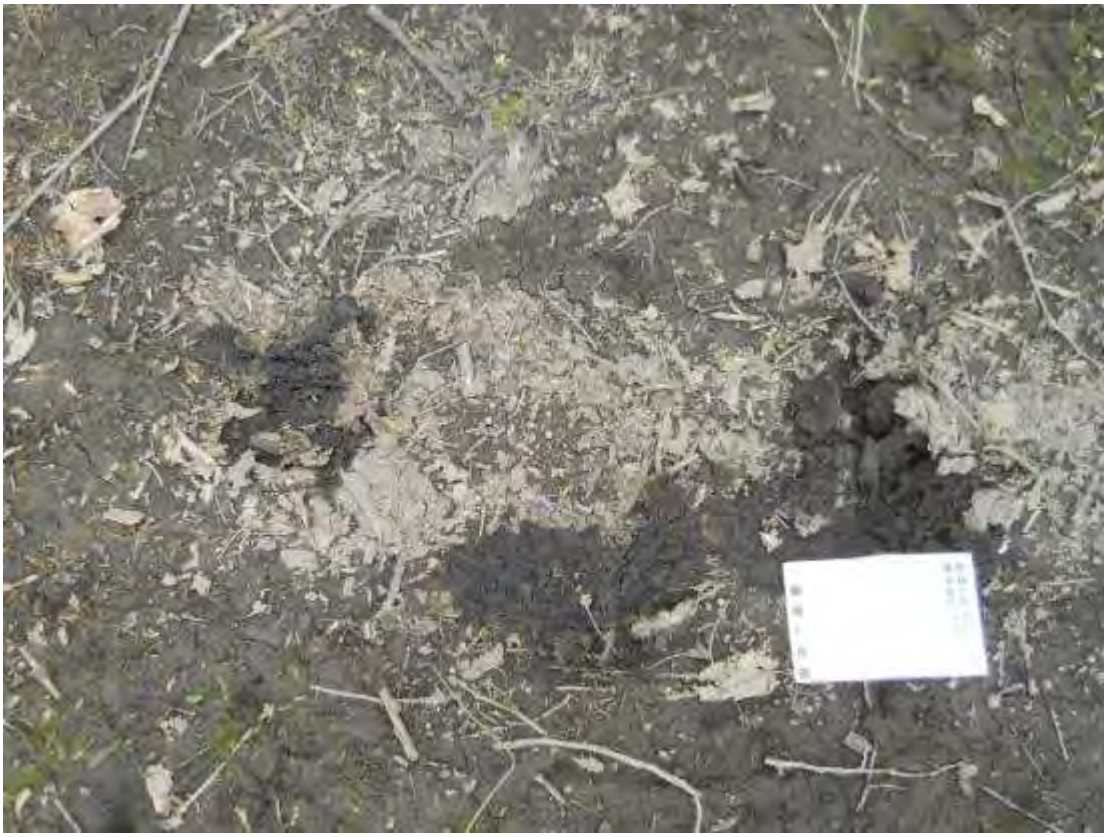
Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 10, Photo 003

RDB Zone ID 10, Photo 004

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 11, Photo 001



RDB Zone ID 12, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 12, Photo 002

RDB Zone ID 12, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 12, Photo 004

RDB Zone ID 13, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 13, Photo 002

RDB Zone ID 14, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 15, Photo 001

RDB Zone ID 16, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 16, Photo 002

RDB Zone ID 16, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 17, Photo 001

RDB Zone ID 17, Photo 002

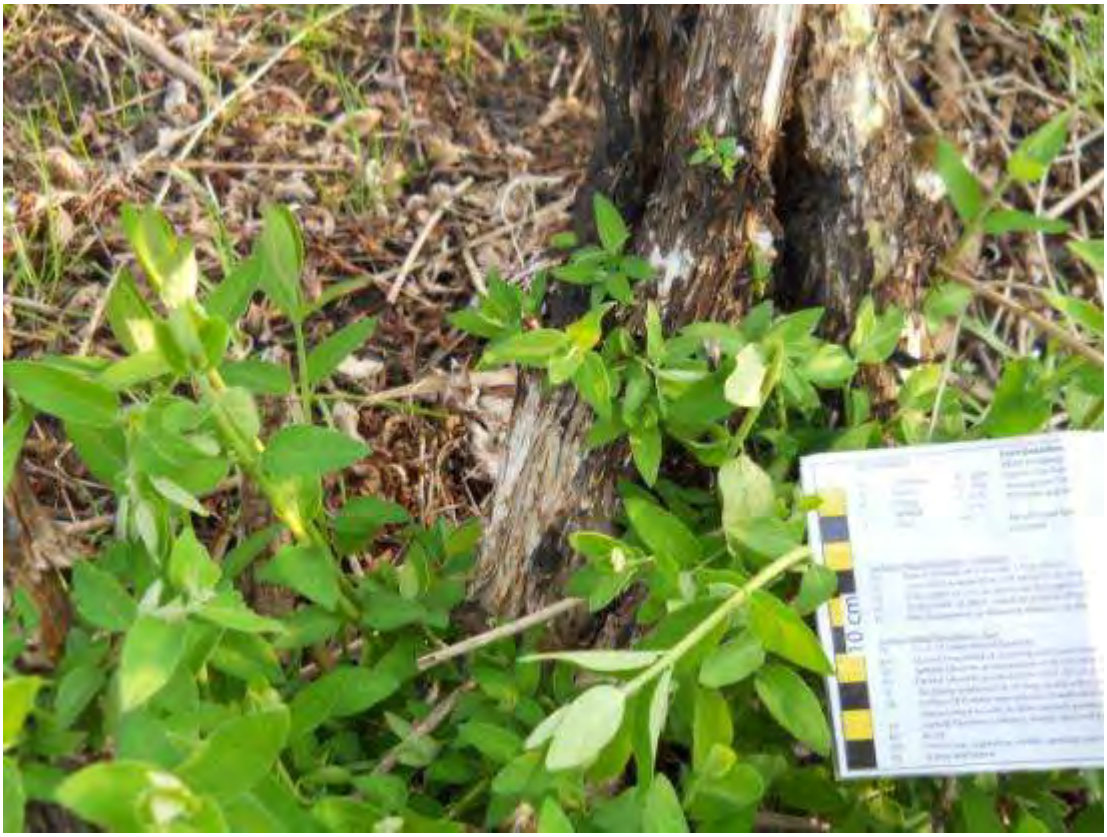
Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 17, Photo 003

RDB Zone ID 17, Photo 004

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 17, Photo 005



RDB Zone ID 17, Photo 006

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 17, Photo 007

RDB Zone ID 17, Photo 008

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 18, Photo 001

RDB Zone ID 18, Photo 002

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 18, Photo 003

RDB Zone ID 18, Photo 004

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 18, Photo 005

RDB Zone ID 18, Photo 006

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 19, Photo 001

RDB Zone ID 19, Photo 002

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 20, Photo 001

RDB Zone ID 20, Photo 002

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 20, Photo 003

RDB Zone ID 20, Photo 004

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 21, Photo 001

RDB Zone ID 21, Photo 002

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 21, Photo 003

RDB Zone ID 22, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 22, Photo 002

RDB Zone ID 23, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 23, Photo 002

RDB Zone ID 23, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 23, Photo 004

RDB Zone ID 23, Photo 005

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 23, Photo 006

RDB Zone ID 23, Photo 007

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 24, Photo 001

RDB Zone ID 25, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 25, Photo 002

RDB Zone ID 26, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 26, Photo 002

RDB Zone ID 26, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 26, Photo 004

RDB Zone ID 26, Photo 005

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 26, Photo 006

RDB Zone ID 27, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 27, Photo 002

RDB Zone ID 27, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 28, Photo 001

RDB Zone ID 28, Photo 002

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 28, Photo 003

RDB Zone ID 29, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 29, Photo 002

RDB Zone ID 30, Photo 001

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 30, Photo 002

RDB Zone ID 30, Photo 003

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 31, Photo 001

RDB Zone ID 31, Photo 002

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 32, Photo 001

RDB Zone ID 32, Photo 002

Field Photographs MP 10.00 – MP 10.25

RDB Zone ID 32, Photo 003

RDB Zone ID 32, Photo 004

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 10.0 to MP 10.25 (LDB) Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/13/11 Date

MARCUS MINCIANTI Printed Name

_____ MDEQ 4-13-11 Date

James Gamble Printed Name

Chris Bauer 4-13-11

Chris Bauer

_____ Enbridge 4-13-11 Date

Hans Vrooman Printed Name

* Note: There were areas of this segment that were difficult to access due to heavy brush and thorn bushes. Oil staining was however evident on brush and trees in virtually all of the areas that were accessed. Oil staining was also evident along the vegetation present at the maximum extent of the inundation boundary. It is clearly evident that this segment contains trace amounts of residual oil.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 10.0 to MP 10.25 RDB, Bank or ~~Island:~~ ____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	5-11-11 Date
Deana Hawe	Printed Name	
[signature]	MDEQ	5/11/11 Date
T.G. Zemke	Printed Name	
[signature]	Enbridge	5-11-11 Date
John W. Juntilla	Printed Name	

15 Features collected on May 10th 2011 (1-15)

17 Features collected on May 11th 2011 (16-32)

MP 10.25 to MP 10.50

The LDB of segment 10.50 generally consists of forested wetland swamp with areas of maintained land, emergent/herbaceous and scrub-shrub wetland habitat. The initial reassessment identified seven polygons and three SORT points containing primarily trace to sporadic staining and surface oil residue throughout.

The RDB of segment 10.50 consists primarily of forested wetland swamp. The initial reassessment identified fourteen polygons and five SORT points containing primarily trace to sporadic stained and coated debris, trunks and stems, some areas of film, and sporadic to patchy patties noted throughout. Three of these SORT points contained sheen or petroleum on pooled water (9, 11 and 17 RDB). Two polygons (5 RDB and 20 RDB) contained surface film/sheen.

One small island is present near the 10.5 segment line that generally consists of a sand and gravel shoreline. Observations of sheen in puddles and stained vegetation were made.

The FLS did identify one suspected oil signature on the LDB within this segment that correlates with 1 LDB.

One inconclusive PI observation was made within this segment within the area of the river. SORT did not observe any surface contamination in this area.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

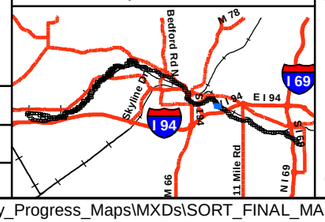
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP10.25-MP10.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character														
Mile Marker: 10.5																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Sand-Gravel shoreline		SHEEN PRESENT BY SHORE IN PUDDLES, ALSO STAINING ON VEGITATION	Kane, Sean
																					ROBIN OEMING
5/12/2011	13:36																	42.29808	-85.12942		Juntilla, John

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character														
Mile Marker: 10.5																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)		includes herbaceous swamp	Muccianti, Marcus Bauer, Chris
4/13/2011	15:48																	42.29551	-85.12808		Wronka, Hans
10	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Muccianti, Marcus Bauer, Chris
4/13/2011	17:18																	42.29787	-85.13011		Wronka, Hans
2	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Lawn (maintained land)		rip rap shoreline with stain. approximately 20 stained trees	Muccianti, Marcus Bauer, Chris
4/13/2011	16:05																	42.29600	-85.12817		Wronka, Hans
3	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	S	Lawn (maintained land)			Muccianti, Marcus Bauer, Chris
4/13/2011	16:12																	42.29595	-85.12831		Wronka, Hans
4	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-scrub/shrub			Muccianti, Marcus Bauer, Chris
4/13/2011	16:29																	42.29648	-85.12874		Wronka, Hans

2011 Reassessment

Bank: LDB

Mile Marker: 10.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
5	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	S	Wetland-swamp (forested)		tar patties throughout	Muccianti, Marcus
																					Bauer, Chris
4/13/2011	16:40																	42.29690	-85.12879		Wronka, Hans
6	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	B	Wetland-scrub/shrub			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	16:46																	42.29689	-85.12878		Wronka, Hans
7	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	16:53																	42.29669	-85.12868		Wronka, Hans
8	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	17:03																	42.29682	-85.12927		Wronka, Hans
9	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Bauer, Chris
4/13/2011	17:11																	42.29765	-85.12978		Wronka, Hans

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 10.5																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINS ON TREES AND DEBRI	Kane, Sean
																					ROBIN OEMING
5/11/2011	13:10																	42.29633	-85.12668		Juntilla, John
11	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)		SHEEN ON POOLED WATER	Kane, Sean
																					ROBIN OEMING
5/11/2011	15:46																	42.29674	-85.12715		Juntilla, John
12	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINED VEGITATION AND TREES	Kane, Sean
																					ROBIN OEMING
5/11/2011	16:21																	42.29676	-85.12783		Juntilla, John
13	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		TAR AND STAINING SPREAD THROUGHOUT	Kane, Sean
																					ROBIN OEMING
5/11/2011	16:49																	42.29660	-85.12806		Juntilla, John
14	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	S	Wetland-swamp (forested)		TAR ON GROUND	Kane, Sean
																					ROBIN OEMING
5/12/2011	09:07																	42.29657	-85.12820		Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 10.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
15	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINING ON VEGITATION	Kane, Sean
																					ROBIN OEMING
5/12/2011	09:23																	42.29708	-85.12768		Juntilla, John
16	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINING ON TREES AND VEGITATION ALSO COATINGS ON DEBRI	Kane, Sean
																					ROBIN OEMING
5/12/2011	11:25																	42.29678	-85.12784		Juntilla, John
17	Overbank	☐	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		GLOB OF PRODUCT IN WETLAND AREA, OBSERVED IN SHALLOW WATER	Kane, Sean
																					ROBIN OEMING
5/12/2011	11:43																	42.29766	-85.12856		Juntilla, John
18	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINING ON VEGITATION	Kane, Sean
																					ROBIN OEMING
5/12/2011	13:09																	42.29803	-85.12905		Juntilla, John
19	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	☐	T	Sand-Gravel shoreline		TRACE STAINING CONSISTENT WITH REST OF AREA	Kane, Sean
																					ROBIN OEMING
5/12/2011	13:14																	42.29813	-85.12898		Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 10.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character											Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
2	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	P	Wetland-swamp (forested)		TAR ON GROUND	Kane, Sean
																					ROBIN OEMING
5/11/2011	13:20																	42.29624	-85.12658		Juntilla, John
20	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous		closer to 10%	Graan, Tom
																					Fairchild, Katie
5/17/2011	09:30																	42.29637	-85.12759		Neumeier, Laura
3	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		STAINING ON TREES	Kane, Sean
																					ROBIN OEMING
5/11/2011	13:35																	42.29614	-85.12719		Juntilla, John
4	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Wetland-scrub/shrub		TAR PATTIES	Kane, Sean
																					ROBIN OEMING
5/11/2011	13:40																	42.29629	-85.12690		Juntilla, John
5	Overbank	☐	☐	☑	☑	☐	☐	☑	☐	☑	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINS ON TREES AND TAR ON THE GROUND	Kane, Sean
																					ROBIN OEMING
5/11/2011	14:06																	42.29601	-85.12743		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character															
Mile Marker: 10.5																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
6	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	P	Wetland-swamp (forested)		TAR ON GROUND	Kane, Sean	ROBIN OEMING
5/11/2011	14:17																	42.29602	-85.12756		Juntilla, John	
7	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☐	☐	P	Wetland-swamp (forested)		TAR ON GROUND	Kane, Sean	ROBIN OEMING
5/11/2011	14:27																	42.29608	-85.12777		Juntilla, John	
8	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	B	Wetland-swamp (forested)		SURFACE OIL RESIDUE IN SOIL	Kane, Sean	ROBIN OEMING
5/11/2011	14:55																	42.29627	-85.12769		Juntilla, John	
9	Overbank	☐	☑	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐		Wetland-emergent/herbaceous		PETROLIUM IN POOLED WATER	Kane, Sean	ROBIN OEMING
5/11/2011	15:02																	42.29640	-85.12766		Juntilla, John	

Photo Logs

Field Photographs MP 10.25 – MP 10.50

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 10.25 – MP 10.50

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 10.25 – MP 10.50

LDB Zone ID 3, Photo 002

LDB Zone ID 4, Photo 001

Field Photographs MP 10.25 – MP 10.50

LDB Zone ID 4, Photo 002

LDB Zone ID 4, Photo 003

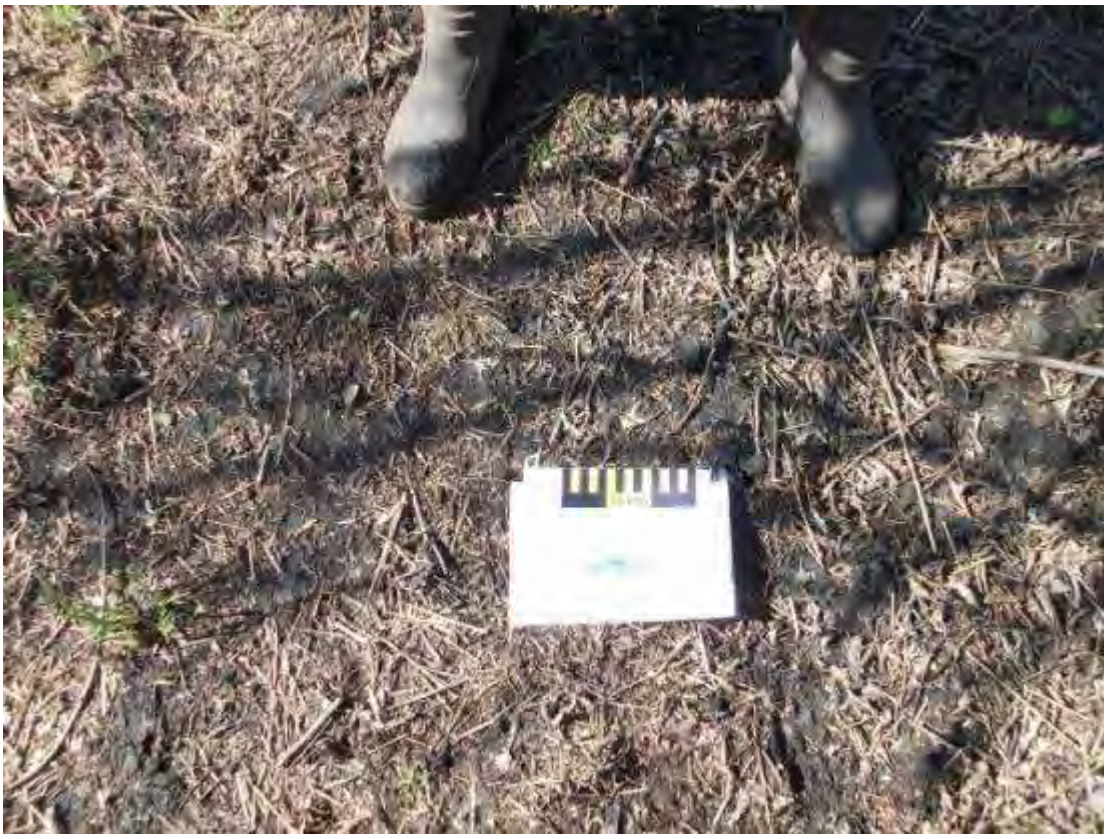
Field Photographs MP 10.25 – MP 10.50

LDB Zone ID 5, Photo 001

LDB Zone ID 6, Photo 001

Field Photographs MP 10.25 – MP 10.50

LDB Zone ID 7, Photo 001



LDB Zone ID 7, Photo 002

Field Photographs MP 10.25 – MP 10.50

LDB Zone ID 8, Photo 001

LDB Zone ID 9, Photo 001

Field Photographs MP 10.25 – MP 10.50

LDB Zone ID 10, Photo 001

LDB Zone ID 10, Photo 002

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 1, Photo 003

RDB Zone ID 1, Photo 004

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 1, Photo 005

RDB Zone ID 1, Photo 006

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 1, Photo 007

RDB Zone ID 1, Photo 008

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 1, Photo 009

RDB Zone ID 1, Photo 010

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 2, Photo 003

RDB Zone ID 2, Photo 004

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

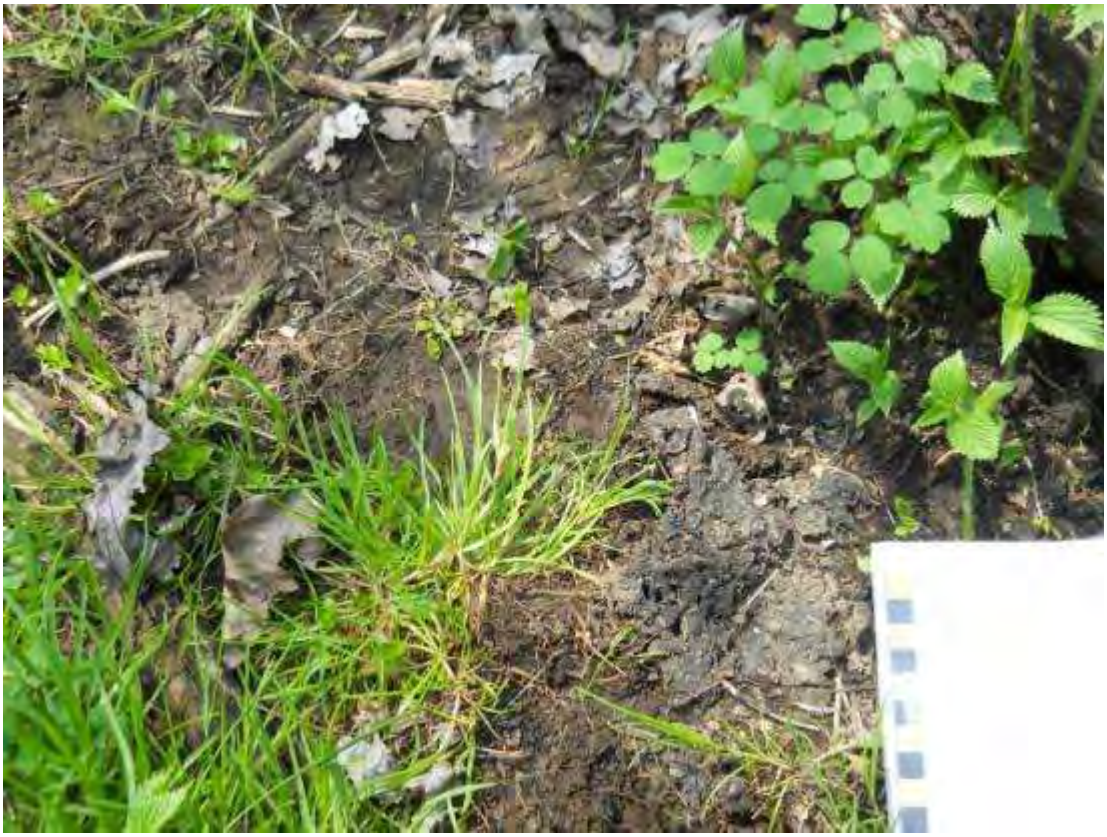
Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 3, Photo 003

RDB Zone ID 3, Photo 004

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 3, Photo 005



RDB Zone ID 3, Photo 006

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 3, Photo 007

RDB Zone ID 4, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 4, Photo 002

RDB Zone ID 5, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 5, Photo 002

RDB Zone ID 5, Photo 003

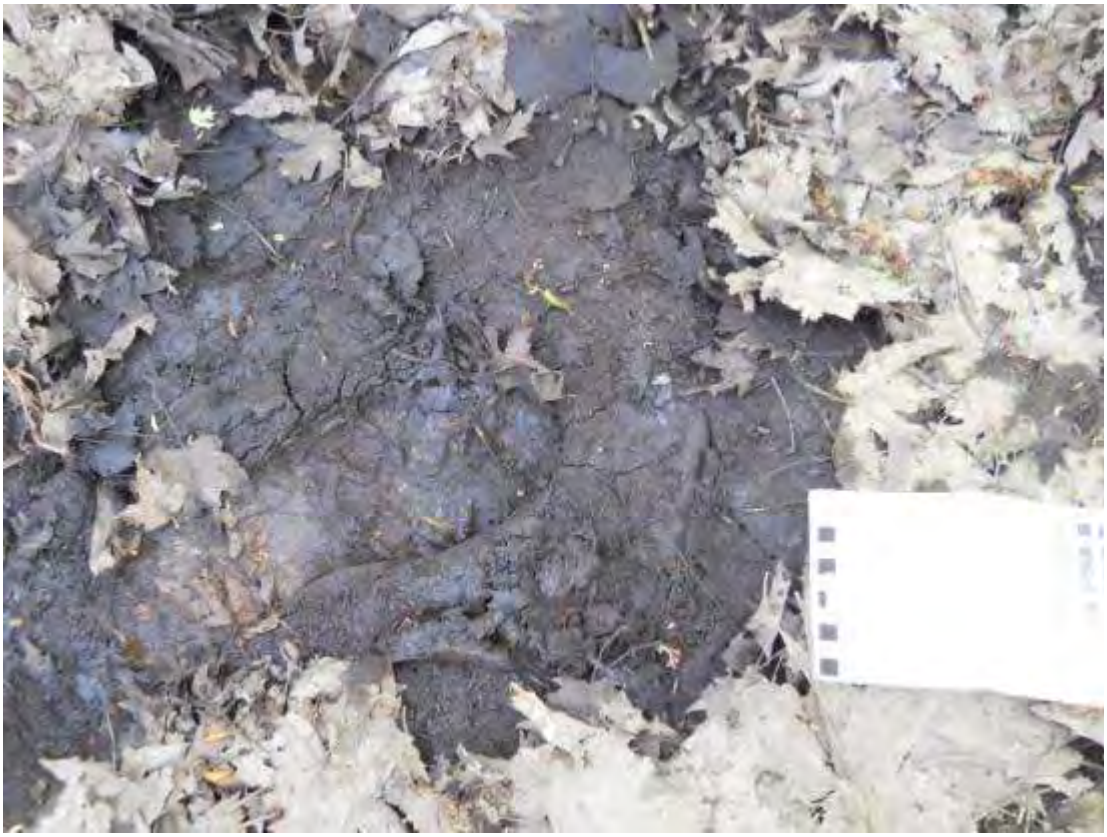
Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 5, Photo 004

RDB Zone ID 5, Photo 005

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 6, Photo 001



RDB Zone ID 6, Photo 002

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 6, Photo 003

RDB Zone ID 7, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 7, Photo 002

RDB Zone ID 7, Photo 003

Field Photographs MP 10.25 – MP 10.50

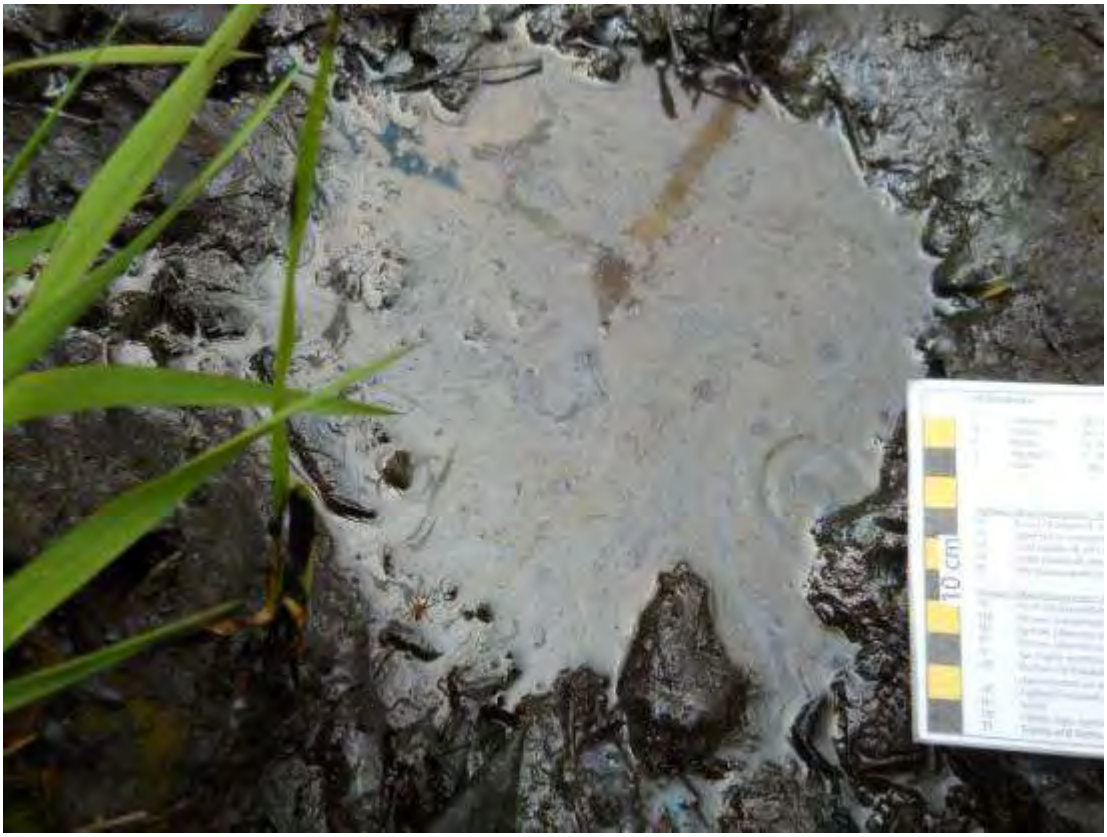
RDB Zone ID 7, Photo 004

RDB Zone ID 8, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 8, Photo 002

RDB Zone ID 9, Photo 001



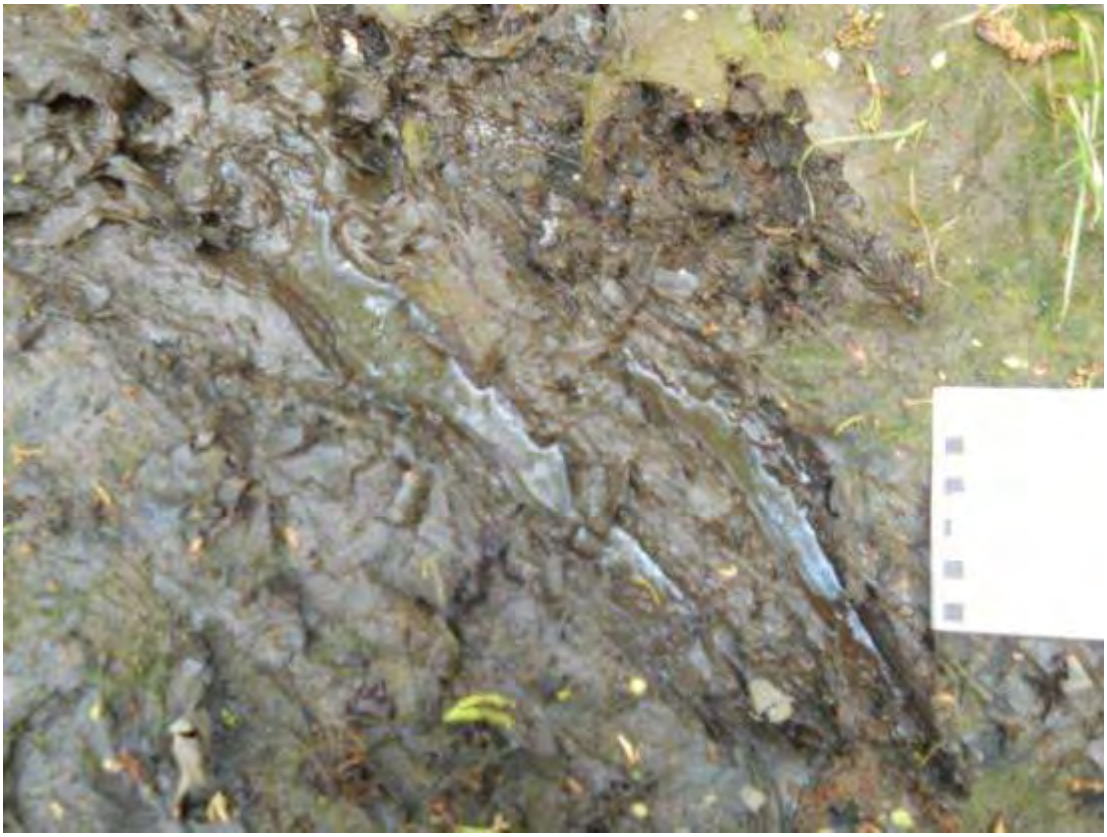
Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 9, Photo 002

RDB Zone ID 10, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 10, Photo 002



RDB Zone ID 10, Photo 003

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 10, Photo 004

RDB Zone ID 11, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 11, Photo 002

RDB Zone ID 12, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 12, Photo 002

RDB Zone ID 12, Photo 003

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 12, Photo 004

RDB Zone ID 12, Photo 005

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 12, Photo 006

RDB Zone ID 12, Photo 007

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 12, Photo 008

RDB Zone ID 13, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 13, Photo 002

RDB Zone ID 13, Photo 003

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 13, Photo 004

RDB Zone ID 13, Photo 005

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 14, Photo 001

RDB Zone ID 14, Photo 002

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 14, Photo 003

RDB Zone ID 15, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 15, Photo 002

RDB Zone ID 15, Photo 003

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 16, Photo 001

RDB Zone ID 16, Photo 002

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 16, Photo 003

RDB Zone ID 16, Photo 004

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 16, Photo 005

RDB Zone ID 16, Photo 006

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 17, Photo 001

RDB Zone ID 17, Photo 002

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 17, Photo 003

RDB Zone ID 17, Photo 004

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 18, Photo 001

RDB Zone ID 18, Photo 002

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 18, Photo 003

RDB Zone ID 18, Photo 004

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 18, Photo 005

RDB Zone ID 18, Photo 006

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 18, Photo 007

RDB Zone ID 18, Photo 008

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 19, Photo 001

RDB Zone ID 20, Photo 001

Field Photographs MP 10.25 – MP 10.50

RDB Zone ID 20, Photo 002

I Zone ID 1, Photo 001

Field Photographs MP 10.25 – MP 10.50

I Zone ID 1, Photo 002

I Zone ID 1, Photo 003

Field Photographs MP 10.25 – MP 10.50

I Zone ID 1, Photo 004

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 10.25 to MP 10.5 LDB, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/13/11 Date

Marcus Mueller Printed Name

Chris Bauer MDEQ 4-13-11 Date

Chris Bauer Printed Name

James Gamble 4-13-11

James Gamble

_____ Enbridge 4-13-11 Date

Hans Wronton Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 10.25 to MP 10.50, Bank or Island: RDB and One island., Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	5-12-11 Date
Jean Kanse	Printed Name	
[signature]	MDEQ	5/12/11 Date
ROBIN CENICO	Printed Name	
[signature]	Enbridge	5-12-11 Date
John W. Juntilla	Printed Name	

13 features collected on May 11, 2011

6 features collected on May 12, 2011

Island 1 feature collected on the island near the 10.50 mile post

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 10.25 to MP 10.50, Unique ID 10.50 RDB 10, Bank RDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Braan START — 5/17/11 Date

THOMAS P. BRAAN Printed Name

Kathleen Fairchild MDEQ — 5-17-11 Date

Kathleen Fairchild Printed Name

Laura Neumeier Enbridge — 5/17/2011 Date

Laura Neumeier Printed Name

Strikepoints collected by YUMA

Sort polygon collected by YUMA

MP 10.50 to MP 10.75

The LDB of segment 10.75 generally consists of emergent/herbaceous wetland habitat. The initial reassessment identified four polygons and two SORT points containing primarily trace to sporadic trunks, stems or debris with sporadic tar identified at two locations. 4 LDB was identified as an area containing (possibly biological) film/sheen on a former access road.

The RDB of segment 10.75 consists primarily of scrub-shrub wetland habitat. The initial reassessment identified one polygon and two SORT points containing primarily trace to sporadic stained and coated debris, trunks and stems.

One island is present in segment 10.75 and generally consists of scrub-shrub wetland habitat. One polygon was identified that encompasses the entire island and contains patchy coated, covered and stained oiled features as well as debris, trunks and stems.

The FLS did identify one suspected oil signature on the LDB within this segment that correlates with polygon 5 LDB.

One inconclusive PI observation was made within LDB in this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

1 LDB
10.75
3 RDB
5 LDB
1 I
2 RDB
4 LDB
1 RDB
2 LDB
1 LDB
3 LDB
6 LDB
10 LDB
1 I
10.50
19 RDB
18 RDB
16 RDB

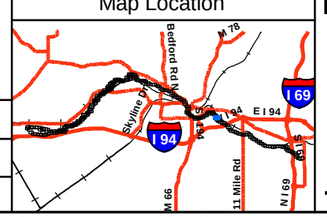
ENBRIDGE

Drawn: DE 5/17/2011

Approved:

Project #: 60162778

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP10.50-MP10.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB

Mile Marker: 10.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous			Graan, Tom
																					Flickinger, Brian
4/12/2011	16:10																	42.29880	-85.13038		Senn, Derek
2	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☑	☑	☐	☐	☐	☑	S	Wetland-emergent/herbaceous		SOME TREES AND SHRUBS	Graan, Tom
																					Flickinger, Brian
4/12/2011	16:37																	42.29882	-85.13026		Senn, Derek
3	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	T	Lawn (maintained land)		DID NOT SURVEY INSIDE HOMEOWNERS FENCED LAWN	Graan, Tom
																					Flickinger, Brian
4/12/2011	16:44																	42.29881	-85.13025		Senn, Derek
4	Overbank	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Other (comments)		RESTORED ACCESS ROAD, POSSIBLY BIOLOGICAL SHEEN	Graan, Tom
																					Flickinger, Brian
4/12/2011	17:00																	42.29892	-85.13125		Senn, Derek
5	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)			Graan, Tom
																					Flickinger, Brian
4/12/2011	18:03																	42.30110	-85.13199		Senn, Derek

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 10.75																					MDEQ
Source: 2011 Reassessment																		Latitude	Longitude		Enbridge Team Lead
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
6	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Other (comments)		debris along fenceline	Graan, Tom
																					Fairchild, Katie
Date	**Time**																				
5/4/2011	09:57																	42.29802	-85.13050		Neumeier, Laura

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character														
Mile Marker: 10.75																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-scrub/shrub			Shauna Ross / Sara Vandelfzjil
4/12/2011	09:38																	42.29886	-85.12934		Mike Van Loan
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Shauna Ross / Sara Vandelfzjil
4/12/2011	09:55																	42.29930	-85.12998		Mike Van Loan
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Shauna Ross / Sara Vandelfzjil
4/12/2011	10:41																	42.30079	-85.13097		Mike Van Loan

2011 Reassessment

Bank: I		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 10.75																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	**Time**																	**Latitude**	**Longitude**		**Enbridge Team Lead**
1	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	P	Wetland-swamp (forested)		Cover refering to SR. Petroleum odor.	Shauna Ross
																					Sara Vandelfzjil
4/12/2011	10:23																	42.29973	-85.13039		Mike Van Loan

Photo Logs

Field Photographs MP 10.50 – MP 10.75

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 10.50 – MP 10.75

I Zone ID 1, Photo 003

LDB Zone ID 1, Photo 001

Field Photographs MP 10.50 – MP 10.75

LDB Zone ID 1, Photo 002

LDB Zone ID 1, Photo 003

Field Photographs MP 10.50 – MP 10.75

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 10.50 – MP 10.75

LDB Zone ID 2, Photo 003

LDB Zone ID 2, Photo 004

Field Photographs MP 10.50 – MP 10.75

LDB Zone ID 2, Photo 005

LDB Zone ID 2, Photo 006

Field Photographs MP 10.50 – MP 10.75

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 10.50 – MP 10.75

LDB Zone ID 5, Photo 001

LDB Zone ID 5, Photo 002

Field Photographs MP 10.50 – MP 10.75

LDB Zone ID 5, Photo 003

LDB Zone ID 5, Photo 004

Field Photographs MP 10.50 – MP 10.75

LDB Zone ID 5, Photo 005

LDB Zone ID 5, Photo 006

Field Photographs MP 10.50 – MP 10.75

LDB Zone ID 5, Photo 007

LDB Zone ID 6, Photo 001

Field Photographs MP 10.50 – MP 10.75

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 10.50 – MP 10.75

RDB Zone ID 3, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 10.5 to MP 10.75, Bank or Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START 4/12/2011 Date

Shawna Marie Ross Printed Name

_____ MDEQ 4/12/11 Date

SARAH VANDERZIJL Printed Name

_____ Enbridge 4-12-2011 Date

Michael Van Loan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 10.5 to MP 10.75, (Bank) or Island: LB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan — START — 4/12/11 — Date

THOMAS P. GRAAN — Printed Name

Brian Fliding, RD — MDEQ — 4/12/11 — Date

Brian Fliding, RD / MATTHEW WESENER — Printed Name

Enbridge — 4/12/11 — Date

Derek Senn — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 10.50 to MP 10.75, Unique ID LDB Access, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Green — START — 5/4/11 — Date

THOMAS P. GREEN — Printed Name

Kat Fairchild — MDEQ — 5-4-11 — Date

Kathleen Fairchild — Printed Name

Laura Neumeier — Enbridge — 5/4/2011 — Date

Laura Neumeier — Printed Name

1 point captured by YUMA

MP 10.75 to MP 11.00

The LDB of segment 11.00 generally consists of forested wetland habitat. The initial reassessment identified three polygons and one SORT point containing primarily trace to sporadic coated material along with some residual surface oil residue and tar. Polygon 2 LDB was identified as an area containing a mix of (possibly biological) film/sheen.

The RDB of segment 11.00 consists primarily of low vegetative bank with areas of forested wetland swamp. The initial reassessment identified one polygon and three SORT points containing trace sporadic areas of stained debris, trunks and stems. SORT point 4 RDB identified an area of mixed petroleum and biological sheen.

Three islands are present in segment 11.00 and all generally consist of forested wetland swamp. One polygon was identified on each island and all contain sporadic cover, coated and stained debris, trunks and stems, as well as surface oil residue.

Poling was also conducted within the segment to fully assess the overbank. The detailed results of the poling activities will be completed under a separate cover.

The FLS did not identify any oil signatures within this segment. One PI location was observed along the RDB near the segment 11.0 boundary and has been identified as a high priority location. No associated SORT data coincides with observed PI location.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP10.75-MP11.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 11																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	P	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	11:03																	42.30153	-85.13226		Mike Van Loan
2	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	11:53																	42.30310	-85.13329		Mike Van Loan
3	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	12:22																	42.30357	-85.13417		Mike Van Loan

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character															
Mile Marker: 11																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Shauna Ross	Sara Vandelfzjil
4/12/2011	10:53																	42.30141	-85.13156			Mike Van Loan
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Shauna Ross	Sara Vandelfzjil
4/12/2011	11:14																	42.30198	-85.13206			Mike Van Loan
3	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)			Shauna Ross	Sara Vandelfzjil
4/12/2011	11:32																	42.30219	-85.13231			Mike Van Loan
4	Overbank	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Low Vegetated Bank		sheen appears to be a mix of petroleum and organic	Shauna Ross	Sara Vandelfzjil
4/12/2011	11:35																	42.30219	-85.13227			Mike Van Loan

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 11																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			Graan, Tom
																					Wesener, Matt
4/13/2011	09:21																	42.30138	-85.13260		Senn, Derreck
2	Overbank	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	B	Wetland-swamp (forested)		MIX OF PETROLEUM & BIOLOGICAL SHEEN	Graan, Tom
																					Wesener, Matt
4/13/2011	10:27																	42.30196	-85.13476		Senn, Derreck
3	Overbank	☐	☑	☑	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)		POLYGON OVERLAPS SEGMENT 11.25 NORTHWEST PORTION MORE HEAVILY AFFECTED	Graan, Tom
																					Wesener, Matt
4/13/2011	13:59																	42.30273	-85.13604		Senn, Derreck
4	Overbank	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)		PHOTOS 1-3 GO WITH FEATURE 11.00L3	Graan, Tom
																					Wesener, Matt
4/13/2011	14:27																	42.30229	-85.13389		Senn, Derreck

Photo Logs

Field Photographs MP 10.75 – MP 11.00

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 10.75 – MP 11.00

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 10.75 – MP 11.00

LDB Zone ID 2, Photo 003

LDB Zone ID 3, Photo 001

Field Photographs MP 10.75 – MP 11.00

LDB Zone ID 3, Photo 002

LDB Zone ID 3, Photo 003

Field Photographs MP 10.75 – MP 11.00

LDB Zone ID 3, Photo 004

LDB Zone ID 3, Photo 005

Field Photographs MP 10.75 – MP 11.00

LDB Zone ID 3, Photo 006

LDB Zone ID 3, Photo 007

Field Photographs MP 10.75 – MP 11.00

LDB Zone ID 3, Photo 008

LDB Zone ID 3, Photo 009

Field Photographs MP 10.75 – MP 11.00

LDB Zone ID 3, Photo 010

LDB Zone ID 3, Photo 011

Field Photographs MP 10.75 – MP 11.00

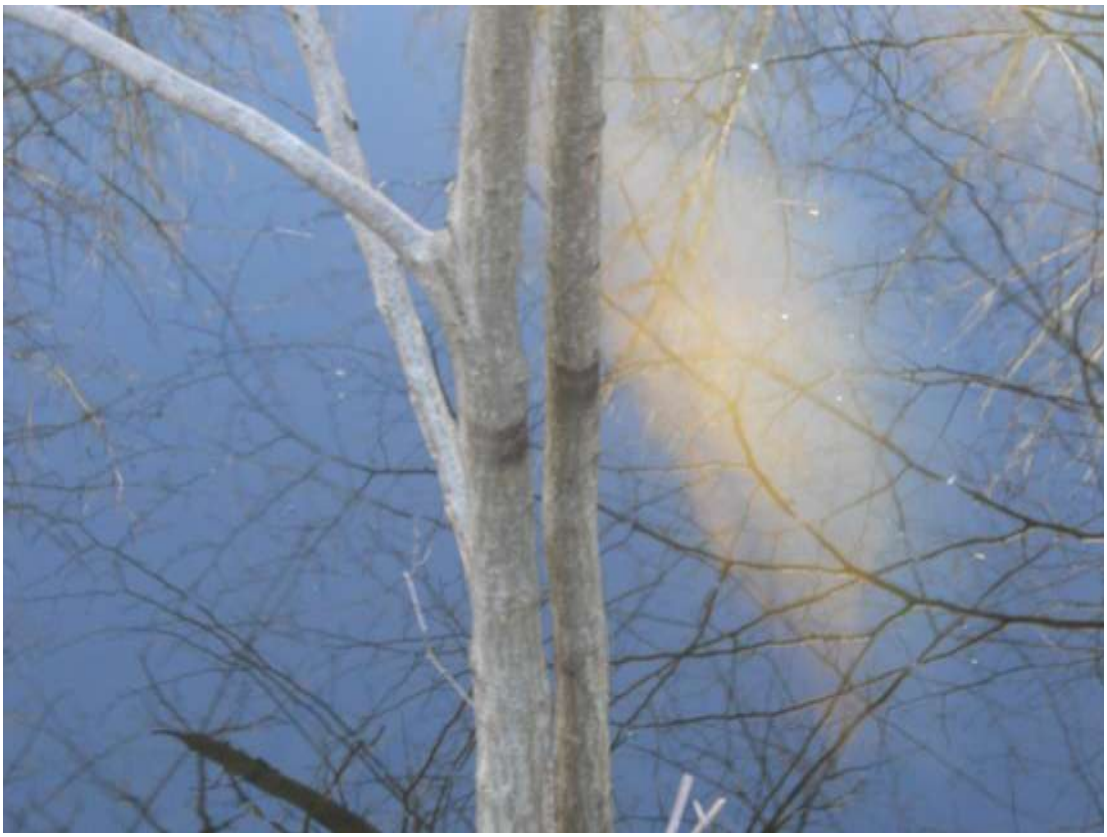
LDB Zone ID 3, Photo 012

LDB Zone ID 4, Photo 001

Field Photographs MP 10.75 – MP 11.00

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001



Field Photographs MP 10.75 – MP 11.00

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 10.75 – MP 11.00

RDB Zone ID 4, Photo 001

I Zone ID 1, Photo 001

Field Photographs MP 10.75 – MP 11.00

I Zone ID 1, Photo 002

I Zone ID 2, Photo 001

Field Photographs MP 10.75 – MP 11.00

I Zone ID 2, Photo 002

I Zone ID 3, Photo 001

Field Photographs MP 10.75 – MP 11.00

I Zone ID 3, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 10.75 to MP 11.0, Bank or Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna M. Ross — START — 4/12/2011 — Date

Shawna Marie Ross — Printed Name

Sarah VanDyke — MDEQ — 4/12/11 — Date

SARAH VAN DELFZIJL — Printed Name

Michael Van Loon — Enbridge — 4-12-2011 — Date

Michael Van Loon — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 10.75 to MP 11.0, (Bank) or Island: LB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan — START — 4/13/11 — Date

THOMAS P. GRAAN — Printed Name

Brian Flickinger RD/MATTHEW LIEBENEC — MDEQ — 4/13/11 — Date

Brian Flickinger RD/MATTHEW LIEBENEC — Printed Name

Enbridge — 4/13/11 — Date

Derek Senn — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 10.75 to MP 11, Bank or Island: L, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan START 4/19/11 Date

THOMAS P. GRAAN Printed Name

Dana Strouse MDEQ 4-19-11 Date

Dana Strouse Printed Name

[signature] Enbridge 4/19/11 Date

Derek Senn Printed Name

* Note: This signoff covers only the inundation area south of River Road. That was assessed on 4/19/11.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 10.75 to MP 11.0, Unique ID 11.00 LDB5, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Grasan _____ START _____ 5/3/11 Date

Thomas P. Grasan _____ Printed Name

Kathleen Fairchild _____ MDEQ _____ 5-3-11 Date

Kathleen Fairchild _____ Printed Name

Don Dechtl _____ Enbridge _____ 5-3-11 Date

Don Dechtl _____ Printed Name

MP 11.00 to MP 11.25

The LDB of segment 11.25 generally consists of forested wetland and emergent/herbaceous wetland habitat. The initial reassessment identified six polygons containing primarily trace to sporadic coated and stained debris, trunks and stems, along with some broken surface oil residue and tar. All polygons, excluding 2 LDB contained within 4 LDB, were identified to contain film/sheen.

The RDB of segment 11.25 consists of forested wetland swamp habitat. The initial reassessment identified two SORT points containing trace amounts of stained trunks and stems.

Three islands are present in segment 11.25 and all generally consist of forested wetland swamp and emergent/herbaceous wetland habitat. One polygon was identified on each island. The upstream island (1 I) contained coated and stained trunks and stems, the island in the center of the segment (2 I) contains stained debris, trunks and stems, and the downstream island (3 I) contained no oil.

The FLS did not identify any oil signatures within this segment. One PI observations was observed within the RDB of this segment and has been identified as a high priority location. No associated SORT data coincides with this data point.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

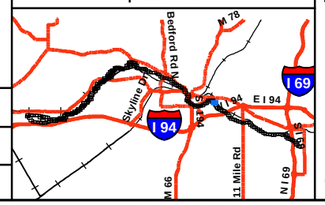
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP11.00-MP11.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 11.25																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	13:06																	42.30394	-85.13507		Mike Van Loan
2	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-emergent/herbaceous			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	14:40																	42.30446	-85.13776		Mike Van Loan
3	Shoreline and Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	T	Wetland-emergent/herbaceous			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	14:48																	42.30425	-85.13828		Mike Van Loan

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 11.25																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	12:41																	42.30383	-85.13461		Mike Van Loan
2	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	12:45																	42.30391	-85.13479		Mike Van Loan

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 11.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Overbank	☐	☐	☑	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Wetland-emergent/herbaceous			Graan, Tom
																					Wesener, Matt
4/13/2011	18:01																	42.30381	-85.13556		Senn, Derreck

2011 Reassessment

Bank: LDB

Mile Marker: 11.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
2	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	B	Wetland-emergent/herbaceous			Graan, Tom
																					Wesener, Matt
4/14/2011	12:29																	42.30438	-85.13754		Senn, Derreck
3	Shoreline and Overbank	☐	☐	☑	☑	☑	☑	☐	☐	☐	☑	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)		FURTHER AWAY FROM RIVER SHEEN OBSERVED TS AND STAINING OBSERVED CLOSER TO SHORELINE ~30FT	Graan, Tom
																					Wesener, Matt
4/14/2011	14:24																	42.30335	-85.13923		Senn, Derreck
4	Shoreline and Overbank	☐	☑	☑	☑	☑	☑	☐	☐	☐	☑	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)			Graan, Tom
																					Wesener, Matt
4/14/2011	15:20																	42.30377	-85.13810		Senn, Derreck
5	Shoreline	☐	☐	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Other (comments)		SHEEN OBSERVED ALONG BANKS COULD NOT ASSESS AREA-WATER	Graan, Tom
																					Wesener, Matt
4/14/2011	15:44																	42.30349	-85.13877		Senn, Derreck
6	Overbank	☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-emergent/herbaceous		SHEEN IS DISTRIBUTED BETWEEN TUSSOCKS	Graan, Tom
																					Wesener, Matt
4/14/2011	16:34																	42.30349	-85.13879		Senn, Derreck

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 11.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
7	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Ponded Water - Reassess		NEED BOAT NEEDS RENAMED TO NEXT IN SEQUENCE FOR SECTION 11.25	**Enbridge Team Lead** Graan, Tom
																					VanDelfzijl, Sarah
4/19/2011	12:17																	42.30208	-85.13745		Senn, Derreck

Photo Logs

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 1, Photo 003

LDB Zone ID 1, Photo 004

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 1, Photo 005

LDB Zone ID 2, Photo 001

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 2, Photo 002

LDB Zone ID 2, Photo 003

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 2, Photo 004

LDB Zone ID 2, Photo 005

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 3, Photo 003

LDB Zone ID 3, Photo 004

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 3, Photo 005

LDB Zone ID 4, Photo 001

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 002

LDB Zone ID 4, Photo 003

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 004

LDB Zone ID 4, Photo 005

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 006

LDB Zone ID 4, Photo 007

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 008

LDB Zone ID 4, Photo 009

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 010

LDB Zone ID 4, Photo 011

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 012

LDB Zone ID 4, Photo 013

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 014

LDB Zone ID 4, Photo 015

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 016

LDB Zone ID 4, Photo 017

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 018

LDB Zone ID 4, Photo 019

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 020

LDB Zone ID 4, Photo 021

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 4, Photo 022

LDB Zone ID 4, Photo 023

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 5, Photo 001

LDB Zone ID 5, Photo 002

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 6, Photo 001

LDB Zone ID 6, Photo 002

Field Photographs MP 11.00 – MP 11.25

LDB Zone ID 6, Photo 003

LDB Zone ID 7, Photo 001

Field Photographs MP 11.00 – MP 11.25

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 11.00 – MP 11.25

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 11.00 – MP 11.25

I Zone ID 2, Photo 001

I Zone ID 3, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11.0 to MP 11.25, Bank ~~or~~ AND Island: RDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Ross — START — 4/12/2011 — Date

Shawna Marie Ross — Printed Name

Sarah VanDeHey — MDEQ — 4/12/11 — Date

SARAH VANDEHEY — Printed Name

[signature] — Enbridge — 4-12-2011 — Date

Michael Van Loon — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11.0 to MP 11.25, (Bank) or Island: LB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan — START — 4/14/11 — Date

THOMAS P. GRAAN — Printed Name

MDEQ — 4/14/11 — Date

MATTHEW D WESENER / Brian Flickinger RP — Printed Name

Enbridge — 4/14/11 — Date

Derek Senn — Printed Name

Note: Did not assess the area South of the road due to uncertainty regarding permission to access property

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11.25 to MP X, (Bank) or Island: LeST, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Braan — START — 4/15/11 — Date

Thomas P. Braan — Printed Name

R. Flicking RP / WRD — MDEQ — 4/15/11 — Date

Brian Flicking RP / Matt Wesener — Printed Name

Enbridge — 4/15/11 — Date

Derek Sean — Printed Name

Note: The areas of this segment that have been assessed on April 14 + 15, 2011 and documented on the Yuma unit are being signed off on as adequately assessed by the team members present during the assessment. This documentation and sign-off is necessary due to new MDEQ personnel joining the assessment team beginning on Monday, April 18, 2011.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11 to MP 11.25, Bank or Island: L, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan — START — 4/19/11 — Date

THOMAS P. GRAAN — Printed Name

Dana Strouse — MDEQ — 4-19-11 — Date

Printed Name

Enbridge — 4/19/11 — Date

Derek Senn — Printed Name

Note: This signoff covers only the inundation area south of River Road that was assessed on 4/19/11

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 11.0 to MP 11.25, Unique ID LDB 7 (11.25), Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/4/11 — Date

THOMAS P. GRAAN — Printed Name

Kathleen Fairchild — MDEQ — 5-4-11 — Date

Kathleen Fairchild — Printed Name

Laura Naumeier — Enbridge — 5/4/2011 — Date

Laura Naumeier — Printed Name

MP 11.25 to MP 11.50

The LDB of segment 11.50 consists of forested wetland habitat. The initial reassessment identified 13 polygons and one point containing primarily trace to sporadic scattered, coated and stained debris, trunks and stems, along with some film and tar. Eight polygons (1, 3, 4, 6, 7, 9, and, 10 LDB) all were identified as areas of film/sheen. Polygon 9 LDB was identified as having sheen on standing water scattered throughout the polygon. A small transect line (8 LDB) contained a continuous distribution of tar and was noted as having a heavy sheen and some floating tar.

The RDB of segment 11.50 consists of forested wetland swamp habitat. The initial reassessment identified two polygons and one point containing primarily trace stained trunks and stems, along with trace tarballs noted at point 2 RDB.

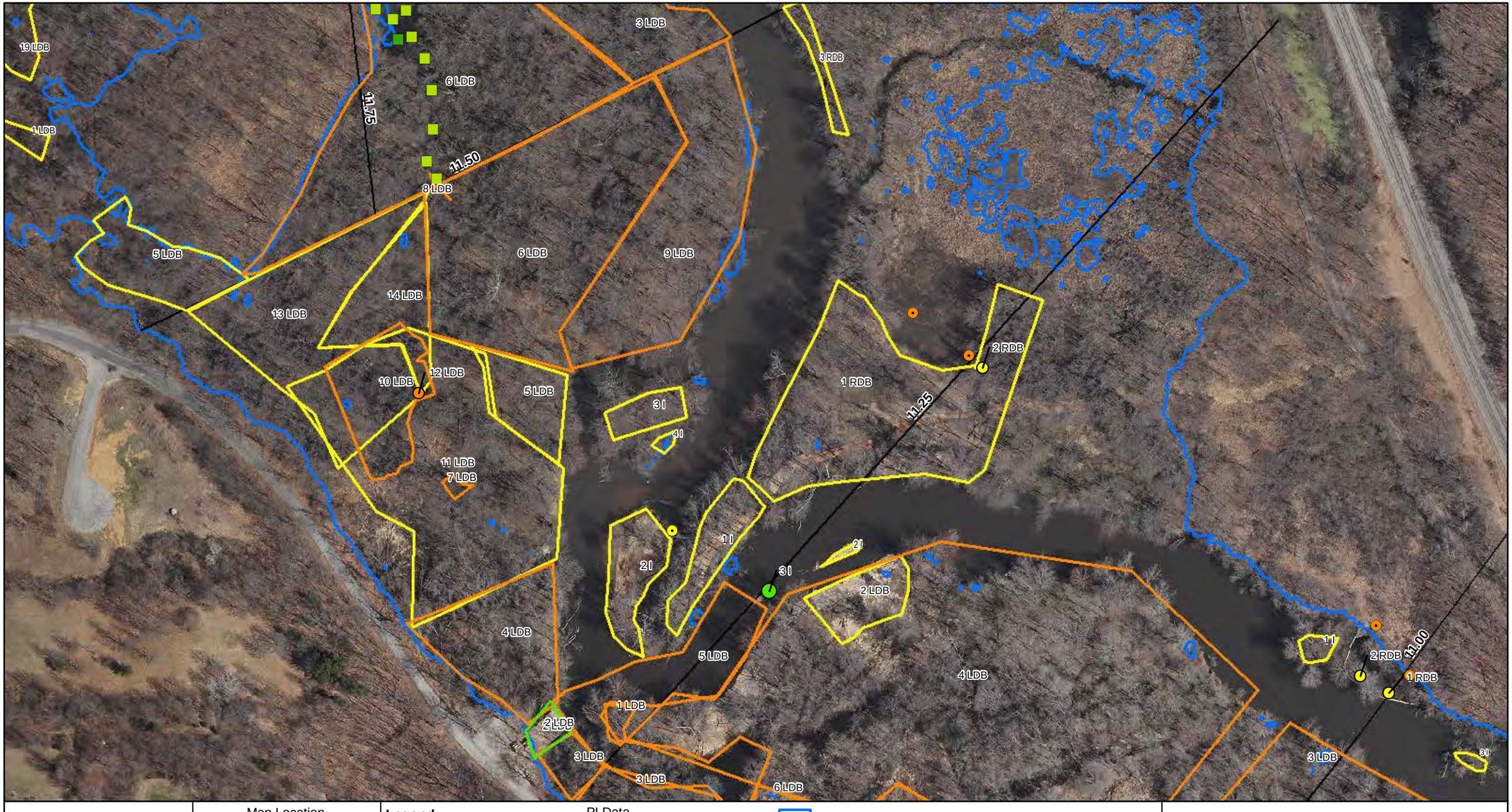
Four island polygons are presented in segment 11.50, all generally consisting of forested wetland swamp habitat. All island polygons contained trace areas of covered and stained trunks and stems along with surface oil residue.

The FLS did not identify any oil signatures within this segment. Three PI observations were observed within this segment. Two were identified as high priority locations, and occurred immediately adjacent to 1 RDB polygon. The third PI observation occurred in the vicinity of polygon 2 I and was inconclusive.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

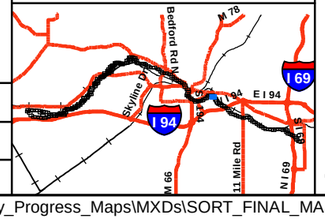
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP11.25-MP11.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 11.5																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	15:02																	42.30429	-85.13869		Mike Van Loan
2	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	15:42																	42.30403	-85.13903		Mike Van Loan
3	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	16:16																	42.30501	-85.13878		Mike Van Loan
4	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	16:18																	42.30498	-85.13897		Mike Van Loan

2011 Reassessment

Bank: RDB

Mile Marker: 11.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		MDEQ / Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	14:20																	42.30477	-85.13702		Mike Van Loan
2	Overbank	☐	☐	☐	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)		sheen present tarballs emerged after sediment was disturbed	Shauna Ross
																					Sara Vandelfzjil
4/12/2011	14:25																	42.30523	-85.13703		Mike Van Loan
3	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Shauna Ross
																					Sara Vandelfzjil
4/12/2011	17:11																	42.30626	-85.13784		Mike Van Loan

2011 Reassessment

Bank: LDB

Mile Marker: 11.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)			Graan, Tom
																					Wesener, Matt
4/14/2011	17:07																	42.30366	-85.13911		Senn, Derreck
2	Shoreline and Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	T	Other (comments)		BOAT LAUNCH REMOVAL RESTORATION & DECOMMISSIONING NOT ASSESSED	Graan, Tom
																					Wesener, Matt
4/14/2011	17:20																	42.30355	-85.13945		Senn, Derreck
3	Shoreline and Overbank	☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Graan, Tom
																					Wesener, Matt
4/14/2011	17:36																	42.30360	-85.13970		Senn, Derreck
4	Shoreline and Overbank	☐	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			Graan, Tom
																					Wesener, Matt
4/14/2011	18:13																	42.30377	-85.13952		Senn, Derreck

2011 Reassessment

Bank: LDB

Mile Marker: 11.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
				Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
																				Latitude	Longitude		Enbridge Team Lead
10	Overbank	4/15/2011	11:20	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)	42.30519 -85.14083	STAINED TS&DB LOW % -TRACE THROUGHOUT POLYGON	Graan, Tom Wesener, Matt Senn, Derreck
11	Shoreline and Overbank	4/15/2011	11:59	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.30546 -85.13880		Graan, Tom Wesener, Matt Senn, Derreck
5	Shoreline and Overbank	4/15/2011	10:46	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)	42.30519 -85.13953	COVER CLOSER TO 10% SR IN 1 ISOLATED SPOT	Graan, Tom Wesener, Matt Senn, Derreck
6	Shoreline and Overbank	4/15/2011	14:14	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.30692 -85.13925		Graan, Tom Wesener, Matt Senn, Derreck
7	Shoreline	4/15/2011	10:10	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)	42.30465 -85.14011	*SHOULD BE 11.50*	Graan, Tom Wesener, Matt Senn, Derreck

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution				
Mile Marker: 11.5																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
8	Overbank	☐	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	C	Wetland-swamp (forested)		HEAVY SHEEN AND SOME FLOATING TAR	Graan, Tom / Wesener, Matt
4/15/2011	13:26																	42.30594	-85.14019		Senn, Derreck
9	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑	☑	☐	☐	☑	☑	P	Wetland-swamp (forested)		SHEEN IN STANDING WATER	Graan, Tom / Wesener, Matt
4/15/2011	14:06																	42.30695	-85.13920		Senn, Derreck

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 11.5																					
Source: 2011 Reassessment																					MDEQ
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Latitude**	**Longitude**		**Enbridge Team Lead**
Date	**Time**																				
12	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	P	Wetland-swamp (forested)		ZONE ID WILL NEED CHANGED TO NEXT IN SEQUENCE FROM 4/15/11	Graan, Tom
																					Strouse, Dana
4/19/2011	10:57																	42.30508	-85.14035	MIXTURE OF BIOLOGICAL & OIL SHEEN	VanLoan, Mike
13	Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		NEEDS OIL ZONE RENUMBERED TO NEXT IN SEQUENCE PRIMARILY CT & ST	Graan, Tom
																					VanDelfzijl, Sarah
4/19/2011	11:13																	42.30478	-85.14083		Senn, Derreck
14	Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	P	Wetland-swamp (forested)		NEEDES RENUMBERED TO NEXT IN SEQUENCE PRIMARILY CT & CV	Graan, Tom
																					VanDelfzijl, Sarah
4/19/2011	11:25																	42.30478	-85.14087		Senn, Derreck

Photo Logs

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 3, Photo 002

LDB Zone ID 3, Photo 003

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 4, Photo 001

LDB Zone ID 4, Photo 002

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 4, Photo 003

LDB Zone ID 4, Photo 004

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 4, Photo 005

LDB Zone ID 5, Photo 001

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 5, Photo 002

LDB Zone ID 5, Photo 003

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 5, Photo 004

LDB Zone ID 5, Photo 005

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 5, Photo 006

LDB Zone ID 5, Photo 007

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 6, Photo 001

LDB Zone ID 6, Photo 002

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 6, Photo 003

LDB Zone ID 7, Photo 001

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 7, Photo 002

LDB Zone ID 7, Photo 003

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 7, Photo 004

LDB Zone ID 7, Photo 005

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 7, Photo 006

LDB Zone ID 7, Photo 007

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 7, Photo 008

LDB Zone ID 7, Photo 009

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 8, Photo 001

LDB Zone ID 8, Photo 002

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 9, Photo 001

LDB Zone ID 9, Photo 002

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 9, Photo 003

LDB Zone ID 10, Photo 001

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 10, Photo 002

LDB Zone ID 10, Photo 003

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 10, Photo 004

LDB Zone ID 10, Photo 005

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 10, Photo 006

LDB Zone ID 10, Photo 007

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 10, Photo 008

LDB Zone ID 10, Photo 009

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 10, Photo 010

LDB Zone ID 10, Photo 011

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 10, Photo 012

LDB Zone ID 11, Photo 001

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 12, Photo 001

LDB Zone ID 13, Photo 001

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 13, Photo 002

LDB Zone ID 13, Photo 003

Field Photographs MP 11.25 – MP 11.50

LDB Zone ID 14, Photo 001

LDB Zone ID 14, Photo 002

Field Photographs MP 11.25 – MP 11.50

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 11.25 – MP 11.50

RDB Zone ID 1, Photo 003

RDB Zone ID 1, Photo 004

Field Photographs MP 11.25 – MP 11.50

RDB Zone ID 1, Photo 005

RDB Zone ID 2, Photo 001

Field Photographs MP 11.25 – MP 11.50

RDB Zone ID 3, Photo 001

I Zone ID 1, Photo 001

Field Photographs MP 11.25 – MP 11.50

I Zone ID 2, Photo 001

I Zone ID 2, Photo 002

Field Photographs MP 11.25 – MP 11.50

I Zone ID 3, Photo 001

I Zone ID 3, Photo 002

Field Photographs MP 11.25 – MP 11.50

I Zone ID 4, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11.25 to MP 11.5, ~~Bank~~ AND Island: ROB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna M Ross — START — 4/12/2011 Date

Shawna Marie Ross — Printed Name

Sarah VanDeLeest — MDEQ — 4/12/11 Date

SARAH VANDELEEST — Printed Name

Mike Van Loan — Enbridge — 4-12-2011 Date

Mike Van Loan — Printed Name

Team 2 Team 3

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11.25 to MP 11.5, Bank or Island: L, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P Oram	START	4/19/11 Date
THOMAS P. ORAM	Printed Name	
Dana Struse	MDEQ	4/19/11 Date
Dana Struse	Printed Name	
	Enbridge	4/19/11 Date
Brock Sean	Printed Name	

NOTE: This signoff covers the remaining portion of this segment that was not completed on 4/15/11. This portion of the assessment was completed on 4/19/11 & completes the 11.25 to 11.5 LOB segment

MP 11.50 to MP 11.75

The LDB of segment 11.75 generally consists of forested swamp and emergent/herbaceous wetland habitats. The initial reassessment identified three large polygons encompassing the LDB, including the entire overbank and three SORT points. This area was identified as having occurrences ranging from trace to broken areas of patties, surface oil residue, debris, trunks and stems.

The RDB of segment 11.75 consists primarily of forested wetland swamp with areas of low vegetative banks. The initial reassessment identified two polygons and one SORT point containing primarily trace occurrences of covered and stained trunks and stems and some surface oil residue.

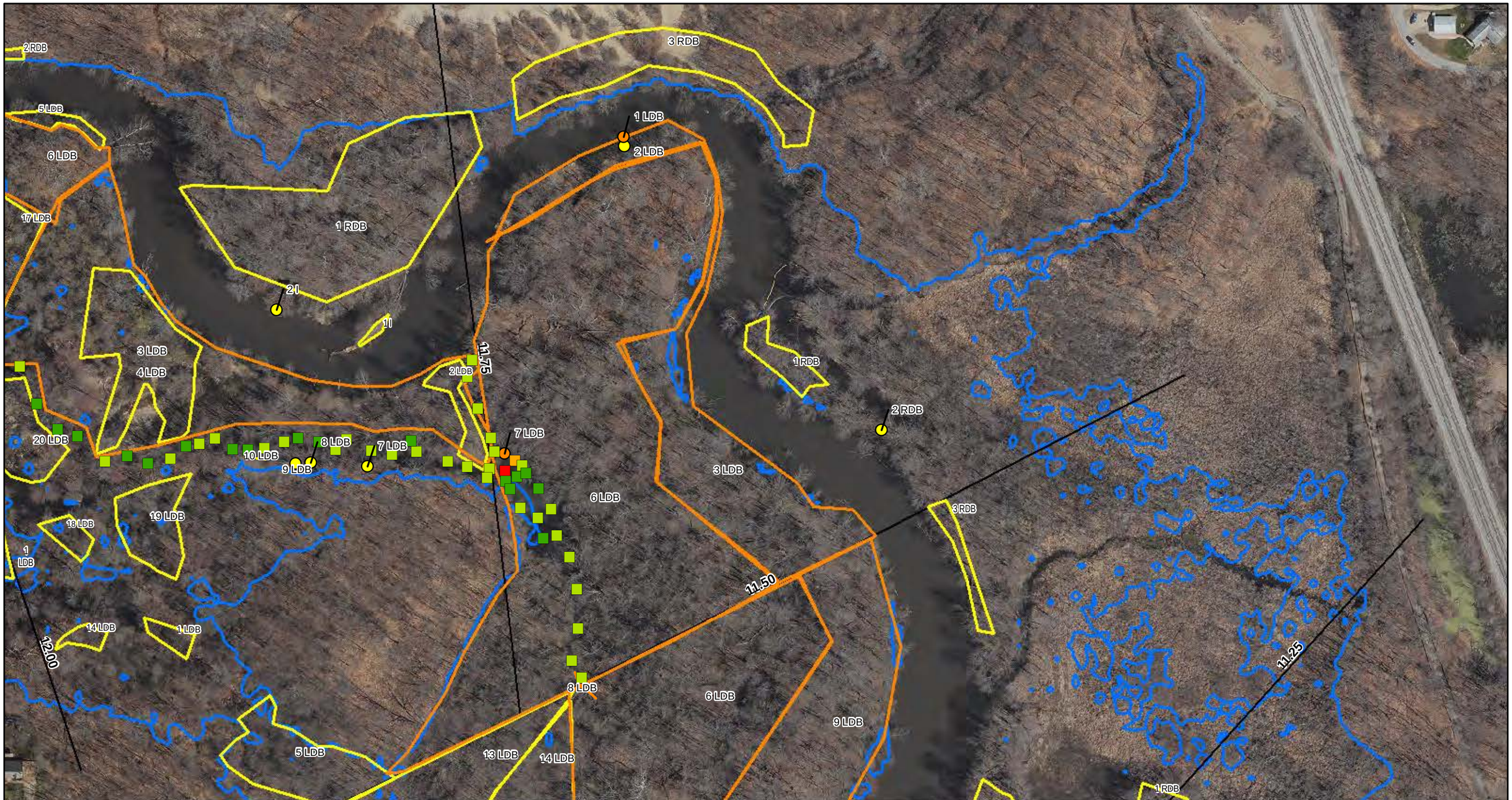
Additionally, poling was completed in an inundated area of overbank, results ranged from no sheen or globules to heavy sheen and globules.

No islands are present in this segment. The FLS did not identify any oil signatures within this segment and no PI observations were made.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

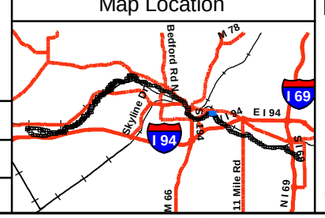
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP11.50-MP11.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: RDB

Mile Marker: 11.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		MDEQ Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna VanDelfzijl, Sarah
4/13/2011	09:32																	42.30729	-85.13898		VanLoan, Mike
2	Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna VanDelfzijl, Sarah
4/13/2011	09:41																	42.30714	-85.13851		VanLoan, Mike
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Ross, Shauna VanDelfzijl, Sarah
4/13/2011	11:11																	42.30832	-85.14088		VanLoan, Mike

2011 Reassessment

Bank: LDB
Mile Marker: 11.75
Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
1	Shoreline	4/19/2011	14:42	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	B	Wetland-emergent/herbaceous	42.30841	-85.14004	POSSIBLE MIXED SHEEN	Graan, Tom Strouse, Dana VanLoan, Mike
2	Shoreline	4/19/2011	14:44	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-emergent/herbaceous	42.30837	-85.14004		Graan, Tom Strouse, Dana Senn, Derreck
3	Shoreline and Overbank	4/19/2011	15:01	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)	42.30814	-85.14064	LOW END AROUND 1% VERY LITTLR SR FL IN STANDING WATER	Graan, Tom Strouse, Dana Senn, Derreck
5	Overbank	4/19/2011	16:33	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.30597	-85.14197		Graan, Tom Strouse, Dana Senn, Derreck
6	Shoreline and Overbank	4/19/2011	16:42	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑	☑	☐	☐	☑	☑	P	Wetland-swamp (forested)	42.30594	-85.14195		Graan, Tom Strouse, Dana Senn, Derreck

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 11.75																					MDEQ
Source: 2011 Reassessment																		**Latitude**	**Longitude**		Enbridge Team Lead
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					
7	Overbank	☐	☐	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	P	Wetland-swamp (forested)		covers shoreline area around pond	Graan, Tom
Date	**Time**																				Fairchild, Katie
5/3/2011	11:10																	42.30688	-85.14091		Neumeier, Laura

Photo Logs

Field Photographs MP 11.50 – MP 11.75

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 11.50 – MP 11.75

RDB Zone ID 1, Photo 003

RDB Zone ID 2, Photo 001

Field Photographs MP 11.50 – MP 11.75

RDB Zone ID 3, Photo 001

LDB Zone ID 1, Photo 001

Field Photographs MP 11.50 – MP 11.75

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 11.50 – MP 11.75

LDB Zone ID 5, Photo 001

LDB Zone ID 6, Photo 001

Field Photographs MP 11.50 – MP 11.75

LDB Zone ID 6, Photo 002

LDB Zone ID 6, Photo 003

Field Photographs MP 11.50 – MP 11.75

LDB Zone ID 6, Photo 004

LDB Zone ID 6, Photo 005

Field Photographs MP 11.50 – MP 11.75

LDB Zone ID 6, Photo 006

LDB Zone ID 6, Photo 007

Field Photographs MP 11.50 – MP 11.75

LDB Zone ID 6, Photo 008

LDB Zone ID 6, Photo 009

Field Photographs MP 11.50 – MP 11.75

LDB Zone ID 6, Photo 010

LDB Zone ID 6, Photo 011

Field Photographs MP 11.50 – MP 11.75

LDB Zone ID 7, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11.5 to MP 11.75, (Bank) or Island: EOB, Segment Length: 0.25 mile

3 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna M Ross — START — 4/13/2011 — Date

Shawna Marie Ross — Printed Name

[signature] — MDEQ — 4/13/11 — Date

SARAH VANDERZIJL — Printed Name

[signature] — Enbridge — 4-13-2011 — Date

Michael Van Loon — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11.5 to MP 11.75, Bank or Island: L, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan START 4/19/11 Date

THOMAS P. GRAAN Printed Name

Dana Strouse MDEQ 4-19-11 Date

Dana Strouse Printed Name

[signature] Enbridge 4/19/11 Date

Desch Senn Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 11.5 to MP 11.75, Unique ID LDB4 (11.75), Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/3/11 — Date

THOMAS P. GRAAN — Printed Name

Kat Fairchild — MDEQ — 5-3-11 — Date

Kathleen Fairchild — Printed Name

Don DeWitt — Enbridge — 5/3/11 — Date

Don DeWitt — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 11.50 to MP 11.75, Unique ID 11.75 RI, Bank RDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan _____ START 5/17/11 Date

THOMAS P. GRAAN _____ Printed Name

Kat Fairchild _____ MDEQ 5-17-11 Date

Kathleen Fairchild _____ Printed Name

Don DeWitt _____ Enbridge 5/17/11 Date

Don DeWitt _____ Printed Name

Strikepoints collected by YUMA

MP 11.75 to MP 12.00

The LDB of segment 12.00 generally consists of forested swamp and areas of ponded water. The initial reassessment identified 13 polygons and four SORT points. This area was identified as having trace to broken areas of coated and stained debris, trunks and stems. Patchy to sporadic areas of tar and surface oil residue were also identified on this bank. Additionally, large areas of the overbank were identified as having trace amounts of film.

The RDB of segment 12.00 consists primarily of forested wetland swamp with areas of low vegetative banks. The initial reassessment identified two polygons containing primarily trace occurrences of stained trunks and stems.

Two islands are present in this segment. Both were identified as having wetland forested swamp as the primary habitat. The upstream island contained trace amounts of covered and stained trunks and stems, as well as some surface oil residue. The downstream Island consisted of sporadic covered areas of surface oil residue.

Poling was also conducted within the segment to fully assess the overbank. The detailed results of the poling activities will be completed under a separate cover.

The FLS did not identify any oil signatures within this segment and no PI observations were made.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP11.75-MP12.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character												
Mile Marker: 12																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**	**Comments**
Date	**Time**																	**Latitude** / **Longitude**	
1	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Wetland-swamp (forested)	
4/13/2011	12:12																	42.30754 / -85.14150	
2	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-emergent/herbaceous	
4/13/2011	12:19																	42.30764 / -85.14208	

START	
MDEQ	
Enbridge Team Lead	
Ross, Shauna	
VanDelfzijl, Sarah	
VanLoan, Mike	
Ross, Shauna	
VanDelfzijl, Sarah	
VanLoan, Mike	

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character														
Mile Marker: 12																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna
																					VanDelfzijl, Sarah
4/13/2011	11:55																	42.30821	-85.14260		VanLoan, Mike
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Ross, Shauna
																					VanDelfzijl, Sarah
4/13/2011	12:35																	42.30871	-85.14399		VanLoan, Mike

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character																
Mile Marker: 12																							
Source: 2011 Reassessment																							
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**		
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**		
																					Enbridge Team Lead		
1	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Graan, Tom		
																					Strouse, Dana		
4/19/2011	17:31																	42.30629	-85.14285		Senn, Derreck		
10	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Graan, Tom		
																					Strouse, Dana		
4/20/2011	14:57																	42.30700	-85.14220		Senn, Derreck		
13	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑		Ponded Water - Reassess			Graan, Tom		
																					Strouse, Dana		
4/20/2011	17:01																	42.30671	-85.14360		Senn, Derreck		
14	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Graan, Tom		
																					Strouse, Dana		
4/21/2011	09:57																	42.30622	-85.14340		Senn, Derreck		
15	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Ponded Water - Reassess		reassess when drier	Graan, Tom		
																					Fairchild, Katie		
5/3/2011	14:37																	42.30797	-85.14347		Neumeier, Laura		

2011 Reassessment

Bank: LDB

Mile Marker: 12

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
16	Overbank	5/3/2011	14:55	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Ponded Water - Reassess	42.30694	-85.14375	reassess when drier	Graan, Tom / Fairchild, Katie / Neumeier, Laura
17	Overbank	5/11/2011	09:59	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.30759	-85.14394	TAR COATED AND STAINED TREES AND DEBRIS	Hadwin, Eric / Wesener, Matt / Kytta, Ken
18	Overbank	5/11/2011	11:52	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank	42.30665	-85.14315	TAR COATED AND STAINED TREES AND BRANCHES	Hadwin, Eric / Wesener, Matt / Kytta, Ken
19	Overbank	5/11/2011	12:09	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank	42.30689	-85.14285	TAR COATED AND STAINED DEBRIS	Hadwin, Eric / Wesener, Matt / Kytta, Ken
2	Overbank	4/20/2011	10:04	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	P	Wetland-swamp (forested)	42.30734	-85.14120		Graan, Tom / Strouse, Dana / Senn, Derreck

2011 Reassessment

Bank: LDB

Mile Marker: 12

Source: 2011 Reassessment

Oil Zone ID / Date	Feature / Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat: Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
20	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		TAR COATED AND STAINED TREES AND DEBRIS; HEAVIER THAN TRACE	Hadwin, Eric Wesener, Matt
5/11/2011	12:28																	42.30703	-85.14327		Kytta, Ken
3	Overbank	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☑	☐	☐	☑	☐	B	Wetland-swamp (forested)		INFORMATION ABOUT COATED DEBRIS PILES WITHIN OTHER POLYGON SR ABUNDANT IN LOW SPOTS SHOULD BE ZONE 3	Graan, Tom Strouse, Dana
4/20/2011	10:46																	42.30747	-85.14273		Senn, Derreck
4	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)		SHEENS IN STANDING WATER	Graan, Tom Strouse, Dana
4/20/2011	12:11																	42.30733	-85.14333		Senn, Derreck
5	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☑	☑	P	Wetland-swamp (forested)			Graan, Tom Strouse, Dana
4/20/2011	13:32																	42.30847	-85.14366		Senn, Derreck
6	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)			Graan, Tom Strouse, Dana
4/20/2011	13:49																	42.30830	-85.14321		Senn, Derreck

2011 Reassessment

Bank: LDB

Mile Marker: 12

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
7	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Graan, Tom
																					Strouse, Dana
4/20/2011	14:41																	42.30695	-85.14149		Senn, Derreck
8	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	T	Wetland-swamp (forested)			Graan, Tom
																					Strouse, Dana
4/20/2011	14:47																	42.30699	-85.14192		Senn, Derreck
9	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Graan, Tom
																					Strouse, Dana
4/20/2011	14:52																	42.30697	-85.14196		Senn, Derreck

Photo Logs

Field Photographs MP 11.75 – MP 12.00

I Zone ID 1, Photo 001

I Zone ID 2, Photo 001

Field Photographs MP 11.75 – MP 12.00

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 3, Photo 002

LDB Zone ID 4, Photo 001

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 4, Photo 002

LDB Zone ID 4, Photo 003

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 4, Photo 004

LDB Zone ID 4, Photo 005

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 4, Photo 006

LDB Zone ID 4, Photo 007

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 4, Photo 008

LDB Zone ID 5, Photo 001

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 5, Photo 002

LDB Zone ID 6, Photo 001

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 6, Photo 002

LDB Zone ID 6, Photo 003

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 6, Photo 004

LDB Zone ID 6, Photo 005

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 7, Photo 001

LDB Zone ID 7, Photo 002

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 8, Photo 001

LDB Zone ID 9, Photo 001

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 10, Photo 001

LDB Zone ID 13, Photo 001

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 13, Photo 002

LDB Zone ID 13, Photo 003

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 13, Photo 004

LDB Zone ID 13, Photo 005

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 13, Photo 006

LDB Zone ID 13, Photo 007

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 13, Photo 008

LDB Zone ID 14, Photo 001

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 14, Photo 002

LDB Zone ID 14, Photo 003

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 15, Photo 001

LDB Zone ID 16, Photo 001

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 17, Photo 001

LDB Zone ID 17, Photo 002

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 18, Photo 001

LDB Zone ID 18, Photo 002

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 19, Photo 001

LDB Zone ID 19, Photo 002

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 20, Photo 001

LDB Zone ID 20, Photo 002

Field Photographs MP 11.75 – MP 12.00

LDB Zone ID 20, Photo 003

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11.75 to MP 12.0, Bank and/or Island: RDB, Segment Length: 0.25 mile

4 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Marie Ross — START — 4/13/2011 — Date

Shawna Marie Ross — Printed Name

Sarah VanDeLeZijl — MDEQ — 4/13/11 — Date

SARAH VANDELEZIJL — Printed Name

Enbridge — 4-13-2011 — Date

Michael Van Loon — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 11.75 to MP 12.0 (Bank) or Island: L, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan — START — 4/21/11 — Date

THOMAS P. GRAAN — Printed Name

Dana Strouse — MDEQ — 4/21/11 — Date

Dana Strouse — Printed Name

[signature] — Enbridge — 4/21/11 — Date

Derek Senn — Printed Name

Note: This segment contained areas that were inassessable and were mapped as such.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 11.75 to MP 12.0 (12.00 *), Unique ID LDB 12, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/3/11 — Date

THOMAS P. GRAAN — Printed Name

Kat Fairchild — MDEQ — 5-3-11 — Date

Kathleen Fairchild — Printed Name

Laura Neumeier — Enbridge — 5/3/2011 — Date

Laura Neumeier — Printed Name

* YUMA collected one point in this polygon to identify that entire polygon needs to be reassessed in dryer conditions.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 11.75 to MP 12.0, Unique ID LDB11 12.0*, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/3/11 — Date

THOMAS P. GRAAN — Printed Name

Kathleen Fairchild — MDEQ — 5-3-11 — Date

Kathleen Fairchild — Printed Name

Laura Neumeier — Enbridge — 5/3/2011 — Date

Laura Neumeier — Printed Name

* Only a portion of polygon was polled as channel. Remainder of polygon was seperated into 2 new polygons (12.00 L1 and 12.00 L2 identified in YUMA) for areas that need to be reassessed in dryer conditions.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 11.75 to MP 12.00, Unique ID CDB16 1200, Bank:____ and/or Island ____.
Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____	START	5/11/11 Date
ERIK HANSEN	Printed Name	
_____	MDEQ	5/11/11 Date
MATT WEBENER	Printed Name	
_____	Enbridge	5/11/11 Date
KEN KITTA	Printed Name	

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 11.75 to MP 12.00, Unique ID 12.00 CDB15, Bank:_____ and/or Island _____.
Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START 5/11/11 Date

Erik Hanson Printed Name

_____ MDEQ 5/11/11 Date

Matt Wiesener Printed Name

_____ Enbridge 5/11/11 Date

Ken Kitta Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 11.75 to MP 12.00, Unique ID LDB13 (12.00 AT), Bank:_____ and/or Island _____.
Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START — 5/11/11 Date

Erik Hansen Printed Name

_____ MDEQ — 5/11/11 Date

Matt Wesener Printed Name

_____ Enbridge — 5/11/11 Date

Ken Kytta Printed Name

MP 12.00 to MP 12.25

The LDB of segment 12.25 consists of primarily of forested wetland swamp and areas of emergent/herbaceous wetlands with areas of ponded water. The initial reassessment identified seven polygons and four SORT points. This area was identified as having trace to sporadic areas of coated and stained debris, trunks and stems.

The RDB of segment 12.25 consists primarily of low vegetative banks. The initial reassessment identified one linear transect that spanned almost the entire RDB. It was noted that this area contained sporadic occurrences of stained trunks and stems.

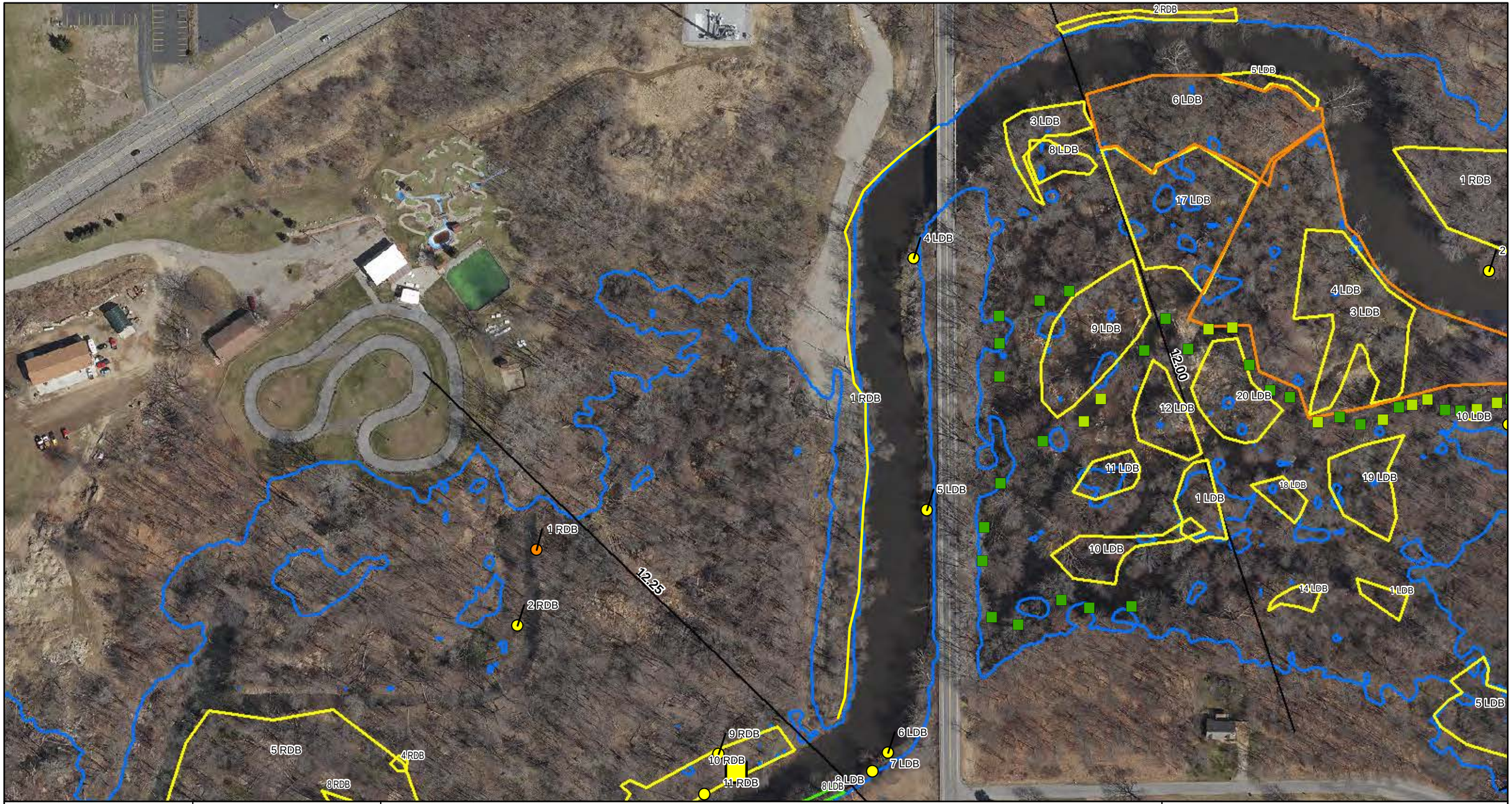
No islands are present in this segment. The FLS did not identify any oil signatures within this segment and no PI observations were made.

Poling was also conducted within the segment to fully assess the overbank. The detailed results of the poling activities will be completed under a separate cover.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

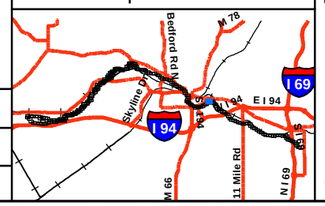
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP12.00-MP12.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 12.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank			**Enbridge Team Lead**
																					Ross, Shauna
																					VanDelfzijl, Sarah
4/13/2011	12:53																	42.30567	-85.14590		VanLoan, Mike

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character												
Mile Marker: 12.25																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**	**Comments**	**START**
Date	**Time**																	**Latitude** / **Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)	AREA FILLED WITH EXTREMELY DENSE VEGETATION AND DOWNED TREES CANNOT SAFELY TRAVERSE. OBSERVATIONS MADE IN AREAS VIEWABLE	Graan, Tom Strouse, Dana
4/20/2011	17:18																	42.30645 / -85.14380		Senn, Derreck
10	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	TAR STAINED AND COVERED TREES AND DEBRIS	Hadwin, Eric Wesener, Matt
5/11/2011	11:09																	42.30647 / -85.14400		Kytta, Ken
11	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	TAR COATED AND STAINED TREES AND DEBRIS	Hadwin, Eric Wesener, Matt
5/11/2011	11:18																	42.30677 / -85.14416		Kytta, Ken
12	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	TAR COATED AND STAINED TREES AND DEBRIS	Hadwin, Eric Wesener, Matt
5/11/2011	11:32																	42.30691 / -85.14414		Kytta, Ken
3	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		Graan, Tom Strouse, Dana
4/21/2011	11:13																	42.30832 / -85.14449		Senn, Derreck

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character																
Mile Marker: 12.25																							
Source: 2011 Reassessment																							
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**		
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**		
																					Enbridge Team Lead		
4		☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-emergent/herbaceous			Graan, Tom		
																					Strouse, Dana		
4/21/2011	11:32																	42.30767	-85.14548		Senn, Derreck		
5	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Low Vegetated Bank			Graan, Tom		
																					Strouse, Dana		
4/21/2011	11:42																	42.30658	-85.14539		Senn, Derreck		
6	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank			Graan, Tom		
																					Strouse, Dana		
4/21/2011	12:37																	42.30551	-85.14560		Senn, Derreck		
7		☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Graan, Tom		
																					Strouse, Dana		
4/21/2011	12:43																	42.30543	-85.14570		Senn, Derreck		
8	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		TAR COATED AND STAINED BRANCHES/TREES	Hadwin, Eric		
																					Wesener, Matt		
5/11/2011	09:33																	42.30810	-85.14445		Kytta, Ken		

2011 Reassessment

Bank:	LDB	Oil Thickness					Oil Character													
Mile Marker:	12.25																			
Source:	2011 Reassessment																			
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
																					MDEQ
Date	**Time**																	**Latitude**	**Longitude**		**Enbridge Team Lead**
9	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		TAR COATED AND STAINED TREES AND DEBRIS	Hadwin, Eric
																					Wesener, Matt
5/11/2011	10:09																	42.30717	-85.14439		Kytta, Ken

Photo Logs

Field Photographs MP 12.00 – MP 12.25

RDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 001

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 1, Photo 002

LDB Zone ID 1, Photo 003

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 3, Photo 003

LDB Zone ID 4, Photo 001

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 5, Photo 001

LDB Zone ID 6, Photo 001

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 7, Photo 001

LDB Zone ID 8, Photo 001

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 8, Photo 002

LDB Zone ID 9, Photo 001

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 9, Photo 002

LDB Zone ID 10, Photo 001

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 10, Photo 002

LDB Zone ID 10, Photo 003

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 11, Photo 001

LDB Zone ID 11, Photo 002

Field Photographs MP 12.00 – MP 12.25

LDB Zone ID 12, Photo 001

LDB Zone ID 12, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 12.0 to MP 12.25, Bank or Island: RDB, Segment Length: 0.25 mile

1 feature (Shoreline)

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Ross — START — 4/13/2011 — Date

Shawna Marie Ross — Printed Name

Sarah VanDeHaar — MDEQ — 4/13/11 — Date

Sarah VanDeHaar — Printed Name

Michael Van Loon — Enbridge — 4-13-2011 — Date

Michael Van Loon — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 12 to MP 12.25 (Bank) or Island: L, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan — START — 4/21/11 — Date

THOMAS P. GRAAN — Printed Name

Dana Strause — MDEQ — 4/21/11 — Date

Dana Strause — Printed Name

Derek Senn — Enbridge — 4/21/11 — Date

Derek Senn — Printed Name

Note: This segment contained a large area of standing water that could not be assessed.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 12.0 to MP 12.25*, Unique ID LDB2, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/3/11 — Date

THOMAS P. GRAAN — Printed Name

Kathleen Fairchild — MDEQ — 5-3-11 — Date

Kathleen Fairchild — Printed Name

Laura Neumeier — Enbridge — 5/3/2011 — Date

Laura Neumeier — Printed Name

* Only a portion of polygon was polled as a channel. Remainder of polygon was seperated into 2 new polygons (12.25L1 and 12.25L2 identified in YUMA) for areas that need to be reassessed in dryer conditions.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 12.00 to MP 12.25, Unique ID 6038, Bank: OB and/or Island _____.
Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START — 5/11/11 Date

ERIC HADWIN Printed Name

_____ MDEQ — 5/11/11 Date

MATT WESENER Printed Name

_____ Enbridge — 5/11/11 Date

KEN KTTM Printed Name

Craig A Wieman — 5/11/2011

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 12.00 to MP 12.25, Unique ID 12.25 LDB9, Bank: B and/or Island _____.
Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START — 5/11/11 Date

Eric Hadwin Printed Name

_____ MDEQ — 5/11/11 Date

MATT WESENER Printed Name

_____ Enbridge — 5/11/11 Date

KEN KYTTA Printed Name

_____ — 5/11/2011

Craig A Wieman

MP 12.25 to MP 12.50

The LDB of segment 12.50 generally consists of primarily forested wetland swamp and areas of emergent/herbaceous wetlands with areas of low vegetative banks. The initial reassessment identified four polygons, one linear transect (2 LDB), and two SORT points. This area was identified as having trace to broken areas of coated and stained debris, trunks and stems. Additionally, sporadic areas of tar and surface residue were also identified. Two polygons (3 and 7 LDB) were noted to contain sporadic film

The RDB of segment 12.50 consists primarily of low vegetative banks. The initial reassessment identified six polygons and six SORT points containing trace to patchy areas of stained and coated debris, trunks, and stems. Additionally, sporadic and patchy areas of tar and patties were also noted.

Two islands are present in this segment, both consisting of forested wetland swamp. The upstream island contained sporadic areas of cover, coated and stained debris, trunks and stems along with surface oil residue. The downstream island, which consists of 2 I and 3 I and spans into the next segment, contained trace to patchy areas of covered, coated, and stained debris, trunks and stems. Additionally patties and surface oil residue were also noted.

The FLS identified one oil signature within the RDB of the segment, which coincides with SORT polygon 10 RDB and SORT point 9 RDB.

No PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

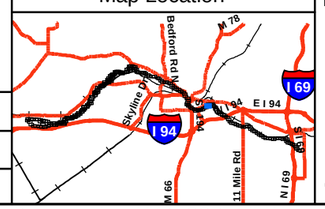
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP12.25-MP12.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character												
Mile Marker: 12.5																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**	**Comments**	**START**
Date	**Time**																	**Latitude** / **Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)		Ross, Shauna Veldkamp, Chris
4/14/2011	14:42																	42.30418 / -85.14862		Juntilla, John
2	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)		Ross, Shauna Veldkamp, Chris
4/14/2011	15:14																	42.30314 / -85.14976		Juntilla, John
3	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	P	Wetland-swamp (forested)	polygon inside larger polygon	Ross, Shauna Veldkamp, Chris
4/14/2011	15:30																	42.30326 / -85.14957		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 12.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	P	Wetland-swamp (forested)			Ross, Shauna / Veldkamp, Chris
4/14/2011	10:11																	42.30638	-85.14769		Juntilla, John
10	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna / Veldkamp, Chris
4/14/2011	13:35																	42.30552	-85.14663		Juntilla, John
11	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Low Vegetated Bank			Ross, Shauna / Veldkamp, Chris
4/14/2011	13:40																	42.30531	-85.14669		Juntilla, John
12	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna / Veldkamp, Chris
4/14/2011	14:20																	42.30462	-85.15079		Juntilla, John
2	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)		shingle tar	Ross, Shauna / Veldkamp, Chris
4/14/2011	10:25																	42.30603	-85.14781		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 12.5																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	Time																	Latitude	Longitude		Enbridge Team Lead
3	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna Veldkamp, Chris
4/14/2011	11:01																	42.30471	-85.15063		Juntilla, John
4	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna Veldkamp, Chris
4/14/2011	11:37																	42.30546	-85.14844		Juntilla, John
5	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna Veldkamp, Chris
4/14/2011	12:12																	42.30454	-85.14860		Juntilla, John
6	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	P	Wetland-swamp (forested)			Ross, Shauna Veldkamp, Chris
4/14/2011	12:20																	42.30498	-85.14889		Juntilla, John
7	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Wetland-swamp (forested)			Ross, Shauna Veldkamp, Chris
4/14/2011	12:26																	42.30520	-85.14898		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character												
Mile Marker: 12.5																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**	**Comments**
Date	**Time**																	**Latitude** / **Longitude**	
8	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	P	Wetland-swamp (forested)	
4/14/2011	12:32																	42.30532 / -85.14895	
9	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	S	Wetland-swamp (forested)	
4/14/2011	13:14																	42.30549 / -85.14660	

START
MDEQ
Ross, Shauna
Veldkamp, Chris
Juntilla, John
Ross, Shauna
Veldkamp, Chris
Juntilla, John

2011 Reassessment

Bank: LDB

Mile Marker: 12.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
2	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Graan, Tom
																					Strouse, Dana
4/21/2011	13:11																	42.30513	-85.14626		Senn, Derreck
3	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)			Graan, Tom
																					Strouse, Dana
4/21/2011	13:29																	42.30465	-85.14702		Senn, Derreck
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Graan, Tom
																					Strouse, Dana
4/21/2011	13:36																	42.30457	-85.14728		Senn, Derreck
5	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	B	Wetland-emergent/herbaceous		PETROLEUM ODOR	Graan, Tom
																					Strouse, Dana
4/21/2011	14:07																	42.30331	-85.14918		Senn, Derreck
6	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Graan, Tom
																					Strouse, Dana
4/21/2011	14:17																	42.30318	-85.14929		Senn, Derreck

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 12.5																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
7	Shoreline and Overbank	☐	☑	☑	☑	☑	☐	☐	☐	☐	☑	☑	☐	☐	☑	☑	S	Wetland-emergent/herbaceous			Graan, Tom
																					Strouse, Dana
4/21/2011	14:24																	42.30328	-85.14912		Senn, Derreck
8	Shoreline	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Low Vegetated Bank		no oil on shoreline	Graan, Tom
																					Fairchild, Katie
5/3/2011	09:22																	42.30823	-85.14286		Neumeier, Laura

Photo Logs

Field Photographs MP 12.25 – MP 12.50

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 12.25 – MP 12.50

I Zone ID 1, Photo 003

I Zone ID 2, Photo 001

Field Photographs MP 12.25 – MP 12.50

I Zone ID 2, Photo 002

I Zone ID 2, Photo 003

Field Photographs MP 12.25 – MP 12.50

I Zone ID 3, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 1, Photo 002

RDB Zone ID 2, Photo 001

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 3, Photo 001

RDB Zone ID 3, Photo 002

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 4, Photo 001

RDB Zone ID 5, Photo 001

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 5, Photo 002

RDB Zone ID 5, Photo 003

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 5, Photo 004

RDB Zone ID 6, Photo 001

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 7, Photo 001

RDB Zone ID 8, Photo 001

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 9, Photo 001

RDB Zone ID 10, Photo 001

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 10, Photo 002

RDB Zone ID 11, Photo 001

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 12, Photo 001

RDB Zone ID 12, Photo 002

Field Photographs MP 12.25 – MP 12.50

RDB Zone ID 12, Photo 003

RDB Zone ID 12, Photo 004

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 2, Photo 003

LDB Zone ID 2, Photo 004

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 3, Photo 003

LDB Zone ID 3, Photo 004

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 3, Photo 005

LDB Zone ID 4, Photo 001

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 4, Photo 002

LDB Zone ID 5, Photo 001

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 6, Photo 001

LDB Zone ID 7, Photo 001

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 7, Photo 002

LDB Zone ID 7, Photo 003

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 7, Photo 004

LDB Zone ID 7, Photo 005

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 7, Photo 006

LDB Zone ID 7, Photo 007

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 7, Photo 008

LDB Zone ID 8, Photo 001

Field Photographs MP 12.25 – MP 12.50

LDB Zone ID 8, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

RDB and Entire Island x2

Segment ID: From MP 12.25 to MP 12.5, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Li Ross _____ START 4/14/2011 Date

Shawna Marie Ross Printed Name

Chris Verdkamp _____ MDEQ 4/14/11 Date

Chris Verdkamp Printed Name

John W. Juntilla _____ Enbridge 4/14/11 Date

John W. Juntilla Printed Name

The Island was observed completely as a part of this segement. It also has become two separate islands since the map was developed.

15 features were collected for this segment

(12 on RDB
3 on the islands)

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 12.75 to MP 12.5, (Bank) or Island: L, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Thomas P. Graan — START — 4/21/11 — Date

Thomas P. GRAAN — Printed Name

Dana Strouse — MDEQ — 4/21/11 — Date

Dana Strouse — Printed Name

[signature] — Enbridge — 4/21/11 — Date

Derek Senn — Printed Name

Note: One segment of shoreline could not be assessed by shore due to steep banks and safety concerns. This segment could not be adequately assessed by fanboat due to overhanging branches & swift river current.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 12.25 to MP 12.5, Unique ID 12.50 LDB1, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/3/11 — Date

THOMAS P. GRAAN — Printed Name

Kat Fairchild — MDEQ — 5-3-11 — Date

Kathleen Fairchild — Printed Name

Laura Neumeier — Enbridge — 5/3/2011 — Date

Laura Neumeier — Printed Name

MP 12.50 to MP 12.75

The LDB of segment 12.75 consist of low vegetative bank and forested wetland swamp. The initial reassessment identified four polygons and two linear transects containing trace to sporadic areas of coated and stained debris, trunks, and stems. Additionally, coated tarballs and patties were also observed at three locations.

The RDB of segment 12.75 consists primarily of low vegetative banks and forested wetland swamp. The initial reassessment identified one polygon, two points, and one linear transect containing trace areas of coated and stained debris, trunks, and stems.

One island is present in this segment consisting of forested wetland swamp containing trace coated and stained debris, trunks and stems.

