

**ExxonMobil Pipeline Company**

**SCAT Area Transition Report  
for A09**

Silvertip Pipeline Incident  
Laurel, Montana

October 18, 2011



## **SCAT Area Transition Report for A09**

Silvertip Pipeline Incident  
Laurel, Montana

Prepared for:  
ExxonMobil Pipeline Company

Prepared by:  
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Our Ref.:  
B0085883.1103

Date:  
October 18, 2011

*The observations described in this Report were made exclusively under the conditions at the time and subject to the limitations stated therein. It is understood by Client that ARCADIS has relied on the accuracy of documents, oral information, and other material and information provided by sources documented in this report, including but not limited to information provided by Client and Client's other contractors. ARCADIS has not independently verified any such information. The conclusions presented in the Report are based solely upon the observations and representations made by others.*

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## **1. Executive Summary of Oil Removal Activities**

This Shoreline Cleanup Assessment Technique (SCAT) Area Transition Report provides a summary of the SCAT surveys conducted to determine the extent of oiling along the riverbanks and floodplain within SCAT Area A09, as well as the oil remediation activities completed in this area based on the SCAT Team recommendations. This report also summarizes the environmental samples collected in SCAT Area A09. This report is intended to be read and used in conjunction with the Summary of Assessment and Oil Removal Activities report.

### **1.1 Land Ownership and Access Issues**

Figure 1 provides an aerial map of SCAT Area A09, along with the (a) SCAT Area boundary, (b) parcel boundaries and respective property owners, and (c) access constraints identified during the oil cleanup process. The acreage surveyed in Area A09 is 101.9. There were access issues for a partial piece of the right bank.

### **1.2 Cultural, Historic, and Natural Resource Constraints**

No historic properties or cultural resources have been identified within this segment that would affect oil removal activities.

Figure 2 summarizes the natural resources identified in this segment. International Bird Rescue and Resource Advisors from U.S. Fish and Wildlife Service conducted regular inspections of Area A09. No oiled wildlife was observed or recovered. No Wildlife Priority Cleanup Areas were identified. No active migratory bird nests were identified in Area A09.

### **1.3 Summary of Environmental Sampling**

Table 1 (below) summarizes samples collected within Area A09. The analytical results for the samples collected can be accessed through a publicly accessible database on the United States Environmental Protection Agency's (USEPA's) website. The approximate locations of samples collected within Area A09 are provided on Figure 3.

**Table 1 Environmental Sampling Summary**

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	LAMT0812SO413	8/12/11	Soil_River	SO-A09-02	45.657433	-108.741733
CTEH	LAMT0812SO414	8/12/11	Soil_River	SO-A09-01	45.657433	-108.741733

Appendix A contains a summary of sample results with detections for this sample set. Detections with a result above the screening level are highlighted; for this set, there were no exceedances.

**1.4 Summary of Initial SCAT Surveys**

The SCAT teams used systematic evaluation criteria and treatment method tables approved by the National Oceanic and Atmospheric Administration to provide a standard approach for data collection and conducting field surveys. The forms and sketches from the initial SCAT surveys performed along the river bank (water edge) and floodplain within Area A09 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area A09.

**1.5 Applicable Compiled Treatment Recommendations**

The SCAT team developed compiled treatment recommendations (CTRs) providing approved treatment methods (ATMs) for each oiling zone identified during the initial SCAT surveys (Appendix C).

**1.6 Oil Removal Activities**

Oil removal activities were conducted within Area A09 in accordance with the ATMs identified in the CTRs. [Appendix I](#) of the Summary of Assessment and Oil Removal Activities report presents this data including: date range/days worked, average number of people working per day, equipment used, and various types of bags removed: oily debris, personal protective equipment (PPE), plastic, trash, super sacks, wood chips, and contaminated wood.

**1.7 Pre-Inspection Survey Transmittal**

A Pre-Inspection Survey Transmittal (PIST) was not conducted for this segment.

### **1.8 Post-Inspection Survey Transmittal**

A Post-Inspection Survey Transmittal (POST) was not conducted for this segment.

### **1.9 Summary of Final SCAT Surveys**

A final SCAT survey was not conducted for this segment.

### **1.10 SCAT Area Conclusions**

Based on the initial SCAT survey performed within Area A09, no oiling was observed on the right bank, left bank, or islands. Therefore, a PIST, POST, and final SCAT survey were not performed and a SCAT Segment Sign-Off Sheet is not necessary.



