Enbridge Line 6B MP 608 Pipeline Release
Marshall, Michigan
Source Contamination Removal and Verification Summary Report
Talmadge Creek Section 9
Stationing 85+00L to 95+00L and 82+50R to 92+00R

Enbridge Energy
September 25, 2010

Talmadge Creek Source Contamination Removal and Verification Summary Report

Section 9 of 10 – Stationing (85+00L to 95+00L) and (82+50R to 92+00R)

Overview

The Enbridge Source Area Response Plan (SAR) and Sampling and Analysis Plan (SAP), dated 2 August 2010, revised 17 August 2010 was developed to prescribe response activities related to a release of crude oil from Enbridge Energy, Limited Partnership's Line 6B MP 608 pipeline in Marshall, Michigan. A detailed and defined approach to identify and complete source removal was subsequently developed and presented in the 13 September 2010 *Supplement to Source Area Response Plan Approach for Source Contamination Removal, Verification and Backfill, Talmadge Creek, Enbridge Line 6B MP 608,* and the *Notice of Approval of Modification* dated 14 September 2010. This report presents the results of the implementation of that approach for Section 9 of 10 (Stationing left bank of Talmadge Creek: 85+00L to 95+00L and Stationing right bank of Talmadge Creek: 82+50R to 92+00R).

Supplemental SAR Objectives

The following remedial objectives were identified to develop guidelines and procedures to remove the source area contamination from Talmadge Creek:

- Remove free oil from the banks of Talmadge Creek;
- Stabilize the existing creek bed;
- Identify that adjacent up bank areas are not a source of free oil.

To meet these objectives, the response actions included the completion of the following activities along Talmadge Creek:

- Site clearing and grubbing of trees and vegetation to allow access road construction and implementation of free oil removal activities;
- Construction of temporary access roads into the affected area;
- Construction of flumes along Talmadge Creek to recover free oil;
- Oil and water recovery and subsequent disposal;
- Installation and maintenance of absorbent booms along Talmadge Creek;
- Soil removal, staging, and bulking of crude oil-impacted soil with eventual characterization, transport, and offsite disposal;
- Storm water management and erosion control;

- Interim source area restoration under guidance of Michigan Department of Natural Resources and Environment (MDNRE).

Section Location

For efficiency and clarity in implementation and reporting, Divisions A and B of Talmadge Creek were divided into 10 sections as illustrated in Figure 1. Each section was subsequently divided into approximately 20, 50-foot linear clearance areas (stationing) on both the left and right banks of Talmadge Creek as illustrated in Figure 2, (left and right banks oriented facing downstream). This summary report addresses Section 9 as described in the table below.

Section Number	Stationing
9	Left Bank: 85+00L to 95+00L Right Bank: 82+50R to 92+00R

Section Excavation Methods and Clearance Metrics

Three methods for determining the vertical limit of excavation were developed and identified as A, B, or C. These three methods are defined as:

- A – No visible free oil and the clearance area passed the 40 CFR Appendix 1 to Subpart A of Part 4105 - Static Sheen Test. A test pit was then constructed and inspected by the United States Environmental Protection Agency (U.S. EPA) representative after 6 hours. If free oil was observed in the 6-hour test pit, additional excavation was completed until clearance was obtained via method A, B, or C. If free oil was not observed, backfilling was completed.

- B – The vertical limit was reached due to groundwater (excavation proceeded vertically at least 6-inches into groundwater). No 6-hour test pit was required for clearance.

- C – The vertical limit was reached due to the silt/clay confining layer. No 6-hour test pit was required for clearance.

In addition, an approximately 2-foot wide 48-hour observation pit/trench was installed along the wall of the excavation boundary and remained open for a minimum of 48 hours to allow the EPA representative to observe potential accumulation of free oil. If oil was observed, an evaluation of the source was conducted and an XTex curtain was installed to separate the impacted area from the clean area. If no oil was observed, or the barrier curtain was installed, backfilling proceeded.

Soil Sampling and Analysis

Soil samples were collected from the area of excavation and analyzed pursuant to MDNRE approved work plans for the following analytical parameters:

- Total Petroleum Hydrocarbons (TPH):
    - Gasoline Range Organics (GRO);
    - Diesel Range Organics (DRO);

    - Oil Range Organics (ORO);
- Benzene;
- Toluene;
- Ethylbenzene;
- Xylenes;
- Polynuclear Aromatics (PNAs);
- 1,2,4-Trimethlybenzene;
- 1,10,5-Trimethylbenzene;
- Barium;
- Nickel;
- Vanadium;
- Iron.

The analytical results will be evaluated as part of future assessment and remediation activities.

Deviations from SAP

No deviations from the SAP were noted in this Section.

Conclusion

All completed work for this section met the U.S. EPA metrics in compliance with the SAR and the Supplement to the SAR. No additional cleanup is required to fulfill the U.S. EPA's requirements pursuant to the Removal Administrative Order issued by U.S. EPA on July 27, 2010 (Docket No. CWA 11021-5-10-001) pursuant to §1011(c) of the Clean Water Act.

Supporting Documentation

The following documentation is included as attachments to this document:

- Location maps indentifying the subject section (Figures 1 and 2);
- Photographs;
- Field notes;
- A table summarizing the following information:

- Identification of final EPA clearance method used to dictate vertical limit (A, B, or C);
- Free oil observed (for Method A);
- Odor (for Method A);
- Sheen test per 40 CFR Appendix 1 to Subpart A of Part 4105 (for Method A);
- Photoionization detector (PID) headspace (for Method A);
- Installation date and time of 6-hour test pit;
- EPA representative sign-off and approval of backfilling;
- Installation date and time of 48-hour observation pit/trench;
- 48-hour observation.