The FLS did not identify any oil signatures within segment. No PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

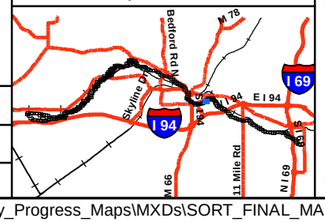
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP12.50-MP12.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character												
Mile Marker: 12.75																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**	**Comments**	**START**
Date	**Time**																	**Latitude** / **Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		Ross, Shauna Veldkamp, Chris
4/14/2011	17:17																	42.30334 / -85.15121		Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 12.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character											Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		MDEQ Enbridge Team Lead
1	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Ross, Shauna Veldkamp, Chris
4/14/2011	16:14																	42.30307	-85.15192		Jintilla, John
2	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna Veldkamp, Chris
4/14/2011	16:26																	42.30281	-85.15224		Juntilla, John
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna Veldkamp, Chris
4/14/2011	16:45																	42.30211	-85.15336		Juntilla, John
4	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Ross, Shauna Veldkamp, Chris
4/14/2011	16:57																	42.30234	-85.15383		Juntilla, John

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character													
Mile Marker: 12.75																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Low Vegetated Bank		STAINING ON TREES OBSERVED BY BOAT OF STEEP BANK	Kane, Sean / ROBIN OEMING
5/12/2011	15:27																	42.30286	-85.14977		Juntilla, John
2	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINING INTERMITENTLY ALONG SHORE, TAR BALLS OBSERVED. PICTURES TAKEN WITH YUMA DUE TO WET CAMERA. RIVER SIDE FOLLOWS BANK	Kane, Sean / ROBIN OEMING
5/12/2011	15:51																	42.30265	-85.14998		Juntilla, John
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Other (comments)		STEEP BANK WITH NOT MUCH ROCK BUT MANY ROOTS IN BLACK DIRT. STAINING ON ROOTS AND TREES. LINE FOLLOWS BANK	Kane, Sean / ROBIN OEMING
5/12/2011	16:18																	42.30234	-85.15122		Juntilla, John
4	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		STAINING ON VEGITATION AND DEBRI	Kane, Sean / ROBIN OEMING
5/12/2011	16:52																	42.30233	-85.15149		Juntilla, John
5	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)		TAR ON GROUND	Kane, Sean / ROBIN OEMING
5/12/2011	17:00																	42.30234	-85.15153		Juntilla, John

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution				
Mile Marker: 12.75																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**		**Habitat**		**Comments**	**START**
																					MDEQ
Date	**Time**																	**Latitude**	**Longitude**		**Enbridge Team Lead**
6	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐		Wetland-emergent/herbaceous		TAR ON GROUND	Kane, Sean
																					ROBIN OEMING
5/12/2011	17:07																	42.30235	-85.15176		Juntilla, John

Photo Logs

Field Photographs MP 12.50 – MP 12.75

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 12.50 – MP 12.75

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

Field Photographs MP 12.50 – MP 12.75

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

Field Photographs MP 12.50 – MP 12.75

RDB Zone ID 4, Photo 003

I Zone ID 1, Photo 001

Field Photographs MP 12.50 – MP 12.75

I Zone ID 1, Photo 002

LDB Zone ID 1, Photo 001

Field Photographs MP 12.50 – MP 12.75

LDB Zone ID 1, Photo 002

LDB Zone ID 1, Photo 003

Field Photographs MP 12.50 – MP 12.75

LDB Zone ID 1, Photo 004

LDB Zone ID 1, Photo 005

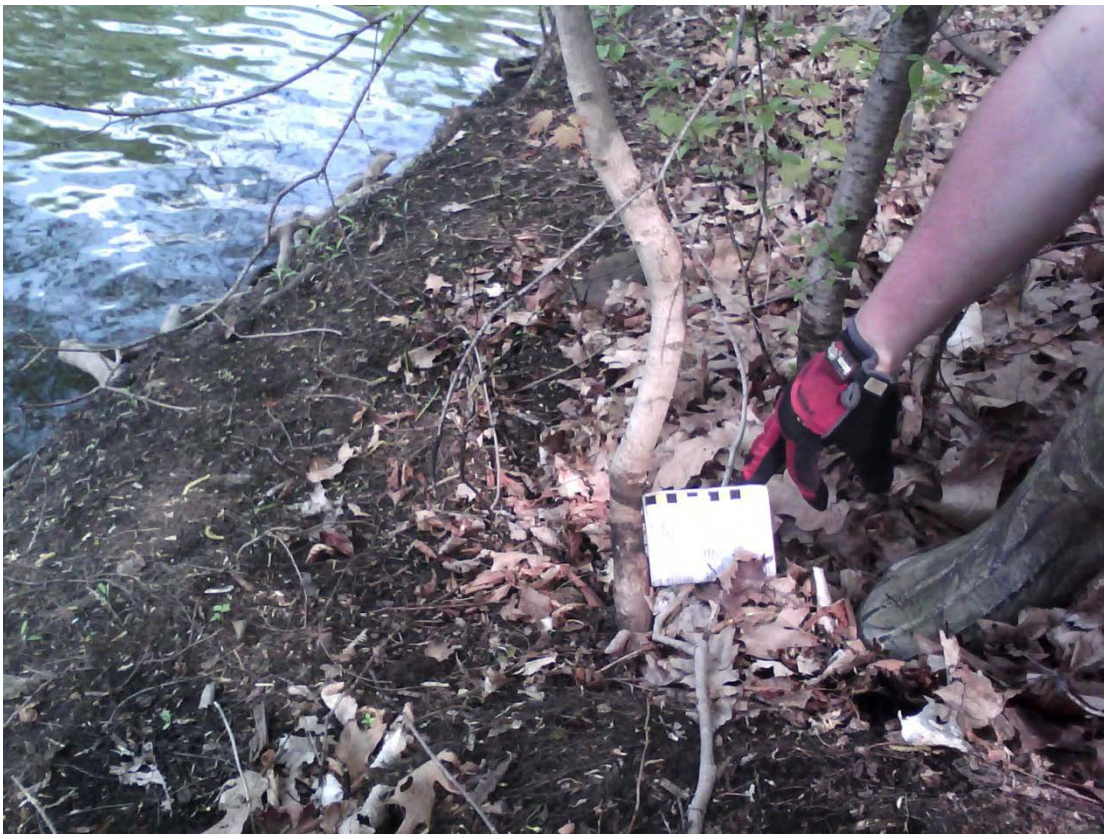
Field Photographs MP 12.50 – MP 12.75

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 12.50 – MP 12.75

LDB Zone ID 3, Photo 001



LDB Zone ID 3, Photo 002

Field Photographs MP 12.50 – MP 12.75

LDB Zone ID 4, Photo 001

LDB Zone ID 4, Photo 002

Field Photographs MP 12.50 – MP 12.75

LDB Zone ID 5, Photo 001

LDB Zone ID 5, Photo 002

Field Photographs MP 12.50 – MP 12.75

LDB Zone ID 6, Photo 001

LDB Zone ID 6, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

RDB and New island (formed after mp produced)

Segment ID: From MP 12.50 to MP 12.75, Bank or Island:_____, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna M Ross _____ START 4/14/2011 Date

Shawna Marie Ross Printed Name

Chris Veldkamp _____ MDEQ 4/14/11 Date

Chris Veldkamp Printed Name

John W Juntilla _____ Enbridge 4-14-2011 Date

John W. Juntilla Printed Name

A new island formed along the middle portion of this segment.

5 - YUMA Features collected in this segment

(4-along RDB
1-on the new island)

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 12.50 to MP 12.75, Bank or ~~Island:~~ LDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Sean Kane START 5-12-2011 Date

[signature] Printed Name

[signature] MDEQ 5/12/11 Date

Robert Deming Printed Name

[signature] Enbridge 5-12-11 Date

John W. Juntilla Printed Name

2 features were observed from the boat (~400 ft of shoreline)

6 Features collected on this segment

MP 12.75 to MP 13.00

The LDB of segment 13.00 generally consists of forested wetland swamp and areas of low vegetative banks. The initial reassessment identified two linear transects and two points, identified as having trace areas of coated debris, trunks and stems. Additionally, trace areas of tar was also identified at Point 1 LDB and Linear Transect 3 LDB. Patchy asphalt pavement was observed at Point 2 LDB.

The RDB of segment 13.00 consists primarily of forested wetland swamp and emergent/herbaceous wetland habitats. The initial reassessment identified 15 polygons, two linear transects, and 12 points containing trace to patchy areas of covered, coated and stained debris, trunks, and stems, along with trace to patchy areas of patties and surface oil residue. Two points (3 RDB and 8 RDB) were identified has having film/sheen. This area also is associated with a current O&M location (13.00 R1).

The FLS did not identify any oil signatures and no PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

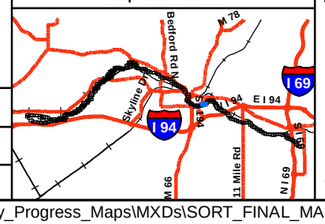
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP12.75-MP13.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 13																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous			Ross, Shauna / Veldkamp, Chris
4/15/2011	08:53																	42.30185	-85.15487		Juntilla, John
10	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna / Veldkamp, Chris
4/15/2011	11:09																	42.30251	-85.15713		Juntilla, John
11	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-swamp (forested)			Ross, Shauna / Veldkamp, Chris
4/15/2011	11:22																	42.30239	-85.15730		Juntilla, John
12	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna / Veldkamp, Chris
4/15/2011	11:32																	42.30236	-85.15766		Jintilla,John
13	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-swamp (forested)			Ross, Shauna / Veldkamp, Chris
4/15/2011	11:40																	42.30257	-85.15788		Juntilla, John

2011 Reassessment

Bank: RDB

Mile Marker: 13

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		MDEQ / Enbridge Team Lead
14	Overbank	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☑	☐	☐	☑	☐	P	Wetland-emergent/herbaceous			Ross, Shauna Veldkamp, Chris
4/15/2011	12:52																	42.30171	-85.15547		Jintilla,John
15	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous			Ross, Shauna Veldkamp, Chris
4/15/2011	13:08																	42.30192	-85.15667		Jintilla,John
16	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☑	☐	P	Wetland-emergent/herbaceous			Ross, Shauna Veldkamp, Chris
4/15/2011	13:27																	42.30157	-85.15625		Jintilla,John
17	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	T	Wetland-emergent/herbaceous			Ross, Shauna Veldkamp, Chris
4/15/2011	13:39																	42.30131	-85.15603		Jintilla,John
18	Overbank	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☑	☐		Wetland-emergent/herbaceous			Ross, Shauna Veldkamp, Chris
4/15/2011	13:48																	42.30132	-85.15537		Jintilla,John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character												
Mile Marker: 13																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**	**Comments**
Date	**Time**																	**Latitude** / **Longitude**	
19	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous	
4/15/2011	13:54																	42.30099 / -85.15537	
2	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	
4/15/2011	09:00																	42.30189 / -85.15509	
20	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous	
4/15/2011	13:56																	42.30115 / -85.15551	
21	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous	
4/15/2011	13:59																	42.30108 / -85.15523	
22	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous	
4/15/2011	14:13																	42.30127 / -85.15474	

START	
MDEQ	
Enbridge Team Lead	
Ross, Shauna	
Veldkamp, Chris	
Juntilla, John	
Ross, Shauna	
Veldkamp, Chris	
Juntilla, John	
Ross, Shauna	
Veldkamp, Chris	
Juntilla, John	
Ross, Shauna	
Veldkamp, Chris	
Juntilla, John	
Ross, Shauna	
Veldkamp, Chris	
Juntilla, John	

2011 Reassessment

Bank: RDB

Mile Marker: 13

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character											Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
23	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous			Ross, Shauna Veldkamp, Chris
4/15/2011	14:26																	42.30180	-85.15363		Jintilla,John
24	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-emergent/herbaceous			Ross, Shauna Veldkamp, Chris
4/15/2011	14:32																	42.30168	-85.15403		Jintilla,John
25	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	☐	T	Wetland-emergent/herbaceous			Ross, Shauna Veldkamp, Chris
4/15/2011	14:52																	42.30127	-85.15431		Jintilla,John
3	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Wetland-swamp (forested)		sheen	Ross, Shauna Veldkamp, Chris
4/15/2011	09:22																	42.30237	-85.15611		Juntilla, John
4	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna Veldkamp, Chris
4/15/2011	09:36																	42.30290	-85.15657		Juntilla, John

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 13																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
26	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	S	Wetland-emergent/herbaceous			Ross, Shauna / Goddard, Matt
4/19/2011	10:27																	42.30057	-85.15743		VanLoan, Mike
27	Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	T	Wetland-scrub/shrub			Ross, Shauna / Goddard, Matt
4/19/2011	10:42																	42.29976	-85.15650		VanLoan, Mike
28	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-emergent/herbaceous			Ross, Shauna / Goddard, Matt
4/19/2011	10:54																	42.29993	-85.15668		VanLoan, Mike
29	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	11:17																	42.30216	-85.15756		VanLoan, Mike

2011 Reassessment

Bank: RDB

Mile Marker: 13

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START MDEQ Enbridge Team Lead
5	Overbank	4/15/2011	09:51	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.30245	-85.15639		Ross, Shauna Veldkamp, Chris Juntilla, John
6	Overbank	4/15/2011	10:21	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.30197	-85.15570		Ross, Shauna Veldkamp, Chris Jintilla,John
7	Overbank	4/15/2011	10:30	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	S	Wetland-swamp (forested)	42.30258	-85.15659		Ross, Shauna Veldkamp, Chris Juntilla, John
8	Overbank	4/15/2011	10:52	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Wetland-swamp (forested)	42.30276	-85.15691	sheen possible organic and petro mix	Ross, Shauna Veldkamp, Chris Juntilla, John
9	Overbank	4/15/2011	10:56	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)	42.30277	-85.15692		Ross, Shauna Veldkamp, Chris Juntilla, John

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 13																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Johnson, Kevin Flickinger, Brian
4/26/2011	12:59																	42.30160	-85.15308		Oswald, John
2	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☑	☐	P	Wetland-swamp (forested)			Johnson, Kevin Flickinger, Brian
4/26/2011	13:25																	42.30082	-85.15436		Oswald, John
3	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Johnson, Kevin Flickinger, Brian
4/26/2011	13:49																	42.29923	-85.15687		Oswald, John
4	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Johnson, Kevin Flickinger, Brian
4/26/2011	17:19																	42.30160	-85.15323		Oswald, John

Photo Logs

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 2, Photo 002

RDB Zone ID 3, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 4, Photo 001

RDB Zone ID 5, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 6, Photo 001

RDB Zone ID 6, Photo 002

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 6, Photo 003

RDB Zone ID 6, Photo 004

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 6, Photo 005

RDB Zone ID 7, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 7, Photo 002

RDB Zone ID 8, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 9, Photo 001

RDB Zone ID 10, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 10, Photo 002

RDB Zone ID 10, Photo 003

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 11, Photo 001

RDB Zone ID 12, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 13, Photo 001

RDB Zone ID 14, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 14, Photo 002

RDB Zone ID 14, Photo 003

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 15, Photo 001

RDB Zone ID 15, Photo 002

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 16, Photo 001

RDB Zone ID 16, Photo 002

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 16, Photo 003

RDB Zone ID 16, Photo 004

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 17, Photo 001

RDB Zone ID 17, Photo 002

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 18, Photo 001

RDB Zone ID 19, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 20, Photo 001

RDB Zone ID 21, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 21, Photo 002

RDB Zone ID 22, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 22, Photo 002

RDB Zone ID 23, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 24, Photo 001

RDB Zone ID 24, Photo 002

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 25, Photo 001

RDB Zone ID 25, Photo 002

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 25, Photo 003

RDB Zone ID 25, Photo 004

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 25, Photo 005

RDB Zone ID 25, Photo 006

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 25, Photo 007

RDB Zone ID 26, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 26, Photo 002

RDB Zone ID 27, Photo 001

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 28, Photo 001

RDB Zone ID 28, Photo 002

Field Photographs MP 12.75 – MP 13.00

RDB Zone ID 28, Photo 003

RDB Zone ID 29, Photo 001

Field Photographs MP 12.75 – MP 13.00

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 12.75 – MP 13.00

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 12.75 – MP 13.00

LDB Zone ID 3, Photo 003

LDB Zone ID 4, Photo 001

Field Photographs MP 12.75 – MP 13.00

LDB Zone ID 4, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 12.75 to MP 13.0, Bank or Island: RYB, Segment Length: 0.25 mile

4 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Marie Ross — START — 4/19/2011 — Date

Shawna Marie Ross — Printed Name

Matt Goddard — MDEQ — 4/15/11 — Date

Matt Goddard — Printed Name

Michael Van Loon — Enbridge — 4-19-2011 — Date

Michael Van Loon — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 12.75 to MP 13.00, Bank or Island: LDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Kevin Johnson — START — 04/26/2011 Date

Kevin Johnson — Printed Name

[signature] — MDEQ — 4/26/11 Date

Brian Flickinger — Printed Name

[signature] — Enbridge — 4/26/11 Date

JOHN OSWALD — Printed Name

MP 13.00 to MP 13.25

The LDB of segment 13.25 generally consists of forested wetland swamp and areas of scrub/shrub wetland areas. The initial reassessment identified four polygons and one point. These areas were identified as having trace to sporadic areas of coated and stained debris, trunks and stems. Additionally sporadic to patchy areas of tar and asphalt pavement were also identified on the LDB

The RDB of segment 13.25 consists primarily of forested wetland swamp and emergent/herbaceous wetland habitats. The initial reassessment identified four polygons and four points containing primarily trace to patchy areas of covered and stained debris, trunks, and stems, along with two small areas of tarballs and/or surface oil residue (2 RDB and 5 RDB).

No islands were identified within this segment.

The FLS did not identify any oil signatures and no PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

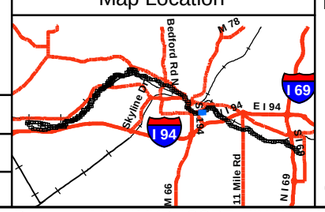
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP13.00-MP13.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 13.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	11:29																	42.30139	-85.15809		VanLoan, Mike
2	Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	S	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	11:32																	42.30120	-85.15810		VanLoan, Mike
3	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	11:55																	42.30083	-85.15823		VanLoan, Mike
4	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	12:04																	42.30016	-85.15822		VanLoan, Mike
5	Overbank	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	P	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	12:39																	42.29937	-85.15781		VanLoan, Mike

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 13.25																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
6	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna Goddard, Matt
4/19/2011	13:03																	42.30062	-85.15901		VanLoan, Mike
7	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Ross, Shauna Goddard, Matt
4/19/2011	13:10																	42.30099	-85.15940		VanLoan, Mike
8	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna Goddard, Matt
4/19/2011	14:06																	42.29948	-85.15985		VanLoan, Mike

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character															
Mile Marker: 13.25																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Johnson, Kevin	Flickinger, Brian
4/26/2011	14:26																	42.29913	-85.15728		Oswald, John	
2	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Johnson, Kevin	Flickinger, Brian
4/26/2011	16:25																	42.29869	-85.15859		Oswald, John	
3	Overbank	☐	☐	☑	☑	☐	☐	☐	☑	☐	☑	☐	☐	☐	☐	☑	S	Wetland-scrub/shrub		subtract	Johnson, Kevin	Flickinger, Brian
4/26/2011	16:39																	42.29882	-85.15958		Oswald, John	
4	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☑	☐	P	Wetland-swamp (forested)		subtract	Johnson, Kevin	Flickinger, Brian
4/26/2011	16:46																	42.29893	-85.15996		Oswald, John	
5	Overbank	☐	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☐	☐		Wetland-swamp (forested)		subtract	Johnson, Kevin	Flickinger, Brian
4/26/2011	16:59																	42.29971	-85.16091		Oswald, John	

Photo Logs

Field Photographs MP 13.00 – MP 13.25

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 13.00 – MP 13.25

RDB Zone ID 2, Photo 002

RDB Zone ID 3, Photo 001

Field Photographs MP 13.00 – MP 13.25

RDB Zone ID 4, Photo 001

RDB Zone ID 5, Photo 001

Field Photographs MP 13.00 – MP 13.25

RDB Zone ID 6, Photo 001

RDB Zone ID 7, Photo 001

Field Photographs MP 13.00 – MP 13.25

RDB Zone ID 8, Photo 001

RDB Zone ID 8, Photo 002

Field Photographs MP 13.00 – MP 13.25

RDB Zone ID 8, Photo 003

LDB Zone ID 1, Photo 001

Field Photographs MP 13.00 – MP 13.25

LDB Zone ID 1, Photo 002

LDB Zone ID 1, Photo 003

Field Photographs MP 13.00 – MP 13.25

LDB Zone ID 1, Photo 004

LDB Zone ID 1, Photo 005

Field Photographs MP 13.00 – MP 13.25

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 13.00 – MP 13.25

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 13.00 – MP 13.25

LDB Zone ID 4, Photo 002

LDB Zone ID 5, Photo 001

Field Photographs MP 13.00 – MP 13.25

LDB Zone ID 5, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 13.0 to MP 13.25, Bank or Island: _____, Segment Length: 0.25 mile

8 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Ross — START — 4/19/2011 — Date

Shawna Marie Ross — Printed Name

Matt Goddard — MDEQ — 4/19/11 — Date

Matt Goddard — Printed Name

Michael Van Loon — Enbridge — 4-19-2011 — Date

Michael Van Loon — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 13.0 to MP 13.25, Bank or Island: LDB, Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Kevin Johnson — START — 4/26/2011 — Date

Kevin Johnson — Printed Name

B. Flicky — MDEQ — 4/26/11 — Date

Brian Flickey — Printed Name

John Oswald — Enbridge — 4/20/11 — Date

JOHN OSWALD — Printed Name

MP 13.25 to MP 13.50

The LDB of segment 13.50 generally consists of forested wetland swamp and areas of scrub/shrub wetland areas. The initial reassessment identified five polygons and one point. These areas were identified as having trace areas of covered, coated and stained debris, trunks and stems. Additionally, sporadic to patchy areas of patties and asphalt pavement were identified in polygon 3 LDB, 4 LDB, and 6 LDB.

The RDB of segment 13.50 consists primarily of forested wetland swamp, emergent/herbaceous wetlands and scrub/shrub wetland habitats. The initial reassessment identified two polygons (1RDB and 2RDB) containing primarily trace areas of stain on trunks and stems. One relatively small polygon (3 RDB) within 2 RDB identified sporadic cover of asphalt pavement on the ground surface.

No islands were identified within this segment.

The FLS did detect three oil signatures within the LDB of the segment. All three locations were in relatively close proximity to SORT findings.

No PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP13.25-MP13.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: RDB

Mile Marker: 13.5

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		MDEQ Enbridge Team Lead
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Ross, Shauna VanDelfzijl, Sarah
4/13/2011	14:01																	42.30030	-85.16252		VanLoan, Mike
2	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna VanDelfzijl, Sarah
4/13/2011	14:26																	42.29997	-85.16286		VanLoan, Mike
3	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-swamp (forested)			Ross, Shauna VanDelfzijl, Sarah
4/13/2011	14:33																	42.29952	-85.16320		VanLoan, Mike

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character																
Mile Marker: 13.5																							
Source: 2011 Reassessment																							
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**		
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**		
																					Enbridge Team Lead		
1	Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Ross, Shauna		
																					Zimont, Ben		
5/11/2011	10:13																	42.29930	-85.16251		VanLoan, Mike		
2	Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Ross, Shauna		
																					Zimont, Ben		
5/11/2011	11:02																	42.29942	-85.16100		VanLoan, Mike		
3	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☑	☐	☐	☑	P	Wetland-swamp (forested)			Ross, Shauna		
																					Zimont, Ben		
5/11/2011	11:26																	42.29990	-85.16085		VanLoan, Mike		
4	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		patties not evenly distributed throughout polygon	Ross, Shauna		
																					Zimont, Ben		
5/11/2011	11:47																	42.30025	-85.16142		VanLoan, Mike		
5	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Wetland-emergent/herbaceous			Ross, Shauna		
																					Wesener, Matt		
5/11/2011	11:58																	42.29949	-85.16253		VanLoan, Mike		

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 13.5																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
6	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna Zimont, Ben
5/11/2011	12:07																	42.29871	-85.16432		VanLoan, Mike

Photo Logs

Field Photographs MP 13.25 – MP 13.50

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 13.25 – MP 13.50

RDB Zone ID 3, Photo 001

LDB Zone ID 1, Photo 001

Field Photographs MP 13.25 – MP 13.50

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 13.25 – MP 13.50

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 13.25 – MP 13.50

LDB Zone ID 4, Photo 001

LDB Zone ID 4, Photo 002

Field Photographs MP 13.25 – MP 13.50

LDB Zone ID 4, Photo 003

LDB Zone ID 5, Photo 001

Field Photographs MP 13.25 – MP 13.50

LDB Zone ID 6, Photo 001

LDB Zone ID 6, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 13.05 to MP 13.5, Bank or Island: RDB, Segment Length: 0.25 mile

3 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/13/2011 Date

Shawna Marie Ross Printed Name

_____ MDEQ — 4/13/'11 Date

Sarah VanBelleghijl Printed Name

_____ Enbridge — 4-13-2011 Date

Michael Van Loan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 13.25 to MP 13.5, Bank or Island: LDB, Segment Length: 0.25 mile

* 6 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna M Ross — START — 5/11/2011 — Date

Shawna Marie Ross — Printed Name

[signature] — MDEQ — 5/11/11 — Date

Ben A. Zimont — Printed Name

[signature] — Enbridge — 5-11-11 — Date

Michael Van Loan — Printed Name

MP 13.50 to MP 13.75

The LDB of segment 13.75 generally consists of forested wetland swamp and areas of scrub-shrub wetland, with some sporadic areas of ponded water. The initial reassessment identified nine polygons and one point. These areas were identified as having primarily trace to sporadic areas of coated and stained debris, trunks and stems. Two polygons contained areas where film/sheen was present.

The RDB of segment 13.50 consists primarily of forested wetland swamp and low vegetative banks with areas of ponded water. The initial reassessment identified four polygons and one linear transect containing primarily trace areas of covered, coated and stained debris, trunks, and stems. Additionally, an area of trace patties was noted in Polygon 1 RDB.

Two islands were identified within this segment, consisting of low vegetative bank with trace to sporadic cover, coated, and stained patties, asphalt pavement, trunks and stems and patties and asphalt pavement.

Poling was completed within this segment to fully assess the overbank. The detailed results of the poling activities will be completed under a separate cover.

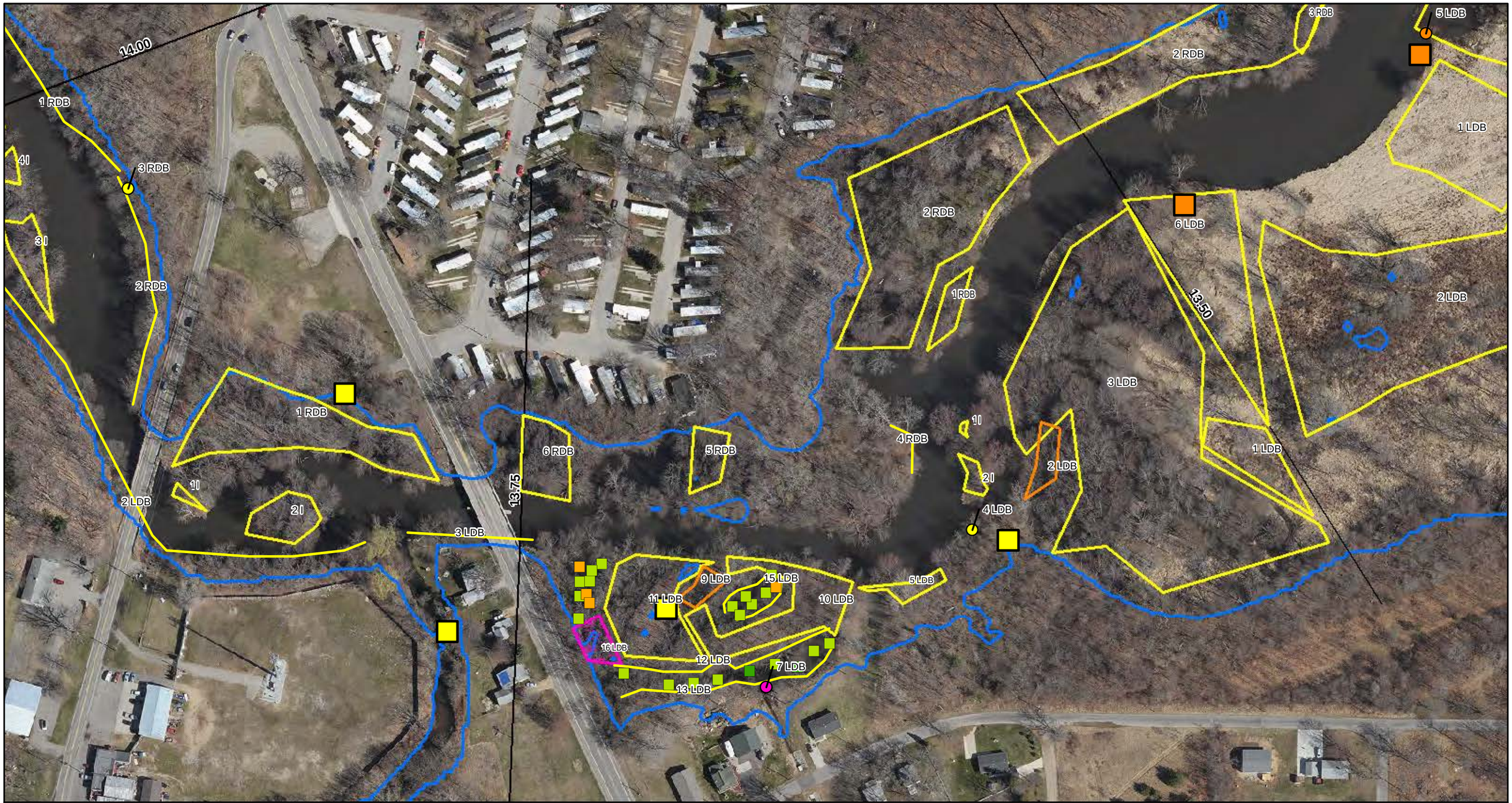
The FLS did detect two suspected oil signatures within the LDB of the segment. Both locations were in relatively close proximity to SORT data at Point 4 LDB and Polygon 11 LDB.

No PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

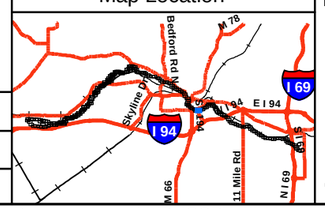
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP13.50-MP13.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 13.75																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☐	☐	S	Low Vegetated Bank		TAR PATTIES AND SMALL AREAS OD ASPHALT PAVEMENT	Hadwin, Eric
																					Washburn, Bruce
5/16/2011	14:21																	42.29773	-85.16526		Hehir, Nate
2	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank		TAR COATED AND STAINED TREES; ONE TAR PATTY OBSERVED AS WELL	Hadwin, Eric
																					Washburn, Bruce
5/16/2011	14:30																	42.29759	-85.16527		Hehir, Nate

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 13.75																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
Date	**Time**																	**Latitude**	**Longitude**		**Enbridge Team Lead**
1	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Ross, Shauna
																					Zimont, Ben
5/11/2011	13:09																	42.29780	-85.16380		VanLoan, Mike
10	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna
																					Zimont, Ben
5/11/2011	16:01																	42.29712	-85.16612		VanLoan, Mike
11	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna
																					Zimont, Ben
5/11/2011	16:09																	42.29720	-85.16717		VanLoan, Mike
12	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)		TAR COATED AND STAINED TRESS AND STEMS	Hadwin, Eric
																					Washburn, Bruce
5/16/2011	10:32																	42.29670	-85.16728		Hehir, Nate
13	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		TAR COATED AND STAINED TREES AND DEBRIS	Hadwin, Eric
																					Washburn, Bruce
5/16/2011	10:52																	42.29679	-85.16599		Hehir, Nate

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character															
Mile Marker: 13.75																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
15	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		TAR COATED AND STAINED TREES	Hadwin, Eric	
																					Washburn, Bruce	
5/16/2011	13:42																	42.29705	-85.16641		Hehir, Nate	
16	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Ponded Water - Reassess		PONDED AREA; REQUIRES JOHN BOAT	Hadwin, Eric	
																					Washburn, Bruce	
5/16/2011	11:08																	42.29673	-85.16727		Hehir, Nate	
2	Shoreline and Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)			Ross, Shauna	
																					Zimont, Ben	
5/11/2011	13:35																	42.29744	-85.16487		VanLoan, Mike	
3	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna	
																					Zimont, Ben	
5/11/2011	13:56																	42.29771	-85.16493		VanLoan, Mike	
4	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Ross, Shauna	
																					Wesener, Matt	
5/11/2011	14:09																	42.29729	-85.16521		VanLoan, Mike	

2011 Reassessment

Bank: LDB

Mile Marker: 13.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Oil Thickness: Pooled Oil	Cover	Coat	Stain	Film	Oil Character: Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
5	Shoreline and Overbank	5/11/2011	14:36	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)	42.29703	-85.16558		Ross, Shauna / Zimont, Ben / VanLoan, Mike
7	Overbank	5/11/2011	15:12	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Ponded Water - Reassess	42.29658	-85.16638	fresh oil found at this point inside an inaccesible area close to bank	Ross, Shauna / Wesener, Matt / VanLoan, Mike
9	Overbank	5/11/2011	15:49	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Wetland-swamp (forested)	42.29714	-85.16677	inundated area located in swamp shallow enough to assess sheen observed after sediment was disturbed while walking thru inundation	Ross, Shauna / Zimont, Ben / VanLoan, Mike

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character															
Mile Marker: 13.75																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
1	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)			Ross, Shauna	Zimont, Ben
5/14/2011	10:05																	0.00000	0.00000			VanLoan, Mike
2	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna	Zimont, Ben
5/14/2011	10:11																	0.00000	0.00000			VanLoan, Mike
4	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Ross, Shauna	Zimont, Ben
5/14/2011	13:02																	42.29756	-85.16556			VanLoan, Mike
5	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna	Zimont, Ben
5/14/2011	13:22																	42.29750	-85.16667			VanLoan, Mike
6	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna	Zimont, Ben
5/14/2011	13:30																	0.00000	0.00000			VanLoan, Mike

Photo Logs

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 2, Photo 002

LDB Zone ID 2, Photo 003

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 3, Photo 001

LDB Zone ID 3, Photo 002

Field Photographs MP 13.50 – MP 13.75

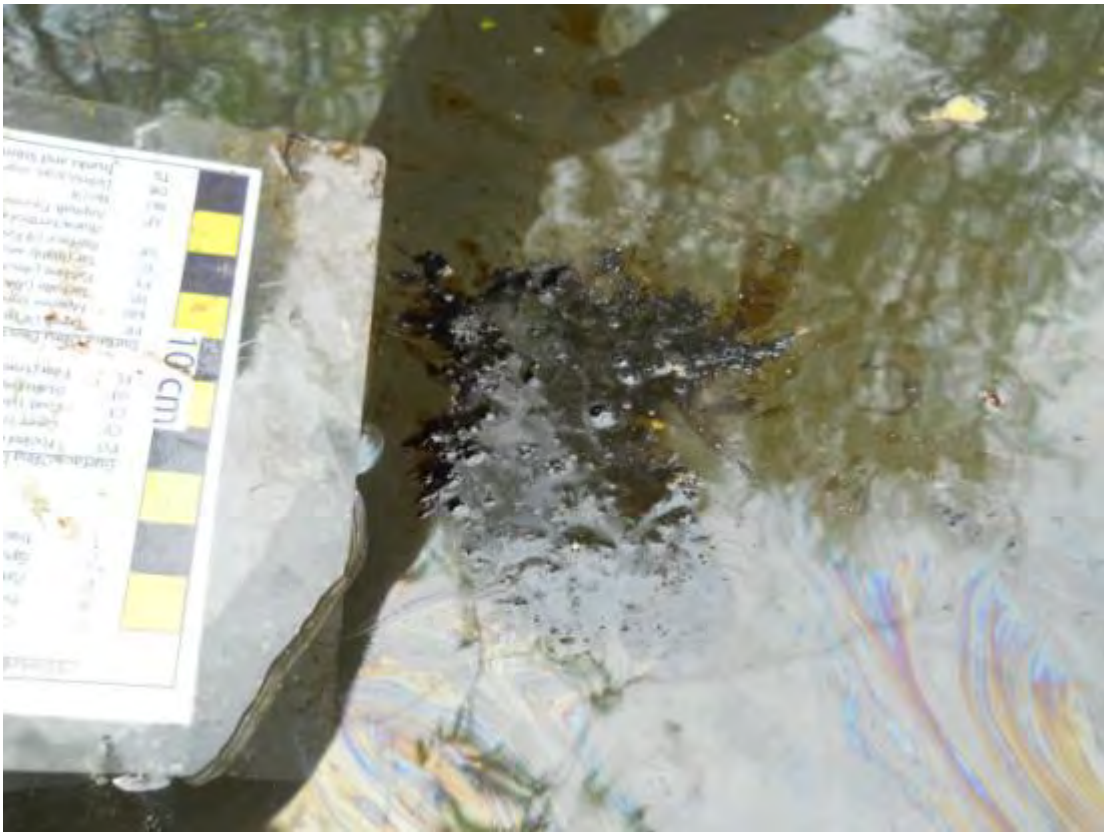
LDB Zone ID 4, Photo 001

LDB Zone ID 5, Photo 001

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 5, Photo 002

LDB Zone ID 7, Photo 001



Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 7, Photo 002

LDB Zone ID 7, Photo 003

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 7, Photo 004

LDB Zone ID 7, Photo 005

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 9, Photo 001

LDB Zone ID 9, Photo 002

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 10, Photo 001

LDB Zone ID 10, Photo 002

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 11, Photo 001

LDB Zone ID 11, Photo 002

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 12, Photo 001

LDB Zone ID 12, Photo 002

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 13, Photo 001

LDB Zone ID 13, Photo 002

Field Photographs MP 13.50 – MP 13.75

LDB Zone ID 15, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 13.50 – MP 13.75

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

Field Photographs MP 13.50 – MP 13.75

RDB Zone ID 4, Photo 001

RDB Zone ID 4, Photo 002

Field Photographs MP 13.50 – MP 13.75

RDB Zone ID 5, Photo 001

RDB Zone ID 6, Photo 001

Field Photographs MP 13.50 – MP 13.75

I Zone ID 1, Photo 001

I Zone ID 2, Photo 001

Field Photographs MP 13.50 – MP 13.75

I Zone ID 2, Photo 002

I Zone ID 2, Photo 003

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 13.5 to MP 13.75, Bank or Island: LDB, Segment Length: 0.25 mile

11 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 5/11/2011 Date

Shawna Marie Ross Printed Name

[signature] MDEQ — 5/11/11 Date

Ben A. Zimont Printed Name

[signature] Enbridge — 3-11-11 Date

Michael Van Loan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

* Did not assess island in Segment

Segment ID: From MP 13.5 to MP 13.75, Bank or Island: RDB, Segment Length: 0.25 mile

6 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	5/14/2011 Date
Shawna Marie Ross	Printed Name	
[signature]	MDEQ	5/14/11 Date
Ben A. Zimont	Printed Name	
[signature]	Enbridge	5-14-11 Date
Michael Van Loan	Printed Name	

Team 1

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 13.50 to MP 13.75, Unique ID 6, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START 5/16/11 Date

Erik Brown Printed Name

Bruce Washburn MDEQ 5/16/11 Date

Bruce A Washburn Printed Name

_____ Enbridge 5/16/11 Date

Nate Hehir Printed Name

- Polling conducted.

_____ Tetra Tech 5/16/2011

Craig A Wiegman

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 13.50 to MP 13.75, Unique ID 8, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START 5/16/11 Date

Eric Hawin Printed Name

Bruce Washburn MDEQ 5/16/11 Date

Bruce L Wood Printed Name

_____ Enbridge 5/16/11 Date

Nate Hehir Printed Name

- Polling Conducted

_____ Tetra Tech 5/16/2011

Craig A Wiemann

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 13.50 to MP 13.75, Unique ID _____, Bank ____ and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START 5/16/11 Date

Erik Hawin Printed Name

_____ MDEQ 5/16/11 Date

Bruce Washburn Printed Name

_____ Enbridge 5/16/11 Date

Nate Hehir Printed Name

MP 13.75 to MP 14.00

The LDB of segment 14.00 generally consists of scrub/shrub wetland and areas of low vegetated banks, with some rip rap. The initial reassessment identified one polygon and two linear transects identified as having primarily trace areas of covered, coated and stained debris, trunks and stems.

The RDB of segment 14.00 consists primarily of forested wetland swamp. The initial reassessment identified one polygon and one linear transect containing primarily trace areas of stained trunks, and stems. One point (3 RDB) was identified as having sporadic cover of surface oil residue on the ground surface.

Multiple islands were identified within this segment, consisting of forested wetland swamp with primarily sporadic cover of patties, asphalt pavement and surface oil residue, as well as stained trunks and stems throughout.

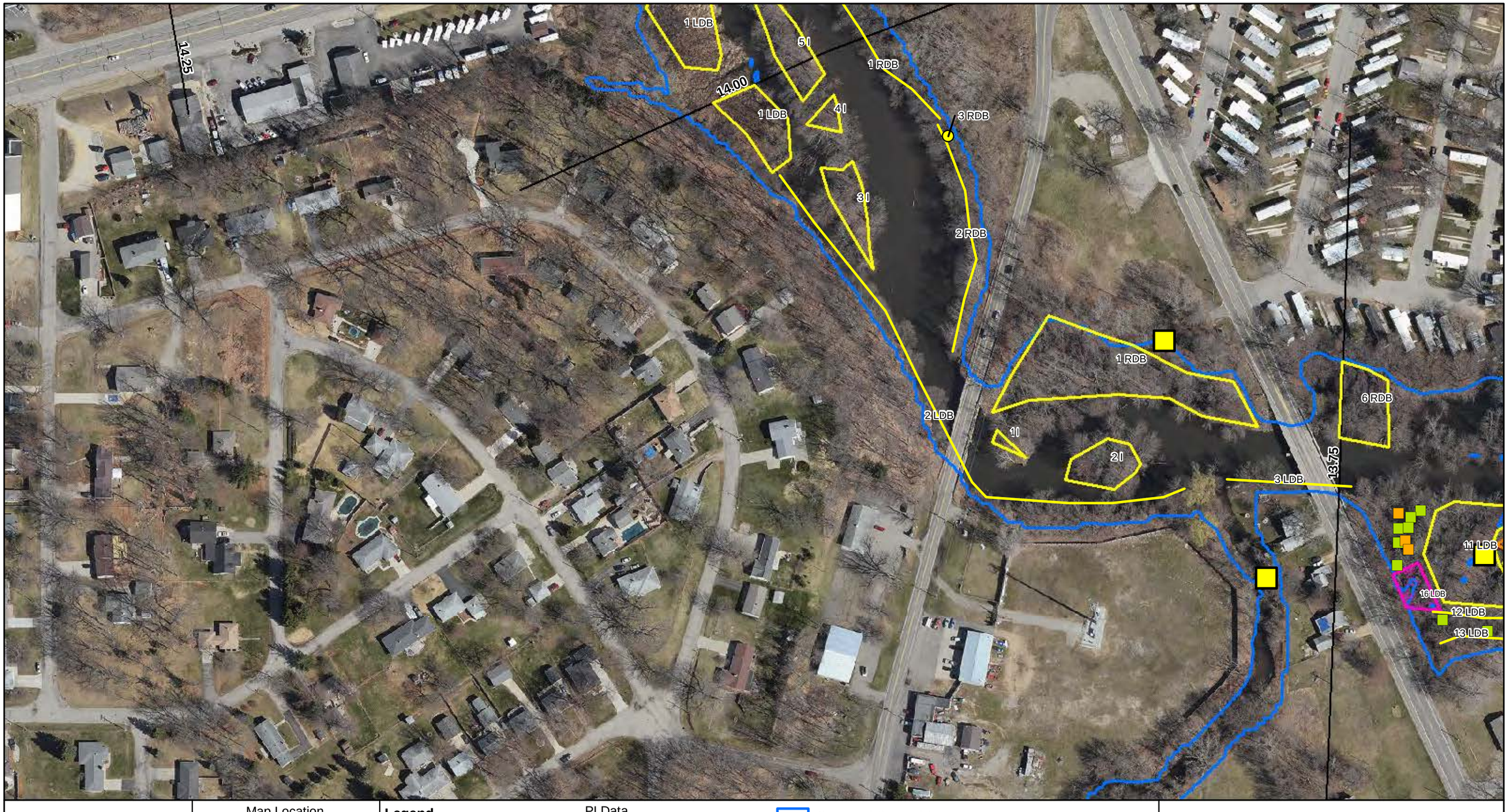
The FLS did detect two suspected oil signatures, one on the LDB and RDB of the segment. The location on the RDB most closely coincides with Polygon 1 RDB, while the signature on the left is not associated with a SORT observation.

No PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP13.75-MP14.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I		Oil Thickness					Oil Character													
Mile Marker: 14																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	14:49																	42.29736	-85.16971		VanLoan, Mike
2	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☑	☐	☐	☑	☐	☑	☑	S	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	15:03																	42.29746	-85.16921		VanLoan, Mike
3	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	17:38																	42.29819	-85.17061		VanLoan, Mike
4	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	17:56																	42.29880	-85.17102		VanLoan, Mike
5	Shoreline and Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Wetland-swamp (forested)			Ross, Shauna / Goddard, Matt
4/19/2011	18:09																	42.29903	-85.17092		VanLoan, Mike

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 14																					MDEQ
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Date	Time																				
1	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑		Wetland-swamp (forested)			Ross, Shauna
																					Goddard, Matt
4/19/2011	14:44																	42.29763	-85.16962		VanLoan, Mike
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Muccianti, Marcus
																					Goddard, Matt
4/19/2011	15:28																	42.29785	-85.17011		VanLoan, Mike
3	Shoreline	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	S	Wetland-swamp (forested)			Ross, Shauna
																					Goddard, Matt
4/19/2011	17:20																	42.29875	-85.17019		VanLoan, Mike

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 14																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-scrub/shrub			Ross, Shauna
																					Zimont, Ben
5/10/2011	16:53																	42.29859	-85.17123		VanLoan, Mike
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑		Low Vegetated Bank			Ross, Shauna
																					Zimont, Ben
5/10/2011	17:22																	42.29724	-85.16778		VanLoan, Mike
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Rip Rap			Ross, Shauna
																					Zimont, Ben
5/10/2011	17:28																	42.29727	-85.16849		VanLoan, Mike

Photo Logs

Field Photographs MP 13.75 – MP 14.00

RDB Zone ID 1, Photo 001

RDB Zone ID 1, Photo 002

Field Photographs MP 13.75 – MP 14.00

RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 13.75 – MP 14.00

RDB Zone ID 2, Photo 003

RDB Zone ID 3, Photo 001

Field Photographs MP 13.75 – MP 14.00

I Zone ID 1, Photo 001

I Zone ID 1, Photo 002

Field Photographs MP 13.75 – MP 14.00

I Zone ID 2, Photo 001

I Zone ID 2, Photo 002

Field Photographs MP 13.75 – MP 14.00

I Zone ID 3, Photo 001

I Zone ID 4, Photo 001

Field Photographs MP 13.75 – MP 14.00

I Zone ID 5, Photo 001

LDB Zone ID 1, Photo 001

Field Photographs MP 13.75 – MP 14.00

LDB Zone ID 1, Photo 002

LDB Zone ID 2, Photo 001

Field Photographs MP 13.75 – MP 14.00

LDB Zone ID 2, Photo 002

LDB Zone ID 2, Photo 003

Field Photographs MP 13.75 – MP 14.00

LDB Zone ID 3, Photo 001

SORT Data Sign off Documentation

Team 5 Yuma 5

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 13.75 to MP 14.0, Bank or Island: RDB, Segment Length: 0.25 mile

7 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/19/2011 Date

Shawna Marie Ross Printed Name

_____ MDEQ — 4/19/11 Date

Matt Goddard Printed Name

_____ Enbridge — 4-19-2011 Date

Michael Van Loan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 13.75 to MP 14.0, Bank or Island: LDB, Segment Length: 0.25 mile

★ 3 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Ross — START — 5/10/2011 — Date

Shawna Marie Ross — Printed Name

Ben A. Zimont — MDEQ — 5/10/11 — Date

Ben A. Zimont — Printed Name

_____ — Enbridge — 5-10-11 — Date

Michael Van Loan — Printed Name

MP 14.00 to MP 14.25

The LDB of segment 14.25 generally consists of forested wetland swamp, scrub-shrub wetland areas of low vegetated banks, with some rip rap. The initial reassessment identified five polygons and two linear transects. In general this segment was identified as having primarily trace areas of coated and stained debris, trunks and stems.

The RDB of segment 14.25 consists primarily of forested wetland swamp, low vegetative bank, and rip rap. The initial reassessment identified one polygon, two linear transects, and one point containing sporadic to patchy areas of covered, coated, and stained surface oil residue on the ground surface and on debris, trunks, and stems.

No islands were identified within the segment.

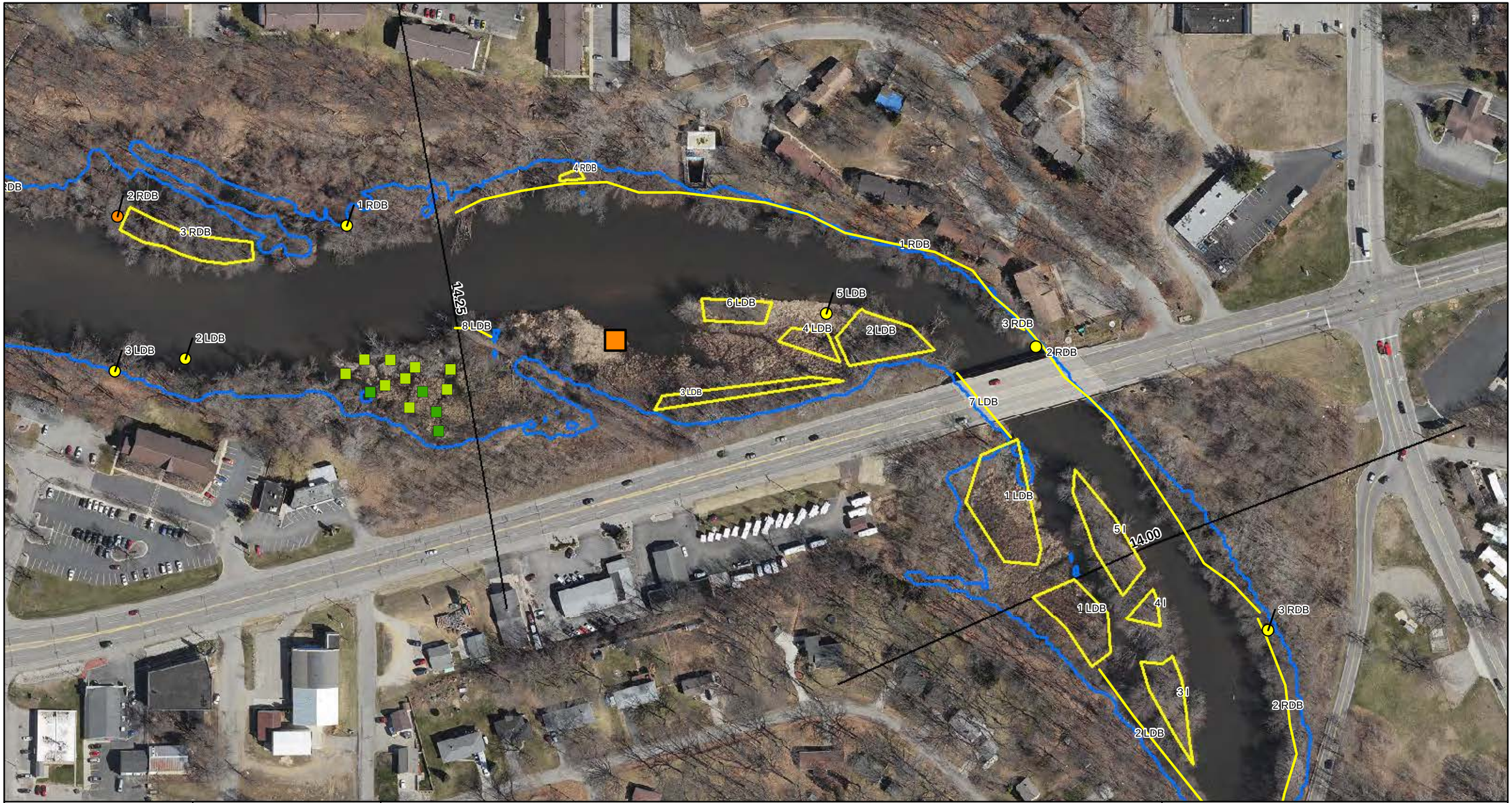
The FLS did detect one oil signature within the LDB of the segment. The location is not associated with a SORT observation.

No PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

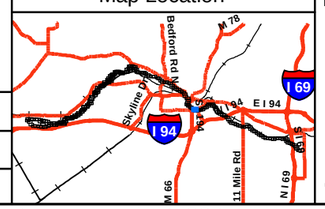
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP14.00-MP14.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: RDB

Mile Marker: 14.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Low Vegetated Bank			Muccianti, Marcus
																					Goddard, Matt
4/19/2011	18:24																	42.29996	-85.17159		VanLoan, Mike
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	S	Rip Rap			Ross, Shauna
																					Goddard, Matt
4/19/2011	18:30																	42.29999	-85.17157		VanLoan, Mike
3	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	P	Low Vegetated Bank			Muccianti, Marcus
																					Goddard, Matt
4/19/2011	18:35																	42.30010	-85.17171		VanLoan, Mike
4	Overbank	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑		Wetland-swamp (forested)			Ross, Shauna
																					Goddard, Matt
4/20/2011	09:38																	42.30072	-85.17439		VanLoan, Mike

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 14.25																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-scrub/shrub			Ross, Shauna
																					Zimont, Ben
5/11/2011	16:50																	42.29959	-85.17167		VanLoan, Mike
2	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna
																					Zimont, Ben
5/12/2011	09:17																	42.30008	-85.17272		VanLoan, Mike
3	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna
																					Zimont, Ben
5/12/2011	09:59																	42.29983	-85.17270		VanLoan, Mike
4	Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous			Ross, Shauna
																					Zimont, Ben
5/12/2011	10:05																	42.30002	-85.17298		VanLoan, Mike
5	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous			Ross, Shauna
																					Zimont, Ben
5/12/2011	10:09																	42.30013	-85.17281		VanLoan, Mike

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 14.25																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
6	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		possible sheen in pothole in polygon	Ross, Shauna Zimont, Ben
5/12/2011	10:21																	42.30018	-85.17312		VanLoan, Mike
7	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Rip Rap		underneath bridge	Ross, Shauna Zimont, Ben
5/12/2011	10:30																	42.29962	-85.17186		VanLoan, Mike
8	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Ross, Shauna Zimont, Ben
5/12/2011	11:09																	42.30003	-85.17492		VanLoan, Mike

Photo Logs

Field Photographs MP 14.00 – MP 14.25

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 14.00 – MP 14.25

RDB Zone ID 3, Photo 001

RDB Zone ID 4, Photo 001

Field Photographs MP 14.00 – MP 14.25

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 14.00 – MP 14.25

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 14.00 – MP 14.25

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 14.00 – MP 14.25

LDB Zone ID 5, Photo 001

LDB Zone ID 6, Photo 001

Field Photographs MP 14.00 – MP 14.25

LDB Zone ID 7, Photo 001

LDB Zone ID 8, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 14.0 to MP 14.25, Bank or Island: _____, Segment Length: 0.25 mile

1 feature today, 4 total

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/20/2011 Date

Shauna Marie Ross Printed Name

_____ MDEQ — 4/20/11 Date

_____ Printed Name

_____ Enbridge — 4-20-2011 Date

Michael Van Loan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 14.0 to MP 14.25, Bank or Island: LDB, Segment Length: 0.25 mile

* 7 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 5/12/2011 Date

Shawna Marie Ross Printed Name

[signature] MDEQ — 5/12/11 Date

Ben A. Zimont Printed Name

[signature] Enbridge — 5-12-11 Date

Michael Van Loon Printed Name

MP 14.25 to MP 14.50

The LDB of segment 14.50 generally consists of sand and gravel shorelines and areas of low vegetated banks, with man-made structures. The initial reassessment identified one linear transect and two points. This area was identified as generally having trace areas of coated and stained debris, trunks and stems.

The RDB of segment 14.50 consists primarily of forested wetland swamp. The initial reassessment identified one polygon, one linear transect, and two points containing trace to sporadic areas of coated and stained debris, trunks, and stems.

No islands were present within this segment.

Poling of the LDB portion of the segment was completed to fully assess the overbank. The detailed results of the poling activities will be presented under a separate cover.

The FLS did not detect oil signatures and no P I observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

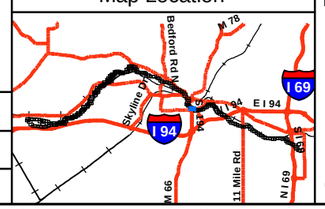
The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP14.25-MP14.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 14.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
																					Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-swamp (forested)			Ross, Shauna Goddard, Matt
4/20/2011	09:58																	0.00000	0.00000		VanLoan, Mike
2	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)			Ross, Shauna Goddard, Matt
4/20/2011	10:23																	42.30052	-85.17699		VanLoan, Mike
3	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-swamp (forested)		Dumping area. a lot of trash throughout area.	Ross, Shauna Goddard, Matt
4/20/2011	10:36																	42.30035	-85.17627		VanLoan, Mike
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Ross, Shauna Goddard, Matt
4/20/2011	12:06																	42.30047	-85.17797		VanLoan, Mike

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character															
Mile Marker: 14.5																						
Source: 2011 Reassessment																						
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**	
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**	**Enbridge Team Lead**
2	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Man-Made Structure		metal poles	Ross, Shauna	Goddard, Matt
4/20/2011	15:02																	42.29989	-85.17652		VanLoan, Mike	
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Sand-Gravel shoreline			Ross, Shauna	Goddard, Matt
4/20/2011	15:21																	42.29986	-85.17699		VanLoan, Mike	
4	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Ross, Shauna	Goddard, Matt
4/20/2011	15:38																	42.30043	-85.17909		VanLoan, Mike	

Photo Logs

Field Photographs MP 14.25 – MP 14.50

LDB Zone ID 2, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 14.25 – MP 14.50

LDB Zone ID 4, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 14.25 – MP 14.50

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

Field Photographs MP 14.25 – MP 14.50

RDB Zone ID 3, Photo 002

RDB Zone ID 4, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 14.25 to MP 14.5, Bank or Island: RDB, Segment Length: 0.25 mile

4 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4/20/2011	Date
Shaona Marie Ross	Printed Name		
[signature]	MDEQ	4/20/11	Date
Matt Goddard	Printed Name		
[signature]	Enbridge	4-20-2011	Date
Michael Van Loon	Printed Name		

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 14.25 to MP 14.5, Bank or Island: RB, Segment Length: 0.25 mile

4 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 4/20/2011 Date

Shawna Marie Poss Printed Name

_____ MDEQ — 4/20/11 Date

_____ Printed Name

_____ Enbridge — 4-20-2011 Date

Michael Van Loon Printed Name

☆ Note: Innundated wetland area to deep to assess. Polygon taken.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 14.25 to MP 14.5, Unique ID 14.50 LDB1, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan — START — 5/3/11 Date

THOMAS P. GRAAN — Printed Name

Kat Fairchild — MDEQ — 5-3-11 Date

Kathleen Fairchild — Printed Name

Dan DeWitt — Enbridge — 5-3-11 Date

Dan DeWitt — Printed Name

MP 14.50 to MP 14.75

The LDB of segment 14.75 generally consists of forested wetland swamp. The initial reassessment identified two polygons. This segment was identified as having trace areas of stained trunks and stems.

The RDB of segment 14.75 consists primarily of forested wetland swamp and low vegetative banks. The initial reassessment identified one polygon and one linear transect containing trace areas of stained debris, trunks, and stems.

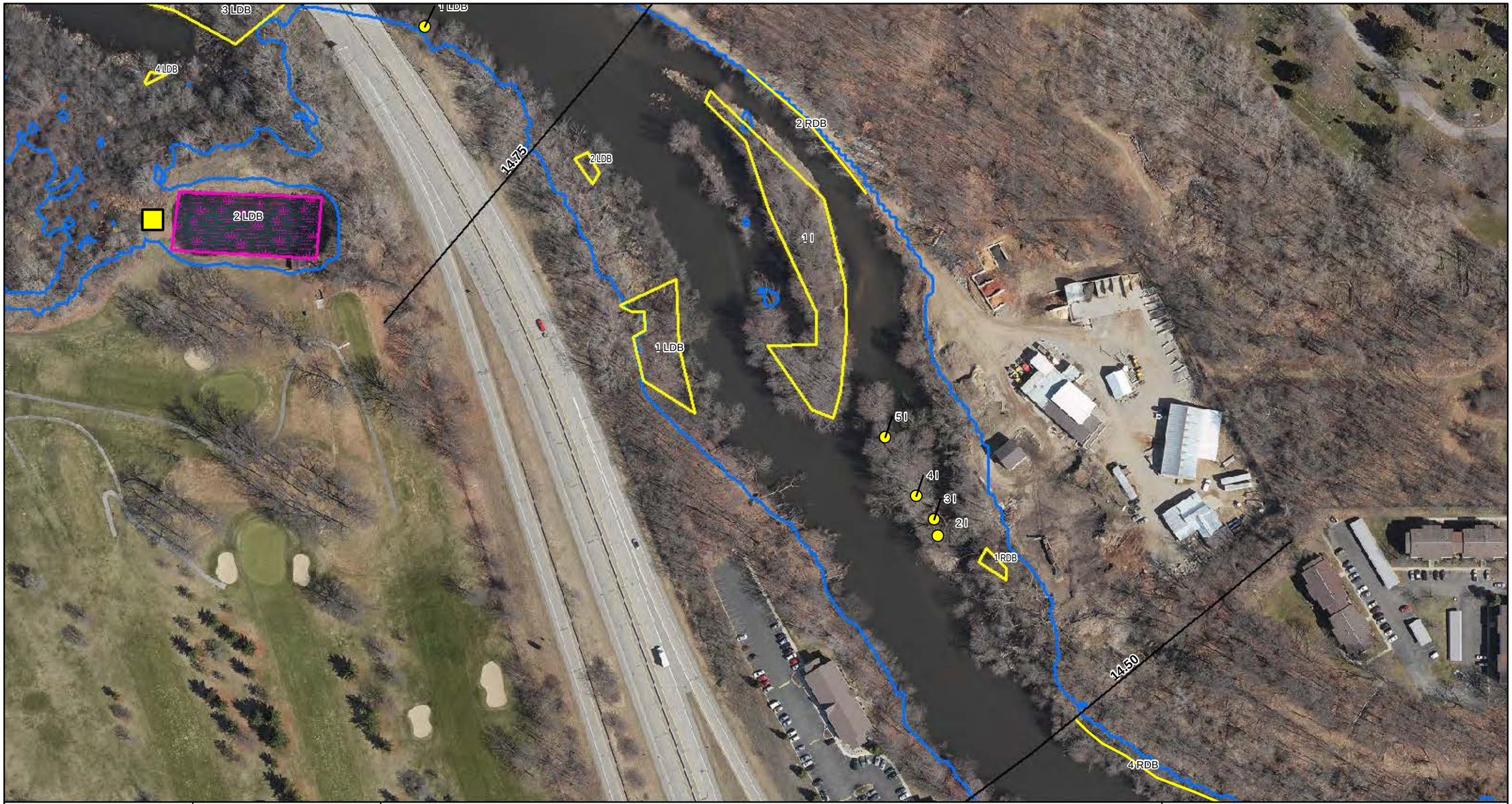
Two islands were identified within this segment, each consisting of forested wetland swamp. The initial reassessment identified one polygon on the downstream island and four points on the upstream island. Both islands contained trace areas of covered and stained trunks and stems. Additionally Polygon 1 I was found to also contain trace surface oil staining.

The FLS did not detect oil signatures and no PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

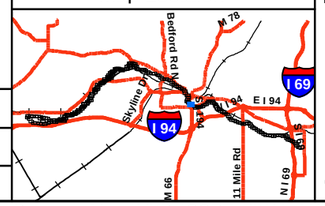
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP14.50-MP14.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: I

Mile Marker: 14.75

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START	MDEQ	Enbridge Team Lead
1	Shoreline and Overbank	4/20/2011	12:48		✔		✔							✔				✔	T	Wetland-swamp (forested)	42.30280	-85.18078		Ross, Shauna	Goddard, Matt	VanLoan, Mike
2	Overbank	4/20/2011	13:04				✔											✔	T	Wetland-swamp (forested)	42.30198	-85.18013		Ross, Shauna	Goddard, Matt	VanLoan, Mike
3	Overbank	4/20/2011	13:08				✔											✔	T	Wetland-swamp (forested)	42.30205	-85.18015		Ross, Shauna	Goddard, Matt	VanLoan, Mike
4	Overbank	4/20/2011	13:11				✔											✔	T	Wetland-swamp (forested)	42.30215	-85.18025		Ross, Shauna	Goddard, Matt	VanLoan, Mike
5	Overbank	4/20/2011	13:14				✔											✔	T	Wetland-swamp (forested)	42.30242	-85.18043		Ross, Shauna	Goddard, Matt	VanLoan, Mike

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution			
Mile Marker: 14.75																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ**
1	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)		sheen thoughtout polygon in the areas of inundation possible product	Ross, Shauna
																					Goddard, Matt
4/20/2011	16:07																	42.30298	-85.18201		VanLoan, Mike
2	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-swamp (forested)			Ross, Shauna
																					Goddard, Matt
4/20/2011	16:28																	42.30371	-85.18234		VanLoan, Mike

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 14.75																					MDEQ
Source: 2011 Reassessment																		Latitude	Longitude		Enbridge Team Lead
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				
1	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑		Wetland-swamp (forested)			Ross, Shauna
																					Goddard, Matt
Date 4/20/2011	Time 13:45																	42.30185	-85.17990		VanLoan, Mike
2	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Ross, Shauna
																					Goddard, Matt
Date 4/20/2011	Time 14:10																	42.30429	-85.18187		VanLoan, Mike

Photo Logs

Field Photographs MP 14.50 – MP 14.75

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 14.50 – MP 14.75

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

Field Photographs MP 14.50 – MP 14.75

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 14.50 – MP 14.75

RDB Zone ID 2, Photo 002

I Zone ID 1, Photo 001

Field Photographs MP 14.50 – MP 14.75

I Zone ID 1, Photo 002

I Zone ID 1, Photo 003

Field Photographs MP 14.50 – MP 14.75

I Zone ID 1, Photo 004

I Zone ID 1, Photo 005

Field Photographs MP 14.50 – MP 14.75

I Zone ID 2, Photo 001

I Zone ID 3, Photo 001

Field Photographs MP 14.50 – MP 14.75

I Zone ID 4, Photo 001

I Zone ID 5, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 14.5 to MP 14.75, Bank or Island: LDB, Segment Length: 0.25 mile

2 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4/30/2011 Date
Shawna Marie Ross	Printed Name	
Matt Goddard	MDEQ	4/20/11 Date
[signature]	Printed Name	
[signature]	Enbridge	4-20-2011 Date
Michael Van Loon	Printed Name	

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 14.5 to MP 14.75, Bank or Island: RDB (2) and (5), Segment Length: 0.25 mile

7 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature]	START	4/20/2011 Date
Shawna Marie Ross	Printed Name	
[signature]	MDEQ	4/20/11 Date
Matt Goddard	Printed Name	
[signature]	Enbridge	4-20-2011 Date
Michael Van Laan	Printed Name	

MP 14.75 to MP 15.00

The LDB of segment 15.00 generally consists of forested wetland swamp and low vegetative banks. The initial reassessment identified three polygons and two points. These areas were identified as having trace areas of coated and stained debris, trunks and stems, with two Polygons 3 LBD and 6 LDB containing trace areas of patties.

The RDB of segment 15.00 consists primarily of forested wetland swamp and low vegetative banks. The initial reassessment identified one polygon, and two points, and one linear transect containing trace to sporadic areas of coated and stained debris, trunks, and stems. Additionally, Linear Transect 1 RDB contained a sporadic presence of surface oil residue.

Three islands were identified within this segment consisting of emergent/herbaceous wetland habitat. The upstream island contained two polygons and two points containing trace to sporadic coated and stained debris, trunks and stems. The island also contained trace amounts of pooled oil and film at Point 3 I. The next island downstream contained Polygon 5 I with trace cover, coated, and stained surface oil residue, debris, trunks, and stems. The furthest downstream island contained Point 6 I and consisted of sporadic coated and stained trunks and stems.

The FLS did identify three suspected oil signatures and one detected oil signature within the segment. Two suspected and one detected oil signature coincide with SORT observations, Polygon 5 I and 4 RDB. One PI observation noted as a high priority area was identified near Point 5 LDB within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP14.75-MP15.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

ENBRIDGE

Bank: LDB

Mile Marker: 15

Source: 2011 Reassessment

Oil Zone ID	Feature	Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Habitat	Latitude	Longitude	Comments	START / MDEQ / Enbridge Team Lead
1	Shoreline	4/20/2011	17:20				✓											✓		Wetland-swamp (forested)	0.00000	0.00000		Ross, Shauna Goddard, Matt VanLoan, Mike
3	Shoreline and Overbank	5/10/2011	14:15			✓	✓					✓					✓	✓	T	Wetland-swamp (forested)	42.30409	-85.18412	adjacent inundated water had organic sheen possble product sheen	Ross, Shauna Zimont, Ben VanLoan, Mike
4	Overbank	5/10/2011	14:31			✓	✓											✓	T	Wetland-swamp (forested)	42.30392	-85.18483		Ross, Shauna Zimont, Ben VanLoan, Mike
5	Shoreline	5/10/2011	15:03			✓												✓	T	Low Vegetated Bank	42.30504	-85.18643		Ross, Shauna Zimont, Ben VanLoan, Mike
6	Shoreline and Overbank	5/10/2011	15:13			✓	✓					✓					✓	✓	T	Wetland-scrub/shrub	42.30443	-85.18590		Ross, Shauna Zimont, Ben VanLoan, Mike

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 15																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☑	S	Low Vegetated Bank			Ross, Shauna
																					Goddard, Matt
4/20/2011	16:48																	42.30482	-85.18311		VanLoan, Mike
2	Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Ross, Shauna
																					Goddard, Matt
4/20/2011	17:01																	42.30497	-85.18405		VanLoan, Mike
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank		sheen observed out in river	Ross, Shauna
																					Zimont, Ben
5/9/2011	09:37																	42.30517	-85.18508		VanLoan, Mike
4	Shoreline and Overbank	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna
																					Zimont, Ben
5/9/2011	09:57																	42.30588	-85.18536		VanLoan, Mike

2011 Reassessment

Bank: I		Oil Thickness					Oil Character														
Mile Marker: 15																					
Source: 2011 Reassessment																					
Oil Zone ID	**Feature**	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Overbank	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous			Ross, Shauna / Zimont, Ben
5/9/2011	10:26																	42.30496	-85.18576		VanLoan, Mike
2	Shoreline and Overbank	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	S	Wetland-emergent/herbaceous			Ross, Shauna / Zimont, Ben
5/9/2011	10:39																	42.30470	-85.18574		VanLoan, Mike
3	Overbank	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	T	Wetland-emergent/herbaceous		fresh oil emerged fromsediment after stepping into pool	Ross, Shauna / Zimont, Ben
5/9/2011	10:42																	42.30473	-85.18544		VanLoan, Mike
4	Shoreline and Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	S	Wetland-emergent/herbaceous			Ross, Shauna / Zimont, Ben
5/9/2011	10:52																	42.30468	-85.18507		VanLoan, Mike
5	Shoreline and Overbank	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	T	Wetland-swamp (forested)			Ross, Shauna / Zimont, Ben
5/9/2011	11:14																	42.30558	-85.18593		VanLoan, Mike

2011 Reassessment

Bank: I		Oil Thickness					Oil Character												
Mile Marker: 15																			
Source: 2011 Reassessment																			
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**	**Comments**
Date	**Time**																	**Latitude** / **Longitude**	
6	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	S	Wetland-emergent/herbaceous	
5/9/2011	11:28																	42.30592 / -85.18608	

START
MDEQ
Enbridge Team Lead
Ross, Shauna
Zimont, Ben
VanLoan, Mike

Photo Logs

Field Photographs MP 14.75 – MP 15.00

LDB Zone ID 1, Photo 001

LDB Zone ID 3, Photo 001

Field Photographs MP 14.75 – MP 15.00

LDB Zone ID 3, Photo 002

LDB Zone ID 3, Photo 003

Field Photographs MP 14.75 – MP 15.00

LDB Zone ID 4, Photo 001

LDB Zone ID 5, Photo 001

Field Photographs MP 14.75 – MP 15.00

LDB Zone ID 6, Photo 001

LDB Zone ID 6, Photo 002

Field Photographs MP 14.75 – MP 15.00

RDB Zone ID 1, Photo 001

RDB Zone ID 2, Photo 001

Field Photographs MP 14.75 – MP 15.00

RDB Zone ID 3, Photo 001

RDB Zone ID 4, Photo 001

Field Photographs MP 14.75 – MP 15.00

RDB Zone ID 4, Photo 002

RDB Zone ID 4, Photo 003

Field Photographs MP 14.75 – MP 15.00

I Zone ID 1, Photo 001

I Zone ID 2, Photo 001

Field Photographs MP 14.75 – MP 15.00

I Zone ID 2, Photo 002

I Zone ID 3, Photo 001

Field Photographs MP 14.75 – MP 15.00

I Zone ID 4, Photo 001

I Zone ID 5, Photo 001

Field Photographs MP 14.75 – MP 15.00

I Zone ID 5, Photo 002

I Zone ID 6, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 14.75 to MP 15.0, Bank or Island: LDB, Segment Length: 0.25 mile

* Segment only assessed upstream of bridge

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Marie Ross — START — 4/20/2011 — Date

Shawna Marie Ross — Printed Name

Matt Caddell — MDEQ — 4/20/11 — Date

Matt Caddell — Printed Name

Enbridge — 4/20/2011 — Date

Michael Van Loan — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 14.75 to MP 15.00, Bank or Island: RDB, Segment Length: 0.25 mile

* Segment only assessed upstream of bridge

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 4/20/2011 Date

Shawna Marie Ross Printed Name

[signature] MDEQ — 4/20/11 Date

Matt Goddard Printed Name

[signature] Enbridge — 4/20/2011 Date

Michael Van Loon Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

* Only assessed area downstream of bridge

Segment ID: From MP 14.75 to MP 15.0, Bank or Island: RDB, Segment Length: 0.25 mile

2 RDB, 6 island features : 8 total

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 5/9/2011 Date

Shawna Marie Ross Printed Name

[signature] MDEQ — 5/9/11 Date

Ben A. Zimont Printed Name

[signature] Enbridge — 5-9-2011 Date

Michael Van Loan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Only assessed area downstream of bridge.

Segment ID: From MP 14.75 to MP 15.0, Bank or Island: LDB, Segment Length: 0.25 mile

* 5 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START — 5/10/2011 Date

Shawna Marie Ross Printed Name

_____ MDEQ — 5/10/11 Date

Ben A. Simon Printed Name

_____ Enbridge — 5-10-11 Date

Michael Van Loan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 14.75 to MP 15.00, Unique ID LDB2, Bank:_____ and/or Island _____.
Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____	START	5/17/11 Date
Erik Hansen	Printed Name	
_____	MDEQ	5/17/11 Date
Bruce Washburn	Printed Name	
_____	Enbridge / Tetra Tech	5/17/2011 Date
Craig A Wieman	Printed Name	

MP 15.00 to MP 15.25

The LDB of segment 15.25 generally consists of low vegetative banks and rip rap. The initial reassessment identified two linear transects identified as having trace areas of coated and stained debris, trunks, and stems. One area located along the 15.0 segment line (Point 4 LDB) was determined to be clean of any oil occurrences.

The RDB of segment 15.25 consists primarily of forested wetland swamp and low vegetative banks. The initial reassessment identified two polygons and one point containing trace areas of coated and stained debris, trunks, and stems. Film/sheen was identified on Polygon 3 RDB.

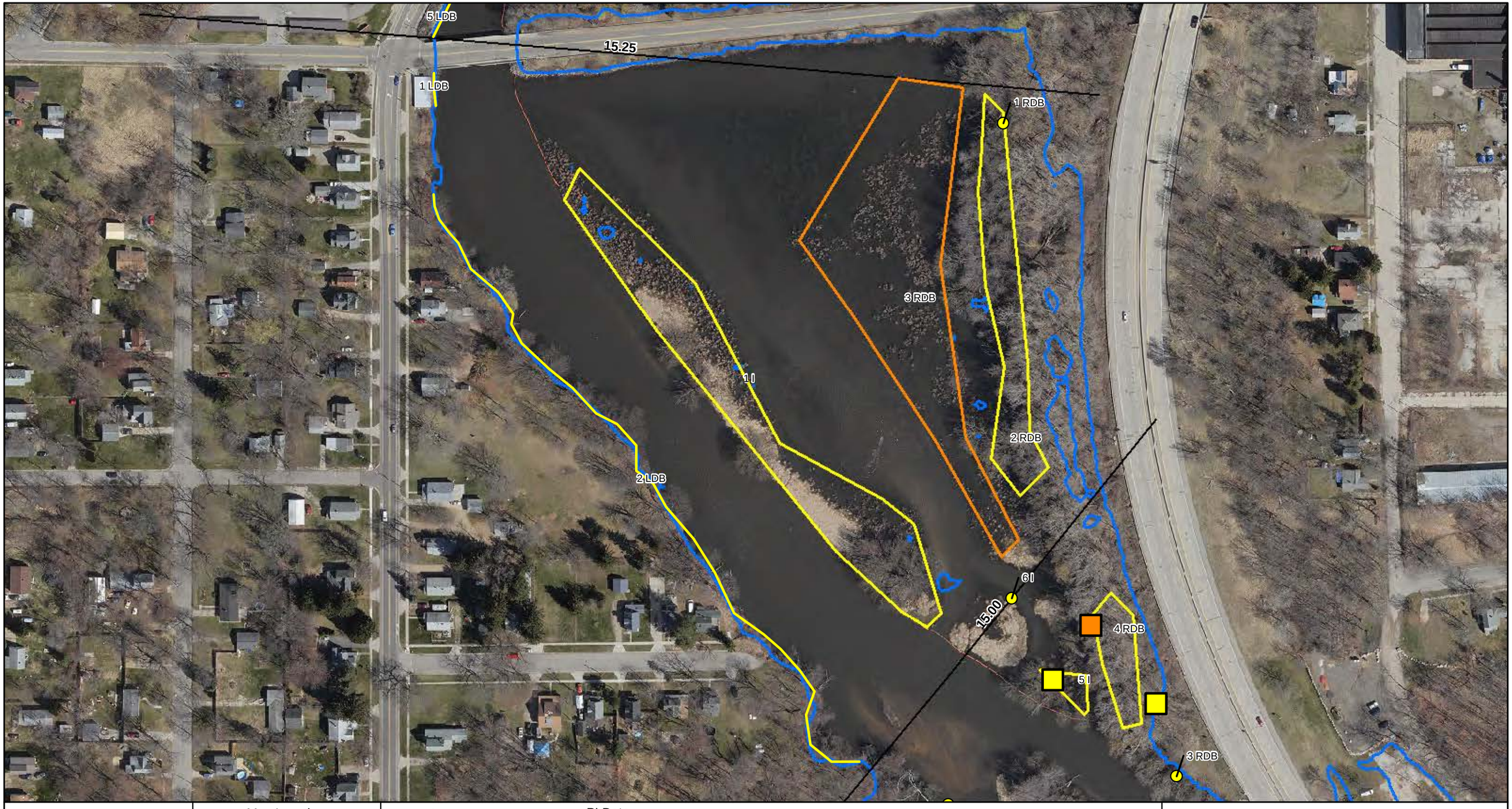
One island was identified within this segment consisting of emergent/herbaceous wetland habitat. The single polygon contained coated and stained debris, trunks, and stems.

The FLS did not detect oil signatures within the segment. No PI observation were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

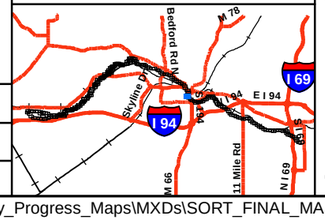
Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

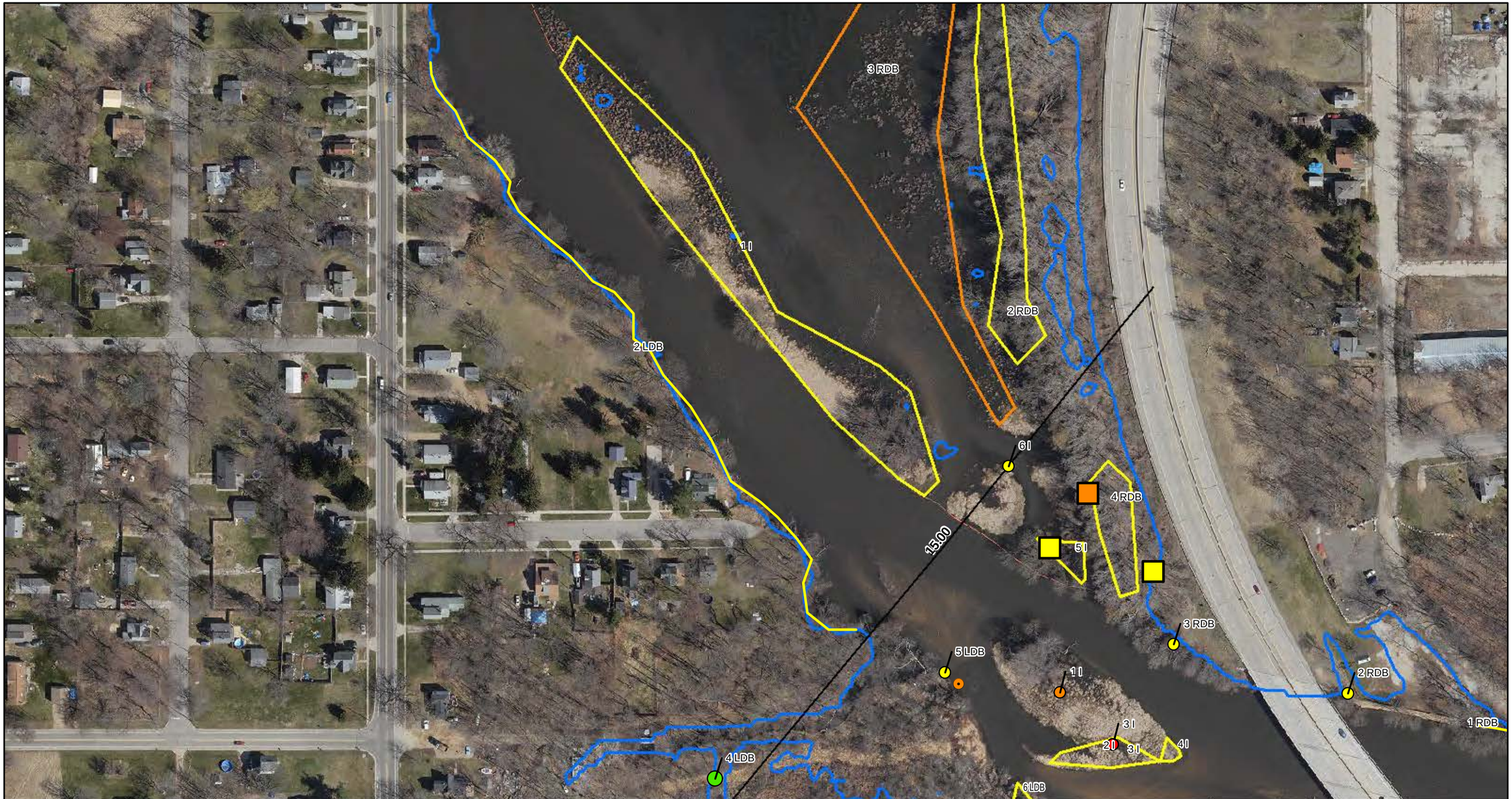
0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP15.00-MP15.25 North

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

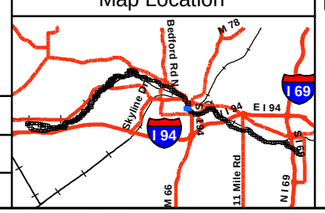
Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location



Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP15.00-MP15.25 South

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: RDB

Mile Marker: 15.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Low Vegetated Bank			Ross, Shauna
																					Zimont, Ben
5/9/2011	12:58																	42.30802	-85.18606		VanLoan, Mike
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-swamp (forested)			Ross, Shauna
																					Zimont, Ben
5/9/2011	14:09																	42.30841	-85.18680		VanLoan, Mike
3	Shoreline	☐	☐	☑	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Wetland-emergent/herbaceous		arrowleaf vegetation	Ross, Shauna
																					Zimont, Ben
5/9/2011	14:57																	42.30607	-85.18612		VanLoan, Mike

2011 Reassessment

Bank: I		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 15.25																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution				MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-emergent/herbaceous		trees on island with coat	Ross, Shauna
																					Zimont, Ben
5/9/2011	12:25																	42.30781	-85.18864		VanLoan, Mike

2011 Reassessment

Bank: LDB

Mile Marker: 15.25

Source: 2011 Reassessment

Oil Zone ID	Feature	Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
																					MDEQ
Date	Time	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems		Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Rip Rap			Ross, Shauna
																					Zimont, Ben
5/9/2011	15:11																	42.30819	-85.18949		VanLoan, Mike
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	T	Low Vegetated Bank			Ross, Shauna
																					Zimont, Ben
5/9/2011	15:31																	42.30505	-85.18645		VanLoan, Mike
3	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		Ponded Water - Reassess		inaccessible wetland	Ross, Shauna
																					Zimont, Ben
5/9/2011	16:03																	42.30470	-85.18774		VanLoan, Mike
4	Overbank	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐		Wetland-scrub/shrub		NO OIL IN PINK, REASSESS POLYGON 15.25 LDB 3	Hadwin, Eric
																					Wesener, Matt
5/11/2011	15:26																	42.30457	-85.18778		Kytta, Ken

Photo Logs

Field Photographs MP 15.00 – MP 15.25

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 15.00 – MP 15.25

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 15.00 – MP 15.25

LDB Zone ID 4, Photo 002

RDB Zone ID 1, Photo 001

Field Photographs MP 15.00 – MP 15.25

RDB Zone ID 2, Photo 001

RDB Zone ID 3, Photo 001

Field Photographs MP 15.00 – MP 15.25

RDB Zone ID 3, Photo 002

I Zone ID 1, Photo 001

Field Photographs MP 15.00 – MP 15.25

I Zone ID 1, Photo 002

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 15.0 to MP 15.25, Bank or Island: OB, Segment Length: 0.25 mile

3 features - one small area too soft to access

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 5/9/2011 Date

Shawna Marie Ross Printed Name

[signature] MDEQ — 5/5/11 Date

Ben A. Zimont Printed Name

[signature] Enbridge — 5-9-2011 Date

Michael Van Loon Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 15.0 to MP 15.25, ~~Bank~~ and ~~or~~ Island: RDB, Segment Length: 0.25 mile

* 4 total features (1 island, 3 RDB)

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

Shawna Marie Ross — START — 5/9/2011 — Date

Shawna Marie Ross — Printed Name

[signature] — MDEQ — 5/9/11 — Date

Ben A. Zimont — Printed Name

[signature] — Enbridge — 5-9-2011 — Date

Michael Van Loon — Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 15.00 to MP 15.25, Unique ID CD83, Bank:_____ and/or Island _____.
Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START — 5/11/11 Date

ERIK HADWIN Printed Name

_____ MDEQ — 5/11/11 Date

MATT WESENER Printed Name

_____ Enbridge — 5/11/11 Date

KEN KEITA Printed Name

MP 15.25 to MP 15.50

The LDB of segment 15.50 generally consists of low vegetative banks and some rip rap. The initial reassessment identified three transects and two points. This area was identified as having trace areas of coated and stained debris, trunks and stems.

The RDB of segment 15.50 consists primarily of forested wetland swamp and emergent/herbaceous wetland. The initial reassessment identified one polygon and one point containing trace areas of coated, covered, and stained debris, trunks, and stems.

No islands were identified within this segment.

Poling was completed within this segment to fully assess the overbank. The detailed results of the poling activities will be completed under a separate cover.

The FLS did not detect oil signatures and no PI observations were made within this segment.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures

ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data
- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data
- Oil Signature Detected
- Oil Signature Suspected

River Inundation Model

Observed Sheen/Globules After Poling
- Heavy
- Moderate
- Light
- None

N

0 75 150 300
Scale in Feet

SORT ASSESSMENT
MP15.25-MP15.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character											Habitat		Comments	START
Mile Marker: 15.5																					MDEQ
Source: 2011 Reassessment		Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems	Oil Distribution	Latitude	Longitude		Enbridge Team Lead
Oil Zone ID	Feature																				
Date	Time																				
1	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Ross, Shauna
																					Zimont, Ben
5/10/2011	09:29																	42.31079	-85.18653		VanLoan, Mike
2	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Low Vegetated Bank			Ross, Shauna
																					Zimont, Ben
5/10/2011	09:36																	42.31058	-85.18695		VanLoan, Mike
3	Shoreline	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Low Vegetated Bank			Ross, Shauna
																					Zimont, Ben
5/10/2011	09:40																	42.31056	-85.18705		VanLoan, Mike
4	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Ross, Shauna
																					Zimont, Ben
5/10/2011	10:13																	42.30861	-85.18937		VanLoan, Mike
5	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Rip Rap			Ross, Shauna
																					Zimont, Ben
5/10/2011	10:19																	42.30838	-85.18951		VanLoan, Mike

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 15.5																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline and Overbank	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Wetland-emergent/herbaceous			Ross, Shauna Zimont, Ben
5/10/2011	11:19																	42.30856	-85.18906		VanLoan, Mike
2	Overbank	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Wetland-swamp (forested)			Ross, Shauna Zimont, Ben
5/10/2011	11:53																	42.30936	-85.18562		VanLoan, Mike

Photo Logs

Field Photographs MP 15.25 – MP 15.50

LDB Zone ID 1, Photo 001

LDB Zone ID 2, Photo 001

Field Photographs MP 15.25 – MP 15.50

LDB Zone ID 3, Photo 001

LDB Zone ID 4, Photo 001

Field Photographs MP 15.25 – MP 15.50

LDB Zone ID 5, Photo 001

RDB Zone ID 1, Photo 001

Field Photographs MP 15.25 – MP 15.50

RDB Zone ID 2, Photo 001

SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 15.25 to MP 15.5, Bank or Island: RDB, Segment Length: 0.25 mile

* 3 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

[signature] START — 5/10/2011 Date

Shawna Marie Ross Printed Name

[signature] MDEQ — 5/10/11 Date

Ben A. Zimont Printed Name

[signature] Enbridge — 5·10·2011 Date

Michael Van Loon Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

SIGN-OFF SHEET

Segment ID: From MP 15.25 to MP 15.5, Bank or Island: LDB, Segment Length: 0.25 mile

☆ 5 features

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced segment has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT team.

_____ START _____ Date

Shawna Marie Ross Printed Name

_____ MDEQ 5/10/11 Date

Ben A. Zimmer Printed Name

_____ Enbridge 5-10-11 Date

Michael Van Laan Printed Name

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 15.25 to MP 15.50, Unique ID 3, Bank RDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

_____ START 5/16/11 Date

Erik Hansen Printed Name

_____ MDEQ 5/16/11 Date

Bruce Washburn Printed Name

_____ Enbridge 5/16/11 Date

Nate Hehr Printed Name

- Polling Assessment

Craig Wiemann Tetra Tech 5/16/2011

X:\2011_Reassessment\Sign-Off Sheets

MP 15.50 to MP 15.75

The LDB of segment 15.75 generally consists of forested wetland swamp and some rip rap. The initial reassessment identified four linear transects identified as having trace areas of covered, coated and stained debris, surface oil residue, trunks and stems.

The RDB of segment 15.75 consists primarily of low vegetative bank, rip rap, and man-made structures. The initial reassessment identified two linear transects containing trace staining of debris at Linear Transect1 RDB and cover, coat, stain on debris, trunks and stems and film at Linear Transect 2 RDB.

No islands were identified within this segment.

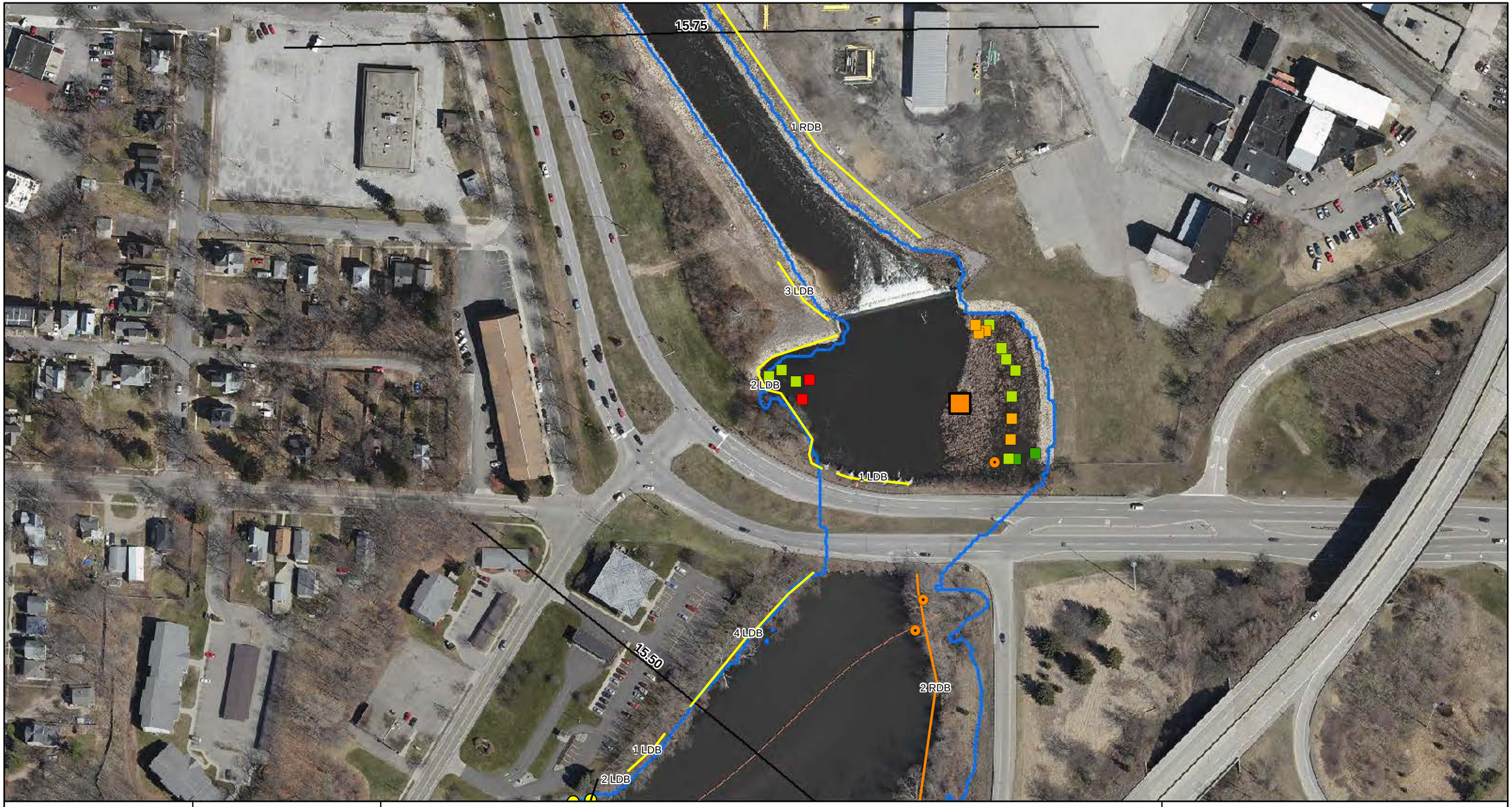
Poling was completed within this segment to fully assess the overbank. The detailed results of the poling activities will be completed under a separate cover.

The FLS did detect one oil signature within the segment on the RDB. Three PI observations identified as high priority areas were made within this segment on the RDB.

The segment has not been compared to the 2011 Inundation Model and additional assessment may be warranted.

The attachments provide additional details on this segment.

Segment Figures



ENBRIDGE

Drawn:	DE	5/17/2011
Approved:		
Project #:	60162778	

Map Location

Legend

- No Oil
- Pooled Oil
- Film (Sheen)
- Remaining Observations
- Quarter Mile Grid Segments

PI Data

- High Priority Area
- Inconclusive
- Unconfirmed Areas of Interest

FLS Data

- Oil Signature Detected
- Oil Signature Suspected

- River Inundation Model

Observed Sheen/Globules After Poling

- Heavy
- Moderate
- Light
- None

N

0 75 150 300

Scale in Feet

SORT ASSESSMENT
MP15.50-MP15.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

Z:\Work\GIS\2011_Reassessment\Daily_Progress_Maps\MXDs\SORT_FINAL_MASTER_REPORTS.mxd

Aerial Photography Date: April 2011

YUMA Output Summary

2011 Reassessment

Bank: RDB		Oil Thickness					Oil Character													
Mile Marker: 15.75																				
Source: 2011 Reassessment																				
Oil Zone ID	**Feature**	**Pooled Oil**	**Cover**	**Coat**	**Stain**	**Film**	**Fresh Oil**	**Mousse**	**Tarballs**	**Patties**	**Tar**	**Surface Oil Residue**	**Asphalt Pavement**	**No Oil**	**Debris**	**Trunks and Stems**	**Oil Distribution**	**Habitat**		**Comments**	**START**
Date	**Time**																	**Latitude**	**Longitude**		**MDEQ** / **Enbridge Team Lead**
1	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	T	Rip Rap		oil stain on stone rip rap at base of slope assed from lefr bank with field glasses	Graan, Tom Keiper, Bill
5/12/2011	14:06																	42.31337	-85.18558		Neumeier, Laura
2	Shoreline	☐	☑	☑	☑	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑		Wetland-swamp (forested)		heavy sheen noted on river surface along shore line	Graan, Tom Keiper, Bill
5/12/2011	16:02																	42.31151	-85.18501		Neumeier, Laura

2011 Reassessment

Bank: LDB		Oil Thickness					Oil Character										Oil Distribution	Habitat		Comments	START
Mile Marker: 15.75																					
Source: 2011 Reassessment																					
Oil Zone ID	Feature	Pooled Oil	Cover	Coat	Stain	Film	Fresh Oil	Mousse	Tarballs	Patties	Tar	Surface Oil Residue	Asphalt Pavement	No Oil	Debris	Trunks and Stems					MDEQ
Date	Time																	Latitude	Longitude		Enbridge Team Lead
1	Shoreline	☐	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑	T	Man-Made Structure		culverts under Dickman Ave	Graan, Tom
																					Keiper, Bill
5/12/2011	11:52																	42.31202	-85.18552		Neumeier, Laura
2	Shoreline	☐	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☑	T	Low Vegetated Bank			Graan, Tom
																					Keiper, Bill
5/12/2011	12:25																	42.31264	-85.18561		Neumeier, Laura
3	Shoreline	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐		Rip Rap		oil on rip rap shoreline assessed from op bank with fieldglasses	Graan, Tom
																					Keiper, Bill
5/12/2011	13:24																	42.31269	-85.18554		Neumeier, Laura
4	Shoreline	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☑	S	Low Vegetated Bank		film on river surface at shoreline	Graan, Tom
																					Keiper, Bill
5/12/2011	15:20																	42.31158	-85.18565		Neumeier, Laura

Photo Logs

Field Photographs MP 15.50 – MP 15.75

LDB Zone ID 1, Photo 001

LDB Zone ID 1, Photo 002

Field Photographs MP 15.50 – MP 15.75

LDB Zone ID 1, Photo 003

LDB Zone ID 1, Photo 004

Field Photographs MP 15.50 – MP 15.75

LDB Zone ID 1, Photo 005

LDB Zone ID 1, Photo 006

Field Photographs MP 15.50 – MP 15.75

LDB Zone ID 2, Photo 001

LDB Zone ID 2, Photo 002

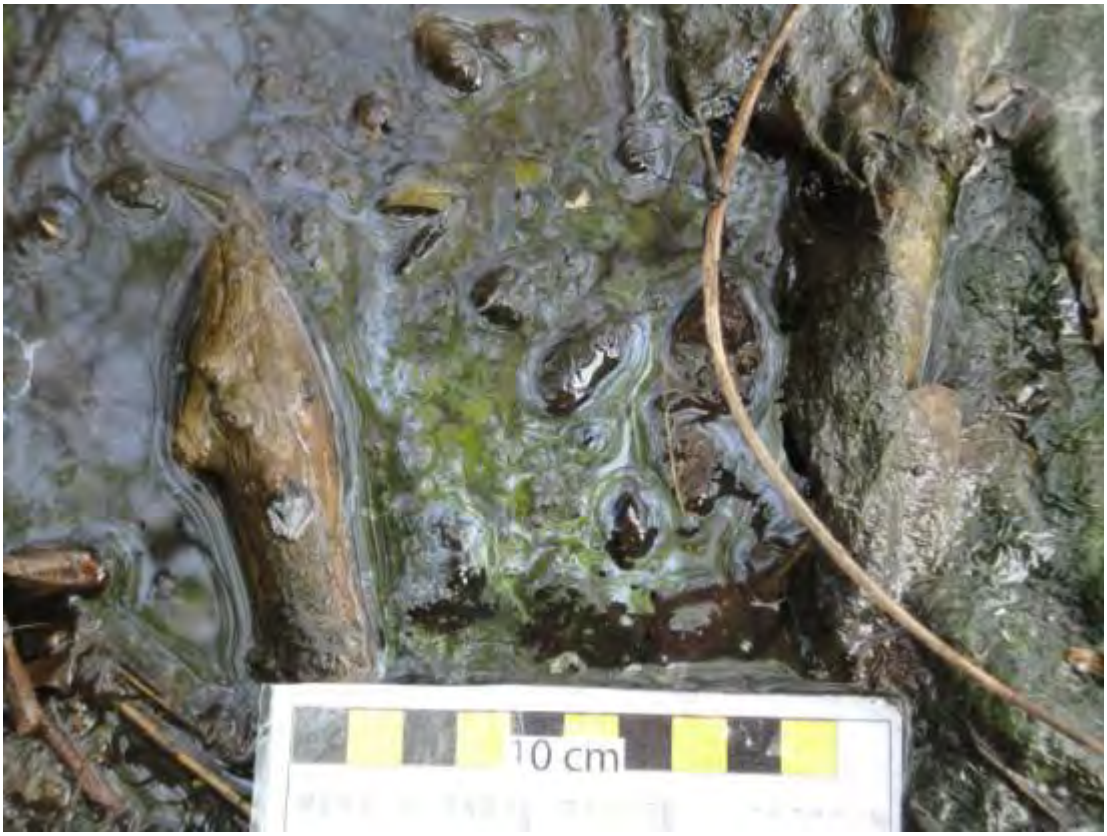
Field Photographs MP 15.50 – MP 15.75

LDB Zone ID 2, Photo 003

LDB Zone ID 3, Photo 001

Field Photographs MP 15.50 – MP 15.75

LDB Zone ID 4, Photo 001



LDB Zone ID 4, Photo 002

Field Photographs MP 15.50 – MP 15.75

LDB Zone ID 4, Photo 003

RDB Zone ID 1, Photo 001

Field Photographs MP 15.50 – MP 15.75

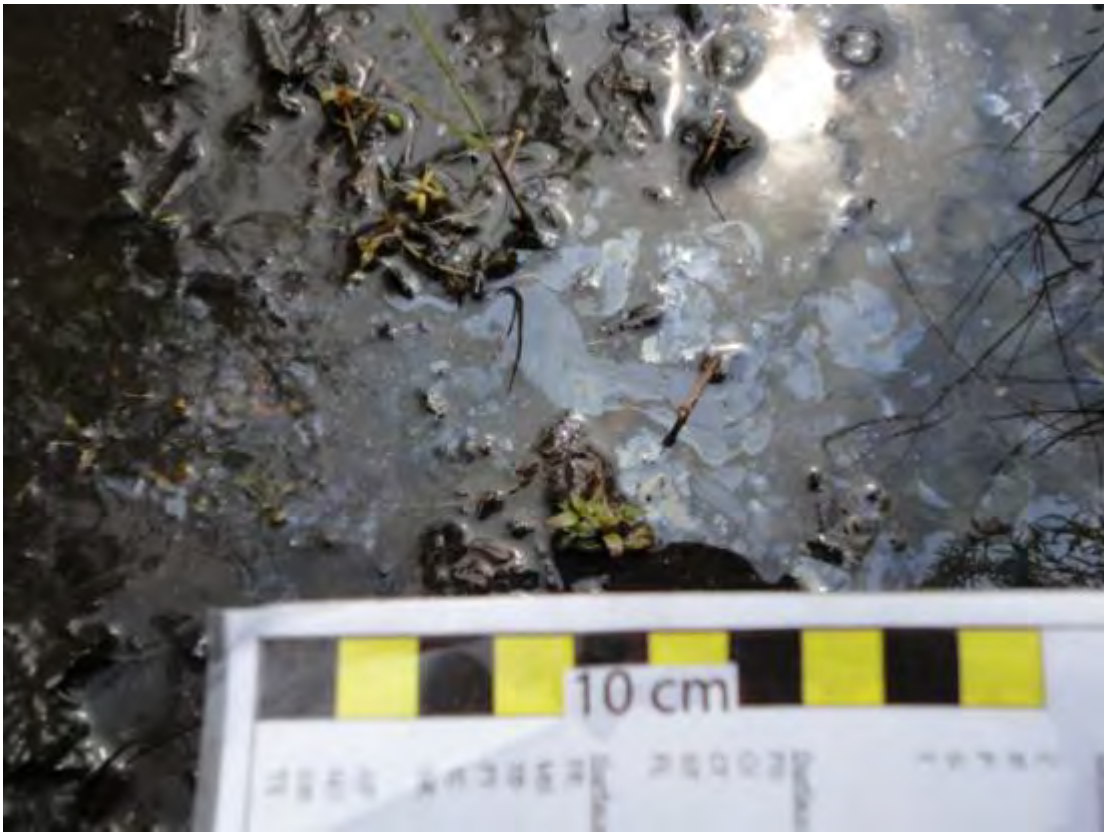
RDB Zone ID 2, Photo 001

RDB Zone ID 2, Photo 002

Field Photographs MP 15.50 – MP 15.75

RDB Zone ID 2, Photo 003

RDB Zone ID 2, Photo 004



SORT Data Sign off Documentation

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 15.50 to MP 15.75, Unique ID _____, Bank LDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan START — 5/12/11 Date

THOMAS P. GRAAN Printed Name

William Kreiper MDEQ — 5/12/11 Date

Printed Name

Laura Neumeier Enbridge — 5/12/2011 Date

Laura Neumeier Printed Name

- Poling points collected by YUMA - elected not to fully delineate heavy sheen and globules due to a lack of containment boom.
- Sort poly lines created along shoreline and rip rap down river of Dickman Road culverts.
- Sort poly line created along shoreline up river of Dickman Road culverts.

Enbridge Line 6B MP 608 Pipeline Release

Shoreline and Overbank Reassessment Technique (SORT)

and Submerged Oil Task Force (SOTF)

Strike Team

SIGN-OFF SHEET

Segment ID: From MP 15.50 to MP 15.75, Unique ID _____, Bank RDB and/or Island ____

Segment Length: 0.25 mile

The following signatures represent agreement between START, MDEQ, and Enbridge personnel that the above referenced reassessment location has been adequately reassessed and areas requiring future consideration have been located and documented by the SORT and SOTF Strike team.

Thomas P. Graan _____ START 5/12/11 Date

THOMAS P. GRAAN _____ Printed Name

William Keiper _____ MDEQ 5-12-11 Date

_____ Printed Name

_____ Enbridge 5/12/2011 Date

Laura Neumeier _____ Printed Name

- Poling points collected by YUMA - elected not to fully delineate moderate ~~heavy~~ sheen and globules due to a lack of containment boom TG WK
- Sort polylines created along shoreline and riprap down river of Dickman Road culverts.
- Sort polyline created along shoreline up river of Dickman Road culverts.

Enbridge Line 6B MP 608
Marshall, MI Pipeline Release

Summary of Findings
Submerged Oil Reassessment Report
MP 0.0 through MP 15.75

Prepared for United States Environmental Protection Agency

Enbridge Energy, Limited Partnership

Submitted: May 20, 2011

Table of Contents

1.0 Introduction and Overview....3

1.1 Poling Objectives....4

1.2 Factors that Influence Submerged Oil Presence....4

1.3 Desktop Analysis....6

1.4 Poling Description and Chronology....6

1.4.1 Poling Description....6

1.4.2 Chronology....7

2.0 Submerged Oil Poling Results and Discussion....8

2.1 Approach....8

2.2 Talmadge Creek (MP 0.0 to 2.0)....9

2.2.1 Source (MP 0.0) to Division Road (MP 0.5)....9

2.2.2 Division Road (MP 0.5) to I- 69 (MP 1.1)....10

2.2.3 I-69 (MP 1.1) to 15 ½ Mile Road (MP 1.3)....11

2.2.4 15 ½ Mile Road (MP 1.3) to Confluence (MP 2.0)....11

2.3 Talmadge Creek Confluence with Kalamazoo River (MP 2.0) to Ceresco Dam (MP 5.75)....12

2.3.1 Geomorphology, Longitudinal Channel Profile, and Soft Sediment....12

2.3.2 Submerged Oil Poling Results....12

2.3.3 Discussion....13

2.4 Ceresco Dam (MP 5.75) to Kalamazoo River Dam (MP 15.75)....14

2.4.1 Geomorphology, Longitudinal Channel Profile, and Soft Sediment....14

2.4.2 Submerged Oil Poling Results....15

2.4.3 Discussion....16

3.0 Summary....18

ATTACHMENTS

Attachment 1	**Submerged Oil Observation Chart and Master Poling Table 1**
Attachment 2	**Delineation Table 1**
Attachment 3	**Figure 1 - Talmadge Creek**
	Figure 2 - Poling Assessment Results Confluence to Ceresco Dam
	Figure 3 - Poling Assessment Results Ceresco Dam to Kalamazoo Dam
Attachment 4	**Figure 1 - Submerged Oil Delineation Areas**

1.0 Introduction and Overview

The US Environmental Protection Agency initiated an Emergency Response Action to find and remove crude oil from the Kalamazoo River System following a crude oil release near Marshall, Michigan on July 26, 2010. A component of the work included characterizing areas of submerged oil and the degree of submerged oil contamination. An efficient process was required to support a rapid clean-up response. Fluvial geomorphic interpretations using desktop tools provided a means for identifying priority areas within the river system based on the potential for submerged oil presence. Poling methods were then used to characterize submerged oil in these areas.

Poling involves disturbance of the river bed sediments with a disk that is positioned at the end of a pole. Oil or sheen, if any, that buoys to the water surface following the sediment disturbance was categorized based on the observed oil at the water surface following agitation. This poling data was used in 2010 to support or revise the delineation and classification of priority areas that were initially defined using geomorphic interpretation and desktop tools. Poling was used to characterize the submerged oil condition in areas other than priority areas in 2010 and these methods were also used to evaluate the sediment condition following submerged oil recovery work. In 2011, poling methods were used to reassess areas where moderate or heavy submerged oil was noted in 2010 or that may be subject to ongoing deposition from upstream source areas. Additional reassessment was conducted at transects in both low- and high-sinuosity areas of the river, and in low-gradient areas of the river upstream of dams.

This report describes the following:

- The poling work objectives.
- The factors that most influence the presence and amount of submerged oil in the river system.
- The desktop analysis, which was used to support geomorphic interpretation for delineating priority areas in the river system in 2010 based on potential for presence of submerged oil.
- The chronology or sequence that poling data was obtained to satisfy specific objectives.
- The 2011 poling data results, including the characterization of current sediment conditions and an analysis of observed submerged oil over time.