**SCAT Area Transition  
Report for A09**

Silvertip Pipeline Incident  
Laurel, Montana

**2. Transition Sign-Off Form**

**SCAT Area Transition Report for A09**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – RP



**SCAT Area Transition  
Report for A09**

Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for A09**

**Prepared for:**

**Unified Command**

9/27/2011

Date

 S. MERRITT

Unified Command – FOSC



**SCAT Area Transition  
Report for A09**

Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for A09**

**Prepared for:**

**Unified Command**

9/28/11  
Date

[Handwritten Signature]  
Unified Command – MDEQ

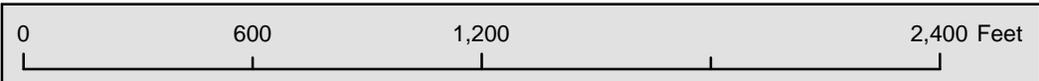
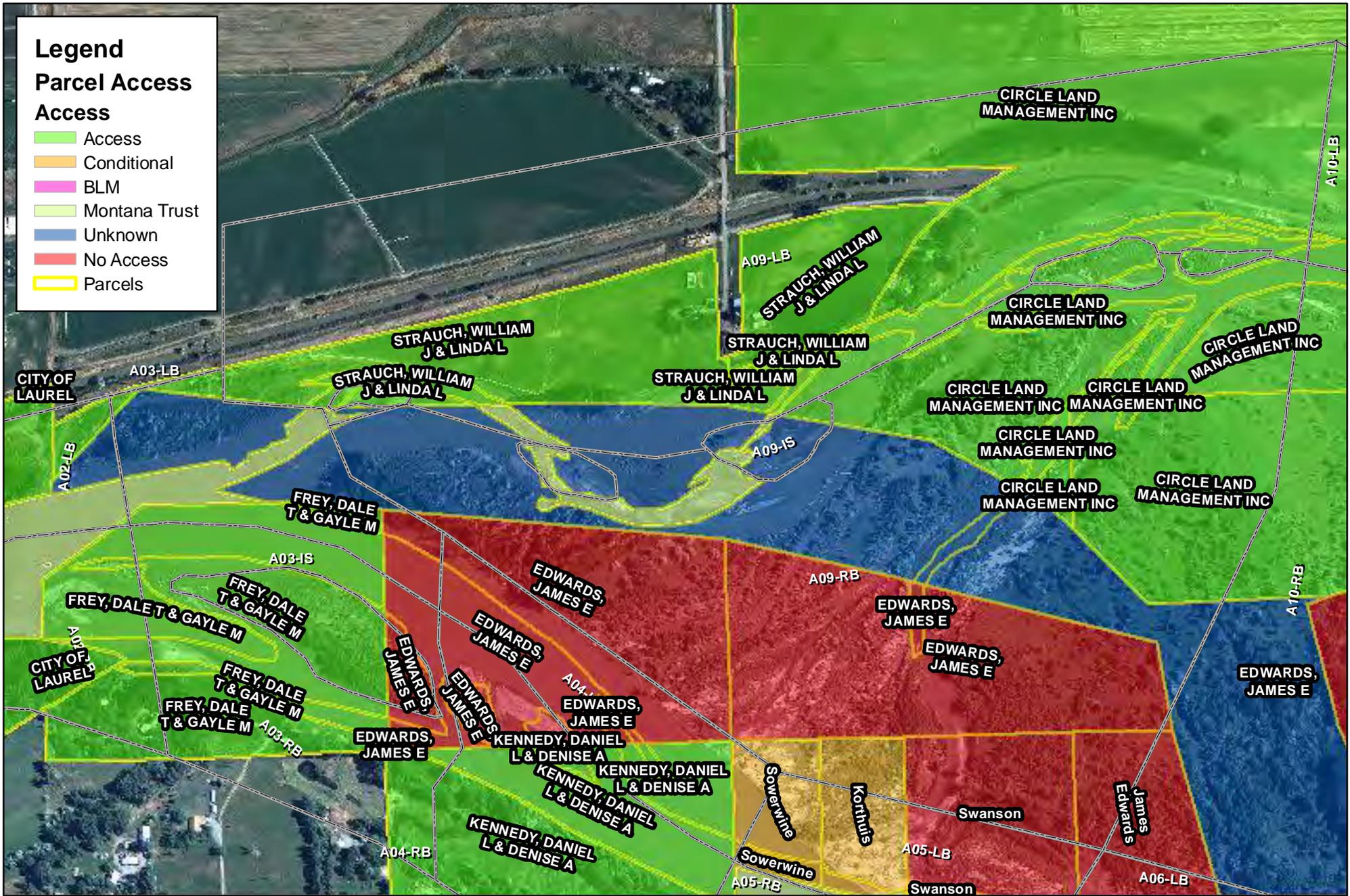
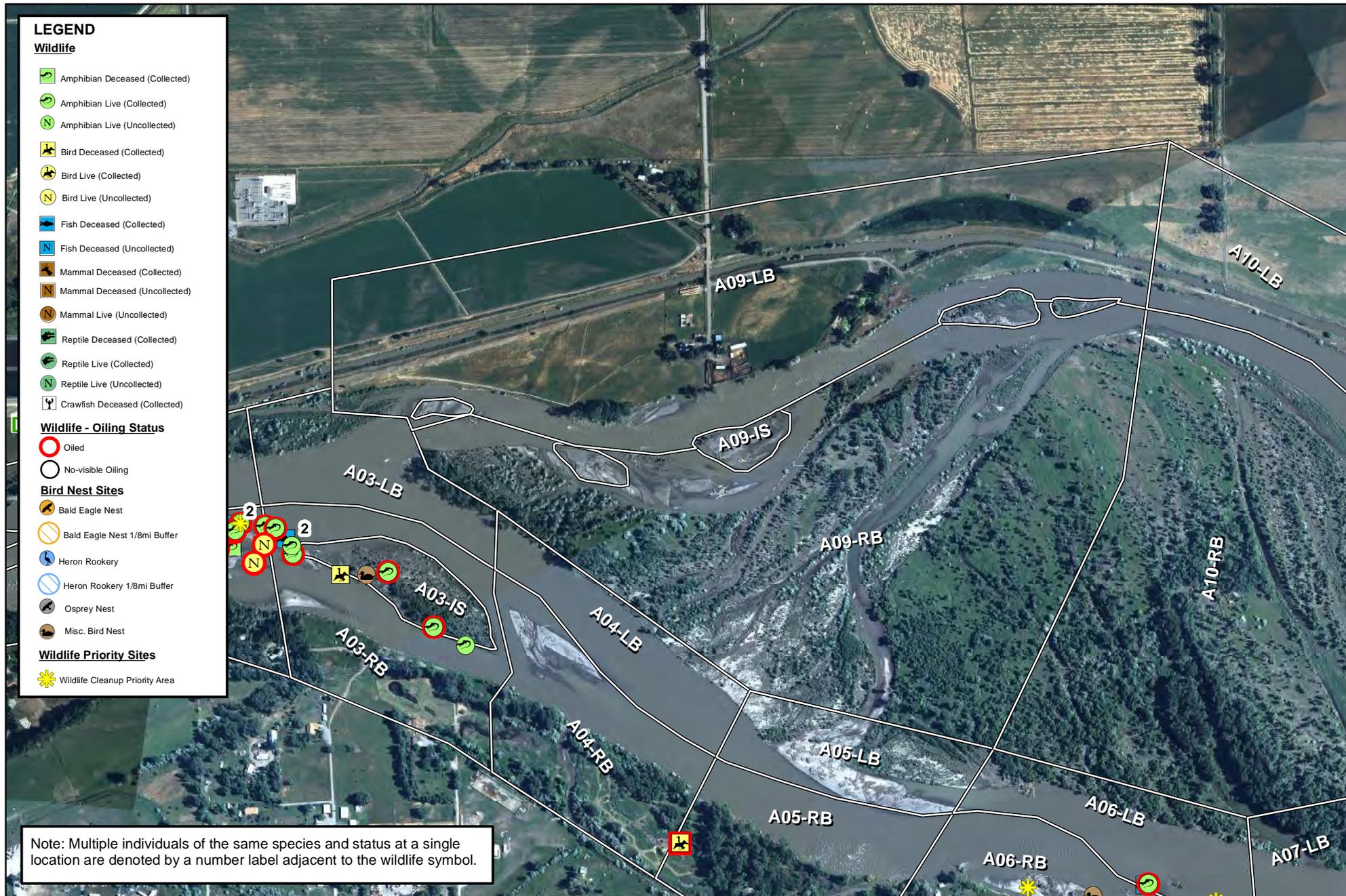
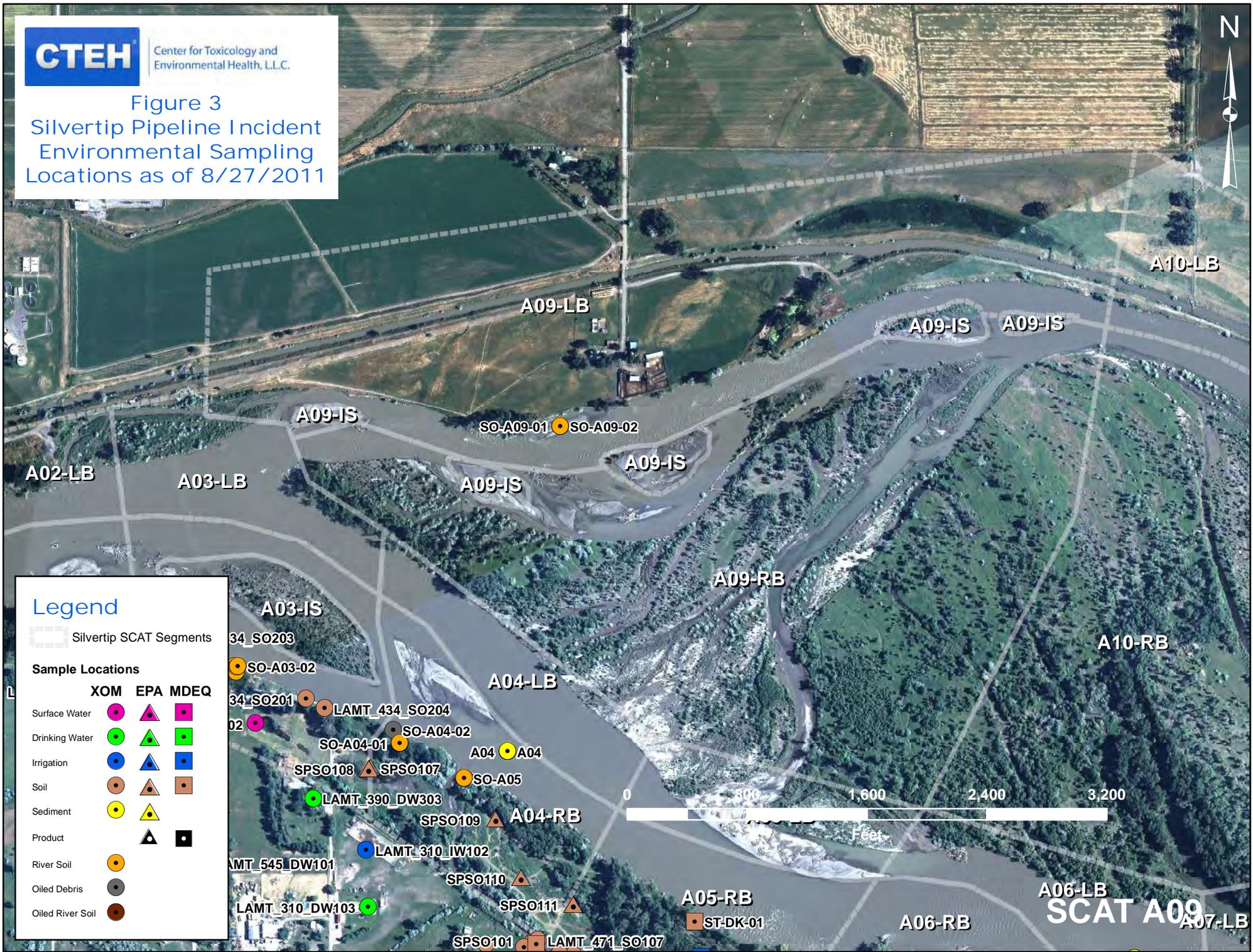


