

ExxonMobil Pipeline Company

**SCAT Area Transition Report for
B47**

Silvertip Pipeline Incident
Laurel, Montana

October 26, 2011



SCAT Area Transition Report for B47

Silvertip Pipeline Incident
Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

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Our Ref.:
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Date:
October 26, 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.

1. Executive Summary of Oil Removal Activities	1
1.1 Land Ownership and Access Issues	1
1.2 Cultural, Historic, and Natural Resource Constraints	1
1.3 Summary of Environmental Sampling	2
1.4 Summary of Initial SCAT Surveys	2
1.5 Applicable Compiled Treatment Recommendations	2
1.6 Oil Removal Activities	3
1.7 Pre-Inspection Survey Transmittal	3
1.8 Post-Inspection Survey Transmittal	3
1.9 Summary of Final SCAT Surveys	3
1.10 SCAT Area Conclusions	3
2. Transition Sign-Off Form	4
Tables	
Table 1 Environmental Sampling Summary	2
Figures	
Figure 1 Aerial Map with Parcel Boundaries	
Figure 2 Wildlife Resources	
Figure 3 Sample Location Map	
Figure 4 Maximum SCAT Observations	
Figure 5 Final SCAT Observations	
Appendices	
A Sample Detection Summary	
B Initial SCAT Survey Forms and Sketches	
C Pre-Inspection Survey Transmittal	
D Post-Inspection Survey Transmittal	
E Final SCAT Survey Forms and Sketches	
F Completed SCAT Segment Sign-Off Forms	

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 B47, 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 B47. 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 B47, 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 B47 is 166.6. There were no access issues for the right bank, but some land did have unknown ownership.

1.2 Cultural, Historic, and Natural Resource Constraints

A single National Register of Historic Places (NRHP) eligible historic property was identified on the right bank. The property was not impacted by the spill or response.

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 B47. One moderately oiled American robin (*Turdus migratorius*) was captured, cleaned, and released. A deceased lightly oiled beaver (*Castor canadensis*) was identified and retained. A lightly oiled mallard (*Anas platyrhynchos*) was observed but not captured for cleaning. A Leopard frog (*Rana pipiens*) was captured and taken to the Wildlife Recovery Center for an oiling evaluation, determined to be un-oiled, and released. Four deceased animals with no visible oiling were identified and retained: a red fox (*Vulpes vulpes*), a Leopard frog (*Rana pipiens*), a wood duck (*Aix sponsa*), and a Cooper's hawk (*Accipiter cooperii*). A Wildlife Priority Cleanup Area (WPCA) was identified. The WPCA consisted of an oiled debris pile with an associated pool with sheen. The WPCA was treated to reduce the potential for wildlife oiling and is no longer considered a wildlife hazard. No active migratory bird nests were identified in Area B47.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area B47. 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 B47 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude	Results Validated?
EPA	SPSO131D01_071511	15-Jul-11	Soil_Surface	SPSO131	45.7124516	-108.5907714	Yes
EPA	SPSO132D01_071511	15-Jul-11	Soil_Surface	SPSO132	45.712452	-108.5907714	Yes
EPA	SPSO141D01_071611	16-Jul-11	Soil_Surface	SPSO141	45.7116661	-108.5910449	NA
EPA	SPSO141D01_071611	16-Jul-11	Soil_Surface	SPSO141	45.7116661	-108.5910449	Yes
EPA	SPSO142D01_071611	16-Jul-11	Soil_Surface	SPSO142	45.7116593	-108.5910509	NA
EPA	SPSO142D01_071611	16-Jul-11	Soil_Surface	SPSO142	45.7116593	-108.5910509	Yes
EPA	SPSO143D01_071611	16-Jul-11	Soil_Surface	SPSO143	45.7105697	-108.591835	NA
EPA	SPSO143D01_071611	16-Jul-11	Soil_Surface	SPSO143	45.7105697	-108.591835	Yes
EPA	SPSO144D01_071611	16-Jul-11	Soil_Surface	SPSO144	45.7104038	-108.5919845	NA
EPA	SPSO144D01_071611	16-Jul-11	Soil_Surface	SPSO144	45.7104038	-108.5919845	Yes

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, three exceedances were shown for total extractable hydrocarbons.

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 B47 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area B47.

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 ([CTR No. 8](#)).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area B47, 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, plastic, trash, super sacks, wood chips, and contaminated wood.

1.7 Pre-Inspection Survey Transmittal

SCAT Operations liaisons performed an inspection of the remediated areas of SCAT Area B47 and developed a Pre-Inspection Survey Transmittal (PIST) associated with the right bank within Area B47, which is presented in Appendix C.

1.8 Post-Inspection Survey Transmittal

SCAT Operations liaisons performed an inspection of the remediated areas of SCAT Area B47 and developed a Post-Inspection Survey Transmittal (POST) associated with the right bank within Area B47, which is presented in Appendix D.