1.1 Poling Objectives

Poling was used as a method to efficiently detect, observe, and document the presence of submerged oil across an extensive river system. The objectives for 2011 reassessment poling work are as follows:

- Assess the distribution and degree of submerged oil in areas where moderate or heavy submerged oil was detected in 2010 and 2011 focus areas to assess temporal change.
- Characterize submerged oil at selected transects in low- and high-sinuosity sections of the river.
- Characterize areas of low channel gradient upstream of Ceresco Dam and Kalamazoo River Dam.
- Rank areas for remedial action.
- Characterize bed material (e.g. gravel, sand), particularly in areas without significant soft sediment (e.g. silt).
- Assess effectiveness of oil recovery measures.

1.2 Factors that Influence Submerged Oil Presence

The presence of submerged oil in the river system is influenced by the proximity to the source release and those factors that influence transport and residence in the river system. The crude oil was released on July 26, 2010 near Marshall, Michigan about 2 miles upstream from the mouth of Talmadge Creek, which is a tributary of the Kalamazoo River. Factors, other than source location, that potentially most influence the presence of submerged crude oil are hydrology and fluvial geomorphology, including sediment characteristics and channel longitudinal profile. Following are descriptions of the potential factors that influence the presence of submerged oil in the river system:

Hydrology: Hydrology is pertinent to the interpretation of results because the Kalamazoo River basin was subject to a significant storm event prior to the oil release. The elevated flow rates and corresponding increase in river stage expedited the transport of the spilled oil down the river system. The total precipitation reported over a four day period at Ceresco just prior to the oil release was 5.7 inches. The Kalamazoo River discharge at Marshall increased from a mean daily flow of 450 cubic feet per second (cfs) (4.73 feet stage) on July 22 to a peak discharge of 1,720

cfs (7.36 feet stage) on July 26, the day of the oil release. The return frequency for the peak discharge was about 25 years.

Above normal flow rates in the Kalamazoo River during the late winter and spring of 2011 were associated with snowmelt and heavy precipitation events. The median daily flow at the Marshall USGS Gage Station for the months of April and May, based on statistical analysis of 42 years of data, is about 500 cfs. The recorded flow at the Marshall USGS Station for April and May 2011 was typically above median daily flow rates, with a maximum flow near 1,000 cfs. The influence of these elevated flow rates on the submerged oil condition (potential for transport and redeposition) was evaluated from 2011 poling data.

Fluvial Geomorphology: Fluvial geomorphology is a discipline that includes the study of river formation, evolution, and function (energy distribution). Geomorphic analysis considers those physical parameters including surface features, erosion, and deposition that influence the river characteristics and associated distribution of contaminants. Fluvial geomorphic methods can be used to support sampling design, interpretations to characterize areas based on potential for contaminant distribution, and remedial action decisions. Fluvial geomorphic parameters include sediment characteristics and channel longitudinal profile, which are described below.

Sediment Characteristics: Sediment characteristics, particularly the particle size distribution, provide insight to the potential presence of submerged oil. Fine-grained sediment particles (e.g. silt) tend to occur in lower flow or low energy portions of the river system. Fine-grained particles are less common in high energy flow systems because they are typically subject to erosion and transport as compared to coarse-grained sediment (e.g. sand). Crude oil, an organic carbon, has more of an affinity to other organic carbon compounds than to non-organic mineral components of sediment. The organic matter complex of fine-grained sediment is typically considerably greater than that of coarse-grained sediment. Therefore, the potential for the presence of submerged crude oil is greater in a low flow environment that is subject to deposition of fine-grained sediment that has an affinity for oil.

Channel Longitudinal Profile: There typically is a direct relationship between channel gradient and flow velocity (i.e. increased slope correlates to increased flow velocity). Likewise, there is an inverse relationship between flow velocity and deposition. An increase in sediment deposition is associated with a decrease in flow velocity. Finer-grained sediment deposits and crude oil are more probable in channel sections with lower gradients.

1.3 Desktop Analysis

A desktop analysis was performed as the initial step to define those areas with potential for submerged oil. Aerial photographs of the source area (including Talmadge Creek) and Kalamazoo River system were used, along with geomorphic interpretation, to select priority areas during the initial 2010 emergency response. The priority areas that were identified in the Kalamazoo River were typical depositional areas. Depositional areas are low flow (low energy) areas that often accumulate soft sediment organic deposits which would adsorb and retain submerged oil. The fluvial geomorphic or anthropogenic features that are representative of low energy, depositional areas include dams, cut-off channels, oxbows, widening channels, backwaters, point bars, deltas, and sometimes bridges. Major priority areas with potential for significant submerged oil that were identified in the 2010 desk top analysis included Talmadge Creek, upstream of Ceresco Dam, South and North Mill Ponds, and Morrow Lake Delta. Talmadge Creek was identified as a priority area due to its proximity to the source release area (not characteristically a depositional area due to a steep channel gradient). The impounded area upriver from Ceresco Dam (near Milepost 5.75) was identified as a priority area due to the depositional environment associated with the dam, caused by lower water velocities and backwater influence from the dam. South (near Milepost 15.2) and North (near Milepost 15.5) Mill Ponds were identified as priority areas due to the depositional environment associated with the Kalamazoo River Dam located immediately downstream. Morrow Lake Delta (Milepost 36.5 to 37.5) was identified as a depositional area due to lower flow associated with widening of the river channel caused by the downstream Morrow Lake Dam.

1.4 Poling Description and Chronology

1.4.1 Poling Description

Softer fine grained sediment typically includes higher concentrations of organic carbon which potentially can adsorb and retain submerged oil. Poling is a qualitative method used to assess soft sediment thickness and distribution, and the degree of observed submerged oil. A portable Global Positioning System (GPS) instrument was used to document the coordinates for each poling location. Prior to poling, the depth from the water surface to sediment surface was determined by gradually lowering a 6-inch diameter disk that was attached to the end of a pole graduated with 0.1 foot intervals. A pole without a disk, (1 3/4 -inch diameter) with maximum graduations of 0.1 foot, was pushed vertically through the sediment until advancement was restricted, to estimate soft sediment thickness and the channel bed type (e.g. gravel). Poling was typically conducted within pre-determined focus areas, using geomorphic characteristics to support the selection of

individual poling locations. The GPS coordinates, water depth, advancement depth, soft sediment thickness and/or bed characteristics were documented for each poling location. In addition, a pole with a 6-inch diameter disk attached at the base was used to agitate the sediment. The degree of submerged oil that was observed at the water surface following sediment agitation was described as heavy, moderate, light, or none. The submerged oil observation flow chart is included in Attachment 1. The 2010 priority areas discussed in Section 1.4 were verified and delineated using poling data. During the Spring 2011 reassessment, poling was used to delineate submerged oil in focus areas, at transects, at bridge or launch access points, and in low gradient areas of the river.

1.4.2 Chronology

The initial poling work that was conducted prior to any clean-up or oil recovery was defined as pre-recovery. As mentioned previously, initially priority areas were defined based on desktop analysis and then further characterized and delineated using poling data. Poling work that was conducted following oil recovery to characterize sediment condition was defined as post-recovery. Most of the pre-recovery poling was conducted from August to October 9, 2010. Post-recovery poling was conducted after October 9 to October 31, 2010. Poling methods were subsequently used to support operations and maintenance work (O & M) associated with ongoing oil detection and recovery. The poling work that was conducted prior to and after Fall 2010 O&M work was defined as pre- and post- O & M recovery, respectively. This O & M poling was conducted from November 1 to December 4, 2010. Poling that was conduced in 2011 to assess areas that were evaluated previously in 2010 or new areas in 2011, was defined as reassessment poling. Reassessment poling was typically done in areas confirmed in 2010 to have 'heavy' and /or 'moderate' submerged oil (hereafter described as 'heavy/moderate') or where submerged oil would be expected to accumulate based on geomorphology interpretation. In addition, poling in 2011 was conducted along transects that were established perpendicular to channel orientation in low- and high-sinuosity sections of the river, near bridges and other public access areas, and in low gradient areas upstream of dams. This reassessment poling was conducted in April and May 2011.

2.0 Submerged Oil Poling Results and Discussion

2.1 Approach

Poling data were used to delineate areas in the river that were affected by the crude oil release on July 26, 2010. Poling data was also used to assess the submerged oil condition over time (temporal change), including before and after implementation of recovery measures. Poling data was obtained in selected areas from late August through early December 2010 and mid-April through May 2011. The results of the Spring 2011 reassessment poling data are described below in terms of geomorphic characteristics that influence the residence of submerged oil in the river and also the observed change in the submerged oil condition (spatial and degree) over time. Talmadge Creek (near source of release) and Kalamazoo River segments were separated based on geomorphic characteristics. These segments were defined so that submerged oil presence can be related to specific geomorphic characteristics. The segments include the following:

- Talmadge Creek (Mile Post [MP] 0.0 to 2.0)
- Talmadge Creek Confluence with Kalamazoo River (MP 2.0) to Ceresco Dam (MP 5.75)
- Ceresco Dam (MP 5.75) to Kalamazoo River Dam (MP 15.75)
- Kalamazoo River Dam (MP 15.75) to Custer Drive Bridge (MP 21.3)
- Custer Drive Bridge (MP 21.3) to Railroad Bridge (MP 28.75)
- Railroad Bridge (MP 28.75) to 35th Street Bridge (MP 36.5)
- Morrow Lake Delta (35th Street Bridge (MP 36.5) to Morrow Lake (MP 37.75))
- Morrow Lake (MP 37.75 to Morrow Lake Dam (MP 40.0))

This report provides poling data results and discussion for the first three segments listed above (Source to Kalamazoo River Dam (MP 15.75)). The poling data results and discussion for the remaining segments to Morrow Lake Dam will be provided following completion of reassessment work in 2011.

The focus of the report is to characterize submerged oil conditions in 2011. All of the poling data results for 2011 from the Source area to Kalamazoo River Dam, are provided in Master Poling Table 1 of Attachment 1. Poling data results for delineated focus areas with 'heavy/moderate' submerged oil are developed and discussed for each of the segments listed previously. To assess

trends in 'heavy/moderate' submerged oil, the 2010 'heavy/moderate' areas are compared to 2011 submerged oil results.

2.2 Talmadge Creek (MP 0.0 to 2.0)

The crude oil release on July 26, 2010 occurred several hundred feet from Talmadge Creek, about 2 miles upstream from the confluence of Talmadge Creek and the Kalamazoo River. Talmadge Creek is a small, meandering creek that discharges into the Kalamazoo River. Spilled crude oil was transported down Talmadge Creek due to the tributary's proximity to the crude oil release location (pipeline fracture). Talmadge Creek is characterized by a relatively steep channel gradient compared to the rest of the impact area (channel gradient up to 26.6 feet per mile). Water surface elevation drops approximately 38 feet between the source area and the confluence with the Kalamazoo River near MP 2.0. Talmadge Creek passes underneath I-69 through a series of constricting culverts that cause upstream ponding.

Talmadge Creek and adjacent overbank areas have been subjected to significant disturbance that is associated with remedial actions to remove crude oil from the impacted watershed. Talmadge Creek segments were defined so that submerged oil presence could be related to the spatial proximity of the crude oil release and to specific geomorphic characteristics within each segment. The segments include the following:

- Source (MP 0.0) to Division Road (MP 0.5)
- Division Road (MP 0.5) to I-69 (MP 1.1)
- I-69 (MP 1.1) to 15 ½ Mile Road (MP 1.3)
- 15 ½ Mile Road (MP 1.3) to confluence with Kalamazoo River (MP 2.0)

Poling data for locations in Talmadge Creek in 2011 with observed 'heavy/moderate' submerged oil are provided in the Delineation Area Table 1 of Attachment 2. Figure 1 of Attachment 3 shows poling data results in 2011 from the source release near Talmadge Creek (MP 0.0) to the confluence with Kalamazoo River (MP 2.0).

2.2.1 Source (MP 0.0) to Division Road (MP 0.5)

Geomorphology and Soft Sediment

This segment of Talmadge Creek is closest to the crude oil release location. The dominating factors for this stream segment are the spatial proximity to the crude oil release and the

disturbance related to remedial actions to remove crude oil. Three culverts at MP 0.04, MP 0.27, and MP 0.5 influence flow and deposition. The segment is a meandering stream with sediment particle size that generally increases from fine-grained to coarse-grained (e.g. silt to sand) as a function of distance downstream. Soft sediment (e.g. silt) is most common in the channel from near the source area to the culvert at MP 0.04. Downstream, sand and gravel bed deposits are prevalent with occasional deposits of soft sediment.

Submerged Oil Poling Results

This Talmadge Creek segment includes 25 'heavy/moderate' submerged oil delineation areas that were observed in 2011. The impacted areas are due to the close proximity to the crude oil release location. This characterization is similar to that of the 2010 poling results. The presence of 'heavy/moderate' submerged oil in this Talmadge Creek segment is not significantly influenced by geomorphic surface, sediment type, or channel gradient. The most influential factor is the proximity to the crude oil release. That is, 'heavy/moderate' submerged oil delineation areas in 2011 occur in all sediment types (fine- and coarse-grained) and all channel slopes (flat and steep) due to the impact from a significant crude oil release that was transported down Talmadge Creek through gravitational force and storm runoff in late July 2010.

2.2.2 Division Road (MP 0.5) to I- 69 (MP 1.1)

Geomorphology and Soft Sediment

This Talmadge Creek segment is relatively straight with occasional broad meanders that do not have significant deposition areas (e.g. point bars). Two culverts that influence flow and deposition are located at MP 0.74 and I-69 (MP1.1). The channel bed downstream from the culvert at Division Road is predominantly sand and gravel. The channel bed transitions to soft sediment upstream from a driveway culvert near MP 0.74 due to flow velocity reduction and ponding from flow restriction (culvert). The channel bed below the culvert is predominantly sand and gravel with pockets of soft sediment composed of silt or layers of sand and silt.

Submerged Oil Poling Results

This Talmadge Creek segment includes 19 'heavy/moderate' submerged oil delineation areas that were observed in 2011. The impacted areas are due to the close proximity to the crude oil release location. Areas with 'heavy/moderate' submerged oil were not observed in 2011 from MP 0.5 to MP 0.68. Downstream from MP 0.68 'heavy/moderate' submerged oil occurs and is often

associated with soft sediment deposits. Downstream from the culvert at MP 0.78 'heavy/moderate' submerged oil is typically associated with the pockets of soft sediment deposits. The soft sediment deposit between MP 0.92 and MP 0.99 includes the largest area of 'heavy/moderate' submerged oil on this segment of Talmadge Creek.

2.2.3 I-69 (MP 1.1) to 15 ½ Mile Road (MP 1.3)

Geomorphology and Soft Sediment

This segment of Talmadge Creek has constricted flow from culverts located upstream (I-69) and downstream (15 ½ Mile Road) that promote deposition. The segment is characterized by soft sediment deposits up to about 2 feet thick.

Submerged Oil Poling Results

This Talmadge Creek segment includes 5 'heavy/moderate' submerged oil delineation areas that were observed in 2011. The impacted areas are due to the close proximity to the crude oil release location. The delineated areas extend through the segment and are associated with soft sediment deposits.

2.2.4 15 ½ Mile Road (MP 1.3) to Confluence (MP 2.0)

Geomorphology and Soft Sediment

This segment of Talmadge Creek is characterized by relatively high sinuosity meanders with many point bars (inside meander bend deposits). The channel bed is predominantly sand and gravel and/or cobbles. A relatively high flow velocity results in limited soft sediment deposition and a sand and gravel bed. The finer-grained deposits of silt and/or sand are associated with the point bar deposits. The thalweg (deepest portion of channel bed) is well defined and composed of sand and gravel. Three culverts at MP 1.59, MP 1.78, and MP 2.0 influence flow and deposition. A soft sediment deposit occurs upstream from the bridge at MP 1.84, likely due to deposition associated with restricted flow from the bridge.

Submerged Oil Poling Results

This Talmadge Creek segment includes 32 'heavy/moderate' submerged oil delineation areas that were observed in 2011. The areas are small in size. The impacted areas are due to the close proximity to the crude oil release location. The areal distribution of soft sediment deposits and corresponding areas with 'heavy/moderate' submerged oil are both limited in this segment. In

2011, areas with 'heavy/moderate' submerged oil are often associated with sand point bar deposits located on the inside bend of meanders. The segment from MP 1.59 to 1.67 was mapped for geomorphic characteristics but poling was not allowed due to landowner access restriction. 'Heavy/moderate' submerged oil is likely associated with point bar deposits, as was observed elsewhere in this segment.

2.3 Talmadge Creek Confluence with Kalamazoo River (MP 2.0) to Ceresco Dam (MP 5.75)

2.3.1 Geomorphology, Longitudinal Channel Profile, and Soft Sediment

The Kalamazoo River from the confluence with Talmadge Creek to the Ceresco Dam is subject to variation in geomorphic character from both natural and anthropogenic influences. The Kalamazoo River drops five feet in elevation over this 3.75 mile channel section. The channel gradient is highest in the upper portion of the reach from MP 2.0 to MP 3.5.The river meanders from the confluence to MP 2.75 after which the channel is relatively straight with islands dispersed within the channel until MP 4.9. The longitudinal profile shows the channel gradient flattens due to Ceresco Dam at MP 4.2, then channel widens and the hydraulic gradient is relatively flat due to the backwater influence from Ceresco Dam. The widest portion of the river in this reach occurs immediately upstream from Ceresco Dam. Some soft sediment deposition occurs in this reach downstream of point bars or islands due to reduced flow velocities. However, the primary in-channel deposition area occurs between MP 4.2 and Ceresco Dam.

2.3.2 Submerged Oil Poling Results

The 2011 poling data for the focus areas in this segment with 'heavy/moderate' submerged oil are provided in Delineation Area Table 1 of Attachment 2. Figure 2 of Attachment 3 shows poling data results in 2011 from Talmadge Creek Confluence with Kalamazoo River (MP 2.0) to Ceresco Dam (MP 5.75). Figure 1 of Attachment 4 provides comparison of 2010 priority areas, 2010 O&M delineations, 2010/2011 winter work areas, and 2011 ’heavy/moderate’ delineation areas.

Spring 2011 submerged oil reassessment data for this river segment shows:

- 'Heavy/moderate' submerged oil areas decreased from 23 in 2010 to 11 in 2011. Nine of the 11 focus areas with 'heavy/moderate' submerged oil are downstream of MP 4.2 and are associated with low gradient, depositional areas. Many of these areas appear to be associated with redeposition of submerged oil from upstream.

- Delineated areas that were classified as 'heavy/moderate' submerged oil in 2010 or 2011 are typically associated with soft sediment.
- Focus areas with 'heavy/moderate' submerged oil in 2011 had ‘heavy/moderate’ submerged oil in 2010.
- New focus areas with 'heavy/moderate' submerged oil were not found in 2011, but some focus areas downstream of MP 4.2 increased in size.
- 'Heavy/moderate' submerged oil was found in only 1 of 22 poling transects.
- Areas that were classified as 'light/none' in 2010 typically did not change in 2011.

2.3.3 Discussion

Observed submerged oil in sediment from the confluence of Talmadge Creek with the Kalamazoo River to Ceresco Dam is often related to hydrologic or geomorphic factors including flow velocity, channel gradient (slope), and bed type (soft sediment). Following are descriptions of those factors for specific river segments that relate to observed submerged oil condition. The polarimetric imaging (PI) and fluorescence lidar spectroscopy (FLS) data points are included within the appropriate river segment.

Confluence to MP 4.2

The channel gradient is sufficient to support flow velocities that are not favorable for significant accumulation of soft sediment or submerged oil unless the velocity is restricted by anthropogenic or natural obstructions (e.g. MP 2.55N Island). Most areas with observed 'heavy/moderate' submerged oil in 2010 have 'light/none' submerged oil in 2011. Presumably, submerged oil that was deposited in these areas in 2010 was remobilized due to elevated flow velocities, particularly with spring flow in 2011.

The PI points are present at 3.25 North and 4.15 South (Island E). The FLS point is located at 2.65 South. The points show surface sheen but do not distinguish the degree of submerged oil. The PI and FLS points have been reassessed during the poling activities at the focus areas listed above.

MP 4.2 to MP 5.5

Channel gradient is relatively low and areas with 'heavy/moderate' submerged oil in 2011 generally occur in localized areas with velocity reduction associated with inside meanders (e.g.

4.15 South), islands (e.g. 4.29 T), or tributary deltas (e.g. 4.3 South) Extensive areas of moderate to heavy submerged oil occur across much of the channel (not including the thalweg) from MP 5.0 to MP 5.5. The main factor of deposition is the extremely low channel gradient. This segment of river has likely received redeposition of submerged oil from upstream, as it is the first low-gradient area downstream of Talmadge Creek. A containment boom, across the channel from the left bank near 5.25 to the right bank near 5.5, likely influences flow velocity and increases deposition both upstream and downstream of the boom.

One PI point is present at 4.3 South. The PI point has been reassessed during the poling activities at 4.3 South.

MP 5.5 to Ceresco Dam

In the Ceresco Dam area, deposition is influenced by the old railroad crossing that constricts the channel, by the current positioning of containment booms, and by the location of dredging in 2010. In 2010, heavy submerged oil was located on the upstream and downstream sides of the crossing. This oil was largely removed by dredging in fall 2010, but it appears that redeposition of submerged oil has occurred especially near the dam (in both 5.75 South and 5.75 Northwest). The area of submerged oil on the downstream right bank side of the railroad crossing is an area where no recovery was performed last year, so it is likely residual. Redeposition appears to be the likely reason for moderate to heavy submerged oil in 5.55 North upstream of the railroad crossing. Current containment directs surface flow to this area, and moderate to heavy submerged oil is largely within the area of current containment. No redeposition has been noted in 5.63 South, which was dredged in 2010. This is likely due to the fact that the thalweg is on this side of the channel and that upstream containment directs flow to the opposite (right) bank. These two factors have likely combined to restrict redeposition to the right bank immediately upstream of the railroad crossing.

2.4 Ceresco Dam (MP 5.75) to Kalamazoo River Dam (MP 15.75)

2.4.1 Geomorphology, Longitudinal Channel Profile, and Soft Sediment

At Ceresco Dam, water surface elevation drops approximately eleven feet. Between the dam (MP 5.75) and MP 14.2, channel gradient is fairly consistent and generally ranges between about 2.5 feet per mile and 5 feet per mile The Kalamazoo River channel from Ceresco Dam to MP 7.8 is relatively narrow with sharp meanders and frequent cutoff channels. The river channel from MP 7.8 to MP 9.6 includes meanders with less amplitude and fewer cutoff channels. A well defined

cutoff channel (future oxbow) occurs at MP 12.5. The South and North Mill Ponds are backwater areas formed due to the dam at MP 15.65. Ten bridge structures, which constrict flow and can promote deposition, intersect the channel from MP 7.15 to MP 15.6. The channel gradient increases downstream from Ceresco Dam and then becomes flat at MP 14.2 upstream from the Kalamazoo River Dam. Soft sediment deposits from Ceresco Dam to MP 7.8 occur predominantly along inside meanders and in cutoff channels, where the flow velocity is typically lower than that within the channel thalweg. The deposition of soft sediment from MP 9.6 to MP 14.2 is predominantly in backwater areas, cutoff channels, oxbows, and other areas of reduced velocity that counteract the relatively high channel gradient in this area. Downstream of MP 14.2, channel gradient is the greatest factor influencing deposition location and rate. The largest depositional area in this reach is at the South and North Mill Ponds, between MP15.0 and MP15.5.

2.4.2 Submerged Oil Poling Results

The 2011 poling data for the focus areas in this segment with 'heavy/moderate' submerged oil are provided in Delineation Area Table 1 of Attachment 2. Figure 3 of Attachment 3 shows poling data results in 2011 from Ceresco Dam (MP 5.75) to Kalamazoo River Dam (MP 15.75). Figure 1 of Attachment 4 provides comparison of 2010 priority areas, 2010 O&M delineations, 2010/2011 winter work areas, and 2011 'heavy/moderate' delineation areas.

Spring 2011 submerged oil reassessment data for this river segment shows:

- 'Heavy/moderate' submerged oil areas decreased from 42 in 2010 to 36 in 2011.
- Of the 18 focus areas that had 'heavy/moderate' submerged oil in 2010, but 'light/none' in 2011, 17 of them are upstream of MP 14.2.
- Areas of 'heavy/moderate' submerged oil between MP 14.2 and MP 15.0 increased in size since 2010.
- When deposition occurs in higher gradient areas (i.e. upstream of MP 14.2) the deposition is associated with geomorphic features where velocity is decreased significantly, such as oxbows, cut off channels, backwaters, and downstream of islands.
- Deposition downstream of MP 14.2 is influenced largely by the low channel gradient.
- Delineated areas that were classified as 'heavy/moderate' submerged oil in 2010 or 2011 are often associated with soft sediment deposits.
- 'Heavy/moderate' submerged oil was found at 3 of 102 poling transects.

- Strike Teams assisted with poling in areas that required waders or jon boats without motors to access to obtain poling information such as ponds or cutoff channels isolated by aqua dams. The areas completed by the Strike Teams were 5.8 South, 8.5 L1/L2, 11.75 R1, 15.6A, and 15.6B. The Strike Team poling information is included in Attachment 3, Figures 2 and 3.

Some additional locations with 'heavy/moderate' submerged oil were observed in 2011. These new locations were typically relatively small areas and associated with deposition from low flow velocity areas associated with islands or inlets and may represent submerged oil that is being re-deposited as it migrates downstream over time.

2.4.3 Discussion

The channel gradient (slope) between Ceresco and Kalamazoo River Dams is relatively steep (high) from Ceresco Dam to MP 14.2. The steep channel gradient and associated flow velocities limit sediment deposition and submerged oil areas. The observed 'heavy/moderate' submerged oil areas within this segment in 2011 occur adjacent to channel banks, in cutoff channels (e.g. secondary channels with reduced flow, e.g 10.75L2), in oxbows (e.g. MP 12.5), in backwaters (e.g. 10.5L2), and near bridge crossings that restrict flow (MP 13.5 to MP 14.2).

The polarimetric imaging (PI) and fluorescence lidar spectroscopy (FLS) data points mapped in the river are located between 10.5 L2 and MP 15.6. Four PI points are present at 10.5 L2, 14.9 South, North Mill Pond, and 15.6A. Three FLS points are present at 13.5 L1, South Mill Pond, and 15.6A. Each of these points coincide with a poling focus area.

Deposition occurs downstream from MP 14.2 that diminishes the channel gradient until there is minimal slope, due to the influence from the dam.

The areas with deposition and associated 'heavy/moderate' submerged oil in 2011, downstream from MP 14.2, are:

- Focus area 14.35 North, due to flat channel gradient and location along inside meander (lower flow velocity supports deposition and submerged oil residence)
- The cutoff channel at MP 14.75.
- Parts of the South and North Mill Ponds where no recovery was performed in 2010.

- Focus area 15.6 between Dickman Road Bridge and the Kalamazoo River Dam along east and west banks (lower flow velocity supports deposition and submerged oil residence).

3.0 Summary

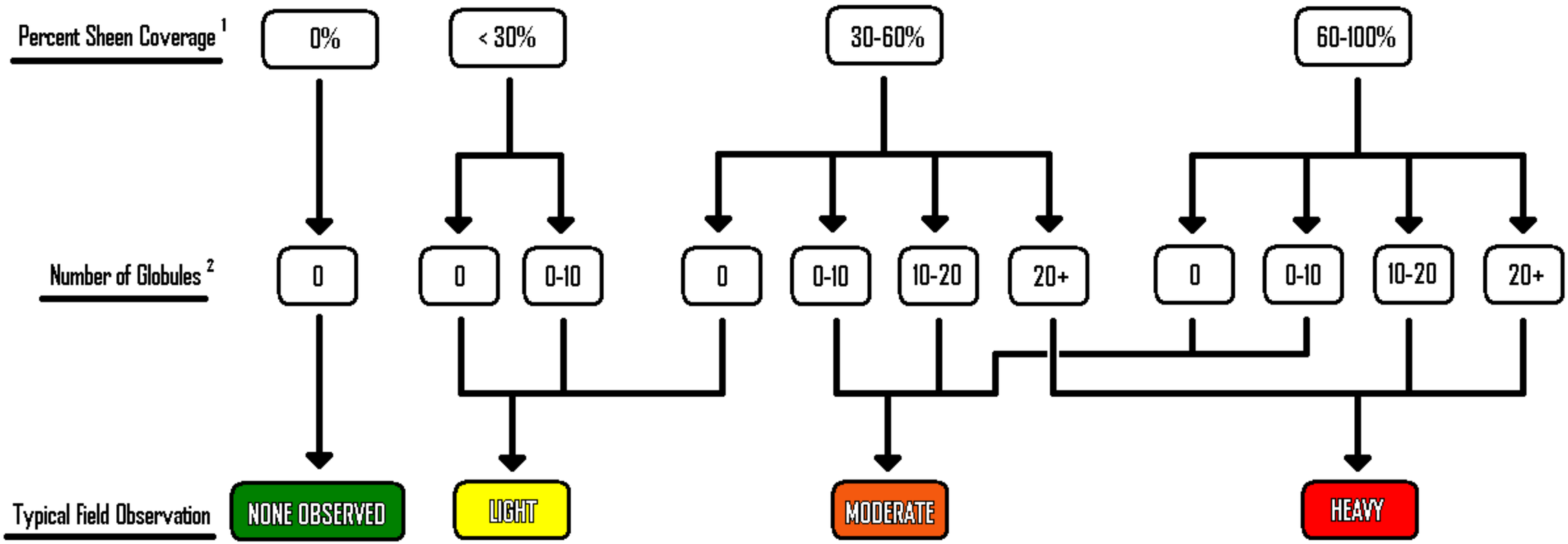
The poling results support several conclusions regarding the changes in submerged oil deposition between 2010 and 2011.

- In Talmadge Creek, proximity to the source, sediment type, and geomorphic features (i.e. meander bends, point bars) are the primary factors in determining where submerged oil is deposited. The 'heavy/moderate' oil deposits are typically associated with soft sediment deposits and/or point bars along inside meander bends.
- In the Kalamazoo River, channel gradient is a controlling factor in submerged oil deposition. Low gradient areas are the primary foci of ‘heavy/moderate’ submerged oil areas.
- Redeposition of submerged oil appears to be associated with 1) low gradient areas (MP 4.2 to Ceresco Dam and MP 14.2 to Kalamazoo River Dam), and 2) typical geomorphic depositional areas where velocity is significantly reduced (i.e. inside meanders, cut-off channels, oxbows, backwaters, etc.).
- Submerged oil is most often associated with soft sediments.
- Of the 124 poling transects only 4 had ‘heavy/moderate’ submerged oil, suggesting that the focus areas provided an accurate means of delineating submerged oil.

Attachment 1

Submerged Oil Observation Chart and Master Poling Table 1

Field Observation Flowchart



Notes:

1. Percent coverage of 1 square yard
2. Number of globules per square yard

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
MP 0.00-0.25																							
TC1-E-01	Focus	4/27/11	9:00:19 AM	12959154.74	270836.6664	912.8257	0.0622	0.107	0.1238	1.0	1.0	1.1	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-02	Focus	4/27/11	9:02:45 AM	12959153.21	270836.2576	912.8107	0.0577	0.0972	0.113	1.9	0.2	0.2	Moderate	Moderate	Common	Center	<1ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-03	Focus	4/27/11	9:04:33 AM	12959150.23	270836.67	912.8083	0.0612	0.1022	0.1191	1.1	0.3	0.4	Light	Light	None	Left	<1ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-04	Focus	4/27/11	9:07:26 AM	12959152.86	270841.7801	912.9441	0.0638	0.1005	0.119	1.2	0.7	0.7	Light	Light	None	Center	<1ft/sec		Strt Channel Edg		Silt over Sand	BOUNDAR	
TC1-E-05	Focus	4/27/11	9:10:18 AM	12959152	270848.5174	912.8306	0.0546	0.0914	0.1064	1.1	0.9	0.9	Light	Light	None	Center	<1ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-06	Focus	4/27/11	9:13:43 AM	12959148.91	270856.0013	912.7021	0.0456	0.0737	0.0866	1.1	0.1	0.7	Moderate	Moderate	Few	Right	<1ft/sec		Cut Bank		Silt over Sand		
TC1-E-07	Focus	4/27/11	9:15:33 AM	12959147.2	270853.6529	912.8094	0.0393	0.0667	0.0774	0.8	0.4	1.2	Light	Light	Few	Center	<1ft/sec		Cut Bank		Silt over Sand		
TC1-E-08	Focus	4/27/11	9:19:08 AM	12959144.86	270851.4843	912.733	0.0308	0.0466	0.0558	1.1	0.8	1.0	Moderate	Moderate	Few	Left	<1ft/sec		Point Bar		Silt over Sand	PHOTO 187	HEAVY SHEEN ON BK
TC1-E-09	Focus	4/27/11	9:22:38 AM	12959142.4	270858.9703	912.8358	0.0482	0.0711	0.0859	1.0	0.8	0.8	Light	Light	None	Right	<1ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-10	Focus	4/27/11	9:26:01 AM	12959140.49	270857.1071	912.7973	0.0527	0.0738	0.0907	1.0	0.6	0.7	Light	Light	Few	Center	<1ft/sec		Mid-Channel		Soft Sediment		
TC1-E-11	Focus	4/27/11	9:27:39 AM	12959141.24	270854.5056	912.863	0.0583	0.0808	0.0996	1.2	0.4	0.4	Moderate	Moderate	Few	Left	<1ft/sec		Point Bar		Soft Sediment		
TC1-E-12	Focus	4/27/11	9:39:57 AM	12959122.05	270862.8849	912.8071	0.0794	0.1022	0.1294	1.0	0.8	0.9	Heavy	Heavy	Many	Center	<1ft/sec		Mid-Channel		Soft Sediment		
TC1-E-13	Focus	4/27/11	9:42:00 AM	12959123.3	270864.6531	912.7433	0.0391	0.0486	0.0624	1.1	0.9	0.9	Light	Light	Few	Right	<1ft/sec		Point Bar		Soft Sediment		
TC1-E-14	Focus	4/27/11	9:44:08 AM	12959120.03	270861.4381	912.7505	0.0494	0.0626	0.0797	1.0	0.9	1.1	Heavy	Heavy	Many	Left	<1ft/sec		Cut Bank		Soft Sediment		
TC1-E-15	Focus	4/27/11	9:48:21 AM	12959119.55	270868.4177	912.7795	0.0632	0.0771	0.0997	1.0	1.2	1.3	Moderate	Moderate	Few	Right	<1ft/sec		Point Bar		Soft Sediment		
TC1-E-16	Focus	4/27/11	9:50:35 AM	12959117.72	270871.3286	912.8813	0.0609	0.0754	0.097	-99	-99	-99	None	None	None	Right	<1ft/sec		Point Bar				EDGE POINT BAR
TC1-E-17	Focus	4/27/11	9:55:06 AM	12959107.76	270887.9569	912.7876	0.0621	0.0596	0.0861	1.1	1.0	1.0	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-18	Focus	4/27/11	9:57:28 AM	12959105.05	270885.2041	912.751	0.0686	0.0665	0.0955	1.0	1.2	1.2	Moderate	Moderate	Common	Left	<1ft/sec		Strt Channel Edg		Sand & Silt		
TC1-E-19	Focus	4/27/11	10:00:25 AM	12959102.35	270892.1076	912.7828	0.0593	0.0555	0.0813	0.9	0.5	0.5	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-20	Focus	4/27/11	10:02:41 AM	12959098.99	270890.3065	912.818	0.1011	0.0972	0.1402	1.1	0.4	0.5	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-21	Focus	4/27/11	10:10:17 AM	12959080.2	270903.8343	912.5302	0.0878	0.0843	0.1217	0.8	0.3	0.3	Moderate	Moderate	Few	Right	<1ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-22	Focus	4/27/11	10:12:19 AM	12959077.89	270901.6396	912.707	0.0956	0.1046	0.1417	0.9	0.3	0.5	Moderate	Moderate	Common	Center	<1ft/sec		Strt Channel Edg		Silt over Sand	SILT OVER GRAVEL	
TC1-E-23	Focus	4/27/11	10:14:17 AM	12959075.23	270900.172	912.7503	0.0796	0.09	0.1202	0.9	0.6	1.2	Heavy	Heavy	Many	Left	<1ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-24	Focus	4/27/11	10:20:32 AM	12959056.61	270923.2569	912.7596	0.0477	0.0591	0.076	1.0	0.6	0.7	Moderate	Moderate	Few	Right	<1ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-25	Focus	4/27/11	10:22:34 AM	12959053.45	270920.8261	912.6639	0.0442	0.057	0.0721	1.3	0.3	0.6	Heavy	Heavy	Common	Left	<1ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-26	Focus	4/27/11	10:26:30 AM	12959042.42	270934.052	912.7642	0.0441	0.0603	0.0747	1.2	0.3	0.3	Heavy	Heavy	Common	Center	<1ft/sec		Strt Channel Edg		Silt over Sand		PHOTO 191
TC1-E-27	Focus	4/27/11	10:39:12 AM	12959020.44	270946.8402	912.7987	0.0431	0.0691	0.0814	1.1	0.8	0.8	Heavy	Heavy	Many	Left	<1ft/sec		Strt Channel Edg		Silt over Sand	SILT OVER GRAVEL	
TC1-E-28	Focus	4/27/11	10:46:14 AM	12958997.23	270961.6042	912.6103	0.0641	0.1102	0.1275	0.7	0.3	0.5	Light	Light	Few	Right	<1ft/sec		Cut Bank		Sand & Silt	VERY LIGHT SHEEN	
TC1-E-29	Focus	4/27/11	10:49:04 AM	12958996.62	270957.8599	912.7496	0.0408	0.072	0.0828	0.8	0.1	0.2	None	None	None	Center	<1ft/sec		Mid-Channel		Silt over Sand	THIN SILT LAYER	
TC1-E-30	Focus	4/27/11	10:51:07 AM	12958995.55	270955.4057	912.8496	0.0426	0.0762	0.0873	0.9	0.1	0.2	None	None	None	Left	<1ft/sec		Mid-Channel		Silt over Sand	THIN SILT LAYER	
TC1-E-31	Focus	4/27/11	10:53:49 AM	12958981.89	270957.7752	912.6004	0.0563	0.1022	0.1167	0.8	0.1	0.1	None	None	None	Center	<1ft/sec		Mid-Channel		Sand & Gravel	IN FRONT OF CLVET	
TC1-E-32	Focus	4/27/11	1:09:30 PM	12958935.26	270965.8472	910.9351	1.0456	1.2514	1.6307	1.0	0.2	0.3	None	None	None	Center	<1ft/sec		Mid-Channel		Sand & Gravel	IN FRONT OF CLVET	
TC1-E-33	Focus	4/27/11	1:13:50 PM	12958925.38	270998.033	911.6705	0.0532	0.0635	0.0828	0.4	0.2	0.2	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-34	Focus	4/27/11	1:15:28 PM	12958928.36	271000.0182	911.671	0.0639	0.0767	0.0998	0.6	0.4	0.4	Light	Light	Few	Center	<1ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-35	Focus	4/27/11	1:17:29 PM	12958933.52	271002.0647	911.6807	0.0753	0.0913	0.1183	0.2	0.2	0.3	Moderate	Moderate	Common	Right	<1ft/sec		Cut Bank		Sand & Silt		
TC1-E-36	Focus	4/27/11	1:22:23 PM	12958928.13	271010.6	911.6256	0.0426	0.0527	0.0678	0.7	0.5	0.8	Moderate	Moderate	Few	Right	<1ft/sec		Cut Bank		Silt over Sand		SED BOUNDARY
TC1-E-37	Focus	4/27/11	1:27:40 PM	12958915.49	271008.6827	911.6321	0.0632	0.0803	0.1022	0.3	0.4	0.6	Moderate	Moderate	Common	Left	<1ft/sec		Point Bar		Sand over Silt		
TC1-E-38	Focus	4/27/11	1:31:58 PM	12958909.91	271010.1254	911.6268	0.0598	0.0787	0.0988	-99	-99	-99	None	None	None	Center	<1ft/sec		Strt Channel Edg		Sand over Silt		PHOTO 192
TC1-E-39	Focus	4/27/11	1:34:22 PM	12958900.46	271016.2223	911.6543	0.0591	0.0794	0.099	0.9	0.6	0.7	Heavy	Heavy	Common	Left	<1ft/sec		Cut Bank		Soft Sediment		
TC1-E-40	Focus	4/27/11	1:38:10 PM	12958905	271018.5934	911.5604	0.0478	0.0664	0.0818	0.8	0.2	0.3	Moderate	Moderate	Few	Right	<1ft/sec		Point Bar		Sand over Silt		
TC1-E-41	Focus	4/27/11	1:40:36 PM	12958901.62	271023.5117	911.6885	0.0633	0.0892	0.1094	1.3	1.2	1.3	Moderate	Moderate	Few	Left	<1ft/sec		Cut Bank		Sand & Silt		
TC1-E-42	Focus	4/27/11	1:42:03 PM	12958905.14	271025.812	911.6737	0.0343	0.0488	0.0597	0.5	0.7	0.7	Moderate	Moderate	Few	Right	<1ft/sec		Point Bar		Sand & Silt		
TC1-E-43	Focus	4/27/11	1:44:49 PM	12958908.38	271041.2441	911.5723	0.0483	0.0686	0.0839	0.7	0.8	1.6	Heavy	Heavy	Common	Right	<1ft/sec		Cut Bank		Sand over Silt		
TC1-E-44	Focus	4/27/11	1:45:52 PM	12958902.16	271040.2123	911.6333	0.0473	0.0675	0.0825	0.7	0.4	0.5	Light	Light	Few	Left	<1ft/sec		Point Bar		Sand & Gravel		
TC1-E-45	Focus	4/27/11	1:48:02 PM	12958904.17	271041.8833	911.7115	0.0555	0.0804	0.0977	0.9	0.0	0.0	Light	Light	Few	Center	<1ft/sec		Mid-Channel		Sand & Gravel		
TC1-E-46	Focus	4/27/11	1:49:52 PM	12958903.66	271049.1944	911.7135	0.0307	0.045	0.0545	1.0	0.0	0.0	Moderate	Moderate	Common	Right	<1ft/sec		Cut Bank		Sand & Gravel		
TC1-E-47	Focus	4/27/11	1:52:13 PM	12958903.32	271040.5163	911.5592	0.0351	0.0522	0.0629	-99	-99	-99				Other-Comments	<1ft/sec		Point Bar		Sand & Gravel		POINT BAR BOUND
TC1-E-48	Focus	4/27/11	1:52:33 PM	12958901.96	271046.3263	911.5785	0.0459	0.0683	0.0823	-99	-99	-99				Other-Comments	<1ft/sec		Point Bar		Sand & Gravel		POINT BAR BOUND
TC1-E-49	Focus	4/27/11	1:52:48 PM	12958900.03	271048.8694	911.5792	0.0481	0.0718	0.0865	-99	-99	-99				Other-Comments	<1ft/sec		Point Bar		Sand & Gravel		POINT BAR BOUND
TC1-E-50	Focus	4/27/11	1:53:12 PM	12958897.47	271052.4088	911.6804	0.0404	0.0604	0.0727	-99	-99	-99				Other-Comments	<1ft/sec		Point Bar		Sand & Gravel		POINT BAR BOUND
TC1-E-51	Focus	4/27/11	1:53:38 PM	12958891.59	271054.8345	911.6283	0.0417	0.0625	0.0751	-99	-99	-99				Other-Comments	<1ft/sec		Point Bar		Sand & Gravel		POINT BAR BOUND
TC1-E-52	Focus	4/27/11	1:54:18 PM	12958886.19	271056.2569	911.5553	0.0404	0.0608	0.073	-99	-99	-99				Other-Comments	<1ft/sec		Point Bar		Sand & Gravel		POINT BAR BOUND
TC1-E-53	Focus	4/27/11	1:54:47 PM	12958883.5	271059.5641	911.5857	0.0381	0.0575	0.069	-99	-99	-99				Other-Comments	<1ft/sec		Point Bar		Sand & Gravel		POINT BAR BOUND
TC1-E-54	Focus	4/27/11	1:56:43 PM	12958896.97	271055.8052	911.6399	0.0608	0.0968	0.1143	0.6	0.7	0.7	Moderate	Moderate	Common	Right	<1ft/sec		Cut Bank		Silt over Sand		
TC1-E-55	Focus	4/27/11	1:57:54 PM	12958895.63	271053.0891	911.5269	0.0424	0.0652	0.0778	0.8	0.3	0.4	Heavy	Heavy	Many	Center	<1ft/sec		Mid-Channel		Sand over Silt		
TC1-E-56	Focus	4/27/11	1:59:52 PM	12958894.09	271051.2969	911.5059	0.0398	0.0619	0.0736	0.4	0.4	0.5	Heavy	Heavy	Many	Left	<1ft/sec		Point Bar		Sand over Silt	BOUNDARY	
TC1-E-57	Focus	4/27/11	2:01:31 PM	12958889.67	271058.2458	911.6854	0.0449	0.0705	0.0836	1.1	0.1	0.9	Light	Light	None	Right	<1ft/sec		Strt Channel Edg		Sand over Silt		
TC1-E-58	Focus	4/27/11	2:03:12 PM	12958892.39	271056.8389	911.5913	0.0333	0.0526	0.0622	1.1	0.7	0.7	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg		Sand over Silt	D BOUNDARY	
TC1-E-59	Focus	4/27/11	2:04:41 PM	12958883.33	271055.985	911.6085	0.0548	0.0875	0.1033	0.6	0.4	0.5	None	None	None	Left	<1ft/sec		Cut Bank		Sand over Silt		
TC1-E-60	Focus	4/27/11	2:06:06 PM	12958882.63	271061.2804	911.607	0.053	0.0876	0.1024	0.9	0.1	0.1	None	None	None	Center	<1ft/sec		Mid-Channel		Sand & Gravel		
TC1-E-61	Focus	4/27/11	2:07:41 PM	12958876.82	271070.3245	911.5011	0.0504	0.0841	0.0981	1.0	0.3	0.4	None	None	None	Center	<1ft/sec		Mid-Channel		Sand & Gravel		
TC1-E-62	Focus	4/27/11	2:09:21 PM	12958870.04	271082.5736	911.6058	0.0392	0.064	0.075	0.5	0.7	1.0	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-63	Focus	4/27/11	2:10:49 PM	12958865.65	271081.1174	911.3792	0.0471	0.078	0.0911	0.6	0.5	0.6	Heavy	Heavy	Common	Left	<1ft/sec		Strt Channel Edg		Sand over Silt		
TC1-E-64	Focus	4/27/11	2:13:05 PM	12958868.59	271077.2074	911.3969	0.0386	0.0642	0.0749	0.9	0.2	0.4	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg		Sand & Silt	U BOUNDARY	
TC1-E-65	Focus	4/27/11	2:16:13 PM	12958866.69	271085.3052	911.3106	0.0352	0.0593	0.0689	0.6	0.4	0.4	Light	Light	Few	Center	<1ft/sec		Mid-Channel		Sand & Gravel	LAT BOUNDARY	
TC1-E-66	Focus	4/27/11	2:18:27 PM	12958863.04	271095.6714	911.2472	0.0384	0.0652	0.0757	0.5	0.3	0.3	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg		Sand & Gravel	D BOUNDARY	
TC1-E-67	Focus	4/27/11	2:20:02 PM	12958862.19	271108.3086	911.4691	0.036	0.0614	0.0712	0.9	0.5	1.2	None	None	None	Right	<1ft/sec		Strt Channel Edg		Sand & Silt		
TC1-E-68	Focus	4/27/11	2:22:04 PM	12958860.14	271107.8378	911.4344	0.0395	0.0676	0.0783	0.6	0.5	0.7	Heavy	Heavy	Common	Left	<1ft/sec		Strt Channel Edg		Sand over Silt	U BOUNDARY	
TC1-E-69	Focus	4/27/11	2:23:56 PM	12958856.56	271118.3407	911.3984	0.0419	0.0721	0.0834	0.4	0.9	0.9	None	None	None	Left	<1ft/sec		Strt Channel Edg		Sand over Silt	D BOUNDARY	
TC1-E-70	Focus	4/27/11	2:25:13 PM	12958859.93	271120.9612	911.4905	0.0383	0.066	0.0764	0.6	0.6	1.2	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-71	Focus	4/27/11	2:26:40 PM	12958855.71	271133.8285	911.3422	0.0381	0.0697	0.0794	0.7	0.6	1.5	None	None	None	Right	<1ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-72	Focus	4/27/11	2:27:33 PM	12958852.5	271133.1197	911.3355	0.0421	0.0768	0.0876	0.5	0.7	0.7	None	None	None	Left	1-3 ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-73	Focus	4/27/11	2:29:09 PM	12958848.24	271152.1903	911.2857	0.0414	0.0717	0.0828	1.0	0.1	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-74	Focus	4/27/11	2:30:01 PM	12958844.13	271150.1696	911.1875	0.0426	0.0774	0.0884	0.5	0.6	0.6	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-75	Focus	4/27/11	2:32:08 PM	12958834.5	271170.281	911.2584	0.0493	0.0851	0.0984	0.6	0.4	0.4	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-76	Focus	4/27/11	2:33:08 PM	12958832.87	271168.0211	911.2278	0.0465	0.0801	0.0926	0.7	0.4	0.5	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg		Sand & Silt		
TC1-E-77	Focus	4/27/11	2:35:16 PM	12958826.51	271183.0494	911.2664	0.0394	0.0705	0.0808	0.9	0.3	0.3	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-78	Focus	4/27/11	2:36:38 PM	12958823.91	271182.1709	911.0883	0.0473	0.0841	0.0965	0.8	0.3	0.3	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-79	Focus	4/27/11	2:39:02 PM	12958822.61	271189.887	911.252	0.0363	0.0639	0.0734	0.8	0.3	0.3	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-80	Focus	4/27/11	2:40:15 PM	12958819.33	271188.1817	911.2649	0.0404	0.0708	0.0815	1.0	0.3	0.4	Moderate	Moderate	Few	Left	1-3 ft/sec		Strt Channel Edg		Silt over Sand	U BOUNDARY	
TC1-E-81	Focus	4/27/11	2:44:00 PM	12958816.62	271200.7645	911.2075	0.0355	0.0609	0.0705	1.1	0.0	0.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-82	Focus	4/27/11	2:45:26 PM	12958813.15	271198.9837	911.2842	0.0355	0.063	0.0723	0.9	1.1	1.3	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-83	Focus	4/27/11	2:47:41 PM	12958809.02	271210.4615	911.1604	0.0359	0.0591	0.0691	0.8	0.4	0.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-84	Focus	4/27/11	2:49:17 PM	12958806.8	271207.6909	911.2915	0.0436	0.0696	0.0822	0.6	1.4	1.6	Moderate	Moderate	Few	Left	1-3 ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-85	Focus	4/27/11	2:51:39 PM	12958801.68	271216.0233	911.2471	0.0435	0.0721	0.0841	1.1	0.4	0.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-86	Focus	4/27/11	2:53:30 PM	12958799.74	271212.5783	911.2771	0.0472	0.0737	0.0876	0.3	1.2	1.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg		Silt over Sand	D BOUNDARY	
TC1-E-87	Focus	4/27/11	2:55:07 PM	12958799.95	271221.0481	911.207	0.0449	0.0711	0.0841	-99.0	-99.0	-99.0				Right			Strt Channel Edg			OIL ON R BANK	
TC1-E-88	Focus	4/27/11	2:56:36 PM	12958792.07	271220.7049	911.2643	0.0452	0.0711	0.0842	1.0	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg		Sand & Silt	U BOUNDARY	
TC1-E-89	Focus	4/27/11	3:01:49 PM	12958791.32	271218.1522	911.2143	0.0379	0.0582	0.0694	0.5	1.0	1.1	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg		Silt over Sand		
TC1-E-90	Focus	4/27/11	3:09:43 PM	12958774.22	271225.9844	911.2433	0.036	0.0544	0.0652	1.0	0.4	0.5	Moderate	Moderate	Few	Left	1-3 ft/sec		Cut Bank		Soft Sediment		
TC1-E-91	Focus	4/27/11	3:10:32 PM	12958776.75	271228.1901	911.1667	0.0317	0.0479	0.0575	0.9	0.5	0.5	Moderate	Moderate	Few	Right	1-3 ft/sec		Point Bar		Soft Sediment		
TC1-E-92	Focus	4/27/11	3:14:37 PM	12958769.89	271237.3695	911.2006	0.041	0.0632	0.0753	0.4	0.9	0.9	Moderate	Moderate	Few	Right	1-3 ft/sec		Point Bar		Silt over Sand	U BOUNDARY	
TC1-E-93	Focus	4/27/11	3:16:11 PM	12958765.76	271238.656	911.2996	0.0408	0.0632	0.0752	1.4	0.3	0.3	Moderate	Moderate	Few	Left	1-3 ft/sec		Cut Bank		Silt over Sand	D BOUNDARY	
TC1-E-94	Focus	4/27/11	3:18:33 PM	12958763.63	271250.7634	911.1581	0.0442	0.0688	0.0817	0.9	0.4	0.4	Moderate	Moderate	Few	Right	1-3 ft/sec		Point Bar		Silt over Sand		
TC1-E-95	Focus	4/27/11	3:25:01 PM	12958756.43	271259.3665	911.2173	0.0468	0.1171	0.1261	0.8	1.0	1.0	Moderate	Moderate	Few	Right	1-3 ft/sec		Point Bar		Soft Sediment		
TC1-E-96	Focus	4/27/11	3:28:12 PM	12958753.73	271257.3378	911.2152	0.0545	0.1371	0.1475	0.7	0.8	1.0	Heavy	Heavy	Many	Left	1-3 ft/sec		Cut Bank		Soft Sediment		PHOTO 193
TC1-E-97	Focus	4/27/11	3:30:58 PM	12958757.9	271271.3656	911.0994	0.0364	0.0897	0.0968	0.2	1.3	1.3	Heavy	Heavy	Many	Center	<1ft/sec		Point Bar		Soft Sediment		
TC1-E-98	Focus	4/27/11	3:32:56 PM	12958754.21	271274.3481	911.1759	0.042	0.1036	0.1118	1.5	0.7	0.7	Light	Light	Few	Left	1-3 ft/sec		Cut Bank		Soft Sediment	D BOUNDARY	
TC1-E-99	Focus	4/27/11	3:35:35 PM	12958763.13	271280.7738	911.1104	0.0401	0.0991	0.1069	0.6	0.7	0.8	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-100	Focus	4/27/11	3:36:59 PM	12958768.39	271290.9817	911.0588	0.0353	0.0905	0.0972	0.7	1.1	1.1	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg		Soft Sediment		
TC1-E-101	Focus	4/27/11	3:38:24 PM	12958764.21	271292.7033	911.1698	0.0384	0.0985	0.1057	0.7	0.5	0.6	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-102	Focus	4/27/11	3:41:23 PM	12958771.2	271302.4645	910.9148	0.0338	0.0867	0.0931	0.7	0.8	0.8	None	None	None	Right	1-3 ft/sec		Cut Bank		Silt over Sand	D BOUNDARY	
TC1-E-103	Focus	4/27/11	3:42:55 PM	12958767.39	271301.4564	911.1045	0.0411	0.0988	0.107	0.6	0.5	0.8	None	None	None	Left	1-3 ft/sec		Point Bar		Silt over Sand		
TC1-E-104	Focus	4/27/11	3:46:57 PM	12958772.12	271315.9834	911.1929	0.039	0.0923	0.1002	0.7	0.7	1.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg		Sand over Silt		
TC1-E-105	Focus	4/27/11	3:48:00 PM	12958768.24	271316.8979	911.1195	0.038	0.0894	0.0971	0.1	0.9	1.5	None	None	None	Left	1-3 ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-106	Focus	4/27/11	3:49:35 PM	12958765.56	271342.375	910.7732	0.0377	0.0943	0.1016	0.4	0.2	1.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg		Gravel & Larger		
TC1-E-107	Focus	4/27/11	3:50:23 PM	12958761.77	271340.076	910.8277	0.0431	0.1076	0.1159	0.5	0.0	0.8	None	None	None	Left	>3 ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-108	Focus	4/27/11	3:52:52 PM	12958758.79	271358.7148	910.5397	0.0384	0.0877	0.0957	0.4	0.1	0.1	None	None	None	Right	>3 ft/sec		Strt Channel Edg		Gravel & Larger		
TC1-E-109	Focus	4/27/11	3:54:19 PM	12958755.15	271357.8127	910.5803	0.0476	0.1078	0.1178	0.5	1.1	1.4	None	None	None	Left	>3 ft/sec		Strt Channel Edg		Sand & Gravel		
TC1-E-110	Focus	4/27/11	3:56:14 PM	12958756.68	271367.7425	910.4383	0.0397	0.0886	0.0971	0.6	2.5	3.5	None	None	None	Right	>3 ft/sec		Point Bar		Sand		
TC1-E-111	Focus	4/27/11	3:57:03 PM	12958755.38	271368.4176	910.5049	0.0423	0.0937	0.1028	1.0	0.2	0.5	None	None	None	Center	>3 ft/sec		Mid-Channel		Sand & Gravel		
TC1-E-112	Focus	4/27/11	3:58:00 PM	12958752.86	271367.6592	910.4576	0.051	0.1123	0.1233	0.9	2.1	2.6	None	None	None	Left	>3 ft/sec		Cut Bank		Sand		
TC1-E-113	Focus	4/28/11	8:39:30 AM	12958756.92	271373.0282	910.9721	0.0358	0.0757	0.0837	1.1	0.2	0.4	Light	Light	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC1-E-114	Focus	4/28/11	8:41:11 AM	12958754.45	271374.4992	911.077	0.0315	0.0656	0.0728	1.5	0.1	0.2	None	None	None	Left	>3 ft/sec		Cut Bank	None	Gravel & Larger		
TC1-E-115	Focus	4/28/11	8:44:58 AM	12958761.74	271385.2565	910.9905	0.0312	0.0622	0.0696	1.4	0.6	0.7	None	None	None	Right	>3 ft/sec		Cut Bank	None	Sand		

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
TC1-E-116	Focus	4/28/11	8:46:16 AM	12958759.33	271386.6943	911.062	0.0355	0.0699	0.0784	1.4	0.5	0.5	None	None	None	Left	>3 ft/sec		Point Bar	None	Sand		
TC1-E-117	Focus	4/28/11	8:48:11 AM	12958763.34	271394.1391	911.0638	0.0418	0.0811	0.0913	1.2	0.1	0.2	Light	Light	Few	Right	>3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-118	Focus	4/28/11	8:50:00 AM	12958758.6	271394.3752	911.0565	0.0333	0.063	0.0713	1.0	0.2	0.4	Light	Light	Few	Left	>3 ft/sec		Point Bar	None	Sand & Gravel		
TC1-E-119	Focus	4/28/11	8:51:37 AM	12958751.87	271405.3111	911.131	0.0292	0.0521	0.0597	1.1	0.4	0.5	None	None	None	Right	>3 ft/sec		Cut Bank	None	Sand		
TC1-E-120	Focus	4/28/11	8:52:57 AM	12958751.48	271403.4996	911.1103	0.0354	0.0622	0.0716	1.4	0.2	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
TC1-E-121	Focus	4/28/11	8:54:29 AM	12958750.09	271401.703	911.1032	0.037	0.0679	0.0774	0.9	0.3	0.4	Light	Light	Few	Left	>3 ft/sec		Point Bar	None	Sand		
TC1-E-122	Focus	4/28/11	8:56:34 AM	12958731.78	271407.273	910.9717	0.0476	0.0852	0.0976	1.4	0.4	0.5	None	None	None	Right	>3 ft/sec		Point Bar	None	Sand		
TC1-E-123	Focus	4/28/11	8:58:04 AM	12958730.05	271405.6414	911.0312	0.0423	0.075	0.0861	1.5	0.4	0.5	Light	Light	None	Center	>3 ft/sec		Mid-Channel	None	Sand		
TC1-E-124	Focus	4/28/11	9:00:28 AM	12958727.92	271403.9284	911.0769	0.0407	0.068	0.0792	1.2	0.3	0.3	Light	Light	Few	Left	>3 ft/sec		Cut Bank	None	Sand		
TC1-E-125	Focus	4/28/11	9:02:46 AM	12958728.83	271420.6454	910.9839	0.0409	0.0648	0.0766	1.8	0.0	0.1	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC1-E-126	Focus	4/28/11	9:05:30 AM	12958727.25	271422.9596	910.9434	0.0434	0.0676	0.0803	1.7	0.0	0.5	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-127	Focus	4/28/11	9:08:22 AM	12958732.24	271439.745	910.944	0.0577	0.0881	0.1053	1.6	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		GRAVEL ACROSSCHNL
TC1-E-128	Focus	4/28/11	9:11:30 AM	12958728.94	271461.7882	910.9032	0.0428	0.064	0.077	1.5	0.2	0.3	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand		SOLID SAND
TC1-E-129	Focus	4/28/11	9:13:05 AM	12958727	271462.05	910.8706	0.0479	0.0741	0.0882	1.1	0.3	0.4	None	None	None	Center	>3 ft/sec		Strt Channel Edg	None	Sand		SOLID SAND
TC1-E-130	Focus	4/28/11	9:14:56 AM	12958724.13	271462.6907	910.8833	0.0457	0.0694	0.0831	1.0	0.4	0.5	Light	Light	Few	Left	>3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-131	Focus	4/28/11	9:17:22 AM	12958726.46	271477.4577	910.901	0.0435	0.0624	0.076	1.5	0.1	0.3	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-132	Focus	4/28/11	9:18:47 AM	12958722.8	271477.0051	910.9065	0.038	0.0539	0.0659	1.5	0.1	0.4	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-133	Focus	4/28/11	9:20:49 AM	12958725.74	271483.8548	910.9068	0.0454	0.0643	0.0787	1.7	0.5	0.6	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-134	Focus	4/28/11	9:23:49 AM	12958723.33	271482.8833	910.8662	0.0462	0.0625	0.0777	2.1	0.3	0.4	Light	Light	Few	Center	>3 ft/sec		Mid-Channel	None	Sand		
TC1-E-135	Focus	4/28/11	9:26:02 AM	12958720.39	271485.5753	910.8713	0.0467	0.0638	0.0791	1.4	0.1	0.2	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-136	Focus	4/28/11	9:28:25 AM	12958722.36	271495.9013	910.8073	0.0439	0.059	0.0735	1.1	0.4	0.5	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-137	Focus	4/28/11	9:30:09 AM	12958718.09	271496.4513	910.8494	0.0556	0.0739	0.0925	1.3	0.2	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-138	Focus	4/28/11	9:32:02 AM	12958719.14	271508.7184	910.8613	0.0331	0.0435	0.0546	1.4	0.1	0.2	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Gravel & Larger		
TC1-E-139	Focus	4/28/11	9:34:34 AM	12958723.25	271509.4647	910.8185	0.0357	0.0464	0.0585	1.0	0.4	0.5	Moderate	Moderate	Few	Right	>3 ft/sec		Point Bar	None	Sand		
TC1-E-140	Focus	4/28/11	9:38:16 AM	12958722.4	271505.5197	910.845	0.0378	0.0471	0.0604	1.3	0.2	0.3	None	None	None	Right	>3 ft/sec		Point Bar	None	Sand	U BOUNDARY	
TC1-E-141	Focus	4/28/11	9:41:52 AM	12958720.61	271512.5032	910.8006	0.0481	0.0604	0.0772	1.6	0.2	0.4	None	None	None	Left	>3 ft/sec		Point Bar	None	Silt over Sand	U BOUNDARY	
TC1-E-142	Focus	4/28/11	9:43:34 AM	12958728.23	271520.8376	910.7884	0.0479	0.0586	0.0757	1.2	0.5	1.0	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-143	Focus	4/28/11	9:45:39 AM	12958731.9	271530.9873	910.7085	0.0637	0.0771	0.1	1.7	0.2	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-144	Focus	4/28/11	9:47:42 AM	12958727.64	271532.7178	910.731	0.0637	0.0765	0.0995	1.4	0.6	0.7	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-145	Focus	4/28/11	9:50:13 AM	12958729.67	271550.4756	910.7736	0.0486	0.0581	0.0757	1.8	0.7	0.8	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-146	Focus	4/28/11	9:52:04 AM	12958735.51	271550.6291	910.7733	0.0394	0.0469	0.0613	1.1	0.6	0.7	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment	U BOUNDARY	
TC1-E-147	Focus	4/28/11	9:54:59 AM	12958734.13	271576.2127	910.7508	0.0423	0.05	0.0655	1.3	0.7	0.7	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-148	Focus	4/28/11	9:59:01 AM	12958729.86	271580.0076	910.708	0.0567	0.0661	0.0871	1.4	0.7	1.8	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-149	Focus	4/28/11	10:01:50 AM	12958731.46	271587.1616	910.7906	0.0487	0.0572	0.0752	1.5	0.5	0.5	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-150	Focus	4/28/11	10:05:31 AM	12958732.53	271595.1778	910.7349	0.0526	0.0626	0.0818	1.3	0.8	1.3	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment	D BOUNDARY	
TC1-E-151	Focus	4/28/11	10:07:20 AM	12958735.94	271594.8403	910.69	0.0481	0.0576	0.075	1.4	0.2	1.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand	D BOUNDARY	
TC1-E-152	Focus	4/28/11	10:09:49 AM	12958729.85	271611.3044	910.8013	0.0519	0.0631	0.0817	1.6	0.3	0.5	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-153	Focus	4/28/11	10:12:45 AM	12958714.44	271618.1625	910.622	0.0522	0.0645	0.0829	1.4	0.3	0.4	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BOUNDARY	
TC1-E-154	Focus	4/28/11	10:13:58 AM	12958713.12	271622.9581	910.5579	0.0423	0.0527	0.0676	1.3	0.3	0.6	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-155	Focus	4/28/11	10:16:48 AM	12958699.9	271632.804	910.7122	0.0367	0.0471	0.0597	1.4	0.5	0.6	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-156	Focus	4/28/11	10:19:34 AM	12958697.93	271629.8969	910.6033	0.0368	0.0483	0.0607	1.6	0.2	0.3	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-157	Focus	4/28/11	10:23:08 AM	12958687.23	271634.7574	910.6176	0.0388	0.0528	0.0655	1.4	0.3	0.4	Moderate	Moderate	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-158	Focus	4/28/11	10:25:11 AM	12958689.25	271638.2271	910.6286	0.0399	0.0555	0.0683	1.7	0.7	0.8	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	LAT BOUNDARY	
TC1-E-159	Focus	4/28/11	10:27:04 AM	12958679.86	271639.54	910.6692	0.049	0.0714	0.0867	1.5	0.5	0.7	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-160	Focus	4/28/11	10:29:11 AM	12958666.91	271646.3564	910.6436	0.0489	0.0714	0.0865	1.4	0.2	0.9	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-161	Focus	4/28/11	10:36:22 AM	12958649.14	271654.8036	910.6711	0.041	0.0666	0.0782	1.3	0.7	1.0	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand	D BOUNDARY	
TC1-E-162	Focus	4/28/11	10:38:09 AM	12958642	271663.0092	910.7077	0.037	0.0614	0.0717	1.3	0.1	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-163	Focus	4/28/11	10:39:29 AM	12958638.94	271661.0061	910.7116	0.0444	0.0743	0.0866	1.2	0.3	0.3	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		
TC1-E-164	Focus	4/28/11	10:41:08 AM	12958638.13	271659.4225	910.6642	0.0426	0.0724	0.084	1.2	0.9	1.0	Moderate	Moderate	Few	Center	1-3 ft/sec		Mid-Channel	None	Soft Sediment		
TC1-E-165	Focus	4/28/11	10:42:59 AM	12958644.41	271658.4935	910.7037	0.043	0.0747	0.0862	1.2	0.4	1.3	Moderate	Moderate	Few	Center	1-3 ft/sec		Mid-Channel	None	Soft Sediment		
TC1-E-166	Focus	4/28/11	10:45:49 AM	12958616.59	271669.0331	910.6142	0.0334	0.0591	0.0679	1.8	0.3	0.8	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-167	Focus	4/28/11	10:47:31 AM	12958616.17	271664.6894	910.6753	0.0358	0.0626	0.0721	1.2	0.4	0.4	Moderate	Moderate	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
TC1-E-168	Focus	4/28/11	10:49:57 AM	12958604.51	271666.1311	910.5898	0.0332	0.0589	0.0676	1.9	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		CHANEL NARROWS
TC1-E-169	Focus	4/28/11	10:52:58 AM	12958581.09	271671.3274	910.5763	0.0373	0.0669	0.0766	1.6	0.6	1.9	Light	Light	Few	Center	>3 ft/sec		Mid-Channel	None	Soft Sediment		BND SILT A GRAVEL
TC1-E-170	Focus	4/28/11	10:55:13 AM	12958578.09	271669.9657	910.6588	0.0392	0.0708	0.081	1.2	0.1	0.1	Light	Light	Few	Left	>3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-171	Focus	4/28/11	10:59:29 AM	12958568.54	271685.75	910.5632	0.0347	0.0654	0.0741	1.7	0.6	0.7	Light	Light	Few	Center	>3 ft/sec		Strt Channel Edg	None	Sand over Silt		WITH GRAVEL
TC1-E-172	Focus	4/28/11	11:02:06 AM	12958563.13	271700.6444	910.5527	0.0413	0.0781	0.0883	1.6	1.0	1.0	Light	Light	Few	Left	>3 ft/sec		Point Bar	None	Soft Sediment	U BOUNDARY	
TC1-E-173	Focus	4/28/11	11:05:24 AM	12958566.12	271706.3167	910.6439	0.0393	0.0726	0.0826	1.2	0.8	1.0	Heavy	Heavy	Many	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment	VERY SOFT	
TC1-E-174	Focus	4/28/11	12:53:20 PM	12958537.54	271728.4481	910.365	0.0438	0.0527	0.0685	2.0	0.7	0.8	None	None	None	Right	>3 ft/sec		Cut Bank	None	Sand		
TC1-E-175	Focus	4/28/11	12:55:49 PM	12958545.33	271728.0307	910.417	0.038	0.0452	0.0591	2.0	0.4	0.5	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand		
TC1-E-176	Focus	4/28/11	12:57:30 PM	12958554.66	271722.2256	908.7455	0.0369	0.0443	0.0577	1.7	0.5	0.7	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand over Silt	D BOUNDARY	
TC1-E-177	Focus	4/28/11	1:02:03 PM	12958561.81	271710.3885	910.4823	0.0501	0.0603	0.0784	1.5	0.2	0.9	Moderate	Moderate	Common	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt		
TC1-E-178	Focus	4/28/11	1:03:23 PM	12958560.08	271707.5975	910.5262	0.0487	0.0582	0.0758	1.5	0.6	0.8	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-179	Focus	4/28/11	1:05:59 PM	12958555.58	271715.6438	910.44	0.055	0.0651	0.0853	1.4	0.9	1.0	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Soft Sediment	D BOUNDARY	
TC1-E-180	Focus	4/28/11	1:09:47 PM	12958544.7	271722.99	910.461	0.0406	0.0484	0.0632	1.3	1.0	1.2	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Silt over Sand		
TC1-E-181	Focus	4/28/11	1:15:02 PM	12958535.81	271723.773	910.2707	0.0396	0.0484	0.0626	1.3	1.9	2.0	None	None	None	Left	1-3 ft/sec		Point Bar	None	Silt over Sand		
TC1-E-182	Focus	4/28/11	1:18:59 PM	12958512.67	271724.8071	910.5647	0.0394	0.049	0.0629	2.0	0.4	0.8	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Silt over Sand		
TC1-E-183	Focus	4/28/11	1:22:51 PM	12958512.04	271721.5536	910.389	0.0445	0.0568	0.0722	1.2	0.8	1.5	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
MP 0.25-0.50																							
TC1-E-184	Focus	4/28/11	1:25:43 PM	12958484.72	271731.4869	910.3658	0.0464	0.0602	0.076	1.6	0.9	1.1	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC1-E-185	Focus	4/28/11	1:28:05 PM	12958489.43	271727.7603	910.4271	0.0377	0.0498	0.0625	1.8	0.8	0.9	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Soft Sediment	U BOUNDARY	
TC1-E-186	Focus	4/28/11	1:30:48 PM	12958484.34	271727.5705	909.9205	0.0428	0.0574	0.0716	2.1	0.8	0.8	Moderate	Moderate	Common	Left	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC1-E-187	Focus	4/28/11	1:33:26 PM	12958481.41	271734.0057	910.4434	0.0369	0.0504	0.0624	1.5	1.3	1.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BOUNDARY	
TC1-E-188	Focus	4/28/11	1:34:46 PM	12958478.62	271730.3994	910.5155	0.0465	0.0647	0.0797	1.5	1.6	1.6	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	D BOUNDARY	
TC1-E-189	Focus	4/28/11	1:37:35 PM	12958474.69	271740.4217	910.4826	0.0399	0.0551	0.068	1.4	0.4	0.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment	OVER GRAVEL	
TC1-E-190	Focus	4/28/11	1:39:01 PM	12958471.32	271737.9187	910.4431	0.0409	0.0575	0.0706	1.7	0.3	1.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC1-E-191	Focus	4/28/11	1:41:26 PM	12958452.17	271759.262	910.4625	0.041	0.0584	0.0713	1.5	1.8	1.8	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Other-Comments	SED AND GRAVEL	
TC1-E-192	Focus	4/28/11	1:43:12 PM	12958450.91	271756.3194	910.3103	0.045	0.0649	0.0789	1.7	1.3	1.4	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Other-Comments	SED AND GRAVEL	
TC1-E-193	Focus	4/28/11	1:46:02 PM	12958425.82	271772.71	910.3502	0.0448	0.0657	0.0795	1.8	1.4	2.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		WITH SEDIMENT
TC1-E-194	Focus	4/28/11	1:49:45 PM	12958424.36	271770.3415	910.4601	0.042	0.063	0.0757	1.8	0.3	0.4	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		WITH SEDIMENT
TC1-E-195	Focus	4/28/11	1:51:52 PM	12958414.17	271776.3901	910.3519	0.0445	0.0676	0.0809	1.4	2.1	2.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		WITH SEDIMENT
TC1-E-196	Focus	4/28/11	1:53:34 PM	12958412.84	271771.8387	910.4936	0.0474	0.0728	0.0869	1.8	0.5	1.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		WITH SEDIMENT
TC1-E-197	Focus	4/28/11	1:57:51 PM	12958329.48	271809.7316	908.9804	0.0458	0.072	0.0853	0.6	0.1	0.1	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC1-E-198	Focus	4/28/11	2:02:55 PM	12958322.21	271807.92	909.0338	0.0476	0.0791	0.0923	1.0	0.8	1.7	Heavy	Heavy	Common	Left	1-3 ft/sec		Cut Bank	None	Soft Sediment	W GRAVEL	
TC1-E-199	Focus	4/28/11	2:05:35 PM	12958327.64	271799.0974	908.9375	0.0493	0.0809	0.0947	0.9	1.7	2.0	None	None	None	Left	>3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-200	Focus	4/28/11	2:08:35 PM	12958324.39	271802.4132	908.9283	0.0452	0.075	0.0875	0.9	0.4	0.5	Light	Light	Few	Left	>3 ft/sec		Cut Bank	None	Sand & Gravel	U BOUNDARY	
TC1-E-201	Focus	4/28/11	2:09:42 PM	12958321.39	271813.2037	908.906	0.0427	0.0712	0.083	0.7	0.7	1.1	Light	Light	Few	Left	>3 ft/sec		Cut Bank	None	Sand & Gravel	D BOUNDARY	
TC1-E-202	Focus	4/28/11	2:12:00 PM	12958356.94	271868.86	908.544	0.0432	0.0728	0.0847	0.9	0.5	0.6	Light	Light	Few	Right	>3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-203	Focus	4/28/11	2:15:22 PM	12958351.93	271866.4039	908.4194	0.0384	0.0699	0.0797	0.4	0.1	0.2	Light	Light	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-204	Focus	4/28/11	2:17:44 PM	12958313.06	271915.4516	908.1884	0.0466	0.0851	0.0971	0.9	0.0	0.0	Light	Light	None	Right	>3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-205	Focus	4/28/11	2:19:06 PM	12958307.75	271912.8953	908.1533	0.046	0.084	0.0957	1.1	0.4	0.6	Heavy	Heavy	Common	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-206	Focus	4/28/11	2:20:58 PM	12958312.65	271906.526	908.18	0.0447	0.0817	0.0932	0.9	0.5	0.5	Light	Light	Few	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BOUNDARY	
TC1-E-207	Focus	4/28/11	2:22:58 PM	12958303.97	271917.5202	908.2162	0.0383	0.07	0.0798	0.8	0.1	0.3	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BOUNDARY	
TC1-E-208	Focus	4/28/11	2:26:14 PM	12958306.04	271948.1396	908.1091	0.0468	0.081	0.0935	0.9	0.1	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-209	Focus	4/28/11	2:27:43 PM	12958302.05	271945.6675	908.0094	0.0407	0.0736	0.0841	1.1	0.9	0.9	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-210	Focus	4/28/11	2:30:33 PM	12958294.21	271967.5905	908.089	0.0425	0.0763	0.0873	1.3	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-211	Focus	4/28/11	2:32:27 PM	12958289.43	271963.9379	908.0088	0.0536	0.0955	0.1095	0.8	0.7	0.8	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-212	Focus	4/28/11	2:34:41 PM	12958273.07	271991.3397	908.0258	0.0414	0.073	0.0839	0.7	0.6	0.6	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-213	Focus	4/28/11	2:43:10 PM	12958268.47	271992.3559	907.9341	0.0443	0.0778	0.0895	1.0	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
TC1-E-214	Focus	4/28/11	2:44:38 PM	12958265.97	271989.5826	907.9098	0.0363	0.059	0.0693	1.0	0.4	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-215	Focus	4/28/11	2:46:03 PM	12958276.24	271985.8543	907.971	0.0335	0.0532	0.0628	1.0	0.4	0.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BOUNDARY	
TC1-E-216	Focus	4/28/11	2:48:34 PM	12958264.99	271998.4238	907.9811	0.042	0.0659	0.0781	1.1	0.1	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BOUNDARY	
TC1-E-217	Focus	4/28/11	2:51:50 PM	12958236.53	272009.36	907.8162	0.0488	0.083	0.0963	1.1	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		OVER GRAVEL
TC1-E-218	Focus	4/28/11	2:52:58 PM	12958232.38	272007.8494	907.9223	0.0446	0.0701	0.0831	0.9	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-219	Focus	4/28/11	2:54:54 PM	12958223.2	272032.1025	907.1127	0.0372	0.0578	0.0687	0.9	0.6	0.7	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-220	Focus	4/28/11	2:56:11 PM	12958218	272031.9138	907.8391	0.0386	0.0599	0.0713	1.4	0.1	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-221	Focus	4/28/11	3:00:16 PM	12958227.04	272019.202	907.8235	0.0446	0.065	0.0789	1.1	0.1	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	U BOUNDARY	
TC1-E-222	Focus	4/28/11	3:02:52 PM	12958221.36	272030.1816	907.7989	0.0425	0.0662	0.0787	1.1	0.2	0.2	Heavy	Heavy	Many	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	SOFT SAND STP HVY	
TC1-E-223	Focus	4/28/11	3:05:00 PM	12958218.66	272061.1704	907.6445	0.0341	0.0528	0.0629	0.2	0.1	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BOUNDARY	
TC1-E-224	Focus	4/28/11	3:08:45 PM	12958222.42	272064.3932	907.7628	0.0447	0.0691	0.0823	1.0	0.3	0.3	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-225	Focus	4/28/11	3:12:52 PM	12958219.88	272105.6907	907.6116	0.0478	0.0742	0.0883	0.5	0.6	0.8	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand	U BOUNDARY	
TC1-E-226	Focus	4/28/11	3:17:03 PM	12958230.51	272107.9271	907.7092	0.0486	0.0757	0.09	1.0	1.1	1.2	Heavy	Heavy	Many	Right	<1ft/sec		Cut Bank	None	Soft Sediment	VERY HEAVY	PHOTO 194
TC1-E-227	Focus	4/28/11	3:19:29 PM	12958229.45	272111.0367	907.6945	0.0391	0.0615	0.0729	2.0	0.2	0.3	Light	Light	Few	Center	<1ft/sec		Mid-Channel	None	Sand & Gravel		THALWAG
TC1-E-228	Focus	4/28/11	3:21:19 PM	12958224.83	272125.801	907.6359	0.041	0.0647	0.0766	1.3	0.3	0.4	Moderate	Moderate	Few	Right	<1ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-229	Focus	4/28/11	3:22:58 PM	12958220.58	272122.0476	907.4409	0.0525	0.0835	0.0986	0.6	0.0	0.0	Heavy	Heavy	Common	Left	<1ft/sec		Point Bar	None	Sand & Gravel		
TC1-E-230	Focus	4/28/11	3:26:05 PM	12958202.3	272139.2626	907.5042	0.0448	0.0724	0.0851	1.0	0.1	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BOUNDARY	

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
TC1-E-231	Focus	4/28/11	3:28:43 PM	12958202.8	272142.8166	907.5038	0.0409	0.0662	0.0778	0.9	0.2	0.3	Light	Light	Few	Right	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
TC1-E-232	Focus	4/28/11	3:30:43 PM	12958198.82	272140.6787	907.5538	0.0469	0.0767	0.0899	0.9	0.4	0.6	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-233	Focus	4/28/11	3:32:38 PM	12958175.26	272153.3499	907.5105	0.0401	0.069	0.0798	0.6	0.3	0.3	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
TC1-E-234	Focus	4/28/11	3:33:56 PM	12958173.96	272158.2189	907.4776	0.0411	0.0681	0.0796	0.5	0.3	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
TC1-E-235	Focus	4/28/11	3:34:58 PM	12958175.4	272161.6511	907.4819	0.0425	0.0707	0.0825	1.0	0.2	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-236	Focus	4/28/11	3:37:39 PM	12958159.79	272177.3395	907.3902	0.0464	0.0782	0.0909	0.2	0.2	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
TC1-E-237	Focus	4/28/11	3:39:41 PM	12958170.54	272209.559	907.3304	0.041	0.0682	0.0796	0.8	0.5	0.6	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Soft Sediment		
TC1-E-238	Focus	4/28/11	3:42:54 PM	12958166.91	272212.6448	907.1579	0.0356	0.062	0.0715	1.5	0.0	0.0	None	None	None	Left	>3 ft/sec		Cut Bank	None	Gravel & Larger	U BOUNDARY	THALWAG
TC1-E-239	Focus	4/28/11	3:47:39 PM	12958166.63	272220.0122	907.3445	0.0448	0.0758	0.088	0.8	0.5	0.5	Moderate	Moderate	Common	Center	>3 ft/sec		Mid-Channel	None	Sand		
TC1-E-240	Focus	4/28/11	3:51:23 PM	12958166.38	272225.839	907.2827	0.0388	0.0657	0.0763	1.1	0.3	0.4	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel	LATERAL BOUND	
TC1-E-241	Focus	4/28/11	3:53:28 PM	12958149.83	272237.2168	907.2501	0.0374	0.0635	0.0737	0.9	0.3	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	D BOUNDARY	
TC1-E-242	Focus	4/28/11	3:56:39 PM	12958149.67	272272.1511	907.2925	0.0371	0.0654	0.0752	0.6	0.5	0.5	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-243	Focus	4/28/11	4:02:43 PM	12958152.07	272273.2138	907.3115	0.0448	0.079	0.0908	1.0	0.2	0.7	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	U BOUNDARY	
TC1-E-244	Focus	4/28/11	4:05:14 PM	12958151.48	272294.9053	907.1535	0.046	0.0812	0.0933	1.0	0.2	0.3	Heavy	Heavy	Common	Left	1-3 ft/sec		Point Bar	None	Sand & Silt		
TC1-E-245	Focus	4/28/11	4:08:53 PM	12958153.87	272298.5937	907.2831	0.0519	0.0916	0.1053	1.1	0.5	0.6	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt	LAT BOUNDARY	
TC1-E-246	Focus	4/28/11	4:12:46 PM	12958137.6	272317.8315	907.2007	0.0447	0.08	0.0917	0.8	0.3	0.5	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment	D BOUNDARY	
TC1-E-247	Focus	4/28/11	4:14:07 PM	12958142.88	272321.6599	907.2726	0.0375	0.0674	0.0772	1.2	0.1	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-248	Focus	4/28/11	4:16:38 PM	12958126.49	272335.3341	907.2469	0.0327	0.0594	0.0678	1.0	0.1	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Other-Comments		SILT A CLAY
TC1-E-249	Focus	4/28/11	4:19:06 PM	12958125.16	272331.2154	907.2507	0.0502	0.0916	0.1045	1.0	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		
TC1-E-250	Focus	4/28/11	4:22:42 PM	12958123.38	272326.9057	907.3129	0.0496	0.0917	0.1043	0.6	0.7	0.7	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-250	Focus	4/29/11	8:28:55 AM	12958093.91	272343.0463	906.9858	0.0334	0.0753	0.0824	0.8	0.3	0.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-251	Focus	4/29/11	8:29:33 AM	12958093.65	272336.1583	907.0158	0.0289	0.0646	0.0708	0.5	0.5	0.5	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-252	Focus	4/29/11	8:31:30 AM	12958059.83	272368.6172	906.993	0.0282	0.0619	0.068	0.6	0.5	0.6	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-253	Focus	4/29/11	8:32:22 AM	12958054.24	272366.2143	906.9515	0.0282	0.061	0.0672	0.9	0.5	0.6	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-254	Focus	4/29/11	8:34:55 AM	12958044.91	272426.87	906.9078	0.0228	0.0482	0.0533	1.0	0.3	0.4	Heavy	Heavy	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
TC1-E-255	Focus	4/29/11	8:36:36 AM	12958051.23	272405.8366	906.9522	0.0235	0.049	0.0543	1.0	0.3	0.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt	U BOUNDARY	
TC1-E-256	Focus	4/29/11	8:39:02 AM	12958046.1	272415.9432	907.0468	0.0287	0.0584	0.065	1.0	0.4	0.5	Moderate	Moderate	Common	Center	1-3 ft/sec		Mid-Channel	None	Sand & Silt		
TC1-E-257	Focus	4/29/11	8:40:17 AM	12958043.91	272414.5973	906.9963	0.0357	0.0678	0.0766	0.9	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt	LAT BOUNDARY	
TC1-E-258	Focus	4/29/11	8:42:21 AM	12958038.75	272424.4286	907.0505	0.0355	0.066	0.075	0.8	0.8	0.9	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt	LAT BOUNDARY	
TC1-E-259	Focus	4/29/11	8:44:25 AM	12958038.25	272440.8277	906.9165	0.0245	0.0475	0.0534	1.2	0.2	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt	D BOUNDARY	
TC1-E-260	Focus	4/29/11	8:45:22 AM	12958032.82	272439.0713	907.0057	0.0418	0.0804	0.0906	0.8	0.2	1.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
TC1-E-261	Focus	4/29/11	8:47:49 AM	12958023.87	272485.251	906.8813	0.0287	0.0538	0.061	0.8	0.4	0.6	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		OVER GRAVEL
TC1-E-262	Focus	4/29/11	8:49:18 AM	12958025.5	272475.4647	906.9193	0.0433	0.0762	0.0877	0.9	0.1	0.2	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt	U BOUNDARY	
TC1-E-263	Focus	4/29/11	8:50:26 AM	12958021.67	272486.5944	906.9544	0.0336	0.0583	0.0673	0.8	0.6	0.8	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Soft Sediment	LAT BOUNDARY	
TC1-E-264	Focus	4/29/11	8:51:39 AM	12958018.22	272484.5123	906.8998	0.0431	0.0744	0.0859	1.0	0.6	0.9	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
TC1-E-265	Focus	4/29/11	8:53:37 AM	12958021.87	272500.9483	906.9737	0.0472	0.0804	0.0932	0.9	0.3	0.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-266	Focus	4/29/11	8:54:41 AM	12958016.53	272501.3863	906.9255	0.0439	0.0736	0.0857	1.0	0.4	0.6	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
TC1-E-267	Focus	4/29/11	8:56:25 AM	12958003.13	272550.3318	906.9605	0.0379	0.0612	0.072	0.9	0.8	0.9	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-268	Focus	4/29/11	8:57:44 AM	12957999.03	272547.1756	907.0008	0.0358	0.0572	0.0675	0.9	0.1	0.2	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-269	Focus	4/29/11	8:58:38 AM	12958004.36	272537.5803	906.889	0.0434	0.0754	0.087	0.9	0.4	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	U BOUNDARY	
TC1-E-270	Focus	4/29/11	9:00:27 AM	12958000.53	272548.6738	906.9	0.0329	0.0515	0.0611	1.0	0.4	0.5	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand	LAT BOUNDARY	
TC1-E-271	Focus	4/29/11	9:01:51 AM	12957990.02	272564.9398	906.9237	0.0333	0.056	0.0652	0.9	0.8	1.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment	D BOUNDARY	
TC1-E-272	Focus	4/29/11	9:10:14 AM	12957983.04	272586.7137	906.9316	0.0493	0.0799	0.0939	1.0	0.9	1.0	Heavy	Heavy	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		OVER GRAVEL
TC1-E-273	Focus	4/29/11	9:11:35 AM	12957979.78	272586.821	907.0123	0.0353	0.0511	0.0621	1.1	0.2	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand	LAT BOUNDARY	
TC1-E-274	Focus	4/29/11	9:12:16 AM	12957977.81	272585.1066	906.9986	0.0385	0.0555	0.0675	1.0	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	LAT BOUNDARY	
TC1-E-275	Focus	4/29/11	9:14:07 AM	12957985.38	272581.0797	906.9833	0.0424	0.0523	0.0673	1.3	0.1	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	U BOUNDARY	
TC1-E-276	Focus	4/29/11	9:16:51 AM	12957974.9	272599.1425	906.836	0.0387	0.0547	0.067	1.3	0.6	1.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment	D BOUNDARY	
TC1-E-277	Focus	4/29/11	9:20:17 AM	12957970.52	272596.5756	906.9173	0.0509	0.0725	0.0886	1.2	1.1	1.4	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-278	Focus	4/29/11	9:24:49 AM	12957974.01	272589.0849	906.9403	0.0419	0.0561	0.07	0.8	0.5	0.7	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment	U BOUNDARY	
TC1-E-279	Focus	4/29/11	9:27:32 AM	12957964.66	272615.5403	906.9428	0.0477	0.0633	0.0793	0.9	0.9	1.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-280	Focus	4/29/11	9:29:13 AM	12957972.14	272615.786	906.9221	0.0501	0.0657	0.0826	0.9	1.6	2.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
MP 0.50-0.75																							
TC1-E-281	Focus	4/29/11	9:33:03 AM	12957960.05	272706.5553	905.5355	0.0499	0.0641	0.0812	0.8	1.0	1.1	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC1-E-282	Focus	4/29/11	9:34:00 AM	12957956.77	272706.5934	905.4902	0.0509	0.0679	0.0849	0.5	0.5	0.7	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand		
TC1-E-283	Focus	4/29/11	9:35:39 AM	12957952.45	272707.0388	905.5263	0.0472	0.0606	0.0769	1.7	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-284	Focus	4/29/11	9:37:16 AM	12957954.74	272727.2093	905.4833	0.0475	0.0601	0.0766	0.4	0.9	1.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-285	Focus	4/29/11	9:38:17 AM	12957948.54	272724.3126	905.4827	0.0555	0.0699	0.0892	0.5	0.2	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC1-E-286	Focus	4/29/11	9:40:39 AM	12957932.06	272783.9451	905.1353	0.0484	0.0592	0.0765	0.8	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-287	Focus	4/29/11	9:41:23 AM	12957926.32	272785.2263	905.0634	0.0401	0.0484	0.0629	0.5	0.5	0.5	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-288	Focus	4/29/11	9:43:31 AM	12957909.46	272838.576	904.8051	0.06	0.0721	0.0938	0.7	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC1-E-289	Focus	4/29/11	9:44:12 AM	12957906.16	272835.781	904.8614	0.067	0.0803	0.1046	0.5	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC1-E-290	Focus	4/29/11	9:45:48 AM	12957904.7	272888.113	904.575	0.0695	0.0829	0.1082	0.7	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-291	Focus	4/29/11	9:46:35 AM	12957900.33	272884.2996	904.5994	0.0612	0.0729	0.0952	0.4	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-292	Focus	4/29/11	9:51:24 AM	12957883.2	272953.249	904.4066	0.0559	0.0648	0.0856	1.1	0.1	0.1	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
TC1-E-294	Focus	4/29/11	9:55:09 AM	12957852.69	273039.5065	903.8755	0.0499	0.0582	0.0767	0.6	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
TC1-E-295	Focus	4/29/11	9:59:04 AM	12957832.13	273113.9	903.4848	0.0359	0.0423	0.0554	0.3	0.1	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
TC1-E-296	Focus	4/29/11	10:03:17 AM	12957802.34	273146.4249	903.1837	0.0517	0.056	0.0762	0.8	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
TC1-E-297	Focus	4/29/11	10:07:44 AM	12957781.71	273188.3582	903.0041	0.0438	0.0538	0.0694	0.5	0.1	0.1	None	None	None	Right	1-3 ft/sec		Other-Comments	None	Gravel & Larger		TRIB ENTRY
TC1-E-298	Focus	4/29/11	10:08:53 AM	12957775.67	273187.273	902.7857	0.0385	0.0477	0.0613	0.7	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC1-E-299	Focus	4/29/11	10:10:08 AM	12957735	273236.0154	902.6222	0.0385	0.0481	0.0616	0.6	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
TC1-E-300	Focus	4/29/11	10:11:55 AM	12957700.28	273254.4742	902.452	0.0489	0.0623	0.0791	0.4	0.1	0.1	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC1-E-301	Focus	4/29/11	10:12:53 AM	12957695.57	273251.4031	902.495	0.0572	0.073	0.0928	1.0	0.5	1.2	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-302	Focus	4/29/11	10:14:31 AM	12957680.17	273265.3379	902.463	0.0642	0.0832	0.1051	0.3	0.1	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-303	Focus	4/29/11	10:15:10 AM	12957678.58	273258.8245	902.4698	0.0665	0.0868	0.1093	0.5	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-304	Focus	4/29/11	10:20:03 AM	12957645.89	273277.1203	902.2666	0.0414	0.0572	0.0706	0.8	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-305	Focus	4/29/11	10:21:15 AM	12957644.6	273271.2205	902.303	0.0421	0.0589	0.0724	0.8	0.6	1.0	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		OVER SOFT SED
TC1-E-306	Focus	4/29/11	10:23:22 AM	12957612.07	273304.1601	902.238	0.0484	0.0694	0.0846	0.9	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-307	Focus	4/29/11	10:24:47 AM	12957608.13	273299.7831	902.2025	0.0501	0.0741	0.0894	0.8	0.5	0.6	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-308	Focus	4/29/11	10:26:33 AM	12957594.78	273308.758	902.3459	0.0472	0.07	0.0844	0.4	0.6	0.6	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-309	Focus	4/29/11	10:27:47 AM	12957594.55	273315.0773	902.2522	0.0377	0.0567	0.0681	1.0	0.0	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-310	Focus	4/29/11	10:29:37 AM	12957558.63	273327.7404	902.131	0.0345	0.0529	0.0632	0.5	0.5	0.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-311	Focus	4/29/11	10:30:28 AM	12957555.81	273325.4892	902.2038	0.0431	0.0687	0.0811	1.1	0.1	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-312	Focus	4/29/11	10:33:06 AM	12957476.83	273375.2919	902.0242	0.0494	0.0856	0.0988	1.0	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-313	Focus	4/29/11	10:34:18 AM	12957477.22	273371.1322	901.9937	0.0588	0.103	0.1186	1.3	0.8	0.9	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-314	Focus	4/29/11	10:43:38 AM	12957425.7	273403.6638	901.7625	0.0407	0.0771	0.0872	0.7	0.3	0.4	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-315	Focus	4/29/11	10:45:06 AM	12957424.56	273400.4646	901.7242	0.0308	0.0598	0.0672	0.9	0.0	0.0	Light	None	Few	Center	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	LAT BOUND	
TC1-E-316	Focus	4/29/11	10:46:09 AM	12957435.53	273396.7108	901.8351	0.0385	0.0702	0.0801	0.9	0.4	0.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BOUNDARY	
TC1-E-317	Focus	4/29/11	10:48:52 AM	12957422.64	273397.7413	901.7706	0.0336	0.0621	0.0706	0.7	0.2	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-318	Focus	4/29/11	10:50:45 AM	12957402.72	273422.1822	889.7719	2.1631	4.095	4.6312	0.9	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-319	Focus	4/29/11	10:51:33 AM	12957399.21	273416.3229	900.5075	1.7305	2.9687	3.4362	0.9	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-320	Focus	4/30/11	9:44:01 AM	12957364.52	273441.818	916.3965	1.6558	1.7255	2.3914	0.9	0.8	0.8	Heavy	Heavy	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-321	Focus	4/30/11	9:45:09 AM	12957368.11	273440.3304	916.9785	2.2464	2.3791	3.2721	0.9	0.8	0.8	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand	U BOUNDARY	
TC1-E-322	Focus	4/30/11	9:46:40 AM	12957367.09	273440.8939	912.3814	2.5182	2.4647	3.5236	0.9	0.1	0.9	Light	Light	Few	Right	1-3 ft/sec		Mid-Channel	None	Silt over Sand	LATERAL BOUNDARY	
TC1-E-323	Focus	4/30/11	9:48:17 AM	12957364.23	273440.6555	914.5522	1.5243	1.6339	2.2345	0.8	0.4	0.4	Moderate	Moderate	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-324	Focus	4/30/11	9:50:38 AM	12957368.32	273438.5488	903.1611	2.1124	2.4146	3.2081	0.8	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BOUNDARY	POOR SATELITES
TC1-E-325	Focus	4/30/11	9:57:47 AM	12957346.56	273456.6759	904.6893	1.5746	1.7991	2.3909	0.8	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	D BOUNDARY	POOR SATELITES
TC1-E-326	Focus	4/30/11	9:59:01 AM	12957345.03	273454.9224	902.8303	1.3203	1.5722	2.053	0.8	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BOUNDARY	POOR SATELITES
TC1-E-327	Focus	4/30/11	10:01:18 AM	12957316.56	273486.0916	901.5578	0.0586	0.0712	0.0922	0.9	0.0	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		POOR SATELITES
TC1-E-328	Focus	4/30/11	10:02:14 AM	12957314.53	273482.7756	901.5364	0.0562	0.0689	0.0889	0.9	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-329	Focus	4/30/11	10:03:50 AM	12957280.9	273516.3815	901.4435	0.0482	0.06	0.0769	0.7	0.2	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-330	Focus	4/30/11	10:05:07 AM	12957274.91	273513.5619	901.4066	0.0556	0.07	0.0894	0.6	0.3	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-331	Focus	4/30/11	10:07:28 AM	12957252.41	273538.4718	901.4122	0.0474	0.0612	0.0774	0.7	0.4	0.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-332	Focus	4/30/11	10:08:52 AM	12957250.15	273534.1023	901.4054	0.044	0.0576	0.0725	0.7	0.2	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-333	Focus	4/30/11	10:13:31 AM	12957242.49	273541.7596	901.4388	0.0384	0.053	0.0654	0.8	0.4	0.5	Moderate	Moderate	Common	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt		
TC1-E-334	Focus	4/30/11	10:16:34 AM	12957256.88	273532.6335	901.3828	0.0463	0.0663	0.0809	0.8	0.2	0.3	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt	U BOUNDARY	
TC1-E-335	Focus	4/30/11	10:21:20 AM	12957266.07	273528.1111	901.3132	0.04	0.0607	0.0727	0.7	0.2	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	U BOUNDARY	
TC1-E-336	Focus	4/30/11	10:26:02 AM	12957232.69	273546.8253	901.3004	0.0552	0.0887	0.1045	1.0	0.1	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BOUNDARY	
MP 0.75-1.00																							
TC1-E-337	Focus	4/30/11	10:36:58 AM	12957183.92	273584.3781	900.2175	0.036	0.0679	0.0769	0.9	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand		
TC1-E-338	Focus	4/30/11	10:38:19 AM	12957179.9	273582.9474	900.2612	0.0488	0.0939	0.1058	0.8	1.0	1.5	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand		
TC1-E-339	Focus	4/30/11	10:40:15 AM	12957177.06	273581.2902	900.2273	0.0453	0.0886	0.0995	1.1	0.4	0.4	Heavy	Heavy	Common	Left	1-3 ft/sec		Cut Bank	None	Sand over Silt		
TC1-E-340	Focus	4/30/11	10:43:04 AM	12957184.31	273575.691	900.2529	0.0522	0.1044	0.1167	0.7	0.2	0.2	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BOUNDARY	
TC1-E-341	Focus	4/30/11	10:47:08 AM	12957177.69	273585.8935	900.1365	0.0595	0.1235	0.1371	1.8	0.0	0.1	Heavy	Heavy	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-342	Focus	4/30/11	10:48:25 AM	12957177.92	273589.5435	900.0581	0.0725	0.151	0.1675	0.8	0.1	0.1	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Gravel & Larger	D BOUNDARY	
TC1-E-343	Focus	4/30/11	10:49:19 AM	12957174.13	273604.5688	900.0233	0.0663	0.1389	0.1539	0.6	0.1	0.1	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-344	Focus	4/30/11	10:50:19 AM	12957171.46	273603.2115	900.1197	0.0912	0.1928	0.2133	0.6	0.0	0.0	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
TC1-E-345	Focus	4/30/11	10:51:43 AM	12957121.49	273636.3779	899.9244	0.0716	0.1522	0.1681	0.4	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-346	Focus	4/30/11	10:52:25 AM	12957117.73	273631.8403	900.1116	0.0874	0.1866	0.2061	0.7	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-347	Focus	4/30/11	10:54:06 AM	12957072.95	273664.5574	899.4099	0.172	0.3712	0.4091	0.6	0.5	1.7	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BOUNDARY	
TC1-E-348	Focus	4/30/11	10:55:13 AM	12957070.4	273663.466	899.5535	0.1578	0.3425	0.3771	0.6	0.7	1.4	Moderate	Moderate	Few	Left	1-3 ft/sec		Cut Bank	None	Sand over Silt		
TC1-E-349	Focus	4/30/11	10:56:12 AM	12957076.32	273659.8273	899.8232	0.1548	0.3369	0.3708	0.5	0.1	0.3	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BOUNDARY	
TC1-E-350	Focus	4/30/11	10:58:14 AM	12957067.84	273667.0276	899.5781	0.2303	0.5059	0.5558	0.7	0.2	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-351	Focus	4/30/11	11:00:08 AM	12957040.31	273708.382	894.0295	4.5429	10.0321	11.0128	0.5	0.0	0.1	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC1-E-352	Focus	4/30/11	11:02:30 AM	12957034.62	273706.8695	898.7463	0.2493	0.5544	0.6079	0.8	0.0	0.0	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-353	Focus	4/30/11	11:03:55 AM	12957008.75	273755.2821	899.2379	0.1647	0.3675	0.4027	0.8	0.4	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
TC1-E-354	Focus	4/30/11	11:04:39 AM	12957007.54	273752.4462	899.5601	0.1461	0.3264	0.3576	0.3	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-355	Focus	4/30/11	11:07:23 AM	12956987	273788.8185	898.8018	0.1119	0.251	0.2748	0.5	0.3	0.4	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-356	Focus	4/30/11	11:09:37 AM	12956989.63	273781.0595	898.8796	0.103	0.2463	0.267	0.3	0.0	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	U BOUNDARY	
TC1-E-357	Focus	4/30/11	11:11:07 AM	12956983.56	273785.8117	898.9939	0.067	0.1507	0.1649	0.7	0.0	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	LAT BOUNDARY	
TC1-E-358	Focus	4/30/11	11:12:20 AM	12956981.9	273796.0609	898.9213	0.0754	0.1694	0.1854	0.5	0.1	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-359	Focus	4/30/11	11:13:25 AM	12956968.67	273818.4135	898.8873	0.072	0.1757	0.1899	0.5	0.1	0.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-360	Focus	4/30/11	11:14:09 AM	12956963.44	273815.3817	899.0771	0.0462	0.113	0.1221	0.4	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-361	Focus	4/30/11	11:15:33 AM	12956948.12	273843.253	898.8124	0.3203	0.2015	0.3784	0.7	0.6	1.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-362	Focus	4/30/11	11:16:17 AM	12956945.12	273837.8247	899.3567	0.6462	0.389	0.7542	0.3	0.1	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-363	Focus	4/30/11	11:17:51 AM	12956921.56	273877.4292	898.9396	0.0589	0.1364	0.1485	0.7	0.0	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-364	Focus	4/30/11	11:18:32 AM	12956917.63	273873.8355	899.102	0.0529	0.1306	0.141	0.5	0.1	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-365	Focus	4/30/11	11:20:13 AM	12956891.15	273916.3338	898.9163	0.0564	0.1306	0.1423	0.6	0.2	0.5	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-366	Focus	4/30/11	11:21:28 AM	12956890.05	273913.0216	898.8554	0.0569	0.1305	0.1424	0.7	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		
TC1-E-367	Focus	4/30/11	11:23:32 AM	12956880.73	273937.7198	898.8141	0.0488	0.1124	0.1225	1.3	0.1	0.3	Moderate	Moderate	Common	Right	1-3 ft/sec		Cut Bank	None	Sand		
TC1-E-368	Focus	4/30/11	11:24:59 AM	12956889.82	273922.7918	899.019	0.0442	0.1116	0.12	0.4	0.0	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	U BOUNDARY	
TC1-E-369	Focus	4/30/11	11:26:50 AM	12956881.64	273935.1774	898.7631	0.0466	0.1145	0.1236	0.8	0.1	0.3	Moderate	Moderate	Common	Center	1-3 ft/sec		Mid-Channel	None	Sand		
TC1-E-370	Focus	4/30/11	11:27:42 AM	12956880.54	273933.1726	898.8094	0.042	0.1028	0.1111	1.1	0.0	0.0	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand	LAT BOUNDARY	
TC1-E-371	Focus	4/30/11	11:29:20 AM	12956873.4	273945.0438	899.0044	0.0487	0.1183	0.128	0.7	0.3	0.8	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-372	Focus	4/30/11	11:30:32 AM	12956870.87	273943.1459	898.8552	0.0354	0.0797	0.0872	0.7	0.1	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand	D BOUNDARY	
TC1-E-373	Focus	4/30/11	11:32:53 AM	12956860.91	273960.8505	898.8554	0.0504	0.1125	0.1233	0.5	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-374	Focus	4/30/11	11:33:53 AM	12956853.82	273956.2893	898.7307	0.0442	0.1049	0.1138	0.9	0.7	1.2	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-375	Focus	4/30/11	11:35:20 AM	12956856.85	273950.8621	898.8157	0.0399	0.0943	0.1024	0.5	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	U BOUNDARY	
TC1-E-376	Focus	4/30/11	11:36:31 AM	12956856.38	273959.001	898.6746	0.0469	0.1096	0.1192	0.6	0.6	0.6	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand	LAT BOUNDARY	
TC1-E-377	Focus	4/30/11	11:39:26 AM	12956844.65	273972.0539	898.6611	0.0462	0.1132	0.1223	0.9	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-378	Focus	4/30/11	11:41:22 AM	12956835.84	273993.8357	898.6114	0.0525	0.118	0.1292	0.8	0.8	0.9	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-379	Focus	4/30/11	11:42:18 AM	12956840.27	273989.0316	898.7299	0.0396	0.0884	0.0969	0.5	0.6	0.6	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-380	Focus	4/30/11	11:44:50 AM	12956852.94	273970.9563	898.7232	0.0584	0.127	0.1398	0.4	0.2	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BOUNDART	
TC1-E-381	Focus	4/30/11	11:47:27 AM	12956833.56	273987.2049	898.1976	0.0629	0.1331	0.1472	0.5	1.7	1.8	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	FULL CHANNEL DEP	
TC1-E-382	Focus	4/30/11	11:50:35 AM	12956819.05	274008.2915	898.7784	0.0483	0.099	0.1102	0.8	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-383	Focus	4/30/11	11:52:00 AM	12956817.07	274004.0384	898.6691	0.0462	0.0929	0.1038	0.4	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-384	Focus	4/30/11	11:53:56 AM	12956809.82	274016.4639	898.6996	0.0664	0.1433	0.1579	0.7	0.2	0.2	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-385	Focus	4/30/11	11:55:31 AM	12956806.52	274012.1141	898.6918	0.0586	0.1243	0.1374	0.6	1.7	2.4	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-386	Focus	4/30/11	11:57:18 AM	12956815.26	274008.6257	898.5812	0.0724	0.1507	0.1672	0.6	0.1	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand	U BOUNDARY	
TC1-E-387	Focus	4/30/11	11:59:22 AM	12956790.03	274027.8235	898.5366	0.0579	0.1063	0.121	0.7	0.3	0.3	Light	Light	Few	Right	1-3 ft/sec		Mid-Channel	None	Sand	D BOUNDARY	
TC1-E-388	Focus	4/30/11	12:00:06 PM	12956789	274022.2648	898.6458	0.0508	0.0925	0.1055	0.4	0.0	0.1	None	None	None	Left	1-3 ft/sec		Mid-Channel	None	Sand	D BOUNDARY	
TC1-E-389	Focus	4/30/11	12:02:09 PM	12956765.03	274043.0673	898.4292	0.0538	0.0941	0.1084	0.6	1.0	1.9	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt		
TC1-E-390	Focus	4/30/11	12:03:26 PM	12956758.3	274044.9082	898.3857	0.1236	0.1259	0.1765	0.9	1.1	1.9	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-391	Focus	4/30/11	12:06:05 PM	12956756.36	274060.0276	898.5967	0.1077	0.1112	0.1548	0.5	0.8	1.9	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-392	Focus	4/30/11	12:07:33 PM	12956761.02	274052.2249	898.5189	0.1188	0.1319	0.1775	0.8	0.6	1.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	U BOUNDARY	
TC1-E-393	Focus	4/30/11	12:09:39 PM	12956754.14	274053.2654	898.4024	0.1058	0.1187	0.159	0.9	0.8	1.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	U BOUNDARY	
TC1-E-394	Focus	4/30/11	12:12:14 PM	12956751.9	274056.1008	898.3917	0.1579	0.2444	0.291	1.0	1.1	1.9	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		3 QUAR CHAN BOUND
TC1-E-395	Focus	4/30/11	1:49:48 PM	12956720.81	274093.2879	898.4813	0.0298	0.0469	0.0555	0.3	0.9	0.9	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-396	Focus	4/30/11	1:51:10 PM	12956714.91	274089.5955	898.5143	0.0313	0.0496	0.0586	0.7	0.7	2.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-397	Focus	4/30/11	1:52:58 PM	12956703.06	274113.0528	898.4623	0.0312	0.05	0.0589	0.4	0.4	1.5	Moderate	Moderate	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-398	Focus	4/30/11	1:54:56 PM	12956716.27	274096.9671	898.4754	0.0302	0.0488	0.0574	0.4	0.7	0.8	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	U BOUNDARY	
TC1-E-399	Focus	4/30/11	1:56:23 PM	12956697.92	274112.7323	898.4922	0.0328	0.0535	0.0628	0.5	0.2	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand	LAT BOUNDARY	
TC1-E-400	Focus	4/30/11	1:58:37 PM	12956684.04	274133.0377	898.422	0.0314	0.0516	0.0604	0.5	0.0	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-401	Focus	4/30/11	1:59:22 PM	12956679.47	274132.0919	898.3713	0.0404	0.0667	0.078	0.5	0.2	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-402	Focus	4/30/11	2:01:38 PM	12956651.13	274139.0305	898.2831	0.0387	0.0646	0.0753	0.5	0.2	0.3	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-403	Focus	4/30/11	2:03:08 PM	12956650.12	274140.946	898.3489	0.034	0.057	0.0664	0.8	0.3	0.3	Moderate	Heavy	None	Center	1-3 ft/sec		Mid-Channel	None	Silt over Sand		
TC1-E-404	Focus	4/30/11	2:06:10 PM	12956655.82	274139.484	898.4088	0.0281	0.0477	0.0554	0.8	0.1	0.1	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Silt over Sand	U BOUNDARY	
TC1-E-405	Focus	4/30/11	2:08:55 PM	12956646.4	274144.736	898.3292	0.03	0.0513	0.0594	1.0	0.1	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-406	Focus	4/30/11	2:13:46 PM	12956610.48	274146.5854	898.3366	0.0299	0.0514	0.0594	0.8	0.1	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-407	Focus	4/30/11	2:15:25 PM	12956607.62	274140.4847	898.3173	0.036	0.0622	0.0718	1.1	0.3	0.3	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-408	Focus	4/30/11	2:16:51 PM	12956620.47	274142.8883	898.3782	0.0379	0.0689	0.0787	0.7	0.3	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	U BOUNDARY	
TC1-E-409	Focus	4/30/11	2:18:09 PM	12956609.96	274144.1146	898.4458	0.0362	0.0626	0.0723	0.7	0.2	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand	LAT BOUNDARY	
TC1-E-410	Focus	4/30/11	2:20:18 PM	12956584.74	274144.3508	898.439	0.0434	0.075	0.0867	1.3	0.3	0.4	Light	Light	Few	Left	1-3 ft/sec		Mid-Channel	None	Sand	D BOUNDARY	
TC1-E-411	Focus	4/30/11	2:21:39 PM	12956572.1	274153.6624	898.3486	0.0361	0.065	0.0743	0.6	0.5	0.5	Moderate	Moderate	Common	Right	1-3 ft/sec		Mid-Channel	None	Sand		
TC1-E-412	Focus	4/30/11	2:22:55 PM	12956580.2	274149.0938	898.3398	0.0322	0.0576	0.066	0.6	0.4	0.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	U BOUNDARY	
TC1-E-413	Focus	4/30/11	2:25:22 PM	12956573.05	274148.6259	898.3301	0.0423	0.075	0.0861	1.0	0.4	0.5	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	LAT BOUNDARY	
TC1-E-414	Focus	4/30/11	2:28:19 PM	12956556.05	274152.8676	898.3219	0.0373	0.0652	0.0752	0.7	0.7	1.0	Moderate	Moderate	Common	Center	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-415	Focus	4/30/11	2:30:53 PM	12956531.31	274157.3602	898.3911	0.0431	0.0744	0.086	0.5	0.2	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt	D BOUNDARY	
TC1-E-416	Focus	4/30/11	2:31:54 PM	12956530.57	274153.2113	898.3009	0.0407	0.0699	0.0809	0.5	0.2	0.2	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-417	Focus	4/30/11	2:33:33 PM	12956518.55	274154.1457	898.3241	0.036	0.0599	0.0699	1.4	0.2	1.0	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	D BOUNDARY	
TC1-E-418	Focus	4/30/11	2:42:47 PM	12956509.78	274164.0339	898.1921	0.0387	0.0617	0.0729	0.6	0.4	0.5	Light	Light	Few	Center	1-3 ft/sec		Strt Channel Edg	None	Sand	UBDY	
TC1-E-419	Focus	4/30/11	2:44:05 PM	12956506.17	274164.8428	898.3822	0.04	0.0655	0.0768	0.6	0.4	0.7	Moderate	Moderate	Common	Center	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-420	Focus	4/30/11	2:45:39 PM	12956501.69	274161.898	898.3482	0.0479	0.0775	0.0911	0.5	0.8	0.8	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-421	Focus	4/30/11	2:48:20 PM	12956475.35	274174.5525	898.2638	0.0416	0.0669	0.0788	0.6	0.7	0.9	Light	Light	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	BDY	
TC1-E-422	Focus	4/30/11	2:50:46 PM	12956476.64	274173.1899	897.154	0.041	0.0652	0.077	0.6	0.7	0.8	Heavy	Heavy	Many	Center	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-423	Focus	4/30/11	2:52:34 PM	12956474.22	274167.8033	898.3513	0.0405	0.0642	0.0759	0.7	0.6	0.8	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		LAT BDY
TC1-E-424	Focus	4/30/11	2:58:16 PM	12956431.14	274173.9016	898.2942	0.0451	0.0712	0.0843	0.5	0.7	0.7	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-425	Focus	4/30/11	3:00:27 PM	12956431.03	274173.7717	898.2524	0.0493	0.0779	0.0922	0.5	0.8	0.8	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		D BDY
TC1-E-426	Focus	4/30/11	3:06:51 PM	12956455.83	274180.2789	898.3163	0.0538	0.0799	0.0963	0.7	0.5	0.7	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-427	Focus	4/30/11	3:08:46 PM	12956432.65	274181.4737	898.2725	0.0492	0.0814	0.0951	1.1	0.3	0.4	Light	Light	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-428	Focus	4/30/11	3:10:15 PM	12956416.62	274184.498	898.2858	0.0516	0.0811	0.0961	0.7	1.3	1.6	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-429	Focus	4/30/11	3:16:28 PM	12956399.79	274185.311	898.2025	0.0842	0.0782	0.1149	1.3	0.9	1.2	Moderate	Moderate	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-430	Focus	4/30/11	3:18:30 PM	12956381.2	274185.2148	898.2556	0.0358	0.0577	0.0679	1.1	0.2	0.8	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-431	Focus	4/30/11	3:20:03 PM	12956378.68	274178.9419	898.2688	0.0543	0.0891	0.1043	0.5	0.4	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-432	Focus	4/30/11	3:23:08 PM	12956353.1	274189.9286	898.2906	0.0522	0.0859	0.1005	1.2	1.6	1.7	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-433	Focus	4/30/11	3:24:54 PM	12956334.07	274195.4634	898.1674	0.0488	0.0815	0.095	1.1	1.1	1.2	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-434	Focus	4/30/11	3:28:08 PM	12956312.42	274202.019	898.3673	0.0563	0.1181	0.1308	1.0	0.5	0.6	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-435	Focus	4/30/11	3:30:35 PM	12956311.38	274198.5916	898.1865	0.053	0.088	0.1027	1.0	0.5	0.6	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC1-E-436	Focus	4/30/11	3:32:20 PM	12956285.71	274213.9158	898.442	0.0724	0.1205	0.1406	0.9	0.9	1.0	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-437	Focus	4/30/11	3:35:07 PM	12956254.68	274226.9767	898.1783	0.0351	0.0646	0.0735	1.3	0.1	0.2	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-438	Focus	4/30/11	3:37:07 PM	12956225.36	274243.2885	898.2296	0.0533	0.0936	0.1077	1.6	0.2	0.3	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-439	Focus	4/30/11	3:41:04 PM	12956190.41	274259.498	898.2017	0.0475	0.0834	0.096	0.9	0.1	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		DBDY
TC1-E-440	Focus	4/30/11	3:42:25 PM	12956193.45	274252.5253	897.0706	0.0499	0.0844	0.098	0.9	0.1	0.3	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		DBDY
TC1-E-441	Focus	4/30/11	3:44:29 PM	12956180.86	274265.6951	898.1065	0.0476	0.0836	0.0962	1.2	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		DBDY
TC1-E-444	Focus	4/30/11	4:12:21 PM	12956161.72	274274.4737	897.9822	0.0419	0.0794	0.0898	1.0	0.0	0.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		UBDY
MP 1.00-1.25																							
TC1-E-442	Focus	4/30/11	4:09:51 PM	12956155.91	274283.8835	898.0881	0.0338	0.0722	0.0797	1.3	0.1	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-443	Focus	4/30/11	4:11:08 PM	12956153.75	274279.5652	898.1233	0.0491	0.0997	0.1111	0.8	0.1	0.1	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC1-E-445	Focus	4/30/11	4:14:07 PM	12956156.44	274281.6151	898.0278	0.0535	0.1038	0.1168	1.1	0.1	0.1	Heavy	Heavy	Many	Center	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC1-E-446	Focus	4/30/11	4:16:55 PM	12956126.67	274301.3695	898.1263	0.0389	0.0787	0.0878	0.8	0.6	0.6	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		DBDY
TC1-E-447	Focus	4/30/11	4:18:12 PM	12956123.93	274296.6262	898.0539	0.0407	0.0834	0.0928	0.9	0.4	0.4	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		DBDY
TC1-E-448	Focus	4/30/11	4:20:36 PM	12956097.48	274314.5113	898.0006	0.0471	0.1004	0.1109	0.9	0.1	0.1	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-449	Focus	4/30/11	4:22:53 PM	12956095.49	274310.5824	897.7984	0.0521	0.1165	0.1277	0.8	0.3	0.4	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC1-E-450	Focus	4/30/11	4:25:48 PM	12956082.73	274310.2042	897.8965	0.0388	0.0916	0.0995	0.4	0.6	0.7	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		UBDY
TC1-E-451	Focus	4/30/11	4:26:46 PM	12956077.67	274306.0393	897.8531	0.0321	0.0769	0.0834	0.6	0.1	0.1	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC1-E-452	Focus	4/30/11	4:29:03 PM	12956077.75	274305.7729	897.9113	0.0396	0.0908	0.0991	0.2	0.5	0.7	Heavy	Heavy	Many	Left	1-3 ft/sec		Cut Bank	None	Soft Sediment		PT BAR
TC1-E-453	Focus	4/30/11	4:30:27 PM	12956070.09	274302.1607	897.9356	0.0309	0.0719	0.0782	0.4	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Other-Comments		SOOVRGR DBDY
TC1-E-454	Focus	4/30/11	4:33:02 PM	12956039.31	274312.6407	897.8662	0.0291	0.071	0.0768	0.7	0.0	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-455	Focus	4/30/11	4:34:05 PM	12956037.86	274307.7902	897.7432	0.0379	0.0941	0.1015	0.4	0.6	1.6	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-456	Focus	4/30/11	4:35:59 PM	12955992.64	274319.2374	897.7195	0.0341	0.0875	0.0939	0.7	0.2	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-457	Focus	4/30/11	4:36:39 PM	12955990.56	274314.8814	897.8036	0.0368	0.0958	0.1026	0.6	0.3	1.6	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-458	Focus	4/30/11	4:42:05 PM	12955982.22	274339.1065	897.6974	0.0334	0.095	0.1007	0.3	0.6	0.7	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-459	Focus	4/30/11	4:43:15 PM	12955979.39	274342.5097	897.668	0.0332	0.0952	0.1008	0.8	0.1	0.1	None	None	None	Center	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		LAT BDY