Figure 1



**CTEH** Center for Toxicology and Environmental Health, L.L.C.

**Figure 3**  
 Silvertip Pipeline Incident  
 Environmental Sampling  
 Locations as of 8/27/2011



**Legend**

	Silvertip SCAT Segments		
<b>Sample Locations</b>			
	<b>XOM</b>	<b>EPA</b>	<b>MDEQ</b>
Surface Water			
Drinking Water			
Irrigation			
Soil			
Sediment			
Product			
River Soil			
Oiled Debris			
Oiled River Soil			



	<b>9999</b> Oiling Zone ID	Light Oiling
	Heavy Oiling	Very Light Oiling
	Moderate Oiling	No Oil Observed

**Figure 4 - Maximum SCAT Observations  
For SCAT Area: A09**





## **Appendix A**

Sample Detections Summary



## Detections in Samples Collected in SCAT Area A09

Printed 9/7/2011

NA - Not Available

Detected Above Screening Level

Sample Num	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
LAMT0812SO413	Field	Soil_River	EPA 6010	Arsenic	Y	17.4	40		mg/kg	no
LAMT0812SO413	Field	Soil_River	EPA 6010	Barium	Y	114	820		mg/kg	no
LAMT0812SO413	Field	Soil_River	EPA 6010	Cadmium	Y	1	3.8		mg/kg	no
LAMT0812SO413	Field	Soil_River	EPA 6010	Chromium	Y	17.8	280		mg/kg	no
LAMT0812SO413	Field	Soil_River	EPA 6010	Lead	Y	8.3	400		mg/kg	no
LAMT0812SO413	Field	Soil_River	EPA 6010	Nickel	Y	13.2	150		mg/kg	no
LAMT0812SO413	Field	Soil_River	EPA 6010	Selenium	Y	0.68	2.6		mg/kg	no
LAMT0812SO413	Field	Soil_River	EPA 6010	Vanadium	Y	35.3	39		mg/kg	no
LAMT0812SO413	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	1380	NA		mg/kg	no
LAMT0812SO413	Field	Soil_River	EPA 9060	RSD%	Y	17.6	NA		%	no
LAMT0812SO413	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	1670	NA		mg/kg	no



## **Appendix B**

Initial SCAT Survey Forms  
and Sketches

DB

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

**1 GENERAL INFORMATION**

Segment/Reach ID: A9 Left Bank / Right Bank / Island (Right Bank) Date (dd/mm/yy) 20/07/11 Time (24h): std / daylight 1000 hrs to 1400 hrs Water Level (full) low - mean - bank full - overbank

Operations Division: A Survey by: Foot / ATV / Boat / Helicopter / Overlook / (Sun) Clouds / Fog / Rain / Snow / Windy / Calm Air Temp +/- 2 deg C

**2 SURVEY TEAM**

name	organization	contact phone number
<u>John Williams</u>	<u>Cardno ENTRIX</u>	<u>361 676 8138</u>
<u>Joe Boyle</u>	<u>Cardno ENTRIX</u>	<u>386 214 6858</u>
<u>Courtney Tyree</u>	<u>FWP</u>	<u>406 660 7814</u>
<u>Mike Ruggles</u>	<u>FWP</u>	<u>406 671 8863</u>
<u>Colin Riley</u>	<u>EPA</u>	<u>46 215 0690</u>

**3 SEGMENT** Total Segment/Reach Length 1200 m Segment/Reach Length Surveyed 1200 m

Start GPS: LATITUDE 45.65687 deg. min. LONGITUDE 108.74650 deg. min. Datum: NAD83

End GPS: LATITUDE 45.65509 deg. min. LONGITUDE 108.73196 deg. min.

**4A RIVER BANK TYPE** SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp Shelf Manmade: Solid Permeable (type) Wetland: Swamp Bog/Fen Marsh

Sediment Bank: Clay/Mud Sand Mixed Pebble/Cobble Boulder Peat/Organic Vegetated Bank: P Wooded Upland:

Sediment Flat: Clay/Mud Sand Mixed/Coarse Other: If snow and ice use Winter River SOS

**4B RIVER VALLEY CHARACTER** select as appropriate complete for primary

Cliff or Bluff: Est Height m canyon manmade meander S confined or leveed  Substrate Type: wood

Sloped: (>5°) (15°)(30°) straight braided P oxbow flood plain valley Forested Vegetated Bare

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate

est. width: <1m 1-10 m 10-100 m >100m m est. water depth: <1m 1-3 m 3-10 m >10 m m

shoal(s) present Y/N point bar present Y/N bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris

seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling - same - rising

**5 OPERATIONAL FEATURES**

Suitable backshore staging Y/N Access: Direct from backshore Y/N Alongshore from next segment Y/N

Debris: Y N oiled Y/N amount  bags or  trucks access restrictions soft mud

Oiled trees/shrubs Y/N River Current strong Y/N Other Features:

**6 SURFACE OILING CONDITIONS** begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER					SUBST. TYPE(S)				
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO	
A	S			P	1200	150	0														P	veg

**7 SUBSURFACE OILING CONDITIONS** use letter for ZONE location plus Number of pit or trench - e.g., "A1"

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO

**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

name Janice Witl organization EPA contact phone number 415 816 6532

Zone A recommendations: NFT

(for ALL sub-segments record: sub-segment ID, length, length surveyed, and GPS start/end fixes)

Sketch Yes/No Photos Yes/No (Roll #  Frames ) Video Tape Yes/No (tape# )



*Zone of A3, A5, A6, A7, A8, A9, A10, A11*

*see second map*

A9

A3

A4

A5

A6

A7

A8

A10

A15

A11

GOO

© 2011 Google

Image © 2011 DigitalGlobe

2086 ft

Date: 5/1/2004

1996

45° 39.316' N 108° 43.941' W elev 3254 ft

Eye Alt 22

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page \_\_\_\_\_ of \_\_\_\_\_

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) <u>3-9-11</u>	Time (24h): std / daylight <u>11:00</u> hrs to <u>12:30</u> hrs	Water Level low - <u>mean</u> bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>A9</u> Left Bank / Right Bank / Island				
Operations Division: <u>A</u>				
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		<u>Sun / Clouds / Fog / Rain / Snow / Windy / Calm</u>		Air Temp +/- <u>20</u> deg C

<b>2 SURVEY TEAM #</b> <u>3</u>	name	organization	contact phone number
<u>Charlie Post</u>	<u>Steve Off</u>	<u>Chico ENTRIX</u>	<u>Chico</u>
<u>LEADY TANNER</u>		<u>DEA</u>	<u>Steve Up</u>
		<u>BPA</u>	

**3 SEGMENT** Total Segment/Reach Length 980 m Segment/Reach Length Surveyed 990 m

Start GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. Datum: \_\_\_\_\_

End GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min.