Table

Talmadge Creek Source Contamination Removal and Verification Summary Table: Section 9

Division	Section Number	Station Number	Creek Bank (L/R)	Final EPA Clearance Method (A, B, C)	Free Oil Observed (Y/N)	Odor (Y/N)	40 CFR Sheen Test Sheen Observed (Y/N)	PID Headspace (ppm)	Installation Date of 6-hour Test Pit	Installation Time of 6-hour Test Pit	Method A 6-hour Test Pit EPA Representative Sign-off (Y/N)	Installation Date of 48-hour Observation Trench/Pit	Installation Time of 48-hour Observation Trench/Pit	48-hour Observation Completed (Y/N)
B4	9	85+00L - 85+50L	L	A	N	N	N	2.6	9/15/2010	1555	Y	9/15/2010	1555	Y
B4	9	85+50L - 86+00L	L	A	N	N	N	3.1	9/15/2010	1545	Y	9/15/2010	1545	Y
B4	9	86+00L - 86+50L	L	A	N	N	N	1.8	9/18/2010	1810	Y	9/18/2010	1810	Y
B4	9	86+50L - 87+00L	L	A	N	N	N	2.6	9/21/2010	1700	Y	9/21/2010	1700	Y
B4	9	87+00L - 87+50L	L	A	N	N	N	1.7	9/18/2010	1630	Y	9/18/2010	1630	Y
B4	9	87+50L - 88+00L	L	A	N	N	N	1.4	9/17/2010	1810	Y	9/17/2010	1725	Y
B4	9	88+00L - 88+50L	L	A	N	N	N	1.7	9/17/2010	1720	Y	9/17/2010	1725	Y
B4	9	88+50L - 89+00L	L	A	N	N	N	2.4	9/15/2010	1355	Y	9/18/2010	1515	Y
B4	9	89+00L - 89+50L	L	A	N	N	N	2.1	9/15/2010	1320	Y	9/15/2010	1320	Y
B4	9	89+50L - 90+00L	L	A	N	N	N	5.0	9/15/2010	1129	Y	9/15/2010	1129	Y
B4	9	90+00L - 90+50L	L	A	N	N	N	2.3	9/15/2010	1109	Y	9/15/2010	1109	Y
B4	9	90+50L - 91+00L	L	A	N	N	N	1.2	9/15/2010	1019	Y	9/15/2010	1019	Y
B4	9	91+00L - 91+50L	L	A	N	N	N	0.3	9/15/2010	1028	Y	9/15/2010	1028	Y
B4	9	91+50L - 92+00L	L	A	N	N	N	0.0	9/15/2010	1000	Y	9/15/2010	1000	Y
B4	9	92+00L - 92+50L	L	A	N	N	N	0.0	9/15/2010	0955	Y	9/15/2010	0955	Y
B4	9	92+50L - 93+00L	L	A	N	N	N	0.0	9/15/2010	0905	Y	9/15/2010	0910	Y
B4	9	93+00L - 93+50L	L	A	N	N	N	NR	9/15/2010	0856	Y	9/15/2010	0901	Y
B4	9	93+50L - 94+00L	L	A	N	N	N	0.5	9/14/2010	1803	Y	9/14/2010	1807	Y
B4	9	94+00L - 94+50L	L	A	N	N	N	0.3	9/14/2010	1755	Y	9/14/2010	1759	Y
B4	9	94+50L - 95+00L	L	A	N	N	N	NR	9/14/2010	1729	Y	9/14/2010	1729	Y

See endnotes for description of notations

Talmadge Creek Source Contamination Removal and Verification Summary Table: Section 9

Division	Section Number	Station Number	Creek Bank (L/R)	Final EPA Clearance Method (A, B, C)	Free Oil Observed (Y/N)	Odor (Y/N)	40 CFR Sheen Test Sheen Observed (Y/N)	PID Headspace (ppm)	Installation Date of 6-hour Test Pit	Installation Time of 6-hour Test Pit	Method A 6-hour Test Pit EPA Representative Sign-off (Y/N)	Installation Date of 48-hour Observation Trench/Pit	Installation Time of 48-hour Observation Trench/Pit	48-hour Observation Completed (Y/N)
B4	9	82+50R - 83+00R	R	A	N	N	N	0.9	9/17/2010	0956	Y	9/17/2010	0956	Y
B4	9	83+00R - 83+50R	R	A	N	N	N	0.0	9/13/2010	1438	Y	9/13/2010	1442	Y
B4	9	83+50R - 84+00R	R	A	N	N	N	0.0	9/13/2010	1419	Y	9/13/2010	1423	Y
B4	9	84+00R - 84+50R	R	A	N	N	N	0.0	9/13/2010	1411	Y	9/13/2010	1415	Y
B4	9	84+50R - 85+00R	R	A	N	N	N	0.0	9/13/2010	1354	Y	9/13/2010	1358	Y
B4	9	85+00R - 85+50R	R	A	N	N	N	0.5	9/15/2010	1418	Y	9/15/2010	1418	Y
B4	9	85+50R - 86+00R	R	A	N	N	N	0.6	9/15/2010	1356	Y	9/15/2010	1400	Y
B4	9	86+00R - 86+50R	R	A	N	N	N	0.6	9/15/2010	1334	Y	9/15/2010	1334	Y
B4	9	86+50R - 87+00R	R	A	N	N	N	0.8	9/15/2010	1320	Y	9/15/2010	1325	Y
B4	9	87+00R - 87+50R	R	A	N	N	N	0.5	9/15/2010	1125	Y	9/15/2010	1125	Y
B4	9	87+50R - 88+00R	R	A	N	N	N	1.8	9/15/2010	1105	Y	9/15/2010	1105	Y
B4	9	88+00R - 88+50R	R	A	N	N	N	0.9	9/15/2010	0850	Y	9/15/2010	0850	Y
B4	9	88+50R - 89+00R	R	A	N	N	N	0.7	9/15/2010	0900	Y	9/15/2010	0900	Y
B4	9	89+00R - 89+50R	R	A	N	N	N	1.3	9/15/2010	0910	Y	9/15/2010	0910	Y
B4	9	89+50R - 90+00R	R	A	N	N	N	0.9	9/15/2010	0923	Y	9/15/2010	0923	Y
B4	9	90+00R - 90+50R	R	A	N	N	N	1.6	9/15/2010	0936	Y	9/15/2010	0936	Y
B4	9	90+50R - 91+00R	R	A	N	N	N	1.6	9/15/2010	0950	Y	9/15/2010	0950	Y
B4	9	91+00R - 91+50R	R	A	N	N	N	0.8	9/14/2010	1731	Y	9/14/2010	1731	Y
B4	9	91+50R - 92+00R	R	A	N	N	N	NR	9/14/2010	1725	Y	9/14/2010	1725	Y

See endnotes for description of notations

Endnotes for Talmadge Creek Source Contamination Removal and Verification Summary Table

NR – Information not recorded on field log, however, U.S. EPA representative sign-off obtained.