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
TC1-E-460	Focus	4/30/11	4:46:20 PM	12955978.21	274365.7734	897.8211	0.039	0.1161	0.1225	0.4	0.6	0.7	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC1-E-461	Focus	4/30/11	4:47:51 PM	12955977.87	274369.7911	897.437	0.0415	0.1528	0.1583	0.8	0.1	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		DBDY
TC1-E-462	Focus	4/30/11	4:50:12 PM	12955970.19	274388.1483	897.4593	0.7762	2.3977	2.5202	0.7	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-463	Focus	4/30/11	4:50:44 PM	12955962.97	274386.3683	897.6074	0.037	0.1134	0.1193	0.7	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-464	Focus	4/30/11	4:51:49 PM	12955961.61	274423.0817	897.8122	0.0387	0.118	0.1242	0.6	0.4	0.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-465	Focus	4/30/11	4:52:35 PM	12955954.84	274423.5875	897.9741	0.0401	0.1483	0.1536	0.6	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-466	Focus	4/30/11	4:53:51 PM	12955951.87	274461.7291	902.6549	12.51	25.4578	28.3654	0.7	0.1	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC1-E-467	Focus	4/30/11	4:56:21 PM	12955951.04	274455.1686	897.9409	0.0513	0.2842	0.2888	0.8	0.0	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC2-D-01	Focus	5/1/2011	9:13:37 AM	12955459.8	274579.669	895.6993	0.0402	0.056	0.0689	0.9	0.6	0.8	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC2-D-02	Focus	5/1/2011	9:14:48 AM	12955467.64	274580.8436	895.6753	0.0435	0.0622	0.0759	1.5	0.1	0.1	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC2-D-03	Focus	5/1/2011	9:16:02 AM	12955475.57	274577.981	895.6694	0.0385	0.0531	0.0656	1.7	0.1	0.1	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC2-D-04	Focus	5/1/2011	9:19:49 AM	12955455.35	274575.4657	895.6752	0.0418	0.0552	0.0692	0.7	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	D BDY	
TC2-D-05	Focus	5/1/2011	9:21:17 AM	12955468.85	274573.829	895.6578	0.0367	0.0479	0.0604	1.6	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BOUNDARY	
TC2-D-06	Focus	5/1/2011	9:23:04 AM	12955425.25	274577.6074	895.3968	0.0376	0.0477	0.0608	0.5	0.1	0.9	Moderate	Moderate	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC2-D-07	Focus	5/1/2011	9:24:15 AM	12955424.45	274572.8069	895.3273	0.0411	0.0516	0.0659	0.9	0.1	0.4	Moderate	Moderate	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC2-D-08	Focus	5/1/2011	9:25:38 AM	12955433.9	274574.7952	895.4051	0.0363	0.0452	0.058	0.4	0.1	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	U BDRY	
TC2-D-09	Focus	5/1/2011	9:26:33 AM	12955434.55	274571.8904	895.3928	0.0386	0.0476	0.0613	0.6	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDRY	
TC2-D-10	Focus	5/1/2011	9:27:55 AM	12955412.61	274578.1186	895.251	0.0393	0.0499	0.0635	0.4	0.0	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDRY	
TC2-D-11	Focus	5/1/2011	9:28:56 AM	12955413.31	274574.0493	895.329	0.0443	0.0563	0.0716	0.4	0.0	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDRY	
TC2-D-12	Focus	5/1/2011	9:31:51 AM	12955407.95	274577.9861	895.2916	0.0532	0.0646	0.0837	1.0	0.5	0.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDRY	
TC2-D-13	Focus	5/1/2011	9:34:25 AM	12955391.62	274581.678	895.2263	0.0476	0.0552	0.0729	0.4	0.3	0.5	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC2-D-14	Focus	5/1/2011	9:36:33 AM	12955391.59	274579.3319	895.2097	0.0535	0.0644	0.0838	0.5	0.0	0.0	Heavy	Heavy	Common	Center	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC2-D-15	Focus	5/1/2011	9:37:44 AM	12955388.51	274577.1241	895.1726	0.0535	0.0624	0.0822	0.9	0.1	0.7	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	LAT BDRY	
TC2-D-16	Focus	5/1/2011	9:39:35 AM	12955369.05	274586.2218	895.2034	0.0611	0.0708	0.0935	0.4	0.0	0.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BNRY	
TC2-D-17	Focus	5/1/2011	9:40:16 AM	12955368.9	274581.1787	895.2651	0.0397	0.0459	0.0607	0.7	0.8	0.8	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BNRY	
TC2-D-18	Focus	5/1/2011	9:42:47 AM	12955345.96	274589.5125	895.1278	0.0373	0.0432	0.0571	0.6	0.1	0.2	Heavy	Heavy	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC2-D-19	Focus	5/1/2011	9:45:06 AM	12955361.79	274586.5844	895.0569	0.0487	0.0462	0.0671	0.5	0.1	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDY	
TC2-D-20	Focus	5/1/2011	9:45:54 AM	12955361.38	274581.9424	895.139	0.0538	0.0514	0.0744	0.6	0.0	0.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDY	
TC2-D-21	Focus	5/1/2011	9:47:02 AM	12955345.29	274583.8565	895.232	0.0581	0.0677	0.0892	0.7	1.2	1.3	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC2-D-22	Focus	5/1/2011	9:49:21 AM	12955313.52	274596.7115	895.1508	0.031	0.0364	0.0478	0.9	0.7	1.8	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC2-D-23	Focus	5/1/2011	9:50:06 AM	12955313.33	274592.0159	895.1019	0.0408	0.048	0.0631	0.6	0.5	0.7	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC2-D-24	Focus	5/1/2011	9:52:22 AM	12955282.14	274594.5613	895.0607	0.0346	0.041	0.0537	1.0	0.2	0.3	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC2-D-25	Focus	5/1/2011	9:53:06 AM	12955282.63	274589.6374	895.1036	0.038	0.0452	0.059	0.6	1.0	1.1	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC2-D-26	Focus	5/1/2011	9:55:24 AM	12955275.11	274594.7926	895.0929	0.0414	0.0496	0.0646	0.8	0.1	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC2-D-27	Focus	5/1/2011	9:56:29 AM	12955273.86	274590.9194	895.1669	0.0359	0.0434	0.0563	0.7	0.2	0.8	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC2-D-28	Focus	5/1/2011	9:59:06 AM	12955261.13	274596.6987	895.1408	0.0488	0.0598	0.0772	1.1	0.5	0.5	Heavy	Heavy	Many	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC2-D-29	Focus	5/1/2011	10:00:28 AM	12955267.24	274595.8462	894.9846	0.0559	0.0692	0.089	0.9	0.1	0.1	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment	U BDY	
TC2-D-30	Focus	5/1/2011	10:02:02 AM	12955259.98	274592.9871	895.1286	0.0441	0.0551	0.0706	1.3	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Soft Sediment	LAT BDY	
TC2-D-31	Focus	5/1/2011	10:03:38 AM	12955247.52	274587.6407	895.0501	0.0328	0.0415	0.0529	1.2	0.6	1.2	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Sand	D BDY	
TC2-D-32	Focus	5/1/2011	10:04:59 AM	12955252.34	274586.6975	895.0648	0.0399	0.0511	0.0649	0.4	1.0	1.6	Heavy	Heavy	Many	Left	1-3 ft/sec		Point Bar	None	Sand over Silt		
TC2-D-33	Focus	5/1/2011	10:07:57 AM	12955235.74	274582.1551	895.0497	0.0377	0.0493	0.0621	0.3	1.6	1.6	Heavy	Heavy	Many	Right	<1ft/sec		Point Bar	None	Sand over Silt		
TC2-D-43	Focus	5/1/2011	10:44:01 AM	12955251.85	274572.0085	894.3517	0.6606	1.2394	1.4045	0.7	1.1	1.1	Heavy	Heavy	Many	Left	1-3 ft/sec		Cut Bank	None	Soft Sediment		
MP 1.25-1.50																							
TC2-D-34	Focus	5/1/2011	10:09:23 AM	12955232.36	274578.6359	895.0196	0.0312	0.0417	0.0521	1.5	0.6	1.3	Heavy	Heavy	Many	Left	<1ft/sec		Cut Bank	None	Sand over Silt		
TC2-D-35	Focus	5/1/2011	10:11:52 AM	12955216.15	274597.9583	895.0642	0.0336	0.0572	0.0663	0.7	1.0	1.1	Heavy	Heavy	Many	Right	1-3 ft/sec		Cut Bank	None	Sand		
TC2-D-36	Focus	5/1/2011	10:13:28 AM	12955201.03	274592.4111	895.1647	0.042	0.0634	0.0761	1.4	0.1	0.2	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC2-D-37	Focus	5/1/2011	10:14:58 AM	12955183.54	274578.0861	894.9741	0.0335	0.0482	0.0587	1.1	1.0	1.0	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC2-D-38	Focus	5/1/2011	10:16:59 AM	12955163.94	274559.0818	895.0118	0.049	0.0798	0.0936	0.5	1.3	1.4	Moderate	Moderate	Common	Right	1-3 ft/sec		Point Bar	None	Soft Sediment		
TC2-D-39	Focus	5/1/2011	10:18:00 AM	12955154.39	274573.541	895.0679	0.0347	0.0526	0.063	0.3	1.0	1.8	Heavy	Heavy	Many	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC2-D-40	Focus	5/1/2011	10:20:27 AM	12955128.36	274582.4582	895.1333	0.0463	0.0746	0.0878	1.1	0.5	0.9	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC2-D-41	Focus	5/1/2011	10:22:03 AM	12955106.03	274591.5762	895.1058	0.0397	0.0681	0.0788	1.1	0.7	0.9	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		OVER ROCK
TC2-D-42	Focus	5/1/2011	10:24:00 AM	12955093.12	274612.9258	894.8569	0.0785	0.1638	0.1816	0.9	0.4	0.5	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		OVER ROCK
TC2-D-44	Focus	5/1/2011	10:45:44 AM	12955229.93	274578.8982	895.1628	0.0344	0.0625	0.0713	1.3	0.7	1.5	Heavy	Heavy	Many	Left	1-3 ft/sec		Cut Bank	None	Sand over Silt		
TC2-D-45	Focus	5/1/2011	10:47:06 AM	12955218.92	274589.3092	895.092	0.0284	0.0536	0.0606	1.0	0.4	1.2	Moderate	Moderate	Common	Left	1-3 ft/sec		Point Bar	None	Sand over Silt		
TC2-D-46	Focus	5/1/2011	10:48:08 AM	12955206.34	274587.2066	895.0792	0.0246	0.0468	0.0529	0.3	1.0	1.5	Heavy	Heavy	Many	Left	1-3 ft/sec		Point Bar	None	Sand over Silt		
TC2-D-47	Focus	5/1/2011	10:54:05 AM	12955189.46	274570.9642	895.037	0.028	0.0514	0.0585	0.3	1.0	1.5	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
TC2-D-48	Focus	5/1/2011	10:55:09 AM	12955167.33	274546.4975	895.1035	0.0355	0.0654	0.0744	0.5	1.0	1.4	Heavy	Heavy	Many	Left	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC2-D-49	Focus	5/1/2011	10:56:45 AM	12955148.1	274561.942	894.8315	0.0327	0.0622	0.0703	1.1	0.7	1.3	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Soft Sediment		
TC2-D-50	Focus	5/1/2011	10:57:57 AM	12955128.59	274573.499	895.0697	0.0427	0.0817	0.0922	0.4	1.9	1.9	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC2-D-51	Focus	5/1/2011	10:59:19 AM	12955106.65	274580.5154	894.9978	0.0291	0.0639	0.0702	0.7	1.2	1.4	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC2-D-52	Focus	5/1/2011	11:02:13 AM	12955092.15	274597.3009	893.9401	1.255	2.4008	2.709	1.3	0.7	1.0	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC2-D-53	Focus	5/1/2011	11:03:43 AM	12955084.79	274610.5281	895.4434	0.0576	0.1287	0.141	0.8	0.0	0.0	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-01	Focus	5/1/2011	11:08:55 AM	12955027.08	274630.009	891.9334	1.3378	2.5723	2.8994	1.0	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		DOWN OF CULVERT
TC3-D-02	Focus	5/1/2011	11:10:00 AM	12955015.89	274632.252	894.4551	1.0351	1.984	2.2378	0.9	0.1	0.3	Heavy	Heavy	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-03	Focus	5/1/2011	11:11:17 AM	12955006.2	274627.9849	893.4991	0.0459	0.0871	0.0985	0.4	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-04	Focus	5/1/2011	11:13:08 AM	12955023.37	274609.6512	893.561	0.0648	0.1357	0.1504	0.8	0.2	0.3	Heavy	Heavy	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-05	Focus	5/1/2011	11:14:04 AM	12955013.47	274611.7169	893.4987	0.0576	0.1202	0.1333	0.8	0.0	0.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-06	Focus	5/1/2011	11:15:23 AM	12955007.08	274612.6921	893.5358	0.0361	0.0919	0.0988	0.7	0.1	0.2	Heavy	Heavy	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-07	Focus	5/1/2011	11:17:13 AM	12955002.01	274614.8735	893.5259	0.0484	0.0992	0.1103	0.7	0.1	0.4	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-08	Focus	5/1/2011	11:18:44 AM	12954982.72	274628.9285	893.1865	0.0422	0.0858	0.0956	0.6	0.1	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-09	Focus	5/1/2011	11:19:37 AM	12954983.55	274625.0363	893.2005	0.052	0.1051	0.1172	0.4	0.5	0.5	Heavy	Heavy	Many	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt		
TC3-D-10	Focus	5/1/2011	11:20:33 AM	12954986.69	274624.82	893.3215	0.055	0.1105	0.1234	0.3	0.1	0.1	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
TC3-D-100	Focus	5/1/2011	2:54:01 PM	12954214.14	274956.9482	888.8965	0.0625	0.1376	0.1511	1.0	0.1	0.1	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel	U BDY	
TC3-D-101	Focus	5/1/2011	2:55:45 PM	12954233.65	274985.3707	888.7548	0.0493	0.1216	0.1312	0.3	0.8	0.9	Heavy	Heavy	Many	Right	1-3 ft/sec		Cut Bank	None	Sand over Silt		
TC3-D-102	Focus	5/1/2011	2:57:07 PM	12954227.1	274984.2795	888.8143	0.0773	0.1787	0.1947	0.5	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-103	Focus	5/1/2011	2:58:45 PM	12954216.16	274989.9977	888.6225	0.1517	0.1919	0.2446	0.2	0.1	0.1	Heavy	Moderate	Many	Left	1-3 ft/sec		Point Bar	None	Sand over Silt		
TC3-D-104	Focus	5/1/2011	3:00:54 PM	12954196.31	274997.6243	888.8704	0.0571	0.1149	0.1283	0.4	0.1	0.1	Light	Light	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel	D BDY	
TC3-D-105	Focus	5/1/2011	3:02:20 PM	12954195.19	274993.5269	888.7634	0.0747	0.1479	0.1657	0.7	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	LAT BDY	
TC3-D-106	Focus	5/1/2011	3:06:46 PM	12954183.91	275002.7494	888.1069	0.0385	0.0968	0.1042	0.5	0.2	0.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	U BDY	
TC3-D-107	Focus	5/1/2011	3:07:24 PM	12954175.05	275005.0854	888.4839	0.0384	0.0968	0.1041	0.8	1.0	1.1	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC3-D-108	Focus	5/1/2011	3:08:41 PM	12954173.11	275001.3873	888.5511	0.0366	0.0931	0.1	0.9	0.8	0.9	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC3-D-109	Focus	5/1/2011	3:10:52 PM	12954159.88	275008.0802	888.6238	0.0468	0.1208	0.1295	1.1	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BDY	
TC3-D-11	Focus	5/1/2011	11:22:10 AM	12954977.85	274625.1634	893.1563	0.0572	0.1139	0.1274	0.4	0.0	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BDY	
TC3-D-110	Focus	5/1/2011	3:11:58 PM	12954153.77	275007.0976	888.5312	0.0651	0.0916	0.1124	0.4	0.2	0.5	Heavy	Moderate	Many	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-111	Focus	5/1/2011	3:13:18 PM	12954158.07	275008.8293	888.9749	0.7897	1.8063	1.9714	0.9	0.2	0.3	Light	Light	Few	Center	1-3 ft/sec		Point Bar	None	Sand	U BDY	
TC3-D-112	Focus	5/1/2011	3:14:39 PM	12954143.81	275005.2188	888.714	0.0376	0.1118	0.118	1.1	0.0	0.0	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-113	Focus	5/1/2011	3:18:57 PM	12954135.26	274990.0304	888.2949	0.0557	0.091	0.1067	0.9	0.0	0.0	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel	D BDY	
TC3-D-114	Focus	5/1/2011	3:21:02 PM	12954116.36	274992.1252	888.6352	0.1279	0.214	0.2493	0.0	0.3	0.7	Moderate	Moderate	Common	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-115	Focus	5/1/2011	3:22:21 PM	12954115.02	274989.5755	888.5852	0.0672	0.2091	0.2196	0.8	0.1	0.2	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel	LAT BDY	
TC3-D-116	Focus	5/1/2011	3:23:17 PM	12954126.19	274989.2128	888.6325	0.0239	0.0746	0.0784	0.7	0.0	0.0	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BDY	
TC3-D-12	Focus	5/1/2011	11:23:23 AM	12954960.19	274631.3281	893.1904	0.0448	0.0883	0.0991	0.5	0.2	0.3	None	None	None	Right	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
TC3-D-13	Focus	5/1/2011	11:24:51 AM	12954960.43	274628.0554	893.1721	0.0673	0.1311	0.1473	0.7	0.3	0.4	Moderate	Moderate	Common	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt		
TC3-D-14	Focus	5/1/2011	11:25:42 AM	12954959.92	274624.6288	893.1889	0.0466	0.0904	0.1016	0.6	0.6	0.6	None	None	None	Left	1-3 ft/sec		Mid-Channel	None	Sand over Silt		
TC3-D-15	Focus	5/1/2011	11:26:55 AM	12954966.02	274627.219	893.2337	0.0485	0.093	0.1049	0.3	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	U BDY	
TC3-D-16	Focus	5/1/2011	11:28:01 AM	12954954.9	274628.4735	893.1945	0.0478	0.0846	0.0972	0.4	0.1	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BDY	
TC3-D-17	Focus	5/1/2011	11:33:34 AM	12954942.45	274630.23	893.1182	0.059	0.1003	0.1163	0.6	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-18	Focus	5/1/2011	11:34:32 AM	12954942.28	274625.1331	893.1515	0.0574	0.0964	0.1122	0.5	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-19	Focus	5/1/2011	12:35:49 PM	12954907.9	274613.1054	892.8363	0.0863	0.1359	0.1609	0.7	0.0	0.0	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BDY	
TC3-D-20	Focus	5/1/2011	12:37:44 PM	12954904.65	274608.779	892.9424	0.084	0.1273	0.1525	0.9	0.2	0.4	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-21	Focus	5/1/2011	12:38:56 PM	12954898.59	274615.9891	892.8028	0.0623	0.0971	0.1154	0.4	0.3	0.3	Moderate	Moderate	Common	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-22	Focus	5/1/2011	12:39:47 PM	12954896.24	274613.6226	892.977	0.0778	0.1003	0.127	1.2	0.1	0.3	Light	Light	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel	LAT BDY	
TC3-D-23	Focus	5/1/2011	12:43:33 PM	12954880.88	274637.4648	892.9671	0.0941	0.1442	0.1722	0.5	1.0	1.1	Light	Light	None	Right	1-3 ft/sec		Cut Bank	None	Sand over Silt	D BDY	
TC3-D-24	Focus	5/1/2011	12:45:21 PM	12954867.44	274638.516	892.9711	0.0582	0.0679	0.0894	0.5	0.3	1.1	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-25	Focus	5/1/2011	12:47:46 PM	12954872.66	274633.9692	893.0089	0.0537	0.0646	0.084	0.4	0.1	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	U BDY	
TC3-D-26	Focus	5/1/2011	12:49:07 PM	12954865.53	274643.434	892.9166	0.078	0.1061	0.1317	0.7	0.1	0.2	Heavy	Heavy	Many	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt		
TC3-D-27	Focus	5/1/2011	12:50:02 PM	12954866.89	274646.5567	892.7089	0.0475	0.0573	0.0744	0.8	0.8	0.8	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	LAT BDY	
TC3-D-28	Focus	5/1/2011	12:51:44 PM	12954849.49	274650.6319	892.7063	0.0968	0.1299	0.162	0.9	0.2	0.4	Heavy	Heavy	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC3-D-29	Focus	5/1/2011	12:52:40 PM	12954852	274653.3486	892.9774	0.0896	0.12	0.1498	1.0	0.2	0.7	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	LAT BDY	
TC3-D-30	Focus	5/1/2011	12:55:08 PM	12954840.77	274669.7402	892.6899	1.3941	1.6198	2.1371	0.2	1.2	1.3	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC3-D-31	Focus	5/1/2011	12:56:01 PM	12954827.56	274683.6764	893.0119	0.0473	0.0578	0.0747	0.5	0.4	0.8	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-32	Focus	5/1/2011	12:57:47 PM	12954815.37	274690.8388	892.8037	0.0856	0.1121	0.1411	0.7	0.1	0.1	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-33	Focus	5/1/2011	12:59:36 PM	12954846.68	274651.2655	892.9951	0.0981	0.1302	0.163	1.0	0.1	0.2	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-34	Focus	5/1/2011	1:02:34 PM	12954834.27	274663.05	892.9071	0.1092	0.1415	0.1788	0.9	0.9	1.0	Moderate	Moderate	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC3-D-35	Focus	5/1/2011	1:03:19 PM	12954820.26	274673.9795	892.9052	0.0693	0.0618	0.0928	0.4	0.9	1.2	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC3-D-36	Focus	5/1/2011	1:05:01 PM	12954811.11	274683.7492	892.8696	0.0585	0.0556	0.0807	0.7	0.2	1.0	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-37	Focus	5/1/2011	1:07:54 PM	12954794.23	274704.8942	894.1068	2.0453	1.3721	2.463	0.9	1.0	1.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	D BDY	

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
TC3-D-38	Focus	5/1/2011	1:09:02 PM	12954790.97	274697.4999	894.7472	2.1371	2.0864	2.9867	0.7	0.0	0.0	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-39	Focus	5/1/2011	1:11:48 PM	12954765.84	274717.2363	891.1163	2.7748	1.7145	3.2618	0.9	0.8	1.0	Heavy	Heavy	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-40	Focus	5/1/2011	1:13:09 PM	12954778.76	274715.6123	894.4723	1.8301	1.6952	2.4946	0.7	0.2	1.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	U BDY	
TC3-D-41	Focus	5/1/2011	1:14:05 PM	12954768.47	274722.5187	893.0413	1.8198	1.8181	2.5724	1.0	0.5	0.6	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-42	Focus	5/1/2011	1:15:33 PM	12954761.35	274747.9022	892.1081	5.4189	3.7692	6.6009	0.4	0.1	0.2	Heavy	Heavy	Many	Right	1-3 ft/sec		Point Bar	None	Sand over Silt		
TC3-D-43	Focus	5/1/2011	1:16:42 PM	12954755.87	274744.5595	894.5435	1.8258	1.2656	2.2215	1.0	0.7	0.7	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Sand over Silt	LAT BDY	
TC3-D-44	Focus	5/1/2011	1:17:55 PM	12954760.08	274761.7645	895.164	2.4805	1.898	3.1233	0.4	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-45	Focus	5/1/2011	1:18:41 PM	12954748.12	274757.7449	898.4992	3.3171	3.3817	4.737	1.0	0.8	0.9	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-46	Focus	5/1/2011	1:20:43 PM	12954755.54	274776.0775	894.8252	2.6321	2.6588	3.7413	0.7	0.4	0.4	Heavy	Heavy	Many	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC3-D-47	Focus	5/1/2011	1:22:26 PM	12954746.64	274787.6468	892.0692	1.6827	1.7156	2.4031	1.1	0.0	0.0	Heavy	Heavy	Many	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-48	Focus	5/1/2011	1:23:34 PM	12954744.57	274784.76	892.3902	1.6549	1.5621	2.2757	0.2	0.7	0.7	Heavy	Heavy	Many	Left	1-3 ft/sec		Point Bar	None	Sand over Silt		
TC3-D-49	Focus	5/1/2011	1:26:01 PM	12954727.11	274777.4787	894.2623	1.5869	1.5474	2.2165	1.1	0.0	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	D BDY	
TC3-D-50	Focus	5/1/2011	1:26:54 PM	12954729.19	274776.1011	893.8299	1.4229	1.4342	2.0203	1.0	0.2	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-51	Focus	5/1/2011	1:28:19 PM	12954710.79	274764.5614	893.89	1.9989	1.9704	2.8068	1.2	0.1	0.2	Light	None	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-52	Focus	5/1/2011	1:29:24 PM	12954712.2	274762.4118	894.1716	1.2532	1.2339	1.7587	0.9	0.1	0.1	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-53	Focus	5/1/2011	1:30:28 PM	12954715.29	274767.1583	893.4892	1.5364	1.5324	2.1699	1.1	0.1	0.4	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDY	
TC3-D-54	Focus	5/1/2011	1:33:26 PM	12954705.82	274752.8029	892.1239	1.334	1.3806	1.9198	0.2	0.8	0.8	Heavy	Heavy	Many	Left	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC3-D-55	Focus	5/1/2011	1:34:51 PM	12954703.71	274755.4563	891.8141	1.3481	1.4204	1.9584	0.6	0.1	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-56	Focus	5/1/2011	1:36:05 PM	12954695.79	274747.4325	893.3325	1.289	1.4059	1.9074	0.5	0.1	0.1	Moderate	Moderate	Common	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-57	Focus	5/1/2011	1:36:58 PM	12954689.74	274748.7726	896.4873	1.6723	1.933	2.5559	0.3	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-58	Focus	5/1/2011	1:38:27 PM	12954662.81	274753.8738	893.6705	1.8912	2.322	2.9947	0.4	0.1	0.1	None	None	None	Right	1-3 ft/sec		Point Bar	None	Gravel & Larger		
TC3-D-59	Focus	5/1/2011	1:39:09 PM	12954649.81	274752.2125	886.9028	6.9449	9.6484	11.8879	0.7	0.0	0.0	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Gravel & Larger		
TC3-D-60	Focus	5/1/2011	1:41:14 PM	12954663.65	274790.0643	891.5991	1.4282	1.6698	2.1972	0.5	0.0	0.0	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand		
TC3-D-61	Focus	5/1/2011	1:42:24 PM	12954663.79	274795.9368	890.1664	1.7608	2.0818	2.7266	0.5	0.0	0.0	Light	Light	Common	Right	1-3 ft/sec		Cut Bank	None	Sand		
TC3-D-62	Focus	5/1/2011	1:43:04 PM	12954656.41	274794.3426	892.0228	2.006	2.3886	3.1192	0.5	0.1	0.1	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand		
TC3-D-63	Focus	5/1/2011	1:46:01 PM	12954622.8	274832.4277	891.2197	0.0519	0.0637	0.0822	0.5	0.0	0.0	None	None	None	Right	1-3 ft/sec		Point Bar	None	Gravel & Larger		
TC3-D-64	Focus	5/1/2011	1:46:57 PM	12954618.08	274832.7578	891.2492	0.0506	0.0629	0.0807	0.6	0.0	0.0	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Gravel & Larger		
TC3-D-65	Focus	5/1/2011	1:49:31 PM	12954625.43	274860.228	889.4728	0.9196	1.2088	1.5188	0.0	0.2	0.3	Moderate	Moderate	Common	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-66	Focus	5/1/2011	1:51:24 PM	12954622.32	274860.2858	891.0109	0.0465	0.0616	0.0772	0.4	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-67	Focus	5/1/2011	1:52:12 PM	12954618.56	274862.2771	891.0528	0.061	0.0824	0.1025	0.8	0.5	0.5	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-68	Focus	5/1/2011	1:54:14 PM	12954623.12	274846.6695	891.1349	0.0383	0.053	0.0654	0.1	0.2	0.2	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BDY	
TC3-D-69	Focus	5/1/2011	1:55:09 PM	12954625.59	274881.238	890.8555	0.0466	0.0655	0.0803	0.3	0.0	0.1	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel	D BDY	
TC3-D-70	Focus	5/1/2011	1:57:38 PM	12954576.64	274899.3514	890.5547	0.0779	0.1068	0.1322	1.5	0.3	0.3	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-71	Focus	5/1/2011	1:58:23 PM	12954578	274892.0245	890.7457	0.0847	0.1178	0.1451	0.0	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-72	Focus	5/1/2011	2:00:00 PM	12954557.51	274883.0393	890.5761	0.067	0.1013	0.1215	0.0	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-73	Focus	5/1/2011	2:04:57 PM	12954552.8	274875.9045	890.5121	0.0475	0.0831	0.0957	0.8	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC3-D-74	Focus	5/1/2011	2:07:42 PM	12954517.24	274890.2012	890.1978	0.0409	0.0771	0.0872	0.2	0.2	0.2	None	None	None	Right	1-3 ft/sec		Point Bar	None	Gravel & Larger		
TC3-D-75	Focus	5/1/2011	2:11:40 PM	12954512.51	274884.8631	890.1281	0.0602	0.1157	0.1305	0.4	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC3-D-76	Focus	5/1/2011	2:12:48 PM	12954505	274907.4065	889.9905	0.0509	0.0995	0.1117	0.3	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
TC3-D-77	Focus	5/1/2011	2:15:14 PM	12954475.64	274923.7428	890.1098	0.0774	0.1505	0.1692	0.2	0.3	0.3	Heavy	Heavy	Common	Left	1-3 ft/sec		Point Bar	None	Soft Sediment		
TC3-D-78	Focus	5/1/2011	2:17:17 PM	12954483.78	274923.7571	890.1121	0.0705	0.1453	0.1615	0.7	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Soft Sediment	U BDY	
TC3-D-79	Focus	5/1/2011	2:18:51 PM	12954475.14	274927.616	889.778	0.0552	0.1154	0.1279	0.4	0.1	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-80	Focus	5/1/2011	2:20:11 PM	12954453.28	274923.6724	890.1412	0.042	0.0891	0.0984	0.4	0.0	0.1	Moderate	Moderate	Common	Left	1-3 ft/sec		Cut Bank	None	Sand		
TC3-D-81	Focus	5/1/2011	2:21:29 PM	12954444.14	274924.5858	889.8284	0.0534	0.1146	0.1264	0.5	0.1	0.1	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand	D BDY	
TC3-D-82	Focus	5/1/2011	2:23:02 PM	12954416.97	274935.7955	889.6002	0.0394	0.088	0.0964	0.3	0.2	0.2	Moderate	Moderate	Common	Left	1-3 ft/sec		Point Bar	None	Sand		
TC3-D-83	Focus	5/1/2011	2:24:23 PM	12954423.26	274936.5246	889.8805	0.047	0.1062	0.1161	0.5	0.0	0.0	None	None	None	Left	1-3 ft/sec		Point Bar	None	Soft Sediment	U BDY	
TC3-D-84	Focus	5/1/2011	2:25:52 PM	12954413.16	274936.879	889.8321	0.0446	0.1018	0.1112	1.1	0.0	0.1	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-85	Focus	5/1/2011	2:27:53 PM	12954405.34	274905.8789	889.5964	0.0773	0.0807	0.1117	0.3	0.0	0.0	Moderate	Moderate	Common	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-86	Focus	5/1/2011	2:28:50 PM	12954399.99	274898.9516	889.725	0.0704	0.1643	0.1787	0.5	0.3	0.3	Moderate	Moderate	Common	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-87	Focus	5/1/2011	2:30:01 PM	12954391.83	274897.6713	889.584	0.2072	0.1977	0.2864	0.9	0.0	0.0	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Gravel & Larger	D BDY	
TC3-D-88	Focus	5/1/2011	2:30:46 PM	12954389.5	274902.9934	889.7385	0.1324	0.1261	0.1829	0.2	0.1	0.3	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BDY	
TC3-D-89	Focus	5/1/2011	2:38:16 PM	12954341.81	274927.8037	889.165	0.2089	0.2208	0.304	0.7	0.2	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-90	Focus	5/1/2011	2:38:49 PM	12954339.53	274922.7296	889.28	0.2127	0.2263	0.3106	0.4	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-91	Focus	5/1/2011	2:40:51 PM	12954278.01	274939.1891	889.361	0.0853	0.2122	0.2287	0.1	0.2	0.2	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC3-D-92	Focus	5/1/2011	2:41:45 PM	12954287.19	274936.0929	889.3185	0.0406	0.1006	0.1085	0.4	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDY	
TC3-D-93	Focus	5/1/2011	2:43:18 PM	12954277.71	274936.4277	889.1131	0.0872	0.2422	0.2575	0.6	0.1	0.1	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-94	Focus	5/1/2011	2:44:07 PM	12954276.82	274934.7792	888.9906	0.1588	0.1786	0.239	0.7	0.0	0.0	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-95	Focus	5/1/2011	2:46:25 PM	12954262.21	274947.5983	888.9245	1.2678	2.7459	3.0245	0.5	0.0	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand	D BDY	
TC3-D-96	Focus	5/1/2011	2:46:59 PM	12954260.18	274940.0134	888.6595	1.7945	2.0085	2.6933	0.4	0.1	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-97	Focus	5/1/2011	2:50:06 PM	12954216.44	274964.115	888.834	0.0539	0.124	0.1352	0.0	0.5	0.5	Moderate	Moderate	Common	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-98	Focus	5/1/2011	2:51:50 PM	12954219.11	274954.9943	888.895	0.0551	0.1242	0.1359	0.5	0.0	0.1	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BDY	
TC3-D-99	Focus	5/1/2011	2:52:54 PM	12954216.25	274964.9715	888.295	1.1935	2.7502	2.998	1.1	0.1	0.1	Heavy	Heavy	Many	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
														MP 1.50-1.75									
TC3-D-117	Focus	5/1/2011	3:25:06 PM	12954106.61	275001.2217	888.5459	0.0425	0.1335	0.1401	0.4	0.0	0.1	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel	D BDY	
TC3-D-118	Focus	5/1/2011	3:26:37 PM	12954086.04	274994.4303	888.3439	0.043	0.1353	0.1419	0.2	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-119	Focus	5/1/2011	3:28:09 PM	12954044.61	275008.7177	888.4692	0.03	0.0829	0.0881	0.2	0.4	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
TC3-D-120	Focus	5/1/2011	3:30:02 PM	12954040.87	275007.3019	888.1023	0.0323	0.0885	0.0942	0.7	0.0	0.0	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-121	Focus	5/1/2011	3:32:20 PM	12954030.55	275023.0797	888.0082	0.0454	0.1227	0.1308	0.0	0.2	0.6	Moderate	Moderate	Common	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-122	Focus	5/1/2011	3:34:09 PM	12954037.06	275021.1665	888.243	0.0508	0.1356	0.1448	1.1	0.1	0.1	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BDY	
TC3-D-123	Focus	5/1/2011	3:35:26 PM	12954032.13	275026.9732	888.0649	0.0336	0.0887	0.0949	0.8	0.0	0.0	None	None	None	Right	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-124	Focus	5/1/2011	3:36:52 PM	12954015.42	275024.2612	888.1109	0.0764	0.1991	0.2133	0.4	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-125	Focus	5/1/2011	3:40:48 PM	12953990.12	275022.4737	887.8821	0.069	0.172	0.1854	0.3	0.0	0.0	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BDY	
TC3-D-126	Focus	5/1/2011	3:42:11 PM	12953984.63	275026.4263	887.7321	0.0675	0.1049	0.1247	0.0	0.7	0.7	Heavy	Heavy	Common	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-127	Focus	5/1/2011	3:43:06 PM	12953979.69	275024.3234	887.8191	0.0462	0.1124	0.1215	0.8	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-128	Focus	5/1/2011	3:44:54 PM	12953988.12	275047.587	887.712	0.1246	0.1932	0.2299	0.4	0.0	0.1	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel	D BDY	
TC3-D-129	Focus	5/1/2011	3:47:55 PM	12953979.64	275048.986	887.4216	0.1492	0.2948	0.3304	0.4	0.1	0.2	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel	D BDY	
TC3-D-130	Focus	5/1/2011	3:49:10 PM	12953970.04	275056.1557	887.6744	0.0861	0.148	0.1713	0.2	0.5	0.5	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-131	Focus	5/1/2011	3:50:04 PM	12953963.22	275055.7451	887.6403	0.0674	0.1138	0.1323	0.3	0.5	0.9	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-132	Focus	5/1/2011	3:50:44 PM	12953965.57	275061.9386	887.6959	0.0576	0.0958	0.1118	0.5	0.0	0.0	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-133	Focus	5/1/2011	3:52:21 PM	12953944.96	275053.6483	887.6106	0.052	0.0878	0.102	0.7	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-134	Focus	5/1/2011	3:53:04 PM	12953947.88	275049.8642	887.5586	0.0494	0.1007	0.1121	0.5	0.1	0.3	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-135	Focus	5/1/2011	3:54:13 PM	12953926.9	275049.3355	887.492	0.0458	0.0936	0.1042	0.4	0.3	0.5	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-136	Focus	5/1/2011	3:55:00 PM	12953927.29	275045.7601	887.5635	0.0428	0.0868	0.0967	0.7	0.5	1.3	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-137	Focus	5/1/2011	3:56:26 PM	12953916.68	275054.6825	887.3964	0.0459	0.0916	0.1025	0.1	0.3	0.4	Heavy	Heavy	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-138	Focus	5/1/2011	3:57:53 PM	12953923.5	275050.6094	887.5324	0.0395	0.0774	0.0869	0.3	0.1	0.3	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand over Silt	U BDY	
TC3-D-139	Focus	5/1/2011	3:59:08 PM	12953914.12	275052.7008	887.4901	0.0519	0.1005	0.1131	0.8	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt	LAT BDY	
TC3-D-140	Focus	5/1/2011	4:00:15 PM	12953905.66	275060.4581	887.5002	0.0384	0.0739	0.0833	0.5	0.4	0.5	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-141	Focus	5/1/2011	4:04:52 PM	12953891.63	275058.2876	887.542	0.0581	0.1053	0.1202	0.6	0.4	0.4	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-142	Focus	5/1/2011	4:06:38 PM	12953904.35	275056.3414	887.5604	0.0507	0.0905	0.1037	0.7	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDY	
TC3-D-143	Focus	5/1/2011	4:08:27 PM	12953887.62	275066.6428	887.6844	0.0341	0.0595	0.0686	1.0	0.5	0.6	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-144	Focus	5/1/2011	4:09:43 PM	12953896.02	275062.0146	887.4702	0.051	0.0877	0.1014	0.9	0.2	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	LAT BDY	
TC3-D-145	Focus	5/1/2011	4:14:00 PM	12953869.41	275077.7911	887.515	0.0456	0.0753	0.088	0.5	0.5	0.6	Heavy	Heavy	Many	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC3-D-146	Focus	5/1/2011	4:15:01 PM	12953878.92	275074.9184	887.6666	0.0638	0.1041	0.122	0.5	0.8	0.8	Moderate	Moderate	Common	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC3-D-147	Focus	5/1/2011	4:17:23 PM	12953865.97	275070.3285	887.481	0.0502	0.0808	0.0951	0.9	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-148	Focus	5/1/2011	4:18:16 PM	12953858.91	275066.3903	887.5486	0.0617	0.084	0.1043	0.1	0.8	1.0	Heavy	Heavy	Many	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-149	Focus	5/1/2011	4:20:03 PM	12953850.73	275063.8837	887.7748	0.0471	0.0746	0.0882	1.1	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-150	Focus	5/1/2011	4:21:27 PM	12953848.24	275049.3958	887.959	0.1126	0.1546	0.1913	0.5	0.5	0.6	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-151	Focus	5/1/2011	4:23:08 PM	12953834.29	275052.3201	887.8573	0.0713	0.1051	0.1271	0.9	0.8	0.9	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel	D BDY	
TC3-D-152	Focus	5/1/2011	4:25:01 PM	12953836.3	275059.8902	887.4521	0.0741	0.1184	0.1397	0.1	0.9	1.0	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC3-D-153	Focus	5/1/2011	4:26:12 PM	12953841.63	275056.6043	887.3442	0.0765	0.1283	0.1494	1.0	0.1	0.1	Light	Light	None	Right	1-3 ft/sec		Point Bar	None	Sand	U BDY	
TC3-D-154	Focus	5/1/2011	4:28:46 PM	12953828.02	275081.0418	887.3722	0.0547	0.0803	0.0971	1.2	0.0	0.0	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-155	Focus	5/1/2011	4:29:47 PM	12953822.04	275079.9004	887.6042	0.0698	0.1041	0.1254	0.4	0.7	0.7	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-156	Focus	5/1/2011	4:31:21 PM	12953828.13	275075.9843	887.5929	0.0544	0.1125	0.125	1.2	0.2	0.4	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel	U BDY	
TC3-D-157	Focus	5/1/2011	4:32:59 PM	12953803.29	275076.9194	887.6774	0.0674	0.148	0.1626	0.5	0.4	0.5	Heavy	Heavy	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC3-D-158	Focus	5/1/2011	4:34:01 PM	12953803.98	275081.2933	887.5745	0.0751	0.171	0.1868	1.0	0.1	0.1	Light	Light	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-159	Focus	5/1/2011	4:35:13 PM	12953798.49	275074.4956	887.4191	0.057	0.1349	0.1465	0.5	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-160	Focus	5/2/2011	8:48:44 AM	12953394.68	275268.2406	885.7948	1.1932	2.0892	2.4059	0.2	0.4	0.7	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-161	Focus	5/2/2011	8:49:30 AM	12953397.62	275273.2459	884.3144	0.0608	0.1102	0.1259	0.5	0.1	0.1	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
TC3-D-162	Focus	5/2/2011	8:50:12 AM	12953398.97	275276.7398	884.2364	0.0465	0.0898	0.1011	0.6	0.0	0.0	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
TC3-D-163	Focus	5/2/2011	8:51:09 AM	12953374.93	275269.4414	884.0909	0.0812	0.1548	0.1748	0.2	0.3	0.8	Moderate	Moderate	Common	Left	1-3 ft/sec		Point Bar	None	Sand over Silt		
TC3-D-164	Focus	5/2/2011	8:52:07 AM	12953373.38	275273.0053	884.0583	0.0515	0.0913	0.1049	0.7	0.0	0.0	Moderate	Moderate	Common	Center	1-3 ft/sec		Point Bar	None	Sand & Gravel	LAT BDY	
TC3-D-165	Focus	5/2/2011	8:54:33 AM	12953382.36	275274.2067	884.0868	0.0879	0.1504	0.1742	0.3	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BDY	
TC3-D-166	Focus	5/2/2011	8:55:23 AM	12953355.29	275271.4471	883.2804	2.7324	4.9066	5.6161	0.6	0.1	0.2	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel	D BDY	
TC3-D-167	Focus	5/2/2011	8:56:25 AM	12953358.33	275274.3778	884.1558	0.0313	0.0533	0.0618	0.1	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BDY	
TC3-D-168	Focus	5/2/2011	8:57:48 AM	12953339.3	275282.9748	884.0406	0.0315	0.0525	0.0612	0.2	0.2	0.3	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Sand over Silt		
TC3-D-169	Focus	5/2/2011	8:59:49 AM	12953338.74	275275.4248	884.1904	0.0611	0.1005	0.1177	0.5	0.2	0.3	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BDY	

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
TC3-D-170	Focus	5/2/2011	9:02:04 AM	12953330.88	275263.6911	880.7891	2.1798	3.0354	3.737	0.0	0.3	0.4	Moderate	Moderate	Common	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-171	Focus	5/2/2011	9:24:48 AM	12953309.8	275247.8573	883.9382	0.0729	0.0598	0.0943	0.9	0.2	0.3	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand	D BDY	
TC3-D-172	Focus	5/2/2011	9:25:43 AM	12953303.31	275250.9913	883.9579	0.0364	0.0463	0.0589	0.3	0.1	0.2	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel	U BDY	
TC3-D-173	Focus	5/2/2011	9:26:30 AM	12953291.81	275246.6768	883.9538	0.0624	0.0783	0.1001	0.1	0.3	0.3	Moderate	Moderate	Common	Right	1-3 ft/sec		Point Bar	None	Silt over Sand		
TC3-D-174	Focus	5/2/2011	9:27:22 AM	12953290.82	275240.9334	883.9151	0.0399	0.0486	0.0629	0.4	0.1	0.2	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BND	
TC3-D-175	Focus	5/2/2011	9:28:26 AM	12953273.73	275226.5668	883.8239	0.0455	0.053	0.0699	0.6	0.1	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-176	Focus	5/2/2011	9:31:40 AM	12953244.63	275220.7542	883.7679	0.0764	0.0841	0.1136	0.3	0.1	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDY	
TC3-D-177	Focus	5/2/2011	9:32:25 AM	12953234.18	275226.3728	883.8246	0.0514	0.0551	0.0753	0.6	0.4	0.4	Moderate	Moderate	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC3-D-178	Focus	5/2/2011	9:33:42 AM	12953230.9	275222.7999	883.678	0.052	0.0555	0.0761	0.5	0.6	0.7	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-179	Focus	5/2/2011	9:35:13 AM	12953205.68	275236.1063	883.6562	0.0616	0.0714	0.0943	0.6	0.0	0.1	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel	D BDY	
TC3-D-180	Focus	5/2/2011	9:39:02 AM	12953204.54	275262.5547	883.5668	0.0405	0.0469	0.062	0.6	0.3	0.4	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-181	Focus	5/2/2011	9:40:49 AM	12953197.85	275272.5897	883.5769	0.0355	0.0415	0.0546	1.3	0.1	0.2	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel	D BDY	
TC3-D-182	Focus	5/2/2011	9:42:42 AM	12953164.95	275285.9779	883.456	0.0443	0.0516	0.0681	0.3	0.1	0.3	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-183	Focus	5/2/2011	9:43:41 AM	12953159.7	275287.2198	883.3858	0.0349	0.0409	0.0538	0.9	0.2	0.3	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Gravel & Larger		
TC3-D-184	Focus	5/2/2011	9:46:59 AM	12953154.38	275337.9549	883.2958	0.0364	0.043	0.0563	0.6	0.1	0.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-185	Focus	5/2/2011	9:47:48 AM	12953149.05	275334.9171	883.3094	0.0308	0.0364	0.0477	0.7	0.1	0.2	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand	U BDY	
TC3-D-186	Focus	5/2/2011	9:49:06 AM	12953142.34	275343.8794	883.1207	0.0399	0.0473	0.0619	0.3	1.1	1.3	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		OVER SEDIMENT
TC3-D-187	Focus	5/2/2011	9:53:10 AM	12953116.37	275343.2369	883.1639	0.0334	0.0404	0.0524	0.6	0.2	0.3	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BDY	
TC3-D-188	Focus	5/2/2011	9:54:22 AM	12953091.4	275381.6062	883.1231	0.0443	0.0541	0.0699	0.2	0.4	0.5	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand		
TC3-D-189	Focus	5/2/2011	9:55:38 AM	12953088.48	275383.4322	883.0457	0.0422	0.0519	0.0668	0.9	0.0	0.1	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-190	Focus	5/2/2011	9:58:36 AM	12953037.45	275378.2498	883.016	0.0405	0.051	0.0651	0.9	0.3	0.5	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Sand	U BDY	
TC3-D-191	Focus	5/2/2011	9:59:30 AM	12953038.22	275385.5812	882.9865	0.0439	0.0555	0.0708	0.2	0.3	0.7	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand	U BDY	
MP 1.75-2.00																							
TC3-D-192	Focus	5/2/2011	10:02:36 AM	12953029.95	275390.0738	882.9259	0.0521	0.0679	0.0856	1.1	0.4	0.6	Heavy	Heavy	Many	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-193	Focus	5/2/2011	10:04:11 AM	12953021.99	275409.7484	882.9254	0.0415	0.0547	0.0686	0.4	0.4	0.8	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-194	Focus	5/2/2011	10:04:58 AM	12953014.86	275407.421	883.0307	0.0466	0.0619	0.0774	0.2	0.4	0.8	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt	D BDY	
TC3-D-195	Focus	5/2/2011	10:08:56 AM	12952969.67	275465.038	882.792	0.0478	0.0669	0.0823	0.2	0.3	0.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC3-D-196	Focus	5/2/2011	10:09:51 AM	12952963.35	275462.6414	883.0154	0.0482	0.0868	0.0993	0.7	0.2	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC3-D-197	Focus	5/2/2011	10:11:54 AM	12952948.3	275494.6759	882.7391	0.0436	0.0638	0.0773	0.6	0.5	0.5	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC3-D-198	Focus	5/2/2011	10:14:55 AM	12952968.44	275525.4317	880.6715	2.3587	3.6141	4.3157	0.3	1.7	3.3	Light	Light	Few	Left	1-3 ft/sec		Point Bar	None	Soft Sediment		
TC3-D-199	Focus	5/2/2011	10:18:00 AM	12952980.41	275598.9739	880.7593	0.0455	0.0724	0.0855	0.5	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC3-D-200	Focus	5/2/2011	10:18:56 AM	12952988.02	275600.394	880.6382	0.0424	0.068	0.0801	0.2	0.0	0.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	U BDY	
TC3-D-201	Focus	5/2/2011	10:21:12 AM	12953001.24	275636.0237	880.5487	0.0391	0.0642	0.0752	0.0	0.2	0.3	Heavy	Heavy	Many	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
TC3-D-202	Focus	5/2/2011	10:22:07 AM	12952994.19	275633.7834	880.5166	0.0344	0.0568	0.0664	0.0	0.1	0.1	None	None	None	Right	1-3 ft/sec		Point Bar	None	Gravel & Larger		
TC3-D-203	Focus	5/2/2011	10:23:51 AM	12952999.45	275644.1516	880.568	0.032	0.0539	0.0627	0.5	0.1	0.1	None	None	None	Left	1-3 ft/sec		Point Bar	None	Gravel & Larger	LAT BDY	
TC3-D-204	Focus	5/2/2011	10:27:05 AM	12953030.89	275651.8423	880.1953	0.0454	0.0805	0.0924	0.0	0.2	0.4	Heavy	Heavy	Many	Left	1-3 ft/sec		Point Bar	None	Sand		
TC3-D-205	Focus	5/2/2011	10:32:42 AM	12953029.91	275686.6462	879.8832	0.0357	0.0622	0.0717	0.1	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	D BDY	
TC3-D-206	Focus	5/2/2011	10:33:20 AM	12953028.6	275697.3833	879.7976	0.0346	0.0609	0.07	0.1	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	D BDY	
TC3-D-207	Focus	5/2/2011	10:35:25 AM	12953048.95	275704.2262	879.7156	0.0547	0.1	0.114	0.4	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger	U BDY	
TC3-D-208	Focus	5/2/2011	10:36:12 AM	12953057.93	275710.1576	879.6283	0.0384	0.0705	0.0802	0.6	1.1	1.2	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment	U BDY	
TC3-D-209	Focus	5/2/2011	10:41:03 AM	12953011.16	275795.3291	878.9766	0.0364	0.0661	0.0755	0.2	0.2	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	D BDY	
TC3-D-210	Focus	5/2/2011	10:42:15 AM	12953015.22	275797.7306	879.0752	0.0299	0.0545	0.0622	0.5	0.1	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	D BDY	
TC3-D-211	Focus	5/2/2011	10:43:37 AM	12953010.08	275813.8779	878.9364	0.0422	0.0769	0.0878	0.1	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC3-D-212	Focus	5/2/2011	10:45:43 AM	12953006.1	275872.8402	878.6162	0.0399	0.073	0.0832	0.3	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-213	Focus	5/2/2011	10:47:46 AM	12953002.95	275898.9108	878.6141	0.0417	0.0762	0.0869	0.5	0.3	0.3	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Silt over Sand		
TC3-D-214	Focus	5/2/2011	10:49:19 AM	12953018.88	275899.6024	878.4697	0.066	0.1166	0.134	0.0	0.8	0.9	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand		
TC3-D-215	Focus	5/2/2011	10:51:47 AM	12953045.35	275919.5152	878.7871	1.1713	2.1604	2.4575	0.3	0.8	0.9	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-216	Focus	5/2/2011	10:52:51 AM	12953047.48	275924.5942	879.1671	0.8831	1.5281	1.7649	0.4	0.4	0.5	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Sand over Silt		
TC3-D-217	Focus	5/2/2011	10:53:56 AM	12953045.28	275931.0849	878.4772	0.0368	0.0678	0.0772	0.6	0.1	0.2	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
TC3-D-218	Focus	5/2/2011	10:57:05 AM	12953079.93	275945.8463	878.1934	0.0416	0.0802	0.0904	0.8	1.2	1.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC3-D-219	Focus	5/2/2011	10:58:29 AM	12953101.24	275947.3373	883.0893	2.2136	3.5844	4.2129	0.6	0.4	0.7	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
TC3-D-220	Focus	5/2/2011	11:01:25 AM	12953083.41	275931.5089	883.9407	1.5198	2.9238	3.2952	0.3	0.6	1.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
TC3-D-221	Focus	5/2/2011	11:04:24 AM	12953097.82	275924.7027	881.909	2.4141	1.9116	3.0792	0.2	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
TC3-D-222	Focus	5/2/2011	11:07:13 AM	12953129.35	276020.4999	875.2977	1.6966	2.9404	3.3948	0.1	0.0	0.0	Light	Light	Few	Left	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC3-D-223	Focus	5/2/2011	11:08:43 AM	12953138.15	276022.6219	877.0784	1.7752	3.4933	3.9185	0.1	0.0	0.3	Light	Light	Few	Right	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC3-D-224	Focus	5/2/2011	11:10:37 AM	12953110.65	276071.5142	876.7119	0.0386	0.0749	0.0843	0.0	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
TC3-D-225	Focus	5/2/2011	11:12:42 AM	12953171.76	276107.7143	876.3003	0.0421	0.0765	0.0873	0.2	0.1	0.1	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
TC3-D-226	Focus	5/2/2011	11:14:08 AM	12953171.54	276113.1754	876.5832	0.0405	0.0729	0.0834	0.3	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
TC3-D-227	Focus	5/2/2011	11:15:53 AM	12953172.11	276121.1296	876.46	0.0331	0.0721	0.0793	0.1	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
TC3-D-228	Focus	5/2/2011	11:19:23 AM	12953223.02	276140.0425	876.0495	0.0579	0.0882	0.1055	0.3	0.5	0.6	Heavy	Heavy	Many	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment		
TC3-D-229	Focus	5/2/2011	11:20:26 AM	12953215.18	276131.8057	876.3809	0.0547	0.1295	0.1406	0.2	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDY	
TC3-D-230	Focus	5/2/2011	11:22:26 AM	12953212.87	276140.7342	876.3457	0.0554	0.1518	0.1616	0.5	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
TC3-D-231	Focus	5/2/2011	11:24:15 AM	12953204.31	276157.7617	876.2758	0.0531	0.0908	0.1052	0.6	0.3	0.4	Light	Light	Few	Right	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	D BDY	
TC3-D-232	Focus	5/2/2011	11:25:51 AM	12953151.77	276217.1631	875.8564	0.0279	0.0489	0.0563	0.5	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Gravel & Larger		
TC3-D-233	Focus	5/2/2011	11:26:47 AM	12953169.79	276226.9458	875.5745	0.0352	0.0612	0.0706	0.3	0.3	0.3	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC3-D-234	Focus	5/2/2011	11:29:11 AM	12953201.32	276280.8158	875.569	0.0406	0.074	0.0844	0.3	0.3	0.3	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand		
TC3-D-235	Focus	5/2/2011	11:32:00 AM	12953247.66	276312.6005	875.3942	0.0544	0.0965	0.1108	0.0	0.3	0.5	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC3-D-236	Focus	5/2/2011	11:33:09 AM	12953254.01	276310.6724	875.5768	0.0437	0.0877	0.098	0.3	0.3	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand	LAT BDY	
TC3-D-237	Focus	5/2/2011	11:33:56 AM	12953260.52	276308.2257	875.4132	0.0468	0.0816	0.0941	0.7	0.2	0.2	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Gravel & Larger		
TC3-D-238	Focus	5/2/2011	11:35:01 AM	12953243.37	276297.7597	875.5325	0.0353	0.0568	0.0669	0.3	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	U BDY	
TC3-D-239	Focus	5/2/2011	11:37:12 AM	12953252.66	276335.9807	875.4229	0.0483	0.0764	0.0904	1.6	0.5	1.3	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand	D BDY	
TC3-D-240	Focus	5/2/2011	11:41:17 AM	12953264.17	276358.3916	875.3825	0.0366	0.0556	0.0666	1.5	0.3	0.4	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
TC3-D-241	Focus	5/2/2011	11:42:02 AM	12953268.22	276358.0626	875.488	0.0399	0.0641	0.0755	1.5	0.2	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		
TC3-D-242	Focus	5/2/2011	11:42:59 AM	12953272.19	276355.3823	875.525	0.0425	0.0678	0.08	0.9	0.4	1.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
MP 2.00-2.25																							
TC3-D-243	Focus	5/2/2011	11:50:55 AM	12953234.39	276486.3922	874.7896	3.644	5.0529	6.2298	1.5	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		BAD POS
TC3-D-244	Focus	5/2/2011	11:52:12 AM	12953227.6	276509.605	877.6543	1.4494	1.9093	2.3971	1.0	0.1	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		BAD POS
TC3-D-245	Focus	5/2/2011	11:53:39 AM	12953204.57	276525.8147	878.2375	1.171	1.778	2.129	1.2	0.4	0.6	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		BAD POS
TC3-D-246	Focus	5/2/2011	11:55:58 AM	12953207.82	276505.1063	872.1128	1.9319	2.573	3.2176	0.5	0.2	0.2	Moderate	Moderate	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		BAD POS
TC3-D-247	Focus	5/2/2011	11:57:36 AM	12953195.73	276512.539	875.1247	0.0886	0.1228	0.1514	0.5	0.4	0.4	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand	DBDY	
TC4-A-01	Focus	5/1/2011	2:35:29 PM	12953112.67	276548.303	875.7304	0.049	0.0791	0.093	0.9	0.2	0.3	None	None	None	Left	<1ft/sec		Other-Comments	None	Sand & Silt		INSIDE BOOM
TC4-A-02	Focus	5/1/2011	2:37:35 PM	12953109.78	276556.2716	875.4731	0.0398	0.0666	0.0776	3.8	0.1	0.1	None	None	None	Left	1-3 ft/sec		Other-Comments	None	Sand & Gravel		OUTSIDE BOOM
TC4-A-03	Focus	5/1/2011	2:41:03 PM	12953132.3	276584.6945	875.464	0.0641	0.0924	0.1125	2.4	1.1	1.3	Light	Light	Few	Center	<1ft/sec		Mid-Channel	None	Sand & Silt		INSIDE BOOM
TC4-A-04	Focus	5/1/2011	2:42:42 PM	12953126.32	276586.7405	875.4644	0.0516	0.0886	0.1025	3.9	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		OUTSIDE BOOM
TC4-A-05	Focus	5/1/2011	2:45:54 PM	12953150.42	276620.7441	875.5586	0.0427	0.0727	0.0843	2.3	0.2	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		OUTSIDE BOOM
TC4-A-06	Focus	5/1/2011	2:48:09 PM	12953181.79	276657.9807	875.5018	0.0491	0.0811	0.0948	1.3	0.7	0.9	None	None	None	Left	<1ft/sec		Other-Comments	None	Sand		SHW MAR/OUTBOM
2.11T-B-01	Transect	5/10/11	4:37:25 PM	12952747.76	276599.1766	871.2576	1.6018	2.3361	2.8326	1.7	0.1	0.1	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Gravel & Larger		VEL 2.9
2.11T-B-02	Transect	5/10/11	4:40:14 PM	12952761.83	276638.8419	873.795	0.042	0.0595	0.0729	2.5	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		VEL 4.8
2.11T-B-03	Transect	5/10/11	4:44:02 PM	12952770.44	276684.0786	874.6669	1.1957	1.7183	2.0934	1.0	0.3	0.3	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		VEL 1.9
15MB-A-01	Bridge	5/1/2011	2:26:36 PM	12952446.46	277061.2456	873.7266	1.886	3.2577	3.7643	1.5	0.2	0.3	None	None	None	Right	1-3 ft/sec		Other-Comments	None	Sand		BOAT LAUNCH
15MB-A-02	Bridge	5/1/2011	2:28:47 PM	12952422.42	276906.4007	874.5735	0.0606	0.1078	0.1237	3.1	0.2	0.3	None	None	None	Left	1-3 ft/sec		Other-Comments	None	Sand & Gravel		BRIDGE
15MRBR-B-01	Bridge	5/10/11	3:08:03 PM	12952364.34	277007.461	873.5038	0.0603	0.1083	0.124	0.5	0.1	0.2	None	None	None	Left	<1ft/sec		Other-Comments	None	Sand & Gravel		VEL .6, DWNSTRM BRIDGE
15MRBR-B-02	Bridge	5/10/11	3:18:15 PM	12952356.68	277125.6462	873.4535	0.1424	0.227	0.268	0.9	0.1	0.2	None	None	None	Right	<1ft/sec		Other-Comments	None	Sand & Silt		VEL 0.2, DWNSTRM BRIDGE
2.24T-A-01	Transect	4/26/2011	9:40:13 AM	12952247.42	277250.52	874.01	0.04	0.07	0.08	1.4	0.5	0.6	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		MOVE LOC 4 VELOCT
2.24T-A-02	Transect	4/26/2011	9:45:42 AM	12952159.82	277147.09	873.93	0.05	0.09	0.10	2.8	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
2.24T-B-01	Transect	5/10/11	3:10:49 PM	12952231.38	277080.2352	873.4484	0.047	0.0844	0.0967	0.3	0.4	0.7	None	None	None	Left	No		Strt Channel Edg	None	Sand & Silt		
2.24T-B-02	Transect	5/10/11	3:22:35 PM	12952310.34	277160.4216	875.6988	1.6984	3.1449	3.5742	0.4	0.1	0.2	None	None	None	Right	No		Strt Channel Edg	None	Sand & Silt		
2.24T-B-03	Transect	5/10/11	3:32:56 PM	12952244.69	277131.4298	873.4503	0.0653	0.1918	0.2026	3.3	0.3	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		VEL 2.7
MP 2.25-2.50																							
2.29T-A-01	Transect	4/26/2011	11:40:57 AM	12952245.89	277383.44	873.96	0.05	0.09	0.11	0.5	1.1	2.7	None	None	None	Right	<1ft/sec		Strt Channel Edg	50%-75%	Sand & Silt		
2.29T-A-01	Transect	5/1/2011	2:05:15 PM	12952140.48	277369.9448	872.1251	0.8198	1.4069	1.6284	1.3	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
2.29T-A-02	Transect	4/26/2011	11:47:16 AM	12952067.46	277280.54	874.03	0.05	0.06	0.08	3.0	0.1	0.2	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		HIGH FLOW NO MID
2.3N-A-01	Focus	4/26/2011	10:03:34 AM	12952239.03	277330.99	873.89	0.03	0.06	0.07	1.3	0.4	0.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
2.3N-A-02	Focus	4/26/2011	10:06:19 AM	12952237.35	277401.12	873.90	0.03	0.06	0.07	1.5	0.9	1.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
2.3N-A-03	Focus	4/26/2011	10:08:27 AM	12952187.41	277474.40	873.87	0.04	0.09	0.10	2.0	0.8	0.8	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
2.3N-A-04	Focus	4/26/2011	10:16:20 AM	12952149.58	277465.03	873.90	0.04	0.08	0.09	2.5	0.1	0.2	None	None	None	Right	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
2.3N-A-05	Focus	4/26/2011	10:21:40 AM	12952210.39	277425.57	873.95	0.04	0.08	0.09	2.6	0.4	0.5	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.3N-A-06	Focus	4/26/2011	11:37:34 AM	12952202.73	277294.26	874.14	0.05	0.07	0.09	2.3	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
2.35S-A-01	Focus	4/26/2011	11:51:26 AM	12951989.79	277326.69	874.06	0.06	0.08	0.10	0.8	0.3	0.4	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
2.35S-A-02	Focus	4/26/2011	11:54:12 AM	12951952.77	277353.04	873.97	0.05	0.07	0.09	2.0	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
2.35S-A-03	Focus	4/26/2011	11:56:53 AM	12951960.07	277414.89	875.57	1.71	2.11	2.72	1.5	0.2	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Silt		
2.35S-A-04	Focus	4/26/2011	12:01:14 PM	12951815.27	277481.78	873.28	3.13	4.51	5.48	1.4	0.1	0.2	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.35S-A-05	Focus	4/26/2011	12:03:26 PM	12951842.38	277466.26	877.10	2.39	3.23	4.02	2.6	0.0	0.0	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
2.35S-A-06	Focus	4/26/2011	12:37:17 PM	12951856.83	277518.24	874.37	1.55	2.11	2.61	1.6	0.0	0.0	None	None	None	Right	>3 ft/sec		Downstrm Island	None	Sand & Gravel		
2.35T-A-01	Transect	4/26/2011	12:15:05 PM	12951851.14	277454.13	873.62	0.06	0.08	0.11	1.4	0.6	0.6	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Silt		
2.35T-A-02	Transect	4/26/2011	12:27:30 PM	12951918.33	277471.70	876.87	2.57	3.35	4.22	1.5	0.3	0.4	None	None	None	Right	>3 ft/sec		Downstrm Island	None	Sand & Gravel		

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
2.35T-A-03	Transect	4/26/2011	12:32:00 PM	12951933.59	277537.38	873.61	0.04	0.05	0.06	1.0	0.2	0.4	None	None	None	Left	1-3 ft/sec		Downstrm Island	None	Sand & Silt		
2.35T-A-04	Transect	4/26/2011	12:44:43 PM	12951918.40	277623.03	879.15	2.36	3.57	4.28	2.5	0.7	0.9	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
2.44T-A-01	Transect	4/26/2011	12:51:12 PM	12951440.23	277474.35	873.13	0.11	0.15	0.18	1.4	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.44T-A-02	Transect	4/26/2011	12:56:19 PM	12951542.38	277443.91	873.36	0.06	0.11	0.12	1.5	0.1	0.1	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.44T-B-01	Transect	5/10/11	2:54:17 PM	12951534.38	277499.7429	872.899	0.0597	0.0835	0.1026	2.6	0.2	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		VEL 3.6
2.50N-A-01	Focus	4/26/2011	1:01:05 PM	12951341.42	277270.45	872.97	0.05	0.09	0.10	1.9	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.50N-A-02	Focus	4/26/2011	1:06:18 PM	12951334.11	277184.77	873.16	0.05	0.08	0.10	1.0	0.1	0.1	None	None	None	Island	<1ft/sec		Downstrm Island	None	Gravel & Larger		TUFA
2.50N-A-03	Focus	4/26/2011	1:14:30 PM	12951234.88	277183.73	873.10	0.07	0.10	0.12	0.5	0.4	0.5	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	5%-25%	Silt over Sand		
2.50N-A-04	Focus	4/26/2011	1:18:51 PM	12951285.84	277152.34	873.17	0.03	0.05	0.06	1.5	0.1	0.2	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		
MP 2.50-2.75																							
2.54T-A-01	Transect	4/26/2011	1:55:52 PM	12951226.05	277118.50	881.22	2.40	3.63	4.35	2.5	0.1	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
2.54T-A-02	Transect	4/26/2011	2:00:41 PM	12951310.82	277038.73	873.06	0.04	0.06	0.07	2.0	0.4	0.5	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
2.54T-A-03	Transect	4/26/2011	2:08:44 PM	12951384.57	276979.47	892.82	3.05	4.21	5.20	2.7	0.3	0.4	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.55N-A-01	Focus	4/26/2011	1:25:39 PM	12951301.49	277076.50	872.88	0.04	0.07	0.08	1.6	0.4	0.5	Moderate	Moderate	Common	Island	<1ft/sec		Downstrm Island	None	Silt over Sand	ABSORB IN PLACE	
2.55N-A-02	Focus	4/26/2011	1:38:58 PM	12951272.32	277035.84	867.40	1.70	3.20	3.62	1.5	0.1	0.2	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		INSIDE OF HRD BOO
2.55N-A-03	Focus	4/26/2011	1:43:52 PM	12951270.69	277100.73	873.91	1.39	2.44	2.81	1.0	0.2	0.3	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Silt		INSIDE OF HRD BOO
2.55N-A-04	Focus	4/26/2011	1:57:02 PM	12951224.96	277124.88	880.22	2.49	3.92	4.64	2.5	0.1	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
2.55N-A-05	Focus	4/26/2011	1:31:07 PM	12951302.34	277063.27	872.92	0.06	0.11	0.12	1.8	0.3	0.4	Moderate	Moderate	Common	Island	<1ft/sec		Downstrm Island	None	Sand & Silt	ABSORB IN PLACE	INSIDE OF HRD BOO
2.55N-A-06	Focus	4/26/2011	1:34:53 PM	12951292.80	277060.91	872.97	0.05	0.09	0.10	2.0	0.1	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Silt	ABSORB IN PLACE	INSIDE OF HRD BOO
2.55N-A-07	Focus	4/26/2011	1:46:27 PM	12951281.01	277097.03	874.20	1.26	2.13	2.48	1.1	0.2	0.3	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Sand & Silt	INSIDE ABSORB	INSIDE OF HRD BOO
2.55N-A-08	Focus	4/26/2011	1:49:21 PM	12951284.10	277085.67	872.90	0.05	0.09	0.10	1.4	0.2	0.4	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Sand & Silt	OUTSIDE ABSORB	INSIDE OF HRD BOO
2.60N-A-01	Focus	4/26/2011	2:29:07 PM	12950827.84	276887.97	872.46	3.09	5.14	6.00	2.3	0.1	0.2	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.60N-A-02	Focus	4/26/2011	2:37:42 PM	12950894.41	276872.93	872.62	0.04	0.07	0.08	1.9	0.4	0.5	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.60N-A-03	Focus	4/26/2011	2:41:10 PM	12950970.91	276896.07	872.63	0.03	0.06	0.07	1.5	0.6	0.7	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
2.60N-A-04	Focus	4/26/2011	2:42:29 PM	12951032.60	276920.33	873.38	0.03	0.05	0.06	1.0	0.3	0.5	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
2.60N-A-05	Focus	4/26/2011	2:43:57 PM	12951086.37	276925.25	872.72	0.06	0.09	0.11	1.2	0.8	0.9	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
2.60N-A-06	Focus	4/26/2011	2:51:51 PM	12951129.20	276915.50	872.47	0.05	0.08	0.09	1.4	0.2	0.2	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand		
2.65PA-A-01	Launch	5/1/2011	1:47:07 PM	12950726.54	276798.1203	876.0574	2.311	3.0746	3.8463	2.4	0.0	0.0	Light	Light	None	Left	1-3 ft/sec		Cut Bank	None	Gravel & Larger		BAD POS
2.65PA-A-02	Launch	5/1/2011	1:49:02 PM	12950756.17	276754.8234	883.0908	3.3035	5.6347	6.5317	1.2	0.3	0.4	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		BAD POS
2.65PA-A-03	Launch	5/1/2011	1:51:25 PM	12950806.95	276734.787	878.86	2.7102	4.4019	5.1693	1.5	0.2	0.3	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand		BAD POS
2.65T-A-01	Transect	4/26/2011	2:28:14 PM	12950825.26	276885.38	867.54	2.29	4.27	4.85	2.3	0.1	0.2	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.65T-A-02	Transect	4/26/2011	2:33:41 PM	12950784.11	276744.01	873.36	1.53	2.70	3.10	0.7	0.4	0.5	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
2.65T-B-01	Transect	5/10/11	2:46:41 PM	12950818.4	276812.0285	872.0667	0.0591	0.1015	0.1174	2.1	0.2	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		VEL 3.4
2.73T-A-01	Transect	4/26/2011	3:06:17 PM	12950671.83	277269.03	871.88	0.04	0.07	0.08	2.1	0.2	0.3	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand		
2.73T-A-02	Transect	4/26/2011	3:28:59 PM	12950558.38	277020.94	871.51	1.56	2.80	3.21	0.7	0.3	0.6	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
2.73T-B-01	Transect	5/10/11	2:39:51 PM	12950497.5	277138.2609	871.2531	0.0975	0.0924	0.1343	0.3	0.2	0.3	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		VEL 1.3
2.73T-B-02	Transect	5/10/11	2:42:28 PM	12950567.46	277193.8442	871.4231	0.0364	0.0579	0.0684	-99.0	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		VEL 3.0
2.75-A-01	Focus	4/26/2011	3:04:04 PM	12950671.67	277268.98	871.84	0.05	0.09	0.10	2.1	0.2	0.3	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand		
2.75-A-02	Focus	4/26/2011	3:11:26 PM	12950676.77	277241.28	871.71	0.04	0.07	0.08	1.5	0.3	0.4	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Sand		
2.75-A-03	Focus	4/26/2011	3:13:05 PM	12950696.95	277189.31	874.88	1.17	2.07	2.37	0.6	0.2	0.2	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
2.75-A-04	Focus	4/26/2011	3:15:31 PM	12950703.32	277151.31	872.30	0.05	0.10	0.11	0.8	0.1	0.2	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Silt		
2.75-A-05	Focus	4/26/2011	3:17:13 PM	12950704.05	277089.71	871.94	0.04	0.07	0.08	0.5	0.2	0.4	None	None	None	Right	1-3 ft/sec		Cut Bank	<5%	Sand		
2.75-A-06	Focus	4/26/2011	3:21:19 PM	12950720.35	277008.19	871.80	0.03	0.05	0.06	0.2	0.0	0.0	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Gravel & Larger		
MP 2.75-3.00																							
2.80S-B-01	Focus	4/26/2011	10:14:08 AM	12950165.82	277270.88	871.31	0.03	0.06	0.07	0.6	0.2	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Other-Comments		ORGANIC SAND
2.80S-B-02	Focus	4/26/2011	10:17:32 AM	12950075.26	277298.17	871.22	0.04	0.07	0.08	0.7	0.6	1.0	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	None	Other-Comments		ORGANIC SAND
2.80S-B-03	Focus	4/26/2011	10:22:28 AM	12949999.45	277302.97	871.13	0.05	0.10	0.11	0.8	0.2	0.7	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Other-Comments		ORGANIC SAND
2.80S-B-04	Focus	4/26/2011	10:27:03 AM	12949940.98	277317.02	871.24	0.04	0.08	0.09	0.7	0.0	0.3	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Other-Comments		ORGANIC SAND
2.80S-B-05	Focus	4/26/2011	10:30:47 AM	12949865.76	277332.03	871.34	0.05	0.08	0.10	0.7	0.0	0.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand		ORGANIC SAND
2.80S-B-06	Focus	4/26/2011	10:33:56 AM	12949814.31	277338.71	871.33	0.04	0.07	0.08	0.5	0.1	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		ORGANIC SAND
2.83T-B-01	Transect	4/26/2011	9:58:34 AM	12950080.75	277294.19	871.21	0.10	0.13	0.16	1.1	0.3	0.5	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		THIN SILT
2.83T-B-02	Transect	4/26/2011	10:02:12 AM	12950109.00	277401.40	871.57	0.03	0.06	0.06	1.9	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
2.83T-B-03	Transect	4/26/2011	10:06:53 AM	12950153.73	277485.22	871.15	0.04	0.08	0.09	1.4	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		VERY THIN SILT
2.90SA-B-01	Focus	4/26/2011	12:58:04 PM	12949509.74	277420.30	871.07	0.04	0.06	0.07	1.2	0.0	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		ORGANIC SAND
2.90SA-B-02	Focus	4/26/2011	1:00:39 PM	12949499.56	277422.25	871.17	0.03	0.04	0.05	0.9	0.5	1.0	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
2.90SA-B-03	Focus	4/26/2011	1:04:23 PM	12949533.60	277414.68	871.22	0.03	0.05	0.06	1.1	0.5	0.9	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
2.90SA-B-04	Focus	4/26/2011	1:06:26 PM	12949527.39	277427.76	871.03	0.03	0.05	0.06	1.1	0.1	0.5	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
2.90SB-B-01	Focus	4/26/2011	1:11:54 PM	12949513.08	277345.56	871.21	0.06	0.10	0.11	0.6	0.0	0.2	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	VERY SLIGHT	SILT B/T ROCKS
2.90SB-B-02	Focus	4/26/2011	1:16:38 PM	12949461.58	277347.28	870.93	0.05	0.09	0.10	0.7	0.2	0.2	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand	VERY LIGHT 1 GLOB	SILT OVER ROCKS
2.90SB-B-03	Focus	4/26/2011	1:21:27 PM	12949407.34	277344.79	871.07	0.04	0.06	0.07	0.7	0.1	0.3	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand	VERY LIGHT	SILT OVER ROCKS
2.90SB-B-04	Focus	4/26/2011	1:24:46 PM	12949316.25	277332.88	871.06	0.04	0.07	0.08	0.5	0.4	0.4	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand	VERY LIGHT	ROCKS
MP 3.00-3.25																							
3.03T-B-01	Transect	4/26/2011	1:30:48 PM	12949052.16	277326.55	871.08	0.03	0.06	0.07	1.4	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
3.03T-B-02	Transect	4/26/2011	1:32:01 PM	12949046.43	277357.42	871.02	0.04	0.07	0.08	1.4	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
3.03T-B-03	Transect	4/26/2011	1:35:10 PM	12949057.71	277390.43	870.94	0.04	0.08	0.09	1.7	0.0	0.0	None	None	None	Island	>3 ft/sec		Downstrm Island	None	Sand		
3.03T-B-04	Transect	4/26/2011	1:44:30 PM	12949050.49	277464.68	870.74	0.04	0.07	0.08	0.9	0.0	0.1	Light	Light	None	Island	>3 ft/sec		Downstrm Island	None	Sand & Gravel	VERY SLIGHT	
3.03T-B-05	Transect	4/26/2011	1:46:42 PM	12949053.89	277516.50	870.68	0.05	0.08	0.09	2.5	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel	VERY SLIGHT	
3.03T-B-06	Transect	4/26/2011	1:48:08 PM	12949054.41	277567.37	867.44	7.83	5.10	9.35	1.4	0.0	0.0	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
3.15S-B-01	Focus	4/26/2011	1:53:08 PM	12948636.00	277503.92	870.68	0.03	0.05	0.06	1.1	0.8	1.5	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
3.15S-B-02	Focus	4/26/2011	1:55:16 PM	12948601.62	277506.62	870.75	0.05	0.09	0.10	2.3	0.2	0.5	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
3.15S-B-03	Focus	4/26/2011	2:00:19 PM	12948582.30	277486.65	870.77	0.04	0.07	0.08	2.5	0.2	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
3.15S-B-04	Focus	4/26/2011	2:04:27 PM	12948569.88	277491.25	871.07	0.04	0.05	0.06	2.0	0.1	0.1	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
3.15T-B-01	Transect	4/26/2011	2:14:33 PM	12948453.19	277392.89	871.24	1.17	1.44	1.85	1.1	0.4	0.8	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
3.15T-B-02	Transect	4/26/2011	2:16:27 PM	12948446.92	277493.64	870.62	0.83	1.27	1.51	2.1	0.1	0.3	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
3.15T-B-03	Transect	4/26/2011	2:18:23 PM	12948428.31	277532.20	870.73	0.03	0.05	0.06	2.9	0.0	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
3.15T-B-04	Transect	4/26/2011	2:20:38 PM	12948439.44	277604.34	870.73	0.04	0.08	0.09	1.3	0.0	0.1	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		THIN SILT ON TOP
3.24T-B-01	Transect	4/26/2011	2:26:18 PM	12947988.44	277583.37	870.56	0.03	0.05	0.06	1.3	0.2	0.3	Light	Light	None	Right	1-3 ft/sec		Downstrm Island	None	Silt over Sand	1 PERCENT	THIN SILT ON TOP
3.24T-B-02	Transect	4/26/2011	2:27:40 PM	12947967.91	277513.71	870.44	0.04	0.06	0.07	2.6	0.0	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand		
3.24T-B-03	Transect	4/26/2011	2:30:53 PM	12947984.94	277412.01	870.65	0.05	0.09	0.10	1.3	0.4	0.7	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
3.25R1-B-01	Focus	4/26/2011	3:27:12 PM	12947169.97	277594.63	870.28	0.03	0.06	0.07	1.6	0.4	1.4	None	None	None	Island	<1ft/sec		Downstrm Island	None	Soft Sediment		
3.25R1-B-02	Focus	4/26/2011	3:29:24 PM	12947186.21	277684.67	870.43	0.07	0.14	0.16	0.8	1.2	2.2	None	None	None	Right	<1ft/sec		Cut Bank	None	Soft Sediment		
3.25R1-B-03	Focus	4/26/2011	3:31:19 PM	12947248.20	277667.66	870.36	0.04	0.09	0.10	0.1	0.5	0.6	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand		
3.25R1-B-04	Focus	4/26/2011	3:37:25 PM	12947329.11	277675.56	870.38	0.03	0.07	0.08	0.6	0.4	0.4	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		
3.25R1-B-05	Focus	4/26/2011	3:41:11 PM	12947456.21	277719.50	870.57	0.03	0.07	0.07	0.9	0.1	0.2	None	None	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand		DEAD TURTLE
3.25R1-B-06	Focus	4/26/2011	3:47:48 PM	12947586.20	277698.29	870.58	0.03	0.08	0.09	0.8	0.0	0.1	None	None	None	Center	<1ft/sec		Mid-Channel	None	Silt over Sand		THIN SILT
3.25R1-B-07	Focus	4/26/2011	3:50:42 PM	12947780.96	277690.77	870.40	0.03	0.06	0.08	1.4	0.6	1.1	Light	Light	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand	VERY SLIGHT	
3.25R1-B-08	Focus	4/26/2011	3:57:35 PM	12947887.47	277656.62	870.80	0.07	0.24	0.25	0.5	0.3	0.4	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Silt over Sand	VERY SLIGHT	
MP 3.25-3.50																							
3.32T-B-01	Transect	4/26/2011	2:38:45 PM	12947620.31	277424.93	870.57	0.04	0.07	0.08	1.2	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
3.32T-B-02	Transect	4/26/2011	2:52:22 PM	12947618.48	277486.14	870.37	0.91	1.53	1.78	4.3	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
3.32T-B-03	Transect	4/26/2011	2:54:57 PM	12947613.05	277534.19	870.44	0.04	0.06	0.07	2.0	0.4	0.5	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		
3.39T-A-01	Transect	4/26/2011	3:50:44 PM	12947152.10	277538.75	870.58	0.03	0.07	0.07	1.8	1.2	1.2	None	None	None	Right	1-3 ft/sec		Downstrm Island	None	Sand & Silt		
3.39T-A-02	Transect	4/26/2011	3:56:30 PM	12947178.59	277464.38	870.14	0.04	0.09	0.10	0.0	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		SAND TO ROCK TRAN
3.39T-A-03	Transect	4/26/2011	4:01:05 PM	12947176.97	277382.36	866.72	2.28	7.99	8.31	1.6	1.5	6.4	Light	Light	Few	Left	No/sec		Strt Channel Edg	None	Soft Sediment		3.3SOUTHB-A-01
3.3SA-B-01	Focus	5/10/11	1:57:51 PM	12947558.71	277432.4732	869.9098	0.0805	0.1312	0.154	2.3	0.1	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		VEL 0.2
3.3SA-B-01	Focus	4/26/2011	2:39:39 PM	12947599.56	277429.24	871.08	0.04	0.07	0.09	2.2	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
3.3SA-B-02	Focus	5/10/11	2:03:29 PM	12947546.8	277445.0222	869.9428	0.0487	0.0689	0.0844	2.7	0.6	0.6	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		VEL 2.7
3.3SA-B-02	Focus	4/26/2011	2:41:18 PM	12947580.71	277432.22	870.54	0.04	0.06	0.07	1.2	0.0	0.0	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
3.3SA-B-03	Focus	5/10/11	2:07:34 PM	12947525.1	277425.8136	869.8689	0.0621	0.0884	0.108	1.7	0.1	0.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		vel 0.6
3.3SA-B-03	Focus	4/26/2011	2:46:20 PM	12947535.25	277429.11	870.43	0.04	0.07	0.08	1.8	0.0	0.0	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
3.3SA-B-04	Focus	4/26/2011	2:49:37 PM	12947688.78	277427.63	870.42	0.09	0.11	0.14	1.2	0.2	0.2	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
3.3SB-A-02	Focus	4/26/2011	4:07:21 PM	12947112.59	277403.72	870.39	0.04	0.14	0.15	2.5	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
3.3SB-B-03	Focus	4/26/2011	4:06:41 PM	12947042.69	277394.42	870.58	0.07	0.24	0.25	1.2	0.0	0.0	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		
3.3SB-B-04	Focus	4/26/2011	4:09:25 PM	12947081.27	277400.51	870.45	0.03	0.09	0.10	1.5	0.0	0.0	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		
3.45N-B-01	Focus	5/10/11	1:44:04 PM	12946800.46	277530.3982	874.3043	1.2368	2.4478	2.7425	1.0	1.3	1.4	None	None	None	Right	<1ft/sec		Strt Channel Edg	<5%	Sand & Silt		VEL 0.4 WT 63.2
3.45N-C-01	Focus	4/26/2011	3:26:58 PM	12946845.54	277560.60	870.20	0.07	0.14	0.15	1.1	0.9	1.5	None	None	None	Right	1-3 ft/sec		Other-Comments	None	Silt over Sand		BACK CHANNEL OUTLET
3.45N-C-02	Focus	4/26/2011	3:34:36 PM	12946896.54	277593.13	872.10	0.97	2.07	2.28	0.7	1.4	1.4	None	None	None	Right	<1ft/sec		Other-Comments	25%-50%	Other-Comments	BCK CHNL OUTLET	SI/Rock
3.45N-C-03	Focus	4/26/2011	3:44:31 PM	12946897.67	277549.49	870.55	0.15	0.46	0.49	1.1	0.3	0.3	Light	Light	Few	Right	1-3 ft/sec		Other-Comments	None	Silt over Sand		BACK CHANNEL OUTLET
3.45N-C-04	Focus	4/26/2011	3:50:59 PM	12946922.77	277557.38	870.44	0.06	0.13	0.14	0.9	0.2	0.4	None	None	None	Right	No		Point Bar	None	Other-Comments	SI/SA/Marlow	BEHIND BOOM
3.45N-C-05	Focus	4/26/2011	3:53:31 PM	12946984.37	277550.11	870.63	1.04	2.47	2.68	1.1	0.5	1.4	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		UPST CHANNEL OUTLET
MP 3.50-3.75																							
3.52T-C-02	Transect	4/26/2011	3:00:12 PM	12946492.58	277305.93	870.27	0.03	0.05	0.06	2.5	0.1	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand		
3.52T-C-03	Transect	4/26/2011	3:05:01 PM	12946515.24	277409.36	875.81	2.19	4.30	4.83	1.0	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
3.5S-C-01	Focus	4/26/2011	2:51:25 PM	12946513.77	277183.11	870.39	0.05	0.09	0.10	1.3	0.3	0.7	Light	Light	Few	Left	1-3 ft/sec		Other-Comments	None	Silt over Sand		AREA AND TRANSEC
3.5S-C-02	Focus	4/26/2011	2:56:26 PM	12946477.86	277207.14	870.35	0.04	0.07	0.08	1.6	0.4	1.1	None	None	None	Island	1-3 ft/sec		Downstrm Island	5%-25%	Silt over Sand		
3.5S-C-03	Focus	4/26/2011	3:01:46 PM	12946535.11	277237.34	870.14	0.04	0.06	0.07	2.2	0.6	1.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
3.5S-C-04	Focus	4/26/2011	3:16:45 PM	12946612.72	277248.27	870.29	0.04	0.08	0.09	1.3	0.4	0.8	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		UPSTREAM
3.6S-C-01	Focus	4/26/2011	2:21:17 PM	12946303.50	277129.43	870.27	0.04	0.07	0.08	2.6	0.4	1.1	None	None	None	Island	>3 ft/sec		Downstrm Island	None	Soft Sediment		OUTSIDE BOOM
3.6S-C-01	Focus	4/26/2011	2:27:40 PM	12946274.75	277112.61	870.12	0.03	0.05	0.06	2.5	0.3	0.9	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		INSIDE OF BOOM
3.6S-C-03	Focus	4/26/2011	2:31:32 PM	12946270.47	277075.82	870.16	0.05	0.09	0.10	1.7	0.3	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Other-Comments	56.4 SILT/Rock	WATER LEVEL POLE
3.6S-C-04	Focus	4/26/2011	2:37:51 PM	12946185.33	277092.52	870.16	0.03	0.05	0.06	1.6	0.4	1.9	Light	Light	Few	Island	1-3 ft/sec		Downstrm Island	None	Soft Sediment		OUT OF BOOM
3.6S-C-05	Focus	4/26/2011	2:47:06 PM	12946250.25	277148.66	870.59	0.05	0.08	0.09	3.4	0.2	0.3	None	None	None	Island	>3 ft/sec		Downstrm Island	None	Silt over Sand		
3.64T-C-01	Transect	4/26/2011	1:59:45 PM	12945814.07	276952.28	870.83	0.04	0.05	0.07	1.5	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	USE POS FROM C 4	
3.64T-C-02	Transect	4/26/2011	2:10:48 PM	12945792.83	277172.51	870.26	0.06	0.09	0.11	1.5	0.3	0.8	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
3.64T-C-03	Transect	4/26/2011	2:15:10 PM	12945814.66	277069.19	870.06	0.03	0.05	0.06	2.3	0.3	0.4	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Silt over Sand		
3.64T-C-04	Transect	4/26/2011	2:17:01 PM	12945820.99	276963.61	870.20	0.06	0.09	0.11	1.5	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger	USE POS FROM C 4	
3.75S-C-01	Focus	4/26/2011	1:25:58 PM	12945265.02	277039.91	870.11	0.03	0.06	0.07	0.6	0.1	0.4	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		SAND BAR
3.75S-C-02	Focus	4/26/2011	1:29:27 PM	12945357.06	277029.63	870.34	0.04	0.07	0.08	0.8	0.2	0.3	None	None	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		
3.75S-C-03	Focus	4/26/2011	1:33:55 PM	12945397.20	277012.61	870.25	0.04	0.06	0.07	1.3	0.1	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	5%-25%	Sand		ISLE S BANK
3.75S-C-04	Focus	4/26/2011	1:40:10 PM	12945414.90	277049.57	870.18	0.03	0.05	0.06	1.3	1.4	2.7	None	None	None	Island	1-3 ft/sec		Downstrm Island	5%-25%	Soft Sediment		OIL ON ISLE
3.75S-C-05	Focus	4/26/2011	1:46:30 PM	12945461.32	277026.79	869.98	0.04	0.07	0.08	1.3	0.2	0.3	None	None	None	Island	1-3 ft/sec		Downstrm Island	<5%	Sand & Gravel		UPSTEARM OF ISLE
3.75S-A-06	Focus	4/29/11	12:44:16 PM	12945359.1	277043.4694	870.838	0.0439	0.053	0.0689	1.3	1.6	2.7	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
MP 3.75-4.00																							
3.81T-C-01	Transect	4/26/2011	1:09:06 PM	12945071.45	276942.13	870.12	1.10	1.83	2.14	1.1	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
3.81T-C-02	Transect	4/26/2011	1:16:14 PM	12945081.25	277184.29	870.05	0.04	0.07	0.08	1.3	0.6	0.6	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Other-Comments	57.6	MARSH OUTLET SILT/GRAVEL
3.81T-C-03	Transect	4/26/2011	1:22:25 PM	12945073.73	277068.02	870.13	0.04	0.07	0.08	2.0	0.1	2.8	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand over Silt		
3.99T-C-01	Transect	4/26/2011	12:47:37 PM	12944122.94	277422.29	870.00	0.04	0.06	0.07	2.2	0.7	1.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
3.99T-C-02	Transect	4/26/2011	12:55:46 PM	12944076.26	277199.83	877.76	2.70	4.13	4.94	1.4	0.2	0.3	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
3.99T-C-03	Transect	4/26/2011	1:03:20 PM	12944093.94	277298.78	870.12	0.03	0.05	0.06	1.4	0.1	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand		SAND BAR
3.99T-C-04	Transect	4/26/2011	1:05:06 PM	12944139.41	277362.94	870.09	0.03	0.05	0.06	3.3	0.3	0.9	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Silt over Sand		
MP 4.00-4.25																							
4.15N-A-02	Focus	4/29/11	1:57:20 PM	12943471.58	277767.0918	870.5834	2.3068	4.7465	5.2774	2.7	0.1	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
4.15N-A-03	Focus	4/29/11	2:00:18 PM	12943513.18	277756.274	870.5654	0.064	0.1125	0.1294	4.9	0.3	0.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
4.15N-C-01	Focus	4/26/2011	12:37:23 PM	12943543.21	277766.84	869.30	0.05	0.07	0.08	2.0	0.5	0.9	None	None	None	Right	<1ft/sec		Other-Comments	None	Soft Sediment		COVE
4.15S-A-14	Focus	4/29/11	1:09:33 PM	12943205.71	277568.7934	870.7405	0.0992	0.1391	0.1708	3.3	0.1	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand		
4.15S-A-15	Focus	4/29/11	1:13:15 PM	12943298.2	277545.9778	870.7053	0.037	0.047	0.0598	3.5	0.1	0.3	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand		
4.15S-A-16	Focus	4/29/11	1:16:37 PM	12943262.09	277516.0192	870.7566	0.4932	0.245	0.5507	3.5	0.1	0.5	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand		
4.15S-A-17	Focus	4/29/11	1:25:35 PM	12943217.18	277612.4447	870.6723	0.0535	0.0712	0.089	2.3	0.3	2.7	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		
4.15S-A-18	Focus	4/29/11	12:55:21 PM	12943633.65	277426.5533	870.6439	0.1294	0.1947	0.2338	4.1	0.7	0.9	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
4.15S-A-19	Focus	4/29/11	12:58:30 PM	12943732.09	277445.0515	870.6256	0.0405	0.0488	0.0634	2.4	0.2	0.3	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		
4.15S-A-20	Focus	4/29/11	1:02:56 PM	12943731.06	277400.5489	870.8933	0.116	0.1679	0.2041	4.8	0.7	0.8	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
4.15S-A-21	Focus	5/1/2011	12:58:53 PM	12943217.59	277698.8698	870.5521	0.0368	0.0454	0.0585	2.5	2.5	2.7	Light	Light	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
4.15S-A-22	Focus	5/1/2011	1:02:13 PM	12943259.01	277712.9627	870.5729	0.0385	0.0475	0.0611	2.7	0.4	0.5	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		
4.15S-B-01	Focus	5/10/11	11:52:17 AM	12943664.71	277470.0439	869.6041	0.3589	0.5584	0.6638	0.9	0.2	0.4	None	None	None	Center			Mid-Channel	None	Sand & Gravel		
4.15S-C-01	Focus	4/26/2011	10:00:34 AM	12943240.85	277682.64	869.91	0.03	0.06	0.07	1.9	2.6	3.6	Moderate	Moderate	Common	Island	1-3 ft/sec		Downstrm Island	None	Soft Sediment	FINE GLOBS	ISLAND E BOOM
4.15S-C-02	Focus	4/26/2011	10:04:21 AM	12943230.59	277593.33	869.88	0.03	0.06	0.07	2.4	0.6	1.2	Moderate	Moderate	Few	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
4.15S-C-03	Focus	4/26/2011	10:11:04 AM	12943203.91	277500.97	869.73	0.08	0.09	0.12	2.7	0.6	1.8	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Other-Comments		Silt/Sand/Gravel
4.15S-C-04	Focus	4/26/2011	10:18:08 AM	12943327.55	277583.58	869.89	0.04	0.07	0.07	1.7	0.6	2.0	Light	Light	Few	Island	1-3 ft/sec		Downstrm Island	None	Soft Sediment		INSIDE BOOM
4.15S-C-05	Focus	4/26/2011	10:25:28 AM	12943411.81	277456.46	869.90	0.13	0.18	0.22	2.0	0.1	0.1	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
4.15S-C-06	Focus	4/26/2011	10:35:32 AM	12943512.22	277504.51	869.98	0.04	0.07	0.09	2.7	0.5	0.7	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Silt over Sand		N Isle and ban
4.15S-C-07	Focus	4/26/2011	10:43:19 AM	12943674.62	277411.56	870.13	0.05	0.09	0.11	3.4	0.6	1.2	Moderate	Moderate	Many	Left	>3 ft/sec		Strt Channel Edg	None	Silt over Sand		Downstream of tree
4.15S-C-08	Focus	4/26/2011	10:56:07 AM	12943740.83	277428.65	870.18	0.04	0.07	0.08	2.8	0.5	2.5	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Silt over Sand		DOWN TREE
4.15S-C-09	Focus	4/26/2011	11:07:09 AM	12943708.89	277498.71	870.06	0.06	0.09	0.11	1.5	0.4	2.7	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Other-Comments		Sand over SILTY
4.15S-C-10	Focus	4/26/2011	11:12:49 AM	12943501.99	277431.19	870.05	0.05	0.08	0.10	1.4	0.1	1.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
4.15S-C-11	Focus	4/26/2011	11:18:09 AM	12943837.93	277385.40	869.98	0.11	0.11	0.16	2.2	0.4	0.4	None	None	None	Center	>3 ft/sec		Strt Channel Edg	None	Silt over Sand		
4.15S-C-12	Focus	4/26/2011	11:22:14 AM	12943206.41	277549.94	870.06	0.08	0.11	0.13	2.6	0.5	0.9	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		
4.15S-C-13	Focus	4/26/2011	11:26:24 AM	12943161.61	277732.54	870.00	0.92	1.22	1.53	2.5	0.5	0.5	None	None	None	Center	1-3 ft/sec		Downstrm Island	None	Silt over Sand		DOWNSTREAM OF ISLE
4.22T-C-01	Transect	4/26/2011	9:28:22 AM	12942945.32	277523.81	869.90	0.06	0.07	0.10	0.8	0.3	0.5	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	5%-25%	Silt over Sand		54.3
4.22T-C-02	Transect	4/26/2011	9:39:15 AM	12943039.86	277806.23	862.67	2.07	3.71	4.25	1.5	0.9	1.8	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	5%-25%	Silt over Sand		
4.22T-C-03	Transect	4/26/2011	9:45:08 AM	12943007.66	277672.69	870.03	0.03	0.05	0.06	2.1	0.4	0.5	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Silt over Sand		
MP 4.25-4.50																							
4.29T-A-09	Transect	4/29/11	1:43:01 PM	12942608.48	277727.609	870.5582	0.0523	0.0772	0.0933	2.5	1.2	1.4	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		
4.29T-A-10	Transect	4/29/11	1:45:47 PM	12942677.36	277696.1821	870.5855	0.0427	0.0641	0.077	2.1	1.5	1.7	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		
4.29T-A-11	Transect	4/29/11	1:52:03 PM	12942621.58	277647.3129	870.5046	0.0428	0.0668	0.0793	2.2	0.0	0.1	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		
4.29T-B-01	Transect	5/10/11	11:36:48 AM	12942428.14	277715.9423	869.2542	0.0583	0.0854	0.1034	1.0	0.0	0.4	Light	Light	None	Island	No		Downstrm Island	None	Sand		INSIDE BOOM
4.29T-E-01	Transect	4/26/2011	9:48:15 AM	12942820.48	277822.37	870.66	1.12	2.08	2.36	1.5	0.1	0.2	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
4.29T-E-02	Transect	4/26/2011	9:52:44 AM	12942795.07	277700.06	869.88	0.04	0.07	0.08	3.6	0.7	1.9	None	None	None	Center	<1ft/sec		Mid-Channel	None	Sand over Silt		
4.29T-E-03	Transect	4/26/2011	10:02:21 AM	12942798.93	277545.96	869.95	0.05	0.09	0.10	0.7	0.3	0.4	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
4.29T-E-04	Transect	4/26/2011	10:23:02 AM	12942555.18	277551.75	869.99	0.12	0.16	0.20	1.5	0.4	0.6	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		NEW L BANK
4.29T-E-05	Transect	4/26/2011	1:10:11 PM	12942583.18	277634.19	870.17	0.04	0.07	0.08	2.3	1.1	1.8	Light	Light	Few	Center	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		OUTSIDE BOOM
4.29T-E-06	Transect	4/26/2011	1:20:34 PM	12942608.62	277691.62	870.01	0.03	0.05	0.06	1.0	0.2	0.2	Moderate	Moderate	Common	Center	1-3 ft/sec		Other-Comments	<5%	Sand		SUBMERGED ISLAND
4.29T-E-07	Transect	4/26/2011	1:32:15 PM	12942620.61	277726.73	869.95	0.04	0.07	0.08	2.5	1.0	2.0	None	None	None	Center	1-3 ft/sec		Other-Comments	None	Sand over Silt		OUTSIDE BOOM
4.29T-E-08	Transect	4/26/2011	1:40:19 PM	12942631.75	277844.37	871.46	1.22	2.34	2.64	1.8	0.4	0.4	None	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		NEW R BANK
4.30S-A-14	Focus	4/29/11	2:13:43 PM	12942101.71	277712.5077	870.4344	0.0516	0.0943	0.1075	3.6	0.6	1.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
4.30S-E-01	Focus	4/26/2011	10:39:00 AM	12942344.28	277590.43	870.00	0.05	0.08	0.09	0.4	1.1	4.6	Moderate	Moderate	Common	Left	<1ft/sec		Downstrm Island	<5%	Soft Sediment		POLE SNAPPED
4.30S-E-02	Focus	4/26/2011	12:43:37 PM	12942323.69	277661.40	870.02	0.05	0.06	0.08	2.4	1.6	2.3	Light	Light	Few	Center	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
4.30S-E-03	Focus	4/26/2011	12:53:27 PM	12942478.69	277617.38	870.28	0.03	0.04	0.05	3.1	1.1	2.4	Moderate	Moderate	Common	Center	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		PHOTO 327 AT2.7F
4.30S-E-04	Focus	4/26/2011	12:58:16 PM	12942483.99	277633.13	870.05	0.04	0.06	0.07	3.7	1.4	1.8	None	None	None	Center	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt	BOUNDARY	
4.30S-E-05	Focus	4/26/2011	1:50:46 PM	12942134.15	277702.28	869.96	0.04	0.07	0.08	3.1	0.9	1.0	Moderate	Moderate	Common	Center	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
4.30S-E-06	Focus	4/26/2011	2:10:52 PM	12942141.78	277763.71	869.83	0.05	0.07	0.09	3.0	1.0	1.1	None	None	None	Center	<1ft/sec		Strt Channel Edg	None	Sand	BOUNDARY	
4.30S-E-07	Focus	4/26/2011	2:21:13 PM	12941894.16	277732.41	869.89	0.03	0.05	0.06	2.3	1.7	4.6	Light	Light	None	Center	<1ft/sec		Strt Channel Edg	None	Soft Sediment	BOUNDARY	
4.30S-E-08	Focus	4/26/2011	2:29:53 PM	12941756.87	277759.51	869.84	0.04	0.06	0.07	3.9	0.6	0.6	None	None	None	Center	<1ft/sec		Strt Channel Edg	None	Sand	BOUNDARY	
4.30S-E-09	Focus	4/26/2011	2:37:29 PM	12941467.95	277764.84	869.92	0.04	0.06	0.07	4.8	1.7	3.7	Light	Light	Few	Center	<1ft/sec		Strt Channel Edg	None	Sand & Silt	BOUNDARY	
4.30S-E-10	Focus	4/26/2011	2:54:43 PM	12941474.36	277727.57	869.89	0.04	0.06	0.08	2.0	1.8	3.6	Heavy	Heavy	Common	Center	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
4.30S-E-11	Focus	4/26/2011	3:10:03 PM	12941758.43	277712.60	869.86	0.04	0.07	0.08	1.1	2.7	3.4	Moderate	Light	Common	Center	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
4.30S-E-12	Focus	4/26/2011	3:22:52 PM	12941893.39	277721.60	869.85	0.04	0.06	0.07	0.6	2.2	4.0	Moderate	Light	Common	Center	<1ft/sec		Strt Channel Edg	25%-50%	Soft Sediment		
4.3S-B-01	Focus	5/10/11	9:47:24 AM	12941436.5	277705.3313	869.0406	0.0438	0.0709	0.0833	0.7	1.3	2.4	Moderate	Heavy	None	Left	No		Other-Comments	None	Soft Sediment		MARSH
4.3S-B-02	Focus	5/10/11	9:50:39 AM	12941363.41	277700.8734	869.0497	0.0455	0.0764	0.089	1.3	1.3	2.5	Light	Moderate	None	Left	No		Other-Comments	<5%	Soft Sediment	HVY RESIDUAL SHN	MARSH
4.3S-B-03	Focus	5/10/11	9:53:35 AM	12941450.25	277735.4722	869.082	0.0532	0.0911	0.1055	2.5	1.5	2.3	Light	Moderate	None	Center	<1ft/sec		Other-Comments	None	Soft Sediment		VEL 0.4, OUTSIDE OF BOOM
4.3S-B-04	Focus	5/10/11	10:15:38 AM	12941993.56	277715.3165	869.1687	0.0584	0.1052	0.1203	0.6	0.3	0.3	None	None	None	Left	1-3 ft/sec		Other-Comments	None	Sand & Silt	HVY RESID SHN	TRIB ENTCE/VEL2
4.3S-B-05	Focus	5/10/11	10:21:15 AM	12942223.76	277666.5271	869.17	0.04	0.0731	0.0833	1.1	1.4	2.0	Light	Moderate	None	Left	No		Other-Comments	5%-25%	Sand & Silt		MARSH
4.3S-B-06	Focus	5/10/11	10:26:55 AM	12942418.57	277625.6422	869.1456	0.0362	0.0659	0.0752	1.1	0.9	1.9	Heavy	Heavy	Many	Other-Comments	No		Other-Comments	None	Sand & Silt	HVY RESIDUAL SHN	COVE
4.3S-B-07	Focus	5/10/11	10:37:37 AM	12942452.45	277583.9672	869.1571	0.0655	0.1258	0.1419	1.2	1.1	1.6	Heavy	Heavy	Many	Other-Comments	No		Other-Comments	None	Soft Sediment	HVY RESIDUAL SHN	COVE
4.3S-B-08	Focus	5/10/11	10:52:17 AM	12942510.19	277611.2066	869.2967	0.0622	0.1103	0.1266	2.3	0.6	1.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		VEL 1.7, OUTSIDE OF BOOM
4.3S-B-09	Focus	5/10/11	10:58:29 AM	12942479.45	277628.2447	869.2545	0.0432	0.0727	0.0846	3.5	0.2	0.9	None	None	None	Center	1-3 ft/sec		Other-Comments	None	Sand		VEL 1.7, OUTSIDE OF BOOM
4.40T-E-01	Transect	4/26/2011	3:34:34 PM	12941991.67	277688.23	869.82	0.03	0.06	0.07	1.6	2.3	2.3	Light	Light	Few	Center	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
4.40T-E-02	Transect	4/26/2011	3:54:42 PM	12942047.19	277772.17	870.06	0.03	0.08	0.09	4.6	0.3	1.8	None	None	None	Center	1-3 ft/sec		Strt Channel Edg	None	Sand over Silt		
4.40T-E-03	Transect	4/26/2011	4:02:22 PM	12942021.99	277833.23	869.89	0.05	0.19	0.19	2.8	1.4	1.4	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Other-Comments		BRANCHES AND SILT
4.48T-E-01	Transect	4/26/2011	3:46:04 PM	12941583.93	277726.78	870.02	0.04	0.07	0.08	0.7	1.3	4.6	Light	Light	Few	Center	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
4.48T-E-02	Transect	4/26/2011	4:11:42 PM	12941622.68	277888.10	869.75	0.04	0.13	0.13	2.0	0.4	0.4	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		BRANCHES AND SILT
4.48T-E-03	Transect	4/26/2011	4:23:49 PM	12941599.53	277815.53	869.83	0.04	0.09	0.10	3.1	0.5	0.7	None	None	None	Center	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
MP 4.50-4.75																							
4.6C-B-01	Focus	5/10/11	9:41:19 AM	12941113.21	277908.437	868.942	0.0612	0.092	0.1105	0.6	0.1	0.3	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		VEL 1.0
4.6C-C-01	Focus	4/27/11	9:21:48 AM	12941024.26	277972.8251	869.7482	0.0463	0.066	0.0806	1.3	0.4	2.9	None	None	None	Center	>3 ft/sec		Strt Channel Edg	None	Sand over Silt	57	
4.6C-C-02	Focus	4/27/11	9:28:32 AM	12941064.19	277920.5445	869.6041	0.0645	0.0861	0.1076	0.9	0.2	0.4	None	None	None	Center	>3 ft/sec		Strt Channel Edg	None	Sand		SUBMERGED ISLE
4.6C-C-03	Focus	4/27/11	9:33:59 AM	12941075.74	277982.8231	869.0057	0.0384	0.051	0.0639	1.5	0.6	1.5	None	None	None	Center	>3 ft/sec		Strt Channel Edg	None	Silt over Sand		
4.64LG-B-01		5/11/2011	9:16:45 AM	12940828.51	278074.363	868.9679	0.0462	0.0561	0.0727	1.8	0.5	0.7	Light	Light	None	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Sand & Silt	HVY SHN KICKED UP BY JET PROP	
4.72LG-A-01	Other	5/16/2011	3:43:11 PM	12940378.17	278258.8272	869.7188	0.042	0.0536	0.0681	3.6	1.1	2.0	None	None	None	Center	No	No	Strt Channel Edg	None	Sand & Silt		
MP 4.75-5.00																							
4.80LG-A-01	Other	5/16/2011	3:39:17 PM	12940200.19	278619.9402	869.7856	0.0321	0.046	0.0561	4.0	1.0	1.8	Heavy	Heavy	Many	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
4.80LG-A-02	Other	5/16/2011	3:58:45 PM	12940202.94	278608.5278	869.9669	0.0337	0.0449	0.0561	3.8	1.0	1.7	None	None	None	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment	U BDY	
4.80LG-A-03	Other	5/16/2011	4:05:46 PM	12940181.34	278671.9491	869.728	0.031	0.0403	0.0509	1.7	1.1	2.1	Moderate	Moderate	Common	Right	No	No	Strt Channel Edg				FARRIGHTASPOSIBL THICKREEDS2RIGHT
4.80LG-A-04	Other	5/16/2011	4:07:54 PM	12940190.84	278645.4866	869.9194	0.0292	0.0397	0.0493	2.6	1.6	2.7	Light	Light	Few	Right	No	No	Strt Channel Edg	None	Soft Sediment	D BDY	
4.80LG-A-05	Other	5/16/2011	4:15:00 PM	12940185.25	278605.3659	869.872	0.051	0.0676	0.0846	3.9	0.7	1.6	Light	Light	Few	Right	No	No	Strt Channel Edg	None	Soft Sediment	LAT BDY	
4.80LG-E-06	Other	5/17/2011	3:04:38 PM	12940139.72	278733.7457	869.7483	0.0374	0.0513	0.0635	0.8	2.4	3.9	Light	Light	Few	Right	No	No	Strt Channel Edg	<5%	Soft Sediment		
4.80LG-E-07	Other	5/17/2011	3:13:56 PM	12940265.4	278604.5428	869.7865	0.0541	0.0657	0.0851	0.9	3.2	4.7	Light	Light	Few	Right	No	No	Strt Channel Edg	5%-25%	Soft Sediment		
4.85LG-B-01	Other	5/11/2011	9:28:57 AM	12939832.99	278663.7008	868.0335	0.9354	1.2553	1.5655	0.7	0.1	0.2	None	None	None	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Silt		TRIB ENTRANCE
4.9N-A-01	Focus	5/1/2011	12:32:23 PM	12939789.49	279029.9919	870.3056	0.0443	0.0544	0.0702	2.2	3.8	4.8	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		TEMP 59
4.9N-A-02	Focus	5/1/2011	12:34:54 PM	12939814.2	279026.6595	870.2611	0.0402	0.0492	0.0635	2.9	3.1	4.1	Light	Light	Few	Right	<1ft/sec		Other-Comments	5%-25%	Soft Sediment		EDG BCK EDDY
4.95N-C-01	Focus	4/27/11	9:43:44 AM	12939862.5	278937.415	869.7012	0.0542	0.0701	0.0886	0.6	0.7	3.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		MARSH EDGE
4.95N-C-02	Focus	4/27/11	9:52:39 AM	12939819.24	279024.9626	869.6002	0.0441	0.0526	0.0686	1.1	2.9	4.6	Heavy	Heavy	Common	Right	1-3 ft/sec		Other-Comments	50%-75%	Soft Sediment		MARSH EDGE
4.95N-C-03	Focus	4/27/11	10:02:13 AM	12939813.66	279062.5739	869.7034	0.0737	0.0705	0.102	1.3	0.3	1.4	Moderate	Moderate	Few	Right	1-3 ft/sec		Other-Comments	None	Silt over Sand		COVE DWNSM MARSH