**4A RIVER BANK TYPE** SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp \_\_\_\_\_ Shelf \_\_\_\_\_ Manmade: Solid \_\_\_\_\_ Permeable \_\_\_\_\_ (type) \_\_\_\_\_ Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand S Mixed P Pebble/Cobble S Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: C Wooded Upland: S

Sediment Flat: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed/Coarse \_\_\_\_\_ Other: \_\_\_\_\_ If snow and ice use Winter River SOS

**4B RIVER VALLEY CHARACTER** select as appropriate

Cliff or Bluff: \_\_\_\_\_ Est Height \_\_\_\_\_ m canyon \_\_\_\_\_ manmade \_\_\_\_\_ meander \_\_\_\_\_ confined or leveed \_\_\_\_\_ Substrate Type: \_\_\_\_\_

Sloped: (>5°)(15°)(30°) straight \_\_\_\_\_ braided X oxbow \_\_\_\_\_ flood plain valley \_\_\_\_\_ Forested / Vegetated / Bare

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate

est. width: <1m 1-10m 10-100m 100m m est. water depth: <1m 1-3m 3-10m >10m m

shoal(s) present Y/N point bar present Y/N bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris

seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling same — rising

**5 OPERATIONAL FEATURES** Suitable backshore staging Y/N Access: Direct from backshore Y/N Alongshore from next segment Y N

Debris Y/N oiled Y/N amount \_\_\_\_\_ bags or \_\_\_\_\_ trucks access restrictions

Oiled trees/shrubs Y/N River Current strong Y/N Other Features:

**6 SURFACE OILING CONDITIONS** begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER					SUBST. TYPE(S)				
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO	
2051 A				<u>Y</u>	<u>980</u>	<u>660</u>	<u>0</u>														<u>X</u>	<u>su</u>

**7 SUBSURFACE OILING CONDITIONS** use letter for ZONE location plus Number of pit or trench — e.g., "A1"

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO

**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Zone A - No OIL observed

(for ALL sub-segments record: sub-segment ID, length, length surveyed, and GPS start/end fixes)

Sketch Yes/No Photos Yes/No (Roll # \_\_\_\_\_ Frames \_\_\_\_\_) Video Tape Yes/No (tape # \_\_\_\_\_)

9/3/2011 2:01 pm



Current Track: 03 SEP 2011

A09-LB  
N45°39'31.68"

A09-IS

A09-RP

W108°44'16.8"

W108

A04-LB

A04

A04-RB

A05-LB

A-1 RB A5  
7-3 9-3-11  
N45°39'15.76"

A06-LB

A6 Eye alt

45°39'18.01" N 108°44'20.12" W elev 3260 ft

002

3-S W108°44'42.72"

1 W V05 V03

V02 V04 003

V04

X

McMullen Ln

Date: 4/30/2004 1996

DB/6/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page \_\_\_\_\_ of \_\_\_\_\_

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>A9</u>	Left Bank / Right Bank / Island	<u>25/07/11</u>	<u>8:25</u> hrs to <u>9:45</u> hrs	low - mean - <u>bankfull</u> - overbank
Operations Division: <u>A</u>				<u>falling</u> - steady - rising
Survey by: <u>(Foot)</u> / ATV / Boat / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>30</u> deg C

<b>2 SURVEY TEAM #</b> <u>2</u>	Name	Organization	Signature
	<u>Chuck Pans</u>	<u>Cardo ENTRIX</u>	<u>Chuck Pans</u>
	<u>Darryl Reed</u>	<u>MDEQ</u>	<u>Darryl Reed</u>
	<u>Patrick Krueke</u>	<u>USCG</u>	<u>Patrick Krueke</u>

**3 SEGMENT** Total Segment/Reach Length 1270 m Segment/Reach Length Surveyed 1270 m

Start GPS: LATITUDE 45 deg. 39.528 min. LONGITUDE 108 deg. 47.806 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 39.429 min. LONGITUDE 108 deg. 47.908 min.

**4A RIVER BANK TYPE** SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp \_\_\_ Shelf \_\_\_ Manmade: Solid \_\_\_ Permeable \_\_\_ (type) \_\_\_ Wetland: Swamp \_\_\_ Bog/Fen \_\_\_ Marsh \_\_\_

Sediment Bank: Clay/Mud \_\_\_ Sand P Mixed \_\_\_ Pebble/Cobble S Boulder \_\_\_ Peat/Organic \_\_\_ Vegetated Bank: X Wooded Upland: \_\_\_

Sediment Flat: Clay/Mud \_\_\_ Sand \_\_\_ Mixed/Coarse \_\_\_ Other: \_\_\_ If snow and ice use Winter River SOS

**4B RIVER VALLEY CHARACTER** select as appropriate

Cliff or Bluff: \_\_\_ Est Height \_\_\_ m canyon \_\_\_ manmade \_\_\_ meander \_\_\_ confined or leveed \_\_\_ Substrate Type: Sand

Sloped: (>5°)(15°)(30°) straight \_\_\_ braided X oxbow \_\_\_ flood plain valley \_\_\_ Forested / Vegetated / Bare

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate

est. width: <1m 1-10m 10-100m <100m 160m 200m est. water depth: <1m 1-3m 3-10m >10m \_\_\_ m

shoal(s) present Y / N point bar present Y / N bar-shoal substrate: S / sand / gravel / cobble / boulder / bedrock / debris

seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling - same - rising

**5 OPERATIONAL FEATURES** Suitable backshore staging Y / N Access: Direct from backshore Y / N Alongshore from next segment Y / N

Debris: Y / N oiled Y / N amount \_\_\_ bags or \_\_\_ trucks access restrictions

Oiled trees/shrubs Y / N River Current strong Y / N Other Features:

**6 SURFACE OILING CONDITIONS** begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

767

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER						SUBST. TYPE(S)			
	MS	LB	UB	OB	Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO	
	m	m	%	m	m	%	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm	cm		cm	cm	cm
A			<u>X</u>	<u>X</u>	<u>1270</u>	<u>50</u>	<u>0</u>														<u>P</u>	<u>Sand</u>

**7 SUBSURFACE OILING CONDITIONS** use letter for ZONE location plus Number of pit or trench - e.g., "A1"

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH	OILED ZONE	SUBSURFACE OIL CHARACTER						WATER TABLE	SHEEN COLOUR	CLEAN BELOW	SUBST. TYPE(S)							
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO	cm	B, R, S, N	Yes / No			
	cm	cm-cm	cm	cm			cm	cm	cm	cm	cm	cm					cm	cm	cm	cm			