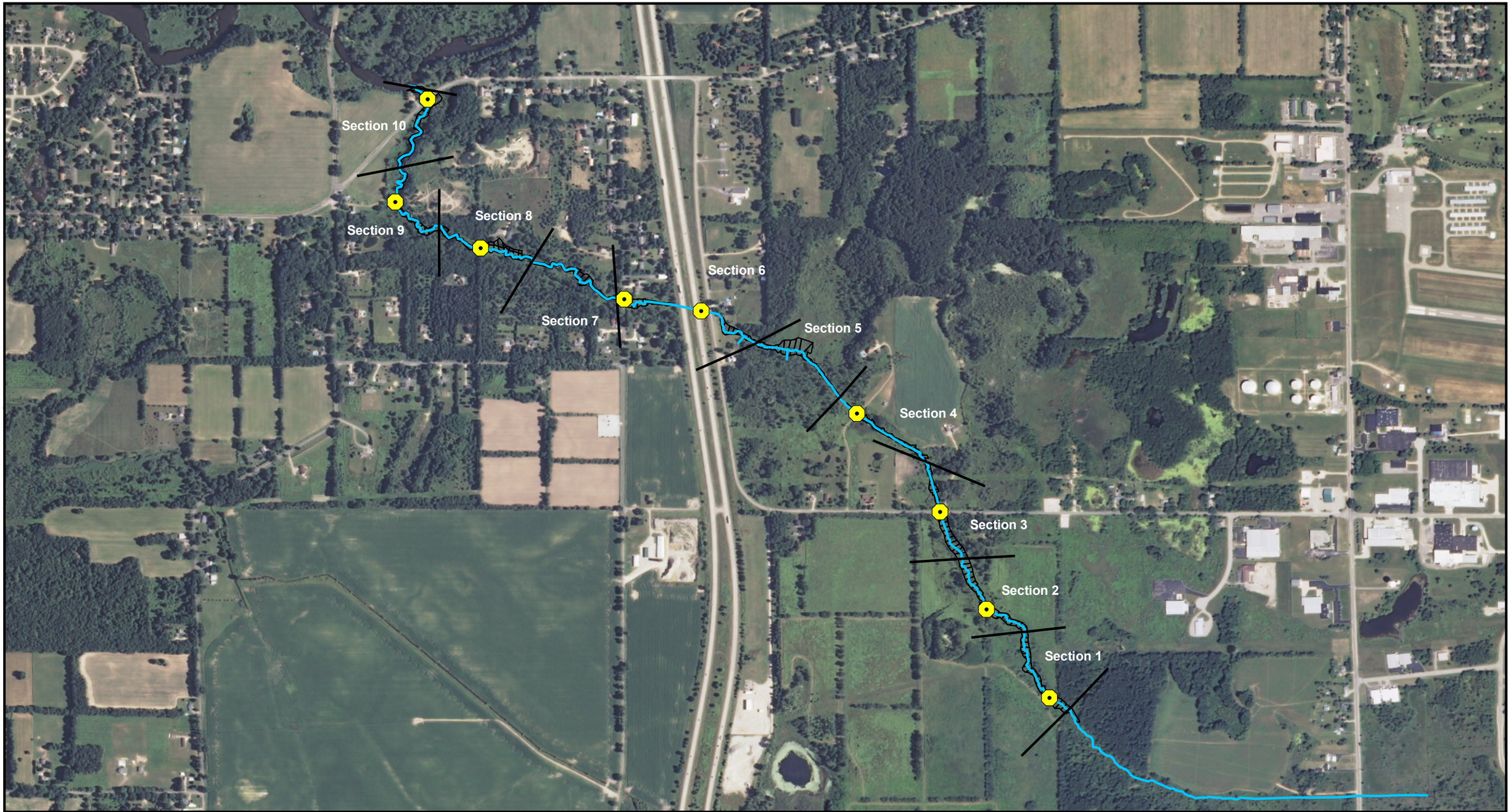
NA – Metric not applicable to final site conditions after achieving 'B' or 'C' Method limits. Site conditions prior to achieving final excavation limits were recorded on field notes.