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
4.95N-C-04	Focus	4/27/11	10:09:31 AM	12939771.71	279089.3888	869.6692	0.0788	0.0832	0.1146	1.4	1.5	4.2	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
4.95N-C-05	Focus	4/27/11	10:16:51 AM	12939779.65	279053.2683	869.6751	0.0523	0.0613	0.0806	1.8	2.9	4.4	Light	Light	None	Other-Comments	1-3 ft/sec		Other-Comments	None	Soft Sediment		COVE MEETS RIVER
4.95S-C-01	Focus	4/27/11	10:26:01 AM	12939611.98	278822.7734	869.7681	0.0489	0.0656	0.0818	1.7	0.8	1.0	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
4.95S-C-02	Focus	4/27/11	10:49:10 AM	12939563.63	278853.4173	869.9163	0.041	0.0733	0.084	1.8	0.8	1.7	None	None	None	Left	1-3 ft/sec		Other-Comments	None	Soft Sediment		MARSH EDGE
4.95S-C-03	Focus	4/27/11	10:42:53 AM	12939507.73	278886.8532	869.7709	0.0412	0.0692	0.0805	1.8	0.2	0.5	None	None	None	Left	1-3 ft/sec		Other-Comments	None	Soft Sediment		MARSH EDGE
4.95S-C-04	Focus	4/27/11	10:50:54 AM	12939391.42	278944.1141	869.7701	0.0364	0.0634	0.0731	1.7	0.6	0.8	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
4.97LG-A-01	Other	5/16/2011	3:34:59 PM	12939468.52	279235.8413	869.8153	0.0363	0.0532	0.0644	2.0	2.0	3.0	Light	Light	Few	Right	No	No	Mid-Channel	None	Soft Sediment		
MP 5.00-5.25																							
5.04LG-B-01	Other	5/11/2011	9:36:14 AM	12939081.91	279261.4647	868.8391	0.0326	0.0519	0.0613	2.1	1.8	2.4	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Soft Sediment		
5.14LG-B-01	Other	5/11/2011	9:43:16 AM	12938605.63	279523.1601	868.8389	0.0315	0.051	0.0599	1.9	0.4	2.2	Light	Light	None	Center	1-3 ft/sec	<1 ft/sec	Mid-Channel	<5%	Soft Sediment		
5.25N-A-11	Focus	5/1/2011	10:23:55 AM	12938157.54	279846.6811	870.1721	0.0298	0.0484	0.0568	2.4	1.8	4.0	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.25N-A-12	Focus	5/1/2011	10:29:07 AM	12938143.72	279848.0779	870.2645	0.0314	0.0535	0.062	2.7	2.3	4.7	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.25N-A-13	Focus	5/1/2011	10:32:07 AM	12938160.36	279831.9041	870.2869	0.0382	0.0663	0.0766	3.9	3.1	5.0	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		SBMRGD TREE
5.25N-A-14	Focus	5/1/2011	10:34:54 AM	12938150.53	279825.1267	870.2967	0.0283	0.0492	0.0568	5.8	3.2	3.8	Heavy	Heavy	Many	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.25N-A-15	Focus	5/1/2011	10:40:20 AM	12938155.72	279817.8527	870.2815	0.0233	0.0417	0.0477	7.0	2.5	2.8	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Soft Sediment		
5.25N-A-16	Focus	5/1/2011	10:44:22 AM	12938202.9	279816.2692	870.2569	0.0277	0.0503	0.0574	3.2	5.3	6.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		SBMRGD TREE
5.25N-A-17	Focus	5/1/2011	10:49:10 AM	12938303.25	279764.01	870.2659	0.0339	0.0621	0.0708	5.0	3.0	4.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.25N-C-01	Focus	4/27/11	11:20:51 AM	12938792.11	279596.6337	869.7916	0.0468	0.0855	0.0974	2.4	1.0	1.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
5.25N-C-02	Focus	4/27/11	11:26:21 AM	12938725.92	279635.5635	869.7928	0.0304	0.0546	0.0625	2.4	0.4	0.8	Light	Light	None	Right	1-3 ft/sec		Other-Comments	None	Soft Sediment		RNOFF OUTLT/MARS
5.25N-C-03	Focus	4/27/11	11:30:14 AM	12938657.7	279687.1437	869.7143	0.0235	0.0417	0.0479	2.0	1.0	1.3	None	None	None	Right	1-3 ft/sec		Other-Comments	None	Silt over Sand		RNOFF OULT/MRSH
5.25N-C-04	Focus	4/27/11	11:36:18 AM	12938555.95	279747.2017	869.794	0.0377	0.0658	0.0759	2.2	0.3	0.6	Light	Light	None	Island	1-3 ft/sec		Other-Comments	None	Soft Sediment	57.1	RUNOFF MARSH
5.25N-C-05	Focus	4/27/11	11:40:55 AM	12938532.65	279710.082	869.8439	0.0344	0.0596	0.0688	3.8	3.9	4.0	Heavy	Heavy	Few	Center	>3 ft/sec		Strt Channel Edg	None			15 20FT OFF BANK
5.25N-C-06	Focus	4/27/11	11:46:40 AM	12938541.49	279695.0106	869.8087	0.0485	0.0845	0.0974	3.3	2.5	3.0	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Soft Sediment		25 30FT OFFBANK
5.25N-C-07	Focus	4/27/11	11:48:47 AM	12938633.96	279667.0399	869.8164	0.0472	0.0808	0.0936	4.4	3.3	3.9	Heavy	Heavy	Few	Right	>3 ft/sec		Strt Channel Edg	None	Soft Sediment		15 20FT OFFBANK
5.25N-C-08	Focus	4/27/11	11:51:18 AM	12938687.43	279640.2696	869.7102	0.0413	0.0691	0.0805	4.3	3.2	4.6	Light	Light	None	Right	>3 ft/sec		Strt Channel Edg	None	Soft Sediment		15 20FT OFFBANK
5.25N-C-09	Focus	4/27/11	11:53:28 AM	12938621.13	279650.0527	869.8217	0.0412	0.0675	0.0791	3.6	2.5	2.9	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Soft Sediment		25 30FT OFFBANK
5.25N-C-10	Focus	4/27/11	11:56:59 AM	12938464.18	279781.2463	869.8814	0.0478	0.0756	0.0894	2.6	1.4	3.0	Heavy	Heavy	Many	Right	1-3 ft/sec		Other-Comments	None	Soft Sediment		MARSH EDGE
5.25N-E-18	Focus	5/13/2011	10:23:52 AM	12938187.16	279739.3597	861.2816	9.9845	13.5505	16.8317	2.8	3.1	5.1	Moderate	Light	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		MIDCNHL
5.25N-E-19	Focus	5/13/2011	10:28:06 AM	12938288.59	279710.8798	862.4275	9.6632	12.7338	15.9852	3.1	3.3	4.9	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		MIDCHNL
5.25N-E-20	Focus	5/13/2011	10:31:43 AM	12938374.38	279650.7623	859.8336	12.3313	16.5885	20.6698	2.7	4.0	4.8	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25N-E-21	Focus	5/13/2011	10:35:51 AM	12938487.67	279634.8129	866.7439	8.2957	10.4417	13.336	2.9	2.3	2.6	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		MIDCHNL
5.25N-E-22	Focus	5/16/2011	10:34:19 AM	12938179.77	279778.5868	869.7308	0.0415	0.0527	0.0671	6.1	2.8	2.9	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25N-E-23	Focus	5/16/2011	10:43:08 AM	12938264.09	279791.1812	869.4475	0.3932	0.5266	0.6572	5.4	2.6	3.9	Heavy	Heavy	Many	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.25N-E-24	Focus	5/16/2011	10:50:56 AM	12938430.8	279784.4597	856.7532	6.6729	8.8717	11.1012	2.0	0.8	1.0	Light	Light	Few	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		ON BANK
5.25N-E-25	Focus	5/16/2011	12:00:46 PM	12938688.48	279667.2426	869.7452	0.1464	0.231	0.2735	2.1	0.6	1.9	Light	Light	Few	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.25N-E-26	Focus	5/16/2011	12:06:39 PM	12938603.66	279721.3285	874.6101	2.3649	3.7751	4.4546	2.2	0.5	0.8	Light	Light	Few	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.25N-E-27	Focus	5/16/2011	12:08:25 PM	12938605.48	279710.4987	870.147	0.3657	0.5798	0.6855	2.1	1.9	2.4	Moderate	Moderate	Common	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.25N-E-28	Focus	5/16/2011	12:14:23 PM	12938509.73	279772.6648	869.942	0.0349	0.0632	0.0722	1.0	1.0	1.5	None	None	None	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.25N-E-29	Focus	5/16/2011	12:17:20 PM	12938512.93	279764.5989	869.7566	0.0893	0.1522	0.1765	2.6	1.8	2.1	Moderate	Moderate	Common	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.25N-E-30	Focus	5/16/2011	12:24:56 PM	12938405.56	279695.2707	869.8526	0.0355	0.0609	0.0705	3.6	3.6	4.5	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25N-E-31	Focus	5/17/2011	10:19:28 AM	12937972.99	279878.394	869.8083	0.0537	0.0802	0.0965	4.8	3.8	5.2	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25N-E-32	Focus	5/17/2011	8:41:10 AM	12938165.85	279715.2544	869.5944	0.0365	0.0615	0.0715	3.2	4.4	6.0	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25N-E-33	Focus	5/17/2011	8:52:11 AM	12938071.62	279786.3798	869.5849	0.0179	0.0325	0.0371	3.7	2.9	3.0	Heavy	Moderate	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25N-E-34	Focus	5/17/2011	9:15:23 AM	12937987.39	279959.4943	869.653	0.0354	0.0662	0.0751	1.5	2.7	3.5	Moderate	Moderate	Common	Right	No	No	Strt Channel Edg	<5%	Soft Sediment		
5.25N-E-35	Focus	5/17/2011	9:27:08 AM	12937913.6	280006.3146	869.6109	0.0346	0.0577	0.0673	1.9	1.3	1.6	Moderate	Moderate	Common	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.25N-E-36	Focus	5/17/2011	8:19:12 AM	12938426.5	279660.0646	869.4723	0.0223	0.0361	0.0424	3.3	2.5	2.6	Moderate	Moderate	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25N-E-37	Focus	5/17/2011	8:22:37 AM	12938388.72	279599.238	869.5184	0.0194	0.0324	0.0378	2.6	3.9	6.0	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25N-E-38	Focus	5/17/2011	8:28:08 AM	12938486.32	279625.7246	869.4599	0.0249	0.0423	0.0491	3.1	2.9	3.8	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.25N-E-39	Focus	5/17/2011	8:34:16 AM	12938270.4	279655.7385	869.6544	0.3093	0.505	0.5922	3.2	4.9	5.8	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25N-E-40	Focus	5/17/2011	3:45:22 PM	12938350.33	279727.0105	869.7709	0.041	0.0488	0.0637	3.5	4.3	5.6	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25S-A-01	Focus	5/1/2011	9:31:30 AM	12937900.45	279767.7515	869.9123	0.0435	0.0505	0.0666	4.1	5.4	5.6	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.25S-A-02	Focus	5/1/2011	9:37:22 AM	12937946.92	279772.3976	870.1976	0.0299	0.0346	0.0457	4.0	3.5	4.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Soft Sediment		
5.25S-A-03	Focus	5/1/2011	9:41:19 AM	12937940.92	279757.0779	870.1967	0.0326	0.0377	0.0498	4.2	3.1	4.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.25S-A-04	Focus	5/1/2011	9:45:03 AM	12937976.97	279754.949	870.2449	0.0312	0.0362	0.0477	4.2	2.9	3.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Soft Sediment		
5.25S-A-05	Focus	5/1/2011	9:49:01 AM	12937978.56	279720.7178	870.247	0.0425	0.0497	0.0654	4.0	3.5	4.0	Moderate	Moderate	Common	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.25S-A-06	Focus	5/1/2011	10:03:40 AM	12938054.57	279671.7222	870.1536	0.0293	0.0371	0.0473	3.9	2.8	3.6	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		TEMP 57
5.25S-A-07	Focus	5/1/2011	9:51:39 AM	12937969.33	279726.1653	870.1919	0.0375	0.0443	0.058	4.0	3.8	4.9	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		DBDY
5.25S-A-08	Focus	5/1/2011	9:56:18 AM	12937989.29	279741.7871	870.1654	0.0306	0.0369	0.048	4.1	4.1	5.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Soft Sediment		LAT BDY
5.25S-A-09	Focus	5/1/2011	9:59:14 AM	12937995.85	279714.9368	870.2361	0.0356	0.0409	0.0542	4.0	3.4	3.6	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.25S-A-PUBLIC-1	Focus	4/30/11	11:19:43 AM	12937487.61	279960.3367	870.2847	0.1368	0.1249	0.1852	2.2	0.3	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
5.25S-A-PUBLIC-2	Focus	4/30/11	11:21:16 AM	12937464.58	279972.5121	870.5665	0.0546	0.1123	0.1249	2.2	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
5.25S-A-PUBLIC-3	Focus	4/30/11	11:22:44 AM	12937446.27	279981.1888	870.8594	0.1553	0.205	0.2572	1.7	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
5.25S-E-10	Focus	5/13/2011	10:07:00 AM	12937878.9	279863.6956	865.8457	7.2486	8.605	11.2511	3.4	3.2	4.3	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		100FT OFF LFTBNK
5.25S-E-11	Focus	5/13/2011	10:11:38 AM	12937973.02	279775.9394	863.6924	6.9181	8.0064	10.5813	3.4	2.0	2.6	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		100FT OFF LFTBNK
5.25S-E-12	Focus	5/16/2011	3:51:45 PM	12937038.88	280236.3351	848.3171	7.9413	13.072	15.2952	2.4	0.5	0.7	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Gravel		
5.25S-E-13	Focus	5/16/2011	1:47:12 PM	12937452.49	280089.6687	869.8326	0.0368	0.0548	0.066	4.1	4.0	5.7	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25S-E-14	Focus	5/16/2011	1:55:35 PM	12937329.42	280026.4154	869.788	0.051	0.08	0.0948	2.0	1.2	1.4	Light	Light	Few	Left	No	No	Strt Channel Edg	None	Soft Sediment		
5.25S-E-15	Focus	5/16/2011	2:03:07 PM	12937196.45	280139.8853	869.9212	0.0374	0.0666	0.0764	4.4	3.7	4.5	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.25S-E-16	Focus	5/16/2011	1:04:37 PM	12937708.22	279870.7271	869.8583	0.173	0.1688	0.2417	3.4	4.3	6.1	Moderate	Moderate	Common	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.25S-E-17	Focus	5/16/2011	1:19:24 PM	12937647.71	279909.0066	869.6837	0.0773	0.0782	0.1099	3.3	3.9	6.6	Heavy	Heavy	Many	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.25S-E-18	Focus	5/16/2011	1:25:37 PM	12937549.86	279998.6622	869.7184	0.0476	0.0458	0.066	3.5	3.7	4.3	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel				
5.25S-E-19	Focus	5/16/2011	9:34:20 AM	12937707.3	279970.3834	869.6801	0.0321	0.0541	0.0629	4.4	3.5	5.7	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25S-E-20	Focus	5/16/2011	12:53:35 PM	12937813.6	279819.7723	869.8399	0.038	0.0525	0.0648	3.9	4.1	4.6	Moderate	Moderate	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment	HVY SHNGLB IN DEEP SED	
5.25S-E-21	Focus	5/16/2011	9:46:26 AM	12937829.65	279847.7568	869.7214	0.0358	0.0538	0.0646	3.2	2.7	3.9	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25S-E-22	Focus	5/16/2011	9:53:16 AM	12937917.21	279768.9285	869.5932	0.0612	0.0648	0.0891	3.2	4.2	4.9	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.25S-E-23	Focus	5/16/2011	9:59:16 AM	12938032.51	279653.0932	866.4758	2.3438	3.0169	3.8203	2.0	0.1	0.1	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Gravel		
5.25S-E-24	Focus	5/16/2011	10:16:16 AM	12938017.44	279717.5022	869.7691	0.0552	0.0831	0.0997	3.9	3.5	5.2	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.25S-E-25	Focus	5/17/2011	3:53:57 PM	12937358.54	280054.8519	869.7342	0.0558	0.0678	0.0879	6.4	0.7	0.8	None	None	None	Left	<1ft/sec	<1 ft/sec	Mid-Channel	None	Sand & Gravel		
5.25S-E-26	Focus	5/17/2011	3:58:20 PM	12937275.09	280129.683	869.6605	0.0364	0.0448	0.0577	3.6	4.1	5.0	None	None	None	Left	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25S-E-27	Focus	5/17/2011	4:03:17 PM	12937537.91	279934.9975	869.6676	0.0927	0.0787	0.1216	4.8	0.8	0.9	Heavy	Heavy	Many	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.25S-E-28	Focus	5/17/2011	4:08:48 PM	12937490.29	280008.54	869.6115	0.0491	0.0505	0.0704	3.2	4.3	5.9	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25S-E-29	Focus	5/17/2011	9:00:46 AM	12938000.57	279772.8647	869.5442	0.0258	0.0466	0.0533	3.6	2.6	3.3	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.25S-E-30	Focus	5/17/2011	9:07:23 AM	12937969.64	279819.167	869.6318	0.0237	0.047	0.0527	4.2	3.0	3.3	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
MP 5.25-5.50																							
5.35N-A-01	Focus	4/30/11	1:09:28 PM	12937680.37	280205.7258	870.3629	0.0358	0.0442	0.0569	2.4	2.7	2.9	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
5.35N-A-02	Focus	4/30/11	1:15:57 PM	12937700.25	280199.0907	870.2583	0.0432	0.0554	0.0703	2.5	3.1	3.5	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
5.35N-A-03	Focus	4/30/11	1:18:31 PM	12937711.71	280175.7656	870.4014	0.0321	0.0418	0.0527	2.5	1.5	1.6	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
5.35N-E-04	Focus	5/13/2011	8:44:51 AM	12937734.18	280109.15	876.0803	8.386	13.2619	15.6909	2.1	1.4	2.1	Heavy	Heavy	Many	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		APPROX 25FT OFFBK
5.35N-E-05	Focus	5/13/2011	8:53:32 AM	12937741.49	280161.4346	874.0661	7.9042	12.9031	15.1316	0.9	1.4	2.1	Moderate	Light	Common	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	<5%	Soft Sediment		ON BANK
5.35N-E-06	Focus	5/13/2011	9:01:08 AM	12937670.9	280171.436	870.8568	7.9466	13.0388	15.2695	2.1	3.7	4.4	Heavy	Heavy	Many	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		30FT OFF BANK
5.35N-E-07	Focus	5/13/2011	9:06:39 AM	12937609.5	280177.6981	870.5714	8.0177	13.008	15.2804	2.2	2.9	3.4	Moderate	Light	Common	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		50FT OFF BANK
5.35N-E-08	Focus	5/13/2011	9:11:18 AM	12937525.76	280232.3614	870.6484	8.1941	13.0533	15.4121	2.5	1.8	2.3	Moderate	Moderate	Common	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.35N-E-09	Focus	5/13/2011	9:22:21 AM	12937481.56	280278.7408	869.0269	8.2001	12.1965	14.6968	2.5	2.1	2.5	Moderate	Moderate	Common	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		50FT OFFBANK
5.35N-E-10	Focus	5/13/2011	9:27:32 AM	12937394.36	280338.4797	866.7395	8.1456	12.2313	14.6954	2.8	1.7	2.1	Moderate	Moderate	Common	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.35N-E-11	Focus	5/13/2011	9:32:07 AM	12937327.27	280426.3294	866.0876	7.7974	11.2979	13.7274	2.3	2.1	2.4	Light	Light	Few	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		30FT OFFBANK
5.35N-E-12	Focus	5/13/2011	9:34:54 AM	12937373.7	280422.6481	866.2762	7.7682	11.0045	13.4701	0.9	1.7	2.6	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	<5%	Soft Sediment		ON BANK
5.35N-E-13	Focus	5/13/2011	9:42:03 AM	12937282.05	280498.7539	866.1612	7.8323	11.1989	13.666	0.8	1.4	2.1	Light	Light	Few							PHT375N376N377 SHEEN B4 AGG ON BANK	
5.35N-E-14	Focus	5/13/2011	9:49:28 AM	12937473.28	280336.6329	864.8712	7.5869	10.2311	12.7372	0.8	1.5	2.0	Moderate	Light	Common	Right	No	No	Strt Channel Edg	<5%	Soft Sediment		ON BANK
5.35N-E-15	Focus	5/13/2011	9:53:56 AM	12937555	280279.4091	865.5461	7.5599	9.8502	12.4169	0.7	1.3	1.8	Moderate	Moderate	Common	Right	No	No	Strt Channel Edg	5%-25%	Soft Sediment	SHEEN B4 AGG	ON BANK
5.35N-E-16	Focus	5/13/2011	9:58:33 AM	12937648.4	280226.687	866.2504	7.3002	9.1908	11.7373	1.6	1.4	1.7	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	None	Soft Sediment		ON BANK
5.35N-E-17	Focus	5/16/2011	8:35:16 AM	12937136.34	280518.099	869.6427	0.0373	0.063	0.0733	2.1	3.0	3.7	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-18	Focus	5/16/2011	8:43:20 AM	12937185.92	280466.2588	869.5918	0.0286	0.0513	0.0587	2.5	2.4	2.7	Moderate	Moderate	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-19	Focus	5/16/2011	8:56:01 AM	12937251.73	280398.8918	869.7086	0.0385	0.0666	0.0769	2.5	2.6	4.4	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-20	Focus	5/16/2011	3:36:36 PM	12936918.23	280433.2247	869.7189	0.0443	0.0644	0.0781	2.8	4.4	7.4	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-21	Focus	5/16/2011	3:41:43 PM	12937083.16	280320.7595	869.7182	0.0516	0.0809	0.0959	2.5	4.3	6.7	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-22	Focus	5/16/2011	3:46:12 PM	12937234.25	280207.7941	848.425	6.728	11.9334	13.6993	2.7	4.5	7.0	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-23	Focus	5/16/2011	9:04:16 AM	12937317.38	280334.7484	869.5155	0.0241	0.0435	0.0498	2.4	3.2	4.7	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-24	Focus	5/16/2011	9:08:33 AM	12937402.8	280255.1302	869.5625	0.0248	0.0461	0.0524	2.5	3.8	4.9	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-25	Focus	5/16/2011	9:15:43 AM	12937519.37	280136.8815	869.5632	0.0579	0.0886	0.1058	2.8	3.4	5.5	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Sand over Silt		
5.35N-E-26	Focus	5/17/2011	10:28:22 AM	12937289.45	280234.2778	869.6234	0.0237	0.0289	0.0374	2.1	4.4	7.7	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-27	Focus	5/17/2011	10:32:00 AM	12937321.67	280290.305	869.6325	0.0311	0.0369	0.0482	2.5	4.8	5.2	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-28	Focus	5/17/2011	10:35:57 AM	12937217.07	280311.381	869.7752	0.0505	0.0622	0.0801	2.1	5.1	7.3	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-29	Focus	5/17/2011	4:13:08 PM	12937317.06	280414.5086	869.9148	0.8053	0.8615	1.1793	2.7	1.9	2.2	Light	Light	Few	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.35N-E-30	Focus	5/17/2011	10:41:53 AM	12937156.23	280365.1711	869.6796	0.0379	0.0451	0.0589	2.1	4.5	7.1	Light	Light	Few	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-31	Focus	5/17/2011	10:03:14 AM	12937648.38	280155.9216	870.5131	2.369	3.2433	4.0163	2.8	3.7	4.4	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-32	Focus	5/17/2011	10:07:54 AM	12937708.97	280061.9992	869.6081	0.0367	0.0518	0.0635	3.4	4.5	4.9	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
5.35N-E-33	Focus	5/17/2011	10:13:07 AM	12937863.26	279937.1703	869.7016	0.0458	0.0645	0.0791	4.2	3.8	5.2	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.35N-E-34	Focus	5/17/2011	9:42:21 AM	12937818.79	280080.4108	869.7519	0.1518	0.2125	0.2612	1.9	0.9	1.2	Light	Light	Few	Right	No	No	Strt Channel Edg	<5%	Soft Sediment		
5.35N-E-35	Focus	5/17/2011	9:52:18 AM	12937743.38	280152.2817	868.0428	1.2468	1.9556	2.3192	1.5	2.0	2.5	Light	Light	Few	Right	No	No	Strt Channel Edg	<5%	Soft Sediment		
5.37LG-B-01		5/11/2011	9:52:19 AM	12937593.41	280158.6342	868.961	0.0403	0.0688	0.0797	3.2	0.8	1.8	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.46LG-B-01		5/11/2011	10:11:32 AM	12937054.14	280225.6634	868.2349	0.7301	1.8768	2.0138	2.2	0.2	0.3	Light	Light	None	Left	1-3 ft/sec	<1 ft/sec	Strt Channel Edg	None	Other-Comments		
MP 5.50-5.75																							
5.55N-A-01	Focus	4/27/11	10:24:47 AM	12936932.93	280721.4607	869.8568	0.0367	0.0489	0.0612	1.5	0.6	1.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-02	Focus	4/27/11	10:28:06 AM	12936943.52	280675.0072	869.8328	0.0445	0.0614	0.0759	2.1	2.1	2.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-03	Focus	4/27/11	10:32:52 AM	12936846.2	280769.9135	869.8408	0.0349	0.052	0.0626	1.6	1.1	1.4	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-04	Focus	4/27/11	10:36:20 AM	12936841.93	280732.719	869.8681	0.0368	0.0572	0.0681	2.2	1.9	3.6	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-05	Focus	4/27/11	10:40:51 AM	12936746.34	280727.5074	869.8201	0.0321	0.0525	0.0616	2.1	1.0	3.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-06	Focus	4/27/11	10:45:43 AM	12936762.87	280755.4977	869.8857	0.0264	0.0453	0.0524	2.3	2.2	2.7	Light	Light	Common	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-07	Focus	4/27/11	10:51:00 AM	12936765.51	280765.741	869.8784	0.0328	0.057	0.0658	2.1	2.5	2.6	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-08	Focus	4/27/11	10:54:44 AM	12936779.71	280792.9162	869.8507	0.0313	0.0555	0.0637	1.7	1.6	2.9	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-09	Focus	4/27/11	10:58:03 AM	12936779.68	280806.0917	869.8364	0.032	0.0593	0.0674	1.6	1.1	1.2	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-10	Focus	4/27/11	11:01:42 AM	12936711.61	280706.6995	869.8529	0.0288	0.0525	0.0599	2.2	2.3	3.0	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-11	Focus	4/27/11	11:06:23 AM	12936699.28	280719.7867	869.8373	0.0309	0.0569	0.0647	2.2	2.9	5.3	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-12	Focus	4/27/11	11:11:26 AM	12936690.02	280728.7472	869.7643	0.0287	0.053	0.0603	2.3	2.7	5.9	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-13	Focus	4/27/11	11:14:42 AM	12936675.04	280734.811	869.7782	0.0356	0.0656	0.0746	2.4	4.6	5.7	Light	None	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-14	Focus	4/27/11	11:19:17 AM	12936729.44	280760.2205	869.8263	0.0392	0.072	0.0819	2.3	2.7	3.5	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-15	Focus	4/27/11	11:22:13 AM	12936724.69	280771.5941	869.9649	0.0303	0.0552	0.0629	2.2	2.9	3.3	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-16	Focus	4/27/11	11:24:43 AM	12936711.19	280783.3641	869.9279	0.0287	0.0518	0.0592	2.2	2.6	2.9	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-17	Focus	4/27/11	11:27:59 AM	12936741.02	280795.4469	869.8882	0.03	0.0536	0.0614	2.0	2.6	2.7	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-18	Focus	4/27/11	11:31:17 AM	12936721.67	280820.6493	869.7603	0.0317	0.058	0.0661	1.6	0.7	1.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-19	Focus	4/27/11	11:39:13 AM	12936614.25	280824.3579	869.8338	0.0409	0.0716	0.0825	3.3	1.3	1.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
5.55N-A-20	Focus	4/27/11	11:42:09 AM	12936614.77	280820.6109	869.8262	0.032	0.0549	0.0635	3.3	1.8	2.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-21	Focus	4/27/11	11:45:59 AM	12936527.6	280809.9084	870.0088	0.0253	0.0423	0.0494	4.6	4.9	6.0	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.55N-A-24	Focus	5/16/2011	2:07:55 PM	12936448.82	280906.9482	869.7883	0.0292	0.0513	0.059	3.8	1.2	1.8	Light	Light	None	Center	No	No	Mid-Channel	None	Soft Sediment		
5.55N-A-25	Focus	5/16/2011	2:21:59 PM	12936457.24	280855.0303	869.7941	0.0246	0.0519	0.0575	5.2	1.4	3.0	Light	Light	None	Center	No	No	Mid-Channel	None	Soft Sediment		
5.55N-A-26	Focus	5/16/2011	2:55:26 PM	12936494.05	280757.6405	870.0867	0.039	0.0995	0.1069	4.2	0.9	1.4	Light	Light	Few	Center	No	No	Mid-Channel	None	Soft Sediment		
5.55N-A-27	Focus	5/16/2011	3:01:22 PM	12936591.94	280752.3772	869.891	0.0348	0.0867	0.0934	3.4	0.8	1.6	Light	Light	None	Center	No	No	Mid-Channel	None	Soft Sediment		
5.55N-B-01	Focus	5/11/2011	10:55:31 AM	12936141.15	281040.7984	869.3205	1.1497	2.1552	2.4427	3.1	0.8	1.9	Light	Light	Few	Center	1-3 ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-B-02	Focus	5/11/2011	11:00:12 AM	12936137.1	281030.2356	868.9264	0.0714	0.1228	0.1421	2.8	1.1	2.2	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-28	Focus	5/16/2011	2:16:38 PM	12936953.24	280613.854	866.0786	1.7789	3.4056	3.8422	2.1	3.4	3.7	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.55N-E-29	Focus	5/16/2011	2:24:41 PM	12936705.54	280662.1935	869.9559	0.0502	0.1074	0.1186	2.6	4.7	7.4	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-30	Focus	5/16/2011	2:57:45 PM	12936905.49	280707.0103	869.9198	0.0423	0.1114	0.1192	1.5	2.3	2.5	Moderate	Moderate	Common	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.55N-E-31	Focus	5/16/2011	3:01:55 PM	12936819.53	280726.2704	869.8533	0.0628	0.1308	0.1451	2.2	1.9	3.4	Moderate	Moderate	Common	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.55N-E-32	Focus	5/16/2011	3:06:36 PM	12936705.89	280744.9675	869.7897	0.0386	0.0787	0.0877	2.0	5.0	6.4	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.55N-E-33	Focus	5/16/2011	3:13:58 PM	12936716.65	280838.7759	869.8857	0.0418	0.0754	0.0862	1.2	0.4	1.2	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	None	Soft Sediment	VERY HEAVY SHEEN GLOBS PHT 378N379	
5.55N-E-34	Focus	5/16/2011	3:23:18 PM	12936833.32	280791.7855	873.0692	2.5894	3.2942	4.1901	0.9	1.4	1.5	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	5%-25%	Soft Sediment		
5.55N-E-35	Focus	5/16/2011	3:30:03 PM	12936751.2	280526.8965	869.7499	0.0317	0.0477	0.0573	3.3	4.6	4.8	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-36	Focus	5/17/2011	12:11:26 PM	12936676.95	280833.9374	869.6608	0.0478	0.1072	0.1174	1.8	1.0	1.1	Moderate	Moderate	Common	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.55N-E-37	Focus	5/17/2011	12:16:18 PM	12936645.6	280812.9314	869.6272	0.0314	0.0757	0.082	2.6	2.3	2.6	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.55N-E-38	Focus	5/17/2011	12:22:27 PM	12936653.77	280755.657	869.6253	0.053	0.1439	0.1534	2.4	4.9	6.0	Moderate	Moderate	Common	Center	No	No	Mid-Channel	None	Soft Sediment		
5.55N-E-39	Focus	5/17/2011	12:26:17 PM	12936695.9	280716.6012	869.6963	0.0741	0.1762	0.1912	2.1	4.4	7.5	Heavy	Heavy	Many	Center	No	No	Mid-Channel	None	Soft Sediment		
5.55N-E-40	Focus	5/17/2011	12:30:13 PM	12936743.98	280706.9564	869.5889	0.0629	0.1459	0.1588	2.1	4.4	5.0	Moderate	Moderate	Common	Center	No	No	Mid-Channel	None	Soft Sediment		
5.55N-E-41	Focus	5/17/2011	12:35:04 PM	12936913.87	280687.2068	869.8893	0.0902	0.1933	0.2133	2.1	2.1	3.2	Moderate	Moderate	Common	Right	No	No	Mid-Channel	None	Soft Sediment		
5.55N-E-42	Focus	5/17/2011	12:44:06 PM	12936883.84	280653.7786	869.71	0.0269	0.0626	0.0681	1.9	3.9	4.4	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-43	Focus	5/17/2011	1:50:34 PM	12936666.9	280678.2742	869.7182	0.0245	0.0488	0.0546	2.6	5.5	7.2	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-44	Focus	5/17/2011	2:03:48 PM	12936603.98	280700.2788	869.6613	0.0354	0.072	0.0802	2.8	5.2	5.3	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-45	Focus	5/17/2011	2:11:57 PM	12936707.17	280619.6027	869.7387	0.0514	0.1072	0.1189	2.4	5.2	7.2	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-46	Focus	5/17/2011	2:16:47 PM	12936673.69	280577.5654	870.2613	0.114	0.2747	0.2974	4.1	4.7	5.4	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-47	Focus	5/17/2011	2:30:02 PM	12936554.8	280602.749	869.3383	0.1226	0.2949	0.3194	6.5	2.5	3.0	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-48	Focus	5/17/2011	2:35:41 PM	12936592.1	280675.191	869.4419	0.0679	0.1663	0.1796	3.0	4.5	5.5	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-49	Focus	5/17/2011	2:39:57 PM	12936691.12	280617.8447	869.7917	0.0804	0.1978	0.2135	2.6	5.0	5.8	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-50	Focus	5/17/2011	2:44:06 PM	12936773.09	280614.1308	869.9294	0.0944	0.2544	0.2714	2.1	4.2	7.1	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-51	Focus	5/17/2011	2:50:08 PM	12936905.58	280591.3916	869.7466	0.0469	0.0851	0.0972	2.1	3.5	5.2	Moderate	Moderate	Common	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.55N-E-52	Focus	5/17/2011	2:53:14 PM	12936886.25	280541.8735	869.607	0.055	0.0884	0.1041	2.1	5.1	6.5	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.63S-A-01	Focus	4/28/11	9:02:31 AM	12936638.56	280503.2395	870.0595	0.0351	0.0559	0.066	5.0	3.0	4.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.63S-A-02	Focus	4/28/11	9:11:31 AM	12936623.26	280511.4291	869.9716	0.0439	0.0656	0.0789	4.7	2.9	3.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.63S-A-03	Focus	4/28/11	9:16:40 AM	12936509.62	280563.3444	870.019	0.0591	0.0855	0.104	2.9	4.4	5.1	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.63S-A-04	Focus	4/28/11	9:22:15 AM	12936479.42	280585.8893	869.9725	0.04	0.0558	0.0687	2.2	4.9	5.9	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.63S-A-05	Focus	4/28/11	9:30:01 AM	12936498.77	280658.7779	870.0492	0.0318	0.0413	0.0521	6.6	3.0	4.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Soft Sediment	2 DEEP 4 VIEW	2 DEEP 4 VIEW
5.63S-A-06	Focus	4/28/11	9:33:12 AM	12936481.12	280684.0978	870.0617	0.0323	0.0422	0.0531	7.0	2.5	3.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Soft Sediment	2 DEEP 4 VIEW	2 DEEP 4 VIEW
5.63S-A-07	Focus	4/28/11	9:44:29 AM	12936413.76	280614.2705	870.0538	0.043	0.0498	0.0658	2.8	3.3	3.7	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.63S-A-08	Focus	4/28/11	9:49:26 AM	12936404.2	280616.9721	870.0258	0.0511	0.059	0.0781	2.9	2.3	2.6	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.63S-A-09	Focus	4/28/11	9:52:06 AM	12936396	280640.4401	869.9971	0.0483	0.0558	0.0738	3.3	3.8	4.9	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.63S-A-10	Focus	4/28/11	10:00:16 AM	12936337.5	280670.8354	870.0775	0.0482	0.0568	0.0745	3.2	3.7	4.4	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.63S-A-11	Focus	4/28/11	10:04:44 AM	12936280.33	280733.3877	870.0619	0.0404	0.0478	0.0626	2.0	1.7	1.8	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.63S-A-12	Focus	4/28/11	10:11:54 AM	12936240.71	280781.8179	869.9368	0.0418	0.0514	0.0663	2.5	3.1	3.6	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.63S-A-14	Focus	5/16/2011	3:08:01 PM	12936147.75	280813.858	869.784	0.0322	0.0638	0.0715	3.2	1.0	2.3	Light	Light	Few	Left	No	No	Cove	None	Soft Sediment		
5.63S-A-15	Focus	5/16/2011	2:43:56 PM	12936276.94	280814.3223	870.6593	0.7856	3.0252	3.1255	3.1	1.1	1.8	Light	Light	Few	Center	No	No	Mid-Channel	None	Soft Sediment		
5.63S-A-16	Focus	5/16/2011	2:48:11 PM	12936329.54	280767.7715	869.9952	0.0416	0.1557	0.1612	3.0	1.5	2.5	None	None	None	Center	No	No	Mid-Channel	None	Soft Sediment		
5.63S-A-PUBLIC-1	Focus	4/30/11	11:09:09 AM	12936323.67	280621.4298	870.3241	0.0566	0.107	0.121	0.7	0.1	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
5.63S-A-PUBLIC-2	Focus	4/30/11	11:10:51 AM	12936305.13	280623.3779	870.34	0.0317	0.0596	0.0675	0.7	0.1	0.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
5.63S-A-PUBLIC-3	Focus	4/30/11	11:12:12 AM	12936290	280628.57	870.2086	0.0285	0.057	0.0637	2.5	0.2	0.4	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
5.63S-B-01	Focus	5/11/2011	11:51:15 AM	12936177.63	280814.5938	869.1617	0.0616	0.0637	0.0886	2.7	1.4	2.3	Light	Light	None	Left	<1ft/sec	No	Cove	None	Soft Sediment		
5.63S-E-17	Focus	5/17/2011	2:23:59 PM	12936661.03	280450.431	873.0207	2.8026	6.2408	6.8412	1.6	1.9	2.9	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.75N-A-01	Focus	4/28/11	12:53:56 PM	12936520.17	280974.8228	870.2465	0.0421	0.0543	0.0688	1.7	2.1	2.3	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75N-A-02	Focus	4/28/11	1:00:34 PM	12936517.8	280975.496	870.1181	0.0384	0.0457	0.0597	1.9	1.7	2.0	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75N-A-02	Focus	4/29/11	9:09:50 AM	12935905.46	281349.3805	870.3932	0.1136	0.202	0.2318	4.0	0.1	0.1	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		
5.75N-A-03	Focus	4/28/11	1:02:38 PM	12936505.89	280965.1555	870.2414	0.0487	0.0586	0.0762	1.9	2.2	2.3	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75N-A-03	Focus	4/29/11	9:14:43 AM	12935947.94	281321.8841	870.2124	0.0388	0.0609	0.0722	4.3	0.1	0.1	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		
5.75N-A-04	Focus	4/28/11	1:06:26 PM	12936494.29	280985.8897	870.1952	0.0382	0.0464	0.0601	2.0	2.0	2.5	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75N-A-04	Focus	4/29/11	9:19:09 AM	12936094.8	281296.8192	870.3186	0.0443	0.0615	0.0758	1.6	0.3	0.4	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
5.75N-A-05	Focus	4/29/11	9:21:26 AM	12936119	281264.2409	870.2713	0.0421	0.0605	0.0737	3.1	0.9	1.1	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
5.75N-A-06	Focus	4/29/11	9:24:07 AM	12936206.42	281202.3495	870.2389	0.0473	0.0622	0.0781	3.2	1.4	1.8	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
5.75N-A-07	Focus	4/29/11	9:26:56 AM	12936297.23	281165.1926	870.2439	0.0717	0.0735	0.1027	1.3	0.7	0.8	None	None	None	Right	<1ft/sec		Strt Channel Edg	50%-75%	Sand & Silt		GLOBS SHEEN SURFC
5.75N-A-08	Focus	4/29/11	9:30:36 AM	12936351.13	281094.5862	870.1977	0.0407	0.0528	0.0667	2.6	1.6	1.9	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
5.75N-A-09	Focus	4/29/11	9:33:22 AM	12936430.86	281069.4064	870.0078	0.0566	0.0725	0.092	2.1	0.3	0.4	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
5.75N-A-13	Focus	4/30/11	9:57:50 AM	12936464	281016.0171	870.256	0.0461	0.0548	0.0716	2.2	1.2	1.3	Moderate	Moderate	Common	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.75N-A-14	Focus	4/30/11	10:00:25 AM	12936448.39	281018.1425	870.2944	0.0445	0.0535	0.0696	2.5	1.2	1.3	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.75N-A-15	Focus	4/30/11	10:03:07 AM	12936453.82	281006.5382	870.2647	0.0451	0.0518	0.0687	2.5	1.5	1.7	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.75N-A-16	Focus	4/30/11	10:05:17 AM	12936439.69	281008.9277	870.2923	0.0424	0.0502	0.0658	2.9	1.2	1.3	Moderate	Moderate	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.75N-A-17	Focus	4/30/11	10:08:37 AM	12936451.61	280979.9069	870.3115	0.0369	0.0474	0.0601	2.5	2.1	2.4	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		OUTSIDE HRD BOOM
5.75N-A-18	Focus	4/30/11	10:15:44 AM	12936433.37	280997.8659	870.2551	0.0326	0.0449	0.0555	2.7	1.9	2.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		OUTSIDE HRD BOOM
5.75N-A-19	Focus	4/30/11	10:17:13 AM	12936419.47	281009.4451	870.1737	0.0305	0.0433	0.0529	2.7	2.0	2.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		OUTSIDE HRD BOOM
5.75N-A-20	Focus	4/30/11	10:20:09 AM	12936479.32	280952.6825	870.1739	0.0352	0.052	0.0628	2.6	2.2	2.5	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		OUTSIDE HRD BOOM
5.75N-A-21	Focus	4/30/11	10:22:11 AM	12936506.13	280921.2048	870.1858	0.0301	0.0457	0.0548	1.7	2.5	3.4	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		OUTSIDE HRD BOOM
5.75N-A-22	Focus	4/30/11	10:24:57 AM	12936519.96	280905.131	870.2262	0.0336	0.0526	0.0624	1.8	0.5	0.6	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		OUTSIDE HRD BOOM
5.75N-A-23	Focus	4/30/11	10:26:56 AM	12936539.28	280931.4077	870.0812	0.0346	0.0554	0.0653	1.7	0.5	0.6	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.75N-A-24	Focus	4/30/11	10:29:35 AM	12936538.2	280947.9578	870.1621	0.0339	0.0559	0.0654	1.8	2.1	2.4	Moderate	Moderate	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.75N-A-25	Focus	4/30/11	10:35:18 AM	12936561.7	280948.9816	870.1491	0.0334	0.0581	0.067	1.0	0.6	0.9	Light	Light	None	Right	No		Strt Channel Edg	50%-75%	Silt over Sand		HEVY SURFCE SHEEN
5.75N-A-26	Focus	4/30/11	10:39:46 AM	12936494.63	281015.9675	870.11	0.0287	0.0513	0.0588	1.9	1.1	1.3	Moderate	Moderate	Common	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		HEVY SURFCE SHEEN
5.75N-A-27	Focus	5/16/2011	1:34:04 PM	12935678.67	281397.403	869.8202	0.0388	0.0496	0.0629	6.0	2.0	2.8	None	None	None	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment	LAT BDY	
5.75N-A-28	Focus	5/16/2011	12:35:44 PM	12935729.16	281424.034	869.9085	0.0383	0.064	0.0746	4.8	1.3	1.8	Light	Light	Few	Right	No	No	Strt Channel Edg	None	Soft Sediment	U BDY	
5.75N-A-29	Focus	5/16/2011	12:42:18 PM	12935745.87	281382.8724	869.6937	0.5617	0.8647	1.0311	5.5	0.6	1.1	None	None	None	Center	No	No	Mid-Channel	None	Soft Sediment	LAT BDY	
5.75N-A-30	Focus	5/16/2011	1:42:15 PM	12935744.22	281368.5885	869.8682	0.0345	0.0479	0.059	5.5	2.0	2.8	None	None	None	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment	LAT BDY	
5.75N-A-31	Focus	5/16/2011	12:46:51 PM	12935799.85	281393.2313	871.1223	1.0694	1.5057	1.8468	3.5	0.0	0.0	None	None	None	Right	No	No	Strt Channel Edg	None	Gravel & Larger		
5.75N-A-32	Focus	5/16/2011	12:50:30 PM	12935826.11	281380.0016	870.0355	0.9175	1.2272	1.5323	3.0	0.0	0.0	None	None	None	Right	No	No	Strt Channel Edg	None	Sand & Gravel		
5.75N-A-33	Focus	5/16/2011	12:59:02 PM	12935856.5	281360.9848	869.7368	0.0791	0.1217	0.1452	5.0	1.0	2.5	None	None	None	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Silt		
5.75N-A-34	Focus	5/16/2011	1:51:38 PM	12936177.55	281122.6723	869.9234	0.0324	0.0503	0.0599	5.2	1.2	2.0	None	None	None	Center	No	No	Mid-Channel	None	Soft Sediment		
5.75N-A-35	Focus	5/16/2011	1:55:34 PM	12936228.28	281097.8347	869.9067	0.0482	0.0773	0.091	4.8	1.6	2.2	None	None	None	Center	No	No	Mid-Channel	None	Soft Sediment		
5.75N-A-36	Focus	5/16/2011	2:00:50 PM	12936261.72	281051.9455	869.8678	0.0262	0.0441	0.0513	4.4	1.4	2.6	Light	Light	None	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		
5.75N-A-37	Focus	5/16/2011	12:02:54 PM	12935633.88	281474.6776	869.8519	0.0508	0.0854	0.0993	4.9	1.3	1.3	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	None	Soft Sediment	SURFSHEENUPONARIV	
5.75N-A-38	Focus	5/16/2011	12:08:42 PM	12935604.39	281518.6961	889.1467	2.0329	4.617	5.0448	4.2	1.6	3.2	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	<5%	Soft Sediment	LAT BDY, SURFSHEENONARIVAL	5PERFLOATORGANIC

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
5.75N-A-39	Focus	5/16/2011	12:14:52 PM	12935542.29	281509.1404	870.1331	1.0749	2.3109	2.5486	4.1	2.0	2.5	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	None	Soft Sediment		
5.75N-A-40	Focus	5/16/2011	12:21:16 PM	12935611.85	281462.2771	869.7413	0.0329	0.0598	0.0683	6.1	1.9	3.2	Heavy	Heavy	Many	Right	No	No	Mid-Channel	None	Soft Sediment	SURFSHEENONARIVAL	
5.75N-A-41	Focus	5/16/2011	1:29:54 PM	12935619.5	281430.1003	869.8984	0.0295	0.036	0.0465	9.4	1.1	1.6	None	None	None	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment	LAT BDY	10FTOUTOFBOOM
5.75N-A-42	Focus	5/16/2011	12:29:39 PM	12935671.53	281449.1334	869.8187	0.0288	0.0501	0.0578	4.9	1.5	2.3	Heavy	Heavy	Many	Right	No	No	Strt Channel Edg	5%-25%	Soft Sediment		ALGAEONSURFACE
5.75S-A-01	Focus	4/29/11	9:43:08 AM	12935541.83	281146.4533	870.1008	0.0558	0.0599	0.0819	3.5	2.1	2.3	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.75S-A-02	Focus	4/29/11	9:47:27 AM	12935683.63	281180.6871	870.1954	0.041	0.0486	0.0636	3.5	4.0	4.7	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-03	Focus	4/29/11	9:51:03 AM	12935695.81	281107.1983	870.2188	0.0502	0.058	0.0767	3.3	3.4	4.2	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-04	Focus	4/29/11	9:54:41 AM	12935807.2	281114.6377	870.2669	0.043	0.05	0.066	3.5	3.6	4.9	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-05	Focus	4/29/11	9:58:30 AM	12935777.84	281068.7152	870.1441	0.0348	0.0409	0.0537	3.5	3.5	4.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-06	Focus	4/29/11	10:02:08 AM	12935827.04	281050.6023	870.2875	0.041	0.0489	0.0638	3.5	3.6	4.5	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-07	Focus	4/29/11	10:06:49 AM	12935871.97	281098.5054	870.1978	0.0303	0.037	0.0479	3.1	3.5	4.5	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-08	Focus	4/29/11	10:10:20 AM	12935843.94	281142.2935	870.2049	0.0355	0.0444	0.0568	3.3	2.7	2.7	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-09	Focus	4/29/11	10:14:43 AM	12935919.22	280979.2401	870.2733	0.0496	0.0645	0.0813	3.4	3.2	4.5	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-10	Focus	4/29/11	10:21:55 AM	12935960.98	280950.7891	870.2376	0.0384	0.0538	0.0661	3.6	4.1	4.9	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-11	Focus	4/29/11	10:26:57 AM	12936010.31	280973.9481	870.1976	0.0305	0.0455	0.0548	3.8	3.8	4.4	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-12	Focus	4/29/11	10:30:28 AM	12936066.04	281010.5995	870.2086	0.034	0.0541	0.0639	3.5	3.2	4.0	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-13	Focus	4/29/11	10:37:52 AM	12936115.44	280919.6385	870.4041	0.0353	0.0607	0.0702	3.2	1.1	1.1	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.75S-A-14	Focus	4/29/11	10:42:32 AM	12936180.83	280957.7132	870.1343	0.0351	0.0609	0.0703	3.8	2.7	3.2	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-15	Focus	4/29/11	10:49:22 AM	12936227.48	280935.7965	870.1359	0.0223	0.0399	0.0457	4.9	1.2	1.7	Light	Light	Common	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.75S-A-19	Focus	5/13/2011	8:48:03 AM	12935606.48	281219.9386	869.025	0.0985	0.161	0.1887	2.6	1.5	8.2	Heavy	Heavy	Many	Center	No	No	Mid-Channel	None	Soft Sediment		
5.75S-A-20	Focus	5/13/2011	9:01:47 AM	12935606.81	281256.6729	869.05	0.032	0.0582	0.0664	3.0	3.0	5.0	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment	HVYSURFACESHEEN	JUST INSIDEBOOM
5.75S-A-21	Focus	5/13/2011	9:08:23 AM	12935650.97	281188.6649	869.0418	0.0413	0.0753	0.0859	3.0	2.6	4.2	Heavy	Heavy	Many	Left	No	No	Mid-Channel	None	Soft Sediment		
5.75S-A-22	Focus	5/13/2011	9:16:55 AM	12935690.84	281207.3027	869.2675	0.0306	0.0554	0.0633	3.0	2.6	3.5	Heavy	Heavy	Many	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		OUTSIDEOFBOOM
5.75S-A-23	Focus	5/13/2011	9:22:35 AM	12935552.11	281164.0739	869.154	0.0299	0.0535	0.0613	3.3	1.4	2.3	Heavy	Heavy	Many	Left	No	No	Strt Channel Edg	None	Soft Sediment		
5.75S-A-24	Focus	5/13/2011	9:36:16 AM	12935517.97	281147.5273	869.2025	0.048	0.058	0.0753	1.5	0.1	0.2	None	None	None	Left	No	No	Strt Channel Edg	None	Soft Sediment	LAT BDY	SILTOVERGRAVEL
5.75S-A-25	Focus	5/13/2011	9:42:09 AM	12935502.52	281207.2677	869.149	0.0287	0.0536	0.0608	4.6	0.2	1.4	Light	Light	Few	Center	No	No	Mid-Channel	None	Soft Sediment	D BDY	
5.75S-A-26	Focus	5/13/2011	9:50:08 AM	12935547.71	281280.2736	869.2532	0.0365	0.0595	0.0698	5.6	0.4	1.9	Moderate	Moderate	Common	Center	No	No	Mid-Channel	None	Soft Sediment		
5.75S-A-27	Focus	5/13/2011	9:59:45 AM	12935536.86	281290.4228	869.209	0.0379	0.0602	0.0711	3.2	1.3	3.3	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment	D BDY	
5.75S-A-28	Focus	5/13/2011	10:04:31 AM	12935609.16	281140.7995	869.2202	0.075	0.0779	0.1081	3.1	1.4	2.9	Moderate	Moderate	Common	Center	No	No	Strt Channel Edg	None	Soft Sediment		
5.75S-A-29	Focus	5/13/2011	10:11:56 AM	12935647.59	281128.2643	869.1195	0.0718	0.084	0.1105	4.5	1.5	2.5	Moderate	Moderate	Common	Left	No	No	Strt Channel Edg	None	Soft Sediment		
5.75S-A-30	Focus	5/13/2011	10:16:42 AM	12935665.55	281175.3809	869.0786	0.044	0.0586	0.0733	3.0	2.5	4.5	Heavy	Heavy	Many	Center	No	No	Mid-Channel	None	Soft Sediment		
5.75S-A-31	Focus	5/13/2011	10:24:24 AM	12935626.76	281278.2576	869.1602	0.0446	0.0627	0.077	2.3	2.4	2.9	Heavy	Heavy	Many	Center	No	No	Mid-Channel	None	Soft Sediment		
5.75S-A-32	Focus	5/16/2011	8:33:00 AM	12935556.96	281213.7621	869.707	0.0311	0.0531	0.0615	3.5	2.5	4.0	Light	Light	Few	Left	No	No	Mid-Channel	None	Soft Sediment	D BDY	
5.75S-A-33	Focus	5/16/2011	11:54:00 AM	12935639.95	281292.7411	869.8068	0.0341	0.0563	0.0658	3.0	2.0	3.0	Light	Light	Few	Center	No	No	Mid-Channel	None	Soft Sediment	LAT BDY	
5.75S-A-34	Focus	5/16/2011	8:39:41 AM	12935762.91	281149.7391	869.6456	0.025	0.044	0.0506	3.9	1.7	2.3	Moderate	Moderate	Few	Left	No	No	Mid-Channel	None	Soft Sediment		JUSTINSIDEBOOM
5.75S-A-35	Focus	5/16/2011	8:45:22 AM	12935804.37	281118.7368	869.6872	0.0265	0.0469	0.0539	3.0	2.0	3.0	Moderate	Moderate	Common	Left	No	No	Mid-Channel	None	Soft Sediment		
5.75S-A-36	Focus	5/16/2011	8:50:49 AM	12935848.4	281102.1225	869.5559	0.0231	0.0419	0.0478	3.2	1.8	3.2	Light	Light	Few	Left	No	No	Mid-Channel	None	Soft Sediment	U BDY	
5.75S-A-37	Focus	5/16/2011	8:57:07 AM	12935774.26	281090.5142	869.5832	0.049	0.0941	0.1061	3.0	2.0	4.0	Moderate	Moderate	Common	Left	No	No	Strt Channel Edg	None			
5.75S-A-38	Focus	5/16/2011	9:02:28 AM	12935737.78	281045.2	869.6905	0.044	0.1048	0.1137	2.2	0.3	0.3	Light	Light	None	Left	No	No	Cut Bank	None	Gravel & Larger	LAT BDY	OVER GRAVEL
5.75S-A-39	Focus	5/16/2011	9:08:21 AM	12935815.49	281049.7972	869.6371	0.0276	0.0547	0.0613	3.9	1.8	3.2	Light	Light	Few	Left	No	No	Strt Channel Edg	None	Soft Sediment	LAT BDY	
5.75S-A-40	Focus	5/16/2011	11:42:32 AM	12935780.31	281172.0786	869.7229	0.0363	0.0563	0.067	3.6	2.3	2.4	Heavy	Heavy	Many	Left	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		20FTOUTOFBOOM
5.75S-A-41	Focus	5/16/2011	11:47:40 AM	12935801.05	281219.3183	869.7909	0.0295	0.0472	0.0557	2.8	2.0	3.2	Light	Light	Few	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment	LAT BDY	
5.75S-A-42	Focus	5/16/2011	9:14:51 AM	12935969.11	281030.6477	864.2697	3.4037	5.5207	6.4857	3.2	1.9	3.8	Heavy	Heavy	Many	Left	No	No	Mid-Channel	None	Soft Sediment		
5.75S-A-43	Focus	5/16/2011	9:23:25 AM	12935951.47	280968.0454	869.6598	0.0353	0.0648	0.0738	3.7	1.9	3.2	Light	Light	Few	Left	No	No	Strt Channel Edg	None	Soft Sediment	LAT BDY	
5.75S-A-44	Focus	5/16/2011	9:41:21 AM	12936077.26	280968.9258	869.678	0.0395	0.0619	0.0735	3.6	1.8	2.3	Heavy	Heavy	Common	Left	No	No	Mid-Channel	None	Soft Sediment		
5.75S-A-45	Focus	5/16/2011	9:46:35 AM	12936092.45	280921.5272	869.7328	0.0478	0.0719	0.0863	3.4	2.3	3.2	Moderate	Moderate	Common	Left	No	No	Strt Channel Edg	None	Soft Sediment		
5.75S-A-46	Focus	5/16/2011	9:51:25 AM	12936143.7	280953.7892	869.6631	0.0414	0.059	0.0721	3.1	1.7	2.4	Heavy	Heavy	Many	Left	No	No	Mid-Channel	None	Soft Sediment		
5.75S-A-47	Focus	5/16/2011	9:57:02 AM	12936188.21	280925.4991	869.6495	0.0638	0.0816	0.1036	4.0	1.2	2.8	Light	Light	Few	Left	No	No	Cove	None	Soft Sediment	U BDY	
5.75S-A-48	Focus	5/16/2011	10:07:37 AM	12935980.81	281071.5391	869.7456	0.0466	0.0663	0.081	3.4	2.3	4.1	Heavy	Heavy	Many	Left	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment		20FTOUTFROMBOOM
5.75S-A-49	Focus	5/16/2011	11:37:08 AM	12935988.38	281130.6251	869.7354	0.032	0.0481	0.0577	3.4	2.0	3.2	None	None	None	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment	LAT BDY	
5.75S-B-01	Focus	5/11/2011	11:21:42 AM	12935497.59	281176.7862	872.886	1.7631	2.2533	2.861	2.9	1.6	2.6	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Other-Comments	None	Soft Sediment		BACK EDDY BY DAM
5.75S-B-02	Focus	5/11/2011	11:28:57 AM	12935540.01	281268.3921	868.8254	1.3218	1.6407	2.1069	2.7	1.6	2.2	Light	Light	None	Left	<1ft/sec	<1 ft/sec	Other-Comments	None	Soft Sediment		BACK EDDY BY DAM
5.75S-B-03	Focus	5/11/2011	11:41:03 AM	12935599.08	281178.3572	869	0.1275	0.1776	0.2186	2.3	1.6	2.5	Heavy	Heavy	Many	Left	<1ft/sec	<1 ft/sec	Other-Comments	None	Soft Sediment	HY SHN KICKED UP BY JETS	BACK EDDY BY DAM
MP 5.75-6.00																							
5.80N-A-01	Focus	4/19/11	1:25:29 PM	12935431.84	281514.89	858.3	1.99	2.59	3.27	2.9	0.1	0.1	Light	Light	None	Right	<1ft/sec		Other-Comments	None	Gravel & Larger		Excavation area
5.80N-A-02	Focus	4/19/11	1:29:01 PM	12935427.16	281489.98	858.8	5.72	8.94	10.61	2.6	0.0	0.0	None	None	None	Right	<1ft/sec		Other-Comments	None	Gravel & Larger		Excavation area
5.80N-A-03	Focus	4/19/11	1:37:20 PM	12935330.44	281457.30	857.7	4.10	6.66	7.82	2.9	0.1	0.3	None	None	None	Right	1-3 ft/sec		Other-Comments	None	Sand & Gravel		Excavation area
MSBR-A-01	Bridge	5/11/2011	1:47:51 PM	12935279.95	281472.3603	862.0439	1.9605	3.5455	4.0515	1.5	0.0	0.0	None	None	None	Right	>3 ft/sec	>3 ft/sec	Strt Channel Edg	None	Gravel & Larger		
MSBR-A-02	Bridge	5/11/2011	1:56:08 PM	12935272.03	281372.4762	869.6235	1.361	2.224	2.6073	0.6	0.1	0.1	None	None	None	Left	1-3 ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Gravel		
MSBR-A-03	Bridge	5/11/2011	2:01:26 PM	12935345.96	281345.2699	859.1291	0.0523	0.0876	0.1021	0.5	0.1	0.1	None	None	None	Left	<1ft/sec	<1 ft/sec	Cove	None	Sand & Gravel		
5.90N-E-01	Focus	4/19/11	1:43:14 PM	12934781.37	281702.99	856.6	2.58	2.88	3.87	0.5	0.2	0.6	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.90N-E-02	Focus	4/19/11	1:54:01 PM	12934811.49	281677.95	862.1	2.33	3.22	3.97	1.0	0.2	0.6	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
5.90N-E-03	Focus	4/19/11	2:06:26 PM	12934839.68	281658.38	854.3	1.42	2.18	2.60	1.0	0.9	1.0	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
5.90N-E-04	Focus	4/19/11	2:09:08 PM	12934837.05	281646.21	856.6	1.17	1.72	2.08	1.3	0.3	0.6	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand		BDY
5.90N-E-05	Focus	4/19/11	2:16:04 PM	12934759.74	281679.95	859.5	0.95	1.44	1.73	2.5	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		BDY
5.90N-E-06	Focus	4/19/11	2:22:55 PM	12934760.58	281688.51	861.7	1.22	1.96	2.31	2.0	0.5	1.0	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
5.90SA-A-01	Focus	5/11/2011	9:28:13 AM	12935088.05	281436.9329	858.4511	0.0904	0.1076	0.1405	1.6	0.1	0.3	Moderate	Moderate	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Silt	LIGHTSHEENONSURFU	0.4FPS
5.90SA-A-02	Focus	5/11/2011	9:32:00 AM	12935117.36	281421.1006	859.3081	1.8344	2.6079	3.1885	0.9	0.1	0.3	Light	Light	None	Left	<1ft/sec	1-3 ft/sec	Strt Channel Edg	None	Sand & Gravel	U BDY	
5.90SA-A-03	Focus	5/11/2011	9:38:49 AM	12935071.07	281432.3176	858.2	0.0549	0.0926	0.1077	0.7	0.3	0.5	Heavy	Heavy	Common	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment	SHEENONBANKARIVAL	
5.90SA-A-04	Focus	5/11/2011	9:44:19 AM	12935035.42	281432.5725	864.9457	1.305	2.2745	2.6223	0.4	0.3	0.6	None	None	None	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment	D BDY, SHEENONSHORE	
5.90SA-A-05	Focus	5/11/2011	10:10:37 AM	12935044.58	281448.6723	858.4086	0.0399	0.0722	0.0824	1.6	0.1	0.2	None	None	None	Left	<1ft/sec	1-3 ft/sec	Strt Channel Edg	None	Sand & Gravel		
5.90SA-A-06	Focus	5/11/2011	10:12:53 AM	12935038.37	281444.0972	858.4764	0.0528	0.1039	0.1165	1.5	0.1	0.2	None	None	None	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment	LAT BDY	LARGE BOULDERS
5.90SA-A-07	Focus	5/11/2011	10:19:52 AM	12935059.83	281440.5607	858.417	0.0685	0.1395	0.1555	1.4	0.2	0.3	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
5.9SA-B-03	Focus	4/27/11	10:23:04 AM	12935192.31	281411.6821	856.4515	1.9561	3.0592	3.6311	0.5	0.0	0.0	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
5.9SA-B-04	Focus	4/27/11	10:37:17 AM	12935208.7	281406.6182	859.0457	2.1244	4.2032	4.7096	1.0	0.0	0.0	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		OILY ROCKS SHORE
5.90S-B-01	Focus	4/19/11	1:47:11 PM	12935006.74	281436.29	863.7	4.14	4.53	6.14	0.5	0.3	0.3	Light	Light	None	Left	--		Cut Bank	<5%	Silt over Sand		FAST CURRENT
5.90S-B-02	Focus	4/19/11	1:53:28 PM	12934921.83	281460.56	854.6	5.07	6.44	8.20	0.7	0.7	0.8	Light	Light	None	Left	--		Cut Bank	<5%	Silt over Sand	VERY SLIGHT	FAST CURRENT
5.90SB-A-01	Focus	5/11/2011	10:33:34 AM	12934725.23	281555.9892	858.1277	0.0589	0.1263	0.1393	1.0	0.1	0.2	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Silt over Sand		
5.90SB-A-02	Focus	5/11/2011	10:37:48 AM	12934741.83	281541.9372	862.8232	1.4995	3.0618	3.4092	0.6	0.1	0.2	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Silt over Sand		
5.90SB-A-03	Focus	5/11/2011	10:41:32 AM	12934718.01	281557.9859	857.9699	1.7548	3.4788	3.8963	0.6	0.1	0.2	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Silt		
5.90SB-A-04	Focus	5/11/2011	10:43:48 AM	12934699.92	281565.4018	858.5793	0.0856	0.1482	0.1712	0.5	0.1	0.2	None	None	None	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Silt		
5.90SB-D-01	Focus	4/19/11	2:13:58 PM	12934771.08	281531.74	862.9	3.88	4.91	6.26	0.5	0.6	1.0	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
5.90SB-D-02	Focus	4/19/11	2:16:58 PM	12934746.57	281539.55	853.6	2.95	4.27	5.19	0.6	0.2	0.3	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
5.90SB-D-03	Focus	4/19/11	2:21:00 PM	12934702.24	281574.55	859.3	1.41	2.17	2.59	1.1	0.3	0.4	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
5.96T-D-01	Transect	4/19/11	1:37:44 PM	12934869.35	281632.43	858.5	0.05	0.07	0.09	0.8	0.3	0.8	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	<5%	Sand & Silt		FALLEN TREES SUB
5.96T-D-02	Transect	4/19/11	1:46:23 PM	12934810.76	281530.33	863.4	2.79	2.86	3.99	1.3	0.0	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		FALLEN TREES SUB
5.96T-D-03	Transect	4/19/11	1:59:18 PM	12934800.10	281607.96	858.4	0.04	0.05	0.07	2.2	0.0	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		HIGH VELOCITY
MP 6.00-6.25																							
6.09T-D-01	Transect	4/19/11	3:49:01 PM	12934362.41	282110.15	857.2	1.43	2.13	2.57	0.8	0.1	0.3	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Silt		
6.09T-D-02	Transect	4/19/11	3:58:17 PM	12934296.28	282084.84	861.0	1.48	2.34	2.76	2.9	0.0	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
6.09T-D-03	Transect	4/19/11	4:02:45 PM	12934242.70	282072.89	863.5	2.92	4.29	5.19	1.9	0.1	0.1	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
6.10N-A-01	Focus	4/19/11	2:27:22 PM	12934347.23	282120.25	857.0	1.31	2.05	2.44	1.2	0.1	0.1	None	None	None	Right	1-3 ft/sec		Point Bar	None	Gravel & Larger		
6.10N-A-02	Focus	4/19/11	2:38:18 PM	12934373.28	282062.37	856.8	1.28	2.09	2.45	1.9	0.1	0.3	None	None	None	Right	1-3 ft/sec		Point Bar	None	Gravel & Larger		
6.10N-A-03	Focus	4/19/11	2:40:43 PM	12934417.84	282004.93	858.6	1.05	1.82	2.10	1.2	0.2	0.3	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
6.10N-A-04	Focus	4/19/11	2:45:41 PM	12934445.20	281942.61	857.4	0.07	0.14	0.16	1.8	0.2	0.3	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
6.10N-A-05	Focus	4/19/11	2:47:58 PM	12934477.86	281891.94	862.1	1.57	2.73	3.15	1.5	0.1	0.2	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
6.10N-A-06	Focus	4/19/11	2:58:56 PM	12934508.97	281834.79	856.3	2.62	4.02	4.80	2.6	0.2	0.3	None	None	None	Right	1-3 ft/sec		Point Bar	None	Gravel & Larger		
6.10T-A-01	Transect	4/19/11	3:03:06 PM	12934268.48	282122.52	858.7	1.01	2.00	2.24	2.5	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
6.20S-D-01	Focus	4/19/11	2:48:03 PM	12934018.15	282525.63	857.8	0.06	0.11	0.13	1.8	0.0	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
6.20S-E-01	Focus	4/19/11	2:42:48 PM	12934081.56	282410.59	869.2	1.77	3.28	3.73	1.5	0.2	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		
6.20S-E-02	Focus	4/19/11	2:47:08 PM	12934071.48	282448.00	857.6	1.43	2.49	2.87	2.0	0.2	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		
6.20S-E-03	Focus	4/19/11	2:55:31 PM	12934079.18	282398.19	845.2	2.99	6.84	7.46	1.7	0.1	0.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		
6.20T-D-01	Transect	4/19/11	2:51:09 PM	12934004.89	282528.36	857.0	0.08	0.15	0.17	1.6	0.1	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
6.20T-D-02	Transect	4/19/11	2:57:11 PM	12934136.79	282532.85	857.8	0.06	0.11	0.12	1.3	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
6.20T-D-03	Transect	4/19/11	3:01:57 PM	12934073.43	282509.94	857.9	0.05	0.08	0.10	3.3	0.0	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
6.25N-B-01	Focus	4/19/11	2:52:16 PM	12933974.48	282779.39	857.3	0.09	0.19	0.21	0.7	0.5	0.5	Light	Light	None	Island	--		Downstrm Island	None	Silt over Sand	VERY SLIGHT	
6.25N-B-01	Focus	4/27/11	11:42:27 AM	12933999.92	282836.7395	857.6317	0.0558	0.1072	0.1208	1.2	0.2	0.5	Light	Light	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Silt	WOODY DEBRIS	
6.25N-B-02	Focus	4/19/11	2:58:11 PM	12933958.92	282859.77	857.4	0.06	0.11	0.13	0.8	0.1	0.1	None	None	None	Island	--		Downstrm Island	None	Sand	FAST CURRENT	
6.25N-B-02	Focus	4/27/11	11:50:03 AM	12933989.13	282893.0483	863.3947	3.3484	3.6913	4.9837	1.4	0.1	0.2	None	None	None	Island	>3 ft/sec		Downstrm Island	None	Sand & Gravel	HIGH WATER	HIGH WATER
6.25N-B-03	Focus	4/27/11	11:55:45 AM	12933957.04	282862.9872	857.6912	0.0744	0.0794	0.1088	0.9	0.2	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Silt		WOODY DEBRIS
6.25N-B-04	Focus	4/27/11	12:00:24 PM	12933960.88	282934.3194	857.51	0.0708	0.0878	0.1129	0.8	0.6	0.7	Light	Light	None	Island	<1ft/sec		Downstrm Island	None	Sand & Silt		
6.25N-B-05	Focus	4/27/11	12:22:46 PM	12934015.06	282992.3037	865.7019	2.002	3.2975	3.8576	1.1	0.7	1.0	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
6.25N-B-06	Focus	4/27/11	12:32:03 PM	12933906.11	283208.6934	865.436	3.0935	3.6057	4.7509	1.8	0.9	1.1	Light	Light	Few	Right	<1ft/sec		Cut Bank	None	Soft Sediment		WOOD
6.25N-B-07	Focus	4/20/11	2:37:09 PM	12933852.46	283223.13	855.5	1.31	2.27	2.63	1.5	0.2	0.2	None	None	None	Right	<1ft/sec		Other-Comments	None	Silt over Sand		45 DEG
6.25N-B-07	Focus	4/27/11	12:39:43 PM	12933937.93	283164.6559	858.9285	4.2186	7.5309	8.632	1.2	1.0	1.3	Light	Light	None	Right	<1ft/sec		Cut Bank	None	Soft Sediment		WOOD
6.25N-B-08	Focus	4/20/11	2:41:05 PM	12933783.81	283158.67	855.6	1.94	2.97	3.55	1.5	0.0	0.0	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand		45 DEG

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
6.25N-B-08	Focus	4/27/11	10:54:41 AM	12933936.85	282587.5406	865.8544	2.0623	4.9915	5.4007	0.7	0.1	0.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	5%-25%	Sand & Gravel		
6.25S-B-01	Focus	4/19/11	2:40:38 PM	12933931.82	282597.88	873.8	3.50	6.28	7.19	0.8	0.0	0.1	None	None	None	Left	--		Strt Channel Edg	None	Silt over Sand		
6.25S-B-02	Focus	4/19/11	2:44:47 PM	12933917.25	282637.26	855.4	1.44	2.77	3.12	1.5	0.0	0.0	None	None	None	Left	--		Strt Channel Edg	None	Sand & Gravel		
MP 6.25-6.50																							
6.30T-E-01	Transect	4/19/11	3:04:28 PM	12933778.02	282958.27	865.2	2.23	3.23	3.92	1.6	0.1	0.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
6.30T-E-02	Transect	4/19/11	3:18:52 PM	12933842.01	283007.41	859.4	2.30	2.92	3.71	2.1	0.5	0.5	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		
6.30T-E-03	Transect	4/19/11	3:31:57 PM	12933812.16	282985.65	855.8	1.29	2.27	2.61	2.1	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
6.41T-A-01	Transect	5/11/2011	11:00:47 AM	12933619.08	283517.7034	856.6503	0.058	0.063	0.0857	0.8	0.5	0.6	Moderate	Moderate	Common	Left	<1ft/sec	<1 ft/sec	Point Bar	None	Soft Sediment		
6.41T-A-02	Transect	5/11/2011	11:08:49 AM	12933616.69	283464.8832	860.9968	3.4988	5.2365	6.2978	0.7	0.3	0.9	None	None	None	Left	<1ft/sec	<1 ft/sec	Point Bar	None	Soft Sediment	U BDY	
6.41T-A-03	Transect	5/11/2011	11:14:40 AM	12933599.2	283561.2804	856.2797	0.2035	0.2705	0.3385	0.6	0.4	0.6	None	None	None	Left	<1ft/sec	<1 ft/sec	Point Bar	None	Soft Sediment	D BDY	
6.41T-A-04	Transect	5/11/2011	11:19:01 AM	12933625.74	283518.0631	856.2498	0.1136	0.1576	0.1943	1.6	0.3	0.5	Heavy	Heavy	Common	Left	<1ft/sec	<1 ft/sec	Point Bar	None	Soft Sediment		
6.41T-A-05	Transect	5/11/2011	11:23:38 AM	12933647.32	283534.5814	856.526	0.0414	0.0614	0.0741	3.0	0.1	0.2	None	None	None	Center	<1ft/sec	No	Point Bar	None	Sand & Gravel	LAT BDY	
6.41T-E-01	Transect	4/19/11	3:54:58 PM	12933728.77	283525.64	859.8	1.99	2.98	3.58	1.4	0.4	0.5	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Silt over Sand		
6.41T-E-02	Transect	4/19/11	4:11:18 PM	12933630.47	283502.35	856.1	1.64	1.83	2.46	1.4	0.6	0.7	Moderate	Moderate	Common	Left	1-3 ft/sec		Point Bar	None	Soft Sediment		
6.41T-E-03	Transect	4/19/11	4:17:35 PM	12933675.79	283517.98	856.7	0.80	1.42	1.63	3.6	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
6.45-A-01	Focus	4/19/11	3:42:37 PM	12933574.82	283827.07	857.9	1.98	2.53	3.21	1.6	1.1	1.3	Moderate	Heavy	Few	Right	<1ft/sec		Cut Bank	None	Gravel & Larger		
6.45-A-02	Focus	4/19/11	3:48:16 PM	12933584.23	283802.06	854.6	1.59	1.90	2.47	1.2	0.5	0.6	Light	Light	None	Right	<1ft/sec		Cut Bank	None	Sand		
6.45-A-03	Focus	4/19/11	4:09:09 PM	12933538.83	283884.47	855.7	1.46	1.74	2.27	0.7	0.5	0.5	Light	Light	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand		
6.45-A-04	Focus	4/19/11	4:13:31 PM	12933531.27	283876.50	854.5	1.20	1.50	1.92	1.1	0.6	0.7	Light	Light	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand		
6.45NA-A-01	Focus	5/11/2011	11:33:08 AM	12933581.89	283816.8345	855.7594	1.0649	1.7285	2.0302	1.1	0.3	0.9	Moderate	Moderate	Common	Right	<1ft/sec	<1 ft/sec	Cut Bank	None	Soft Sediment	D STR SUBMRG TREE	
6.45NA-A-02	Focus	5/11/2011	11:38:06 AM	12933638.46	283745.2804	859.2632	2.78	4.3887	5.1951	1.5	0.2	0.3	Light	Light	None	Right	1-3 ft/sec	<1 ft/sec	Cut Bank	None	Sand & Gravel	U BDY	U STRM SUBMRGD TR
6.45NA-A-03	Focus	5/11/2011	11:40:15 AM	12933606.22	283763.8999	858.0147	1.1326	1.6826	2.0283	2.4	0.0	0.0	None	None	None	Right	>3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel	LAT BDY	
6.45NA-A-04	Focus	5/11/2011	11:44:19 AM	12933575.93	283791.7884	856.3072	0.0801	0.0753	0.1099	1.5	0.0	0.0	None	None	None	Right	>3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel		
6.45NA-A-05	Focus	5/11/2011	11:52:44 AM	12933522.83	283881.461	858.1674	1.5004	1.9055	2.4253	1.1	0.4	0.5	Moderate	Moderate	Common	Right	<1ft/sec	<1 ft/sec	Cut Bank	None	Soft Sediment		
6.45NA-A-06	Focus	5/11/2011	11:56:47 AM	12933480.19	283855.0574	856.4452	0.0738	0.1061	0.1292	3.5	0.1	0.1	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel	LAT BDY	
6.45NA-A-07	Focus	5/11/2011	12:01:03 PM	12933443.13	283903.0754	857.7005	1.9709	2.4222	3.1228	1.6	0.1	0.2	None	None	None	Right	No	No	Cut Bank	None	Sand & Gravel	D BDY	
6.45NB-A-01	Focus	4/20/11	4:00:50 PM	12933249.00	283971.21	855.5	2.29	6.76	7.14	2.0	0.0	0.2	Light	Light	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand	TEMP 45.0	
6.45NB-A-02	Focus	4/20/11	4:04:56 PM	12933295.57	283959.93	856.5	2.23	6.29	6.67	1.5	1.3	1.4	None	None	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand	TEMP 45.0	
6.45NB-A-03	Focus	4/20/11	4:07:49 PM	12933323.81	283930.07	838.5	6.16	15.58	16.75	1.4	0.1	0.1	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Gravel	TEMP 45.0	
6.49T-E-01	Transect	4/19/11	4:25:47 PM	12933508.67	283884.83	855.0	0.11	0.16	0.19	1.1	0.5	0.5	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment		
6.49T-E-02	Transect	4/19/11	4:31:57 PM	12933430.16	283796.23	856.1	0.89	1.57	1.80	1.1	0.0	0.0	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
6.49T-E-03	Transect	4/19/11	4:48:21 PM	12933452.98	283841.32	856.2	0.06	0.11	0.13	3.0	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		SHEEN PRIOR 2 AGI
MP 6.50-6.75																							
6.59T-B-01	Transect	4/27/11	3:13:04 PM	12932883.31	283974.4093	857.558	1.1434	2.5255	2.7722	1.9	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		INSIDE BOOM AREA
6.59T-B-02	Transect	4/27/11	3:17:18 PM	12932871.29	283908.5276	854.3035	0.2846	0.859	0.905	2.8	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		CENTER
6.59T-B-03	Transect	4/27/11	3:19:05 PM	12932883.69	283840.7509	855.255	1.9178	3.9778	4.416	1.2	0.1	0.1	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		BANK
6.68T-B-01	Transect	4/27/11	3:25:28 PM	12932420.03	283967.3956	853.318	1.1071	2.5361	2.7672	1.3	0.2	0.3	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger	COMING DOWN RIVER	BANK
6.68T-B-02	Transect	4/27/11	3:32:20 PM	12932413.91	283887.0124	856.3201	0.0761	0.255	0.2661	2.2	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
6.68T-B-03	Transect	4/27/11	3:34:59 PM	12932444.06	283693.7726	853.7692	4.0463	10.9639	11.6867	0.7	1.1	1.5	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
6.68T-B-04	Transect	4/27/11	3:37:56 PM	12932437.17	283698.2602	848.8993	4.0896	4.0736	5.7722	1.5	0.8	0.8	Light	Light	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		EDGE OF SEDIMENT
6.7N-B-01	Focus	4/27/11	2:36:08 PM	12932211.04	283935.4547	859.1153	5.0254	11.0247	12.1161	0.9	0.2	0.3	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		ROOTS
6.7N-B-02	Focus	4/27/11	2:40:42 PM	12932249.83	283944.0628	851.3288	2.5677	6.7672	7.238	1.0	0.1	0.1	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		ROOTS
6.7N-B-03	Focus	4/27/11	2:44:20 PM	12932305.52	283971.6291	851.7767	2.0452	5.5358	5.9016	0.5	0.2	0.3	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
6.7N-B-04	Focus	4/27/11	2:47:38 PM	12932331.09	283962.395	851.585	1.8598	4.7411	5.0828	0.6	0.2	0.4	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		FLOODED TER VEG
6.70N-A-01	Focus	4/20/11	1:57:50 PM	12932302.60	283950.33	861.1	1.59	2.83	3.25	1.4	0.1	0.2	None	None	None	Right	<1ft/sec		Strt Channel Edg		Silt over Sand	TEMP 45.5	
6.75S-A-01	Focus	4/20/11	2:16:35 PM	12932133.88	283741.98	855.7	0.02	0.04	0.05	1.0	0.3	0.5	Light	Light	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand	TEMP 45.0	
6.75S-A-02	Focus	4/20/11	2:18:05 PM	12932199.48	283782.74	855.8	0.02	0.04	0.04	1.2	0.2	0.3	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand	TEMP 45.0	
6.75S-A-03	Focus	4/20/11	2:20:46 PM	12932228.28	283755.03	855.8	0.03	0.05	0.06	0.6	0.4	0.6	None	None	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand	TEMP 45.0	OBSER OVBANK SHEN
6.75S-A-04	Focus	4/20/11	2:22:57 PM	12932182.28	283743.14	855.7	0.03	0.05	0.05	1.2	0.2	0.3	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel	TEMP 45.0	OBSER OVBANK SHEN
MP 6.75-7.00																							
6.84T-B-01	Transect	4/27/11	3:46:05 PM	12931830.81	283541.0007	855.575	0.0384	0.1031	0.1101	1.3	0.0	0.0	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		EDGE OF ISLAND
6.84T-B-02	Transect	4/27/11	4:02:42 PM	12931795.98	283574.9704	855.317	0.1962	0.1028	0.2214	2.7	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
6.84T-B-03	Transect	4/27/11	4:04:27 PM	12931781.52	283640.899	854.5347	1.2713	2.7931	3.0689	1.8	0.0	0.0	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Gravel & Larger		BANK
6.98T-B-01	Transect	4/27/11	4:10:09 PM	12930932.38	283182.2493	852.1593	1.8907	1.6829	2.5312	1.5	0.1	0.1	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		BANK
6.98T-B-02	Transect	4/27/11	4:17:13 PM	12930926.27	283253.9748	854.9589	1.6068	2.5764	3.0364	2.5	0.0	0.0	None	None	None	Center	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
6.98T-B-03	Transect	4/27/11	4:19:36 PM	12930976.07	283346.5807	852.5657	2.0204	3.1726	3.7613	1.3	0.9	0.9	Light	Light	None	Right	>3 ft/sec		Strt Channel Edg	None	Silt over Sand		
7.00S-A-01	Focus	5/3/2011	10:38:08 AM	12931847.5	283310.8065	856.8779	0.6742	1.1668	1.3476	1.4	0.1	0.2	None	None	None	Right	1-3 ft/sec		Oxbow	None	Sand & Silt	U BDY	
7.00S-A-02	Focus	5/3/2011	10:55:52 AM	12931820.29	283281.1615	854.7686	0.0309	0.067	0.0738	1.9	0.1	0.2	None	None	None	Center	1-3 ft/sec		Oxbow	None	Sand & Gravel	LAT BND	
7.00S-A-03	Focus	5/3/2011	11:13:16 AM	12931811.6	283288.5196	855.2956	0.0264	0.0492	0.0558	1.3	0.2	0.3	Light	Light	Few	Right	1-3 ft/sec		Oxbow	None	Sand & Silt	U BDY	
7.00S-A-04	Focus	5/3/2011	11:16:50 AM	12931804.92	283275.6812	855.3711	0.0485	0.0882	0.1007	1.8	0.2	0.2	None	None	None	Center	1-3 ft/sec		Oxbow	None	Sand & Gravel	LAT BDY	
7.00R1-A-01	Focus	5/11/2011	1:10:38 PM	12932952.51	283978.8135	855.95	0.0353	0.0573	0.0673	1.4	0.1	0.2	Moderate	Moderate	Common	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Silt		
7.00R1-A-02	Focus	5/11/2011	1:13:11 PM	12932989.43	283978.222	855.9595	0.0482	0.0791	0.0926	0.9	0.1	0.1	None	None	None	Right	1-3 ft/sec	1-3 ft/sec	Strt Channel Edg	None	Sand & Gravel	U BDY	
7.00R1-A-03	Focus	5/11/2011	1:15:05 PM	12932979.07	283970.4571	855.9422	0.0432	0.0716	0.0836	1.6	0.1	0.1	None	None	None	Right	1-3 ft/sec	1-3 ft/sec	Strt Channel Edg	None	Sand & Gravel	LAT BDY	
7.00R1-A-04	Focus	5/11/2011	1:22:45 PM	12932921.3	283977.683	856.0176	0.0476	0.0865	0.0987	2.3	0.1	0.3	Heavy	Heavy	Many	Right	<1ft/sec	<1 ft/sec	Cove	None	Sand & Silt	BIGGLOBSINCOVE	PHOTO 2013
7.00R1-A-05	Focus	5/11/2011	1:29:28 PM	12932918.58	283963.906	856.0253	0.0417	0.0761	0.0868	1.8	0.2	0.3	None	None	None	Right	1-3 ft/sec	<1 ft/sec	Mid-Channel	<5%	Sand & Gravel	LAT BDY	
7.00R1-A-06	Focus	5/11/2011	1:35:28 PM	12932892.45	283977.4319	855.9072	0.03	0.0542	0.062	1.6	0.2	0.3	None	None	None	Right	1-3 ft/sec	<1 ft/sec	Mid-Channel	None	Soft Sediment	D BDY	
7.0R1-E-04	Focus	4/30/11	10:16:16 AM	12932890.13	283999.719	859.1502	0.0843	0.1154	0.143	-99	-99	-99	Light		Few	Right			Other-Comments	None	Soft Sediment		FROM SHORE
7.0R1-E-05	Focus	4/30/11	10:20:37 AM	12932890.85	284001.4738	859.0459	0.0761	0.1067	0.1311	-99	-99	-99	Light		Few	Right			Other-Comments	None	Soft Sediment		8 FT FROM SHORE
7.0R1-E-06	Focus	4/30/11	10:20:44 AM	12932890.81	284001.469	859.2599	0.0407	0.0574	0.0704	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		FROM SHORE
7.0R1-E-07	Focus	4/30/11	10:22:45 AM	12932887.57	283994.062	859.0844	0.0389	0.0607	0.0721	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		FROM SHORE
7.0R1-E-08	Focus	4/30/11	10:23:42 AM	12932887.67	283994.2958	859.1058	0.0521	0.085	0.0997	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		5-7 FT FM SHORE
7.0R1-E-09	Focus	4/30/11	10:29:23 AM	12932890.3	284006.6792	858.5608	0.0344	0.0566	0.0663	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		FM SHORE
7.0R1-E-10	Focus	4/30/11	10:32:21 AM	12932890.15	284007.0502	858.6481	0.0421	0.0713	0.0827	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		5-7 FT FM SHORE
7.0R1-E-11	Focus	4/30/11	10:34:03 AM	12932893.54	284026.4181	859.4538	0.0356	0.0645	0.0737	-99	-99	-99	None	None	None	Right			Other-Comments	None	Soft Sediment		FM SHORE
7.0R1-E-12	Focus	4/30/11	10:36:10 AM	12932893.41	284027.5561	859.8919	0.6568	1.0862	1.2693	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		5-7 FT FM SHORE
7.0R1-E-13	Focus	4/30/11	10:38:24 AM	12932932.73	284034.3344	858.6936	0.0327	0.0615	0.0697	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		FM SHORE
7.0R1-E-14	Focus	4/30/11	10:40:00 AM	12932932.41	284033.8423	858.7237	0.0404	0.081	0.0905	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		5-7 FT FM SHORE
7.0R1-E-15	Focus	4/30/11	10:41:22 AM	12932938.88	284021.0818	858.7529	0.0258	0.0494	0.0557	-99	-99	-99	None	None	None	Right			Other-Comments	None	Sand & Gravel		FM SHORE
7.0R1-E-16	Focus	4/30/11	10:42:49 AM	12932938.55	284021.9092	858.6628	0.0328	0.0582	0.0668	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		5-7 FT FM SHORE
7.0R1-E-17	Focus	4/30/11	10:45:07 AM	12932939.39	284004.6515	858.9946	0.0536	0.138	0.148	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Sand & Gravel		FM SHORE
7.0R1-E-18	Focus	4/30/11	10:46:10 AM	12932939.48	284005.2307	858.9362	0.0415	0.0811	0.0911	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		5-7 FT FM SHORE
7.0R1-E-19	Focus	4/30/11	10:48:00 AM	12932936.89	283996.916	858.4902	0.0376	0.0741	0.0831	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		FM SHORE
7.0R1-E-20	Focus	4/30/11	10:48:04 AM	12932936.88	283996.9815	858.5624	0.0462	0.0903	0.1014	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		5-7 FT FM SHORE
7.0R1-E-21	Focus	4/30/11	10:50:39 AM	12932937.76	283995.8059	858.4028	0.0386	0.0845	0.0929	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		FM SHORE OUTSIDE
7.0R1-E-22	Focus	4/30/11	10:52:09 AM	12932940.9	283998.9704	858.6474	0.0637	0.1343	0.1486	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		5-7 FT FM SHORE
7.0R1-E-23	Focus	4/30/11	10:54:30 AM	12932921.51	284039.436	858.5271	0.0491	0.1082	0.1189	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Sand & Gravel		FM SHORE
7.0R1-E-24	Focus	4/30/11	10:54:31 AM	12932921.52	284039.427	858.515	0.0452	0.0995	0.1093	-99	-99	-99	Light	Light	Few	Right			Other-Comments	None	Soft Sediment		5-7 FT FM SHORE
7.0R1-E-25	Focus	4/30/11	11:02:02 AM	12932914.51	283977.018	856.7081	0.0305	0.0548	0.0627	-99	-99	-99	Heavy	Heavy	Many	Right			Other-Comments	None	Soft Sediment		MID OF BOOM
7.0R1-E-26	Focus	4/30/11	11:04:41 AM	12932895.47	283973.8833	856.6676	0.0292	0.0554	0.0626	-99	-99	-99	Moderate	Moderate	Common	Right			Other-Comments	None	Soft Sediment		END OF BOOM
7.03T-A-01	Transect	5/3/2011	11:30:33 AM	12930689.68	283260.3346	850.6162	2.2551	4.6907	5.2047	0.4	0.1	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		POOR POSITION
7.03T-A-02	Transect	5/3/2011	11:35:22 AM	12930711.25	283197.6737	853.6842	0.0297	0.0491	0.0574	3.0	0.1	0.1	Light	Light	Few	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
7.03T-B-01	Transect	4/20/11	2:54:56 PM	12930767.45	283159.70	854.2	0.06	0.06	0.09	1.4	0.0	0.0	None	None	None	Left	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		45 DEG
7.14T-A-02	Transect	5/3/2011	2:04:09 PM	12930193.4	283116.503	850.6139	1.4504	2.3474	2.7594	2.0	0.0	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
7.14T-A-03	Transect	5/3/2011	2:11:49 PM	12930184.48	283054.347	853.844	0.0453	0.0844	0.0958	3.5	0.0	0.0	None	None	None	Center			Mid-Channel	None			
7.14T-A-04	Transect	5/3/2011	2:15:56 PM	12930228.7	282955.0578	852.7996	0.9657	1.7867	2.031	1.5	0.2	0.5	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment	SURF SHN PRE ARR	
7.14T-B-01	Transect	4/20/11	3:10:05 PM	12930398.14	283158.53	854.1	0.07	0.11	0.13	1.7	1.1	1.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		45 DEG
7.14T-B-02	Transect	4/20/11	3:19:03 PM	12930405.18	283109.33	854.0	0.04	0.09	0.10	2.7	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		45 DEG
7.14T-B-03	Transect	4/20/11	3:22:56 PM	12930440.75	283015.87	854.0	0.03	0.05	0.06	0.5	0.5	0.9	None	None	None	Left	<1ft/sec		Strt Channel Edg	5%-25%	Organic		45 DEG
BRIDGEPA-A-01	Bridge	5/3/2011	2:31:45 PM	12930032.68	283001.8986	856.3604	2.2165	3.6893	4.304	1.3	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
BRIDGEPA-A-02	Bridge	5/3/2011	2:42:27 PM	12930038.45	283110.5113	850.3055	1.97	2.9136	3.5171	1.5	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
11MRBR-A-01	Bridge	5/11/2011	2:10:38 PM	12929938.28	283102.3743	853.8124	1.5022	2.2802	2.7306	1.3	0.0	0.0	None	None	None	Right	>3 ft/sec	1-3 ft/sec	Point Bar	None	Gravel & Larger		
11MRBR-A-02	Bridge	5/11/2011	2:18:03 PM	12929936.91	283009.8034	852.4994	0.0761	0.0717	0.1046	0.8	0.0	0.0	None	None	None	Left	<1ft/sec	1-3 ft/sec	Cut Bank	None	Gravel & Larger		