**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

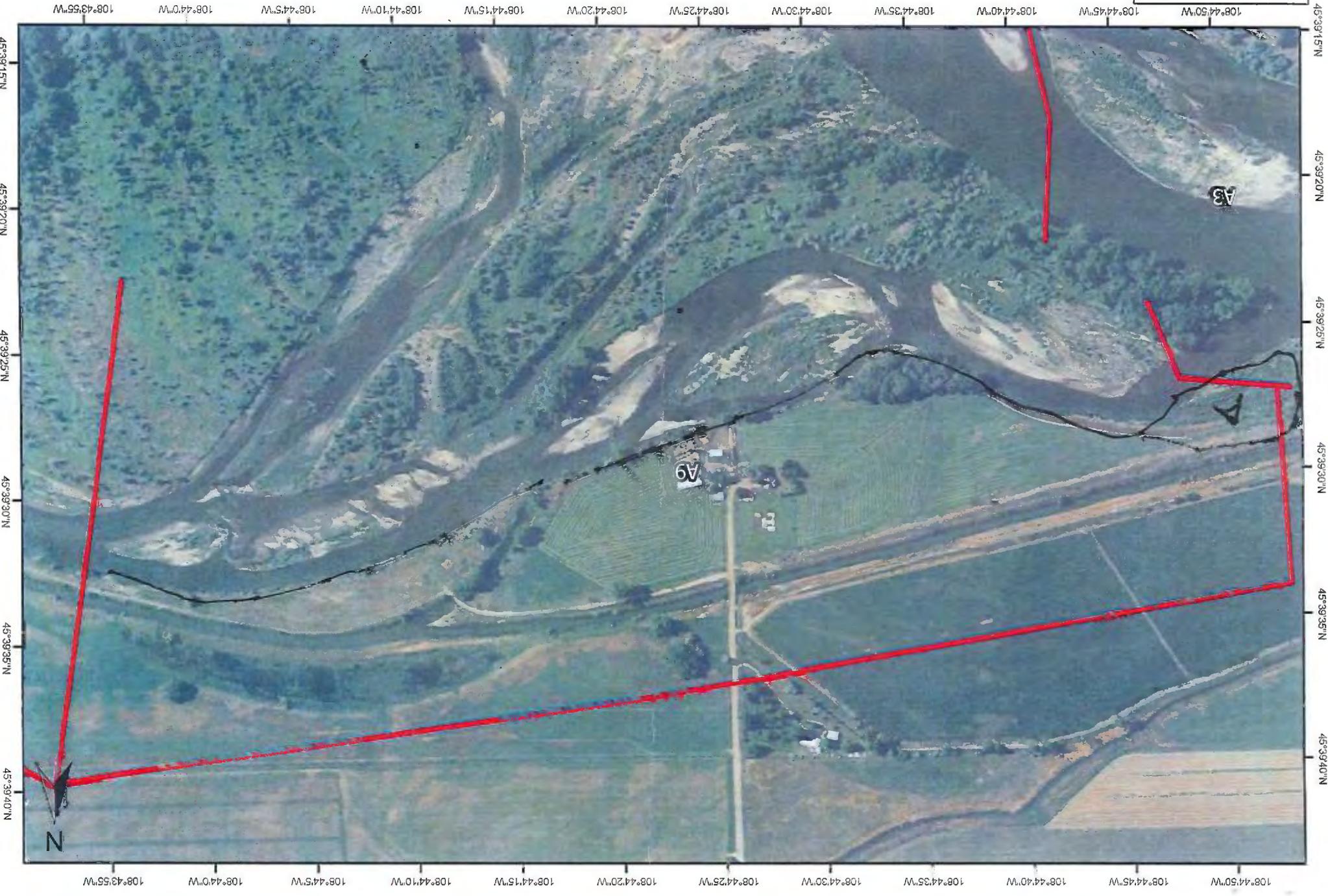
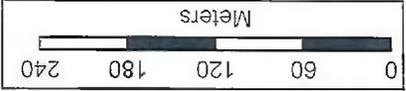
Overbank Survey Required Y / N Overbank Survey Completed (Y) N Shoreline Survey Completed (Y) / N

Zone A - No oil observed

**A09 -**  
(L/R/I)??

DATE:  
TEAM:

COMMENTS:



DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 28/07/11	Time (24h): std / daylight hrs to _____ hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: <u>A 9</u> Left Bank / Right Bank / Island		Operations Division:		
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>2.8</u> deg C

<b>2 SURVEY TEAM # 1</b>	Name	Organization	Signature
Pete Lee <u>PBL</u>		Polaris	225.892.6459
Janice Witul <u>JW</u>		US EPA	415.816.6582 <i>Janice Witul</i>
Mark Ewanic <u>ME</u>		MT DEQ	406.533.5216

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 1560 m

Start GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. Datum: \_\_\_\_\_

End GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min.

**4A RIVER BANK TYPE** SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp \_\_\_\_\_ Shelf \_\_\_\_\_ Manmade: Solid \_\_\_\_\_ Permeable \_\_\_\_\_ (type) \_\_\_\_\_ Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed X Pebble/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Peal/Organic \_\_\_\_\_ Vegetated Bank: P Wooded Upland: S

Sediment Flat: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed/Coarse \_\_\_\_\_ Other: \_\_\_\_\_ If snow and ice use Winter River SOS

**4B RIVER VALLEY CHARACTER** select as appropriate complete for primary

Cliff or Bluff: \_\_\_\_\_ Est Height \_\_\_\_\_ m canyon \_\_\_\_\_ manmade \_\_\_\_\_ meander \_\_\_\_\_ confined or leveed \_\_\_\_\_ Substrate Type: \_\_\_\_\_

Sloped: (>5°)(15°)(30°) straight \_\_\_\_\_ braided X oxbow \_\_\_\_\_ flood plain valley X Forested / Vegetated / Bare

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m m est. water depth: <1m 1-3m 3-10m >10m m

shoal(s) present Y/N point bar present Y/N bar-shoal substrate silt / sand / gravel / cobble / boulder / bedrock / debris

seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling — same — rising

**5 OPERATIONAL FEATURES** Suitable backshore staging Y / N Access: Direct from backshore Y / N Alongshore from next segment Y / N

Debris: Y / N oiled Y / N amount \_\_\_\_\_ bags or \_\_\_\_\_ trucks access restrictions \_\_\_\_\_

Oiled trees/shrubs Y / N River Current strong Y / N Other Features: \_\_\_\_\_

**6 SURFACE OILING CONDITIONS** begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS								OIL CHARACTER								SUBST. TYPE(S)
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO				
A				X	150	50															X	Grass, trees		
B				X	360	100															X	"		
C				X	450	100															X	4		
D				X	400	50															X	"		
E				X	200	30															X	"		

**7 SUBSURFACE OILING CONDITIONS** use letter for ZONE location plus Number of pit or trench — e.g., "A1"

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER								WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)				
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR	NO									

**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Overbank Survey Required Y / N Overbank Survey Completed Y / N Shoreline Survey Completed Y / N

Oil height:  
Zones A, B, <sup>D/E</sup> C are isolated islands at this time

Treatment recommendations:  
Zone A, B, C, <sup>D/E</sup> : No oil observed; no treatment required.

Sketch Yes / No Photos Yes / No Frames \_\_\_\_\_ Photographer \_\_\_\_\_

108°44'50"W 108°44'45"W 108°44'40"W 108°44'35"W 108°44'30"W 108°44'25"W 108°44'20"W 108°44'15"W 108°44'10"W 108°44'5"W 108°44'0"W 108°43'55"W