ND – Not Detected

PID – Photoionization detector

ppm – Parts per million

Figures



N

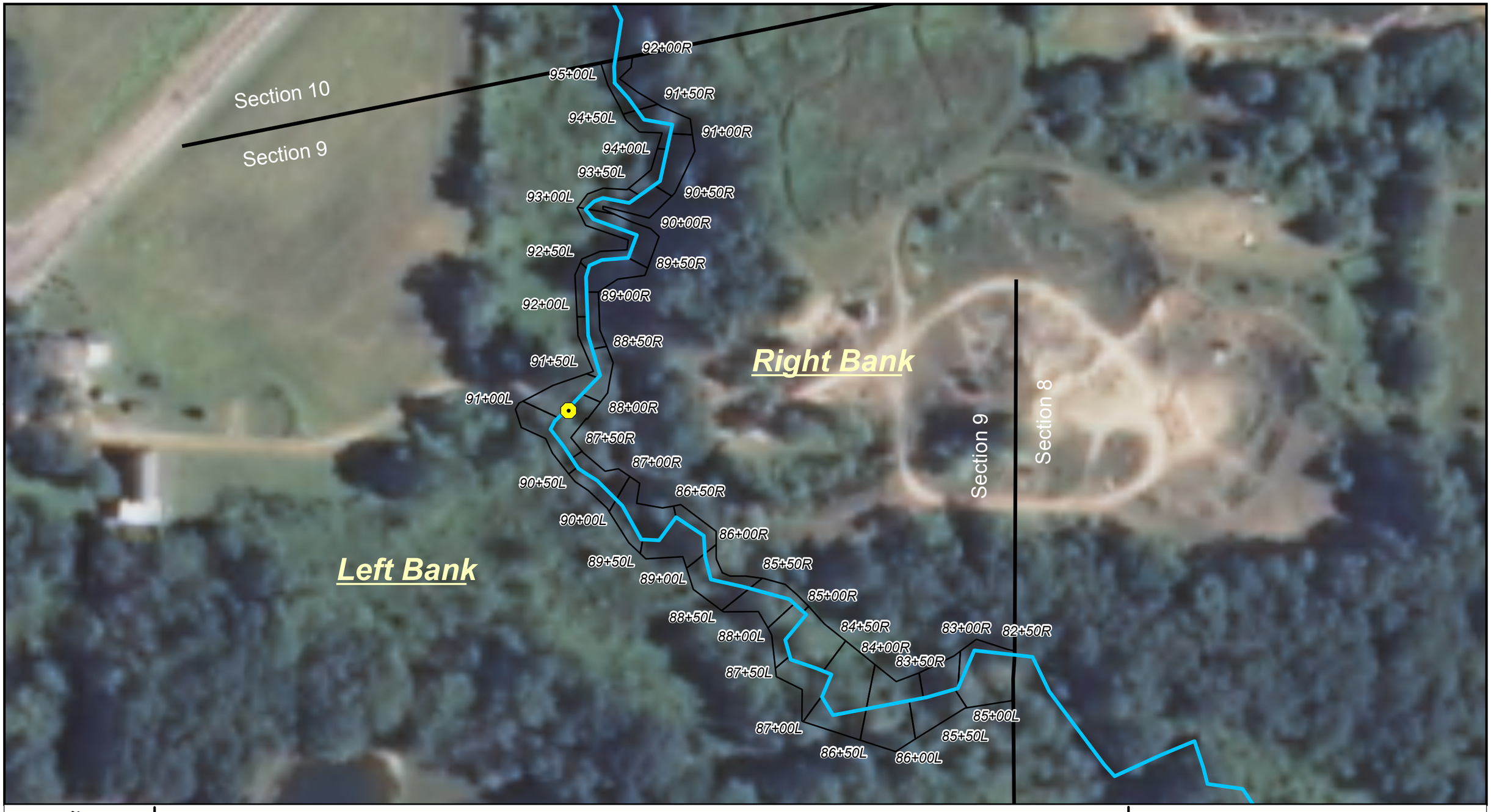
0 500 1,000 Feet

Legend

- Culverts
- Section Lines
- Talmadge Creek

SEPTEMBER, 2010

FIGURE 1
OVERALL SECTION LOCATION MAP
LINE 6B MP 608
MARSHALL, MICHIGAN



N

0 50 100 Feet

Legend

- Culverts
- Talmadge Creek
- Section Lines
- 01+00L Environmental Clearance Areas

SEPTEMBER, 2010

FIGURE 2
SECTION 9 STATION LOCATIONS
TALMADGE CREEK
LINE 6B MP 608
MARSHALL, MICHIGAN

Field Photographs

Field Photographs – Section 9

85+00L – 85+50L: Looking across Talmadge Creek (September 22, 2010)

85+50L – 86+00L: Looking toward Talmadge Creek (September 23, 2010)

Field Photographs – Section 9

86+00L – 86+50L: Looking downstream (September 23, 2010)

86+50L – 87+00L: Looking downstream (September 21, 2010)

Field Photographs – Section 9

87+00L – 87+50L: Looking downstream with mat road over creek in foreground (September 23, 2010)

87+50L – 88+00L: Looking downstream (September 23, 2010)

Field Photographs – Section 9

88+00L – 88+50L: Looking toward Talmadge Creek (September 23, 2010)

88+50L – 89+00L: Looking toward Talmadge Creek (September 23, 2010)

Field Photographs – Section 9

89+00L – 89+50L: Looking across Talmadge Creek (September 23, 2010)

89+50L – 90+00L: Looking across Talmadge Creek (September 23, 2010)

Field Photographs – Section 9

90+00L – 90+50L: Looking across Talmadge Creek (September 23, 2010)

90+50L – 91+00L: Looking across Talmadge Creek (September 23, 2010)

Field Photographs – Section 9

91+00L – 91+50L: Looking downstream (September 14, 2010)

91+50L – 92+00L: Looking downstream (September 14, 2010)

Field Photographs – Section 9

92+00L – 92+50L: Looking upstream (September 15, 2010)

92+50L – 93+00L: Looking downstream (September 15, 2010)

Field Photographs – Section 9

93+00L – 93+50L: Looking toward Talmadge Creek at 6-hour test pit (September 15, 2010)

93+50L – 94+00L: Looking toward Talmadge Creek (September 14, 2010)

Field Photographs – Section 9

94+00L – 94+50L: Looking upstream (September 14, 2010)

94+50L – 95+00L: Looking upstream (September 14, 2010)

Field Photographs – Section 9

82+50R – 83+00R: Looking downstream (September 13, 2010)

83+00R – 83+50R: Looking downstream (September 13, 2010)

Field Photographs – Section 9

83+50R – 84+00R: Looking upstream (September 13, 2010)

84+00R – 84+50R: Looking downstream (September 13, 2010)

Field Photographs – Section 9

84+50R – 85+00R: Looking toward Talmadge Creek (September 13, 2010)

85+00R – 85+50R: Looking upstream (September 15, 2010)

Field Photographs – Section 9

85+50R – 86+00R: Looking downstream (September 15, 2010)

86+00R – 86+50R: Looking downstream (September 15, 2010)

Field Photographs – Section 9

86+50R - 87+00R: Looking toward Talmadge creek (September 15, 2010)

87+00R – 87+50R: Looking upstream (September 15, 2010)

Field Photographs – Section 9

87+50R – 88+00R: Looking upstream (September 15, 2010)

88+00R – 88+50R: Looking toward Talmadge Creek (September 23, 2010)

Field Photographs – Section 9

88+50R - 89+00R: Looking upstream (September 23, 2010)

89+00R - 89+50R: Looking downstream (September 23, 2010)

Field Photographs – Section 9

89+50R – 90+00R: Looking toward Talmadge Creek (September 23, 2010)

90+00R – 90+50R: Looking toward Talmadge Creek (September 23, 2010)

Field Photographs – Section 9

90+50R - 91+00R: Looking downstream (September 23, 2010)

91+00R – 91+50R: Looking downstream (September 24, 2010)

Field Photographs – Section 9

91+50R - 92+00R: Looking downstream (September 24, 2010)