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
7.21T-A-01	Transect	5/3/2011	2:57:51 PM	12929829.17	283141.1554	862.3943	4.6604	7.511	8.8394	1.5	0.1	0.2	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand		
7.21T-A-02	Transect	5/3/2011	3:02:33 PM	12929764.82	283097.0291	852.4837	0.9819	1.6372	1.909	1.7	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
7.21T-A-03	Transect	5/3/2011	3:12:29 PM	12929736.24	283027.5443	859.78	1.4271	2.9394	3.2675	1.5	0.1	0.1	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
MP 7.25-7.50																							
7.35C-A-01	Focus	5/3/2011	3:33:26 PM	12929248.54	283444.4731	851.5216	0.0355	0.0621	0.0715	0.7	0.2	0.7	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand over Silt		LT SHN ON ISLAND
7.35C-A-02	Focus	5/3/2011	3:37:09 PM	12929286.68	283411.4956	851.6384	0.0355	0.0623	0.0717	0.9	0.1	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
7.35C-A-03	Focus	5/3/2011	3:39:40 PM	12929287.91	283418.4644	851.4423	0.03	0.0526	0.0605	0.9	0.1	0.2	Light	Light	Few	Island	1-3 ft/sec		Downstrm Island	None	Sand over Silt		
7.35C-A-04	Focus	5/3/2011	3:48:27 PM	12929331.71	283398.288	851.816	0.0326	0.0577	0.0662	0.5	0.2	0.6	Light	Light	None	Island	<1ft/sec		Downstrm Island	None	Sand & Silt		PHOTO 195
7.35C-A-05	Focus	5/3/2011	3:52:13 PM	12929383.13	283381.86	851.8955	0.0261	0.0466	0.0534	1.5	0.0	0.0	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
7.35C-A-06	Focus	5/3/2011	3:55:57 PM	12929338.99	283419.8423	851.729	0.0323	0.0583	0.0666	1.4	0.1	0.1	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
7.37T-A-01	Transect	5/3/2011	4:06:21 PM	12929013.12	283471.9239	851.7099	0.0379	0.0751	0.0841	1.4	0.3	0.5	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		SLT SHN SURF ARR
7.37T-A-02	Transect	5/3/2011	4:08:38 PM	12929043.68	283532.8983	851.3776	0.0327	0.0677	0.0752	1.0	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
7.37T-A-03	Transect	5/3/2011	4:16:52 PM	12929082.5	283618.9532	851.4739	0.0518	0.1834	0.1906	2.0	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
7.45N-A-01	Focus	4/20/11	4:23:08 PM	12928736.00	283803.50	851.2	0.06	0.22	0.23	0.9	0.2	0.3	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Silt over Sand	TEMP 45.0	
7.45N-A-02	Focus	4/20/11	4:24:27 PM	12928705.17	283836.42	851.0	0.05	0.16	0.17	1.3	0.1	0.2	Light	Light	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand	TEMP 45.0	
7.45N-A-03	Focus	4/20/11	4:28:54 PM	12928673.52	283888.42	850.8	0.10	0.28	0.30	1.2	0.8	0.9	None	None	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand	TEMP 45.0	
7.45N-A-04	Focus	4/20/11	4:31:48 PM	12928763.80	283823.81	851.3	0.06	0.20	0.20	0.9	0.7	0.8	None	None	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand	TEMP 45.0	
7.49T-A-01	Transect	5/3/2011	4:37:49 PM	12928523.09	283834.2171	850.698	0.0489	0.1642	0.1714	1.7	0.1	0.1	None	None	None	Left	>3 ft/sec		Point Bar	None	Sand & Gravel		
7.49T-A-02	Transect	5/3/2011	4:39:19 PM	12928542.81	283853.6264	850.8245	0.0498	0.1637	0.1711	3.0	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
7.49T-A-03	Transect	5/3/2011	4:48:42 PM	12928609.3	283926.8376	846.5912	2.0514	5.4972	5.8675	0.8	0.2	0.3	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Silt		POOR POS HVY TREE
7.49T-A-04	Transect	5/3/2011	5:00:53 PM	12928661.75	283895.571	863.884	3.2918	4.2977	5.4135	0.0	0.4	0.6	Moderate	Heavy	Few	Right	No		Point Bar	None	Sand & Silt	HVY SHEEN OBSV BK	
7.49T-A-05	Transect	5/4/2011	10:02:48 AM	12928679.86	283892.8034	852.9952	2.453	3.9172	4.6219	1.0	0.5	0.6	Moderate	Moderate	Common	Right	<1ft/sec		Cut Bank	None	Soft Sediment		
7.49T-A-06	Transect	5/4/2011	10:09:05 AM	12928703.3	283886.3326	850.1051	19.3085	23.2058	30.1882	0.6	0.1	0.4	Light	Light	Few	Right	<1ft/sec		Cut Bank	None	Soft Sediment	U BDY	
7.49T-A-07	Transect	5/4/2011	10:15:39 AM	12928655.38	283882.1803	850.4142	1.8167	3.1363	3.6245	1.5	0.5	0.5	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment	LAT BDY	
MP 7.50-7.75																							
7.55S-A-01	Focus	5/4/2011	10:25:56 AM	12928204.02	283786.0532	850.2624	0.0513	0.0945	0.1075	0.9	0.2	0.6	None	None	None	Left	<1ft/sec		Point Bar	None	Soft Sediment		
7.55S-A-02	Focus	5/4/2011	10:29:49 AM	12928232.19	283787.2539	850.1156	0.0404	0.0746	0.0848	0.7	0.2	0.6	None	None	None	Left	<1ft/sec		Point Bar	5%-25%	Soft Sediment		
7.55S-A-03	Focus	5/4/2011	10:33:13 AM	12928264.82	283790.5717	847.5713	1.5044	2.967	3.3266	0.4	0.2	0.7	None	None	None	Left	<1ft/sec		Point Bar	None	Soft Sediment		
7.55S-A-04	Focus	5/4/2011	10:37:28 AM	12928203.26	283795.5847	850.0639	0.0413	0.0837	0.0933	1.5	0.5	0.8	None	None	None	Left	1-3 ft/sec		Point Bar	None	Soft Sediment		
7.57T-A-01	Transect	5/4/2011	10:51:38 AM	12928144.03	283782.352	851.4201	1.3793	2.8249	3.1436	1.0	0.3	0.4	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Soft Sediment		
7.57T-A-02	Transect	5/4/2011	11:00:15 AM	12928123.64	283868.5527	849.9954	0.0311	0.0611	0.0685	2.8	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
7.57T-A-03	Transect	5/4/2011	11:09:18 AM	12928164.39	283933.5288	850.1605	0.1854	0.1956	0.2695	2.0	0.2	0.7	Light	Light	None	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment		
7.65N-A-01	Focus	5/4/2011	11:32:46 AM	12927884.64	283999.7274	851.8366	1.7216	3.0946	3.5412	1.0	0.1	0.1	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand over Silt		
7.65N-A-02	Focus	5/4/2011	11:37:21 AM	12927825.86	284017.5395	852.3078	2.3613	2.7576	3.6304	2.0	0.1	0.1	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
7.65N-A-03	Focus	5/4/2011	11:41:48 AM	12927867.02	284018.6214	850.9597	1.3616	2.2501	2.63	2.0	0.2	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
7.65N-A-04	Focus	5/4/2011	11:56:39 AM	12927845.74	284076.2374	850.0914	0.0411	0.0597	0.0725	1.5	0.1	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
7.65N-A-05	Focus	5/4/2011	12:02:32 PM	12927793.92	284095.5206	857.6644	2.6159	3.9276	4.719	2.0	0.2	0.5	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
7.65N-A-06	Focus	5/4/2011	12:12:12 PM	12927920.19	284072.0298	872.5115	2.847	2.434	3.7457	1.6	0.1	0.2	Light	Light	Few	Right	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment		
7.68T-A-01	Transect	5/4/2011	2:31:59 PM	12927583.76	284041.7845	850.0309	0.1197	0.1319	0.1782	2.0	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
7.68T-A-02	Transect	5/4/2011	2:34:53 PM	12927601.24	284075.3213	849.9508	0.0458	0.0688	0.0827	3.0	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None			
7.68T-A-03	Transect	5/4/2011	2:39:30 PM	12927649.74	284138.53	857.126	1.8097	2.6224	3.1862	1.3	0.1	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
7.75-B-01	Focus	5/3/2011	10:33:40 AM	12927307.83	284132.5135	847.8448	1.3776	2.627	2.9663	1.3	0.3	0.4	Light	Light	None	Left	<1ft/sec		Other-Comments	25%-50%	Silt over Sand		SIDE CHNL INLET
7.75-B-02	Focus	5/3/2011	10:46:00 AM	12927198.04	284195.2748	845.6964	1.7112	3.3326	3.7462	0.9	1.3	1.3	Light	Light	Few	Island	No		Downstrm Island	None	Soft Sediment		BAD POS
7.75-B-03	Focus	5/3/2011	10:55:06 AM	12927122.75	284177.4233	849.6419	1.3037	2.8381	3.1232	2.3	0.2	0.2	Light	Light	None	Left	1-3 ft/sec		Other-Comments	None	Sand & Gravel		BACK STRM CHNL
7.75-B-04	Focus	5/3/2011	11:06:48 AM	12927081.17	284170.9088	853.5273	2.9486	6.931	7.5321	1.2	0.0	0.6	Light	Light	Few	Left	No		Other-Comments	None	Sand & Gravel	BAD POS	BCK STM CHNL
7.75-B-05	Focus	5/3/2011	11:17:50 AM	12927069.12	284203.8928	852.7469	2.1781	6.1307	6.5061	2.2	0.2	0.3	None	None	None	Center	1-3 ft/sec		Other-Comments	None	Sand & Gravel	BAD POS	BCK STRM CHNL
7.75-B-06	Focus	5/3/2011	11:26:24 AM	12927100.51	284222.5317	849.0149	3.0493	7.0088	7.6434	1.1	0.3	1.3	None	None	None	Island	<1ft/sec		Downstrm Island	None	Other-Comments	BAD POS	SI OVR SA/GR
7.75-B-07	Focus	5/3/2011	1:34:17 PM	12926779.99	284302.4345	842.704	1.4797	2.8241	3.1882	0.9	0.1	0.2	Light	Light	None	Left	<1ft/sec		Other-Comments	<5%	Sand & Gravel	REALLY BAD POS	BCK STRM CHNL
7.75-B-08	Focus	5/3/2011	1:45:52 PM	12926841.68	284291.2825	889.6608	3.5823	4.3534	5.6378	1.6	0.4	0.5	None	None	None	Island	<1ft/sec		Downstrm Island	5%-25%	Sand		
7.75-B-09	Focus	5/3/2011	1:55:05 PM	12926923.02	284237.0742	871.783	4.1286	6.9434	8.0781	1.5	0.8	0.9	Light	Light	Few	Left	<1ft/sec		Other-Comments	25%-50%	Soft Sediment	BAD POS	BCK STRM CHNL
MP 7.75-8.00																							
7.81T-A-01	Transect	5/4/2011	2:50:10 PM	12926988.75	284404.474	845.2636	2.8127	4.3716	5.1983	2.0	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
7.81T-A-02	Transect	5/4/2011	2:54:00 PM	12926986.18	284362.1886	853.6986	1.3651	2.1838	2.5754	3.1	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
7.81T-A-03	Transect	5/4/2011	2:56:44 PM	12926987.68	284327.4151	849.1376	2.3613	3.4264	4.1612	1.5	0.1	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
7.81T-A-04	Transect	5/4/2011	3:00:33 PM	12926977.21	284262.1171	858.9823	2.8211	3.2134	4.276	1.2	0.2	0.3	Light	Light	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		
7.81T-A-05	Transect	5/4/2011	3:10:25 PM	12926946.12	284235.8521	851.495	2.7788	3.255	4.2798	1.4	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
7.84T-B-01	Transect	5/3/2011	3:47:22 PM	12926824.95	284351.7144	845.3892	1.5746	3.0255	3.4107	1.7	0.3	0.3	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
7.84T-B-02	Transect	5/3/2011	3:52:17 PM	12926845.28	284449.4875	839.9479	1.8038	2.9614	3.4675	1.7	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
7.84T-B-03	Transect	5/3/2011	4:01:40 PM	12926784.46	284332.8004	860.6001	3.584	7.5722	8.3775	1.7	0.1	0.2	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		BAD POS
7.95T-B-01	Transect	5/4/2011	10:04:56 AM	12926251.09	284815.2371	860.9832	2.9441	5.2556	6.024	1.4	0.1	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		DWN TREE BAD POS
7.95T-B-02	Transect	5/4/2011	10:17:41 AM	12926332.57	284875.99	850.1648	1.2025	1.5587	1.9686	2.1	0.4	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
7.95T-B-03	Transect	5/4/2011	10:23:28 AM	12926307.98	284943.3514	846.7961	1.9623	2.9102	3.51	1.0	0.1	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
MP 8.00-8.25																							
8.02C-B-01	Focus	5/3/2011	4:23:48 PM	12925970.65	285044.8202	851.3506	1.3392	3.0936	3.371	2.1	0.2	0.2	None	None	None	Center	<1ft/sec		Downstrm Island	None	Sand & Gravel		
8.02C-B-02	Focus	5/3/2011	4:29:55 PM	12925977.1	285096.1444	851.8831	2.1245	5.8069	6.1834	1.2	0.2	0.2	Light	Light	Few	Right	<1ft/sec		Cut Bank	None	Sand & Gravel	BAD POS	END OF CUT BANK
8.02C-B-03	Focus	5/3/2011	4:37:05 PM	12925920.35	285079.3598	848.6916	0.0497	0.1261	0.1356	1.9	0.1	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		BEHIND DWN TREE
8.07T-B-01	Transect	5/4/2011	10:37:32 AM	12925827.02	285035.2158	847.8976	0.0426	0.0695	0.0815	3.0	0.3	0.8	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
8.07T-B-02	Transect	5/4/2011	10:43:43 AM	12925820.75	284997.9914	847.9622	0.0585	0.0989	0.1149	1.3	0.0	0.1	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		BEHIND DWN TREE
8.07T-B-03	Transect	5/4/2011	10:51:09 AM	12925788.44	285133.1311	871.2758	3.623	8.4693	9.2116	1.3	0.5	0.5	Light	Light	None	Right	<1ft/sec		Other-Comments	5%-25%	Silt over Sand	BA POS	Cut Bank, BCK EDDY DWN TRE
8.21T-B-02	Transect	5/4/2011	11:54:51 AM	12925068.07	284990.3915	845.2346	2.5733	3.5442	4.3799	0.2	0.0	0.0	None	None	None	Island	1-3 ft/sec		Downstrm Island	>75%	Soft Sediment		BAD POS
8.21T-B-03	Transect	5/4/2011	12:09:14 PM	12925154.97	285154.8295	902.1769	10.4284	15.0919	18.3444	1.0	0.4	0.5	Moderate	Moderate	Few	Right	<1ft/sec		Strt Channel Edg	50%-75%	Silt over Sand		BAD POS
8.21T-B-04	Transect	5/4/2011	12:16:05 PM	12925141.23	285164.8631	875.42	50.4609	65.9963	83.0772	0.3	0.2	0.5	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	50%-75%	Soft Sediment		BAD POS 60FTUP
8.21T-B-05	Transect	5/4/2011	12:23:06 PM	12924998.69	285138.8037	857.2548	7.2025	9.0046	11.5308	0.2	0.1	0.2	None	None	None	Right	No		Downstrm Island	<5%	Soft Sediment	MOD BANK SHEEN	BAD POS 60FTDN
8.21T-B-06	Transect	5/4/2011	12:33:49 PM	12925099.21	285123.9416	850.8201	6.32	9.1879	11.1517	1.7	0.2	0.3	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Silt		DWN TREE BAD POS
8.25I-B-01	Focus	5/4/2011	11:08:35 AM	12925548.26	285040.3886	847.9659	0.0983	0.1913	0.2151	0.9	0.1	0.1	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		
8.25I-B-02	Focus	5/4/2011	11:20:07 AM	12925105.37	285101.8101	858.8645	6.1216	4.1559	7.399	1.5	0.2	0.2	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		BAD POS
8.25I-B-03	Focus	5/4/2011	11:26:05 AM	12925133.11	285040.2346	848.0532	6.2336	4.554	7.7199	0.7	0.2	0.4	Light	Light	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand	HVY OIL ON BANK	BCK EDDY/BAD POS
8.25I-B-05	Focus	5/4/2011	11:48:40 AM	12924973.11	284992.0354	844.4686	7.9667	10.1122	12.8734	0.9	0.3	0.4	Light	Light	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		BAD POS
8.25I-B-06	Focus	5/4/2011	12:44:01 PM	12924760.82	285128.1831	857.1801	3.1832	5.7657	6.586	1.1	0.3	0.9	None	None	None	Right	<1ft/sec		Other-Comments	None	Soft Sediment	BAD POS	BACK CHNL OUTLET
8.25I-D-05	Focus	4/20/11	1:45:26 PM	12924853.02	284949.39	847.7	0.06	0.12	0.14	2.9	0.1	0.3	None	None	None	Left	>3 ft/sec		Cut Bank	None	Sand & Gravel		H20 TEMP 46.0F
8.25I-D-06	Focus	4/20/11	1:55:12 PM	12925083.41	284883.09	849.4	2.36	3.59	4.30	1.5	0.6	1.3	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Silt over Sand		H20 TEMP 45.0F
8.25I-D-07	Focus	4/20/11	2:07:33 PM	12925401.91	284933.74	848.2	0.07	0.13	0.15	1.6	0.2	0.7	Light	Light	Few	Left	1-3 ft/sec		Downstrm Island	None	Silt over Sand		45.5F H2O TEMP
8.25I-D-09	Focus	4/20/11	2:36:23 PM	12925329.38	284985.25	853.5	4.99	5.43	7.38	0.2	0.4	1.0	None	None	None	Island	<1ft/sec		Downstrm Island	<5%	Sand & Silt		46.0 F H2O TEMP
8.25I-D-10	Focus	4/20/11	2:42:05 PM	12925398.33	285011.33	846.9	2.48	3.28	4.11	0.8	0.7	0.8	Light	Light	None	Island	1-3 ft/sec		Downstrm Island	None	Silt over Sand		46.0 F H2O TEMP
8.25I-D-11	Focus	4/20/11	2:52:47 PM	12925225.44	284954.96	848.0	0.09	0.08	0.12	1.1	0.5	0.5	Light	Light	Few	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		46.0 F H2O TEMP
8.25I-D-13	Focus	4/20/11	3:16:59 PM	12925021.26	285084.12	854.3	2.55	5.35	5.93	2.0	0.1	0.3	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		46.0 F H20 TEMP
8.25I-D-14	Focus	4/20/11	3:26:41 PM	12925346.49	285130.63	873.6	3.09	5.42	6.24	2.5	0.2	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		45.0 F H20 TEMP
MP 8.25-8.50																							
8.43T-A-01	Transect	5/11/2011	2:52:31 PM	12924215.33	285548.497	846.5218	2.8368	4.4424	5.2709	1.9	0.2	0.5	Light	Light	Few	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Silt		
8.43T-A-02	Transect	5/11/2011	3:07:42 PM	12923978.38	285394.9407	852.8462	2.1781	4.4481	4.9527	0.5	0.3	0.5	None	None	None	Left	No	No	Backwater	5%-25%	Soft Sediment		SWAMP AREA, NARROW BACK CHANL, CANTGETTOPOINT
8.43T-B-01	Transect	5/4/2011	12:58:38 PM	12924049.71	285501.5112	846.3006	2.5964	3.6297	4.4627	1.0	0.3	0.5	None	None	None	Left	<1ft/sec		Point Bar	5%-25%	Soft Sediment		BAD POS
8.43T-B-02	Transect	5/4/2011	1:03:52 PM	12924046.26	285603.158	853.234	2.2008	3.0558	3.7659	1.2	0.1	0.2	Light	Light	None	Right	No		Cut Bank	<5%	Other-Comments		SOOVRRCK/BADPOS
MP 8.50-8.75																							
8.58T-C-01	Transect	5/3/2011	4:04:05 PM	12923596.22	286069.9766	842.2562	0.9805	2.1192	2.335	1.6	0.1	0.2	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
8.58T-C-02	Transect	5/3/2011	4:15:24 PM	12923540.5	286047.4237	846.2914	0.026	0.0582	0.0637	3.3	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
8.58T-C-03	Transect	5/3/2011	4:19:18 PM	12923495.7	286003.0308	845.5337	2.0801	4.4048	4.8712	1.5	0.2	0.3	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
8.6N-C-01	Focus	5/3/2011	3:36:22 PM	12923646.52	286001.6354	846.4727	0.0376	0.0659	0.0759	0.5	0.5	1.0	Moderate	Moderate	Common	Right	<1ft/sec		Strt Channel Edg	5%-25%	Soft Sediment		SIDE INLET
8.6N-C-02	Focus	5/3/2011	3:40:09 PM	12923626.73	286003.8169	846.5309	0.0957	0.2091	0.23	1.2	0.3	0.8	None	None	None	Right	<1ft/sec		Strt Channel Edg	<5%	Soft Sediment		
8.6N-C-03	Focus	5/3/2011	3:43:07 PM	12923674.95	285937.6643	846.0009	1.3285	2.3962	2.7399	1.5	0.3	0.4	None	None	None	Right	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		
8.6N-C-04	Focus	5/3/2011	3:51:14 PM	12923669.83	286010.6585	845.0911	0.9558	1.7833	2.0233	1.1	0.8	1.0	Heavy	Heavy	Many	Right	<1ft/sec		Other-Comments	5%-25%	Soft Sediment	PHOTOS 737-732	LAGOON
8.6N-C-05	Focus	5/3/2011	3:58:01 PM	12923627.98	286028.3979	846.2954	0.0482	0.0904	0.1024	1.1	0.7	0.8	Light	Light	Few	Right	<1ft/sec		Other-Comments	5%-25%	Silt over Sand		INLET ENTRANCE
8.60N-E-02	Focus	4/20/11	1:22:47 PM	12923653.35	286006.95	848.6	1.43	1.56	2.12	0.9	1.1	1.1	Heavy	Moderate	Many	Right			Other-Comments	None	Soft Sediment	PHOTO 324	H20 46.2 -SIDECHL
8.68T-C-01	Transect	5/3/2011	4:27:51 PM	12923306.23	286336.774	844.6975	1.953	4.0056	4.4563	1.4	0.9	1.0	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
8.68T-C-02	Transect	5/3/2011	4:31:00 PM	12923342.7	286388.0583	846.148	0.0658	0.2331	0.2422	2.5	0.2	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
8.68T-C-03	Transect	5/3/2011	4:33:54 PM	12923407.93	286427.3911	846.02	0.0706	0.2477	0.2575	1.9	0.2	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
8.75N-A-01	Focus	5/11/2011	3:42:14 PM	12923329.58	286577.5819	845.5199	0.0365	0.1044	0.1106	1.4	1.0	1.4	Light	Light	None	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment	U BDY	
8.75N-A-02	Focus	5/11/2011	3:45:09 PM	12923313.51	286596.5913	845.739	0.0575	0.1321	0.1441	2.6	0.1	0.2	None	None	None	Right	1-3 ft/sec	1-3 ft/sec	Strt Channel Edg	None	Sand & Gravel	LAT BDY	
8.75N-A-03	Focus	5/11/2011	3:51:50 PM	12923289.74	286715.9787	845.1214	0.115	0.2298	0.257	1.6	0.2	0.3	Light	Light	Few	Right	<1ft/sec	No	Strt Channel Edg	None	Sand & Silt	D BDY	
8.75N-A-04	Focus	5/11/2011	3:58:31 PM	12923150.73	286854.0902	845.0329	0.0784	0.2755	0.2864	1.5	0.2	0.3	Light	Light	Few	Island	1-3 ft/sec	<1 ft/sec	Downstrm Island	None	Soft Sediment	POSSIBLE BDY	
8.75N-A-05	Focus	5/11/2011	4:06:38 PM	12923140.85	286912.8424	845.1794	0.0508	0.1666	0.1742	1.3	0.4	0.6	None	None	None	Right	1-3 ft/sec	<1 ft/sec	Strt Channel Edg	None	Sand & Gravel	POSSIBLE D BDY	
8.75N-A-06	Focus	5/11/2011	4:11:23 PM	12923222.47	286857.61	845.9268	0.0861	0.258	0.2719	2.0	0.1	0.2	None	None	None	Right	<1ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel	CANTACCESSCHANL	
8.75N-A-07	Focus	5/11/2011	4:18:38 PM	12922935.17	287111.5691	846.1463	1.0466	2.4185	2.6352	1.9	0.0	0.0	None	None	None	Right	>3 ft/sec	1-3 ft/sec	Strt Channel Edg	None	Sand & Gravel	D BDY	
8.75N-C-01	Focus	5/3/2011	1:29:21 PM	12923217.49	286803.8905	845.9689	0.7824	1.1251	1.3704	1.2	0.2	0.3	Light	Light	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		
8.75N-C-02	Focus	5/3/2011	1:40:14 PM	12923166.62	286890.6171	853.3342	1.4889	2.3274	2.7629	1.5	0.2	0.2	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Sand		
8.75N-C-03	Focus	5/3/2011	1:48:23 PM	12923126.94	286839.3394	845.646	0.0339	0.0573	0.0665	1.2	0.4	1.3	Light	Light	None	Island	<1ft/sec		Downstrm Island	None	Soft Sediment		
8.75N-C-04	Focus	5/3/2011	1:49:53 PM	12923126.43	286843.4934	845.7337	0.0342	0.0583	0.0676	1.6	0.4	0.5	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
8.75N-C-05	Focus	5/3/2011	1:52:35 PM	12923126.08	286843.1195	845.7579	0.0472	0.0919	0.1033	1.3	0.6	0.7	Heavy	Heavy	Common	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		DNSTRM OF EXCAVAN
8.75N-C-06	Focus	5/3/2011	1:56:18 PM	12923129.72	286849.6915	845.8527	0.0384	0.0681	0.0782	1.4	1.2	1.5	Moderate	Moderate	Few	Island	<1ft/sec		Downstrm Island	None	Soft Sediment		DNSTRM OF EXCAVAN
8.75N-C-07	Focus	5/3/2011	2:02:26 PM	12923116.85	286827.8737	845.6991	0.0286	0.0568	0.0636	2.1	0.2	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
8.75N-C-08	Focus	5/3/2011	2:06:23 PM	12923109.7	286860.2681	845.8048	0.0737	0.1402	0.1584	2.2	0.1	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand		
8.75N-C-09	Focus	5/3/2011	2:09:19 PM	12923135.27	286929.7895	845.6514	0.0397	0.0639	0.0752	2.0	0.4	0.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
8.75N-C-10	Focus	5/3/2011	2:12:22 PM	12923056.61	286927.5437	846.1383	1.3724	2.4387	2.7984	0.9	0.1	0.3	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
8.75N-C-11	Focus	5/3/2011	2:18:25 PM	12923047.35	287057.6943	852.5006	1.3111	2.725	3.024	2.4	0.2	0.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
8.75N-C-12	Focus	5/3/2011	2:28:56 PM	12922967.31	287046.9556	846.4158	0.9387	1.5868	1.8436	0.7	0.2	0.3	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
8.75N-C-13	Focus	5/3/2011	2:32:40 PM	12922941.06	287120.2607	847.1727	1.6301	2.6683	3.1268	1.9	0.3	0.4	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
8.75N-C-14	Focus	5/3/2011	3:03:07 PM	12923333.85	286607.3407	845.9972	0.0578	0.1125	0.1265	1.5	0.6	0.6	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
8.75N-C-15	Focus	5/3/2011	3:09:52 PM	12923257.85	286663.2387	845.9955	0.0653	0.1126	0.1301	1.5	0.2	0.3	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
8.75N-C-16	Focus	5/3/2011	3:13:47 PM	12923282.86	286749.025	848.0977	4.1292	6.7	7.8702	1.2	0.7	0.8	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
8.75N-E-04	Focus	4/20/11	3:34:49 PM	12923187.38	286822.78	843.9	0.00	0.00	0.00	0.4	0.3	0.6	Heavy	Heavy	Many	Island			Strt Channel Edg	None	Soft Sediment	INSIDE AQUADAM	43.9 H2O-PHT325-6
8.75N-E-05	Focus	4/20/11	3:49:55 PM	12923333.30	286605.09	849.1	1.22	2.01	2.35	1.3	0.8	1.0	Moderate	Light	Common	Right			Strt Channel Edg	None	Soft Sediment		44.0 H2O
MP 8.75-9.00																							
8.77T-C-01	Transect	5/3/2011	2:47:44 PM	12923050.82	286772.522	863.1966	2.1834	2.8021	3.5523	2.1	0.2	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand		
8.77T-C-02	Transect	5/3/2011	2:58:47 PM	12923071.84	286800.2142	845.7435	0.0629	0.0808	0.1024	2.7	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
8.92T-C-01	Transect	5/3/2011	10:48:53 AM	12922710.13	287424.8165	844.9715	0.0676	0.1263	0.1433	2.5	0.1	0.2	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		SHEEN FLOATING BY
8.92T-C-02	Transect	5/3/2011	10:57:43 AM	12922633.21	287384.1022	845.0858	0.0258	0.0606	0.0658	2.3	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
8.92T-C-03	Transect	5/3/2011	11:00:33 AM	12922569.45	287321.2205	849.2582	1.6893	5.457	5.7125	1.5	0.7	0.8	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
8.95S-C-01	Focus	5/3/2011	11:06:59 AM	12922624.71	287262.9227	843.1123	7.9761	1.9046	8.2004	2.1	0.0	0.0	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
8.95S-C-02	Focus	5/3/2011	11:14:09 AM	12922541.91	287450.5148	851.0873	1.1307	2.2053	2.4783	2.8	0.1	0.2	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
8.95S-C-03	Focus	5/3/2011	11:26:47 AM	12922447.73	287459.1026	847.2186	3.7065	8.4328	9.2114	2.1	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
8.95S-C-04	Focus	5/3/2011	11:31:04 AM	12922456.25	287523.5307	854.1354	1.8495	4.3504	4.7273	1.5	0.1	0.4	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Gravel & Larger		
8.95S-C-05	Focus	5/3/2011	11:38:19 AM	12922391.9	287572.8856	833.1904	5.1604	8.2278	9.7121	3.1	0.9	0.9	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand		
8.95S-C-06	Focus	5/3/2011	11:42:38 AM	12922448.84	287626.0242	848.5964	2.0461	3.2411	3.8329	2.1	0.3	0.4	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand		
8.95S-C-07	Focus	5/3/2011	11:47:35 AM	12922431.51	287699.9767	853.6723	2.3329	3.2864	4.0303	3.2	0.3	0.4	None	None	None	Left	<1ft/sec		Point Bar	None	Sand & Gravel		
MP 9.00-9.25																							
9.04T-A-01	Transect	5/4/2011	3:31:21 PM	12922188.59	287958.4571	844.2777	0.0549	0.0877	0.1035	1.7	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
9.04T-A-02	Transect	5/4/2011	3:33:02 PM	12922208.9	287995.2392	844.3464	0.0333	0.0559	0.0651	2.5	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
9.04T-A-03	Transect	5/4/2011	3:35:27 PM	12922285.98	288040.0846	844.5541	0.0685	0.1681	0.1816	1.4	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		
9.12T-C-01	Transect	5/3/2011	10:30:46 AM	12921921.94	288122.0092	843.9069	0.0606	0.1155	0.1304	1.6	0.2	0.3	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
9.12T-C-02	Transect	5/3/2011	10:34:11 AM	12921922.58	288180.795	844.0479	0.0225	0.0406	0.0464	2.9	0.1	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
9.12T-C-03	Transect	5/3/2011	10:37:21 AM	12921969.52	288255.0108	844.0573	0.0562	0.1062	0.1201	1.7	0.3	2.4	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Gravel		
9.15S-C-01	Focus	5/3/2011	9:44:45 AM	12921707.38	288114.8883	850.5091	3.084	4.0715	5.1077	0.7	1.0	1.1	Moderate	Moderate	Few	Left	<1ft/sec		Point Bar	<5%	Silt over Sand		PHOTO 739-741
9.15S-C-02	Focus	5/3/2011	9:56:31 AM	12921677.72	288143.1857	843.986	0.0789	0.152	0.1713	1.4	0.7	0.8	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
9.15S-C-03	Focus	5/3/2011	10:00:01 AM	12921721.31	288151.1667	844.0352	0.0304	0.043	0.0527	1.7	0.5	0.6	None	None	None	Left	<1ft/sec		Mid-Channel	None	Silt over Sand		
9.15S-C-04	Focus	5/3/2011	10:02:04 AM	12921732.65	288119.6162	843.7735	0.0772	0.1636	0.1809	0.6	1.0	1.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	5%-25%	Silt over Sand		
9.15S-C-05	Focus	5/3/2011	10:09:52 AM	12921783.65	288150.7171	844.0781	0.0392	0.0588	0.0707	1.4	0.3	0.3	None	None	None	Left	1-3 ft/sec		Point Bar	<5%	Sand & Gravel		SHEEN ON BANK
9.15S-C-06	Focus	5/3/2011	10:14:35 AM	12921848.97	288145.7882	844.1714	0.0325	0.0521	0.0614	1.3	0.2	0.5	None	None	None	Left	<1ft/sec		Point Bar	<5%	Soft Sediment		
9.21T-C-01	Transect	5/3/2011	9:23:27 AM	12921493.15	288418.7863	843.8553	1.1988	1.4686	1.8957	2.0	0.2	0.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	<5%	Sand & Gravel		53.5 WATER TEMP
9.21T-C-02	Transect	5/3/2011	9:29:52 AM	12921472.28	288365.4562	843.9835	0.0415	0.0479	0.0634	3.4	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		53.5 WATER TEMP
9.21T-C-03	Transect	5/3/2011	9:34:03 AM	12921455.89	288298.8543	843.8887	0.0684	0.0868	0.1105	2.0	0.2	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Gravel & Larger		53.5 WATER TEMP
9.24T-A-01	Transect	5/4/2011	3:44:41 PM	12921327.97	288403.686	844.4407	0.0903	0.2567	0.2722	2.2	0.5	0.6	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
9.24T-A-02	Transect	5/4/2011	3:48:07 PM	12921362.94	288453.3357	843.7678	0.0284	0.0472	0.0551	3.2	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
9.24T-A-03	Transect	5/4/2011	3:50:22 PM	12921415.21	288483.7627	843.8765	0.0466	0.085	0.097	2.0	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
MP 9.25-9.50																							
WB-E-01	Bridge	5/3/2011	11:19:03 AM	12920427.65	289279.7523	842.8731	0.0877	0.0673	0.1106	0.9	1.4	1.4	Light	Light	Few	Right	<1ft/sec		Point Bar	5%-25%	Sand & Gravel		
WB-E-02	Bridge	5/3/2011	11:25:00 AM	12920340.68	289198.5265	844.7082	3.911	3.335	5.1398	4.1	0.4	0.4	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		1.8FT/S
WRBR-A-01	Bridge	5/11/2011	4:35:19 PM	12920361.04	289116.6584	844.0206	2.0176	3.2607	3.8344	3.7	0.0	0.0	None	None	None	Left	1-3 ft/sec	<1 ft/sec	Strt Channel Edg	None	Gravel & Larger		
WRBR-A-02	Bridge	5/11/2011	4:40:13 PM	12920449.17	289164.8189	841.9149	1.2501	1.8474	2.2306	1.0	0.3	0.4	None	None	None	Right	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Silt over Sand		
9.34T-E-01	Transect	5/3/2011	10:41:45 AM	12920989.92	288832.2162	843.3913	1.9567	2.7362	3.3638	2.2	0.3	0.3	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
9.34T-E-02	Transect	5/3/2011	10:48:34 AM	12920954.95	288759.5462	843.4244	0.0809	0.081	0.1145	1.6	0.0	0.0	Light	Light	None	Island	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
9.34T-E-03	Transect	5/3/2011	10:54:53 AM	12920807.51	288688.4521	843.475	0.1083	0.0987	0.1465	0.9	0.4	0.4	Light	Light	Few	Left	No		Strt Channel Edg	None	Silt over Sand		
9.35C-E-01	Focus	5/3/2011	9:46:05 AM	12920787.37	288787.9237	843.451	0.0377	0.0531	0.0652	1.4	0.0	0.1	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		
9.35C-E-02	Focus	5/3/2011	9:53:09 AM	12920752.5	288780.6265	843.3106	0.0464	0.0641	0.0791	0.9	0.6	0.7	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Sand over Silt		
9.35C-E-03	Focus	5/3/2011	9:58:29 AM	12920789.01	288752.0954	843.2719	0.0445	0.0643	0.0782	1.4	1.0	1.1	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Sand over Silt		
9.35C-E-04	Focus	5/3/2011	10:04:57 AM	12920885.61	288713.566	843.5836	0.0524	0.0799	0.0955	1.8	0.2	0.2	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		
9.35C-E-05	Focus	5/3/2011	10:11:59 AM	12920927.01	288780.7784	843.3353	0.0606	0.1082	0.124	2.0	0.2	0.2	Light	Light	Few	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		53.9
HBP-E-01	Launch	5/3/2011	10:18:04 AM	12921063.26	288770.0982	842.5695	2.9454	3.762	4.7779	2.0	0.1	0.1	Light	Light	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		53.9
HBP-E-02	Launch	5/3/2011	10:26:30 AM	12920855.13	288874.7079	838.8151	2.5657	4.0112	4.7616	1.0	0.2	1.3	None	None	None	Right	<1ft/sec		Point Bar	None	Sand & Gravel		53.9
HBP-E-03	Launch	5/3/2011	10:28:30 AM	12920773.46	288881.4883	841.2213	2.3755	3.4889	4.2208	3.6	0.0	0.0	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		53.9
HBP-E-04	Launch	5/3/2011	10:31:12 AM	12920616.11	288948.9554	843.0914	0.0469	0.0632	0.0787	3.1	1.4	1.4	None	None	None	Right	<1ft/sec		Point Bar	None	Sand		
9.45T-E-01	Transect	5/3/2011	11:05:12 AM	12920445.39	288980.6831	799.7925	85.7583	154.9353	177.0859	1.6	1.3	1.4	Light	Light	Few	Left	<1ft/sec		Cut Bank	None	Silt over Sand		
9.45T-E-02	Transect	5/3/2011	11:09:05 AM	12920434.15	289057.0272	847.4117	3.2859	2.7938	4.3131	3.8	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
9.45T-E-03	Transect	5/3/2011	11:13:30 AM	12920499.47	289061.9873	842.1305	3.3363	2.7677	4.3349	1.7	0.2	0.3	None	None	None	Right	<1ft/sec		Point Bar	None	Sand & Gravel		
9.50N-E-01	Focus	5/3/2011	11:39:41 AM	12920326.16	289422.2592	842.9076	0.0722	0.1495	0.166	1.3	0.2	0.2	Light	Light	Few	Right	<1ft/sec		Cut Bank	None	Sand & Gravel		VIS SHEEN BANK
9.50N-E-02	Focus	5/3/2011	11:47:38 AM	12920277.03	289437.9438	842.9473	0.0479	0.0697	0.0845	1.4	0.2	0.2	Light	Light	Few	Right	<1ft/sec		Cut Bank	None	Sand & Gravel		
9.50N-E-03	Focus	5/3/2011	11:49:22 AM	12920252.26	289443.2814	842.7855	0.0584	0.0903	0.1075	1.5	0.0	0.0	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Gravel		
MP 9.50-9.75																							
9.5N-A-01	Focus	5/4/2011	3:58:44 PM	12920412.23	289335.936	842.7868	0.0415	0.081	0.091	2.0	0.2	0.3	None	None	None	Right	<1ft/sec		Other-Comments	None	Silt over Sand		Boat Launch
9.5N-A-02	Focus	5/4/2011	4:03:47 PM	12920423.41	289328.4225	842.9146	0.0404	0.0831	0.0924	1.2	0.2	0.3	Light	Light	None	Right	<1ft/sec		Other-Comments	None	Silt over Sand		Boat Launch
9.5N-A-03	Focus	5/4/2011	4:06:04 PM	12920430.59	289306.7959	843.0867	0.0424	0.1115	0.1193	1.0	1.0	1.1	None	None	None	Right	<1ft/sec		Other-Comments	5%-25%	Silt over Sand		Boat Launch
9.52T-A-01	Transect	5/4/2011	4:22:32 PM	12920299.13	289311.9748	842.2884	0.097	0.3125	0.3272	1.6	0.3	0.4	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand		
9.52T-A-02	Transect	5/4/2011	4:25:02 PM	12920294.41	289368.5682	842.7041	0.0241	0.063	0.0674	3.5	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
9.52T-A-03	Transect	5/4/2011	4:27:39 PM	12920355.03	289403.5802	843.1376	0.057	0.1538	0.164	1.6	0.6	0.7	None	None	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand		
9.56T-E-01	Transect	5/3/2011	1:43:28 PM	12920178.81	289469.9255	821.9564	7.5239	12.3928	14.498	1.8	0.2	0.2	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		CD 15
9.56T-E-02	Transect	5/3/2011	1:47:14 PM	12920148.46	289437.1684	820.6413	6.937	11.4327	13.3726	3.4	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		CD 15 6.4FTS
9.56T-E-03	Transect	5/3/2011	1:53:50 PM	12920140.03	289384.2713	823.7178	7.3251	11.9688	14.0324	1.3	0.2	0.3	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand		CD 15
9.59T-E-01	Transect	5/3/2011	2:00:57 PM	12919944.76	289408.4671	820.7318	9.3371	18.1756	20.4336	0.6	0.0	0.0	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 14
9.59T-E-02	Transect	5/3/2011	2:04:48 PM	12919935.7	289478.6092	818.6424	6.873	10.8429	12.8377	3.1	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		CD 14 4.9FTS
9.59T-E-03	Transect	5/3/2011	2:09:18 PM	12919984.31	289519.2204	819.2361	11.9672	23.2843	26.1797	1.7	0.0	0.0	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 15
9.62T-E-01	Transect	5/3/2011	2:17:27 PM	12919783.05	289409.1378	820.5258	8.2908	15.2019	17.3158	1.4	0.3	0.3	Light	Light	Few	Left	No		Strt Channel Edg	None	Silt over Sand		CD 18
9.62T-E-02	Transect	5/3/2011	2:21:31 PM	12919779.61	289514.9759	822.01	6.3785	10.6215	12.3895	1.8	0.0	0.0	Light	Light	Few	Center	>3 ft/sec		Mid-Channel	None	Silt over Sand		CD 13
9.62T-E-03	Transect	5/3/2011	2:26:52 PM	12919798.33	289582.5403	827.4591	7.8539	11.8962	14.2549	1.4	0.0	0.0	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 13
9.65N-B-01	Focus	4/19/11	10:12:38 AM	12919588.25	289677.22	841.4	0.04	0.05	0.06	0.6	0.7	0.9	Light	Light	None	Island	--		Downstrm Island	5%-25%	Silt over Sand	VERY SLIGHT	
9.65N-B-02	Focus	4/19/11	10:21:59 AM	12919614.91	289668.80	841.4	0.07	0.11	0.13	0.5	0.5	1.2	Moderate	Moderate	Few	Island	--		Downstrm Island	5%-25%	Silt over Sand		
9.65N-B-03	Focus	4/19/11	10:27:07 AM	12919632.61	289656.45	840.0	1.43	2.09	2.53	0.4	0.2	0.3	Light	Light	None	Island	--		Downstrm Island	5%-25%	Silt over Sand		
9.65N-B-04	Focus	4/19/11	10:30:41 AM	12919670.76	289643.86	841.6	0.04	0.05	0.07	0.3	0.5	0.6	Light	Light	None	Island	--		Downstrm Island	5%-25%	Silt over Sand	VERY SLIGHT	
9.65N-B-05	Focus	4/19/11	10:33:33 AM	12919684.25	289620.40	841.6	0.06	0.07	0.09	0.8	0.3	1.0	None	None	None	Island	--		Downstrm Island	5%-25%	Silt over Sand		FAST CURRENT
9.65N-B-06	Focus	4/19/11	11:03:37 AM	12919631.90	289677.59	841.4	0.07	0.21	0.23	1.4	0.0	0.0	None	None	None	Other-Comments	--		Other-Comments	5%-25%	Sand & Gravel		FAST CURRENT
9.65N-B-07	Focus	4/19/11	11:07:02 AM	12919651.92	289666.13	841.5	0.05	0.08	0.10	1.2	0.0	0.1	None	None	None	Other-Comments	--		Other-Comments	5%-25%	Sand & Gravel		FAST CURRENT BDY
9.69T-E-01	Transect	5/3/2011	2:33:16 PM	12919564.24	289726.0653	821.309	7.6749	12.937	15.0423	1.1	0.5	0.6	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 18
9.69T-E-02	Transect	5/3/2011	2:36:14 PM	12919502.39	289623.3627	825.386	6.191	10.3652	12.0734	2.6	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		CD 18
9.69T-E-03	Transect	5/3/2011	2:39:37 PM	12919456.94	289547.8407	823.8672	5.9673	10.0396	11.6791	1.7	0.3	0.3	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		CD 18
9.75S-A-02	Focus	4/19/11	9:52:19 AM	12919563.86	289505.51	841.8	0.95	1.13	1.47	1.7	0.3	0.4	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand		
9.75S-A-03	Focus	4/19/11	10:00:11 AM	12919535.59	289606.43	841.4	0.05	0.06	0.08	2.0	0.1	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
9.75S-B-01	Focus	4/19/11	9:40:31 AM	12919181.59	289823.04	841.2	0.06	0.11	0.12	0.7	0.1	0.8	None	None	None	Island	--		Downstrm Island	None	Sand		
9.75S-B-02	Focus	4/19/11	10:00:26 AM	12919413.25	289576.37	844.1	3.01	3.73	4.80	0.7	0.2	0.3	None	None	None	Left	--		Other-Comments	None	Sand & Gravel		
9.75S-E-01	Focus	4/19/11	10:19:14 AM	12919135.39	289903.41	839.5	1.02	1.25	1.61	0.6	0.4	0.4	None	None	None	Island	--		Downstrm Island	None	Sand & Gravel		
9.75S-E-02	Focus	4/19/11	10:25:44 AM	12919060.14	289804.71	840.9	0.06	0.07	0.10	1.7	0.2	0.3	None	None	None	Left	--		Strt Channel Edg	None	Sand & Gravel		
9.75S-E-03	Focus	5/3/2011	2:48:53 PM	12919401.56	289577.4995	827.3935	10.1718	16.2805	19.1969	0.6	0.3	0.3	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 11
9.75S-E-04	Focus	5/3/2011	2:52:45 PM	12919220.68	289760.9379	639.3622	195.712	312.4739	368.7047	0.9	0.2	0.2	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		CD 11
9.75S-E-05	Focus	5/3/2011	2:55:55 PM	12919204.58	289707.1622	822.6868	173.2225	279.7608	329.0473	0.5	0.0	0.0	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 11
9.75S-E-06	Focus	5/3/2011	3:05:34 PM	12919391.67	289656.1588	827.8199	11.8448	18.1212	21.649	2.3	0.2	0.3	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		CD 20
9.75S-E-07	Focus	5/3/2011	3:08:11 PM	12919355.24	289691.2172	797.043	178.7068	328.5674	374.0223	1.6	0.2	0.3	None	None	None	Island	No		Downstrm Island	None	Sand over Silt		CD 20
9.75S-E-08	Focus	5/3/2011	3:13:28 PM	12919257.55	289759.6739	839.5374	30.6442	39.9265	50.3309	1.5	0.0	0.1	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		CD 60
9.75T-E-01	Transect	5/3/2011	3:19:39 PM	12919308.95	289792.1477	847.5782	24.2809	38.7335	45.7148	0.9	0.4	0.4	Light	Light	Few	Center	<1ft/sec		Downstrm Island	None	Sand over Silt		CD 22
9.75T-E-02	Transect	5/3/2011	3:29:16 PM	12919298.56	289649.7243	862.9768	22.8587	33.1238	40.2455	2.7	0.2	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 40
9.75T-E-03	Transect	5/3/2011	3:36:35 PM	12919381.31	289838.9998	839.5174	23.472	37.0111	43.8265	2.1	0.2	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 40
MP 9.75-10.00																							
9.80T-E-01	Transect	5/3/2011	3:43:15 PM	12919114.69	290014.33	842.9016	21.5578	34.2345	40.4566	2.3	0.2	0.4	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 40
9.80T-E-02	Transect	5/3/2011	3:45:57 PM	12919059.12	289936.9423	845.5493	21.5921	34.2278	40.4692	2.3	0.2	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		CD 40
9.80T-E-03	Transect	5/3/2011	3:48:41 PM	12919024.98	289837.571	845.2929	21.7581	34.322	40.6376	2.6	0.1	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 40
9.88T-E-01	Transect	5/3/2011	3:55:19 PM	12918566.16	290020.9842	848.9543	23.0178	35.3939	42.2202	2.5	0.1	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 40
9.88T-E-02	Transect	5/3/2011	3:57:46 PM	12918562.74	290067.3464	847.3172	24.1947	36.741	43.9919	3.4	0.2	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		CD 40

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
9.88T-E-03	Transect	5/3/2011	4:00:17 PM	12918585.22	290112.0466	849.6472	29.3729	40.3482	49.9074	2.0	0.3	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		CD 40
9.95T-A-01	Transect	5/4/2011	4:39:25 PM	12918260.2	290155.0132	840.929	0.0964	0.1111	0.1471	1.7	0.3	0.4	None	None	None	Left	<1ft/sec		Cut Bank	None	Silt over Sand		
9.95T-A-02	Transect	5/4/2011	4:44:38 PM	12918292.11	290218.4843	841.0882	0.0481	0.1175	0.1269	2.7	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
9.95T-A-03	Transect	5/4/2011	4:46:44 PM	12918335.69	290272.3422	835.9415	1.7254	3.1096	3.5562	2.3	0.1	0.2	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
9.98T-E-01	Transect	5/3/2011	4:06:15 PM	12918177.26	290275.2767	830.0319	31.6859	43.0161	53.4264	2.7	0.1	0.1	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		CD 30
9.98T-E-02	Transect	5/3/2011	4:08:36 PM	12918215.23	290325.0327	823.5393	26.2814	30.2701	40.0873	2.3	0.2	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		CD 30
9.98T-E-03	Transect	5/3/2011	4:12:01 PM	12918290.31	290324.9867	861.1768	182.7883	78.4428	198.9091	2.4	0.3	0.5	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		CD 30
9.99T-E-01	Transect	5/3/2011	4:22:51 PM	12918262.64	290420.7192	841.1009	0.0527	0.1911	0.1982	1.9	0.1	0.1	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		
9.99T-E-02	Transect	5/3/2011	4:26:24 PM	12918215.72	290386.4568	841.2355	0.0354	0.1231	0.1281	2.2	0.3	0.4	None	None	None	Center	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
9.99T-E-03	Transect	5/3/2011	4:29:09 PM	12918148.26	290362.9242	841.225	0.0249	0.0643	0.069	2.8	0.1	0.1	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
10.0C-E-01	Focus	5/3/2011	4:36:22 PM	12918230.62	290396.3105	841.0782	0.0524	0.18	0.1875	3.0	0.0	0.0	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		2FTS
10.0C-E-02	Focus	5/3/2011	4:38:31 PM	12918207.59	290427.7366	840.9414	0.0495	0.1653	0.1725	2.1	0.3	0.3	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		
10.0C-E-03	Focus	5/3/2011	4:40:52 PM	12918211.02	290465.6796	840.9251	0.0292	0.0935	0.0979	0.8	0.8	0.9	Light	Light	Few	Island	No		Downstrm Island	None	Sand & Gravel		
10.0C-E-04	Focus	5/3/2011	4:46:01 PM	12918214.27	290481.0555	840.956	0.0423	0.1214	0.1286	1.0	0.4	0.5	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand		
MP 10.00-10.25																							
10.07T-D-01	Transect	5/5/2011	10:10:26 AM	12918276.32	290832.9808	840.2117	0.0516	0.1018	0.1141	1.9	0.1	0.2	None	None	None	Left	<1ft/sec		Point Bar	None	Sand & Silt		
10.07T-D-02	Transect	5/5/2011	10:15:55 AM	12918335.07	290804.7146	840.0226	0.0362	0.0731	0.0815	2.6	0.1	0.1	None	None	None	Center	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
10.07T-D-03	Transect	5/5/2011	10:19:00 AM	12918371.11	290770.8852	840.0982	0.0342	0.0703	0.0781	2.0	0.1	0.1	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Gravel		
10.12T-D-01	Transect	5/5/2011	10:26:50 AM	12918299.22	290998.0197	835.8712	2.8125	4.6161	5.4054	1.2	0.2	0.3	None	None	None	Left	<1ft/sec		Point Bar	None	Sand & Gravel		
10.12T-D-02	Transect	5/5/2011	10:33:45 AM	12918352.53	291011.0733	839.9499	0.0439	0.0899	0.1	3.4	0.0	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		3.3FTSEC
10.12T-D-03	Transect	5/5/2011	10:36:36 AM	12918374.92	291042.2195	839.8016	0.037	0.0709	0.08	2.4	0.0	0.1	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Gravel		3.3FTSEC
10.17T-D-01	Transect	5/5/2011	10:43:48 AM	12918167.2	291124.6268	851.6963	17.7462	26.0659	31.5334	1.2	0.2	0.3	None	None	None	Left	<1ft/sec		Point Bar	None	Sand & Gravel		0
10.17T-D-02	Transect	5/5/2011	10:50:56 AM	12918186.09	291168.5626	840.1036	0.0273	0.0509	0.0578	4.0	0.0	0.0	None	None	None	Center	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		4FTSEC
10.17T-D-03	Transect	5/5/2011	10:55:28 AM	12918236.52	291187.8784	840.1057	0.0271	0.0502	0.057	2.0	0.5	0.8	Light	Light	Few	Right	<1ft/sec		Cut Bank	None	Gravel & Larger		4FTSEC
10.21T-D-01	Transect	5/5/2011	11:12:41 AM	12917959.13	291125.5792	839.6577	0.0788	0.1583	0.1768	1.4	0.4	1.1	None	None	None	Right	<1ft/sec		Cut Bank	None	Soft Sediment		0
10.21T-D-02	Transect	5/5/2011	11:31:48 AM	12917977.16	291081.0815	839.9726	0.0433	0.0749	0.0865	3.0	0.0	0.0	Light	None	Few	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		1-3FTSEC
10.21T-D-03	Transect	5/5/2011	11:37:37 AM	12918001.05	291051.9427	839.6483	0.1209	0.1558	0.1972	0.8	0.3	1.1	Light	Light	Few	Left	<1ft/sec		Point Bar	None	Sand		
10.21T-D-04	Transect	5/5/2011	11:19:13 AM	12917938.98	291124.3784	839.4391	0.1024	0.1714	0.1996	0.9	0.3	0.7	Light	Light	Few	Right	<1ft/sec		Cut Bank	None	Silt over Sand		SHEENOBSERVED
10.25N-D-01	Focus	5/5/2011	1:27:02 PM	12917793.38	291078.0733	847.3002	3.9389	7.0737	8.0964	0.9	0.6	0.6	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
10.25N-D-02	Focus	5/5/2011	1:38:06 PM	12917735.11	291066.5229	839.759	0.0408	0.0708	0.0817	1.8	0.2	0.3	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
10.25N-D-03	Focus	5/5/2011	1:44:13 PM	12917679.75	291065.068	839.9577	0.0416	0.0811	0.0911	3.0	0.2	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand		SUBM. 55DRUM
10.25N-D-04	Focus	5/5/2011	1:51:57 PM	12917657.19	291061.5953	839.4889	0.1068	0.311	0.3289	3.3	0.6	1.2	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand		SUBM. 55DRUM
MP 10.25-10.50																							
10.2S-D-01	Focus	5/5/2011	12:56:52 PM	12918022	291011.8943	846.4384	4.4441	5.3628	6.9648	0.1	0.4	1.4	None	None	None	Left	No		Other-Comments	None	Organic		EDDY
10.2S-D-02	Focus	5/5/2011	1:01:01 PM	12918016.64	291037.0706	848.9399	3.0252	4.1733	5.1544	0.5	0.9	1.6	None	None	None	Left	No		Other-Comments	None	Soft Sediment		INSIDE SANDBAR
10.2S-D-03	Focus	5/5/2011	1:05:34 PM	12917977.25	291005.2654	839.8724	0.0668	0.0892	0.1115	1.1	2.0	2.1	Light	Light	Few	Left	No		Other-Comments	None	Silt over Sand		INSIDE SANDBAR
10.2S-D-04	Focus	5/5/2011	1:09:34 PM	12917915.96	290972.4114	844.5239	1.9567	2.7019	3.336	0.4	0.6	0.7	None	None	None	Left	<1ft/sec		Cut Bank	None	Silt over Sand		
10.2S-D-05	Focus	5/5/2011	1:11:52 PM	12917857.74	290962.9269	843.7191	1.5682	2.2338	2.7293	1.4	0.7	1.2	None	None	None	Left	<1ft/sec		Cut Bank	None	Silt over Sand		
10.28T-D-01	Transect	5/5/2011	1:59:01 PM	12917655.63	291052.5286	839.7266	0.0954	0.1596	0.1859	3.0	0.3	0.4	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
10.28T-D-02	Transect	5/5/2011	2:05:54 PM	12917682.95	291003.9251	839.7081	1.0369	1.658	1.9555	1.8	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
10.28T-D-03	Transect	5/5/2011	2:11:23 PM	12917676.18	290941.1983	837.0735	1.537	2.4707	2.9098	1.4	0.0	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		
10.36T-D-01	Transect	5/5/2011	2:50:18 PM	12917349.11	291142.9778	846.0396	3.714	3.4393	5.0618	1.1	0.4	0.4	Light	Light	Few	Right	<1ft/sec		Point Bar	None	Silt over Sand		
10.36T-D-02	Transect	5/5/2011	2:59:23 PM	12917293.07	291134.4957	841.1097	2.9971	1.7759	3.4837	2.7	0.1	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
10.36T-D-03	Transect	5/5/2011	3:04:52 PM	12917269.99	291142.8672	823.47	32.457	26.1564	41.6847	3.2	0.0	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		3.3FTSEC
10.4N-C-04	Focus	5/7/2011	3:18:04 PM	12917331.13	291367.7245	839.3438	0.0422	0.0738	0.085	1.4	1.4	1.8	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand	SHEEN ON BANK	0.1 FPS
10.4N-C-05	Focus	5/7/2011	3:25:46 PM	12917341.39	291337.9245	839.2794	0.0399	0.0679	0.0788	0.7	1.8	1.9	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand	SOME EXISTING SHN	
10.4N-C-06	Focus	5/7/2011	3:38:54 PM	12917374.46	291302.3822	839.5569	0.0832	0.153	0.1741	0.7	1.6	1.7	Heavy	Heavy	Many	Right	<1ft/sec		Cut Bank	None	Soft Sediment	PHOTO 65-68	VL FLOW
10.4N-C-07	Focus	5/7/2011	3:44:20 PM	12917389	291268.313	839.6056	0.0648	0.1019	0.1207	0.9	0.6	0.6	Heavy	Heavy	Many	Right	<1ft/sec		Cut Bank	None	Silt over Sand	THICK SHEEN	
10.4N-C-08	Focus	5/7/2011	3:51:26 PM	12917326.65	291296.5283	839.2925	0.0424	0.0817	0.092	1.0	1.9	2.0	Moderate	Moderate	Common	Right	<1ft/sec		Cut Bank	<5%	Silt over Sand		
10.4N-C-09	Focus	5/7/2011	3:55:51 PM	12917313.72	291260.2667	839.2819	0.0543	0.1277	0.1387	0.5	0.4	0.6	None	None	None	Right	<1ft/sec		Point Bar	None	Sand		1.1 FPS
10.4N-C-10	Focus	5/7/2011	4:00:28 PM	12917297.8	291305.3479	839.2296	0.0295	0.0882	0.093	1.0	1.3	1.3	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand		1.5 FPS
10.4N-D-01	Focus	5/5/2011	3:11:57 PM	12917336.96	291358.0243	839.2855	0.0406	0.0757	0.0859	1.4	1.9	1.9	Light	Light	Few	Right	<1ft/sec		Cut Bank	None	Silt over Sand		
10.4N-D-02	Focus	5/5/2011	3:27:56 PM	12917282.8	291418.6529	839.5756	0.0524	0.1013	0.1141	2.1	1.3	1.4	Light	Light	Few	Right	<1ft/sec		Cut Bank	None	Silt over Sand		GREY SHEEN OBSERD
10.4N-D-03	Focus	5/5/2011	3:34:05 PM	12917237.47	291468.2537	839.2262	0.0366	0.0694	0.0784	3.1	0.1	0.2	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Silt		
10.44T-D-01	Transect	5/6/2011	9:06:12 AM	12917082.57	291543.9209	838.9704	0.0368	0.0483	0.0607	1.3	0.7	1.0	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg		Sand & Silt		
10.44T-D-02	Transect	5/6/2011	9:10:20 AM	12917073.67	291489.7196	838.8203	0.0331	0.0454	0.0562	3.5	0.0	0.0	Light	Light	Few	Center	1-3 ft/sec		Strt Channel Edg		Gravel & Larger		3.3FTSEC
10.44T-D-03	Transect	5/6/2011	9:14:41 AM	12917031.36	291474.2841	843.8682	2.8008	3.7918	4.714	1.5	0.9	1.0	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg		Silt over Sand		
10.5L2-C-09	Focus	5/7/2011	4:06:38 PM	12917017.78	291453.6538	839.3746	2.797	2.2532	3.5917	1.2	1.6	1.7	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt	OUTSIDE BOOM	0.3 FPS
10.5L2-C-10	Focus	5/7/2011	4:12:25 PM	12917032.61	291401.3266	863.7407	2.2611	7.7656	8.0881	1.2	0.6	0.8	Light	Light	Few	Left	<1ft/sec		Cut Bank	5%-25%	Sand & Gravel		
10.5L2-C-11	Focus	5/7/2011	4:15:28 PM	12917061.19	291331.0321	839.2928	0.09	0.2459	0.2618	1.0	1.0	1.2	Heavy	Heavy	Many	Left	<1ft/sec		Cut Bank	5%-25%	Sand & Silt	HEAVY EXISTING	PHOTOS 69-72
10.5L2-C-12	Focus	5/7/2011	4:22:01 PM	12917097.9	291243.1395	839.0903	0.0471	0.0738	0.0876	1.3	0.2	0.3	Heavy	Heavy	Many	Left	<1ft/sec		Cut Bank	25%-50%	Silt over Sand		
10.5L2-C-13	Focus	5/7/2011	4:25:53 PM	12917119.81	291198.5834	838.4129	0.1138	0.3557	0.3735	1.4	0.8	0.9	Heavy	Heavy	Many	Left	No		Cut Bank	25%-50%	Silt over Sand		
10.5L2-C-14	Focus	5/7/2011	4:37:17 PM	12917113.97	291320.7851	839.2265	0.0237	0.0564	0.0612	1.7	0.8	1.1	Moderate	Moderate	Common	Left	<1ft/sec		Cut Bank	5%-25%	Silt over Sand		
10.5L2-D-02	Focus	5/5/2011	3:53:27 PM	12917102.39	291271.1262	838.5908	0.0243	0.0524	0.0578	1.3	0.7	0.8	Heavy	Heavy	Many	Left	<1ft/sec		Other-Comments	None	Silt over Sand	ODOR PRESENT	BACKCHANNEL
10.5L2-D-03	Focus	5/5/2011	4:07:06 PM	12917160.02	291290.8842	839.3693	0.031	0.0734	0.0797	0.8	0.3	1.0	Moderate	Moderate	Many	Left	<1ft/sec		Other-Comments	None	Silt over Sand	ODOR PRESENT	BACKCHANNEL
10.5L2-D-04	Focus	5/5/2011	4:13:43 PM	12917139.75	291340.3872	839.0304	0.0419	0.0985	0.107	0.7	0.5	0.6	Light	Light	Few	Left	<1ft/sec		Other-Comments	None	Sand & Gravel		BACKCHANNEL
10.5L2-D-05	Focus	5/5/2011	4:23:06 PM	12917084.06	291386.6519	838.8633	0.0358	0.1159	0.1213	1.2	1.9	1.9	Heavy	Heavy	Many	Left	<1ft/sec		Other-Comments	None	Sand & Gravel		BACKCHANNEL
10.5L2-D-06	Focus	5/5/2011	4:59:31 PM	12917135.93	291426.882	839.3927	0.0683	0.1163	0.1349	1.4	0.1	0.2	Light	Light	Few	Left	<1ft/sec		Other-Comments	None	Sand & Gravel		BNDRY
10.5L2-D-07	Focus	5/5/2011	4:56:38 PM	12917095.43	291437.6662	839.2107	0.0962	0.1377	0.168	1.6	0.1	0.2	Light	Light	Few	Left	<1ft/sec		Other-Comments	None	Sand & Gravel		BNDRY
10.5L2-D-08	Focus	5/5/2011	4:53:44 PM	12917071.2	291444.0185	839.2862	0.0484	0.0559	0.0739	1.5	0.3	0.4	Light	Light	Few	Left	<1ft/sec		Other-Comments	None	Sand & Gravel		OUTSIDE OF BOOM
10.5N-D-01	Focus	5/6/2011	9:22:12 AM	12917005.05	291705.7195	838.7876	0.0408	0.0502	0.0647	0.4	0.1	0.1	None	None	None	Right	1-3 ft/sec		Strt Channel Edg		Gravel & Larger		
10.5N-D-02	Focus	5/6/2011	9:27:42 AM	12917054.39	291786.7974	838.7272	0.0651	0.0713	0.0966	0.7	0.6	0.7	Light	Light	Few	Right	<1ft/sec		Downstrm Island		Soft Sediment		
10.5N-D-03	Focus	5/6/2011	9:38:20 AM	12917066	291869.0609	838.8284	0.0452	0.0582	0.0737	1.5	0.6	0.7	Light	Light	Few	Right	<1ft/sec		Downstrm Island		Soft Sediment		MOUTHOFBACKCHAN
10.5N-D-04	Focus	5/6/2011	9:42:44 AM	12917082.81	291838.6284	838.6551	0.0314	0.0415	0.0521	1.0	0.3	0.4	None	None	None	Right	<1ft/sec		Downstrm Island		Silt over Sand		MOUTHOFBACKCHAN
10.5N-D-05	Focus	5/6/2011	9:49:47 AM	12917127.75	291830.9779	838.6509	0.046	0.0725	0.0859	0.5	1.1	1.2	Heavy	Heavy	Many	Right	<1ft/sec		Other-Comments		Silt over Sand		BACKCHANNEL
10.5N-D-06	Focus	5/6/2011	9:51:57 AM	12917115.61	291833.364	838.5751	0.0597	0.1	0.1165	0.6	0.9	0.9	Heavy	Moderate	Many	Right	<1ft/sec		Other-Comments		Soft Sediment		BACKCHANNEL
10.5N-D-07	Focus	5/6/2011	9:54:37 AM	12917116.33	291842.7721	838.9511	0.1463	0.2442	0.2847	0.8	0.5	0.5	Heavy	Moderate	Many	Right	<1ft/sec		Other-Comments		Silt over Sand		BACKCHANNEL
10.5N-D-09	Focus	5/6/2011	10:06:32 AM	12917153.85	291812.1009	841.0036	0.0392	0.085	0.0936	0.6	0.0	0.1	Light	Light	Few	Right	<1ft/sec		Other-Comments		Silt over Sand		BACKCHANNEL
MP 10.50-10.75																							
10.51T-D-01	Transect	5/6/2011	10:17:04 AM	12917064.51	291826.3274	838.7176	0.0473	0.0933	0.1045	1.0	0.2	0.3	Light	Light	Few	Right	<1ft/sec		Downstrm Island		Silt over Sand		
10.51T-D-02	Transect	5/6/2011	10:21:58 AM	12916982.74	291840.7605	838.3976	0.0334	0.0653	0.0734	2.0	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel		Gravel & Larger		
10.51T-D-03	Transect	5/6/2011	10:25:04 AM	12916947.67	291848.802	838.7182	0.0172	0.0352	0.0392	3.5	0.1	0.1	None	None	None	Left	1-3 ft/sec		Cut Bank		Gravel & Larger		
10.57T-C-01	Transect	5/4/2011	9:36:22 AM	12916997.11	292128.2818	838.8687	0.0414	0.0502	0.0651	3.2	0.2	0.3	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel		
10.57T-C-02	Transect	5/4/2011	9:43:38 AM	12916968.21	292094.0485	838.8584	0.0303	0.0363	0.0473	4.4	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
10.57T-C-03	Transect	5/4/2011	9:49:23 AM	12916909.58	292063.5027	838.8511	0.0399	0.0521	0.0656	0.8	0.1	0.2	None	None	None	Right	<1ft/sec		Point Bar	None	Sand & Gravel		
10.65N-C-01	Focus	5/4/2011	1:22:44 PM	12916822.21	292351.5769	838.6735	0.1761	0.2743	0.3259	1.4	0.4	0.6	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Sand		NEAR INLET ENTRAN
10.65N-C-02	Focus	5/4/2011	1:27:56 PM	12916781.96	292392.1293	843.5829	1.1674	1.9487	2.2716	1.7	0.4	0.4	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		NEAR INLET ENTRAN
10.65N-C-03	Focus	5/4/2011	1:31:34 PM	12916746.9	292449.9913	842.1512	1.7964	3.558	3.9857	2.1	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
10.65N-C-04	Focus	5/4/2011	1:33:22 PM	12916741.1	292494.1576	838.2664	0.0239	0.0438	0.0499	1.5	0.2	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
10.65N-C-05	Focus	5/4/2011	1:36:28 PM	12916666.52	292542.7013	838.4891	0.0339	0.0591	0.0681	1.7	0.3	0.4	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		
10.65N-C-06	Focus	5/4/2011	1:40:09 PM	12916636.5	292658.3334	838.5106	0.0515	0.087	0.1011	1.4	0.5	0.7	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
10.65T-C-01	Transect	5/4/2011	11:27:11 AM	12916602.76	292285.7515	839.7536	1.8769	2.513	3.1365	1.3	0.6	0.7	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
10.65T-C-02	Transect	5/4/2011	11:30:56 AM	12916634.54	292350.2029	838.5043	0.0263	0.0446	0.0518	2.1	0.2	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
10.65T-C-03	Transect	5/4/2011	11:33:35 AM	12916692.61	292410.1688	838.4959	0.0421	0.0747	0.0858	1.3	0.5	0.7	None	None	None	Island	>3 ft/sec		Downstrm Island	None	Silt over Sand		
10.71T-C-01	Transect	5/4/2011	1:50:43 PM	12916592.6	292734.4877	840.1282	1.4086	2.5842	2.9431	1.7	0.6	0.7	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
10.71T-C-02	Transect	5/4/2011	1:54:13 PM	12916533.42	292721.4269	838.2245	0.0427	0.0807	0.0913	1.9	0.4	0.5	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		
10.71T-C-03	Transect	5/4/2011	1:56:23 PM	12916482.17	292710.4621	838.2123	0.0401	0.0734	0.0837	2.2	0.2	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
10.71T-C-04	Transect	5/4/2011	1:58:23 PM	12916430.24	292686.8873	838.6907	0.0571	0.1034	0.1181	2.5	0.1	0.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		EPA-C-0285 SCAT
10.75L2-C-01	Focus	5/4/2011	9:53:44 AM	12916877.99	292075.7791	838.6611	0.0506	0.0687	0.0853	0.3	0.3	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		ENTANCE TO SIDE C
10.75L2-C-02	Focus	5/4/2011	10:00:51 AM	12916817.38	292081.3928	839.5283	1.0994	1.8157	2.1226	0.6	0.3	0.5	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		SIDE CHANNEL
10.75L2-C-03	Focus	5/4/2011	10:06:16 AM	12916754.57	292096.6187	838.6113	0.0398	0.0594	0.0715	1.9	0.7	0.8	Moderate	Moderate	Common	Left	<1ft/sec		Cut Bank	None	Silt over Sand		SIDE CHANNEL
10.75L2-C-04	Focus	5/4/2011	10:13:48 AM	12916715.5	292106.402	838.5079	0.034	0.0562	0.0656	0.8	0.8	1.0	None	None	None	Left	<1ft/sec		Cut Bank	None	Silt over Sand		EXCAVATED AREA
10.75L2-C-05	Focus	5/4/2011	10:19:59 AM	12916645.48	292153.0483	838.4288	0.0428	0.0747	0.0862	0.9	0.5	1.0	Heavy	Heavy	Many	Left	<1ft/sec		Cut Bank	None	Silt over Sand		EXCAVATED AREA
10.75L2-C-06	Focus	5/4/2011	10:31:16 AM	12916619.29	292238.1681	838.2625	0.0685	0.1773	0.1901	1.8	0.4	0.5	Heavy	Heavy	Many	Left	<1ft/sec		Cut Bank	None	Silt over Sand		EXCAVATED AREA
10.75L2-C-07	Focus	5/4/2011	10:37:26 AM	12916640.73	292244.0548	838.532	0.0268	0.0533	0.0597	1.6	0.2	0.3	None	None	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		EXCAVATED AREA
10.75L2-C-08	Focus	5/4/2011	10:40:47 AM	12916621.99	292226.3564	838.6154	0.0349	0.0904	0.0969	1.8	0.6	0.8	Moderate	Heavy	Few	Center	<1ft/sec		Mid-Channel	None	Silt over Sand		EXCAVATED AREA
10.75L2-C-09	Focus	5/4/2011	10:44:16 AM	12916637.36	292218.3002	838.4624	0.0374	0.0748	0.0836	1.6	0.4	0.4	None	None	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		EXCAVATED AREA
10.75L2-C-10	Focus	5/4/2011	10:46:07 AM	12916616.17	292181.2562	838.511	0.0256	0.0511	0.0572	2.0	1.2	1.5	Heavy	Heavy	Many	Left	<1ft/sec		Cut Bank	None	Silt over Sand		PHOTO 732-727
10.75L2-C-11	Focus	5/4/2011	10:54:46 AM	12916650.95	292190.9927	838.4754	0.0262	0.0515	0.0578	1.2	0.2	0.4	None	None	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		
10.75L2-C-12	Focus	5/4/2011	10:57:18 AM	12916691.68	292162.9107	838.5204	0.0409	0.0798	0.0897	1.4	0.5	0.5	Heavy	Heavy	Many	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		PHOTO 726-728
10.75L2-C-13	Focus	5/4/2011	11:03:52 AM	12916696.2	292120.445	838.3783	0.055	0.1138	0.1264	1.4	0.3	0.5	Light	Light	Few	Left	<1ft/sec		Cut Bank	None	Sand & Gravel	PHOTO 725	BASE OF TOWER
10.75L2-C-14	Focus	5/4/2011	11:08:27 AM	12916714.77	292149.6546	838.7132	0.0528	0.1145	0.1261	1.8	0.2	0.3	Heavy	Heavy	Many	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		
10.75L2-C-15	Focus	5/4/2011	11:14:02 AM	12916763.25	292127.4947	838.6869	0.0712	0.1375	0.1549	1.5	0.3	0.3	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		EDGE OF SAND BAR
MP 10.75-11.00																							
10.79T-C-01	Transect	5/7/2011	4:58:39 PM	12916340.24	293111.5958	837.9466	0.0997	0.2372	0.2573	3.9	0.2	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		1.7 FPS
10.79T-C-02	Transect	5/7/2011	5:02:10 PM	12916308.12	293085.9433	838.2837	0.0434	0.0638	0.0771	2.9	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		2.1 FPS

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
10.79T-C-03	Transect	5/7/2011	5:04:33 PM	12916272.46	293052.3694	838.1186	0.035	0.0496	0.0607	1.9	0.0	0.0	None	None	None	Left	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		1.8 FPS
10.8N-C-01	Focus	5/4/2011	2:46:20 PM	12916317.94	293228.3779	838.3059	2.0735	3.0835	3.7158	1.4	2.0	3.8	Moderate	Moderate	Common	Right	<1ft/sec		Cut Bank	None	Soft Sediment		COVE
10.8N-C-02	Focus	5/4/2011	2:53:57 PM	12916299.01	293222.6284	840.5625	1.4517	2.6651	3.0348	1.5	2.0	2.1	Light	Light	Few	Right	<1ft/sec		Other-Comments	None	Silt over Sand		COVE
10.8N-C-03	Focus	5/4/2011	2:59:29 PM	12916278.05	293195.3096	841.8217	1.4509	2.7499	3.1092	1.5	1.7	3.8	Moderate	Moderate	Common	Right	<1ft/sec		Other-Comments	None	Soft Sediment		COVE
10.8N-C-04	Focus	5/4/2011	3:03:21 PM	12916249.38	293171.4207	847.3652	2.6828	4.6689	5.3848	4.1	0.6	0.6	None	None	None	Right	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		OUTSIDE COVE
10.8N-C-05	Focus	5/4/2011	3:09:25 PM	12916257.31	293182.3894	846.9996	1.7563	2.6508	3.1798	1.7	1.9	2.6	Light	Light	Few	Right	<1ft/sec		Other-Comments	None	Soft Sediment		COVE MOUTH
10.8S-C-01	Focus	5/4/2011	2:10:33 PM	12916253.46	292976.2475	836.2093	2.07	3.3735	3.958	1.5	0.0	0.0	None	None	None	Island	>3 ft/sec		Downstrm Island	None	Gravel & Larger		
10.8S-C-02	Focus	5/4/2011	2:13:47 PM	12916222.96	292997.8824	838.2993	0.0442	0.0784	0.09	0.8	0.0	0.0	None	None	None	Island	>3 ft/sec		Downstrm Island	None	Gravel & Larger		
10.8S-C-03	Focus	5/4/2011	2:17:09 PM	12916212.13	293022.5429	842.8405	1.4202	2.4309	2.8154	0.3	1.0	1.7	Light	Light	Few	Island	<1ft/sec		Downstrm Island	None	Soft Sediment		
10.8S-C-04	Focus	5/4/2011	2:21:13 PM	12916181.71	293055.5846	842.912	2.9218	5.6548	6.365	0.9	0.7	0.8	None	None	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		
10.8S-C-05	Focus	5/4/2011	2:30:39 PM	12916120	293045.2755	838.3462	0.0668	0.1106	0.1292	1.3	0.7	0.8	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
10.8S-C-06	Focus	5/4/2011	2:35:51 PM	12916124.89	293115.3097	838.2207	0.0329	0.0513	0.0609	1.3	0.2	0.8	None	None	None	Center	<1ft/sec		Downstrm Island	None	Silt over Sand		
10.8S-C-07	Focus	5/4/2011	2:38:41 PM	12916081.04	293073.2612	838.1046	0.118	0.1753	0.2113	1.3	1.2	1.7	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
10.89T-C-01	Transect	5/4/2011	3:28:02 PM	12916052.87	293425.5239	838.5934	0.2004	0.2342	0.3083	3.5	0.5	0.6	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
10.89T-C-02	Transect	5/4/2011	3:32:42 PM	12915990.03	293398.7851	838.1445	0.0273	0.0479	0.0551	2.7	0.0	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
10.89T-C-03	Transect	5/4/2011	3:34:28 PM	12915932.81	293350.264	837.9921	1.5081	1.9328	2.4516	2.9	0.3	0.4	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
10.95N-C-01	Focus	5/4/2011	3:50:34 PM	12915719.01	293810.096	838.0077	0.0358	0.0705	0.079	2.4	0.5	0.6	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		
10.95N-C-02	Focus	5/4/2011	3:52:43 PM	12915757.44	293803.3702	837.6815	0.0734	0.2639	0.2739	2.4	0.3	0.4	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		END OF T10.97T
10.95N-C-03	Focus	5/4/2011	3:55:25 PM	12915809.03	293800.212	838.0123	0.0517	0.1038	0.116	2.5	0.4	0.4	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
10.97T-C-01	Transect	5/4/2011	3:42:42 PM	12915701.55	293692.489	839.5146	1.6859	2.78	3.2512	2.0	0.4	0.7	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
10.97T-C-02	Transect	5/4/2011	3:47:39 PM	12915719.1	293724.2733	838.1113	0.0368	0.0808	0.0888	2.8	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
MP 11.00-11.25																							
11.0N-C-01	Focus	5/4/2011	4:08:20 PM	12915564.81	293931.9615	852.692	5.7935	14.5838	15.6925	0.5	0.7	1.5	None	None	None	Other-Comments	<1ft/sec		Strt Channel Edg	None	Soft Sediment		INLET
11.0N-C-02	Focus	5/4/2011	4:11:52 PM	12915589.1	293921.9173	837.0336	1.3259	3.546	3.7858	0.3	0.8	1.2	Light	Light	Few	Other-Comments	<1ft/sec		Strt Channel Edg	None	Soft Sediment	BY RED STAKE	INLET
11.0N-C-03	Focus	5/4/2011	4:18:54 PM	12915456.54	294018.8797	837.4217	0.0647	0.2341	0.2429	2.6	0.2	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		INLET EXIT
11.0N-C-04	Focus	5/4/2011	4:21:48 PM	12915508.42	293997.0461	834.883	1.4073	4.9342	5.131	1.8	0.3	0.4	None	None	None	Right	<1ft/sec		Downstrm Island	None	Sand & Silt		INLET EXIT
11.0N-C-05	Focus	5/4/2011	4:38:25 PM	12915536.09	293988.8804	847.6685	17.2265	52.4823	55.2371	2.1	0.2	0.3	None	None	None	Island	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		INLET MOUTH
11.0N-C-06	Focus	5/5/2011	9:00:13 AM	12915533.89	293949.9695	844.7763	1.818	2.5434	3.1263	1.4	0.1	0.2	None	None	None	Island	<1ft/sec		Downstrm Island	<5%	Silt over Sand		0.9 VEL
11.05T-C-01	Transect	5/4/2011	4:47:50 PM	12915381.27	294072.7284	837.8827	0.0737	0.1578	0.1741	1.8	0.9	1.0	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
11.05T-C-02	Transect	5/4/2011	4:50:55 PM	12915324.4	294035.8542	837.856	0.0261	0.0486	0.0552	4.1	0.2	0.3	None	None	None	Center	>3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
11.05T-C-03	Transect	5/4/2011	4:53:47 PM	12915294.59	293994.9193	837.7173	0.0523	0.0957	0.109	2.9	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		
11.11T-C-01	Transect	5/5/2011	9:11:56 AM	12915125.98	294185.8166	837.3687	0.1079	0.0978	0.1456	0.8	0.6	0.9	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Gravel		0.6 VEL
11.11T-C-02	Transect	5/5/2011	9:18:03 AM	12915143.74	294122.7649	837.3992	0.0652	0.077	0.1008	3.6	0.5	0.6	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		3 VEL
11.11T-C-03	Transect	5/5/2011	9:21:51 AM	12915096.05	294072.888	837.2978	0.0704	0.09	0.1143	1.8	0.6	0.8	None	None	None	Left	<1ft/sec		Point Bar	None	Silt over Sand		0.4 VEL
11.16T-C-01	Transect	5/5/2011	9:29:42 AM	12914846.37	294110.7491	837.0419	0.0891	0.0993	0.1334	1.8	0.1	0.2	None	None	None	Left	<1ft/sec		Point Bar	None	Sand & Gravel		0.7 VEL
11.16T-C-02	Transect	5/5/2011	9:36:43 AM	12914815.18	294161.9649	837.2157	0.132	0.1448	0.1959	3.2	0.2	0.6	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		3.0 VEL
11.16T-C-03	Transect	5/5/2011	9:40:34 AM	12914782.06	294225.7254	837.2454	0.0748	0.1466	0.1646	3.8	0.5	0.6	None	None	None	Right	<1ft/sec		Cut Bank	<5%	Sand & Gravel		0.5 VEL
11.2S-C-01	Focus	5/5/2011	10:05:52 AM	12914638.9	293995.8789	850.7508	1.8635	3.8392	4.2676	1.9	0.2	0.5	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		2.8 VEL
11.2S-C-02	Focus	5/5/2011	10:14:55 AM	12914590.59	294003.0441	835.9372	1.2936	2.5156	2.8287	0.3	0.6	3.2	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand		
11.2S-C-03	Focus	5/5/2011	10:20:08 AM	12914700.26	294075.1248	836.9937	0.0236	0.0423	0.0484	1.5	0.4	0.5	None	None	None	Island	>3 ft/sec		Downstrm Island	None	Sand & Silt		1.0 VEL
11.2S-C-04	Focus	5/5/2011	10:21:54 AM	12914770.43	294089.7056	836.8019	0.0284	0.0573	0.0639	2.6	0.4	0.6	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand		1.9 VEL
11.24T-C-01	Transect	5/5/2011	10:30:12 AM	12914572.91	293896.1504	833.1176	1.123	2.0823	2.3658	0.7	0.4	1.1	None	None	None	Left	<1ft/sec		Point Bar	<5%	Silt over Sand		0.2 VEL
11.24T-C-02	Transect	5/5/2011	10:35:14 AM	12914537.08	293941.264	836.9576	0.0355	0.0706	0.0791	2.5	0.3	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		1.4 VEL
11.24T-C-03	Transect	5/5/2011	10:38:04 AM	12914509.72	294003.3374	836.4527	0.1661	0.5009	0.5278	4.0	0.2	0.2	None	None	None	Right	1-3 ft/sec		Cut Bank	<5%	Sand & Gravel		2.5 VEL
MP 11.25-11.50																							
11.28T-B-01	Transect	5/4/2011	2:54:02 PM	12914310.75	293899.5787	853.8885	3.3722	5.7929	6.7029	1.5	0.1	0.3	None	None	None	Left	<1ft/sec		Cut Bank	5%-25%	Sand & Silt		BAD POS/WT 56.4
11.28T-B-02	Transect	5/4/2011	3:03:10 PM	12914397.44	293964.8325	831.9219	3.0628	4.0855	5.1061	1.0	0.3	0.7	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		BAD POS
11.28T-D-01	Transect	5/7/2011	4:25:49 PM	12914374.47	293935.8047	836.6789	0.1514	0.145	0.2097	3.5	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
11.34T-B-01	Transect	5/4/2011	3:15:02 PM	12914306.13	294238.8179	839.7135	2.2755	4.1285	4.7141	2.0	0.2	1.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Silt		
11.34T-B-02	Transect	5/4/2011	3:25:41 PM	12914533.63	294205.4889	837.317	1.7354	2.9507	3.4232	0.3	0.7	0.8	None	None	None	Right	<1ft/sec		Other-Comments	None	Sand		BCK CHNL OUTLT
11.34T-D-01	Transect	5/7/2011	4:28:52 PM	12914499.08	294226.5557	834.4747	2.5601	2.6485	3.6835	1.1	0.1	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
11.4S-B-01	Focus	5/4/2011	3:40:33 PM	12914448.74	294371.9819	831.8721	2.0878	3.9493	4.4672	1.7	0.5	0.5	None	None	None	Island	<1ft/sec		Downstrm Island	25%-50%	Sand & Silt		
11.4S-B-02	Focus	5/4/2011	3:49:00 PM	12914382.17	294296.8242	853.9806	3.9828	7.6338	8.6103	1.7	0.2	0.2	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		BAD POS
11.4S-B-03	Focus	5/4/2011	3:54:18 PM	12914461.62	294317.9688	850.1349	4.7579	8.9523	10.1381	1.3	0.1	0.2	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		BAD POS/ BN ISLE
11.4S-B-04	Focus	5/4/2011	3:59:34 PM	12914489.71	294338.8772	850.9675	2.2801	3.8662	4.4884	1.5	0.0	0.0	None	None	None	Island	<1ft/sec		Downstrm Island		Sand & Gravel		INVALID
11.4S-B-05	Focus	5/4/2011	4:04:45 PM	12914500.98	294327.666	837.6313	1.794	3.3734	3.8208	1.8	0.1	0.2	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand & Gravel		
11.4S-B-06	Focus	5/4/2011	4:19:01 PM	12914400.59	294438.1299	851.4795	2.0606	4.1612	4.6434	1.1	0.1	1.1	None	None	None	Left	<1ft/sec		Cut Bank	None	Soft Sediment	LT SHEEN ON BANK	
11.4S-B-07	Focus	5/4/2011	4:25:57 PM	12914326.11	294430.3533	879.8572	3.9013	10.2969	11.0112	0.2	0.4	1.9	None	None	None	Left	No		Cut Bank	None	Soft Sediment		BAD POS
11.4S-B-08	Focus	5/4/2011	4:33:33 PM	12914295.61	294320.6878	843.7667	3.5002	10.4503	11.0209	1.2	0.8	1.6	None	None	None	Left	<1ft/sec		Cut Bank	5%-25%	Sand & Silt		BAD POS
11.4S-B-09	Focus	5/4/2011	4:47:36 PM	12914501.84	294461.4784	837.2924	3.9562	8.7839	9.6337	1.2	0.3	0.6	None	None	None	Left	<1ft/sec		Cut Bank	None	Sand & Silt		BAD POS
11.41T-B-01	Transect	5/4/2011	4:42:01 PM	12914486.73	294512.2934	884.764	18.8515	25.1883	31.4616	0.2	0.2	1.0	None	None	None	Left	<1ft/sec		Cut Bank	25%-50%	Soft Sediment		BCK EDDY/ BADPOS
11.41T-B-02	Transect	5/5/2011	9:16:00 AM	12914712.39	294487.594	835.7692	4.736	2.2507	5.2436	2.5	0.1	0.1	None	None	None	Right	<1ft/sec		Cut Bank	5%-25%	Sand		BHND BM/BADPOS
11.41T-D-01	Transect	5/7/2011	4:16:12 PM	12914618.72	294413.5704	834.2564	1.521	3.1631	3.5098	1.9	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		
11.44T-B-01	Transect	5/4/2011	4:53:55 PM	12914581.08	294702.4514	844.6655	3.1036	6.522	7.2228	1.4	0.5	0.7	None	None	None	Left	<1ft/sec		Point Bar	None	Sand & Silt		BAD POS
11.44T-B-02	Transect	5/5/2011	9:25:00 AM	12914765.41	294651.9667	830.0782	6.2669	5.4755	8.322	1.4	0.2	0.3	None	None	None	Right	No		Cut Bank	None	Soft Sediment		BHD BM/BADPOS
11.44T-B-03	Transect	5/5/2011	9:41:00 AM	12914669.21	294620.6701	831.7487	9.6372	12.2684	15.6009	2.8	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		BAD POS
MP 11.50-11.75																							
11.51T-D-01	Transect	5/7/2011	3:56:58 PM	12914609.63	295034.919	840.588	2.038	5.0668	5.4613	3.4	0.4	0.5	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
11.51T-D-02	Transect	5/7/2011	4:03:08 PM	12914561.1	295008.2729	836.1228	0.038	0.1087	0.1151	3.0	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
11.51T-D-03	Transect	5/7/2011	4:07:46 PM	12914524.76	294965.1027	840.34	2.0231	3.1299	3.7268	2.0	0.2	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		
11.53T-B-01	Transect	5/5/2011	9:52:00 AM	12914494	295140.9585	846.2322	2.5675	3.7232	4.5226	1.7	0.3	0.5	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Soft Sediment		BAD POS
11.53T-B-02	Transect	5/5/2011	10:06:00 AM	12914518.41	295031.1154	835.2109	0.062	0.0749	0.0973	2.6	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
11.53T-B-03	Transect	5/5/2011	10:24:00 AM	12914409.19	295019.8903	835.365	0.144	0.4174	0.4415	0.5	0.3	1.5	None	None	None	Left	<1ft/sec		Point Bar	None	Soft Sediment		
11.6T-B-01	Transect	5/5/2011	11:00:00 AM	12914258.66	295334.9048	835.4254	0.0951	0.1423	0.1712	0.9	0.4	0.5	None	None	None	Left	<1ft/sec		Cut Bank	None	Soft Sediment		
11.6T-D-03	Transect	5/7/2011	3:33:56 PM	12914348.77	295265.2443	837.1334	2.1084	3.1018	3.7505	2.8	0.1	0.2	Light	Light	Few	Right	>3 ft/sec		Mid-Channel	None	Sand & Gravel		AQUADAMATPOINT
11.63T-B-01	Transect	5/5/2011	11:13:00 AM	12914297.4	295440.4344	861.7215	4.489	8.3991	9.5234	1.2	0.3	0.3	None	None	None	Left	<1ft/sec		Point Bar	None	Other-Comments		SI/SA OVR GR
11.63T-B-02	Transect	5/5/2011	11:33:00 AM	12914454.92	295441.9856	828.9309	4.8583	7.308	8.7755	1.2	0.1	0.1	None	None	None	Right	<1ft/sec		Cut Bank	None	Silt over Sand		BAD POS
11.67T-B-01	Transect	5/5/2011	11:17:00 AM	12914180.04	295579.5867	834.7066	0.0665	0.0892	0.1113	1.0	0.2	0.3	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
11.67T-D-01	Transect	5/7/2011	3:17:28 PM	12914250.54	295645.8835	833.8341	2.7733	2.2586	3.5767	3.5	0.0	0.0	None	None	None	Right	>3 ft/sec		Cut Bank	None	Gravel & Larger		
11.67T-D-02	Transect	5/7/2011	3:19:31 PM	12914249.74	295621.088	835.7818	1.5207	1.8432	2.3895	3.5	0.3	0.3	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
11.67T-D-03	Transect	5/7/2011	3:22:00 PM	12914263.29	295589.5369	832.4534	3.4122	3.0475	4.575	0.9	0.1	0.2	None	None	None	Left	>3 ft/sec		Point Bar	None	Sand & Gravel		
11.75R1-B-03	Focus	5/5/2011	10:44:00 AM	12914441.03	295333.5147	835.0706	0.0925	0.2362	0.2537	0.9	0.4	0.4	None	None	None	Right	No		Other-Comments	None	Soft Sediment	SEE LEADER	BACK EDDY
11.75R1-B-04	Focus	5/5/2011	10:49:00 AM	12914381.82	295317.3094	835.5453	0.0367	0.0738	0.0824	2.0	0.1	0.2	None	None	None	Right	1-3 ft/sec		Other-Comments	None	Sand & Gravel	DELINIATION	OUT OF BOOM
11.75R1-D-01	Focus	5/7/2011	2:58:34 PM	12914476.81	295350.5374	843.533	3.7535	4.1795	5.6176	0.5	0.5	0.6	Light	Light	Few	Right	No		Other-Comments	None	Organic		BACCHAN
11.75R1-D-02	Focus	5/7/2011	3:04:55 PM	12914517.08	295311.6965	841.49	3.4287	4.2121	5.4312	0.3	0.3	0.7	None	None	None	Right	No		Other-Comments	None	Organic		BACCHAN
11.75S-B-01	Focus	5/5/2011	1:58:00 PM	12913973.02	295442.7249	834.8503	0.0604	0.12	0.1344	0.4	0.9	0.9	None	None	None	Left			Point Bar	5%-25%	Soft Sediment		
11.75S-B-02	Focus	5/5/2011	2:25:00 PM	12913950.27	295368.0847	849.5395	8.1741	12.3885	14.8422	0.6	0.3	0.7	None	None	None	Left	<1ft/sec		Point Bar	None	Silt over Sand		BAD POS
11.75S-B-03	Focus	5/5/2011	2:08:00 PM	12913948.24	295279.4273	834.8143	0.0406	0.0851	0.0943	0.7	1.1	1.1	Light	Light	None	Left	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		TIRB ENTR
11.75S-D-04	Focus	5/7/2011	2:43:11 PM	12913922.8	295290.1287	838.4298	2.1797	4.0583	4.6066	0.4	0.4	0.6	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand		
11.75S-D-05	Focus	5/7/2011	2:46:50 PM	12913935	295360.0438	837.4395	1.5174	2.6657	3.0673	0.6	0.0	0.8	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		
11.75T-B-01	Transect	5/5/2011	1:54:00 PM	12913958.35	295398.5314	846.442	2.0177	4.0458	4.521	0.2	0.7	0.8	None	None	None	Left	<1ft/sec		Point Bar		Soft Sediment		
MP 11.75-12.00																							
11.77T-C-01	Transect	5/11/2011	3:30:55 PM	12913914.88	295230.831	834.5206	0.1124	0.1039	0.1531	0.7	0.8	2.1	Heavy	Heavy	Many	Left	<1ft/sec	<1 ft/sec	Cut Bank	None	Soft Sediment		POINT BAR UPSTREM AT MOUTH OF TRIB
11.77T-C-02	Transect	5/11/2011	3:37:11 PM	12913831.47	295358.5041	835.1338	0.0729	0.1704	0.1853	2.7	0.0	0.2	None	None	None	Right	1-3 ft/sec	1-3 ft/sec	Point Bar	None	Sand & Gravel		FAST CURRENT
11.77T-C-03	Transect	5/11/2011	3:49:08 PM	12913864.31	295298.8388	834.7656	0.0262	0.0848	0.0888	2.3	0.1	0.1	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand & Gravel		
11.77T-C-04	Transect	5/11/2011	3:50:34 PM	12913898.6	295266.3202	834.6975	0.0491	0.1626	0.1699	1.9	0.2	0.6	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel		
11.77T-C-05	Transect	5/11/2011	3:52:12 PM	12913922.24	295307.7381	834.4849	0.0244	0.0827	0.0862	0.4	0.6	0.8	None	None	None	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand	HEAVY AREA EXTEND UPSTREAM INSIDE OF POINTBAR	
11.77T-C-06	Transect	5/11/2011	3:57:44 PM	12913854.55	295195.9096	842.9926	1.7351	6.1013	6.3432	3.9	0.8	0.9	Light	Light	Few	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Silt over Sand	SHEEN FLOATING BY	INSIDE OF POINTBR
11.8N-B-01	Focus	5/5/2011	2:49:00 PM	12913821.26	295373.5537	841.0742	10.5639	10.3536	14.7917	0.8	0.3	0.4	None	None	None	Right	1-3 ft/sec		Other-Comments	None	Sand & Gravel		SEL CHL BAD POS
11.8N-B-02	Focus	5/5/2011	2:55:00 PM	12913692.66	295272.6373	834.4394	4.7138	5.5947	7.3158	0.7	0.2	0.2	Light	Light	None	Right	<1ft/sec		Point Bar	None	Silt over Sand		BAD POS
11.8N-B-03	Focus	5/5/2011	2:58:00 PM	12913688.72	295275.1907	835.0754	3.1667	3.8289	4.9687	0.1	0.4	0.4	Light	Light	None	Right	<1ft/sec		Point Bar	<5%	Sand & Silt		
11.8N-B-04	Focus	5/5/2011	3:15:00 PM	12913714.18	295233.2149	831.3318	4.6011	6.3335	7.8284	0.9	0.4	0.4	Light	Light	Few	Island	<1ft/sec		Downstrm Island	<5%	Silt over Sand		BAD POS
11.8N-B-05	Focus	5/5/2011	3:33:00 PM	12913616.27	295293.0806	862.1196	13.1927	23.3314	26.803	1.9	0.9	1.0	None	None	None	Island	1-3 ft/sec		Downstrm Island	5%-25%	Silt over Sand		BAD POS
11.81T-B-03	Transect	5/5/2011	4:22:00 PM	12913801.98	295172.5483	837.2614	5.2187	5.1335	7.3203	3.5	0.5	0.7	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand over Silt	BAD POS	DWN TREE MVD UPS
11.81T-C-01	Transect	5/11/2011	12:24:38 PM	12913676.49	295185.2398	835.0597	1.2821	1.5419	2.0053	7.4	0.2	0.2	None	None	None	Left	>3 ft/sec	>3 ft/sec	Mid-Channel	None	Gravel & Larger		TOO FAST, TOO HARD
11.81T-B-02	Transect	5/5/2011	3:20:00 PM	12913685.33	295234.0681	834.3354	0.0342	0.0487	0.0595	1.6	0.3	2.0	Light	Light	None	Island	1-3 ft/sec		Downstrm Island	5%-25%	Soft Sediment		
11.81T-B-04	Transect	5/5/2011	3:02:00 PM	12913677.49	295277.3637	836.7943	4.2289	5.2772	6.7626	0.5	0.2	0.3	None	None	None	Right	1-3 ft/sec		Point Bar	<5%	Sand & Gravel		BAD POS
11.88T-B-01	Transect	5/5/2011	3:43:00 PM	12913471.69	295474.0873	838.4531	2.4693	3.4423	4.2363	1.1	0.2	0.2	Light	Light	None	Right	<1ft/sec		Point Bar	None	Sand & Silt		
11.88T-B-02	Transect	5/5/2011	4:02:00 PM	12913360.7	295502.7078	860.1554	17.5042	26.4766	31.7397	1.1	0.2	0.2	None	None	None	Left	<1ft/sec		Point Bar	None	Sand & Silt		BAD POS
11.88T-D-03	Transect	5/7/2011	2:27:40 PM	12913395.9	295393.1656	834.3161	0.0732	0.1316	0.1506	2.1	0.8	0.9	None	None	None	Left	>3 ft/sec		Cut Bank	None	Sand & Silt		
11.88T-D-04	Transect	5/7/2011	2:35:22 PM	12913443.36	295419.0019	834.2635	0.0823	0.1497	0.1709	2.5	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
11.94T-B-01	Transect	5/5/2011	3:53:00 PM	12913233.32	295617.4354	843.1126	6.7046	9.8603	11.9239	1.3	0.1	0.1	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		
11.94T-D-02	Transect	5/7/2011	2:19:10 PM	12913291.93	295648.4209	835.1466	1.6652	2.5839	3.074	3.5	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
11.94T-D-03	Transect	5/7/2011	2:15:16 PM	12913298.63	295683.165	834.7582	2.0174	3.867	4.3616	1.2	0.1	0.1	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Gravel & Larger		
MP 12.00-12.25																							
12.02T-C-01	Transect	5/11/2011	4:13:58 PM	12912864.39	295533.028	842.9628	1.9707	5.5743	5.9124	1.7	0.2	0.3	None	None	None	Left	1-3 ft/sec	1-3 ft/sec	Point Bar	None	Sand & Gravel		POOR GPS SIGNAL, TOO FAST