45°39'40"N  
45°39'35"N  
45°39'30"N  
45°39'25"N  
45°39'20"N  
45°39'15"N

45°39'40"N  
45°39'35"N  
45°39'30"N  
45°39'25"N  
45°39'20"N  
45°39'15"N

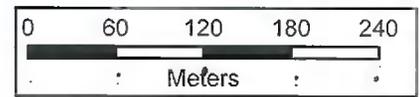


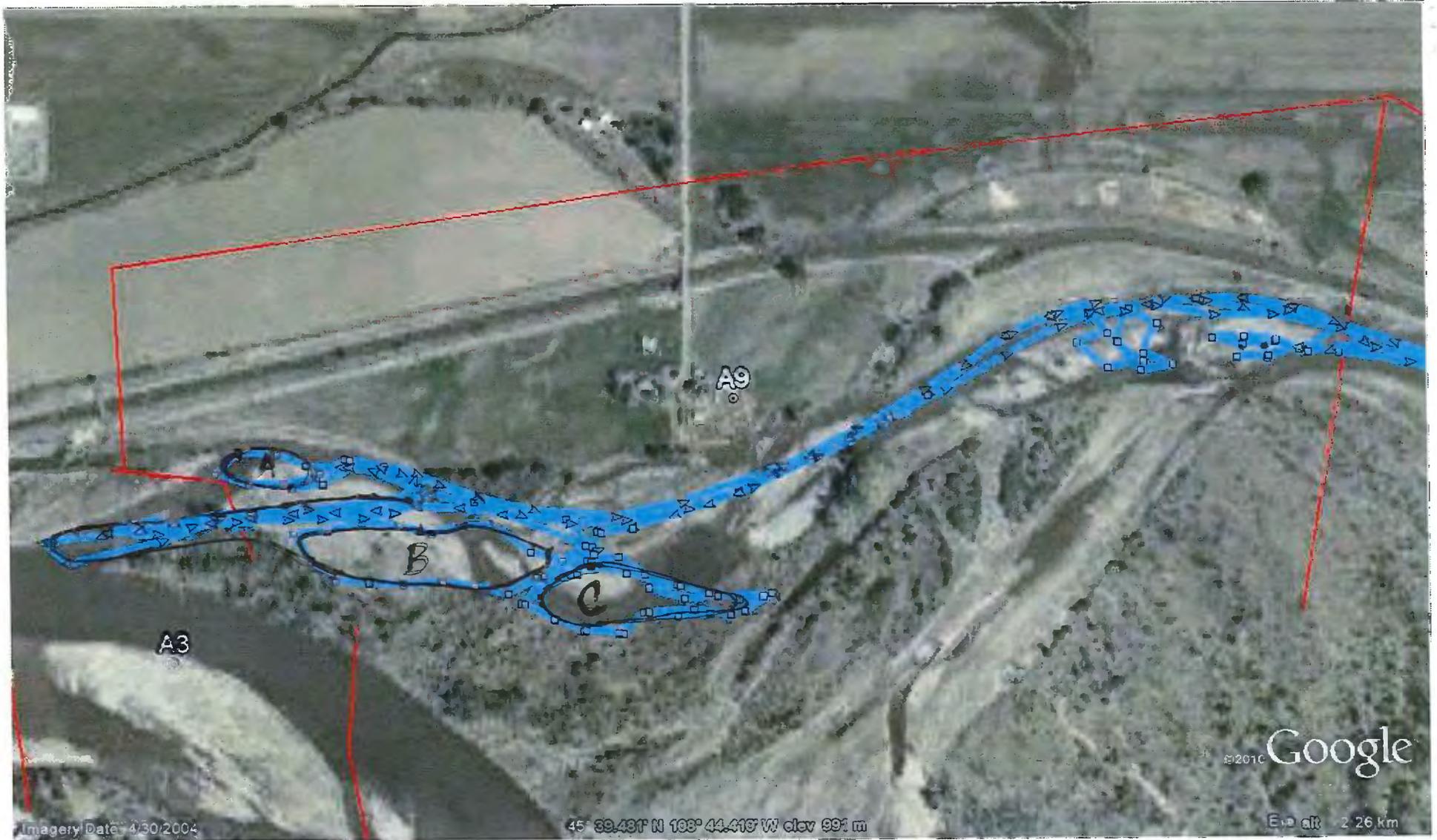
108°44'50"W 108°44'45"W 108°44'40"W 108°44'35"W 108°44'30"W 108°44'25"W 108°44'20"W 108°44'15"W 108°44'10"W 108°44'5"W 108°44'0"W 108°43'55"W

**A09 -**  
(L/R/I)??

DATE:  
TEAM:

COMMENTS:





DB/9

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>A09</u>	Left Bank / Right Bank / Island			low - mean - bankfull - overbank
Operations Division:		<u>2010811</u>	<u>1030</u> hrs to <u>1050</u> hrs	<u>falling</u> - steady - rising
Survey by: <u>Foot/ATV/Boat</u> / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ___ deg C

<b>2 SURVEY TEAM # <u>3</u></b>	Name	Organization	Signature
	<u>Todd Farrar</u>	<u>Polaris</u>	<u>Todd Farrar</u>
	<u>Lisa Gerendcher</u>	<u>Entrix</u>	<u>Lisa Gerendcher</u>
	<u>Jeffrey Herriek</u>	<u>DEQ</u>	<u>Jeffrey Herriek</u>
	<u>Rachelle Thompson</u>	<u>EPA</u>	<u>Rachelle Thompson</u>
	<u>Ethan Stapp</u>	<u>DNRC</u>	<u>Ethan Stapp</u>

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 525 m

Start GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. Datum: \_\_\_\_\_

End GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min.

**4A RIVER BANK TYPE** SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED

Bedrock: Cliff/Ramp \_\_\_\_\_ Shelf \_\_\_\_\_ Manmade: Solid \_\_\_\_\_ Permeable \_\_\_\_\_ (type) \_\_\_\_\_ Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed S Pebble/Cobble P Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: \_\_\_\_\_ Wooded Upland: \_\_\_\_\_

Sediment Flat: Clay/Mud \_\_\_\_\_ Sand S Mixed/Coarse \_\_\_\_\_ Other: \_\_\_\_\_ If snow and ice use Winter River SOS

**4B RIVER VALLEY CHARACTER** select as appropriate complete for primary

Cliff or Bluff: \_\_\_\_\_ Est Height \_\_\_\_\_ m canyon \_\_\_\_\_ manmade \_\_\_\_\_ meander \_\_\_\_\_ confined or leveed \_\_\_\_\_ Substrate Type: \_\_\_\_\_

Sloped: (>5°)(15°)(30°) straight \_\_\_\_\_ braided P oxbow \_\_\_\_\_ flood plain valley \_\_\_\_\_ Forested (Vegetated) Bare \_\_\_\_\_

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 160m est. water depth: <1m 1-3m 3-10m >10m \_\_\_\_\_ m

shoal(s) present Y/N point bar present Y/N bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris

seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling - same - rising

**5 OPERATIONAL FEATURES** Suitable backshore staging Y N Access: Direct from backshore Y/N Alongshore from next segment Y/N

Debris: Y/N oiled Y/N amount \_\_\_\_\_ bags or \_\_\_\_\_ trucks access restrictions

Oiled trees/shrubs Y/N River Current strong Y / N Other Features:

**6 SURFACE OILING CONDITIONS** begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)	
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO
<u>1736</u> A		X			100	29															X
<u>1737</u> B		x			120	38															X
<u>1738</u> C		x			134	75															X
<u>1739</u> D		x			120	63															X
<u>1740</u> E		x			51	30															X

**7 SUBSURFACE OILING CONDITIONS** use letter for ZONE location plus Number of pit or trench - e.g., "A1"

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER								WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR	NO					

**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Overbank Survey Required Y / N Overbank Survey Completed Y / N Shoreline Survey Completed Y / N

Zone A through Zone E - NOO .NFT .

8:20/2011 - 9:05 am  
8:20/2011 - 1:57 pm  
1 pm



A04-LB © 2011 Google

45°39'24.43" N 108°44'30.03" W elev 3264ft

1996

GOO

Eye alt



## **Appendix C**

Applicable Compiled Treatment  
Recommendations

## Compiled Treatment Recommendations – 10

### SCAT Segments Covered:

A3 (Left Bank), A4 (Left Bank), A5 (Left Bank), A6 (Left Bank), A7 (Left Bank), A8 (Left Bank), A9 (Right Bank), A10 (Right Bank), A15 (Island)