Field Notes

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-15-10

Completed By: P. Stephen

Creek Section: 85000L to 85150L

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
TUP	(A) B C	1606	Y (N)	(N) L M S	Y (N)	2.6	1555	1547 9-19-10		1642 9-19-10	NE	

Notes:
1545 - collect scrap sample for sheen test
- test comes back w/ No odor or sheen
1550 begin test pit, oil found as we go deeper w/ pit
1555 will leave open + tape off
~~1550~~ complete pit, odor noticed coming from test pit, take photo @ 1606

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)
(2) None (N), Light (L), Moderate (M), Strong (S)
(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-15-10

Completed By: Peter Stephens

Creek Section

85+50 L to 86+00 L

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID (time)	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	1549	Y (N)	(N) L M S	Y (N)	3.1	1545	[signature] 1238 9-17-10		[signature] 1538 9-19-10	[signature]	

Notes:

1530 - Collect a scrape sample to conduct sheen test
- Sheen test comes back w/ no sheen or odor
1540 - begin installing test pit
1545 - Complete test pit, take photo

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

B-4

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/18/10

Completed By: Eric Samios

Creek Section: B6600 to B6-50L

Photo ID[3] Time	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
18:22	(A) B C		Y (N)	(N) L M S	Y (N)	1.8	18:10	1536 9-19-10		9/22/10 14:51	AT	

Notes:
- AREA FAILED SHEEN TEST PRIOR TO 9/18/10. HEAVY SHEEN VISIBLE ALONG CREEK WATER EDGE
- STARTED EXCAVATING AROUND 17:20.
- STREAM BANK PREVIOUSLY REMOVED PRIOR AS PART OF HISTORICAL OIL REMOVAL ACTIVITIES
- EXCAVATED ~6 INCHES OF SOIL FROM SILT FENCE AND UP NEW BANK
- SHEEN TEST SOIL SAMPLE COLLECTED AT ~17:55

K
- PHOTO TAKEN BY PETER STEVENS

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-15-10

Completed By: Pete Stephens

Creek Section: 86+00L to 86+50L

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	A B C		(Y) N	N L (M) S	(Y) N	22.6	–	9/22/10 14:51		9/22/10 14:51	(AV)	

Notes: 15/5 - coduct a scrap + collect a sample for a sheen test. test comes back with visible product + a moderate odor. No pit dug or contamination dug out due to being on left of river. Can not swing over creek + there are no matt roads in place yet.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-15-10

Completed By: Peter Stephens

Creek Section: 86+50L to 87+00L

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
1505	(A) B C		Y (N)	(N) L M S	Y (N)	2.6	—	9/22/10 8:05		9/28/10 15:07	AT	

Notes: 1505 - collect a scrap sample. ~~to~~ conduct a sheen test. -> no sign of sheen or odor. Due not dig any tests ~~here~~ per request of Eric (Curtin) due to the possibility of being in the future roadway area

9/21 Place another silt fence + clay berm closer to mat road
Remove oil/dewater
Excavate and leave ~~observation trench~~ 48hr trench
contaminated soil
Backfill everything but 48hr trench
Occurred on 9/21

Pit was installed instead of trench, completed on 9/21 after 1700

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)
(2) None (N), Light (L), Moderate (M), Strong (S)
(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-15-19

Completed By: Peter Stephens

Creek Section: 87+00L to 87+50L

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	A B C	—	Y (N)	(N) L M S	Y (N)	1.6						

Notes: 1455- Collect a scrap sample to see if sheen is present while we are in the area, no pits will be installed due to possible being in an area where a roadway may be constructed.
- test shows no signs of sheen or odor

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

B4

Project Name: Marshall Line 6B MP608 Pipeline Release

Date: 9/18/10

Creek Section

Project Number: 22131003

Completed By: ERIC SCHMIDT

87+00 to 87+50L

Photo ID# Time:	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
17:36	(A) B C		Y (N)	(N) L M S	Y (N)	1.7	16:30	1534 9-17-10		9/22/10 14:42		

Notes:
- SHEEN TEST SAMPLE COLLECTED ON 9/15/10. AREA PASSED SHEEN TEST, BUT TEST PIT WAS NOT DUG (PROPOSED AREA OF MAT ROAD BRIDGE)
- HEAVY SHEEN OBSERVED ALONG RIVER BANK EDGE AFTER NEW MAT ROAD INSTALLED
- EXCAVATED 12-18 INCHES OF SOIL NEAR STREAM BANK AND INSTALLED TEST PIT
- BEFORE INSTALLING TEST A SHEEN TEST SOIL SAMPLE WAS COLLECTED AT 16:20

- MAT ROAD BRIDGE SEPARATES AREA

* PHOTO TAKEN BY PETER STEVENS

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-15-16

Completed By: P. Stephens

Creek Section: 87+50L to 88+00L

Photo ID	Method Used to Indicate Vertical Limit[1] (A / B / C)	Photo ID	Free Phase Oil Observed (Y / N)	Odor[2] (N / L / M / S)	Sheen Test Rainbow Sheen Observed (Y / N)	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval: EPA	Backfill Approval: Enbridge
	A / B / C		(Y) / N	N / L / (M) / S	(Y) / N	186	—	9/22/16 0950		9/20/16 0950	(✓)	

Notes:

1425 - collect first scrap to conduct sheen test. test produces product + a noticable odor. Calls are made to decide how to proceed in order to excavate without swinging over creek.

1440 - Headspace reading of 186 Collected

- Decide to not do anything until a road + bridge can be built to avoid dropping spoils into creek. Will also skip next section upstream (87+00L → ~~88+00~~ 87+50L to avoid possible screwing up the future roadway.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/17/10

Completed By: Eric Schmidt*

Creek Section: 87+50 to 88+00L

Photo ID** Time	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
18:11	(A) B C		Y (N)	(N) L M S	Y (N)	1.4	18:10	1530 9-19-10	-			

Notes: AREA FAILED SHEEN TEST ON 9/17/10

- STARTED EXCAVATING AROUND 17:30

- EXCAVATED APPROXIMATELY SIX TO EIGHT INCHES OF SOIL PRIOR TO COLLECTING SAMPLE FOR SHEEN

- SHEEN SAMPLE COLLECTED AT 18:00

- HEAVY SHEEN NOTED ON RIVER BANK NEAR WATERS EDGE. AREA OF SHEEN NOT EXCAVATED BECAUSE IT WAS AT WATERS EDGE

- DUE TO MEANDER IN RIVER, OBSERVATION PIT LOCATION SAME AS PIT LOCATION FOR 88+00L TO 88+50L. SEPARATE OBSERVATION PIT FOR 87+50 TO 88+00L NOT NECESSARY.