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
12.02T-C-02	Transect	5/11/2011	4:15:09 PM	12912863.62	295570.7439	833.1961	0.0564	0.1553	0.1653	3.1	0.0	0.0				Center	>3 ft/sec	>3 ft/sec	Mid-Channel	None	Sand & Silt		NO OBSERVATION, CURRENT TOO FAST, HARD BOTTOM
12.02T-C-03	Transect	5/11/2011	4:15:49 PM	12912861.05	295616.263	832.9914	0.083	0.1489	0.1704	1.9	0.1	0.1	None	None	None	Right	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel		HARD BOTTOM, FAST CURRENT
RAYBRIDGE-C-01	Bridge	5/5/2011	11:11:26 AM	12912776.86	295557.821	838.4312	1.5083	2.7644	3.1491	1.1	0.1	0.1	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Gravel	UPSTREAM	0.1 VEL
RAYBRIDGE-C-02	Bridge	5/5/2011	11:15:16 AM	12912720.28	295517.3983	829.9904	4.3563	11.3615	12.1681	0.9	0.2	0.3	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Gravel	DNSTR OF STRUC	0.7 VEL
RAYBRIDGE-C-03	Bridge	5/5/2011	11:18:22 AM	12912683.93	295478.3219	833.0782	1.7651	2.3582	2.9456	1.2	0.1	0.1	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Sand & Gravel	DWNSTR	1.6 VEL
RAYBRIDGE-C-04	Bridge	5/5/2011	11:23:31 AM	12912713.33	295396.1412	833.0156	0.0815	0.1903	0.207	1.5	0.2	0.2	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel	DWNSTR	2.0 VEL
RAYBRIDGE-C-05	Bridge	5/5/2011	11:30:15 AM	12912785.45	295450.7746	834.7748	2.0163	4.0661	4.5386	1.5	0.4	0.5	None	None	None	Left	<1ft/sec		Point Bar	None	Sand	UPSTR	0.6 VEL
12.08T-C-01	Transect	5/5/2011	12:23:35 PM	12912685.6	295335.3996	833.1076	0.0435	0.0603	0.0744	1.6	0.2	0.3	None	None	None	Left	1-3 ft/sec		Point Bar	None	Sand & Gravel		2.8 VEL
12.08T-C-02	Transect	5/5/2011	12:29:51 PM	12912650.35	295341.8586	833.0367	0.0617	0.0748	0.097	3.2	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		4.6 VEL
12.08T-C-03	Transect	5/5/2011	12:32:51 PM	12912611.57	295343.0326	838.8203	3.4245	5.3609	6.3614	2.1	0.0	0.0	None	None	None	Right	1-3 ft/sec		Cut Bank	None	Gravel & Larger		2.2 VEL
12.16T-C-01	Transect	5/5/2011	12:39:36 PM	12912711.98	294942.8231	832.7998	0.0648	0.1045	0.123	2.2	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		1.9 VEL
12.16T-C-02	Transect	5/5/2011	12:43:17 PM	12912668.74	294927.4174	833.0811	0.0396	0.0556	0.0683	2.9	0.1	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		4.0 VEL
12.16T-C-03	Transect	5/5/2011	12:45:48 PM	12912620.74	294919.2519	832.9915	1.8122	2.6779	3.2335	1.8	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		1.8 VEL
12.22T-C-01	Transect	5/5/2011	12:55:39 PM	12912662.59	294533.6301	833.8781	1.5503	2.4591	2.907	1.7	0.2	0.3	None	None	None	Left	<1ft/sec		Cut Bank	None	Sand & Gravel		0.8 VEL
12.22T-C-02	Transect	5/5/2011	12:58:44 PM	12912634.92	294563.2468	832.8301	0.0506	0.0761	0.0914	3.8	0.3	0.3	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		4.0 VEL
12.22T-C-03	Transect	5/5/2011	1:01:15 PM	12912601.11	294613.233	832.7424	0.0691	0.1055	0.1261	1.8	0.1	0.1	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Gravel		1.1 VEL
MP 12.25-12.50																							
12.29T-C-01	Transect	5/5/2011	1:05:33 PM	12912440.25	294357.8869	831.5931	1.4407	2.025	2.4852	1.6	0.1	0.4	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		0 VEL
12.29T-C-02	Transect	5/5/2011	1:10:59 PM	12912408.49	294395.6548	831.9711	0.1626	0.2619	0.3082	3.7	0.0	0.2	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Sand & Gravel		5 VEL
12.29T-C-03	Transect	5/5/2011	1:13:33 PM	12912374.08	294454.2007	832.3661	0.0525	0.0774	0.0935	0.9	1.0	1.2	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.2 VEL
12.29T-C-04	Transect	5/5/2011	1:24:28 PM	12912369.15	294454.3146	832.3653	0.0388	0.0583	0.0701	1.1	0.3	0.6	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		0 VEL
12.35S-C-01	Focus	5/5/2011	1:35:07 PM	12912293.28	294240.5569	832.3459	0.0325	0.0564	0.0651	1.0	0.9	1.1	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		1.5 VEL
12.35S-C-02	Focus	5/5/2011	1:39:13 PM	12912259.67	294220.3325	834.0562	1.4919	2.6186	3.0138	1.4	0.1	0.7	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		1.5 VEL
12.35S-C-03	Focus	5/5/2011	1:44:00 PM	12912213.9	294193.1189	836.5699	1.2142	2.3647	2.6582	0.9	0.4	0.6	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.8 VEL
12.35S-C-04	Focus	5/5/2011	1:49:09 PM	12912320.53	294277.3588	832.4568	0.0484	0.0885	0.1009	0.2	0.4	1.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		0.9 VEL
12.35T-C-01	Transect	5/5/2011	2:02:07 PM	12912127.67	294178.9652	834.8791	1.6611	3.1187	3.5335	1.8	0.1	0.4	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand		1.7 VEL
12.35T-C-02	Transect	5/5/2011	2:06:04 PM	12912095.45	294202.4518	831.528	0.8579	1.6787	1.8852	3.3	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		3.8 VEL
12.35T-C-03	Transect	5/5/2011	2:08:52 PM	12912071.88	294256.0762	836.5687	1.1051	2.1642	2.43	1.5	0.2	0.2	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		1.0 VEL
12.40T-C-01	Transect	5/5/2011	2:16:18 PM	12911967.52	294015.8872	825.2622	3.8965	7.0383	8.0449	3.8	0.1	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.6 VEL
12.40T-C-02	Transect	5/5/2011	2:36:07 PM	12911927.26	294075.7775	831.2837	1.1274	1.6375	1.9881	2.3	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		3.3 VEL
12.40T-C-03	Transect	5/5/2011	2:39:11 PM	12911914.98	294169.8181	833.5553	2.6794	3.9039	4.7349	1.1	0.5	0.7	None	None	None	Right	>3 ft/sec		Strt Channel Edg	None	Silt over Sand		0.6 VEL
12.45T-C-01	Transect	5/5/2011	2:28:42 PM	12911754.5	293889.7281	831.9194	0.0751	0.082	0.1112	1.7	0.2	0.7	None	None	None	Left	<1ft/sec		Point Bar	None	Sand & Gravel		0.6 VEL
12.45T-C-02	Transect	5/5/2011	2:44:13 PM	12911738.8	293928.8452	832.0226	0.0377	0.0549	0.0666	3.6	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		5 VEL
12.45T-C-03	Transect	5/5/2011	2:46:29 PM	12911720.68	293955.1394	832.4447	0.2547	0.176	0.3096	1.1	0.6	0.7	None	None	None	Right	1-3 ft/sec		Downstrm Island	None	Sand & Gravel		1.9 VEL
12.5-C-01	Focus	5/6/2011	9:13:36 AM	12911073.95	293552.4885	830.7044	0.0377	0.045	0.0586	1.4	0.9	1.0	None	None	None	Left	<1ft/sec		Oxbow	None	Silt over Sand		0.2 FPS
12.5-C-02	Focus	5/6/2011	9:26:19 AM	12911213.5	293683.9697	830.8817	0.0566	0.0683	0.0886	2.6	0.5	0.6	None	None	None	Left	<1ft/sec		Oxbow	<5%	Silt over Sand		1.0 FPS
12.5-C-03	Focus	5/6/2011	9:32:25 AM	12911048.75	293597.2383	830.8158	0.0553	0.061	0.0823	1.2	0.5	0.6	None	None	None	Center	<1ft/sec		Oxbow	None	Sand		1.1 FPS
12.5-C-04	Focus	5/6/2011	9:36:19 AM	12911058.93	293674.9224	830.6081	0.0723	0.1414	0.1588	0.5	0.5	0.7	Light	Light	Few	Right	No		Oxbow	<5%	Silt over Sand		NO FLOW OBS
12.5-C-05	Focus	5/6/2011	9:43:32 AM	12911195.95	293720.8364	830.8007	0.0323	0.043	0.0538	0.9	0.7	0.9	None	None	None	Center	1-3 ft/sec		Oxbow	None	Sand		2.2 FPS
12.5-C-06	Focus	5/6/2011	9:47:05 AM	12911227.55	293899.2375	830.7342	0.0523	0.0801	0.0957	0.8	0.9	0.9	Heavy	Heavy	Many	Right	<1ft/sec		Oxbow	<5%	Silt over Sand	PHOTO 54-55	0.2 FPS
12.5-C-07	Focus	5/6/2011	9:54:49 AM	12911182.9	293823.8847	830.6763	0.0373	0.0563	0.0675	0.8	0.3	0.4	None	None	None	Right	<1ft/sec		Oxbow	None	Sand & Gravel		0.5 FPS
12.5-C-08	Focus	5/6/2011	10:10:54 AM	12911253.45	293862.4288	830.8363	0.0327	0.0598	0.0681	1.0	0.3	0.5	None	None	None	Center	<1ft/sec		Oxbow	<5%	Silt over Sand		0.2 FPS
12.5-C-09	Focus	5/6/2011	10:16:01 AM	12911269.67	293934.6869	830.7517	0.0331	0.063	0.0711	0.7	0.6	0.7	Light	Light	Few	Right	<1ft/sec		Oxbow	<5%	Silt over Sand		0.2 FPS
12.5-C-10	Focus	5/6/2011	10:24:20 AM	12911284.42	294025.5102	830.4721	0.0567	0.1225	0.135	0.6	0.7	0.7	None	None	None	Right	<1ft/sec		Oxbow	None	Silt over Sand		0.8 FPS
12.5-C-11	Focus	5/6/2011	10:30:48 AM	12911371.21	294034.298	830.8288	0.0517	0.1097	0.1213	0.9	0.4	0.5	Heavy	Heavy	Many	Left	<1ft/sec		Oxbow	None	Silt over Sand		0.4 FPS
12.5-C-12	Focus	5/6/2011	10:37:24 AM	12911361.29	294034.6152	830.7074	0.0537	0.1166	0.1283	1.6	0.2	0.2	None	None	None	Left	1-3 ft/sec		Oxbow	None	Gravel & Larger	PHOTOS 56-57	2.5 FPS
12.5-C-13	Focus	5/6/2011	10:42:42 AM	12911375.48	293983.2308	830.8926	0.0338	0.0751	0.0824	0.4	1.2	1.3	None	None	None	Left	<1ft/sec		Oxbow	<5%	Silt over Sand		0.3 FPS
12.5-C-14	Focus	5/6/2011	10:48:26 AM	12911286.07	294196.6636	831.2735	0.0761	0.2108	0.2241	2.2	0.2	0.3	None	None	None	Right	1-3 ft/sec		Oxbow	None	Sand & Gravel		2.1 FPS
12.5-C-15	Focus	5/6/2011	10:53:10 AM	12911348.96	294201.5004	831.0541	0.0686	0.1393	0.1553	0.4	0.2	0.4	None	None	None	Left	<1ft/sec		Oxbow	None	Sand		0.2 FPS
12.5-C-16	Focus	5/6/2011	10:57:42 AM	12911436.72	294290.3735	831.1362	0.0668	0.1088	0.1277	0.5	0.4	0.5	None	None	None	Right	<1ft/sec		Oxbow	None	Sand		0.6 FPS
12.5-C-17	Focus	5/6/2011	11:05:35 AM	12911509.48	294274.0144	831.2071	0.0437	0.079	0.0903	0.9	0.3	0.4	None	None	None	Center	1-3 ft/sec		Oxbow	None	Sand		2.3 VEL
12.5-C-18	Focus	5/6/2011	11:10:37 AM	12911624.35	294239.8007	831.5432	0.0772	0.203	0.2172	0.6	0.3	0.4	None	None	None	Right	<1ft/sec		Oxbow	None	Silt over Sand		0.2 FPS
MP 12.50-12.75																							
12.58T-C-01	Transect	5/5/2011	3:10:05 PM	12911304.31	293340.3752	835.4202	2.3349	3.9228	4.5652	2.1	0.2	0.3	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		1.5 VEL
12.58T-C-02	Transect	5/5/2011	3:14:52 PM	12911309.74	293376.9408	829.3227	2.6663	3.598	4.4782	3.8	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		2.8 VEL
12.58T-C-03	Transect	5/5/2011	3:17:35 PM	12911294.36	293397.7928	830.5215	0.9071	1.72	1.9446	2.0	0.7	0.9	None	None	None	Right	1-3 ft/sec		Point Bar	None	Sand & Silt		2.5 VEL
12.63T-C-01	Transect	5/5/2011	3:28:06 PM	12911048.59	293397.9745	831.112	0.0435	0.0748	0.0865	0.6	0.0	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		NO FLOW
12.63T-C-02	Transect	5/5/2011	3:34:37 PM	12911049.65	293456.7551	831.0049	0.0303	0.0583	0.0657	2.8	0.0	0.1	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		4.3 FPS
12.63T-C-03	Transect	5/5/2011	3:38:29 PM	12911040.98	293517.4898	830.886	0.0324	0.06	0.0682	1.3	0.6	1.5	None	None	None	Right	No		Strt Channel Edg	None	Soft Sediment		NO FLOW
12.7N-C-01	Focus	5/5/2011	3:55:03 PM	12910660.8	293409.3585	830.8236	0.0459	0.0934	0.1041	2.8	0.2	0.6	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.4 FPS
12.7N-C-02	Focus	5/5/2011	4:00:12 PM	12910638.15	293399.1935	827.3436	0.0294	0.0565	0.0636	2.5	0.6	0.8	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.4 FPS
12.7N-C-03	Focus	5/5/2011	4:04:05 PM	12910611.22	293378.4428	830.7744	0.0394	0.0822	0.0911	3.5	0.3	0.4	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		1.0 FPS
12.7N-C-04	Focus	5/5/2011	4:08:00 PM	12910563.43	293325.5469	832.0101	0.9974	2.1384	2.3596	4.0	0.4	0.4	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand	TIE TO 12.72T	0.8 FPS
12.7N-D-05	Focus	5/7/2011	1:56:54 PM	12910694.36	293434.525	830.781	0.0331	0.0638	0.0719	1.0	0.4	0.8	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
12.7S-C-01	Focus	5/6/2011	11:31:10 AM	12910808.96	293369.1732	830.6049	0.0385	0.0591	0.0706	1.6	1.1	1.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.2 FPS
12.7S-C-02	Focus	5/6/2011	11:35:50 AM	12910786.02	293360.5885	833.0738	1.4071	1.8169	2.2981	1.7	0.6	0.8	None	None	None	Left	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		0.3 FPS
12.7S-C-03	Focus	5/6/2011	11:39:58 AM	12910860.52	293376.8626	828.8695	2.652	4.2286	4.9914	0.3	0.4	0.6	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.2 FPS
12.72T-C-02	Transect	5/5/2011	4:12:24 PM	12910595.93	293299.7185	830.7406	0.0298	0.1076	0.1116	3.5	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		2.9 FPS
12.72T-C-03	Transect	5/5/2011	4:16:08 PM	12910628.37	293221.2487	830.8685	0.0352	0.1263	0.1311	1.7	0.4	1.0	None	None	None	Left	1-3 ft/sec		Point Bar	None	Silt over Sand		1.9 FPS
MP 12.75-13.00																							
12.76T-C-01	Transect	5/6/2011	12:16:41 PM	12910576.77	293101.042	822.627	9.6285	10.9794	14.6033	1.4	0.9	2.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	<5%	Soft Sediment		0.6 FPS
12.76T-C-02	Transect	5/6/2011	12:20:35 PM	12910525.21	293109.64	830.4771	0.0873	0.1259	0.1532	2.7	0.2	0.2	None	None	None	Center	1-3 ft/sec		Strt Channel Edg	None	Gravel & Larger		3.0 FPS
12.76T-C-03	Transect	5/6/2011	12:23:28 PM	12910481.35	293160.18	830.652	0.1415	0.1859	0.2336	1.4	0.2	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		2.2 FPS
12.82T-C-01	Transect	5/11/2011	11:46:31 AM	12910321.6	292886.4347	835.3307	2.2888	3.9453	4.5612	1.8	0.1	0.2	None	None	None	Left	1-3 ft/sec	1-3 ft/sec	Strt Channel Edg	None	Sand & Gravel		
12.82T-C-01	Transect	5/6/2011	12:29:48 PM	12910224.89	292821.2628	825.9351	7.9564	7.7527	11.109	1.6	0.4	0.7	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		1.4 FPS
12.82T-C-02	Transect	5/11/2011	11:53:01 AM	12910276.77	292939.4287	829.9034	0.1355	0.2074	0.2477	1.6	0.1	0.1	Light	Light	Few	Right	1-3 ft/sec	1-3 ft/sec	Strt Channel Edg	<5%	Sand & Gravel		
12.82T-C-02	Transect	5/6/2011	12:34:48 PM	12910171.75	292845.678	830.3785	0.1381	0.1943	0.2383	3.0	0.3	0.4	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		3.3 FPS
12.82T-C-03	Transect	5/11/2011	11:56:25 AM	12910293.37	292906.6275	830.4074	0.0546	0.0791	0.0961	3.7	0.0	0.0				Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand & Gravel		TOO FAST, HARD BOTTOM
12.82T-C-03	Transect	5/6/2011	12:36:49 PM	12910163.7	292894.3282	830.2376	0.2018	0.2909	0.3541	2.4	0.1	0.2	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		1.9 FPS
12.91T-C.03	Transect	5/6/2011	12:50:19 PM	12909884.85	292674.2458	828.8616	1.3135	1.6149	2.0817	1.6	0.5	0.5	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		1.3 FPS
12.91T-C-01	Transect	5/6/2011	12:42:15 PM	12909975.33	292634.7979	831.4051	3.5484	2.6192	4.4104	1.5	0.2	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		2.6 FPS
12.91T-C-02	Transect	5/6/2011	12:48:08 PM	12909922.8	292638.5563	830.1525	0.0396	0.0401	0.0563	3.1	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		LESS THAN 3
MP 13.00-13.25																							
13.01T-C-01	Transect	5/6/2011	12:57:07 PM	12909555.38	292385.2967	829.6902	0.0269	0.0359	0.0448	3.2	0.1	0.3	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		1.5 FPS
13.01T-C-02	Transect	5/6/2011	1:00:33 PM	12909598.54	292341.9341	829.7014	0.044	0.0606	0.0749	2.9	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		3.0 FPS
13.01T-C-03	Transect	5/6/2011	1:02:41 PM	12909629.76	292301.6352	829.953	1.0497	1.4301	1.774	2.2	0.1	0.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		1.5 FPS
13.09T-C.03	Transect	5/6/2011	1:21:46 PM	12909149.72	292210.625	829.5497	0.0577	0.0983	0.1139	2.0	0.7	0.9	None	None	None	Right	<1ft/sec		Oxbow	None	Soft Sediment		1.9 FPS
13.09T-C-01	Transect	5/6/2011	1:13:39 PM	12909144.2	292076.9566	829.8456	0.0543	0.0835	0.0996	0.8	0.6	0.7	None	None	None	Left	<1ft/sec		Strt Channel Edg	<5%	Soft Sediment		LOW VEL
13.09T-C-02	Transect	5/6/2011	1:19:42 PM	12909106.72	292137.4802	829.5485	0.0464	0.0667	0.0812	2.9	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		3.0 FPS
13.14T-C-01	Transect	5/11/2011	11:31:24 AM	12908869.73	292158.3224	829.1826	0.0557	0.081	0.0983	2.5	0.3	0.5	Light	Light	Few	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Silt over Sand		
13.14T-C-02	Transect	5/11/2011	11:36:25 AM	12908893.38	292253.2497	829.4162	0.0496	0.0725	0.0879	1.4	1.2	2.5	None	None	None	Right	1-3 ft/sec	1-3 ft/sec	Point Bar	None	Soft Sediment		
13.14T-C-02	Transect	5/6/2011	1:57:23 PM	12908824.11	292248.892	829.4762	0.0456	0.0858	0.0971	4.0	0.0	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		3.4 FPS
13.14T-C-03	Transect	5/11/2011	11:39:23 AM	12908884.2	292200.5816	829.2286	0.0617	0.0917	0.1105	3.1	0.2	0.2	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand & Gravel		
13.14T-C-03	Transect	5/6/2011	1:59:18 PM	12908793.99	292211.5058	829.517	0.0586	0.0876	0.1054	2.7	0.3	0.3	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel		2.0 FPS
13.15N-C-01	Focus	5/6/2011	1:29:34 PM	12909063.69	292199.9476	829.7895	0.0284	0.046	0.054	2.3	1.0	1.5	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		1.7 FPS
13.15N-C-02	Focus	5/6/2011	1:37:21 PM	12909015.85	292200.4948	829.4317	0.0378	0.0652	0.0754	2.7	0.3	0.6	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Silt over Sand		
13.15N-C-03	Focus	5/6/2011	1:44:02 PM	12908941.45	292223.4225	829.4734	0.0291	0.0531	0.0605	2.1	0.4	0.9	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		1.6 FPS
13.15N-C-04	Focus	5/6/2011	1:47:12 PM	12908849.17	292279.8212	829.5231	0.043	0.0691	0.0814	2.3	0.4	0.9	None	None	None	Right	1-3 ft/sec		Strt Channel Edg	None	Sand		1.5 FPS
13.15N-C-05	Focus	5/6/2011	2:02:31 PM	12908751.27	292388.8904	829.4446	0.0318	0.0559	0.0643	2.0	0.4	0.6	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.5 FPS
13.20T-C-01	Transect	5/6/2011	2:14:14 PM	12908685.4	292504.6346	829.2202	0.0934	0.1138	0.1472	2.4	1.3	1.5	None	None	None	Right	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		0.6 FPS
13.20T-C-02	Transect	5/6/2011	2:18:16 PM	12908620.64	292481.722	829.5869	0.0308	0.0489	0.0578	3.3	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		2.3 FPS
13.20T-C-03	Transect	5/6/2011	2:20:18 PM	12908565.25	292446.9828	829.6294	0.0478	0.0777	0.0912	1.0	0.4	1.0	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.6 FPS
13.24T-C-01	Transect	5/7/2011	9:16:49 AM	12908763.14	292764.0787	829.3398	0.0478	0.0715	0.086	0.4	1.0	3.1	None	None	None	Right	No		Cut Bank	25%-50%	Soft Sediment		NO FLOW
13.24T-C-02	Transect	5/7/2011	9:26:28 AM	12908728.04	292737.1811	829.2088	0.0763	0.1019	0.1273	0.5	1.0	3.0	None	None	None	Right	No		Cut Bank	25%-50%	Soft Sediment		NO FLOW
13.24T-C-03	Transect	5/7/2011	9:32:25 AM	12908676.92	292698.8842	829.4227	0.0417	0.0526	0.0671	1.7	1.0	2.6	Moderate	Moderate	Common	Right	No		Cut Bank	25%-50%	Soft Sediment		NO FLOW
13.24T-C-04	Transect	5/7/2011	10:20:59 AM	12908563.43	292625.1181	829.435	0.0228	0.0424	0.0482	3.1	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		2.0 FPS
13.24T-C-05	Transect	5/7/2011	10:26:15 AM	12908525.13	292517.9616	829.3252	0.041	0.0857	0.095	2.1	0.7	0.8	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	<5%	Sand & Gravel		1.1 FPS
13.25N-C-01	Focus	5/7/2011	9:47:15 AM	12908675.61	292646.3228	829.2455	0.0461	0.0621	0.0773	1.0	0.6	2.0	Light	Light	None	Right	No		Strt Channel Edg	5%-25%	Soft Sediment		NO FLOW
13.25N-C-02	Focus	5/7/2011	9:54:33 AM	12908650.34	292691.8329	829.3659	0.0342	0.0551	0.0648	1.2	1.1	2.8	Moderate	Moderate	Common	Right	<1ft/sec		Cut Bank	5%-25%	Soft Sediment		NO FLOW
13.25N-C-03	Focus	5/7/2011	9:59:06 AM	12908593.54	292719.2193	820.3229	4.3632	6.2355	7.6104	3.6	0.4	0.6	None	None	None	Right	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		0.6 FPS
13.25N-C-04	Focus	5/7/2011	10:17:22 AM	12908606.52	292692.3511	829.3744	0.0373	0.0953	0.1023	2.2	0.7	0.9	None	None	None	Right	<1ft/sec		Mid-Channel	None	Silt over Sand		0.9 FPS
MP 13.25-13.50																							
13.38T-C-01	Transect	5/7/2011	10:40:13 AM	12907957.4	292523.1886	830.3869	2.8288	4.2903	5.1389	3.1	0.2	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		0.6 FPS
13.38T-C-02	Transect	5/7/2011	10:59:51 AM	12908014.7	292489.7976	829.0776	0.0329	0.0647	0.0726	3.1	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		3.1 FPS
13.38T-C-03	Transect	5/7/2011	11:01:48 AM	12908071.46	292480.7622	828.9784	0.0226	0.0438	0.0493	1.4	1.3	1.8	None	None	None	Left	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		1.0 FPS
13.45S-C-01	Focus	5/11/2011	10:33:15 AM	12907672.23	292150.4051	828.6677	0.0487	0.0918	0.1039	3.4	0.3	0.3	None	None	None	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel	SOME OIL IS COMING FROM UPSTREAM	SOME SED

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
13.45S-C-01	Focus	5/7/2011	12:39:33 PM	12907888.8	292212.9998	828.9961	0.0442	0.0561	0.0715	3.3	0.7	1.7	None	None	None	Center	<1ft/sec		Mid-Channel	<5%	Soft Sediment		1.3 FPS
13.45S-C-02	Focus	5/11/2011	10:42:05 AM	12907728.25	292139.8793	828.722	0.0463	0.0896	0.1009	3.5	0.1	0.2	Light	Light	Few	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel		
13.45S-C-03	Focus	5/11/2011	10:47:46 AM	12907765.33	292133.2824	828.7936	0.0635	0.121	0.1366	3.5	0.3	0.4	Light	Light	None	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Silt over Sand		
13.45S-C-04	Focus	5/11/2011	10:53:59 AM	12907851.93	292158.5708	828.7396	0.0386	0.0697	0.0797	2.7	0.0	0.0	Light	Light	Few	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel		
13.45S-C-05	Focus	5/11/2011	10:58:57 AM	12907849.79	292205.9241	828.6931	0.0307	0.053	0.0613	2.6	0.2	0.3	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand & Gravel		
13.45S-C-06	Focus	5/11/2011	11:02:17 AM	12907818.89	292209.6073	828.5769	0.0342	0.0571	0.0665	2.9	0.2	0.2	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand		
13.45S-C-07	Focus	5/11/2011	11:04:47 AM	12907769.77	292179.3159	828.6117	0.0351	0.0573	0.0672	4.5	0.1	0.2	Light	Light	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand & Gravel		
13.45S-C-08	Focus	5/11/2011	11:06:55 AM	12907699.1	292181.2976	828.7622	0.0456	0.0505	0.0681	3.7	0.1	0.1	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand		
13.45T-C-01	Transect	5/7/2011	12:28:38 PM	12907821.15	292141.7373	829.1679	0.0449	0.0542	0.0704	3.5	0.2	0.9	None	None	None	Left	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		0.7 FPS
13.45T-C-02	Transect	5/7/2011	12:36:21 PM	12907785.92	292209.5599	829.013	0.0262	0.032	0.0413	2.9	0.1	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		2.5 FPS
13.45T-C-03	Transect	5/7/2011	12:53:54 PM	12907788.17	292304.5683	831.6917	1.412	2.1631	2.5832	1.6	0.4	1.7	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	<5%	Soft Sediment		0.1 FPS
13.5L1-C-01	Focus	5/7/2011	11:20:06 AM	12908035.16	292337.3526	828.8185	0.101	0.123	0.1592	0.8	0.8	1.6	None	None	None	Left	<1ft/sec		Cut Bank	<5%	Soft Sediment		
13.5L1-C-02	Focus	5/7/2011	11:23:35 AM	12908032.02	292379.0381	829.0157	0.0342	0.0543	0.0642	0.5	0.4	1.1	None	None	None	Left	<1ft/sec		Cut Bank		Soft Sediment		SHEEN ON BANK
13.5L1-C-03	Focus	5/7/2011	11:28:14 AM	12907925.27	292190.1306	828.9342	0.0321	0.0457	0.0558	3.3	1.2	1.5	Heavy	Heavy	Many	Left	<1ft/sec		Cut Bank	None	Silt over Sand		PHOTO 61-64
13.5L1-C-04	Focus	5/7/2011	11:36:41 AM	12908001.94	292260.8193	829.0595	0.0609	0.0909	0.1094	2.0	1.0	1.4	Moderate	Moderate	Common	Left	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		0.2 FPS
13.5L1-C-06	Focus	5/7/2011	12:49:46 PM	12907957.71	292273.6401	821.4293	8.4624	11.7553	14.4844	3.0	0.3	0.5	None	None	None	Center	<1ft/sec		Mid-Channel	None	Soft Sediment		1.0 FPS
MP 13.50-13.75																							
13.52T-C-01	Transect	5/7/2011	1:05:56 PM	12907460.95	292175.5771	828.9194	0.061	0.099	0.1163	3.0	0.7	0.8	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		0.8 FPS
13.52T-C-02	Transect	5/7/2011	1:41:09 PM	12907505.8	292126.1454	828.8061	0.03	0.0593	0.0664	3.9	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Gravel & Larger		1.5 FPS
13.52T-C-03	Transect	5/7/2011	1:44:39 PM	12907549.29	292106.952	831.4683	1.2825	2.385	2.708	2.0	0.4	1.3	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		0.6 FP
13.59T-D-01	Transect	5/7/2011	11:56:42 AM	12907116.67	291841.9759	829.381	4.2287	7.2039	8.3533	0.8	0.7	1.0	Moderate	Moderate	Common	Right	<1ft/sec		Other-Comments	None	Soft Sediment	PHOTO2.3.4	BACKCHAN
13.59T-D-02	Transect	5/7/2011	12:14:07 PM	12907127.25	291815.6703	838.4359	4.2416	5.4232	6.885	1.0	0.5	0.6	Heavy	Moderate	Many	Right	<1ft/sec		Other-Comments	None	Soft Sediment		BACKCHAN
13.59T-D-03	Transect	5/7/2011	12:31:50 PM	12907156.93	291863.5507	838.7402	3.4445	4.4928	5.6613	0.5	0.3	0.6	Light	Light	Few	Right	No		Other-Comments	<5%	Soft Sediment		BACKCHAN
13.59T-D-04	Transect	5/7/2011	1:09:21 PM	12907379.86	291836.9126	832.3494	1.9716	3.0925	3.6676	1.5	0.6	0.6	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
13.59T-D-05	Transect	5/7/2011	1:11:54 PM	12907340.88	291865.3966	829.7848	0.8499	1.3309	1.5791	4.5	0.0	0.1	None	None	None	Center	<1ft/sec		Mid-Channel	None	Gravel & Larger		
13.6N-D-01	Focus	5/7/2011	11:41:19 AM	12907206.35	291781.2257	829.2136	0.2432	0.4174	0.4831	0.6	0.3	0.4	None	None	None	Right	<1ft/sec		Other-Comments	None	Soft Sediment		BACKCHAN
13.6N-D-02	Focus	5/7/2011	11:44:10 AM	12907207.39	291809.6335	828.6747	0.0368	0.0672	0.0766	1.0	1.0	1.4	None	None	None	Right	<1ft/sec		Other-Comments	None	Soft Sediment		BACKCHAN
13.6N-D-03	Focus	5/7/2011	11:47:40 AM	12907190.51	291837.9566	824.556	2.4115	4.5245	5.127	1.5	0.9	1.3	Light	Light	Few	Right	<1ft/sec		Other-Comments	None	Soft Sediment		BACKCHAN
13.6S-D-01	Focus	5/7/2011	11:16:29 AM	12907332.05	291624.3732	826.7869	11.2001	16.7591	20.1571	2.8	0.3	0.4	None	None	None	Left	1-3 ft/sec		Downstrm Island	None	Silt over Sand		
13.6S-D-02	Focus	5/7/2011	11:22:34 AM	12907406.46	291647.3857	828.3546	3.0474	4.9926	5.8492	2.3	0.5	1.1	Light	Light	Few	Left	1-3 ft/sec		Cut Bank	None	Sand & Silt		
13.6S-D-03	Focus	5/7/2011	11:28:15 AM	12907400.61	291684.6494	865.9444	3.8317	6.5163	7.5594	0.8	0.7	0.8	Light	Light	Few	Left	<1ft/sec		Cut Bank	None	Silt over Sand		
13.6S-D-04	Focus	5/7/2011	11:33:12 AM	12907364.12	291709.7783	829.133	0.0797	0.1453	0.1658	2.1	0.1	0.2	None	None	None	Left	<1ft/sec		Cut Bank	None	Sand & Gravel		
13.62T-D-01	Transect	5/7/2011	10:54:18 AM	12907222.33	291642.3067	828.5871	4.249	4.6335	6.2868	1.9	0.2	0.2	None	None	None	Right	<1ft/sec		Point Bar	None	Gravel & Larger		
13.62T-D-02	Transect	5/7/2011	11:05:02 AM	12907257.73	291599.3465	828.72	0.0267	0.0598	0.0655	2.7	0.0	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel		
13.62T-D-03	Transect	5/7/2011	11:08:40 AM	12907313.43	291575.2201	836.2446	1.9141	3.7023	4.1678	3.0	0.4	0.5	Light	Light	Few	Left	<1ft/sec		Downstrm Island	None	Silt over Sand		
13.69T-D-01	Transect	5/7/2011	10:28:15 AM	12906976.06	291591.9265	831.4638	1.635	3.3622	3.7387	2.0	0.2	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand		
13.69T-D-02	Transect	5/7/2011	10:30:09 AM	12906964.49	291580.3069	828.3974	0.0662	0.1924	0.2035	4.0	0.4	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		
13.69T-D-03	Transect	5/7/2011	10:36:02 AM	12906971.82	291541.2528	828.1263	0.0629	0.1252	0.1401	1.4	0.0	0.1	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand		
13.7N-D-01	Focus	5/7/2011	9:31:54 AM	12906813.86	291706.5108	827.898	3.3841	5.0019	6.0392	0.8	1.1	1.2	Moderate	Light	Common	Right	No		Other-Comments		Organic	PHOTO1	BACKCHAN
13.7N-D-02	Focus	5/7/2011	9:38:22 AM	12906817.75	291689.4534	828.4675	1.5614	3.7834	4.0929	1.2	1.8	2.2	Moderate	Light	Common	Right	No		Other-Comments	5%-25%	Organic	SMALLGLOBULES	REFUSE AND TRASH
13.7N-D-03	Focus	5/7/2011	9:46:23 AM	12906808.26	291655.6084	825.3823	2.5701	5.0721	5.6861	1.0	1.1	1.3	Heavy	Moderate	Many	Right	No		Other-Comments	25%-50%	Organic	SMALLGLOBULES	REFUSE AND TRASH
13.7N-D-04	Focus	5/7/2011	9:47:33 AM	12906820.69	291652.2645	831.0195	2.4138	4.8281	5.3978	1.0	0.4	0.6	Light	Light	Few	Right	No		Other-Comments	25%-50%	Organic		REFUSE AND TRASH
13.7N-D-05	Focus	5/7/2011	9:55:30 AM	12906842.38	291700.1443	835.2427	2.3263	4.3592	4.9411	1.3	1.7	2.1	Light	Light	Few	Right	No		Other-Comments	25%-50%	Organic		REFUSE AND TRASH
13.7N-D-06	Focus	5/7/2011	10:00:34 AM	12906775.81	291696.4369	830.0247	2.4431	3.285	4.0939	0.6	0.6	1.5	Heavy	Moderate	Many	Right	No		Other-Comments	>75%	Organic	SMALLGLOBULES	REFUSE AND TRASH
13.7N-D-07	Focus	5/7/2011	10:03:01 AM	12906768.93	291680.7117	826.9496	0.0963	0.2102	0.2312	5.0	1.4	1.9	Light	Light	Few	Right	No		Other-Comments	50%-75%	Organic	SMALLGLOBULES	REFUSE AND TRASH
13.7N-D-08	Focus	5/7/2011	10:06:31 AM	12906735.79	291676.3593	830.5304	2.2317	3.9679	4.5524	0.3	1.3	1.6	Light	Light	Few	Right	No		Other-Comments	5%-25%	Organic	1GLOBULE	ENTOFBACKCHAN
13.7N-D-09	Focus	5/7/2011	10:15:51 AM	12906741.09	291663.7352	829.1544	0.1894	0.586	0.6158	0.9	1.0	1.2	None	None	None	Right	No		Other-Comments	<5%	Organic		ENTOFBACKCHAN
13.75BR-D-01	Bridge	5/6/2011	2:13:26 PM	12906504.77	291658.5668	827.0008	1.4381	2.8759	3.2154	2.8	0.4	0.6	None	None	None	Right	<1ft/sec		Strt Channel Edg		Silt over Sand		
13.75BR-D-02	Bridge	5/6/2011	2:12:35 PM	12906579.59	291660.8557	828.1686	0.0708	0.1157	0.1356	1.2	0.5	0.6	None	None	None	Right	<1ft/sec		Strt Channel Edg		Silt over Sand		
13.75BR-D-03	Bridge	5/6/2011	2:18:44 PM	12906521.17	291589.5842	826.8623	0.1975	0.2404	0.3111	2.2	0.2	0.2	None	None	None	Left	1-3 ft/sec		Strt Channel Edg		Sand & Gravel		RIPRAP
13.75BR-D-04	Bridge	5/6/2011	2:23:04 PM	12906640.95	291564.138	828.0959	0.0863	0.1078	0.1381	2.0	0.6	0.7	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg		Silt over Sand		
MP 13.75-14.00																							
13.79T-D-01	Transect	5/6/2011	1:47:38 PM	12906397.69	291668.1619	829.2278	6.5357	9.1723	11.2626	2.9	0.2	0.2	None	None	None	Right	<1ft/sec		Strt Channel Edg		Sand		
13.79T-D-02	Transect	5/6/2011	1:51:05 PM	12906393.07	291635.0651	833.3141	2.9096	4.9787	5.7666	3.5	0.0	0.1	None	None	None	Center	1-3 ft/sec		Mid-Channel		Gravel & Larger		2.9FTSEC
13.79T-D-03	Transect	5/6/2011	1:54:47 PM	12906373.54	291602.1803	832.3022	1.9841	3.5885	4.1005	2.8	0.4	0.6	None	None	None	Left	<1ft/sec		Strt Channel Edg		Silt over Sand		
13.80S-A-01	Focus	5/6/2011	10:58:48 AM	12905851.07	291915.2953	832.8933	3.3315	6.0182	6.8788	0.7	0.3	0.7	None	None	None	Left	No		Downstrm Island	None	Soft Sediment		.6FPS
13.80S-A-02	Focus	5/6/2011	11:05:51 AM	12905805.96	291985.9471	831.7357	1.7028	3.5267	3.9163	2.5	0.5	0.6	None	None	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand	U BDY	1.0FPS
13.80S-A-03	Focus	5/6/2011	11:18:51 AM	12905791.54	292026.6265	854.2557	3.7046	6.4756	7.4604	1.1	0.1	0.2	Moderate	Light	Common	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		
13.80S-A-04	Focus	5/6/2011	11:24:07 AM	12905781.76	292073.33	827.1856	0.0903	0.1455	0.1713	1.3	0.4	0.7	None	None	None	Island	<1ft/sec		Downstrm Island	None	Soft Sediment		0.2FPS
13.80S-A-05	Focus	5/6/2011	11:27:50 AM	12905813.4	292073.6874	831.5165	5.2227	7.8899	9.4619	1.1	0.4	0.6	Light	Light	Few	Island	No		Downstrm Island	None	Soft Sediment		CHNL SEPERATN ISL
13.80S-A-06	Focus	5/6/2011	12:54:14 PM	12905685.42	292219.9483	827.1551	0.0512	0.0655	0.0832	0.8	0.4	0.7	Moderate	Light	Common	Left	No		Point Bar	None	Soft Sediment		
13.80S-A-07	Focus	5/6/2011	1:00:59 PM	12905634.25	292290.6134	827.1292	0.055	0.0765	0.0942	0.3	0.5	0.7	Light	Light	Few	Left	No		Point Bar	<5%	Soft Sediment	HVY SHEEN ON BANK	0.0FPS D BDY
13.80S-A-08	Focus	5/6/2011	1:06:52 PM	12905690.42	292221.787	827.1481	0.0436	0.0589	0.0732	2.0	0.8	1.0	Heavy	Heavy	Many	Left	No		Point Bar	None	Soft Sediment		
13.80S-A-09	Focus	5/6/2011	1:13:28 PM	12905702.82	292228.0003	827.4765	0.0429	0.0627	0.076	3.6	1.1	1.3	Heavy	Moderate	Many	Center	<1ft/sec		Mid-Channel	None	Soft Sediment		.2FPS
13.80S-A-10	Focus	5/6/2011	1:19:00 PM	12905729.24	292188.8954	826.8042	0.0798	0.1416	0.1626	4.2	0.6	1.0	Heavy	Moderate	Many	Center	<1ft/sec		Mid-Channel	None	Soft Sediment		
13.80S-A-11	Focus	5/6/2011	1:23:37 PM	12905746.15	292121.9429	826.958	0.062	0.1013	0.1187	2.2	0.3	0.6	Moderate	Light	Common	Center	<1ft/sec		Mid-Channel	None	Soft Sediment		.5FPS
13.80S-A-12	Focus	5/6/2011	1:32:19 PM	12905644.99	292367.9022	826.3558	0.9189	1.5857	1.8327	1.7	1.1	2.2	Moderate	Moderate	Common	Center	<1ft/sec		Mid-Channel	None	Soft Sediment		
13.80S-A-13	Focus	5/6/2011	1:38:11 PM	12905605.9	292451.3372	827.1591	0.028	0.0503	0.0575	3.7	0.1	0.1	None	None	None	Center	1-3 ft/sec		Point Bar	None	Silt over Sand	D BDY	
13.80S-A-14	Focus	5/6/2011	1:48:06 PM	12905892.71	291874.4087	827.2933	0.0522	0.0959	0.1092	4.2	0.0	0.0	None	None	None	Left	<1ft/sec		Point Bar	None	Sand & Gravel	U BDY	1.3FPS
13.8S-B-01	Focus	5/11/2011	2:52:21 PM	12905621.64	292352.4489	817.0437	2.3331	3.0256	3.8207	2.6	0.4	1.2	Moderate	Moderate	Few	Left	<1ft/sec	<1 ft/sec	Backwater	None	Soft Sediment		
13.85N-C-01	Focus	5/11/2011	9:29:44 AM	12906218.82	291642.9312	837.0236	3.3241	7.1847	7.9164	2.0	0.2	0.2	None	None	None	Island	>3 ft/sec	1-3 ft/sec	Downstrm Island	None	Sand & Gravel		SAND GRAVEL, HIGH FLOW, VELOCITY METER MALFUNCTION
13.85N-C-02	Focus	5/11/2011	9:36:37 AM	12906173.71	291599.0284	828.1101	1.8678	3.4344	3.9095	0.7	0.5	0.9	Moderate	Moderate	Common	Island	1-3 ft/sec	1-3 ft/sec	Downstrm Island	<5%	Silt over Sand		VELOCITY METER MALFUNCTION, LOCATION AT CONFLUENCE WITH MAIN CHANNEL
13.85N-C-03	Focus	5/11/2011	9:43:11 AM	12906187.64	291581.1354	834.5695	1.8509	3.0771	3.5908	0.6	0.4	0.5	Moderate	Moderate	Common	Island	1-3 ft/sec	1-3 ft/sec	Downstrm Island	None	Silt over Sand		MAIN CHANNEL BY ISLAND, PHOTO 337-341
13.85N-C-04	Focus	5/11/2011	9:46:26 AM	12906208.12	291570.1474	831.1443	2.3231	5.0327	5.5431	0.2	1.6	1.7	None	None	None	Island	1-3 ft/sec	1-3 ft/sec	Downstrm Island	None	Silt over Sand		
13.85N-C-05	Focus	5/11/2011	9:49:22 AM	12906179.12	291610.2355	831.5972	1.6726	3.3136	3.7118	1.3	0.9	1.0	Light	Light	Few	Island	1-3 ft/sec	1-3 ft/sec	Downstrm Island	<5%	Silt over Sand		BY ISLAND
13.85N-C-06	Focus	5/11/2011	10:00:37 AM	12906135.4	291586.907	827.6516	0.0317	0.0631	0.0706	3.0	0.0	0.1	None	None	None	Center	>3 ft/sec	>3 ft/sec	Mid-Channel	None	Sand & Gravel		TOO FAST
13.85N-C-07	Focus	5/11/2011	10:07:23 AM	12906103.78	291598.8612	827.3855	0.0383	0.083	0.0914	3.4	0.4	0.5	None	None	None	Right	1-3 ft/sec	1-3 ft/sec	Strt Channel Edg	None	Silt over Sand	HIGH FLOW	DOWNSTREAM AT CHANNEL MOUTH
13.85N-C-08	Focus	5/11/2011	10:12:26 AM	12906158.32	291644.2503	829.9131	1.6074	3.3253	3.6934	4.1	0.0	0.0				Center	>3 ft/sec	>3 ft/sec	Mid-Channel	None	Gravel & Larger		TOO FAST, HARD BOTTOM
13.85N-C-09	Focus	5/11/2011	10:16:45 AM	12906265.35	291687.6346	827.0904	0.8946	2.1861	2.362	3.7	0.0	0.0	None	None	None	Center	>3 ft/sec	>3 ft/sec	Mid-Channel	None	Sand & Gravel		TOO FAST, HARD BOTTOM
13.85N-C-10	Focus	5/11/2011	10:22:27 AM	12906314.45	291663.6495	820.925	1.8153	4.8076	5.1389	3.1	0.0	0.0				Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand & Gravel		TOO FAST, HARD BOTTOM
13.85N-D-01	Focus	5/6/2011	12:55:41 PM	12906250.83	291612.4315	763.9116	5.3027	7.7246	9.3695	1.6	0.4	0.6	None	None	None	Island	<1ft/sec		Cut Bank		Organic		
13.85N-D-02	Focus	5/6/2011	12:58:41 PM	12906243.53	291648.2162	838.4083	3.5159	3.6415	5.0618	2.2	0.3	0.4	None	None	None	Island	1-3 ft/sec		Cut Bank		Sand		
13.85N-D-03	Focus	5/6/2011	1:15:26 PM	12906199	291696.8399	843.1671	5.8021	6.5537	8.753	3.5	0.5	0.6	None	None	None	Right	1-3 ft/sec		Strt Channel Edg		Soft Sediment		
13.85N-D-05	Focus	5/6/2011	1:41:21 PM	12906363.68	291700.5515	820.3957	10.4037	13.2701	16.8621	2.1	0.4	0.5	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg		Soft Sediment		
13.87T-A-01	Transect	5/6/2011	9:04:07 AM	12906066.56	291624.1116	828.422	0.4774	0.7155	0.8602	2.2	0.1	0.1	None	None	None	Right	<1ft/sec		Point Bar	None	Sand		1.3FPS
13.87T-A-02	Transect	5/6/2011	9:09:14 AM	12906074.09	291574.8427	827.8483	0.0459	0.0422	0.0623	4.5	0.0	0.0	None	None	None	Center	>3 ft/sec		Mid-Channel	None	Gravel & Larger		5FOS
13.87T-A-03	Transect	5/6/2011	9:11:30 AM	12906078.87	291554.6994	827.9807	0.0515	0.0757	0.0916	4.5	0.0	0.0	None	None	None	Left	1-3 ft/sec		Cut Bank	None	Sand & Gravel		3FPS
13.95N-A-01	Focus	5/6/2011	9:27:29 AM	12906016.66	291978.2147	839.7442	2.9543	3.4772	4.5628	0.9	0.2	0.3	Moderate	Light	Common	Right	No		Strt Channel Edg	None	Soft Sediment		0FPS
13.95N-A-02	Focus	5/6/2011	9:32:26 AM	12906010.84	292017.4133	833.7158	3.0748	3.5899	4.7267	0.8	0.2	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Silt over Sand	D BDY	.2FPS
13.95N-A-03	Focus	5/6/2011	9:37:17 AM	12905998.19	292058.4726	827.2892	0.0408	0.0459	0.0614	1.2	0.2	0.3	Light	Light	Few	Right	No		Strt Channel Edg	None	Soft Sediment		0.1
13.95N-A-04	Focus	5/6/2011	9:44:47 AM	12906010.2	291939.1547	828.154	2.8525	3.8644	4.8031	0.7	0.3	0.4	Light	Light	Few	Right	No		Strt Channel Edg	None	Soft Sediment		.1FPS
13.95N-A-05	Focus	5/6/2011	9:49:55 AM	12906004.57	291915.5173	827.4551	0.0983	0.0786	0.1259	0.5	0.3	0.6	Light	Light	None	Right	No		Point Bar	None	Soft Sediment	U BDY	.1FPS
13.95N-A-06	Focus	5/6/2011	9:54:09 AM	12905996.36	291921.5744	827.4169	0.1047	0.1462	0.1798	0.8	0.5	0.8	Heavy	Heavy	Common	Right	No		Point Bar	None	Soft Sediment		.1FPS
13.95N-A-07	Focus	5/6/2011	10:00:11 AM	12905977.43	291903.6928	827.6715	0.1413	0.1825	0.2308	0.9	0.5	0.9	Light	Light	Few	Right	1-3 ft/sec		Cut Bank	None	Sand & Silt	LAT BDY	
13.95N-A-08	Focus	5/6/2011	10:08:09 AM	12905991.15	291856.7035	827.3871	0.039	0.0865	0.0949	1.3	0.4	0.7	Light	Light	None	Right	<1ft/sec		Point Bar	None	Silt over Sand		.6FPS
13.95T-A-01	Transect	5/6/2011	10:16:20 AM	12905994	292047.5825	827.4395	0.0432	0.0675	0.0801	1.2	0.5	0.9	Moderate	Moderate	Few	Right	No		Point Bar	None	Soft Sediment		0.5
13.95T-A-02	Transect	5/6/2011	10:22:26 AM	12906006.12	292013.3498	836.3345	2.2888	4.12	4.713	1.0	0.1	0.1	Moderate	Light	Common	Right	No		Point Bar	None	Silt over Sand		.1FPS
13.95T-A-03	Transect	5/6/2011	10:28:16 AM	12905968.26	292044.6696	827.6597	0.0455	0.083	0.0946	1.8	0.2	0.8	Light	Light	Few	Right	<1ft/sec		Point Bar	None	Sand & Silt	LAT BDY	1.1FPS
13.95T-A-04	Transect	5/6/2011	10:32:20 AM	12905985.95	292072.7089	828.0879	0.3533	0.6083	0.7035	1.6	0.9	1.2	Light	Light	Few	Right	<1ft/sec		Point Bar	None	Soft Sediment	D BDY	.3FPS
13.95T-A-05	Transect	5/6/2011	10:40:37 AM	12905912.69	292023.5158	827.509	0.0406	0.0997	0.1076	2.6	0.1	0.1	None	None	None	Center	No		Mid-Channel	None	Gravel & Larger		
13.95T-A-06	Transect	5/6/2011	10:52:58 AM	12905826.89	291967.4449	825.0623	2.3733	5.4505	5.9448	1.9	0.2	0.6	None	None	None	Left	No		Downstrm Island	None	Silt over Sand	LEFT BANK UNACSBL	
MAINSTBR-A-01	Bridge	5/6/2011	1:55:33 PM	12905972.49	291645.5205	828.4258	2.0255	3.5453	4.0831	1.2	0.0	0.0	None	None	None	Left	No		Strt Channel Edg	None	Gravel & Larger		PUBLIC ACCESS
MP 14.00-14.25																							
14.09T-A-01	Transect	5/6/2011	2:32:10 PM	12905533.13	292663.2215	826.0241	1.9339	2.5817	3.2258	1.1	0.2	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		.7FPS
14.09T-A-02	Transect	5/6/2011	2:38:17 PM	12905456.74	292584.2602	824.478	1.645	2.516	3.006	1.7	0.4	0.5	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
14.09T-A-03	Transect	5/6/2011	2:41:28 PM	12905501.54	292622.944	827.315	0.0416	0.0566	0.0702	4.5	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand		2.3
14.20S-A-01	Focus	5/6/2011	2:48:34 PM	12905042.48	292611.7795	827.0496	0.0496	0.0771	0.0916	0.5	0.8	1.3	Light	Light	None	Left	No		Other-Comments	None	Soft Sediment		0.1FPS MARSH
14.20S-A-02	Focus	5/6/2011	2:53:22 PM	12905072.05	292570.7765	827.1153	0.0434	0.0698	0.0822	0.5	1.0	1.5	Moderate	Moderate	Common	Left	No		Other-Comments	5%-25%	Soft Sediment		
14.20S-A-03	Focus	5/6/2011	2:55:32 PM	12905032.92	292566.163	827.0096	0.0295	0.0475	0.0559	0.5	1.0	1.6	Light	Light	Few	Left	No		Other-Comments	5%-25%	Soft Sediment		MARSH
14.20S-A-04	Focus	5/6/2011	2:59:21 PM	12904986.65	292582.8801	826.8214	0.0276	0.0452	0.053	0.6	0.9	1.5	Light	None	Few	Left	No		Other-Comments	5%-25%	Soft Sediment		MARSH
14.20S-A-20	Focus	5/10/11	4:06:54 PM	12904930.38	292672.6788	827.011	0.0218	0.051	0.0555	1.3	0.7	1.1	None	None	None	Center	<1ft/sec		Mid-Channel	None	Silt over Sand	LAT BDY	1.1FPS
14.20S-A-21	Focus	5/10/11	4:10:28 PM	12905009.87	292668.3528	827.1501	0.0327	0.0857	0.0917	1.4	1.1	1.2	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt	LAT BDY	.9FPS
14.22T-A-01	Transect	5/7/2011	9:15:30 AM	12904823.52	292814.6459	827.1345	0.0851	0.1297	0.1552	1.2	0.8	1.4	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		.2FPS PHOTO201
14.22T-A-03	Transect	5/7/2011	9:48:18 AM	12904827.76	292791.803	826.902	0.0679	0.1007	0.1215	3.5	0.3	0.3	None	None	None	Right	No		Strt Channel Edg	None	Soft Sediment	LAT BDY	
14.22T-A-04	Transect	5/7/2011	10:06:36 AM	12904878.32	292820.4608	829.2481	1.6442	3.2068	3.6038	1.3	0.9	2.0	Heavy	Heavy	Common	Right	No		Strt Channel Edg	None	Soft Sediment		.2FPS
14.22T-A-05	Transect	5/7/2011	10:13:54 AM	12904944.05	292823.1154	826.9561	0.0858	0.1555	0.1776	1.1	0.7	0.9	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment	U BDY	

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
14.22T-A-06	Transect	5/7/2011	10:24:11 AM	12904755.81	292791.0367	826.6353	0.0535	0.1166	0.1283	3.6	0.3	0.4	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		0.4FPS
14.22T-A-07	Transect	5/7/2011	10:43:41 AM	12904677.33	292763.5485	826.7672	0.0529	0.1131	0.1248	2.2	0.5	0.8	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		.6FPS
14.22T-A-08	Transect	5/7/2011	10:53:59 AM	12904562.4	292761.5543	826.6133	0.1084	0.2198	0.2451	1.0	0.1	0.2	Moderate	Light	Common	Right	No		Strt Channel Edg	None	Soft Sediment		
14.22T-A-09	Transect	5/7/2011	10:59:46 AM	12904579.85	292733.8925	827.0631	0.048	0.0942	0.1057	2.2	1.1	1.4	Heavy	Heavy	Many	Right	<1ft/sec		Mid-Channel	None	Soft Sediment		.8PS
14.22T-A-10	Transect	5/7/2011	11:03:23 AM	12904564.77	292706.9269	826.7637	0.0246	0.0442	0.0506	3.3	0.1	0.2	None	None	None	Center	<1ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
14.22T-A-11	Transect	5/7/2011	11:12:00 AM	12904488.95	292727.8415	827.0019	0.0732	0.149	0.166	1.6	0.3	0.5	Moderate	Moderate	Common	Right	No		Point Bar	None	Sand & Silt		.2FPS
14.22T-A-12	Transect	5/7/2011	11:21:23 AM	12904851.68	292651.111	827.1302	0.0255	0.0379	0.0457	1.9	0.3	0.4	Heavy	Heavy	Many	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt		
14.22T-A-13	Transect	5/7/2011	11:24:29 AM	12904821.01	292710.3613	826.9418	0.0276	0.0406	0.0491	2.1	0.4	0.6	None	None	None	Center	<1ft/sec		Strt Channel Edg	None	Sand & Gravel		2.1FPS
14.22T-A-14	Transect	5/7/2011	1:13:07 PM	12904873.61	292656.2596	826.9317	0.022	0.0329	0.0396	2.5	0.2	0.4	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	None	Sand & Gravel	LAT BDY	
14.22T-A-15	Transect	5/7/2011	1:19:08 PM	12904921.48	292625.2613	826.8911	0.0268	0.0417	0.0496	1.7	0.8	1.2	Moderate	Light	Common	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		.8FPS
14.22T-A-16	Transect	5/7/2011	1:33:12 PM	12904957.61	292602.9536	826.9283	0.0373	0.0624	0.0727	1.7	0.8	1.1	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment	U BDY	
14.22T-A-17	Transect	5/7/2011	1:45:46 PM	12904761.46	292636.5901	823.1743	1.326	2.4238	2.7628	1.9	0.3	0.5	Moderate	Moderate	Few	Left	No		Strt Channel Edg	None	Soft Sediment		.6FPS
14.22T-A-18	Transect	5/7/2011	1:53:58 PM	12904690.44	292616.8339	826.8577	0.0892	0.1258	0.1542	1.5	0.3	0.4	Heavy	Heavy	Common	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
14.22T-A-19	Transect	5/7/2011	2:01:36 PM	12904621.99	292600.8037	826.7272	0.0321	0.0555	0.0641	1.1	0.8	1.5	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	None	Soft Sediment	D BDY	
14.22T-A-20	Transect	5/10/11	4:02:47 PM	12904858.46	292677.8149	826.8836	0.0289	0.0662	0.0722	2.5	0.5	0.7	None	None	None	Center	<1ft/sec		Mid-Channel	None	Sand	LAT BDY	1.4FPS
14.22T-A-21	Transect	5/10/11	4:19:04 PM	12904701.86	292652.5907	826.7811	0.0589	0.1471	0.1585	2.8	0.2	0.5	None	None	None	Center	<1ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	1.2FPS
CABR-B-04	Bridge	5/11/2011	2:23:44 PM	12905689.43	292488.18	825.2854	2.1225	3.2	3.84	4.1	0.2	0.2	Light	Light	None	Right	1-3 ft/sec	1-3 ft/sec	Other-Comments	None	Sand & Gravel		
CABR-B-05	Bridge	5/11/2011	2:33:29 PM	12905582.87	292457.1529	829.4398	2.139	3.1133	3.7773	1.6	1.0	1.3	Moderate	Moderate	Few	Left	<1ft/sec	<1 ft/sec	Other-Comments	None	Sand & Silt		
CABR-B-06	Bridge	5/11/2011	2:39:27 PM	12905587.86	292455.2596	826.434	2.1488	3.0677	3.7454	3.1	0.6	0.6	Light	Light	None	Left	<1ft/sec	<1 ft/sec	Mid-Channel	None	Sand & Silt		
COLUMBIABR-A-01	Bridge	5/6/2011	2:21:50 PM	12905616.5	292563.1659	820.0327	2.5859	2.6075	3.6723	2.5	0.1	0.2	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Sand & Gravel	OIL ON BANK ROCKS	
COLUMBIABR-A-02	Bridge	5/6/2011	2:25:08 PM	12905486.94	292551.0617	827.1971	0.0506	0.0829	0.0971	1.6	0.2	0.4	Light	Light	Few	Left	<1ft/sec		Mid-Channel	None	Soft Sediment		.3FPS
PARKPA-A-01	Launch	5/7/2011	8:48:35 AM	12905048.2	292820.5572	829.4226	2.2053	3.2328	3.9134	0.8	0.2	0.3	None	None	None	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		NO PA OBSERVED
PARKPA-A-02	Launch	5/7/2011	8:52:42 AM	12904970.59	292838.4648	848.2352	4.3638	5.9654	7.3911	0.8	0.3	0.4	Light	Light	Few	Right	<1ft/sec		Mid-Channel	None	Sand & Silt		
PARKPA-A-03	Launch	5/7/2011	8:57:25 AM	12905035.97	292828.5346	828.9195	2.8449	4.1017	4.9917	0.9	0.1	0.3	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		.2FPS NO PA
PARKPA-A-04	Launch	5/7/2011	9:04:23 AM	12905150.6	292805.8143	833.7954	3.235	3.9823	5.1307	0.5	0.1	0.7	Light	Light	Few	Right	No		Mid-Channel	None	Soft Sediment		0.0FPS NO PA OBS
MP 14.25-14.50																							
14.28T-A-01	Transect	5/7/2011	2:14:05 PM	12904487.86	292727.88	826.703	0.0526	0.1022	0.115	1.6	0.5	0.7	Moderate	Light	Common	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		.5FPS
14.28T-A-02	Transect	5/7/2011	2:24:19 PM	12904423.57	292699.6231	826.9498	0.0457	0.0823	0.0942	1.7	1.3	1.7	Heavy	Heavy	Many	Right	No						
14.28T-A-03	Transect	5/10/11	4:24:21 PM	12904520.72	292584.0204	826.9391	0.0243	0.0513	0.0567	1.7	0.6	1.0	Heavy	Heavy	Many	Left	<1ft/sec		Cut Bank	None	Soft Sediment		
14.28T-A-04	Transect	5/10/11	4:31:18 PM	12904574.18	292604.8408	826.8323	0.0531	0.094	0.108	1.8	0.8	1.5	None	None	None	Left	No		Cut Bank	None	Sand & Silt	U BDY	
14.28T-A-05	Transect	5/10/11	4:34:43 PM	12904536.33	292616.6912	826.8562	0.0374	0.0631	0.0734	2.9	0.5	0.8	Light	Light	Few	Center	<1ft/sec		Mid-Channel	None	Sand & Silt	LAT BDY	1.4FPS
14.28T-A-06	Transect	5/10/11	4:39:34 PM	12904465.2	292570.2634	826.9714	0.0339	0.0531	0.063	0.8	0.8	1.1	Light	Light	Few	Left	<1ft/sec		Cut Bank	None	Soft Sediment	D BDY	.7FPS
14.28T-A-07	Transect	5/10/11	4:42:35 PM	12904508.61	292648.1666	826.7843	0.0255	0.0385	0.0461	4.0	0.2	0.4	None	None	None	Center	<1ft/sec		Mid-Channel	None	Sand & Gravel		
14.33LG-B-01	Other	5/12/2011	11:23:12 AM	12904283.65	292589.8216	826.5985	0.0614	0.0917	0.1104	3.8	0.4	0.6	None	None	None	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand		
14.35LG-B-01	Other	5/12/2011	11:18:35 AM	12904119.06	292616.7319	826.5762	0.0597	0.0708	0.0926	4.1	0.5	0.5	None	None	None	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Gravel		BESIDE DWND TREE
14.35N-A-01	Focus	5/10/11	1:23:04 PM	12903599.96	292932.2723	826.6194	0.0609	0.1009	0.1179	1.6	0.4	0.5	Heavy	Heavy	Many	Right	<1ft/sec		Point Bar	None	Sand & Silt		.4FPS
14.35N-A-01	Focus	5/7/2011	9:36:56 AM	12904801.79	292809.1988	827.3641	0.0457	0.0992	0.1092	2.5	1.2	1.4	Heavy	Heavy	Many	Right	No		Strt Channel Edg	None	Soft Sediment		
14.35N-A-02	Focus	5/10/11	1:26:39 PM	12903593.25	292916.3827	826.6073	0.0326	0.0548	0.0638	3.2	0.2	0.3	Light	Light	Few	Right	1-3 ft/sec		Point Bar	None	Sand	LAT BDY	1.8FPS
14.35N-A-03	Focus	5/10/11	1:35:34 PM	12903781.21	292844.7395	826.8457	0.0287	0.0537	0.0609	3.0	0.1	0.2	None	None	None	Right	<1ft/sec		Point Bar	None	Sand & Gravel	LAT BDY	1.2FPS
14.35N-A-04	Focus	5/10/11	1:38:09 PM	12903775.99	292858.8086	826.6919	0.0409	0.076	0.0863	2.3	0.2	0.3	Moderate	Moderate	Few	Right	<1ft/sec		Point Bar	None	Soft Sediment		.8FPS
14.35N-A-05	Focus	5/10/11	1:42:56 PM	12903950.58	292816.2099	826.5805	0.0568	0.0973	0.1126	1.4	0.3	0.6	Heavy	Heavy	Common	Right	<1ft/sec		Point Bar	None	Soft Sediment		.8FPS
14.35N-A-06	Focus	5/10/11	1:48:03 PM	12904079.89	292779.8816	826.6277	0.0409	0.0714	0.0823	1.8	0.3	0.4	Heavy	Moderate	Many	Right	<1ft/sec		Point Bar	None	Sand & Silt		.4FPS
14.35N-A-07	Focus	5/10/11	1:56:03 PM	12904125.74	292718.4677	826.6131	0.0322	0.0542	0.0631	1.9	0.1	0.2	Light	Light	Few	Center	<1ft/sec		Mid-Channel	None	Sand & Silt	LAT BDY	
14.35N-A-08	Focus	5/10/11	2:02:52 PM	12904237.66	292710.7105	826.5534	0.0549	0.0851	0.1013	1.9	0.1	0.3	Heavy	Heavy	Many	Right	<1ft/sec		Point Bar	None	Silt over Sand		
14.35N-A-09	Focus	5/10/11	2:10:53 PM	12904357.8	292711.2516	826.6099	0.0473	0.0673	0.0822	1.3	0.5	1.0	Moderate	Light	Common	Right	<1ft/sec		Point Bar	None	Soft Sediment		
14.35N-A-10	Focus	5/10/11	2:15:35 PM	12904390.41	292661.7069	826.682	0.0251	0.0408	0.0479	4.3	0.2	0.3	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	
14.35N-A-11	Focus	5/10/11	2:41:26 PM	12904478.33	292742.7044	827.1283	1.3958	2.719	3.0564	0.8	0.2	0.6	Heavy	Heavy	Many	Right	<1ft/sec		Point Bar	None	Soft Sediment		0.1FPS
14.35N-A-12	Focus	5/10/11	2:47:05 PM	12904497.66	292701.5476	826.6758	0.0422	0.0716	0.0831	3.0	0.1	0.2	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand	LAT BDY	2.1FPS
14.40T-A-01	Transect	5/10/11	4:47:27 PM	12903970.24	292789.1582	826.7916	0.0323	0.0474	0.0574	1.7	0.6	1.3	Heavy	Heavy	Many	Right	<1ft/sec		Strt Channel Edg	None	Soft Sediment		.7FPS
14.40T-A-02	Transect	5/10/11	4:51:13 PM	12903965.57	292717.8146	826.7183	0.05	0.072	0.0877	2.3	0.5	0.7	None	None	None	Center	No		Mid-Channel	None	Sand & Gravel		1.4FPS
14.40T-A-03	Transect	5/10/11	4:55:58 PM	12903888.58	292638.4796	826.8311	0.0445	0.0555	0.0712	1.9	0.1	0.2	Moderate	Moderate	Common	Left	No		Cut Bank	None	Sand & Silt		
14.40T-A-04	Transect	5/10/11	4:58:10 PM	12903936.73	292623.2535	826.7083	0.0666	0.0713	0.0976	3.0	0.1	0.2	None	None	None	Left	No		Cut Bank	None	Sand & Silt	U BDY	
14.40T-A-05	Transect	5/10/11	5:01:52 PM	12903810.87	292671.6222	826.8975	0.0901	0.0912	0.1282	3.0	0.1	0.1	Light	Light	None	Left	<1ft/sec		Cut Bank	None	Sand & Silt	D BDY	
14.40T-A-06	Transect	5/10/11	5:04:39 PM	12903840.6	292688.728	826.8342	0.0356	0.0464	0.0585	3.5	0.1	0.1	Light	Light	None	Center	No		Mid-Channel	None	Sand & Gravel	LAT BDY	
14.43LG-B-01	Other	5/12/2011	11:13:07 AM	12903769.62	292783.5606	826.5709	0.059	0.0884	0.1063	2.2	0.7	0.8	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand		
14.44LG-B-01	Other	5/12/2011	11:09:38 AM	12903694.12	292755.6012	826.234	0.0692	0.1131	0.1326	3.7	0.3	0.4	Light	Light	None	Left	1-3 ft/sec	<1 ft/sec	Cut Bank	None	Sand		ABOVE DWNED TREE
14.46LG-B-01	Other	5/12/2011	11:03:28 AM	12903585.02	292774.925	818.5674	1.6251	2.665	3.1214	-99.0	-99.0	-99.0	Heavy	Heavy	Many	Left			Cut Bank				BEHIND DWN TREE
14.47LG-B-01	Other	5/12/2011	10:52:31 AM	12903515.58	292829.2878	822.456	1.7029	3.9187	4.2728	2.5	0.7	0.8	Moderate	Heavy	Few	Left	<1ft/sec	<1 ft/sec	Cut Bank	None	Soft Sediment	LIGHT SURFACE SH	
14.48LG-B-01	Other	5/12/2011	10:59:22 AM	12903511	292903.4299	826.3628	0.0758	0.1672	0.1836	4.5	0.3	0.4	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand		
14.49LG-B-01	Other	5/12/2011	10:47:18 AM	12903459.97	292898.7588	834.3129	2.1536	5.1183	5.5529	4.0	0.5	0.5	None	None	None	Left	1-3 ft/sec	1-3 ft/sec	Cut Bank	None	Sand & Silt		
MP 14.50-14.75																							
14.52LG-B-01	Other	5/12/2011	10:31:17 AM	12903346.69	293042.6907	826.3573	0.0617	0.1774	0.1879	4.0	0.5	0.6	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand & Gravel		
14.60S-A-01	Focus	5/7/2011	3:23:44 PM	12903166.47	293228.1417	826.8111	0.0509	0.0762	0.0916	4.3	0.1	0.2	Heavy	Heavy	Many	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
14.60S-A-02	Focus	5/7/2011	3:29:41 PM	12903203.76	293177.3411	826.993	0.0575	0.1063	0.1209	4.5	0.3	0.4	Moderate	Moderate	Common	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt		.8FPS
14.60S-A-03	Focus	5/7/2011	3:36:29 PM	12903217.3	293143.4264	827.8551	3.0051	4.5272	5.4338	3.2	0.6	0.8	Moderate	Moderate	Common	Left	<1ft/sec		Mid-Channel	None	Soft Sediment		.8FPS
14.60S-A-04	Focus	5/7/2011	3:40:47 PM	12903247.42	293088.4693	835.2897	1.5232	2.7685	3.1599	2.0	0.5	0.6	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment	U BDY	
14.60S-A-05	Focus	5/7/2011	3:48:13 PM	12903149.29	293291.3841	826.6947	0.0363	0.0689	0.0779	2.5	1.1	1.7	Heavy	Heavy	Many	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment	EXTRM HVY BY TREE	0.6FPS PHOTO 204
14.60S-A-06	Focus	5/7/2011	3:58:51 PM	12903136.17	293334.8243	826.7885	0.0214	0.0443	0.0492	3.0	0.3	0.4	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt	D AND LAT BDY	.5FPS
14.60S-A-07	Focus	5/7/2011	4:02:26 PM	12903115.29	293362.6229	826.8235	0.0358	0.0836	0.091	3.1	0.3	0.4	None	None	None	Left	<1ft/sec		Strt Channel Edg	None	Sand & Silt		.9FPS
14.64LG-B-01		5/11/2011	2:11:24 PM	12902954.48	293553.1206	826.2385	2.9312	4.7972	5.6219	1.0	0.2	0.4	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
14.6S-B-01	Focus	5/11/2011	1:48:42 PM	12903268.9	293213.1939	826.5306	0.0318	0.0526	0.0614	3.2	0.6	0.8	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand		
14.6S-B-02	Focus	5/11/2011	1:53:17 PM	12903220.6	293264.8681	826.5874	0.0413	0.0683	0.0799	4.4	0.4	0.5	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand		
14.6S-B-03	Focus	5/11/2011	2:00:25 PM	12903175.56	293343.3459	826.339	0.0348	0.0554	0.0654	4.2	0.1	0.2	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand & Gravel		
14.71LG-B-01	Other	5/11/2011	3:25:41 PM	12902864.69	293924.2689	813.9676	3.5155	4.9487	6.0703	5.0	0.4	0.8	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand	BAD POS	
14.75-A-01	Focus	5/10/11	9:13:03 AM	12902852.87	294097.3608	826.5281	0.0431	0.0436	0.0613	1.4	0.5	0.9	Light	Light	Few	Center	<1ft/sec		Oxbow	None	Sand & Silt	D BDY	1.0FPS
14.75-A-02	Focus	5/10/11	9:17:43 AM	12902950.23	294058.6139	826.5603	0.043	0.0464	0.0633	2.0	0.4	0.5	Heavy	Moderate	Many	Center	<1ft/sec		Oxbow	None	Soft Sediment		.9FPS
14.75-A-03	Focus	5/10/11	9:21:27 AM	12902945.06	294045.9261	826.4753	0.0487	0.0499	0.0698	1.0	0.3	0.5	Moderate	Moderate	Common	Left	<1ft/sec		Oxbow	None	Sand & Silt		.8FPS
14.75-A-04	Focus	5/10/11	9:25:12 AM	12902960.92	294084.3202	826.5714	0.0936	0.1018	0.1383	1.7	0.8	0.8	Heavy	Heavy	Many	Right	<1ft/sec		Oxbow	None	Soft Sediment		.5FPS
14.75-A-05	Focus	5/10/11	9:43:10 AM	12903019.68	294004.2055	826.6418	0.0707	0.1365	0.1537	1.4	0.9	1.1	Heavy	Heavy	Many	Island	<1ft/sec		Oxbow	None	Soft Sediment		.4FPS
14.75-A-06	Focus	5/10/11	9:55:40 AM	12903094.44	293922.0729	826.6513	0.0381	0.0707	0.0803	0.9	0.6	0.9	Light	Light	Few	Island	<1ft/sec		Oxbow	None	Soft Sediment	U BDY LEFTBANK	.5FPS
14.75-A-07	Focus	5/10/11	9:59:41 AM	12903149.39	293836.9076	826.6057	0.051	0.0928	0.1059	0.5	0.2	0.3	Light	Light	Few	Island	<1ft/sec		Oxbow	None	Silt over Sand		.5FPS
14.75-A-08	Focus	5/10/11	10:04:20 AM	12903179.3	293718.9848	826.4944	0.0382	0.081	0.0896	0.2	0.1	0.3	Light	Light	Few	Island	<1ft/sec		Oxbow	None	Silt over Sand	D BDY LEFTBANK	.4FPS
14.75-A-09	Focus	5/10/11	10:08:40 AM	12903164.71	293589.6931	826.7827	0.0514	0.1086	0.1201	1.2	0.9	1.1	Heavy	Heavy	Many	Island	<1ft/sec		Oxbow	None	Sand & Silt		0.4FPS
14.75-A-10	Focus	5/10/11	10:43:01 AM	12903134.48	293495.8428	826.1092	0.041	0.0897	0.0986	2.7	0.3	0.4	None	None	None	Island	No		Downstrm Island	None	Soft Sediment	LAT BDY	
14.75-A-11	Focus	5/10/11	10:50:22 AM	12903177.05	293463.8136	820.9019	8.8173	13.7225	16.3111	2.9	0.2	0.3	Heavy	Heavy	Many	Center	<1ft/sec		Oxbow	None	Sand & Silt		1FPS
14.75-A-12	Focus	5/10/11	10:59:58 AM	12903149.36	293433.076	826.5132	0.0351	0.0647	0.0736	3.8	0.0	0.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	2.1FPS
14.75-A-13	Focus	5/10/11	11:06:20 AM	12903212.28	293424.332	830.1415	1.6232	2.9635	3.3789	1.1	0.7	1.0	Light	Light	Few	Right	<1ft/sec		Oxbow	None	Soft Sediment	U BDY	
14.75-A-14	Focus	5/10/11	11:13:53 AM	12903254.6	293315.1079	826.6176	0.0495	0.0767	0.0913	2.1	0.4	0.5	Light	Light	Few	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt		1.2FPS
14.75-A-15	Focus	5/10/11	11:20:48 AM	12903340.1	293194.6118	826.6524	0.0596	0.1083	0.1236	1.2	0.3	1.0	Heavy	Heavy	Many	Right	<1ft/sec		Point Bar	None	Soft Sediment		.3FPS
14.75-A-16	Focus	5/10/11	11:27:12 AM	12903300.32	293174.7583	826.5001	0.0394	0.0585	0.0705	3.0	0.3	0.6	None	None	None	Right	<1ft/sec		Mid-Channel	None	Sand & Gravel	LAT BDY	1.4FPS
14.75-A-17	Focus	5/10/11	11:32:18 AM	12903302.36	293254.6034	826.5888	0.0373	0.0526	0.0645	0.9	0.6	0.7	Light	None	Few	Right	<1ft/sec		Strt Channel Edg	None	Sand & Silt	D BDY	
14.75-A-18	Focus	5/10/11	1:02:43 PM	12903360.27	293155.7462	823.4347	1.3638	2.2162	2.6022	1.4	0.5	0.6	Heavy	Heavy	Common	Right	<1ft/sec		Point Bar	None	Soft Sediment		.4FPS
14.75-A-19	Focus	5/10/11	1:12:52 PM	12903463.95	293045.7477	826.415	0.0386	0.0736	0.0831	1.2	0.8	1.6	Heavy	Heavy	Many	Right	<1ft/sec		Point Bar	None	Soft Sediment		
14.75-A-20	Focus	5/10/11	3:02:02 PM	12903048.46	294006.6185	826.5451	0.0408	0.0635	0.0755	2.9	0.2	0.4	Heavy	Heavy	Many	Center	<1ft/sec		Oxbow	None	Soft Sediment		1FPS
14.75-A-21	Focus	5/10/11	3:03:03 PM	12903045.64	294012.5847	826.7045	0.0425	0.0632	0.0761	2.4	0.1	0.1	Light	Light	Few	Right	<1ft/sec		Oxbow	None	Sand & Gravel	U BDY RIGHTBANK	
14.75-A-22	Focus	5/10/11	3:08:02 PM	12903144.9	293920.8886	826.6251	0.0693	0.1143	0.1337	2.3	0.0	0.0	Light	Light	Few	Right	<1ft/sec		Oxbow	None	Sand & Gravel	LAT BDY	.8FPS
14.75-A-23	Focus	5/10/11	3:10:03 PM	12903128.71	293908.7758	826.5908	0.0732	0.1226	0.1427	1.8	0.6	2.1	Heavy	Heavy	Many	Center	<1ft/sec		Oxbow	None	Soft Sediment		
14.75-A-24	Focus	5/10/11	3:17:57 PM	12903204.81	293812.8156	826.4575	0.0331	0.0577	0.0666	2.8	0.5	1.1	Heavy	Heavy	Many	Right	No		Oxbow	None	Sand & Silt		.4FPS
14.75-A-25	Focus	5/10/11	3:27:29 PM	12903207.01	293740.8183	826.4688	0.0407	0.075	0.0853	1.8	0.3	0.6	Light	Light	Few	Center	<1ft/sec		Oxbow	None	Sand & Silt		
14.75-A-26	Focus	5/10/11	3:31:42 PM	12903220.71	293635.148	826.6437	0.0515	0.1112	0.1226	1.0	0.5	0.7	Heavy	Heavy	Common	Right	<1ft/sec		Oxbow	None	Soft Sediment		0.6
14.75-A-27	Focus	5/10/11	3:36:33 PM	12903197.26	293570.4918	826.6257	0.0461	0.0848	0.0966	1.8	0.4	0.8	Moderate	Light	Common	Right	<1ft/sec		Oxbow	None	Soft Sediment		.8FTS
14.75-B-01	Focus	5/7/2011	1:37:20 PM	12902848.34	294146.7669	830.7814	2.5804	4.411	5.1103	0.9	1.5	2.1	Heavy	Heavy	Common	Right	<1ft/sec		Strt Channel Edg	25%-50%	Soft Sediment		
14.75-B-02	Focus	5/7/2011	1:45:18 PM	12902791.53	294179.1559	838.9689	2.0329	3.5751	4.1126	0.7	0.1	0.4	None	None	None	Right	>3 ft/sec		Strt Channel Edg	50%-75%	Sand & Silt		
14.75-B-03	Focus	5/7/2011	1:51:16 PM	12902845.54	294117.9958	827.208	1.2551	2.2082	2.5399	2.4	1.1	1.1	Light	Light	None	Center	<1ft/sec		Strt Channel Edg	None	Sand		
14.75-B-04	Focus	5/7/2011	1:57:40 PM	12902911.17	294057.8812	826.2567	0.0477	0.0802	0.0933	1.1	0.9	1.5	Light	Light	None	Island	>3 ft/sec		Downstrm Island	5%-25%	Soft Sediment		
14.75-B-05	Focus	5/7/2011	2:02:59 PM	12903136.63	293849.1133	827.9104	11.1078	15.8174	19.328	0.5	0.1	0.1	Light	Light	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		
14.75-B-06	Focus	5/7/2011	2:12:15 PM	12902892.08	294121.5009	825.9482	1.6353	2.6783	3.1381	2.0	0.7	0.7	Moderate	Heavy	Few	Right	<1ft/sec		Strt Channel Edg	5%-25%	Soft Sediment		
14.75LG-B-01	Other	5/11/2011	3:33:25 PM	12902710.03	294025.8775	826.2296	0.0437	0.0838	0.0945	1.8	0.7	0.8	Light	Light	Few	Left	<1ft/sec	<1 ft/sec	Strt Channel Edg	None	Soft Sediment		
MP 14.75-15.00																							
14.79LG-B-01	Other	5/11/2011	3:39:55 PM	12902582.5	294106.3082	826.4296	0.1035	0.3171	0.3336	2.7	0.2	0.3	Light	Moderate	None	Left	<1ft/sec	<1 ft/sec	Point Bar	None	Sand & Silt		
14.80LG-B-01	Other	5/12/2011	10:06:09 AM	12902593.36	294262.7977	826.4121	0.0381	0.0671	0.0771	2.2	0.2	0.3	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand & Gravel		
14.8S-B-01	Focus	5/7/2011	1:21:59 PM	12902416.9	294168.6562	833.0643	1.9085	3.2227	3.7454	1.0	0.3	0.3	Light	Light	None	Left	No		Strt Channel Edg	<5%	Soft Sediment		WATER TEMP 60.5
14.8S-B-02	Focus	5/7/2011	1:24:29 PM	12902428.85	294165.4535	825.0392	1.2041	1.9945	2.3298	1.0	0.5	0.5	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	5%-25%	Soft Sediment		
14.8S-B-03	Focus	5/7/2011	1:27:00 PM	12902422.76	294176.9654	825.128	1.2009	1.951	2.291	1.3	0.0	0.2	Light	Light	Few	Left	>3 ft/sec		Strt Channel Edg	None	Silt over Sand		
14.90LG-B-01	Other	5/11/2011	3:45:49 PM	12902044.32	294368.592	826.3179	0.0228	0.0479	0.0531	2.9	0.2	0.7	None	None	None	Center	1-3 ft/sec	<1 ft/sec	Mid-Channel	None	Sand & Silt		
14.96LG-B-01	Other	5/11/2011	3:51:06 PM	12901800.14	294560.1844	826.4383	0.0657	0.2205	0.2301	5.6	0.9	0.9	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand		

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
14.9S-B-01	Focus	5/7/2011	10:28:04 AM	12901663.38	294507.4001	817.5478	8.3016	13.7224	16.0381	0.5	0.1	0.1	None	None	None	Island	<1ft/sec		Downstrm Island	None	Silt over Sand		
14.9S-B-02	Focus	5/7/2011	10:35:14 AM	12901635.28	294436.8744	821.9654	8.3403	13.5086	15.8759	2.4	0.0	0.2	Light	Light	Few	Left	No		Other-Comments	None	Silt over Sand		SEC CHANNEL
14.9S-B-03	Focus	5/7/2011	10:41:56 AM	12901774.89	294364.1445	819.9501	7.7563	12.1472	14.4122	0.5	0.5	0.5	Light	Light	None	Island	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		COVE
14.9S-B-04	Focus	5/7/2011	10:48:14 AM	12901706.15	294316.203	818.3024	8.0298	12.0726	14.4991	2.9	0.4	0.9	Light	Light	Few	Left	<1ft/sec		Other-Comments	<5%	Soft Sediment		SEC CHANNEL
14.9S-B-05	Focus	5/7/2011	10:54:08 AM	12901831.5	294298.3919	820.521	8.0161	11.5404	14.0513	1.1	0.1	0.2	None	None	None	Island	<1ft/sec		Downstrm Island	None	Sand		SEC CHAN
14.9S-B-06	Focus	5/7/2011	10:58:14 AM	12901790.66	294229.323	828.3445	9.8666	15.3254	18.2268	0.8	2.6	3.0	None	None	None	Left	<1ft/sec			<5%	Soft Sediment		MOD RES SHEEN
14.9S-B-07	Focus	5/7/2011	11:01:00 AM	12901795.56	294217.9195	829.7627	10.3514	15.7688	18.8628	0.8	2.6	3.0	None	None	None	Left	<1ft/sec		Other-Comments	<5%	Soft Sediment	SEC CHAN	MOD RES SHEEN
14.9S-B-08	Focus	5/7/2011	11:06:54 AM	12901920.24	294217.3049	816.6027	8.406	12.2601	14.8651	0.8	1.1	2.8	Light	Light	Few	Left	<1ft/sec		Other-Comments	<5%	Silt over Sand		SEC CHANNEL
14.9S-B-09	Focus	5/7/2011	11:14:06 AM	12902027.43	294154.7566	817.9229	8.7749	12.1128	14.9572	0.8	2.8	3.4	Light	Moderate	None	Left	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		MARSH
14.9S-B-10	Focus	5/7/2011	11:30:38 AM	12901946.82	294167.2577	826.3636	0.0363	0.0503	0.062	0.8	3.0	3.3	Moderate	Moderate	Few	Left	No		Other-Comments	None	Soft Sediment		MARSH
14.9S-B-11	Focus	5/7/2011	11:36:09 AM	12901892.81	294179.2139	826.4309	0.046	0.0661	0.0806	0.8	2.6	3.3	Light	Light	Few	Left	No		Other-Comments	25%-50%	Soft Sediment	MARSH	HEV RED SHEEN
14.9S-B-12	Focus	5/7/2011	11:42:01 AM	12901924	294206.8767	826.391	0.0425	0.0541	0.0688	0.8	1.4	1.5	Moderate	Moderate	Few	Left	No		Other-Comments	None	Soft Sediment	MARSH	HEV RES SHEEN
15.00LG-B-01	Other	5/12/2011	9:55:13 AM	12901560.79	294623.7698	826.302	0.0426	0.0602	0.0737	0.8	0.5	0.6	Light	Light	None	Center	<1ft/sec	<1 ft/sec	Mid-Channel	None	Sand		
PA-B-01	Launch	5/7/2011	1:09:27 PM	12902437.08	294373.8659	832.7254	1.8709	2.8315	3.3938	0.4	0.1	0.1	None	None	None	Right	No		Strt Channel Edg	<5%	Sand		
PA-B-02	Launch	5/7/2011	1:10:56 PM	12902415.47	294378.8319	826.2131	0.0823	0.1267	0.1511	0.5	0.1	0.1	None	None	None	Right	<1ft/sec		Strt Channel Edg	<5%	Sand		
MP 15.00-15.25																							
15.02LG-B-01	Other	5/11/2011	3:57:16 PM	12901542.83	294752.8402	826.1267	0.0336	0.1153	0.12	1.7	0.4	0.5	Light	Light	None	Right	1-3 ft/sec	1-3 ft/sec	Downstrm Island	5%-25%	Soft Sediment		
15.05S-B-01	Focus	5/7/2011	9:21:43 AM	12901208.15	294885.913	825.3641	10.4817	13.4096	17.0201	1.1	0.4	0.4	Light	Moderate	None	Left	<1ft/sec		Strt Channel Edg	5%-25%	Soft Sediment	MOD RES SHEEN	
15.05S-B-02	Focus	5/7/2011	9:32:30 AM	12901258.54	294852.0129	819.9883	11.8393	16.0844	19.9719	3.0	0.3	0.8	Light	Light	Few	Left	1-3 ft/sec		Strt Channel Edg	50%-75%	Sand & Silt		DOWN TREES
15.05S-B-03	Focus	5/7/2011	9:39:28 AM	12901409.27	294686.6725	822.6847	10.0951	12.9575	16.4258	1.1	2.4	2.7	Moderate	Heavy	Few	Left	<1ft/sec		Strt Channel Edg	5%-25%	Soft Sediment		
15.05S-B-05	Focus	5/7/2011	9:53:05 AM	12901345.04	294738.8656	825.9491	11.4584	14.1466	18.205	1.3	0.2	0.2	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	None	Silt over Sand		
15.05S-B-06	Focus	5/7/2011	9:59:40 AM	12901429.72	294693.952	820.8544	11.4319	16.6437	20.1916	1.6	1.4	1.5	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	None	Soft Sediment		
15.05S-B-07	Focus	5/7/2011	10:05:10 AM	12901433.8	294618.6224	822.5071	12.4548	27.1682	29.887	1.0	0.1	0.5	Light	Light	Few	Left	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		COVE
15.05S-B-08	Focus	5/7/2011	10:10:21 AM	12901439.4	294648.2234	828.3704	8.3919	13.4224	15.8298	1.1	0.3	0.4	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		
15.05S-B-09	Focus	5/7/2011	10:15:02 AM	12901477.44	294580.3221	820.3559	8.1799	13.3473	15.6544	1.1	0.3	0.3	Light	Light	None	Left	<1ft/sec		Strt Channel Edg	<5%	Silt over Sand		COVE
15.05S-B-10	Focus	5/7/2011	10:19:08 AM	12901550.88	294539.1948	819.6208	8.3117	13.7148	16.0369	1.0	0.1	0.1	None	None	None	Left	<1ft/sec		Other-Comments	None	Sand		SEC CHA
15.10LG-B-01	Other	5/12/2011	9:47:35 AM	12901234.23	295029.978	826.1804	0.0617	0.091	0.1099	2.2	0.8	0.8	None	None	None	Center	1-3 ft/sec	<1 ft/sec	Mid-Channel	None	Sand		South Mill Pond
15.11LG-B-01	Other	5/12/2011	11:48:09 AM	12901244.96	295075.7198	826.122	0.0829	0.1318	0.1557	1.2	0.6	0.9	Light	Light	None	Right	No	No	Point Bar	None	Sand & Silt		
15.13LG-B-01	Other	5/12/2011	11:45:11 AM	12901183.57	295145.5288	825.8642	0.0968	0.1547	0.1825	1.0	0.0	0.0	Moderate	Moderate	Few	Right			Point Bar				
15.13LG-B-02	Other	5/12/2011	11:54:36 AM	12901133.53	295138.4036	826.262	0.04	0.0483	0.0628	3.1	0.8	1.4	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand		
15.15LG-B-01	Other	5/12/2011	11:41:54 AM	12901078.83	295244.9324	826.0501	0.0826	0.1231	0.1482	2.1	0.0	0.2	None	None	None	Center	1-3 ft/sec	<1 ft/sec	Mid-Channel	None	Sand & Silt		
15.15LG-B-01	Other	5/11/2011	4:05:43 PM	12901132.8	295224.9612	825.8601	0.0408	0.0998	0.1078	0.6	0.7	1.1	Moderate	Moderate	Few	Right	<1ft/sec	<1 ft/sec	Point Bar	None	Sand & Silt	HVY SHN FROM JET	
15.16LG-B-01	Other	5/11/2011	4:09:44 PM	12901094.67	295278.869	826.3069	0.0453	0.1094	0.1184	1.1	0.9	1.7	Heavy	Heavy	Many	Right	<1ft/sec	<1 ft/sec	Point Bar	None	Soft Sediment		
15.16LG-B-02	Other	5/11/2011	4:30:59 PM	12901088.13	295277.8674	828.0869	1.208	1.9112	2.2609	0.6	0.5	1.5	None	None	None	Right	<1ft/sec	<1 ft/sec	Point Bar	None	Sand & Silt	HVY SHN FROM JET	
15.18LG-B-01	Other	5/11/2011	4:36:45 PM	12901028.71	295364.8556	826.3022	0.0353	0.0522	0.063	0.7	0.9	0.6	Light	Light	None	Right	<1ft/sec	<1 ft/sec	Point Bar	None	Soft Sediment		
15.22LG-B-01	Other	5/12/2011	11:34:52 AM	12900876.68	295534.3481	826.2537	0.0534	0.0751	0.0922	3.0	0.3	0.7	None	None	None	Center	1-3 ft/sec	1-3 ft/sec	Mid-Channel	None	Sand		
15.25-B-01	Focus	5/9/2011	9:04:51 AM	12901184.13	296114.0478	826.2813	2.6379	3.0932	4.0652	1.7	1.1	1.3	Light	Light	None	Right	No		Point Bar	5%-25%	Soft Sediment		
15.25-B-02	Focus	5/9/2011	9:10:52 AM	12901087.28	295991.4801	826.1838	0.0397	0.0618	0.0734	0.7	0.1	1.1	Light	Light	None	Right	No		Point Bar	5%-25%	Sand & Silt		
15.25-B-03	Focus	5/9/2011	9:15:58 AM	12901000.54	295894.7959	822.4676	1.3968	1.7337	2.2264	2.8	0.9	1.3	Light	Light	None	Right	<1ft/sec		Point Bar	5%-25%	Soft Sediment	UP STM BOOM	
15.25-B-05	Focus	5/9/2011	11:43:01 AM	12900962.17	295861.7165	826.216	0.0516	0.0722	0.0888	3.4	2.1	3.0	Light	Light	Few	Right	1-3 ft/sec	Point Bar	None	Soft Sediment			
15.25-B-06	Focus	5/9/2011	11:43:32 AM	12900972.82	295854.3452	826.2091	0.0454	0.0635	0.078	2.1	1.3	2.3	Moderate	Moderate	Few	Right	1-3 ft/sec	Point Bar	None	Sand			
15.25-B-07	Focus	5/9/2011	11:51:11 AM	12900931.78	295805.5175	826.1906	0.0419	0.0546	0.0688	1.8	1.6	2.0	Light	Moderate	None	Right	1-3 ft/sec		Point Bar	25%-50%	Soft Sediment		
BSBR-B-01	Bridge	5/9/2011	11:57:07 AM	12900895.65	295721.3802	826.2004	0.0474	0.0655	0.0809	2.6	0.8	0.9	Moderate	Heavy	Few	Right	<1ft/sec		Point Bar	None	Sand over Silt		
BSBR-B-02	Bridge	5/9/2011	12:07:43 PM	12900873.06	295716.7215	826.0851	0.0528	0.0628	0.082	5.8	0.0	0.5	None	None	None	Center	<1ft/sec		Mid-Channel	None	Sand		
BSBR-B-03	Bridge	5/9/2011	12:12:24 PM	12900806.34	295721.3505	826.2034	0.0603	0.0723	0.0942	4.8	0.2	0.3	None	None	None	Left	<1ft/sec		Cut Bank	None	Sand & Gravel		
BSBR-B-04	Bridge	5/9/2011	12:16:39 PM	12900800.28	295617.3443	826.1765	0.0722	0.0942	0.1187	4.0	0.0	0.0	None	None	None	Left	<1ft/sec		Point Bar	None	Gravel & Larger		
BSBR-B-05	Bridge	5/9/2011	12:20:48 PM	12900909.7	295633.4987	826.1755	0.0858	0.111	0.1403	0.6	0.2	0.2	None	None	None	Right	<1ft/sec		Cut Bank	None	Sand & Gravel		
BSBR-B-06	Bridge	5/11/2011	4:57:41 PM	12900902.49	295753.0044	826.0602	0.0705	0.0918	0.1158	2.3	1.0	1.5	Heavy	Heavy	Many	Right	<1ft/sec	<1 ft/sec	Point Bar	None	Soft Sediment		
SMP-B-01	Focus	5/6/2011	9:12:04 AM	12901585.9	295637.2876	826.3209	0.0371	0.0431	0.0569	1.2	3.2	3.7	Light	Moderate	None	Other-Comments	No		Other-Comments	50%-75%	Soft Sediment		MARSH
SMP-B-03	Focus	5/6/2011	9:23:36 AM	12901525.76	295593.9851	826.2528	0.0308	0.0349	0.0465	1.0	2.4	5.0	Moderate	Heavy	Few	Center	No		Other-Comments	50%-75%	Soft Sediment		MARSH
SMP-B-04	Focus	5/6/2011	9:34:46 AM	12901448.69	295623.0341	826.1038	0.04	0.0469	0.0616	1.2	3.1	5.5	Light	Light	Few	Center	No		Other-Comments	25%-50%	Soft Sediment		MARSH
SMP-B-05	Focus	5/6/2011	9:42:49 AM	12901495.52	295643.9281	826.343	0.028	0.0506	0.0578	1.5	2.5	5.4	None	None	None	Center	No		Other-Comments	25%-50%	Soft Sediment	RSID SURF SHN	MARSH
SMP-B-06	Focus	5/6/2011	9:50:26 AM	12901529.45	295663.7165	826.2655	0.0394	0.0538	0.0667	1.3	1.7	4.7	Light	Light	Few	Center	No		Other-Comments	25%-50%	Soft Sediment	RSID SURF SHN	MARSH
SMP-B-07	Focus	5/6/2011	9:57:35 AM	12901447.82	295665.8662	826.2931	0.031	0.0446	0.0543	0.9	1.5	3.2	Light	Light	None	Center	No		Other-Comments	25%-50%	Sand over Silt	HVY RISD SURFSHN	MARSH
SMP-B-08	Focus	5/6/2011	10:03:29 AM	12901386.64	295659.2484	826.2655	0.0338	0.0534	0.0632	1.0	2.4	2.4	Light	Light	None	Center	No		Other-Comments	25%-50%	Silt over Sand	HVY RISD SURFSHN	MARSH
SMP-B-09	Focus	5/6/2011	10:08:40 AM	12901364.76	295581.0215	826.1637	0.038	0.0628	0.0735	1.0	3.1	5.7	Light	Light	Few	Center	No		Other-Comments	50%-75%	Soft Sediment	HVY RISD SURFSHN	MARSH
SMP-B-10	Focus	5/6/2011	10:14:48 AM	12901336.18	295610.4058	826.2734	0.0349	0.0585	0.0682	1.5	3.7	5.0	Light	Light	Few	Center	No		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-11	Focus	5/6/2011	10:19:40 AM	12901269.18	295643.1252	826.3115	0.0321	0.0551	0.0638	1.0	4.3	5.5	Light	Light	None	Center	No		Other-Comments	50%-75%	Soft Sediment		MARSH
SMP-B-12	Focus	5/6/2011	10:25:28 AM	12901195.55	295637.6193	826.364	0.028	0.0506	0.0578	1.3	3.9	4.6	Light	Light	None	Center	No		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-13	Focus	5/6/2011	10:30:38 AM	12901118.88	295630.6577	826.3718	0.0468	0.0986	0.1092	1.1	3.6	5.2	Light	Light	None	Center	No		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-14	Focus	5/6/2011	10:36:10 AM	12901025.25	295613.1816	826.3009	0.0356	0.0656	0.0746	2.0	3.9	4.3	None	None	None	Center	No		Other-Comments	5%-25%	Soft Sediment	HVY RSDL SRF SHN	MARSH
SMP-B-15	Focus	5/6/2011	10:40:49 AM	12900965.73	295613.4835	826.3466	0.0352	0.0646	0.0735	2.5	0.5	1.6	None	None	None	Center	No		Other-Comments	25%-50%	Sand over Silt	HVY RSDL SRF SHN	MARSH
SMP-B-16	Focus	5/6/2011	10:44:19 AM	12900950.7	295566.6357	826.2936	0.0342	0.0623	0.071	1.7	2.6	2.6	Light	Light	None	Center	No		Other-Comments	25%-50%	Silt over Sand	HVY RSDL SRF SHN	MARSH
SMP-B-17	Focus	5/6/2011	10:48:22 AM	12901031.5	295500.7555	826.3351	0.0364	0.0658	0.0752	0.7	2.6	3.0	Light	Light	None	Center	<1ft/sec		Other-Comments	<5%	Soft Sediment	MARSH	
SMP-B-18	Focus	5/6/2011	10:51:08 AM	12901044.3	295457.5881	826.318	0.0344	0.0617	0.0706	0.4	2.9	3.7	Light	Light	None	Center	<1ft/sec		Other-Comments	<5%	Soft Sediment		MARSH
SMP-B-19	Focus	5/6/2011	10:56:49 AM	12901104	295453.5563	826.3463	0.0444	0.0762	0.0882	0.6	0.6	0.9	Light	Light	None	Center	<1ft/sec		Other-Comments	50%-75%	Soft Sediment		MARSH
SMP-B-20	Focus	5/6/2011	11:01:35 AM	12901072.62	295560.9625	826.3466	0.0348	0.0638	0.0726	1.2	3.1	4.2	None	None	None	Center	<1ft/sec		Other-Comments	None	Soft Sediment		MARSH
SMP-B-21	Focus	5/6/2011	11:06:00 AM	12901186.05	295588.5223	826.0738	0.0524	0.1029	0.1155	1.4	3.7	4.1	None	None	None	Center	<1ft/sec		Other-Comments	<5%	Soft Sediment		MARSH
SMP-B-22	Focus	5/6/2011	11:11:53 AM	12901337.66	295574.843	826.1783	0.036	0.0626	0.0722	1.0	4.0	6.0	Light	Light	None	Center	<1ft/sec		Other-Comments	>75%	Soft Sediment		MARSH
SMP-B-23	Focus	5/6/2011	11:18:33 AM	12901278.36	295582.939	826.3735	0.0313	0.0522	0.0609	1.4	4.2	5.1	None	None	None	Center	<1ft/sec		Other-Comments	<5%	Soft Sediment		MARSH
SMP-B-24	Focus	5/6/2011	1:02:58 PM	12901644.21	294800.1102	826.4782	0.0261	0.0379	0.046	0.5	1.8	2.3	Light	Light	None	Center	<1ft/sec		Other-Comments	<5%	Silt over Sand		MARSH
SMP-B-25	Focus	5/6/2011	1:07:09 PM	12901609.05	294778.0213	824.5511	3.2125	5.1423	6.0633	2.7	0.4	0.5	Light	Light	None	Center	<1ft/sec		Other-Comments	None	Silt over Sand		MARSH
SMP-B-26	Focus	5/6/2011	1:18:02 PM	12901593.62	295001.4347	826.3996	0.0653	0.1233	0.1395	0.8	3.1	2.8	Light	Moderate	None	Center	<1ft/sec		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-27	Focus	5/6/2011	1:27:31 PM	12901580.42	295036.3879	826.3789	0.051	0.12	0.1304	0.5	0.5	1.6	Light	Light	None	Center	<1ft/sec		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-28	Focus	5/6/2011	1:30:56 PM	12901558.65	295001.7431	824.7923	2.318	3.8699	4.511	1.1	3.0	3.4	None	None	None	Center	<1ft/sec		Other-Comments	<5%	Silt over Sand		MARSH
SMP-B-29	Focus	5/6/2011	1:37:06 PM	12901610.05	294987.1757	825.7718	0.0665	0.1881	0.1995	0.6	1.7	2.1	Light	Light	None	Center	<1ft/sec		Other-Comments	<5%	Silt over Sand		MARSH
SMP-B-30	Focus	5/6/2011	1:43:38 PM	12901491.21	295105.8547	823.2189	0.0786	0.1431	0.1633	0.7	1.8	2.3	Light	Light	None	Center	<1ft/sec		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-31	Focus	5/6/2011	1:46:55 PM	12901405.21	295186.7445	826.204	0.0235	0.0412	0.0474	0.6	1.5	3.0	Light	Light	None	Center	<1ft/sec		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-32	Focus	5/6/2011	1:50:34 PM	12901297.99	295289.4837	826.387	0.04	0.0766	0.0865	0.6	2.7	3.9	Light	Light	Few	Center	<1ft/sec		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-33	Focus	5/6/2011	1:56:20 PM	12901238.69	295416.8106	826.4024	0.0745	0.1435	0.1617	0.5	2.7	4.8	Light	Moderate	None	Center	<1ft/sec		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-34	Focus	5/6/2011	1:58:47 PM	12901280.44	295498.0051	826.2875	0.0269	0.0524	0.0589	0.6	3.0	4.1	Light	Light	Few	Center	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		MARSH
SMP-B-35	Focus	5/6/2011	2:07:03 PM	12901192.43	295520.9206	826.3972	0.027	0.0483	0.0554	0.5	3.3	4.7	Light	Light	None	Center	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		MARSH
SMP-B-36	Focus	5/6/2011	2:10:36 PM	12901150.83	295398.4634	826.273	0.0358	0.0594	0.0693	0.9	2.2	3.1	Light	Light	None	Center	<1ft/sec		Other-Comments	5%-25%	Soft Sediment		MARSH
SMP-B-37	Focus	5/6/2011	2:13:48 PM	12901213.16	295374.3334	826.179	0.0263	0.0434	0.0508	0.9	1.8	2.4	None	None	None	Center	<1ft/sec		Other-Comments	None	Soft Sediment		MARSH
SMP-B-38	Focus	5/6/2011	2:19:11 PM	12901244.07	295276.3951	826.3449	0.0316	0.0512	0.0602	1.0	1.7	2.2	Light	Light	None	Center	<1ft/sec		Other-Comments	5%-25%	Soft Sediment	HEV RED SHE	MARSH
SMP-B-39	Focus	5/6/2011	2:24:02 PM	12901314.81	295162.0265	826.3319	0.0966	0.1073	0.1444	0.6	1.3	2.7	Light	Light	None	Center	<1ft/sec		Other-Comments	<5%	Soft Sediment		MARSH
SMP-B-40	Focus	5/6/2011	2:27:30 PM	12901406.57	295128.6973	826.3857	0.0279	0.0424	0.0508	0.5	0.6	2.6	Light	Light	None	Center	<1ft/sec		Other-Comments	<5%	Soft Sediment		MARSH
SMP-B-41	Focus	5/6/2011	2:31:52 PM	12901396.18	295031.9234	826.3938	0.0388	0.0541	0.0666	0.5	1.4	3.2	Light	Moderate	None	Center	<1ft/sec		Other-Comments	<5%	Soft Sediment	HEV SHEEN	MARSH
SMP-B-42	Focus	5/6/2011	2:39:33 PM	12901693.96	294797.3184	826.4465	0.0347	0.0535	0.0638	0.5	1.7	2.4	Light	Light	None	Center	<1ft/sec		Other-Comments	25%-50%	Soft Sediment	HEV SHEEN	MARSH
SMP-B-43	Focus	5/6/2011	2:42:52 PM	12901770.2	294821.6441	825.9577	1.3031	1.7769	2.2035	0.6	1.5	1.5	Moderate	Heavy	Few	Center	<1ft/sec		Other-Comments	25%-50%	Soft Sediment	HEV SHEEN	MARSH
SMP-B-44	Focus	5/6/2011	2:47:56 PM	12901806.67	294787.164	829.4211	1.2852	1.9282	2.3173	1.0	1.2	1.2	Light	Moderate	None	Center	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		MARSH
SMP-B-45	Focus	5/6/2011	2:51:27 PM	12901824.88	294726.7978	827.8062	1.9272	2.7522	3.3599	0.5	2.1	2.5	Moderate	Moderate	Few	Center	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		MARSH
SMP-B-46	Focus	5/6/2011	2:53:47 PM	12901850.61	294643.0461	834.4061	3.1521	4.6322	5.6029	0.4	0.3	0.3	Light	Light	None	Center	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		MARSH
SMP-B-47	Focus	5/7/2011	8:54:57 AM	12901641.24	294814.4596	823.7458	7.1222	10.4651	12.6588	0.8	1.0	1.1	None	None	None	Center	<1ft/sec		Other-Comments	5%-25%		WATER TEMP 56.8	MARSH
SMP-B-48	Focus	5/7/2011	9:03:17 AM	12901731.43	294785.119	822.2832	9.214	10.832	14.2207	1.2	2.1	2.4	Moderate	Heavy	Few	Center	<1ft/sec		Other-Comments	5%-25%	Silt over Sand	WATER TEMP 56.8	MARSH
SMP-B-49	Focus	5/7/2011	9:05:46 AM	12901749.21	294751.703	821.1148	6.7862	10.0106	12.094	1.1	1.0	1.8	None	None	None	Center	<1ft/sec		Other-Comments	<5%	Silt over Sand	WATER TEMP 56.8	MARSH
SMP-B-50	Focus	5/12/2011	9:26:09 AM	12901732.05	294826.979	826.1616	0.0693	0.0499	0.0854	0.7	0.8	1.3	Heavy	Heavy	Many	Other-Comments	No	No	Pond	None	Soft Sediment		
SMP-B-50	Focus	5/7/2011	9:08:21 AM	12901747.73	294708.2051	821.9764	9.1419	11.2261	14.4776	0.9	1.5	1.7	Light	Light	None	Center	<1ft/sec		Other-Comments	<5%	Soft Sediment	WATER TEMP 56.8	MARSH
SMP-B-51	Focus	5/12/2011	9:32:35 AM	12901774.83	294861.7524	826.3599	0.3171	0.3331	0.4599	0.3	1.5	1.3	Heavy	Heavy	Many	Other-Comments	No	No	Pond	None	Soft Sediment		South Mill Pond, BAD POS/NO NTRIP
SMP-B-52	Focus	5/12/2011	9:36:42 AM	12901665.8	294845.2418	826.2416	0.1006	0.1022	0.1434	0.7	0.9	1.1	Moderate	Heavy	Few	Other-Comments	No	No	Pond	<5%	Soft Sediment		South Mill Pond
SMP-B-53	Focus	5/12/2011	9:40:23 AM	12901618.54	294844.9394	826.2501	0.0655	0.0812	0.1043	1.0	0.9	1.3	Light	Light	Few	Other-Comments	<1ft/sec	<1 ft/sec	Pond	None	Sand & Silt		South Mill Pond
SMP-B-54	Focus	5/12/2011	12:08:58 PM	12901620.07	294943.0899	826.3023	0.0463	0.0544	0.0714	0.8	0.0	0.0	Heavy	Heavy	Many	Other-Comments	<1ft/sec	<1 ft/sec	Pond	None	Sand & Silt		South Mill Pond
SMP-B-55	Focus	5/12/2011	12:12:36 PM	12901564.76	294981.2453	826.203	0.0403	0.0479	0.0626	0.7	2.0	2.8	Light	Moderate	None	Other-Comments	<1ft/sec	<1 ft/sec	Pond	None	Soft Sediment		South Mill Pond
MP 15.25-15.75																							
15.4-B-01	Focus	5/9/2011	8:47:48 AM	12901480.28	296471.0735	826.2385	0.0694	0.0967	0.119	2.5	0.1	0.1	None	None	None	Left	<1ft/sec		Cut Bank	<5%	Sand & Gravel		
15.4-B-02	Focus	5/9/2011	8:52:37 AM	12901391.76	296451.4941	825.8641	1.5955	2.0589	2.6048	3.7	0.0	0.0	None	None	None	Left	<1ft/sec		Cut Bank	<5%	Sand & Gravel		
15.4-B-03	Focus	5/9/2011	8:57:11 AM	12901311.47	296382.8865	826.0363	0.9488	1.3868	1.6803	4.6	0.4	0.6	None	None	None	Center	1-3 ft/sec		Mid-Channel	<5%	Sand & Silt		
15.4-B-04	Focus	5/11/2011	5:11:19 PM	12901218.96	296351.4132	826.1374	0.045	0.0504	0.0676	0.9	2.6	3.4	Heavy	Heavy	Many	Left	<1ft/sec	<1 ft/sec	Other-Comments	>75%	Soft Sediment	HVY SURFACE SHN	MARSH
NMP-B-01	Focus	5/9/2011	10:14:38 AM	12902000.33	296718.0665	825.9453	0.0394	0.0727	0.0827	1.0	2.0	3.0	Moderate	Heavy	None	Other-Comments	<1ft/sec		Other-Comments	None	Soft Sediment	MOD RESIDUAL SHN	North Mill Pond, MARSH
NMP-B-01	Focus	5/8/2011	10:27:11 AM	12901949.23	296715.3534	826.1099	0.1121	0.0681	0.1311	4.8	1.6	1.8	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	None	Soft Sediment	HEV RES SHEEN	North Mill Pond, MARSH
NMP-B-02	Focus	5/9/2011	10:36:34 AM	12901751.63	296324.5616	825.8878	0.0222	0.042	0.0475	1.3	3.1	4.5	Light	Light	None	Other-Comments	No		Other-Comments	25%-50%	Soft Sediment		North Mill Pond, MARSH
NMP-B-02	Focus	5/8/2011	10:36:35 AM	12901889.29	296675.1185	827.292	4.4019	2.3567	4.9931	5.2	2.0	2.1	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	None	Sand & Silt	HEV RES SHEEN	North Mill Pond, MARSH
NMP-B-03	Focus	5/9/2011	10:46:25 AM	12901561.19	296273.202	825.9724	0.0278	0.0528	0.0597	1.2	3.5	4.8	Moderate	Heavy	None	Other-Comments	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		North Mill Pond, MARSH
NMP-B-03	Focus	5/8/2011	10:41:04 AM	12901810.19	296603.8973	826.0217	0.0949	0.0513	0.1079	5.7	1.2	1.7	None	None	None	Other-Comments	<1ft/sec		Other-Comments	None	Sand & Silt	HEV RES SHEEN	North Mill Pond, MARSH
NMP-B-04	Focus	5/9/2011	10:51:18 AM	12901588.09	296208.8045	826.0802	0.0358	0.0659	0.075	1.3	3.3	4.7	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	50%-75%	Soft Sediment		North Mill Pond, MARSH
NMP-B-04	Focus	5/8/2011	10:46:56 AM	12901738.21	296534.858	826.7579	3.3126	1.9168	3.8272	6.1	1.1	1.6	None	None	None	Other-Comments	<1ft/sec		Other-Comments	None	Sand		North Mill Pond, BOOM LINE, MARSH

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Master Poling Table 1
Source to Kalamazoo River Dam

Location ID	Type	Date	Time	Easting	Northing	Elevation (ft)	Position Quality (ft)	Height Quality (ft)	3DCQ (ft)	Water Depth (ft)	One-hand Push (ft)	Two-hand Push (ft)	Submerged Oil Category	Sheen	Globules	Bank	Velocity	Bed Velocity	River Setting	Aquatic Vegetation	Bed Type	Submerged Oil Comments	Location Comments
NMP-B-05	Focus	5/9/2011	10:57:18 AM	12901467.82	296189.3284	826.1017	0.0328	0.0577	0.0664	1.8	2.8	3.9	Light	Moderate	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, MARSH
NMP-B-06	Focus	5/8/2011	10:58:41 AM	12901659.99	296468.8076	823.1525	3.1334	1.9744	3.7035	5.5	0.9	1.0	Light	Moderate	None	Other-Comments	<1ft/sec		Other-Comments	None	Silt over Sand		North Mill Pond, BOOM LINE, MARSH
NMP-B-06	Focus	5/9/2011	11:05:10 AM	12901371.97	296178.1391	826.1205	0.0401	0.0658	0.0771	1.5	2.5	3.6	Light	Moderate	None	Other-Comments	<1ft/sec		Other-Comments	25%-50%	Soft Sediment	RESIDUAL SHN MOD	North Mill Pond, MARSH
NMP-B-06	Focus	5/8/2011	11:04:33 AM	12901660.61	296431.758	826.3601	4.6526	3.5197	5.834	0.6	1.1	3.0	Heavy	Heavy	Many	Other-Comments	<1ft/sec		Other-Comments	5%-25%	Silt over Sand		North Mill Pond, MARSH
NMP-B-07	Focus	5/8/2011	11:12:43 AM	12901716.12	296481.5125	825.9733	0.0919	0.0784	0.1208	0.5	1.2	1.4	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	5%-25%	Sand		North Mill Pond, MARSH
NMP-B-08	Focus	5/9/2011	11:22:44 AM	12901903.73	296338.8771	825.9713	0.0544	0.08	0.0967	1.5	1.6	2.5	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, MARSH
NMP-B-08	Focus	5/8/2011	11:28:23 AM	12901809.67	296543.5918	827.6425	3.4067	3.463	4.8578	0.4	0.4	1.3	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	5%-25%	Sand		North Mill Pond, MARSH
NMP-B-09	Focus	5/8/2011	11:36:32 AM	12901866.55	296592.8905	826.0388	0.0588	0.0662	0.0886	0.6	0.2	0.3	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	None	Sand		North Mill Pond, SEE MIKE, MARSH
NMP-B-10	Focus	5/8/2011	11:49:47 AM	12901953.57	296664.365	825.2739	3.3882	4.1643	5.3559	0.7	1.7	2.2	Heavy	Heavy	Many	Other-Comments	<1ft/sec		Other-Comments	<5%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-11	Focus	5/8/2011	11:54:16 AM	12902020.81	296655.8355	823.6419	2.1454	2.1496	3.037	1.0	1.5	1.5	Heavy	Heavy	Common	Other-Comments	<1ft/sec		Other-Comments	None	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-12	Focus	5/8/2011	11:58:19 AM	12902000.85	296572.9311	824.7714	2.0447	1.9911	2.854	1.1	2.3	4.8	Moderate	Heavy	Few	Other-Comments	<1ft/sec		Other-Comments	None	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-13	Focus	5/8/2011	12:03:11 PM	12901938.11	296439.5748	824.251	1.6472	1.5945	2.2925	1.2	1.8	1.8	Moderate	Moderate	Common	Other-Comments	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-14	Focus	5/8/2011	12:07:17 PM	12901894.47	296264.1942	823.9535	1.8723	1.6799	2.5155	1.4	0.9	1.6	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Silt over Sand		North Mill Pond, SEE MIKE, MARSH
NMP-B-15	Focus	5/8/2011	12:11:39 PM	12901770.7	296071.1836	822.8211	3.569	3.3623	4.9034	1.8	2.7	3.8	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-16	Focus	5/8/2011	12:15:40 PM	12901678.1	295922.1867	824.251	2.159	2.2202	3.0969	1.8	2.2	2.8	None	None	None	Other-Comments	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-17	Focus	5/8/2011	12:23:05 PM	12901560.4	295824.1842	826.5118	1.373	1.3802	1.9469	1.5	3.0	4.2	None	None	None	Other-Comments	<1ft/sec		Other-Comments	50%-75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-18	Focus	5/8/2011	2:27:07 PM	12901939.07	296519.1536	828.3575	1.1679	1.8303	2.1711	1.0	2.4	3.2	Light	Light	Few	Other-Comments	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-19	Focus	5/8/2011	2:31:24 PM	12901863.72	296389.8762	826.1344	0.0413	0.0749	0.0855	1.5	3.2	5.2	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	50%-75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-20	Focus	5/8/2011	2:37:13 PM	12901663.3	296265.0173	827.6498	0.91	1.497	1.7519	1.4	2.7	4.4	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	50%-75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-21	Focus	5/8/2011	2:42:52 PM	12901430.99	296227.0304	826.0199	0.043	0.0721	0.0839	1.4	3.3	4.8	Moderate	Moderate	Few	Other-Comments	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-22	Focus	5/8/2011	2:48:10 PM	12901390.17	296188.3708	825.9623	0.1263	0.1666	0.209	1.5	3.3	4.6	Moderate	Moderate	Few	Other-Comments	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-23	Focus	5/8/2011	2:54:27 PM	12901308.63	296078.8674	826.079	0.0453	0.0772	0.0895	1.5	1.7	3.5	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	50%-75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-24	Focus	5/8/2011	2:59:21 PM	12901283.32	296034.785	824.3975	1.6683	2.9125	3.3565	1.5	2.8	3.2	Light	Moderate	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-25	Focus	5/8/2011	3:05:24 PM	12901326.93	295853.625	826.1559	0.037	0.0606	0.071	1.9	2.3	3.7	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-26	Focus	5/8/2011	3:12:39 PM	12901347.23	295786.6675	824.1196	1.1306	1.828	2.1494	1.7	2.9	3.8	Light	Light	Few	Other-Comments	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-27	Focus	5/8/2011	3:17:39 PM	12901406.65	295778.0173	827.1159	0.7735	1.2394	1.461	1.7	2.7	3.7	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	50%-75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-28	Focus	5/8/2011	3:21:52 PM	12901348.22	295834.4568	825.9673	0.8071	1.3069	1.536	2.1	2.6	5.7	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	50%-75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-29	Focus	5/8/2011	3:26:05 PM	12901441.9	295933.6505	825.9884	1.127	1.8544	2.1701	2.9	2.7	4.5	None	None	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-30	Focus	5/8/2011	3:36:41 PM	12901386.13	296071.1204	826.9771	0.8697	1.4129	1.6591	2.4	3.4	5.0	Light	Moderate	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-31	Focus	5/8/2011	3:40:23 PM	12901517.13	296149.3565	826.1282	0.0402	0.0662	0.0774	2.5	3.1	5.3	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-32	Focus	5/8/2011	3:44:04 PM	12901622.12	296114.3695	826.2538	0.0634	0.1082	0.1254	2.1	3.1	3.3	None	None	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-33	Focus	5/8/2011	3:46:25 PM	12901683.69	296043.6655	826.3804	0.8452	1.6228	1.8297	2.3	2.6	3.6	None	None	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-34	Focus	5/8/2011	3:53:19 PM	12901804.2	296237.2339	826.3007	0.0372	0.067	0.0766	1.8	3.7	4.8	Light	Light	None	Other-Comments	<1ft/sec		Other-Comments	>75%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
NMP-B-35	Focus	5/8/2011	4:03:37 PM	12901879.22	296453.6773	828.745	1.3463	2.7992	3.1061	1.0	2.0	3.1	Light	Light	Few	Other-Comments	<1ft/sec		Other-Comments	25%-50%	Soft Sediment		North Mill Pond, SEE MIKE, MARSH
EDRBR-B-01	Bridge	5/8/2011	4:19:25 PM	12902002.04	296807.3587	824.7557	1.7039	3.7844	4.1503	1.6	0.6	0.9	Heavy	Heavy	Common	Right	<1ft/sec		Strt Channel Edg	5%-25%	Soft Sediment		DOWSTR ROCK BOT, MARSH
EDRBR-B-02	Bridge	5/8/2011	4:23:52 PM	12901956.93	296808.8457	828.2329	1.631	3.8889	4.2171	4.7	1.0	2.0	None	None	None	Center	1-3 ft/sec		Mid-Channel	5%-25%	Silt over Sand		DOWSTR ROCK BOT, MARSH
EDRBR-B-03	Bridge	5/8/2011	4:26:42 PM	12901919.54	296818.1172	826.1163	0.0317	0.0676	0.0747	3.8	0.3	2.1	None	None	None	Center	1-3 ft/sec		Mid-Channel	5%-25%	Sand		DOWSTR ROCK BOT, MARSH
EDRBR-B-04	Bridge	5/8/2011	4:36:07 PM	12901854.98	296828.0918	828.3607	1.3532	2.3591	2.7196	1.1	0.5	0.5	None	None	None	Left	1-3 ft/sec		Strt Channel Edg	5%-25%	Sand	HEV SUR SHEEN	DOWSTR ROCK BOT
EDRBR-B-05	Bridge	5/8/2011	4:41:46 PM	12902003.69	296768.1187	830.8265	2.1675	3.9396	4.4965	2.0	0.5	0.7	Light	Light	None	Right	1-3 ft/sec		Strt Channel Edg	5%-25%	Sand & Silt		INSIDE BOOM

= Light Submerged Oil

= Moderate Submerged Oil

= Heavy Submerged Oil

Note: Coordinates in NAD83 Michigan State Plane South International Feet, Vertical Datum NAVD88
Records shaded based on submerged oil category.