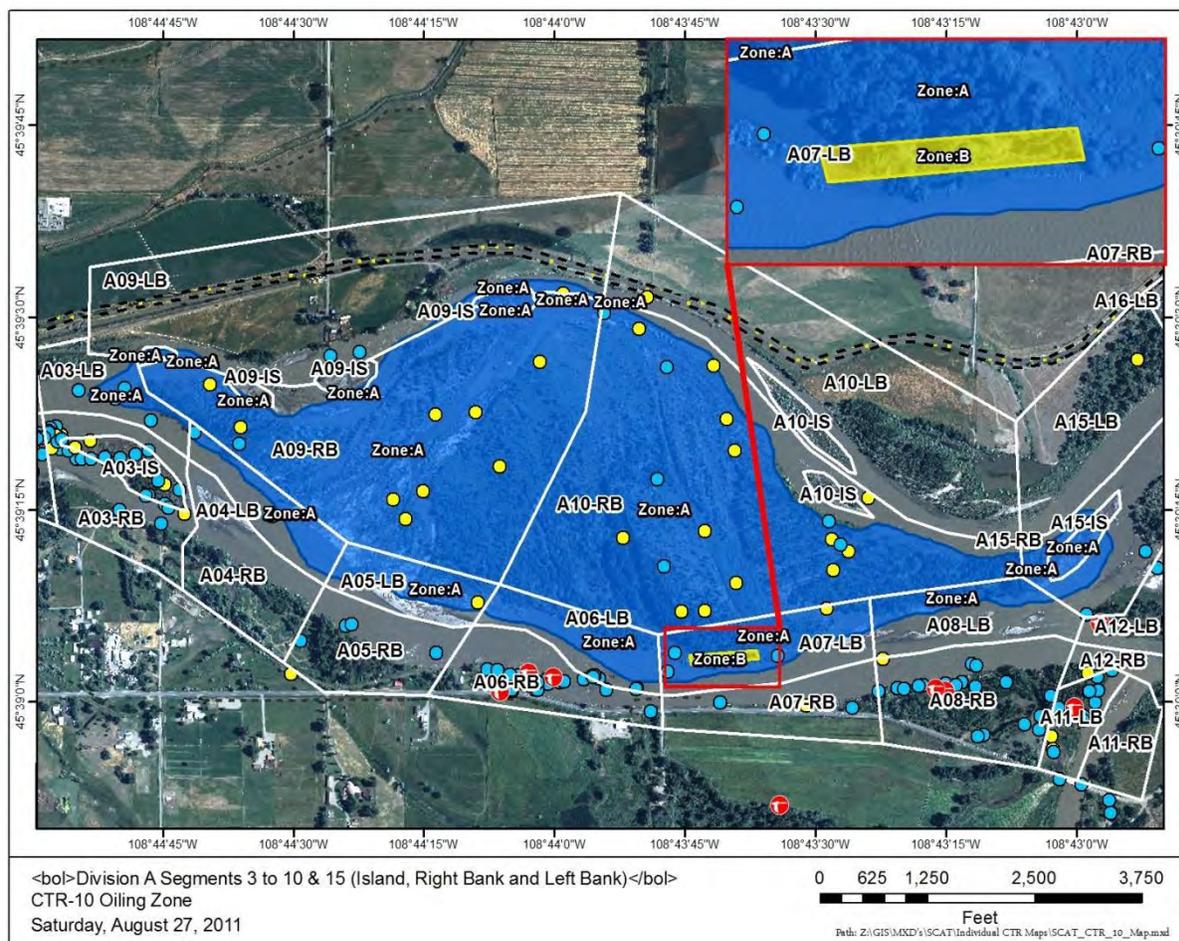
SCAT Survey Dates: 20-July-2011 (See attached Riverine SCAT Forms)

### Ops Sites Covered:

3b

### Refer to current approved treatment methods:

#6 Sorbent Use



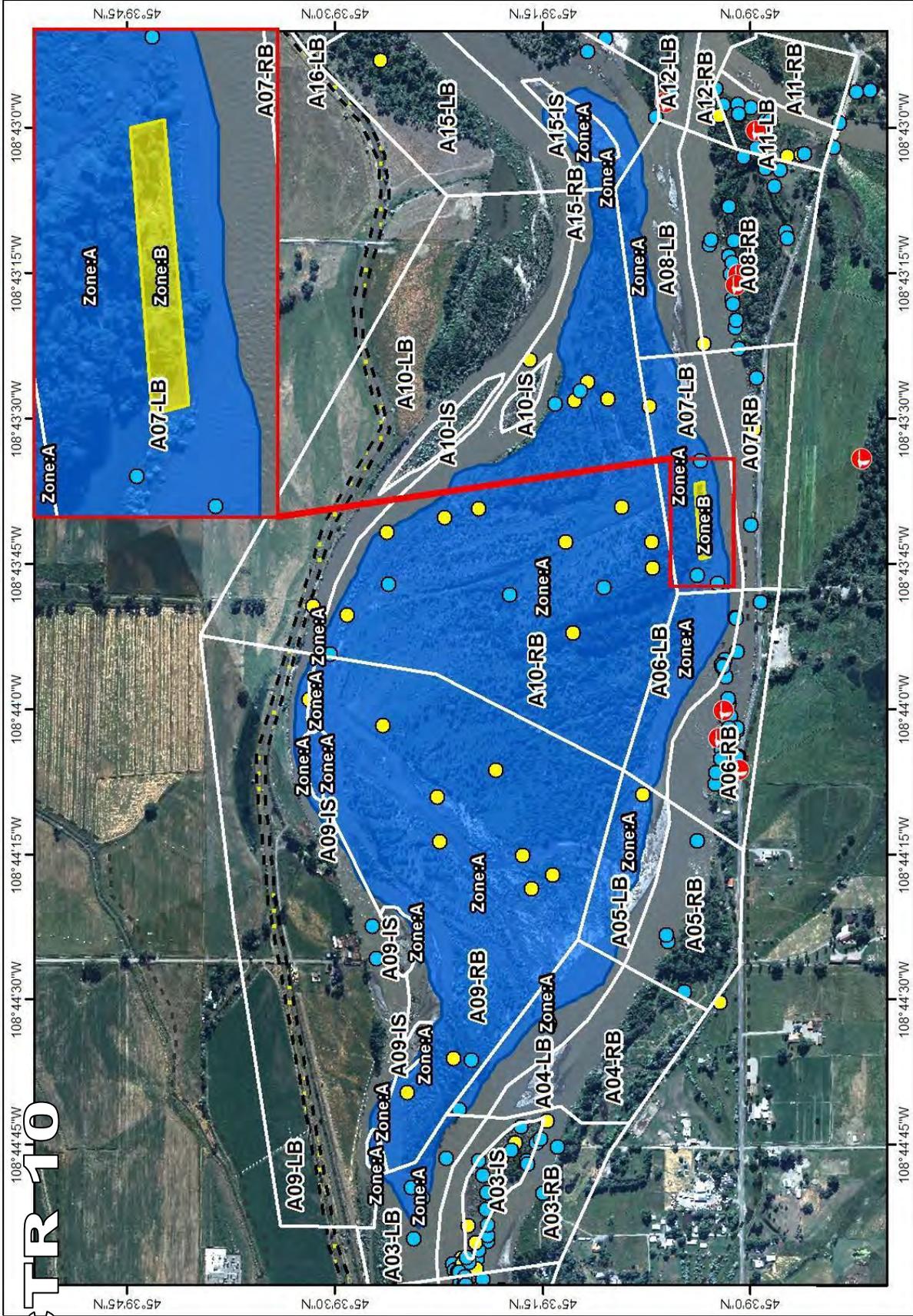
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**Zone A:**

**Primary Oiling Conditions:** No Oil Observed

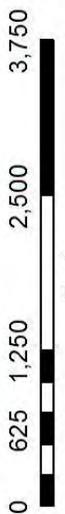
**Cleanup Recommendations:** No Further Treatment





**CTR 10**

<bol>Division A Segments 3 to 10 & 15 (Island, Right Bank and Left Bank)</bol>  
 CTR-10 Oiling Zone  
 Saturday, August 27, 2011