*OVERSIGHT SUPPORT FROM PETER STEVENS

**PHOTOS TAKEN BY PETER STEVENS

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-15-10

Completed By: Peter Stephens

Creek Section: 88+00L to 88+50L

Photo ID	Method Used to Indicate Vertical Limit[1]			Photo ID	Free Phase Oil Observed		Odor[2]				Sheen Test Rainbow Sheen Observed		Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
																		EPA	Enbridge
	A	B	C	—	Y	N	N	L	M	S	Y	N	—	—					

Notes: Eric P (Westin) noticed a pool of free product at the base of a pine tree on River left in the middle of the section. Brian Trekar with EQ has made arrangements to have the area cleaned, boomed, + taken care of. Want to get taken care of before the forecasted rain tomorrow.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/17/10

Completed By: Eric Seiman *

Creek Section

88+00L to 88+50L

Photo ID **	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
1742	(A) B C		Y (N)	(N) L M S	Y (N)	1.7	17:20	9-18-10 1519	17:25	09/20/10 0951	AL	

Notes:

AREA FAILED SHEEN TEST ON 9/15/10.

- STARTED EXCAVATING AROUND 16:00
- EXCAVATED 12 - 15" OF SOIL. EVIDENCE OF PRODUCT IN EXCAVATED SOIL
- SHEEN TEST SOIL SAMPLE COLLECTED AROUND 17:10

- AREA LOCATED IN AREA OF PONDED, FLOWING WATER. BERMS INSTALLED AROUND TEST PIT + OBSERVATION PIT USING PIT SPOILS

* OVERSIGHT SUPPORT PROVIDED BY PETER STEVENS

** PHOTO TAKEN BY PETER STEVENS

~~9/20/10 Breached @ 0945~~ RV.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-15-10

Completed By: P. Stephens (SEC)

Creek Section: 887.5 ft to 897 ft

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	145	Y (N)	(N) L M S	Y (N)	2.4	1355	1230 9-17-10		9/22/10 1432	AE	

Notes:

1340 - begin scrap for collecting soil for sheen test. Area to the south of section is very wet + water is leeching into entire section. Pick driest area. No Sheen/odor observed

1350 begin digging test/ob pit. berm up as much as possible to prevent overfilling from surround wet areas

1355 Complete test pit

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

B4

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/18/10

Completed By: Eric Schmidt

Creek Section: 88+50 to 89+00L

Photo ID* Time	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
16:00	(A) B C		Y (N)	(N) L M S	Y (N)	1.8	See 9/15/10 Log	1517 9-19-10	15:15	9/22/10 1437	(AI)	

Notes: TEST PIT PREVIOUSLY CONSTRUCTED ON 9/15/10. PRODUCT OBSERVED AFTER 9/15/10 EAST OF PIT NEAR STREAM BANK.

- STARTED EXCAVATING AROUND 08:20. SHUT DOWN DUE TO LIGHTNING AT 09:30. RESUMED EXCAVATING AT 10:15.
- CONSTRUCTED BERM USING IMPORTED FILL MATERIAL. BERM CONSTRUCTED NEAR SILT FENCE TO LIMIT OIL MIGRATION FROM EXCAVATION FROM ENTERING CREEK. BERM ALSO CONSTRUCTED ~~BETWEEN~~ AT STA 88+50L TO LIMIT WATER FROM ENTERING 88+00 - 88+50L.
- SPRINGS + PONDED WATER IN AREA CAUSED EXCAVATION AREAS TO FLOOD
- VAC TRUCK REMOVED WATER W/ HEAVY SHEEN FROM 13:00 TO 14:00
- AFTER WATER WAS VACUUMED OUT, AREA WAS QUICKLY RE-SCRAPED AND SOIL SAMPLE FOR SCREEN TEST COLLECTED AT 14:10
  - WATER QUICKLY RE-ENTERED AREA FROM SPRINGS AND PONDED WATER SOUTH OF MAT ROAD.
  - WATER ENTERING EXCAVATION FROM UNDER MAT ROAD APPEARED TO BE FREE OF SHEEN
- APPROXIMATELY 17-18 INCHES OF SOIL SCRAPED FROM EASTERN PORTION OF AREA.
- WATER PONDED IN EXCAVATION ABOVE CREEK LEVEL DUE TO WATER ENTERING FROM WET AREA TO SOUTH.

* PHOTO TAKEN BY PETER STEVENS

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-15-10

Completed By: Peter Stephens

Creek Section: 89+00L to 89+50L

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID (time)	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	1325	Y (N)	(N) L M S	Y (N)	2.1	1320	[signature] 1505 9-19-10		[signature] 1505 9-19-10	[signature]	

Notes:
1310 take first scoop, begin sheen test @ 89+25L
1315 begin digging test/ob. pit after sheen test indicated no sheen or odor
1320 Complete pit, water leeching in
1325 take photo of test/ob pit

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)
(2) None (N), Light (L), Moderate (M), Strong (S)
(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: NGP

89+50 – 90+00L
Creek Section
~~90+00L~~ to ~~89+50L~~

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C		Y (N)	(N) L M S	Y (N)	5.0	1129	one pic 1503 9-19-10	1129 ok pit	1503 9-19-10	MC	

Notes: Sheen Sample taken from the bucket. No sheen. No Odor. Test pit dug to ground water

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: N6P

Creek Section

90+50L to 90+00L

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C		Y (N)	(N) L M S	Y (N)	2.3	1109 one pit	1501 9-19-10	1109 one pit	1501 9-19-10		

Notes: Sample taken from the bucket from the other side of the creek. Test/Observation pit dug to ground water. No sheen. No Odor.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: NGP

Creek Section: 90+50L to 91+00L

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	1022	Y (N)	(N) L M S	Y (N)	1.2	1019 one pit	1622 9-16-10	1019 one pit	1225 9-15-10		

Notes: Sheen sample taken at the back of a back water near the 91+00L station. No sheen. No odor. Test pit/Observation pit taken to ~~water~~ ground water.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: NGP

Creek Section: 91+00 to 91+50

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C		Y (N)	(N) L M S	Y (N)	0.3	1028 in pit	0913 9-17-10	1024 in pit	1213 9-17-10		

Notes: Mat road moved so the sheen sample could be taken. No sheen. No odor. Test/Observation pit dug down to ground water.