Attachment 2

Delineation Table 1

Delineation Table 1A - Talmadge Creek - Source to Division Rd

Delineation Area	Overall Type	Approximate Size		Date of Most Recent Poling	Range of Sheen	Range of Globules	# of Moderate Poling Locations	# Heavy Poling Locations	Mean Water Depth	Mean Soft Sediment Thickness	Mean Depth to Hard Bottom	Water Velocity	Aquatic Vegetation
Talmadge Creek													
Talmadge Creek A	Moderate	<0.1 acres	<100 sq ft	4/27/11	30-60%	10-20	1	0	1.9 ft	0.2 ft	0.2 ft	<1 ft/sec	None
Talmadge Creek B	Heavy	<0.1 acres	1,300 sq ft	4/27/11	30-100%	1-20+	8	8	1.0 ft	0.6 ft	0.8 ft	<1 ft/sec	None
Talmadge Creek C	Heavy	<0.1 acres	400 sq ft	4/27/11	30-100%	1-20	6	1	0.7 ft	0.5 ft	0.7 ft	<1 ft/sec	None
Talmadge Creek D	Heavy	<0.1 acres	200 sq ft	4/27/11	30-100%	10-20+	3	2	0.7 ft	0.4 ft	0.6 ft	<1 ft/sec	None
Talmadge Creek E	Heavy	<0.1 acres	<100 sq ft	4/27/11	60-100%	10-20	0	1	0.6 ft	0.5 ft	0.6 ft	<1 ft/sec	None
Talmadge Creek F	Heavy	<0.1 acres	<100 sq ft	4/27/11	60-100%	10-20	0	1	0.6 ft	0.5 ft	0.7 ft	<1 ft/sec	None
Talmadge Creek G	Moderate	<0.1 acres	200 sq ft	4/27/11	30-60%	1-20	3	0	0.8 ft	0.9 ft	1.1 ft	1-3 ft/sec	None
Talmadge Creek H	Heavy	<0.1 acres	900 sq ft	4/27/11	30-100%	1-20+	8	3	0.7 ft	0.8 ft	0.8 ft	<1-3 ft/sec	None
Talmadge Creek I	Moderate	<0.1 acres	<100 sq ft	4/28/11	30-60%	1-10	1	0	1.0 ft	0.4 ft	0.5 ft	>3 ft/sec	None
Talmadge Creek J	Moderate	<0.1 acres	400 sq ft	4/28/11	30-60%	10-20	3	0	1.4 ft	0.6 ft	1.0 ft	1-3 ft/sec	None
Talmadge Creek K	Moderate	<0.1 acres	600 sq ft	4/28/11	30-60%	1-20	7	0	1.4 ft	0.4 ft	0.7 ft	1-3 ft/sec	None
Talmadge Creek L	Heavy	<0.1 acres	200 sq ft	4/28/11	30-100%	10-20+	2	1	1.4 ft	0.5 ft	0.9 ft	1-3 ft/sec	None
Talmadge Creek M	Moderate	<0.1 acres	<100 sq ft	4/28/11	30-60%	10-20	1	0	2.1 ft	0.8 ft	0.8 ft	1-3 ft/sec	None
Talmadge Creek N	Heavy	<0.1 acres	<100 sq ft	4/28/11	60-100%	10-20	0	1	1.0 ft	0.8 ft	1.7 ft	1-3 ft/sec	None
Talmadge Creek O	Heavy	<0.1 acres	<100 sq ft	4/28/11	60-100%	10-20	0	1	1.1 ft	0.4 ft	0.6 ft	>3 ft/sec	None
Talmadge Creek P	Moderate	<0.1 acres	<100 sq ft	4/28/11	30-60%	10-20	1	0	0.7 ft	0.6 ft	0.6 ft	1-3 ft/sec	None
Talmadge Creek Q	Heavy	<0.1 acres	200 sq ft	4/28/11	60-100%	20+	0	1	1.1 ft	0.2 ft	0.2 ft	1-3 ft/sec	None
Talmadge Creek R	Heavy	<0.1 acres	400 sq ft	4/28/11	30-100%	1-20+	2	1	1.0 ft	0.5 ft	0.5 ft	<1 ft/sec	None
Talmadge Creek S	Moderate	<0.1 acres	200 sq ft	4/28/11	30-60%	10-20	1	0	0.8 ft	0.5 ft	0.5 ft	>3 ft/sec	None
Talmadge Creek T	Heavy	<0.1 acres	300 sq ft	4/28/11	60-100%	10-20	0	1	1.0 ft	0.2 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek U	Heavy	<0.1 acres	200 sq ft	4/29/11	30-100%	10-20	1	1	1.0 ft	0.4 ft	0.5 ft	1-3 ft/sec	None
Talmadge Creek V	Heavy	<0.1 acres	100 sq ft	4/29/11	60-100%	20+	0	2	0.9 ft	0.3 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek W	Moderate	<0.1 acres	100 sq ft	4/29/11	30-60%	10-20	1	0	0.9 ft	0.1 ft	0.2 ft	1-3 ft/sec	None
Talmadge Creek X	Heavy	<0.1 acres	<100 sq ft	4/29/11	60-100%	10-20	0	1	1.0 ft	0.9 ft	1.0 ft	1-3 ft/sec	None
Talmadge Creek Y	Moderate	<0.1 acres	100 sq ft	4/29/11	30-60%	10-20	1	0	1.2 ft	1.1 ft	1.4 ft	1-3 ft/sec	None

Submerged Oil Summary - Talmadge Creek - Source to Division Rd	
Total number of locations:	**25**
Number of locations >0.25 acres:	**0**
Approximate Total Area:	**0.15 acres (6,300 sq ft)**
Moderate (10 Locations) ----------	<0.1 acres (1,800 sq ft)
Heavy (15 Locations) ----------	0.1 acres (4,500 sq ft)

Delineation Table 1B - Talmadge Creek - Division Rd to I-69

Delineation Area	Overall Type	Approximate Size		Date of Most Recent Poling	Range of Sheen	Range of Globules	# of Moderate Poling Locations	# Heavy Poling Locations	Mean Water Depth	Mean Soft Sediment Thickness	Mean Depth to Hard Bottom	Water Velocity	Aquatic Vegetation
Talmadge Creek													
Talmadge Creek Z	Moderate	<0.1 acres	100 sq ft	4/29/11	30-60%	10-20	1	0	0.7 ft	0.3 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek AA	Heavy	<0.1 acres	200 sq ft	4/30/11	30-100%	1-20	1	1	0.9 ft	0.6 ft	0.6 ft	1-3 ft/sec	None
Talmadge Creek BB	Moderate	<0.1 acres	200 sq ft	4/30/11	30-60%	10-20	1	0	0.8 ft	0.4 ft	0.5 ft	1-3 ft/sec	None
Talmadge Creek CC	Heavy	<0.1 acres	<100 sq ft	4/30/11	60-100%	10-20	0	2	1.5 ft	0.2 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek DD	Moderate	<0.1 acres	<100 sq ft	4/30/11	30-60%	1-10	1	0	0.6 ft	0.7 ft	1.4 ft	1-3 ft/sec	None
Talmadge Creek EE	Moderate	<0.1 acres	<100 sq ft	4/30/11	30-60%	10-20	1	0	0.5 ft	0.3 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek FF	Moderate	<0.1 acres	100 sq ft	4/30/11	30-60%	10-20	2	0	1.1 ft	0.1 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek GG	Moderate	<0.1 acres	100 sq ft	4/30/11	30-60%	10-20	1	0	0.9 ft	0.7 ft	1.2 ft	1-3 ft/sec	None
Talmadge Creek HH	Heavy	<0.1 acres	400 sq ft	4/30/11	30-100%	10-20+	2	1	0.6 ft	1.0 ft	1.1 ft	1-3 ft/sec	None
Talmadge Creek II	Heavy	<0.1 acres	300 sq ft	4/30/11	30-100%	10-20+	1	1	0.7 ft	1.0 ft	1.3 ft	1-3 ft/sec	None
Talmadge Creek JJ	Moderate	<0.1 acres	<100 sq ft	4/30/11	30-60%	10-20	1	0	0.5 ft	0.8 ft	1.9 ft	1-3 ft/sec	None
Talmadge Creek KK	Moderate	<0.1 acres	400 sq ft	4/30/11	30-60%	1-10	1	0	0.4 ft	0.4 ft	1.5 ft	1-3 ft/sec	None
Talmadge Creek LL	Moderate	<0.1 acres	<100 sq ft	4/30/11	60-100%	None	0	1	0.8 ft	0.3 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek MM	Moderate	<0.1 acres	200 sq ft	4/30/11	30-60%	10-20	1	0	1.1 ft	0.3 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek NN	Moderate	<0.1 acres	400 sq ft	4/30/11	30-60%	10-20	3	0	0.6 ft	0.5 ft	0.6 ft	1-3 ft/sec	None
Talmadge Creek OO	Heavy	<0.1 acres	3,500 sq ft	4/30/11	30-100%	1-20+	9	4	1.0 ft	0.7 ft	0.8 ft	1-3 ft/sec	None
Talmadge Creek PP	Heavy	<0.1 acres	400 sq ft	4/30/11	60-100%	20+	0	2	1.0 ft	0.1 ft	0.1 ft	1-3 ft/sec	None
Talmadge Creek QQ	Heavy	<0.1 acres	<100 sq ft	4/30/11	60-100%	20+	0	1	0.2 ft	0.5 ft	0.7 ft	1-3 ft/sec	None
Talmadge Creek RR	Heavy	<0.1 acres	400 sq ft	4/30/11	30-100%	10-20+	1	1	0.4 ft	0.6 ft	0.7 ft	1-3 ft/sec	None

Submerged Oil Summary - Talmadge Creek - Division Rd to I-69	
Total number of locations:	**19**
Number of locations >0.25 acres:	**0**
Approximate Total Area:	**0.15 acres (7,300 sq ft)**
Moderate (11 Locations) ----------	<0.1 acres (1,800 sq ft)
Heavy (8 Locations) ----------	0.1 acres (5,500 sq ft)

Delineation Table 1C - Talmadge Creek - I-69 to 15 ½ Mile Rd

Delineation Area	Overall Type	Approximate Size		Date of Most Recent Poling	Range of Sheen	Range of Globules	# of Moderate Poling Locations	# Heavy Poling Locations	Mean Water Depth	Mean Soft Sediment Thickness	Mean Depth to Hard Bottom	Water Velocity	Aquatic Vegetation
Talmadge Creek													
Talmadge Creek SS	Heavy	<0.1 acres	200 sq ft	5/1/11	30-100%	10-20+	2	1	1.4 ft	0.3 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek TT	Moderate	<0.1 acres	200 sq ft	5/1/11	30-60%	1-10	2	0	0.7 ft	0.1 ft	0.1 ft	1-3 ft/sec	None
Talmadge Creek UU	Heavy	<0.1 acres	300 sq ft	5/1/11	30-100%	10-20	1	1	0.5 ft	0.2 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek VV	Heavy	<0.1 acres	1,000 sq ft	5/1/11	30-100%	10-20+	2	4	0.7 ft	0.6 ft	0.9 ft	1-3 ft/sec	None
Talmadge Creek WW	Heavy	<0.1 acres	2,500 sq ft	5/1/11	30-100%	10-20+	4	16	0.8 ft	0.9 ft	1.2 ft	<1-3 ft/sec	None

Submerged Oil Summary - Talmadge Creek - I-69 to 15 ½ Mile Rd	
Total number of locations:	**5**
Number of locations >0.25 acres:	**0**
Approximate Total Area:	**<0.1 acres (4,200 sq ft)**
Moderate (1 Locations) ----------	<0.1 acres (200 sq ft)
Heavy (4 Locations) ----------	<0.1 acres (4,000 sq ft)

Delineation Table 1D - Talmadge Creek - 15 ½ Mile Rd to Confluence

Delineation Area	Overall Type	Approximate Size		Date of Most Recent Poling	Range of Sheen	Range of Globules	# of Moderate Poling Locations	# Heavy Poling Locations	Mean Water Depth	Mean Soft Sediment Thickness	Mean Depth to Hard Bottom	Water Velocity	Aquatic Vegetation
Talmadge Creek													
Talmadge Creek XX	Heavy	<0.1 acres	500 sq ft	5/1/11	60-100%	10-20	0	3	0.8 ft	0.1 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek YY	Heavy	<0.1 acres	<100 sq ft	5/1/11	60-100%	20+	0	1	0.4 ft	0.5 ft	0.5 ft	1-3 ft/sec	None
Talmadge Creek ZZ	Moderate	<0.1 acres	<100 sq ft	5/1/11	30-60%	10-20	1	0	0.7 ft	0.3 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek AAA	Moderate	<0.1 acres	200 sq ft	5/1/11	30-60%	10-20	1	0	0.4 ft	0.3 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek BBB	Heavy	<0.1 acres	1,200 sq ft	5/1/11	30-100%	10-20+	1	7	0.7 ft	0.3 ft	0.6 ft	1-3 ft/sec	None
Talmadge Creek CCC	Heavy	<0.1 acres	800 sq ft	5/1/11	30-100%	10-20+	2	5	0.8 ft	0.5 ft	0.5 ft	1-3 ft/sec	None
Talmadge Creek DDD	Heavy	<0.1 acres	400 sq ft	5/1/11	30-100%	10-20+	1	2	0.5 ft	0.3 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek EEE	Moderate	<0.1 acres	300 sq ft	5/1/11	30-60%	10-20	1	0	0.0 ft	0.2 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek FFF	Heavy	<0.1 acres	200 sq ft	5/1/11	30-100%	10-20	1	1	0.3 ft	0.2 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek GGG	Moderate	<0.1 acres	300 sq ft	5/1/11	30-60%	10-20	3	0	0.4 ft	0.2 ft	0.2 ft	1-3 ft/sec	None
Talmadge Creek HHH	Heavy	<0.1 acres	300 sq ft	5/1/11	30-100%	10-20+	2	1	0.5 ft	0.1 ft	0.1 ft	1-3 ft/sec	None
Talmadge Creek III	Heavy	<0.1 acres	400 sq ft	5/1/11	30-100%	10-20+	1	3	0.4 ft	0.4 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek JJJ	Heavy	<0.1 acres	100 sq ft	5/1/11	30-100%	10-20+	1	1	0.9 ft	0.9 ft	1.0 ft	1-3 ft/sec	None
Talmadge Creek KKK	Heavy	<0.1 acres	100 sq ft	5/1/11	30-60%	20+	0	1	0.4 ft	0.2 ft	0.5 ft	1-3 ft/sec	None
Talmadge Creek LLL	Moderate	<0.1 acres	100 sq ft	5/1/11	30-60%	10-20	1	0	0.0 ft	0.3 ft	0.7 ft	1-3 ft/sec	None
Talmadge Creek MMM	Moderate	<0.1 acres	100 sq ft	5/1/11	30-60%	10-20	1	0	0.0 ft	0.2 ft	0.6 ft	1-3 ft/sec	None
Talmadge Creek NNN	Heavy	<0.1 acres	300 sq ft	5/1/11	60-100%	10-20	0	1	0.0 ft	0.7 ft	0.7 ft	1-3 ft/sec	None
Talmadge Creek OOO	Heavy	<0.1 acres	200 sq ft	5/1/11	60-100%	10-20	0	1	0.1 ft	0.3 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek PPP	Heavy	<0.1 acres	1,000 sq ft	5/1/11	30-100%	10-20+	3	2	0.4 ft	0.6 ft	0.7 ft	1-3 ft/sec	None
Talmadge Creek QQQ	Moderate	<0.1 acres	300 sq ft	5/1/11	30-60%	10-20	1	0	0.1 ft	0.9 ft	1.0 ft	1-3 ft/sec	None
Talmadge Creek RRR	Heavy	<0.1 acres	200 sq ft	5/1/11	30-100%	10-20	1	1	0.5 ft	0.6 ft	0.6 ft	1-3 ft/sec	None
Talmadge Creek SSS	Moderate	<0.1 acres	100 sq ft	5/2/11	30-60%	10-20	2	0	0.5 ft	0.2 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek TTT	Moderate	<0.1 acres	200 sq ft	5/2/11	30-60%	10-20	1	0	0.0 ft	0.3 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek UUU	Moderate	<0.1 acres	200 sq ft	5/2/11	30-60%	10-20	1	0	0.1 ft	0.3 ft	0.3 ft	1-3 ft/sec	None
Talmadge Creek VVV	Moderate	<0.1 acres	200 sq ft	5/2/11	30-60%	10-20	1	0	0.6 ft	0.4 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek WWW	Heavy	<0.1 acres	300 sq ft	5/2/11	60-100%	20+	0	1	0.3 ft	1.1 ft	1.3 ft	1-3 ft/sec	None
Talmadge Creek XXX	Heavy	<0.1 acres	300 sq ft	5/2/11	60-100%	20+	0	1	1.1 ft	0.4 ft	0.6 ft	1-3 ft/sec	None
Talmadge Creek YYY	Heavy	<0.1 acres	2,000 sq ft	5/2/11	60-100%	20+	0	2	0.0 ft	0.2 ft	0.4 ft	1-3 ft/sec	None
Talmadge Creek ZZZ	Heavy	<0.1 acres	1,700 sq ft	5/2/11	60-100%	20+	0	1	0.6 ft	1.1 ft	1.2 ft	1-3 ft/sec	None
Talmadge Creek AAAA	Heavy	<0.1 acres	300 sq ft	5/2/11	60-100%	20+	0	1	0.3 ft	0.5 ft	0.6 ft	1-3 ft/sec	None

Delineation Area	Overall Type	Approximate Size		Date of Most Recent Poling	Range of Sheen	Range of Globules	# of Moderate Poling Locations	# Heavy Poling Locations	Mean Water Depth	Mean Soft Sediment Thickness	Mean Depth to Hard Bottom	Water Velocity	Aquatic Vegetation
Talmadge Creek BBBB	Moderate	<0.1 acres	400 sq ft	5/2/11	30-60%	10-20	1	0	0.0 ft	0.3 ft	0.5 ft	1-3 ft/sec	None
Talmadge Creek CCCC	Moderate	<0.1 acres	700 sq ft	5/2/11	30-60%	1-10	1	0	0.5 ft	0.2 ft	0.2 ft	1-3 ft/sec	None

Submerged Oil Summary - Talmadge Creek - 15 ½ Mile Rd to Confluence	
Total number of locations:	**32**
Number of locations >0.25 acres:	**0**
Approximate Total Area:	**0.3 acres (13,600 sq ft)**
Moderate (13 Locations) ----------	<0.1 acres (3,300 sq ft)
Heavy (19 Locations) ----------	0.2 acres (10,300 sq ft)

Delineation Table 1E - Confluence to Ceresco Dam

Delineation Area	Overall Type	Approximate Size		Date of Most Recent Poling	Range of Sheen	Range of Globules	# of Moderate Poling Locations	# Heavy Poling Locations	Mean Water Depth	Mean Soft Sediment Thickness	Mean Depth to Hard Bottom	Water Velocity	Aquatic Vegetation
Kalamazoo River													
2.55 North	Moderate	<0.1 acres	1,500 sq ft	4/26/11	30-60%	10-20	2	0	1.7 ft	0.4 ft	0.5 ft	<1 ft/sec	None
4.15 South A	Heavy	0.2 acres	7,900 sq ft	5/10/11	30-60%	20+	0	1	3.4 ft	0.6 ft	1.2 ft	>3 ft/sec	None
4.15 South B	Moderate	0.35 acres	15,400 sq ft	5/1/11	30-60%	1-20	2	0	2.2 ft	1.6 ft	2.4 ft	1-3 ft/sec	None
4.29T	Moderate	0.35 acres	15,200 sq ft	5/10/11	30-60%	10-20	1	0	1.0 ft	0.2 ft	0.2 ft	1-3 ft/sec	<5%
4.3 South A	Heavy	0.8 acres	35,300 sq ft	5/10/11	30-100%	10-20+	3	2	1.8 ft	1.0 ft	2.3 ft	None-3 ft/sec	None-<5%
4.3 South B	Heavy	1.1 acres	47,100 sq ft	5/10/11	<30-100%	0-20	3	1	1.1 ft	2.0 ft	3.4 ft	None-<1 ft/sec	None-50%
4.8 North	Heavy	0.1 acres	5,000 sq ft	5/17/11	30-100%	10-20+	1	1	2.9 ft	1.1 ft	2.0 ft	None-<1 ft/sec	None
4.9 North	Heavy	<0.1 acres	3,600 sq ft	5/1/11	30-100%	1-20	1	1	1.2 ft	1.6 ft	3.0 ft	1-3 ft/sec	None-75%
5.25 North	Heavy	5.0 acres	218,500 sq ft	5/17/11	<30-100%	1-20+	15	17	3.6 ft	2.9 ft	3.9 ft	None->3 ft/sec	None-<5%
5.25 South	Moderate	<0.1 acres	800 sq ft	5/1/11	30-60%	10-20	1	0	4.0 ft	3.5 ft	4.0 ft	1-3 ft/sec	None
5.55 North/5.35 North	Heavy	5.45 acres	237,300 sq ft	5/17/11	<30-100%	1-20+	23	9	2.1 ft	2.9 ft	3.8 ft	None-<1 ft/sec	None-25%
5.55 North	Heavy	0.25 acres	10,100 sq ft	4/30/11	30-100%	1-20+	4	4	2.1 ft	1.6 ft	1.8 ft	<1 ft/sec	None
5.75 Northwest	Heavy	0.45 acres	18,900 sq ft	5/16/11	60-100%	20+	0	5	4.8 ft	1.7 ft	2.5 ft	None	None-25%
5.75 South A	Heavy	0.7 acres	29,500 sq ft	5/16/11	30-100%	10-20+	1	4	3.3 ft	2.0 ft	3.2 ft	None-<1 ft/sec	None
5.75 South B	Heavy	1.0 acres	43,000 sq ft	5/16/11	30-100%	10-20+	6	8	3.4 ft	2.0 ft	3.5 ft	None-<1 ft/sec	None

Submerged Oil Summary - Kalamazoo River - Confluence to Ceresco Dam	
Total number of locations:	**15**
Number of locations >0.25 acres:	**11**
Approximate Total Area:	**15.85 acres (688,900 sq ft)**
Moderate (4 Locations) ----------	0.75 acres (32,900 sq ft)
Heavy (11 Locations) ----------	15.1 acres (656,000 sq ft)

Delineation Table 1F - Ceresco Dam to Kalamazoo River Dam

Delineation Area	Overall Type	Approximate Size		Date of Most Recent Poling	Range of Sheen	Range of Globules	# of Moderate Poling Locations	# Heavy Poling Locations	Mean Water Depth	Mean Soft Sediment Thickness	Mean Depth to Hard Bottom	Water Velocity	Aquatic Vegetation
Kalamazoo River													
5.8 South*	Heavy	<0.1 acres	2,600 sq ft	5/16/11	60-100%	20+	0	2	4.3 ft	1.2 ft	1.2 ft	1-3 ft/sec	None
5.9 South A	Heavy	<0.1 acres	1,700 sq ft	5/11/11	30-100%	1-20	1	1	1.2 ft	0.2 ft	0.4 ft	<1 ft/sec	None
6.41T	Heavy	<0.1 acres	2,900 sq ft	5/11/11	30-100%	10-20	2	1	1.3 ft	0.5 ft	0.6 ft	<1-3 ft/sec	None
6.45 North A	Moderate	0.15 acres	6,600 sq ft	5/11/11	30-100%	1-20	3	0	1.3 ft	0.6 ft	0.9 ft	<1 ft/sec	None
7.0 R1 A	Moderate	<0.1 acres	<100 sq ft	4/30/11	30-60%	1-10	1	0	2.1 ft	0.3 ft	0.4 ft	<1 ft/sec	None
7.0 R1 B	Heavy	<0.1 acres	2,600 sq ft	5/11/11	30-100%	10-20+	1	2	1.9 ft	0.1 ft	0.3 ft	<1 ft/sec	None
7.0 South	Moderate	<0.1 acres	300 sq ft	5/3/11	30-60%	10-20	1	0	1.1 ft	0.5 ft	0.6 ft	<1 ft/sec	None
7.45 North	Moderate	<0.1 acres	1,700 sq ft	5/4/11	30-100%	1-20	2	0	0.5 ft	0.5 ft	0.6 ft	None to <1 ft/sec	None
8.25 Islands	Moderate	0.25 acres	11,500 sq ft	5/5/11	30-60%	1-10	1	0	1.0 ft	0.4 ft	0.5 ft	<1 ft/sec	50-75%
8.5L1/L2*	Heavy	<0.1 acres	2,300 sq ft	5/16/11	30-100%	1-20+	2	4	0.3 ft	0.8 ft	1.0 ft	<1-3 ft/sec	<5-50%
8.6 North	Heavy	<0.1 acres	1,100 sq ft	5/3/11	30-100%	10-20+	2	1	0.8 ft	0.8 ft	1.0 ft	<1 ft/sec	None-25%
8.75 North A	Moderate	<0.1 acres	500 sq ft	5/11/11	<30%	10-20	1	0	1.3 ft	0.8 ft	1.0 ft	<1 ft/sec	None
8.75 North B	Heavy	<0.1 acres	4,000 sq ft	5/11/11	30-100%	1-20+	1	2	1.0 ft	0.7 ft	0.9 ft	<1 ft/sec	None
9.15 South	Moderate	<0.1 acres	2,500 sq ft	5/3/11	30-60%	1-10	1	0	0.7 ft	1.0 ft	1.1 ft	<1 ft/sec	<5%
9.65 North	Moderate	<0.1 acres	800 sq ft	4/19/11	30-60%	1-10	1	0	0.5 ft	0.5 ft	0.7 ft	<1 ft/sec	5-25%
10.4 North	Heavy	0.1 acres	4,600 sq ft	5/17/11	30-100%	10-20+	1	7	0.9 ft	1.1 ft	1.2 ft	None-<1 ft/sec	None-50%
10.5L2	Heavy	0.4 acres	18,200 sq ft	5/7/11	30-100%	10-20+	2	5	1.2 ft	0.8 ft	1.0 ft	None to <1 ft/sec	None-50%
10.5 North	Heavy	<0.1 acres	2,900 sq ft	5/6/11	30-100%	20+	0	3	0.6 ft	0.8 ft	0.9 ft	<1 ft/sec	N/A
10.75L2	Heavy	0.2 acres	8,600 sq ft	5/4/11	30-100%	1-20+	2	4	1.7 ft	0.6 ft	0.8 ft	<1 ft/sec	None
10.8 North	Moderate	<0.1 acres	2,300 sq ft	5/4/11	30-60%	10-20	2	0	1.5 ft	1.9 ft	3.8 ft	<1 ft/sec	None
11.75 South	Heavy	<0.1 acres	3,500 sq ft	5/11/11	60-100%	20+	0	1	0.7 ft	0.8 ft	2.1 ft	<1 ft/sec	None
11.75R1*	Heavy	<0.1 acres	3,000 sq ft	5/17/11	<30-100%	10-20+	5	2	1.5 ft	1.0 ft	1.3 ft	None	None
12.5 A	Heavy	<0.1 acres	1,500 sq ft	5/6/11	60-100%	20+	0	1	0.9 ft	0.4 ft	0.5 ft	<1 ft/sec	None
12.5 B	Heavy	0.1 acres	4,700 sq ft	5/6/11	60-100%	20+	0	1	0.8 ft	0.9 ft	0.9 ft	<1 ft/sec	<5%
13.25 North	Moderate	0.1 acres	5,300 sq ft	5/7/11	30-60%	10-20	2	0	1.5 ft	1.1 ft	2.7 ft	None to <1 ft/sec	5-50%
13.5L1	Heavy	0.25 acres	10,500 sq ft	5/7/11	30-100%	10-20+	1	1	2.7 ft	1.1 ft	1.5 ft	<1 ft/sec	None-5%
13.6 North	Heavy	0.15 acres	7,400 sq ft	5/7/11	30-60%	10-20+	1	1	0.9 ft	0.6 ft	0.8 ft	<1 ft/sec	None
13.7 North	Heavy	0.15 acres	4,500 sq ft	5/7/11	<30-60%	10-20+	2	2	0.9 ft	1.2 ft	1.6 ft	None	5->75%
13.8 South	Heavy	0.5 acres	24,700 sq ft	5/6/11	<30-100%	10-20+	4	3	2.2 ft	0.6 ft	1.0 ft	None-<1 ft/sec	None

Delineation Area	Overall Type	Approximate Size		Date of Most Recent Poling	Range of Sheen	Range of Globules	# of Moderate Poling Locations	# Heavy Poling Locations	Mean Water Depth	Mean Soft Sediment Thickness	Mean Depth to Hard Bottom	Water Velocity	Aquatic Vegetation
13.85 North	Moderate	<0.1 acres	1,900 sq ft	5/11/11	30-60%	10-20	2	0	0.7 ft	0.5 ft	0.7 ft	1-3 ft/sec	None-<5%
13.95 North	Heavy	0.15 acres	6,700 sq ft	5/6/11	<30-100%	1-20	3	1	1.0 ft	0.3 ft	0.5 ft	None	None
14.2 South	Heavy	0.5 acres	22,100 sq ft	5/10/11	<30-100%	1-20+	3	2	1.5 ft	0.5 ft	0.8 ft	None-<1 ft/sec	None-25%
14.28T	Heavy	0.1 acres	5,400 sq ft	5/10/11	60-100%	20+	0	1	1.7 ft	0.6 ft	1.0 ft	<1 ft/sec	None
14.35 North	Heavy	2.2 acres	96,300 sq ft	5/10/11	<30-100%	1-20+	5	16	1.7 ft	0.5 ft	0.9 ft	None-<1 ft/sec	None
14.40T A	Moderate	0.1 acres	5,100 sq ft	5/10/11	30-60%	10-20	1	0	1.9 ft	0.1 ft	0.2 ft	None	None
14.40T B	Heavy	0.4 acres	17,900 sq ft	5/12/11	60-100%	1-20+	1	1	2.5 ft	0.7 ft	0.8 ft	<1 ft/sec	None
14.6 South	Heavy	0.4 acres	17,300 sq ft	5/11/11	30-100%	10-20+	2	2	3.6 ft	0.5 ft	0.8 ft	<1 ft/sec	None
14.75	Heavy	1.25 acres	54,000 sq ft	5/10/11	<30-100%	1-20+	3	10	1.8 ft	0.6 ft	0.9 ft	None-<1 ft/sec	None-50%
14.9 South	Moderate	0.2 acres	9,800 sq ft	5/7/11	30-60%	1-10	2	0	0.8 ft	2.2 ft	2.4 ft	None	None
15.05 South A	Moderate	0.15 acres	6,200 sq ft	5/7/11	60-100%	1-10	1	0	1.1 ft	2.4 ft	2.7 ft	<1 ft/sec	5-25%
15.05 South B	Heavy	0.3 acres	13,400 sq ft	5/12/11	30-100%	1-20+	2	1	0.9 ft	0.5 ft	0.9 ft	<1 ft/sec	None
South Mill Pond A	Heavy	1.05 acres	45,500 sq ft	5/12/11	30-100%	1-20+	4	3	0.7 ft	1.3 ft	1.4 ft	None-<1 ft/sec	None-50%
South Mill Pond B	Moderate	0.15 acres	6,700 sq ft	5/6/11	60-100%	1-10	1	0	1.0 ft	2.4 ft	5.0 ft	None	50-75%
15.25	Heavy	0.15 acres	5,500 sq ft	5/10/11	30-100%	1-20+	2	2	2.0 ft	0.8 ft	1.2 ft	<1-3 ft/sec	None
15.4	Heavy	0.25 acres	11,400 sq ft	5/10/11	60-100%	20+	0	1	0.9 ft	2.6 ft	3.4 ft	<1 ft/sec	>75%
North Mill Pond	Heavy	2.9 acres	125,800 sq ft	5/9/11	30-100%	1-20+	6	3	1.1 ft	2.3 ft	3.4 ft	<1 ft/sec	None-50%
Dickman Rd Bridge	Heavy	<0.1 acres	3,800 sq ft	5/9/11	60-100%	10-20	0	1	1.6 ft	0.6 ft	0.9 ft	<1 ft/sec	5-25%
15.6 A*	Heavy	0.85 acres	36,800 sq ft	5/18/11	30-100%	1-20	5	17	1.2 ft	1.8 ft	2.4 ft	<1 ft/sec	None->75%
15.6 B*	Heavy	0.3 acres	14,000 sq ft	5/18/11	30-100%	10-20+	1	8	1.0 ft	2.1 ft	4.1 ft	<1 ft/sec-3 ft/sec	None-25%

* Delineation based on data collected by Strike Teams

Submerged Oil Summary - Kalamazoo River - Ceresco Dam to Kalamazoo River Dam	
Total number of locations:	**49**
Number of locations >0.25 acres:	**15**
Approximate Total Area:	**14.9 acres (648,400 sq ft)**
Moderate (15 Locations) ----------	1.4 acres (61,300 sq ft)
Heavy (34 Locations) ----------	13.5 acres (587,100 sq ft)

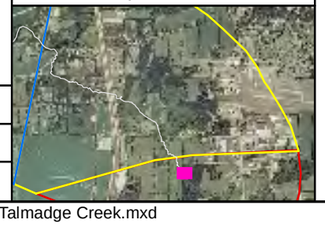
Attachment 3

Figure 1 - Talmadge Creek

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP0.00 - MP0.02

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.03 - MP0.09

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

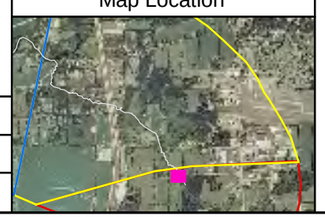
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

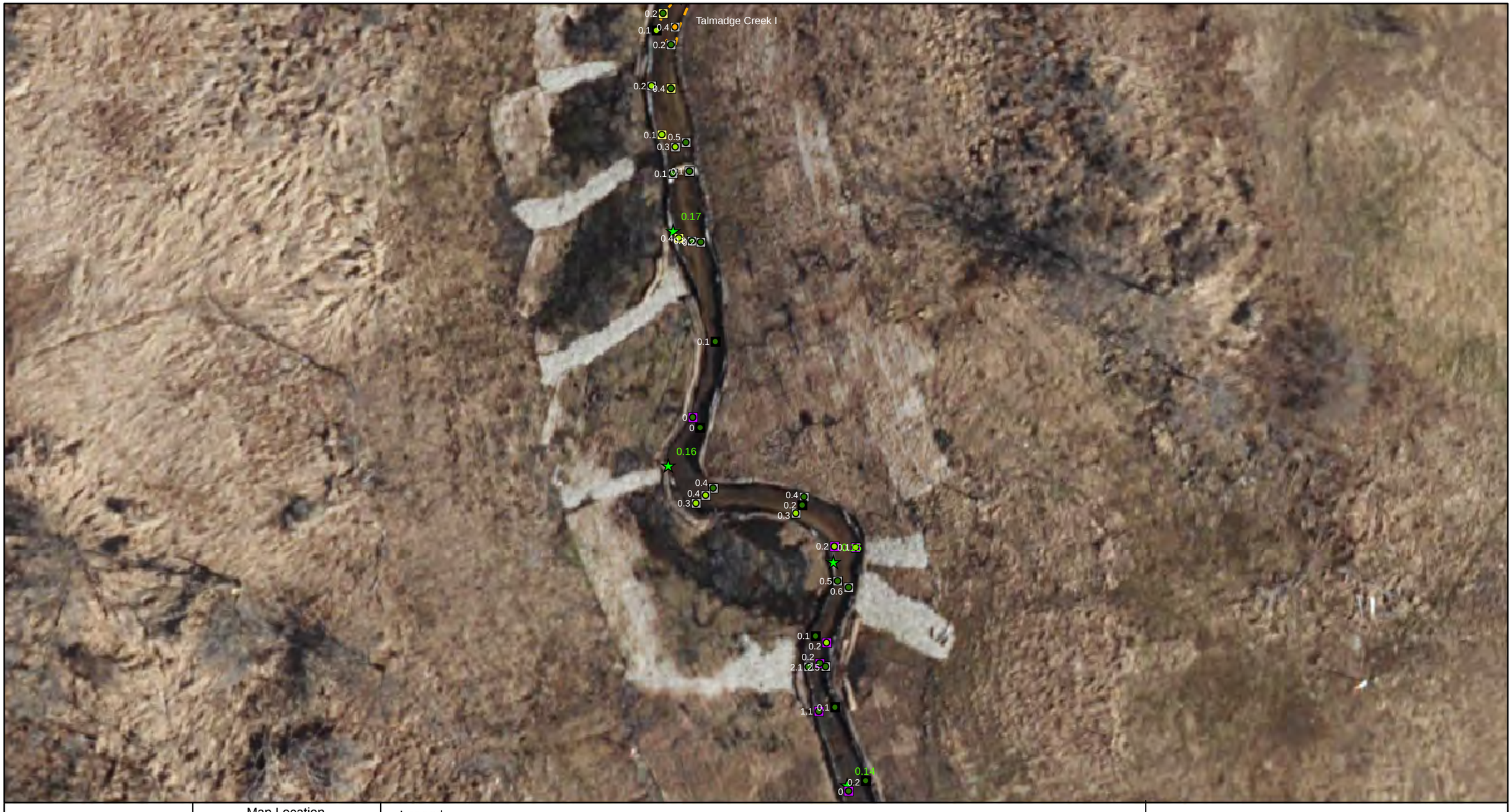
0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.10 - MP0.13

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

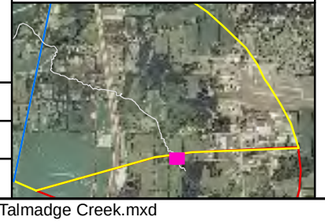
Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil
with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.14 - MP0.17

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.18 - MP0.22

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

Map Location

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.23 - MP0.28

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

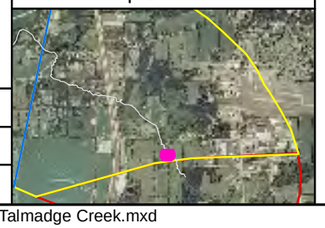
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP0.28 - MP0.32

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

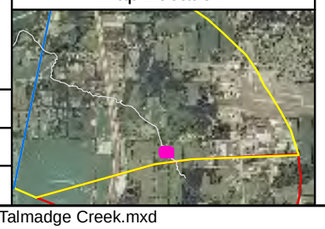
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.33 - MP0.36

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

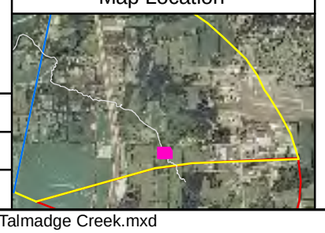
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.36 - MP0.40

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

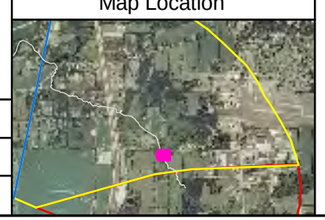
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.41 - MP0.45

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

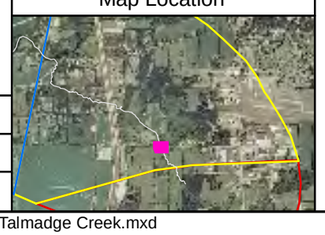
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP-0.46 - MP0.49

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location

Legend

Submerged Oil
with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP0.50 - MP0.53

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

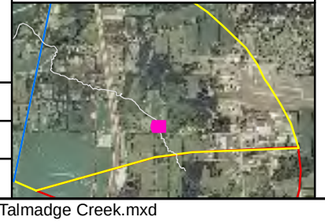
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP-0.54 - MP0.56

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

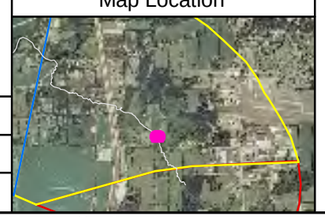
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP-0.57 - MP0.60

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

0.5
0.1
0.66
0
0.6
0
0.5
0.65
0
0.6
0.64
0.1
0
0.1
0.5
0.63
0
0.62
0
0.1
0.61

ENBRIDGE

Drawn:	BRS 5/19/2011
Approved:	DBR 5/19/2011
Project #:	106-4186

Map Location

Legend

Submerged Oil
with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.61 - MP0.66

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

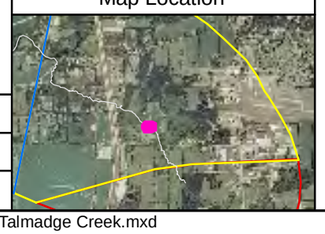
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS 5/19/2011
Approved:	DBR 5/19/2011
Project #:	106-4186

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.67 - MP0.72

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

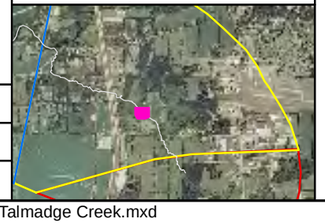
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP0.73 - MP0.78

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.79 - MP0.82

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.83 - MP0.86

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

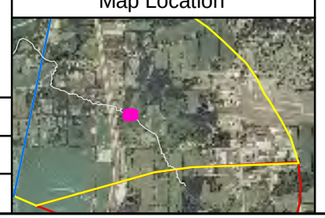
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP0.87 - MP0.94

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP0.95 - MP1.05

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

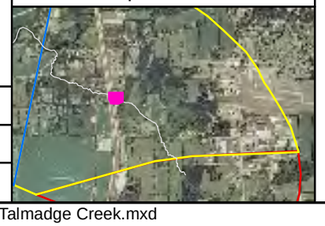
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.06 - MP1.11

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

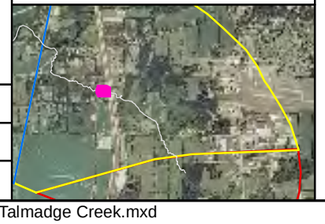
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP1.12 - MP1.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.26 - MP1.32

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

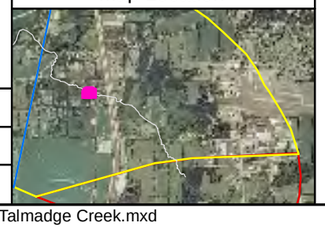
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP1.33 - MP1.39

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

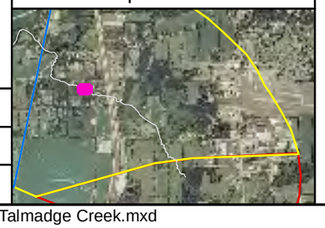
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.41 - MP1.45

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

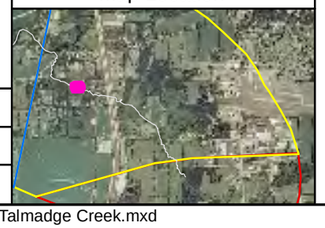
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP1.46 - MP1.51

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

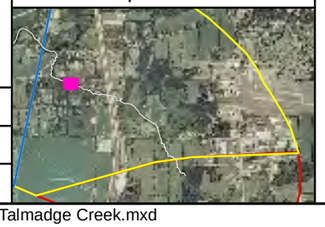
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.52 - MP1.60

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

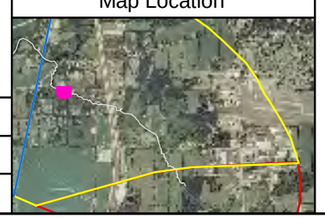
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.61 - MP1.66

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

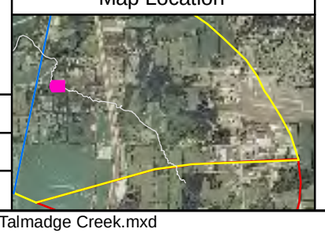
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS 5/19/2011
Approved:	DBR 5/19/2011
Project #:	106-4186

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.67 - MP1.73

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.74 - MP1.78

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

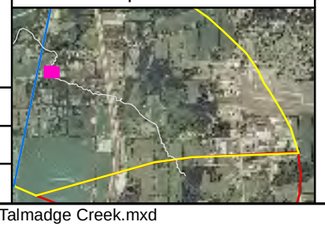
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil
with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.79 - MP1.82

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

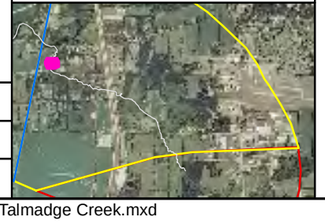
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.83 - MP1.85

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK MP1.86 - MP1.89

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

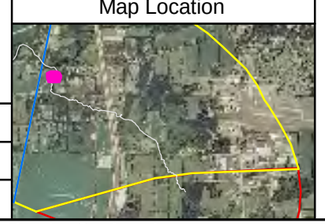
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate
- Milepost

N

0 15 30
Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.90 - MP1.94

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

Map Location

Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ENBRIDGE

Drawn:	BRS	5/19/2011
Approved:	DBR	5/19/2011
Project #:	106-4186	

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.95 - MP1.99

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

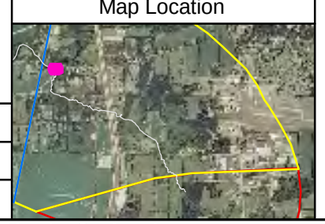
G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	BRS 5/19/2011
Approved:	DBR 5/19/2011
Project #:	106-4186

Map Location



Legend

Submerged Oil with soft sediment thickness (ft)
- Heavy
- Moderate
- Light
- None
- N/A

BedType
- Soft Sediment
- Silt over Sand
- Organic
- Sand
- Sand over Silt
- Sand & Gravel
- Sand & Silt
- Gravel & Larger
- Other

Delineation Areas
- Heavy
- Moderate

Milepost

N

0 15 30

Scale in Feet

ATTACHMENT 3, FIGURE 1: TALMADGE CREEK
MP1.99 - MP2.03

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

G:\ArcMap Project Files\Report Maps\Talmadge Creek.mxd

Aerial Photography Date: April 2011

Attachment 3

Figure 2 - Poling Assessment Results confluence to Ceresco Dam

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 2
POLING ASSESSMENT RESULTS
CONFLUENCE TO CERESCO DAM
MP 02.00 - MP 03.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

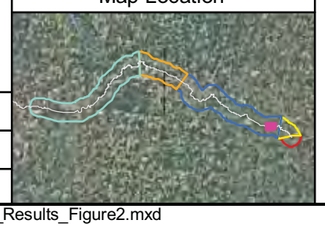
M:\ArcMap Project Files\Report\Poling_Results_Figure2.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 2
POLING ASSESSMENT RESULTS
CONFLUENCE TO CERESCO DAM

MP 03.00 - MP 03.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

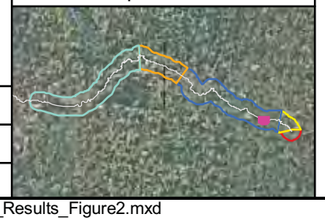
M:\ArcMap Project Files\Report\Poling_Results_Figure2.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 2
POLING ASSESSMENT RESULTS
CONFLUENCE TO CERESCO DAM
MP 03.75 - MP 04.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

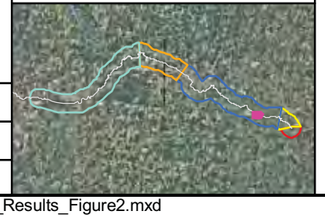
M:\ArcMap Project Files\Report\Poling_Results_Figure2.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

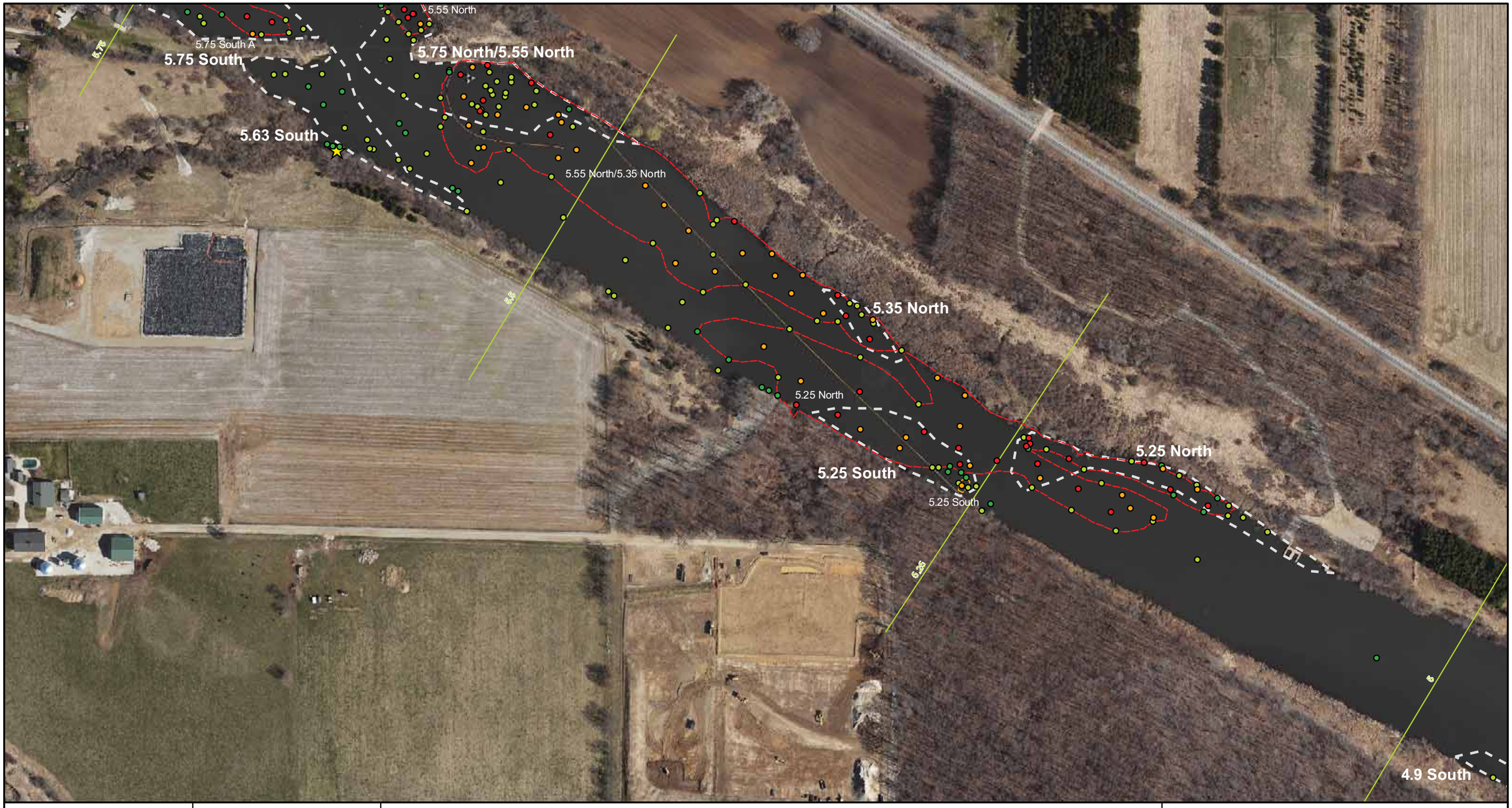
ATTACHMENT 3, FIGURE 2
POLING ASSESSMENT RESULTS
CONFLUENCE TO CERESCO DAM

MP 04.50 - MP 05.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure2.mxd

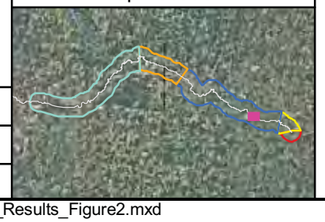
Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 2
POLING ASSESSMENT RESULTS
CONFLUENCE TO CERESCO DAM
MP 05.00 - MP 05.65

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure2.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 2
POLING ASSESSMENT RESULTS
CONFLUENCE TO CERESCO DAM
MP 05.65 - MP 06.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure2.mxd

Aerial Photography Date: April 2011

Attachment 3

Figure 3 – Poling Assessment Results Ceresco Dam to Kalamazoo Dam

ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM
MP 05.65 - MP 06.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM

MP 06.25 - MP 07.15

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

7.95T

7.81T

7.75

7.76

7.65 North

7.55 South

7.49T

7.45 North

7.45 North

7.78

7.37T

7.35 Center

7.35

ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600

Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM

MP 07.15 - MP 07.95

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

8.75 North B

8.75 North

8.75 North A

8.75

8.68T

8.6 North

8.6 North

8.58T

8.5

8.43T

8.5L1/L2

8.5 L1/L2

8.25 Islands

8.25 Islands

8.21T

8.25

8.05 Center

8

7.95T

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600

Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM

MP 07.95 - MP 08.75

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

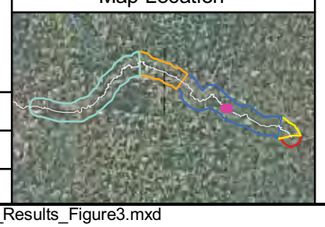
M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location



Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate

Transect

Poling Focus Areas

Park/Launch Access Poling Areas

Bridge Access Poling Areas

Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM
MP 08.75 - MP 09.25

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM

MP 09.25 - MP 10.00

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

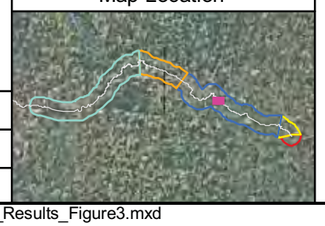
M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location



Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM
MP 10.00 - MP 10.65

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

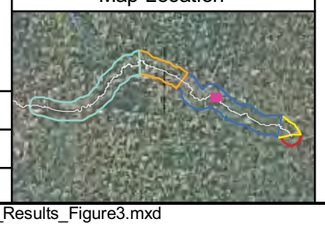
M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location



Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM
MP 10.65 - MP 11.35

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM

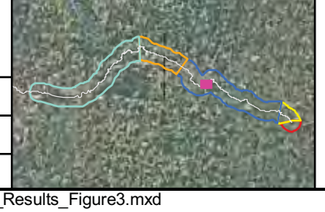
MP 11.35 - MP 12.45

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

Map Location



Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

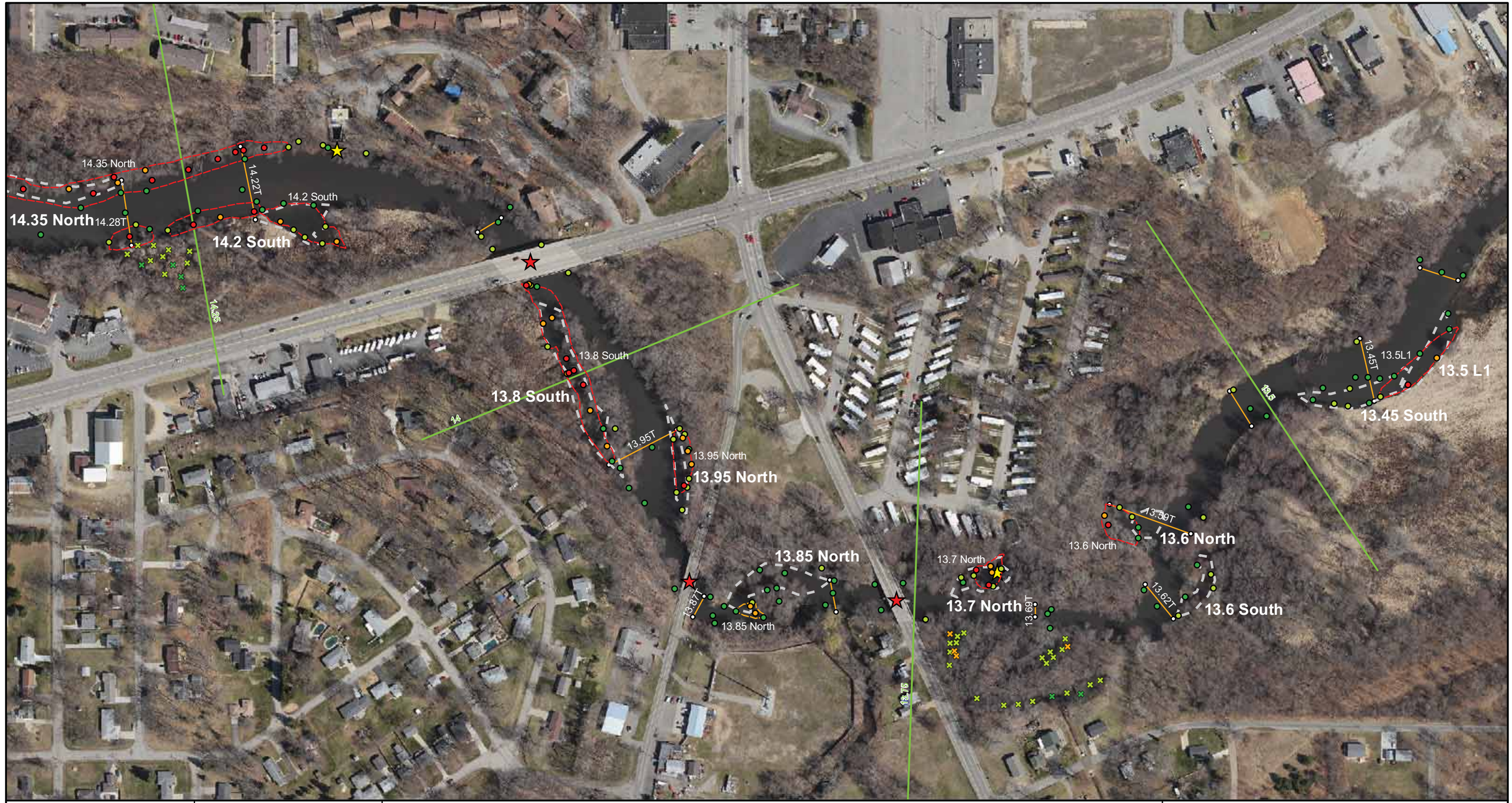
ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM

MP 12.45 - MP 13.35

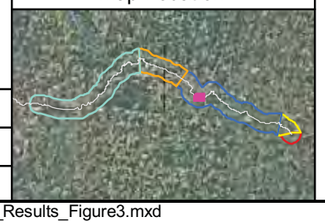
ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011



Map Location



ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM
MP 13.35 - MP 14.35

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM

MP 14.35 - MP 14.95

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

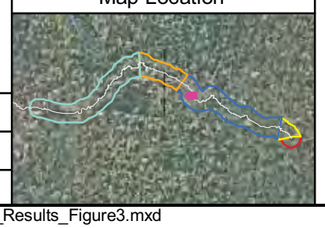
M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

15.4
15.4
North Mill Pond
North Mill Pond
North Mill Pond
15.25
15.25
15.25
South Mill Pond B
South Mill Pond
15.05 South B
South Mill Pond A
15.05 South A
15.05 South
14.9 South
15
14.75

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location



Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

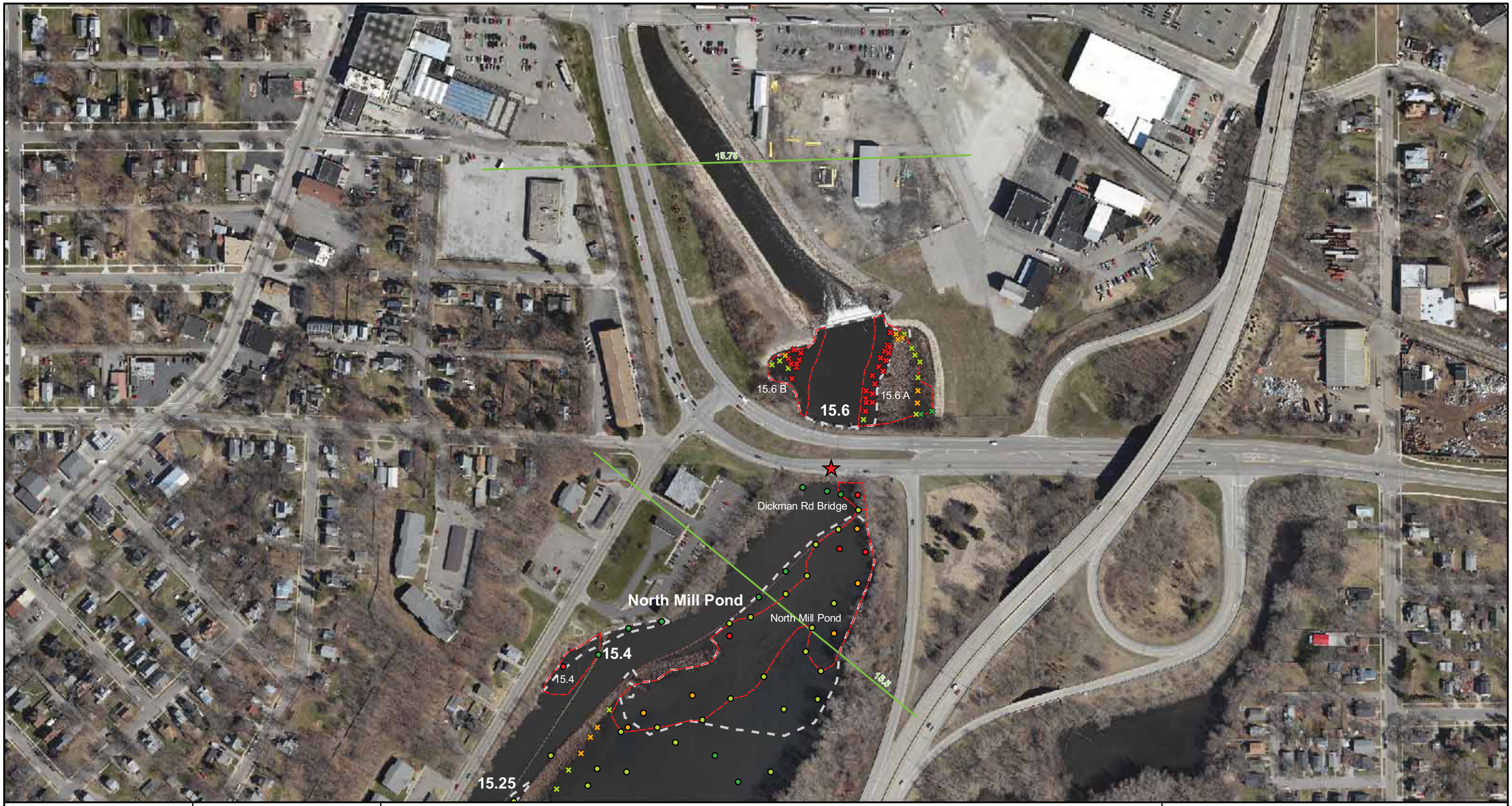
0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM
MP 14.95 - MP 15.35

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB 05/18/2011
Approved:	BRS 05/18/2011
Project #:	106-4186

Map Location

Legend

SOTF Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Strike Force Submerged Oil Category
- Heavy
- Moderate
- Light
- None

Delineation Areas
- Heavy
- Moderate
- Transect
- Poling Focus Areas

- Park/Launch Access Poling Areas
- Bridge Access Poling Areas
- Quarter Mile Grid Segment

N

0 150 300 600
Scale in Feet

ATTACHMENT 3, FIGURE 3
POLING ASSESSMENT RESULTS
CERESCO DAM TO KALAMAZOO DAM
MP 15.35 - MP 15.80

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Poling_Results_Figure3.mxd

Aerial Photography Date: April 2011

Attachment 4

Figure 1 – Submerged Oil Delineation Areas

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 00.00 - MP 00.30

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

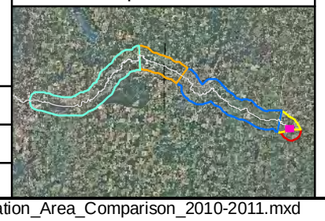
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 00.30 - MP 00.55

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

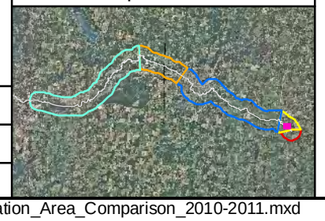
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB	05/19/2011
Approved:	BRS	05/19/2011
Project #:	106-4186	

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 00.68 - MP 01.10

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

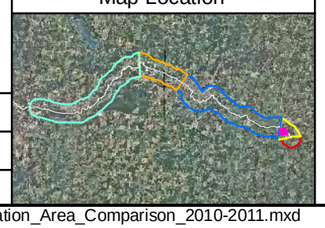
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 01.17 - MP 01.62

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

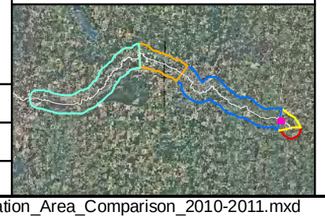
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 01.60 - MP 01.94

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

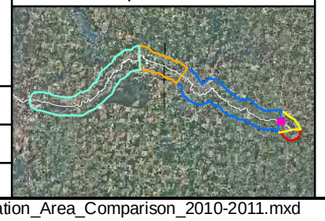
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 01.85 - MP 02.18

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

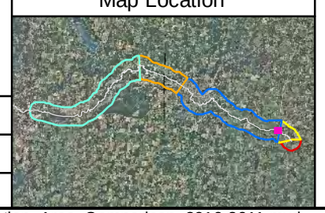
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 02.24 - MP 02.79

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

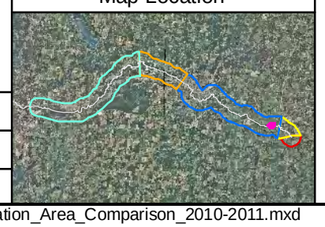
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 03.09 - MP 03.48

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

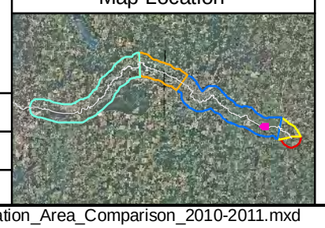
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

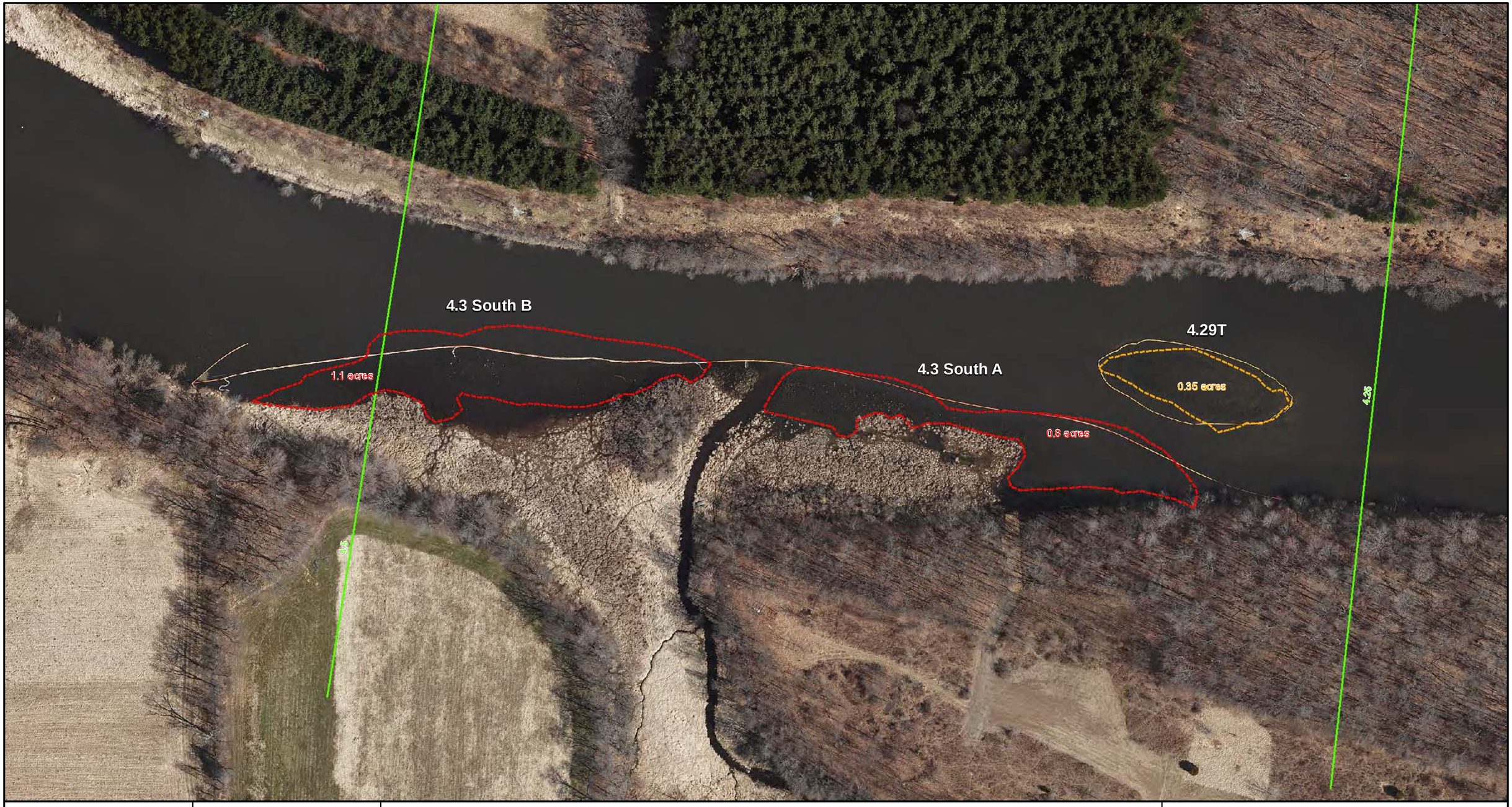
ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 03.37 - MP 04.27

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

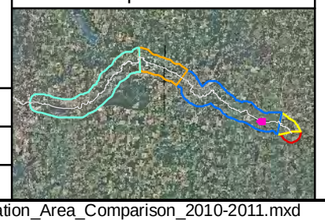
Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 04.22 - MP 04.60

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB	05/19/2011
Approved:	BRS	05/19/2011
Project #:	106-4186	

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 04.73 - MP 05.05

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

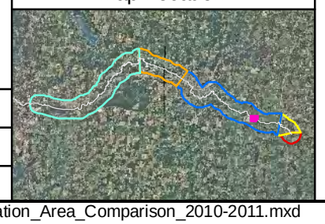
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB	05/19/2011
Approved:	BRS	05/19/2011
Project #:	106-4186	

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

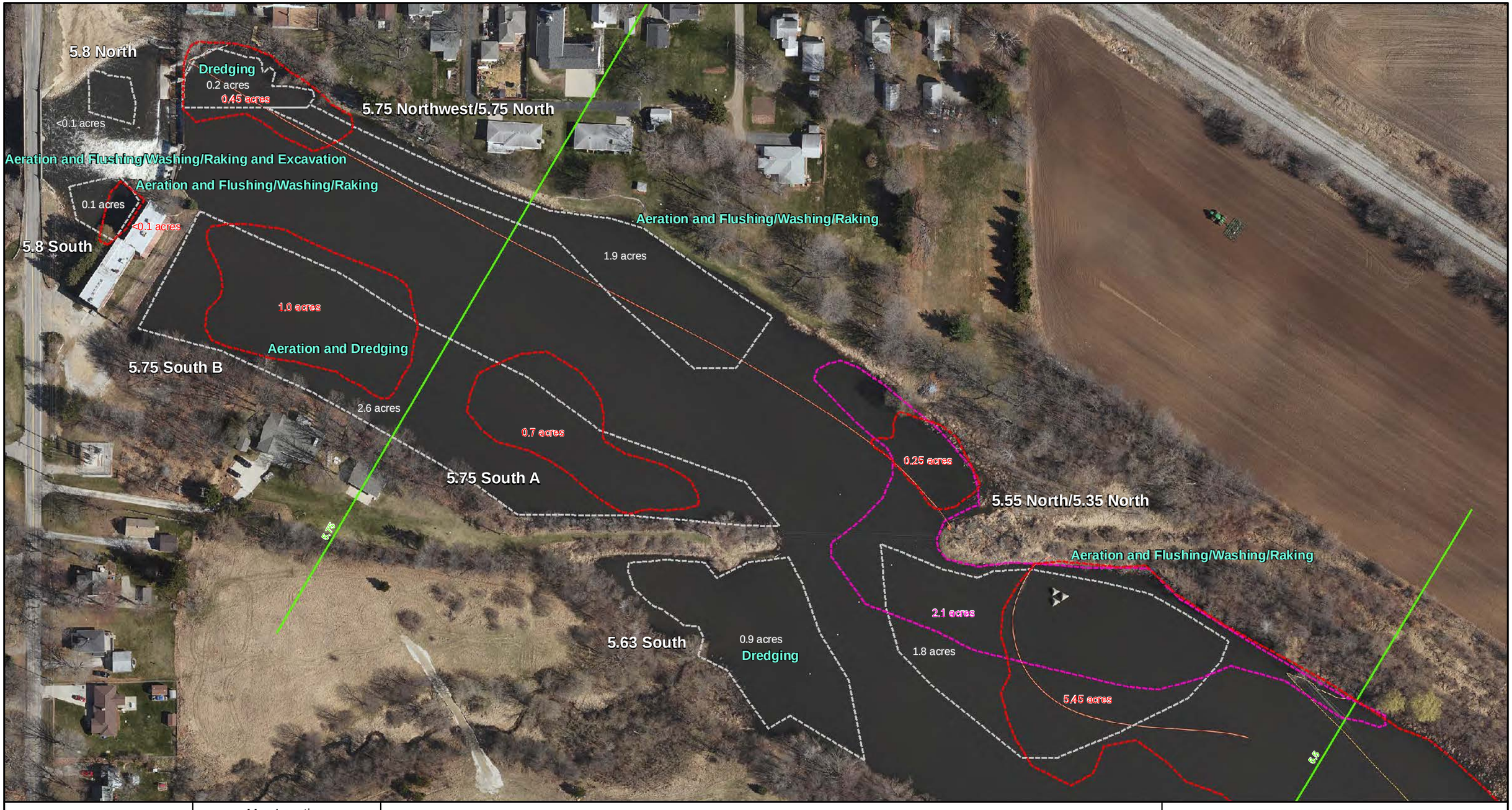
ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 05.16 - MP 05.54

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

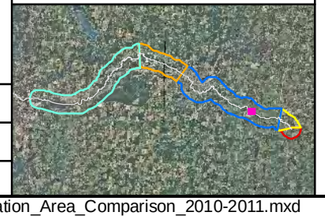
Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

2010 Priority Sites

Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

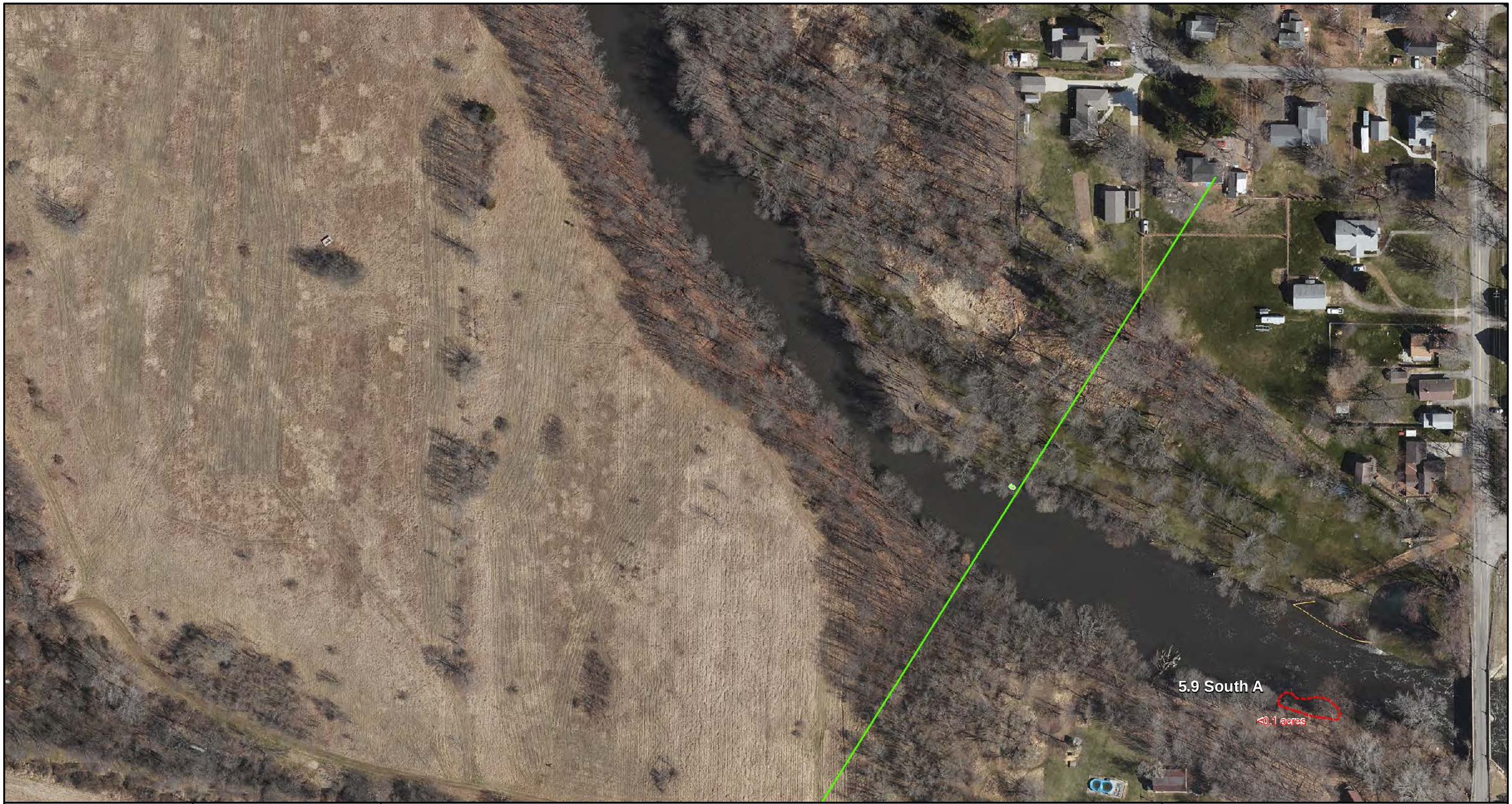
ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 05.53 - MP 05.88

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

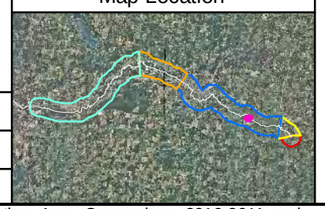
Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

2010 Priority Sites

Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 05.86 - MP 06.16

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 06.35 - MP 06.83

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

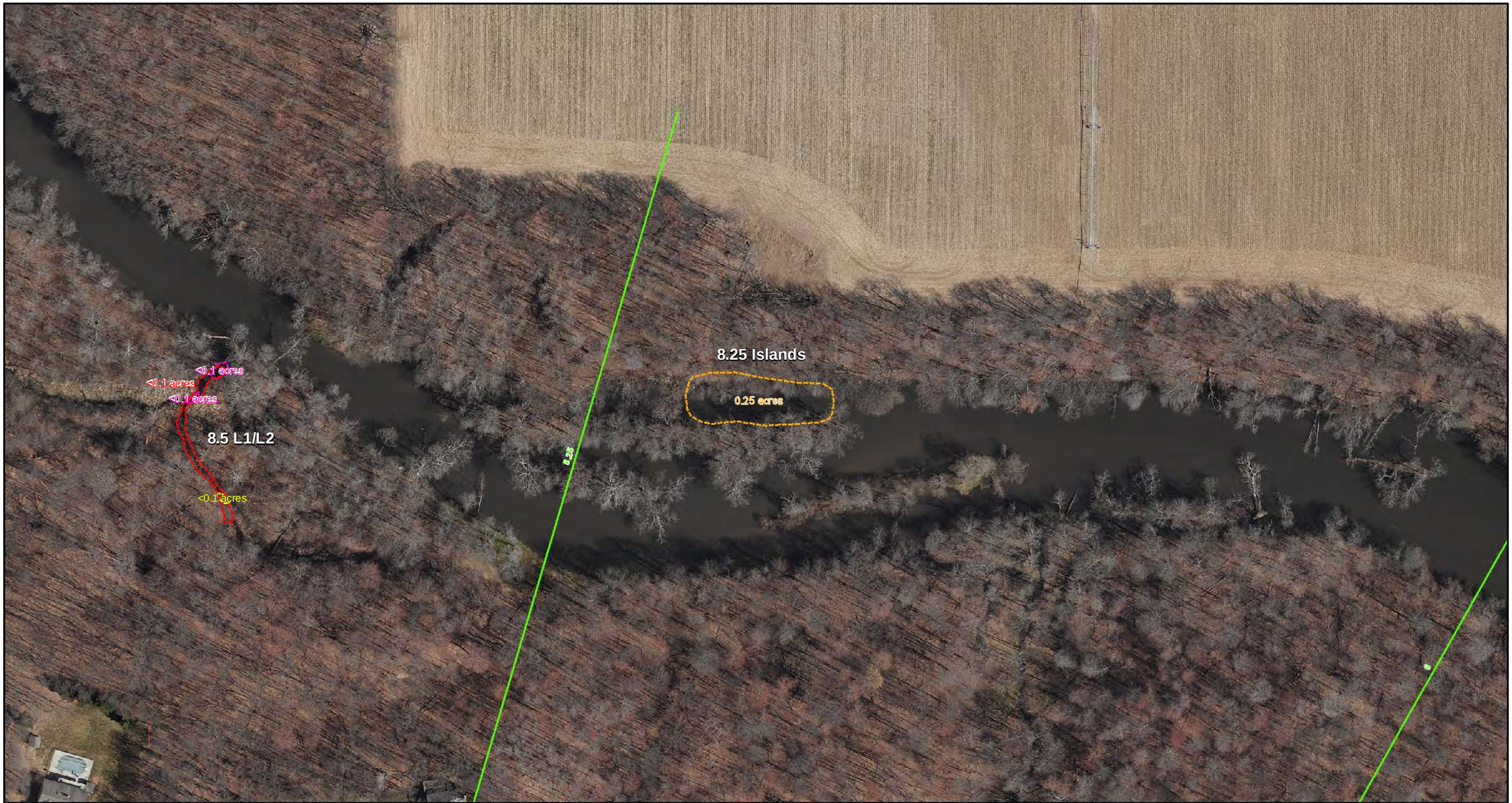
ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 07.41 - MP 07.83

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB	05/19/2011
Approved:	BRS	05/19/2011
Project #:	106-4186	

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

2010 Priority Sites

Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 08.00 - MP 08.42

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

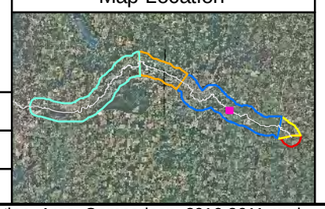
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 08.56 - MP 08.80

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

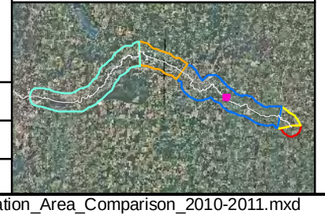
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

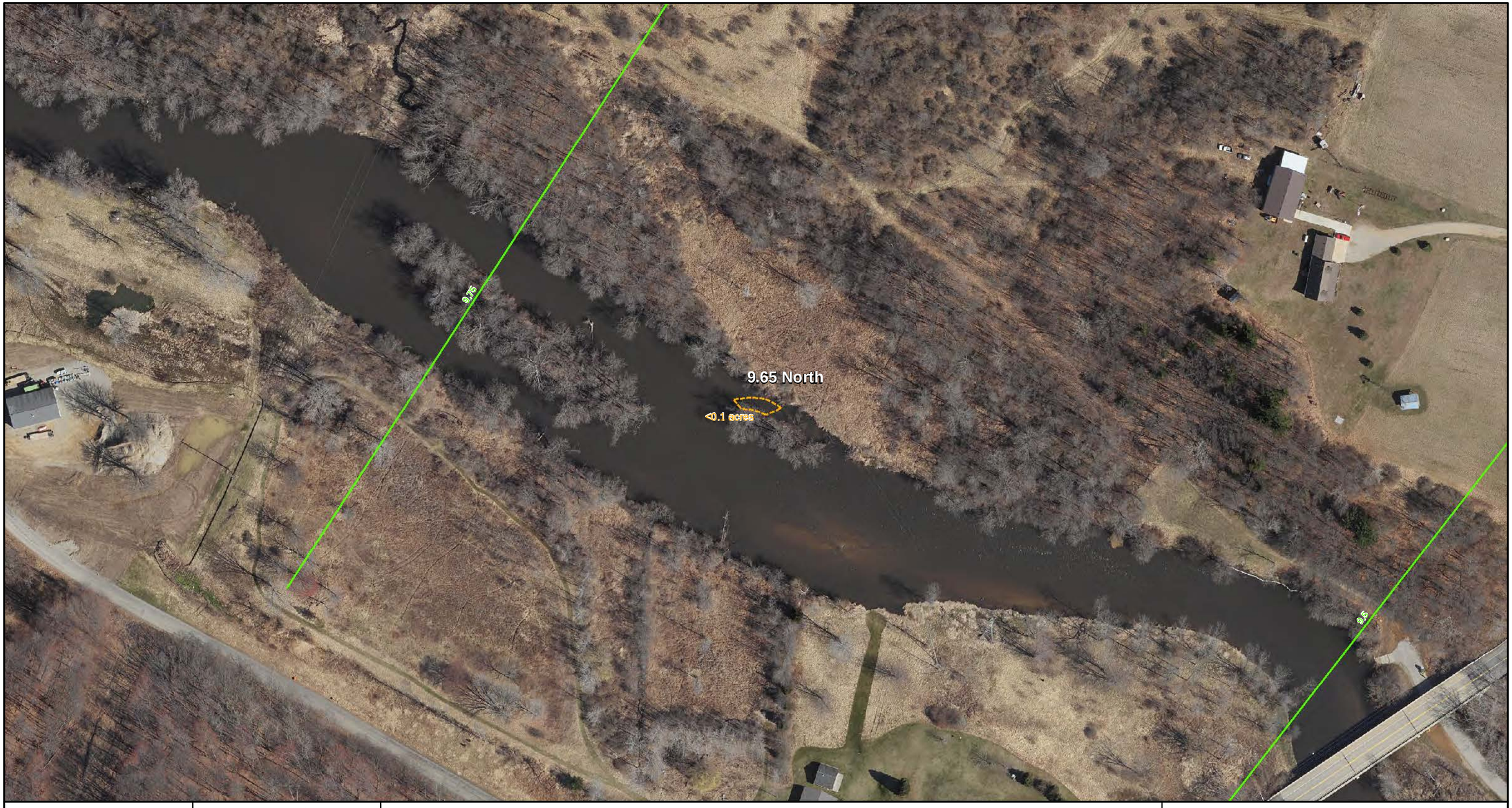
ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 08.94 - MP 09.31

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

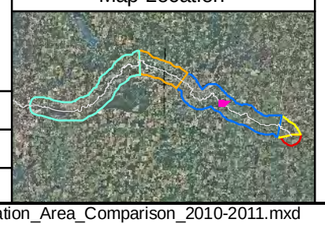
Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB	05/19/2011
Approved:	BRS	05/19/2011
Project #:	106-4186	

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

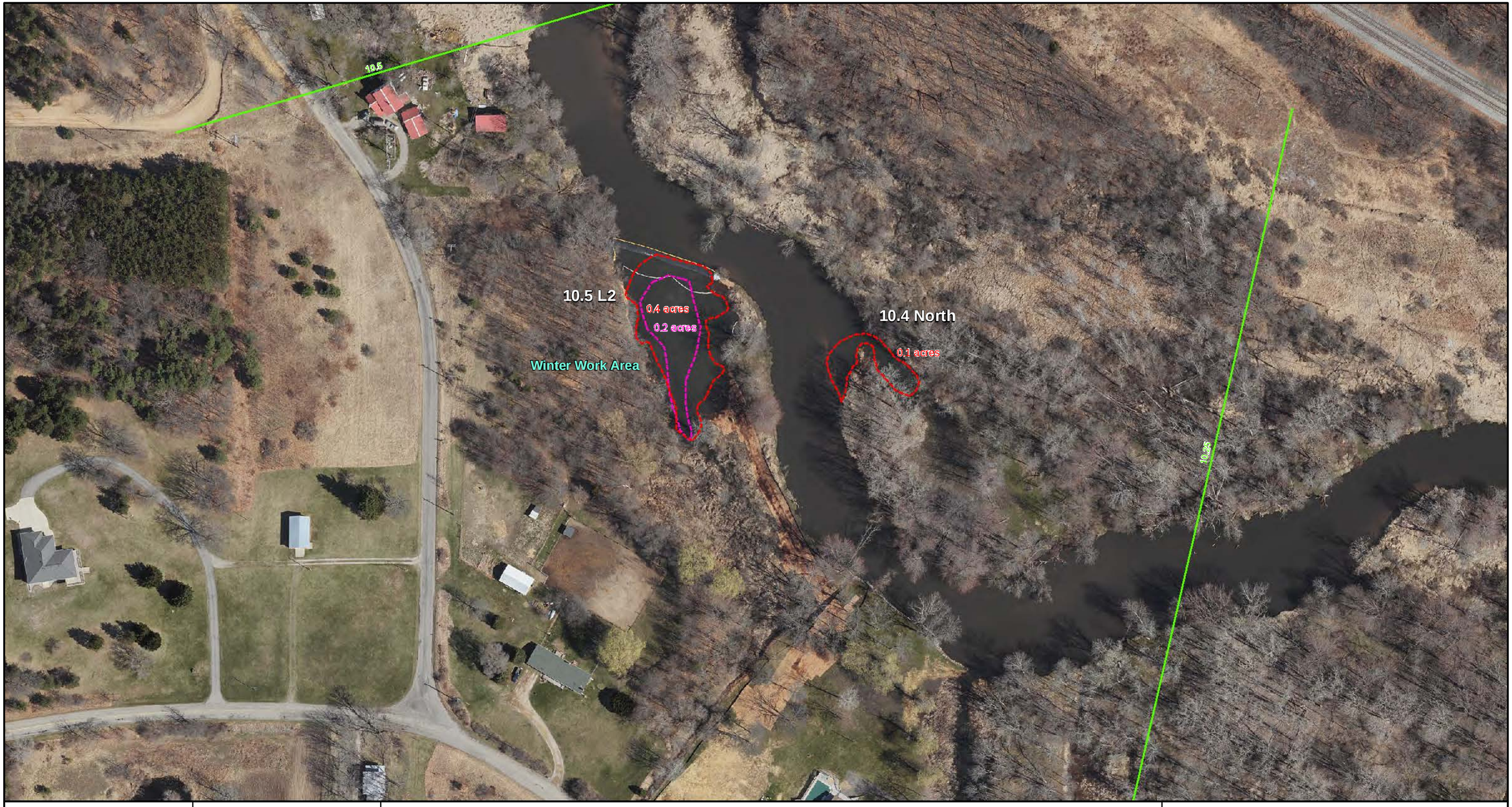
ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 09.47 - MP 09.88

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

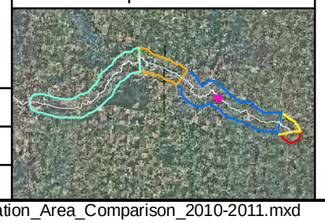
Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB	05/19/2011
Approved:	BRS	05/19/2011
Project #:	106-4186	

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment
- 2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 10.16 - MP 10.50

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 10.44 - MP 10.67

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

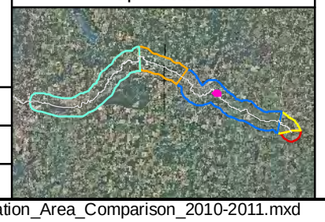
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

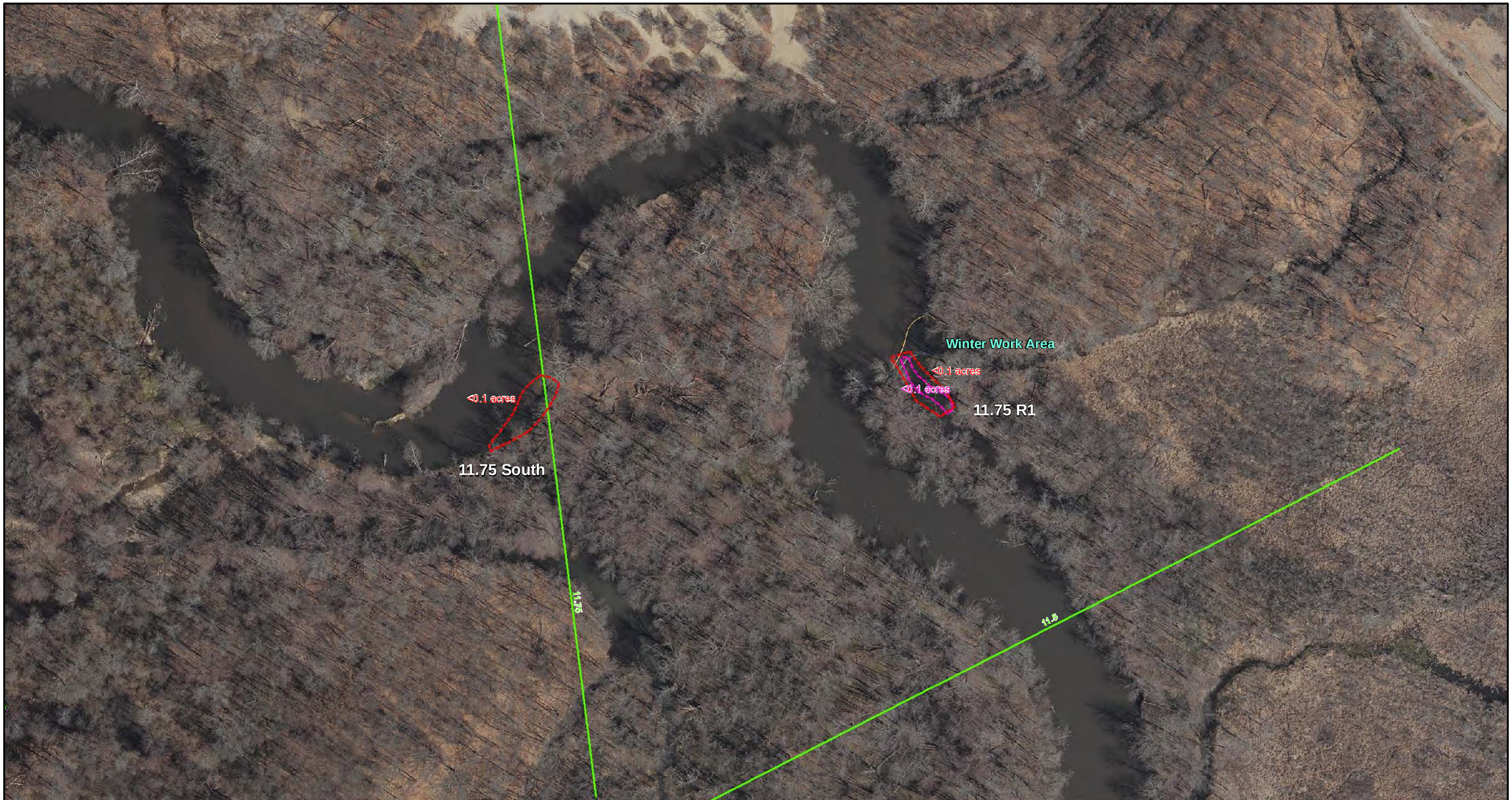
ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 10.71 - MP 10.97

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 11.45 - MP 11.95

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 12.31 - MP 12.72

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 13.05 - MP 13.56

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

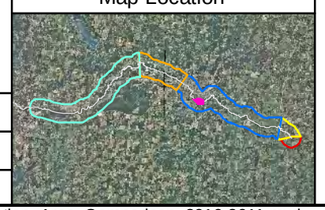
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 13.54 - MP 14.06

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

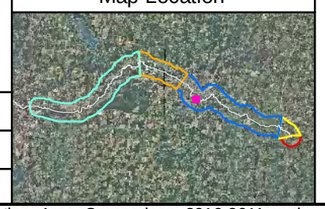
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 14.17 - MP 14.60

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

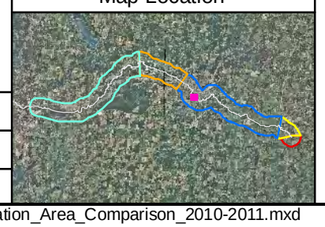
M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 14.59 - MP 14.88

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 14.76 - MP 15.11

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011

ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

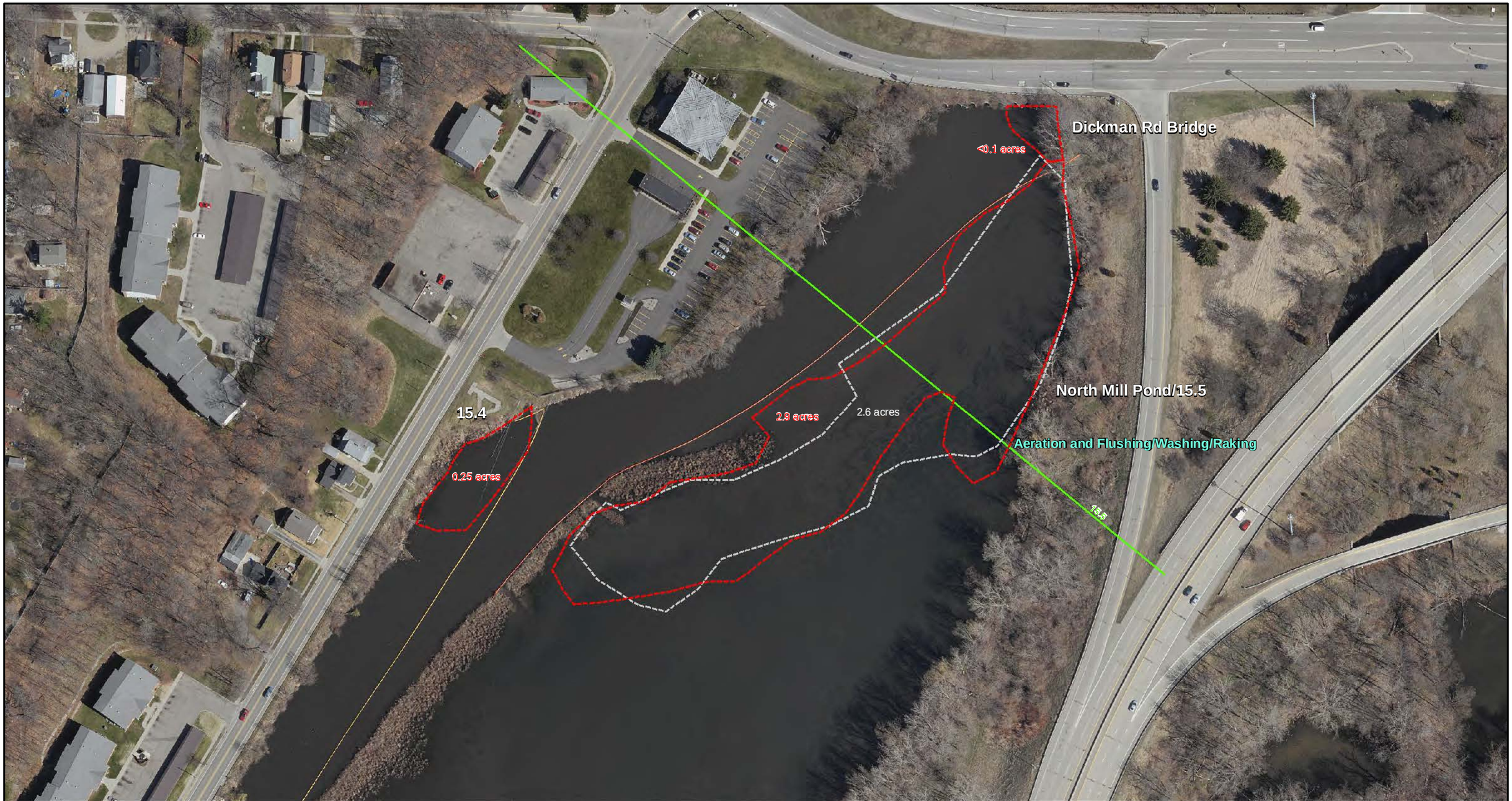
ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 15.11 - MP 15.34

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location

Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment

2010 Recovery Method

N

0 75 150 300
Scale in Feet

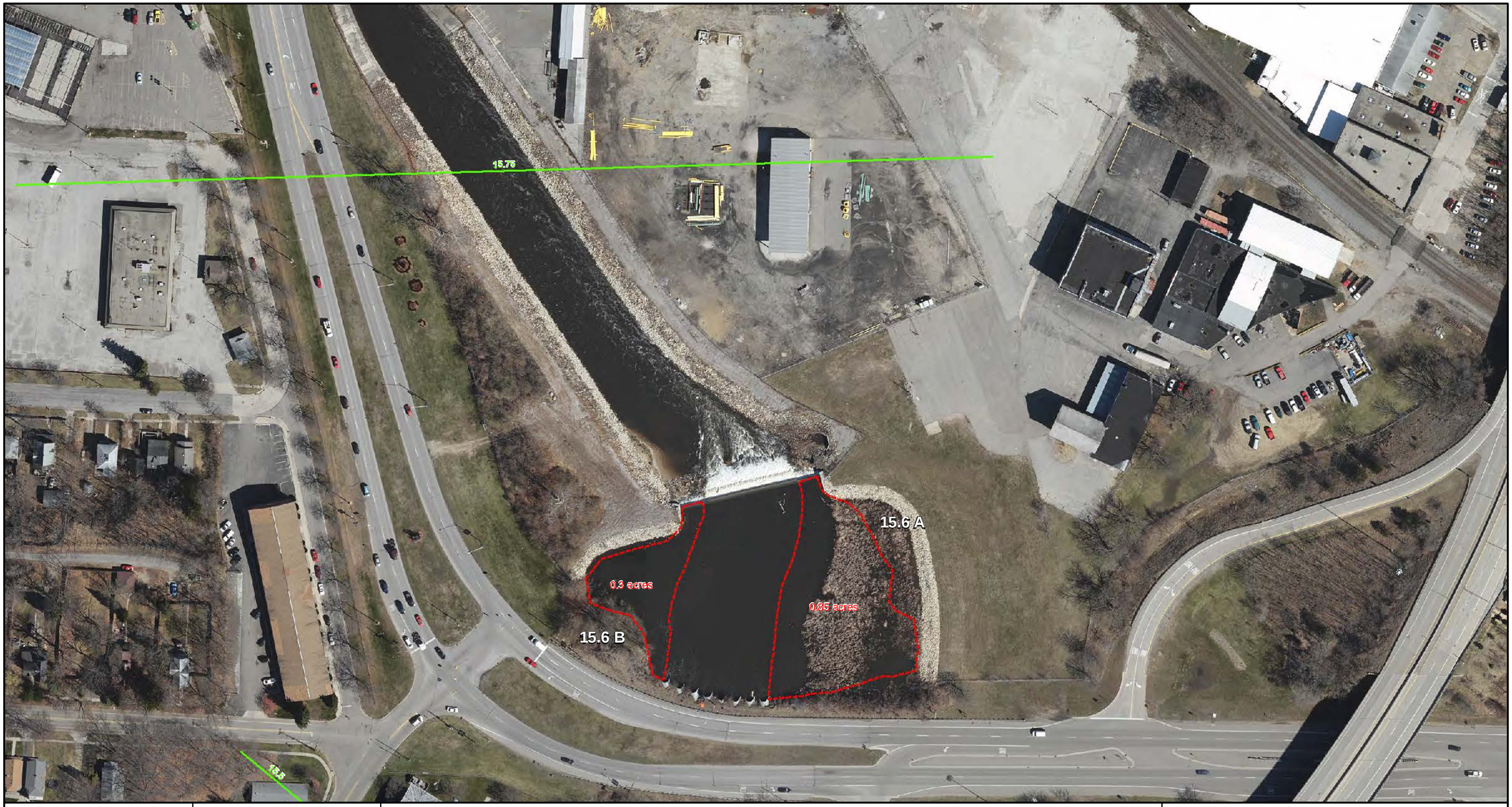
ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 15.30 - MP 15.59

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

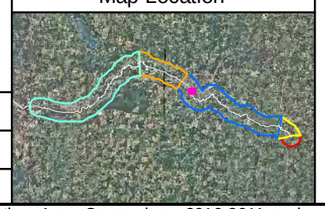
Aerial Photography Date: April 2011



ENBRIDGE

Drawn:	KAB 05/19/2011
Approved:	BRS 05/19/2011
Project #:	106-4186

Map Location



Legend

2011 Delineation Areas
- Heavy
- Moderate

O&M Delineation Areas
- Heavy
- Moderate

- 2010 Priority Sites
- Quarter Mile Grid Segment
- 2010 Recovery Method

N

0 75 150 300
Scale in Feet

ATTACHMENT 4, FIGURE 1
SUBMERGED OIL DELINEATION AREAS
2010 AND 2011

MP 15.56 - MP 15.80

ENBRIDGE LINE 6B MP 608
MARSHALL, MI PIPELINE RELEASE
ENBRIDGE ENERGY, LIMITED PARTNERSHIP

M:\ArcMap Project Files\Report\Delineation_Area_Comparison_2010-2011.mxd

Aerial Photography Date: April 2011