Feet

Path: Z:\GIS\MXD's\SCAT\Individual\_CTR\_Maps\SCAT\_CTR\_10\_Map.mxd

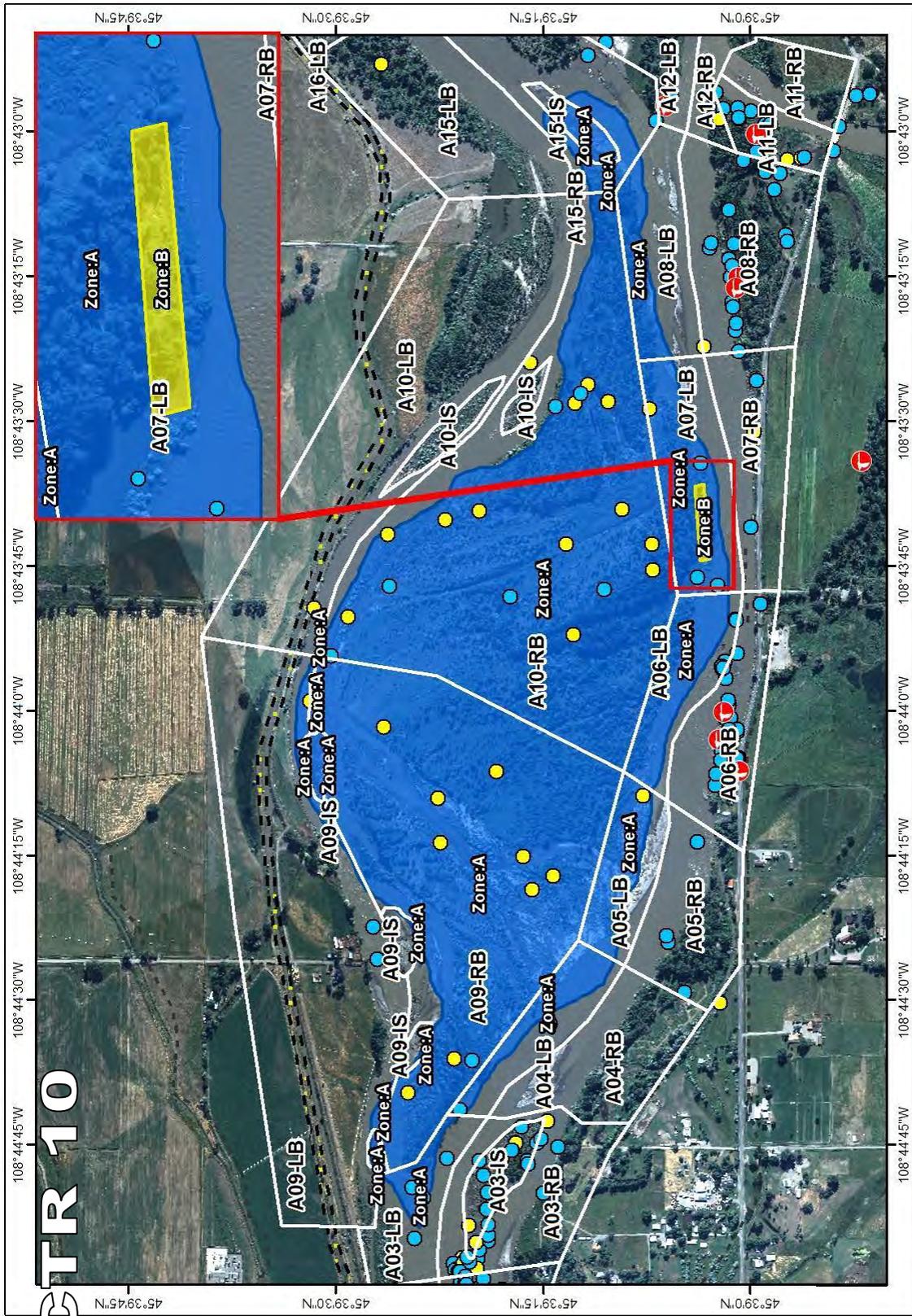
**Zone B:**

An area approximately 200m in width near the shoreline centered around  
N45°39.038',W108°43.689'

**Primary Oiling Conditions:** ~15% distribution of fresh oil debris (coat) on water surface.

**Cleanup Recommendations:** Deploy sorbents on water surface.





**CTR 10**

<bol>Division A Segments 3 to 10 & 15 (Island, Right Bank and Left Bank) </bol>  
 CTR-10 Oiling Zone  
 Saturday, August 27, 2011

Feet  
 Path: Z:\GIS\MXD's\SCAT\Individual\_CTR\_Maps\SCAT\_CTR\_10\_Map.mxd

## Compiled Treatment Recommendations – 17

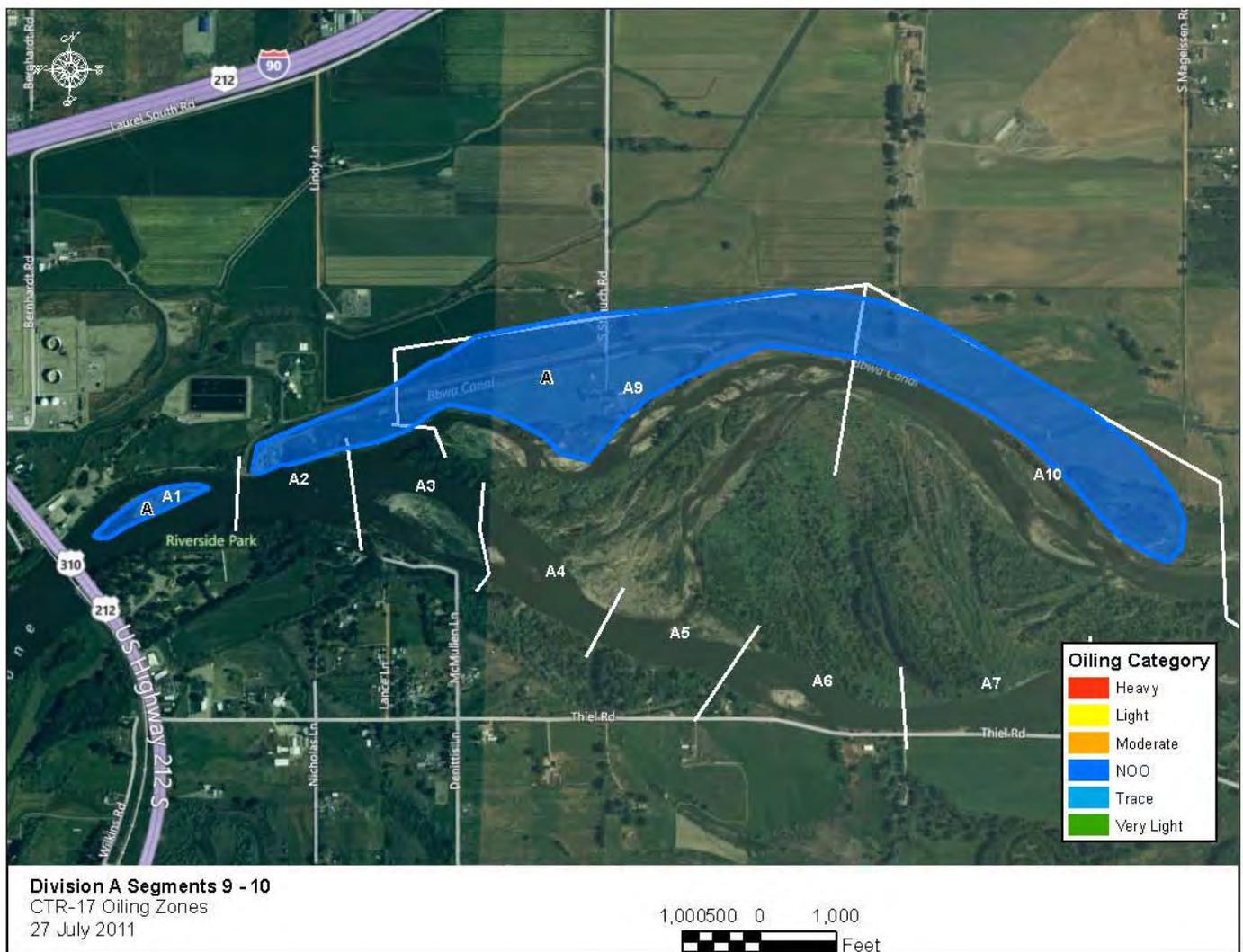
### SCAT Segments Covered:

A1 (Island), A1 (Left Bank), A2 (Left Bank), A3 (Left Bank), A9 (Left Bank), A9 (Island), A10 (Left Bank)

SCAT Survey Dates: 11-Jul-2011, 25-Jul-2011

### Refer to current approved treatment methods:

No Treatment Necessary



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**Zone A:**

**Primary Oiling Conditions:** ~No oil was observed in this section including along the bank and in adjacent floodplains.

**Cleanup Recommendations:** None.



## **Appendix D**

Pre-Inspection Survey Transmittal

**A Pre-Inspection Survey was  
not conducted for this area**



## **Appendix E**

Post-Inspection Survey Transmittal

**A Post-Inspection Survey  
was not conducted for this area**



## **Appendix F**

Final SCAT Survey Forms  
and Sketches

**Final SCAT Surveys were not  
conducted for this area**



## **Appendix G**

Completed SCAT Segment  
Sign-Off Forms

**SCAT Segment Sign-Off Forms were not  
necessary for this area**