FILLED 9/19/10 CP

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: ERIC SCHMIDT

Creek Section

9+50 to 12+00

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
95 96 296295 FS	(A) B C		Y (N)	(N) L M S	Y (N)	0.0	10:00			9216 9-17-10		

Notes: EXCAVATED USING MINI-EXCAVATOR

FILLED 9/19/10 CJ

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: Eric Schmidt

Creek Section 92+00 to 92+50L

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
93-94 297-296	(A) B C		Y (N)	(N) L M S	Y (N)	0.0	11:55	MK		MK 1220 9-17-10	MR	

Notes: EXCAVATED USING MINI-EXCAVATOR

FILLED 9/19/10 CJS

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: Noah Beck/Eric Sumner

Creek Section: 92+50 to 93+00

Photo ID	Method Used to Indicate Vertical Limit[1]			Photo ID	Free Phase Oil Observed		Odor[2]				Sheen Test Rainbow Sheen Observed		Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
																		EPA	Enbridge
~~92+50~~	A	B	C	~~93+50~~	Y	(N)	(N)	L	M	S	Y	(N)	00	09:05		9:10	0935 9-17-10		

Notes:

OBSERVATION PIT: 09:10

TEST PIT PHOTOS: ~~301~~ 300 (ECS) 89-90

OBSERVATION PIT PHOTOS: ~~297~~ - ~~296~~ (ECS) 91-92

FILLED 9/19/10 CJS

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: Roy Beck / Eric Schmidt

Creek Section 93+00 L to 93+50 L

Photo ID	Method Used to Indicate Vertical Limit[1]			Photo ID	Free Phase Oil Observed		Odor[2]				Sheen Test Rainbow Sheen Observed		Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
	A	B	C		Y	N	N	L	M	S	Y	N						EPA	Enbridge
~~93+00 L~~ 93+50 L	(A)			~~93+00 L~~ 93+50 L		(N)	(N)					(N)		08:56	[signature] 0938 9-17-10	~~[illegible]~~ 9:01 ELS ~~08:56~~	[signature] 0931 9-17-10	[signature]	

Notes: Photos - ~~305 302~~ 85-88 ELS

→ Observation Pit 09:01

FILLED 9/19/10 CJS

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)
(2) None (N), Light (L), Moderate (M), Strong (S)
(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/14/10

Completed By: Roger Beale

Creek Section	Photo ID	Method Used to Indicate Vertical Limit[1]	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
91+20R to 91+50R		(A) B C	Y (N)	(N) L M S	Y (N)	0.8	1731			1148 9-17-10		
Comments: Narrow and disturbed area. TP will also be OP FILLED 9/19/10 CJS												
94+20L to 94+50L		(A) B C	Y (N)	(N) L M S	Y (N)	0.3	1755		1759	0946 9-17-10		
Comments: FILLED 9/19/10 CJS												
93+50L to 94+20L		(A) B C	Y (N)	(N) L M S	Y (N)	0.5	1803		1807	0945 9-17-10		
Comments: FILLED 9/19/10 CJS												

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9-17-10

Completed By: Peter Stephens

8250R-8300R
Creek Section
~~8250R to 8300R~~

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	1009 time	Y (N)	(N) L M S	Y (N)	0.9	0956	NW 1546 9-18-10		9-19-10 10:50	55	

Notes:
0950 - collect soil for sheen test
→ no signs of FP, odor or sheen
0956 - complete test pit, photo taken

Dug w/ mini

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)
(2) None (N), Light (L), Moderate (M), Strong (S)
(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/13/10

Completed By: Roger Beck

Creek Section	Photo ID	Method Used to Indicate Vertical Limit[1]	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
84+00R to 84+50R		(A) B C	Y (N)	(N) L M S	Y (N)	0.0	1411	[signature]	1495	[signature] 1137 9-16-10	MK	
Comments												
83+50R to 84+00R		(A) B C	Y (N)	(N) L M S	Y (N)	0.0	1419	[signature]	1423	[signature] 1134 9-16-10	ML	
Comments												
83+00R to 83+50R		(A) B C	Y (N)	(N) L M S	Y (N)	0.0	1438	[signature]	1442	[signature] 1131 9-16-10	ND	
Comments												

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/13/10

Completed By: Roger Beck

Creek Section	Photo ID	Method Used to Indicate Vertical Limit[1]	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
101+00 to 101+50		(A) B C	Y (N)	(N) L M S	Y (N)	0.0	1112	MC	1120	MC 1041 9-17-10	ML	
Comments												
100+00 to 100+50		(A) B C	Y N	N L M S	Y N	0.0	1319	MC		MC 1034 9-17-10	ML	
Comments	Narrow excavation TP will be OP											
84+50 to 85+00		(A) B C	Y (N)	(N) L M S	Y (N)	0.0	1354	MC	~~1358~~			
Comments												

9-16-10 OP - free product. 1144

9-19-10 OP - Free Product visible - 11:22 - [signature]

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 68 MP608 Pipeline Release

Project Number: 22131003

Date: 9/23/10

Completed By: _____

Creek Section

84+50R to 85+00R

Photo ID	Method Used to Indicate Vertical Limit[1]			Photo ID	Free Phase Oil Observed		Odor[2]				Sheen Test Rainbow Sheen Observed		Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
																		EPA	Enbridge
	A	B	C		Y	N	N	L	M	S	Y	N		OP 0913 1358		OP 09/13 1358		AT	

Notes:

Failed 9/19 Free Product Visible

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: Eric Schmidt

Creek Section

85+00 to 85+50R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
107-108	(A) B C		Y (N)	(N) L M S	Y (N)	0.5	14:18	1554 9-16-10	-	1550 9-9-10		

Notes:

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: Eric Schmidt

Creek Section: 85+50 to 86+00R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
105-106	(A) B C		Y (N)	(N) L M S	Y (N)	0.6	13:56	ND 1553 9-15-10	14:00	ND 1548 9-18-10	ND	

Notes:

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: Eric Schmidt

Creek Section

06+00 to 06+50

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (if Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (if Applicable)	Backfill Approval	
											EPA	Enbridge
103-104	(A) B C		Y (N)	(N) L M S	Y (N)	0.6	13:34	1616	-	1545 9-17-10	MB	

Notes:

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: Eric Schmidt

Creek Section: 86+50 to 87+00R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
101-102	(A) B C		Y (N)	(N) L M S	Y (N)	0.8	13:20	[signature] 1615 9-16-10	13:25	[signature] 1539 9-16-10	[signature]	

Notes:

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: ERIC SCHMIDT

Creek Section: 87+00 to 87+50R

Photo ID	Method Used to Indicate Vertical Limit[2]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
99-100	(A) B C		Y (N)	(N) L M S	Y (N)	0.5	11:25	1619 9-16-10		1535 9-17-10		

Notes:

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/14/10

Completed By: Roger Beck

Creek Section	Photo ID	Method Used to Indicate Vertical Limit[3]	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
87+50R to 88+00R		(A) B C	Y (N)	(N) L M S	Y (N)		1313	[signature] 9-16-10				
Comments	Limited access across creek. Test pit excavated with mini-excavator. TP will also be OP. — Duplicated, & already cleared.											
to		A B C	Y N	N L M S	Y N							
Comments												
to		A B C	Y N	N L M S	Y N							
Comments												

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: Eric Schm[illegible]

Creek Section 87+50 to 88+00R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval EPA	Backfill Approval Enbridge
97-98	(A) B C		Y (N)	(N) L M S	Y (N)	1.8	11:05	[signature] 0925 9-17-10		[signature] 1210 9-17-10	[initials]	

Notes: - EXCAVATED USING MINI-EXCAVATOR

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

roject Name: Marshall Line 6B MP608 Pipeline Release

roject Number: 22131003

Date: 9/15/10

Completed By: NGP

Creek Section

88+00R to 88+50R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	8852	Y (N)	(N) L M S	Y (N)	0.9	0850	one pit D. Matlock	0850 one pit	D. Matlock	DW	

otes: Sample taken near 88+25R. No sheen. No odor. One pit will be used for test pit and observation pit. Dug to groundwater.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

roject Name: Marshall Line 6B MP608 Pipeline Release

roject Number: 22131003

Date: 9/15/10

Completed By: NGP

Creek Section

48+50R to 89+00R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	0904	Y (N)	(N) L M S	Y (N)	0.7	0900 one pit	D. Matlock	0900 one pit	D. Matlock	DM	

otes: Sample taken near 48+75R No sheen. No odor. One pit will be used for test pit and observation pit - Dug to ground water.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 68 MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: NGP

Creek Section: ~~89+50~~ 89+50L to ~~89+00~~ 89+50R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	0914	Y (N)	(N) L M S	Y (N)	1.3	0910	DA test pit D. Matlock	0910 on pit	D. Matlock	DM	

Notes: Sample taken near 89+25R. No sheen. No odor. Test pit dug in area that appeared to have been excavated previously.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: NGP

Creek Section

89+50R to 90+00R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	0930	Y (N)	(N) L M S	Y (N)	0.4	0923	one pit D. Matlock	0925 one pit	D. Matlock	DM	

Notes: Sample taken near 89+75R. No sheen. No odor. Test/observation pit dug to ground water.

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: NGP

Creek Section: 90+00R to 90+50R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	0944	Y (N)	(N) L M S	Y (N)	1.6	0936 Grab pit		0936 Grab pit	1153 9/17/10		

Notes: Sample taken from 90+00R - station. Test/observation pit dug to ground water out on a point near 90+00R.

FILLED 9/19/10 CDS

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 6B MP608 Pipeline Release

Project Number: 22131003

Date: 9/15/10

Completed By: NGP

Creek Section: 90+50R to 91+00R

Photo ID	Method Used to Indicate Vertical Limit[1]	Photo ID	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (If Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (If Applicable)	Backfill Approval	
											EPA	Enbridge
	(A) B C	0954	Y (N)	(N) L M S	Y (N)	1.6	0950	end pit	0950	end pit	9-15-10	MR	

Notes: Sheen sample taken near 90+75R station. Test pit dug down to ground water. No sheen. No odor.

FILLED 9/19/10 CJS CJS

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection

Project Name: Marshall Line 68 MP608 Pipeline Release Date: 9/19/10

Project Number: 22131003 Completed By: Roger Beck

Creek Section	Photo ID	Method Used to Indicate Vertical Limit[1]	Free Phase Oil Observed	Odor[2]	Sheen Test Rainbow Sheen Observed	Headspace[3] ppm	Time of Test Pit	6-hour Follow-up Inspection Observations and Time (if Applicable)	Time of Trench Excavation	48-hour Follow-up Inspection Observations and Time (if Applicable)	Backfill Approval	
											EPA	Enbridge
95+00L to 95+50L		(A) B C	Y (N)	(N) L M S	Y (N)	109	1653			1001 9-17-10		
Comments	Narrow undisturbed area. Mini excavator used to excavate test pit. TP will also be OP.											
FILLED 9/19/10 CJS												
94+50L to 95+00L		(A) B C	Y (N)	(N) L M S	Y (N)		1729			0945 9-17-10		
Comments	NARROW EXCAVATION AREA - MINI USED TO PROTECT SILT FENCE TP ALSO OP											
FILLED 9/19/10 CJS												
91+50R to 92+00R		(A) B C	Y (N)	(N) L M S	Y (N)		1725			1146 9-17-10		
Comments	TO LEAVE ROOM FOR MINI TO GET BY TP ALSO OP											
FILLED CJS 9/19/10												

(1) Depth of Contamination (A)
Groundwater (B)
Confining Layer (C)

(2) None (N), Light (L), Moderate (M), Strong (S)

(3) PID readouts in ppm above background
ND = No Detection