1.9 Summary of Final SCAT Surveys

Figure 5 shows the oiling conditions within Area B47 following completion of oil removal activities. The SCAT team performed final surveys of the right bank within SCAT Area B47 to confirm the agreed-upon cleanup endpoints identified in the applicable CTRs had been achieved. The final SCAT survey documentation is presented in Appendix E.

1.10 SCAT Area Conclusions

Based on the final SCAT surveys performed on the right bank within Area B47, no further treatment is recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition
Report for B47**

Silvertip Pipeline Incident
Laurel, Montana

2. Transition Sign-Off Form

SCAT Area Transition Report for B47

Prepared for:

Unified Command

Date

Unified Command – RP



**SCAT Area Transition
Report for B47**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for B47

Prepared for:

Unified Command

Date

Unified Command – FOSC



**SCAT Area Transition
Report for B47**

Silvertip Pipeline Incident
Laurel, Montana

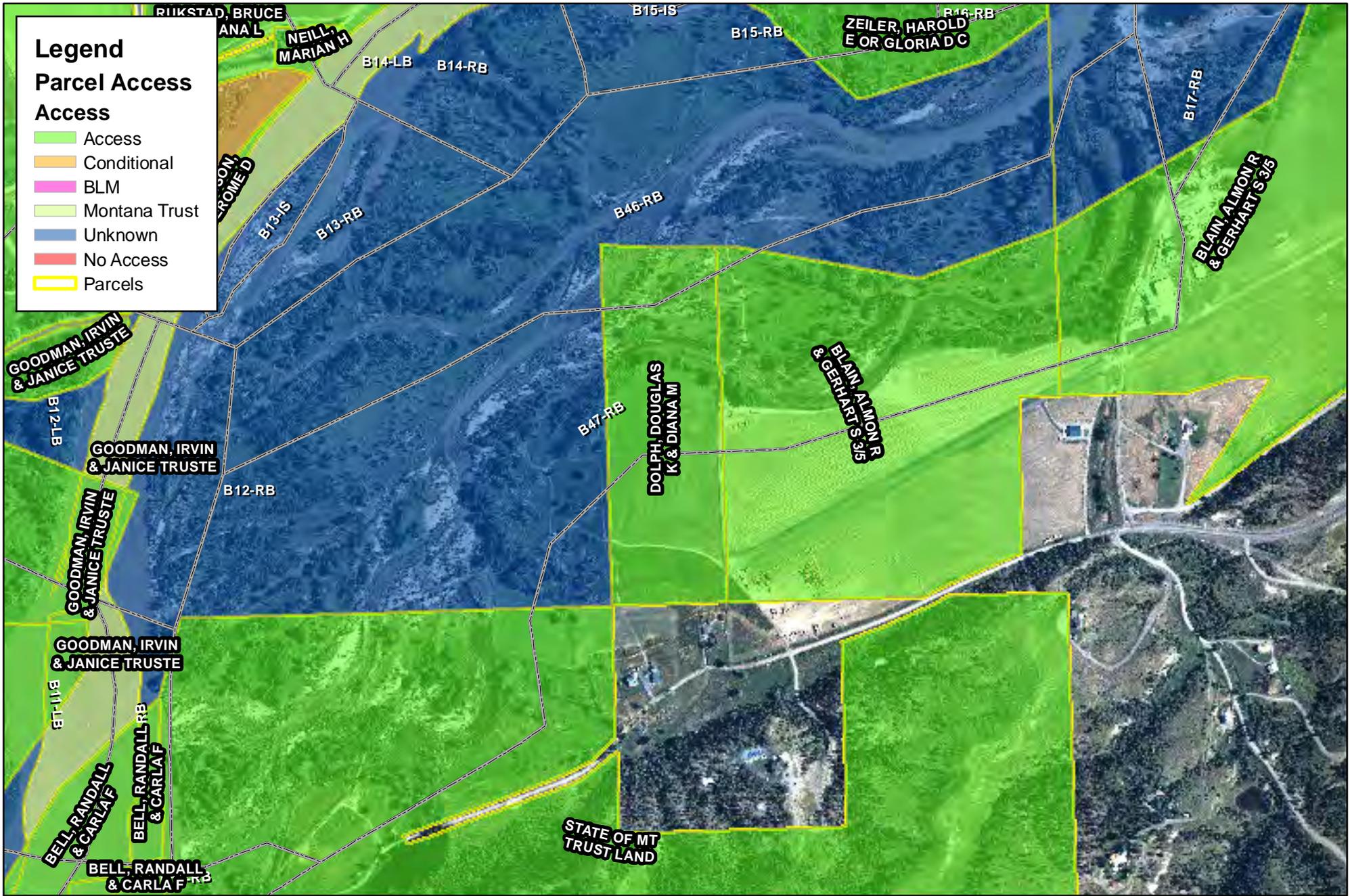
SCAT Area Transition Report for B47

Prepared for:

Unified Command

Date

Unified Command – MDEQ



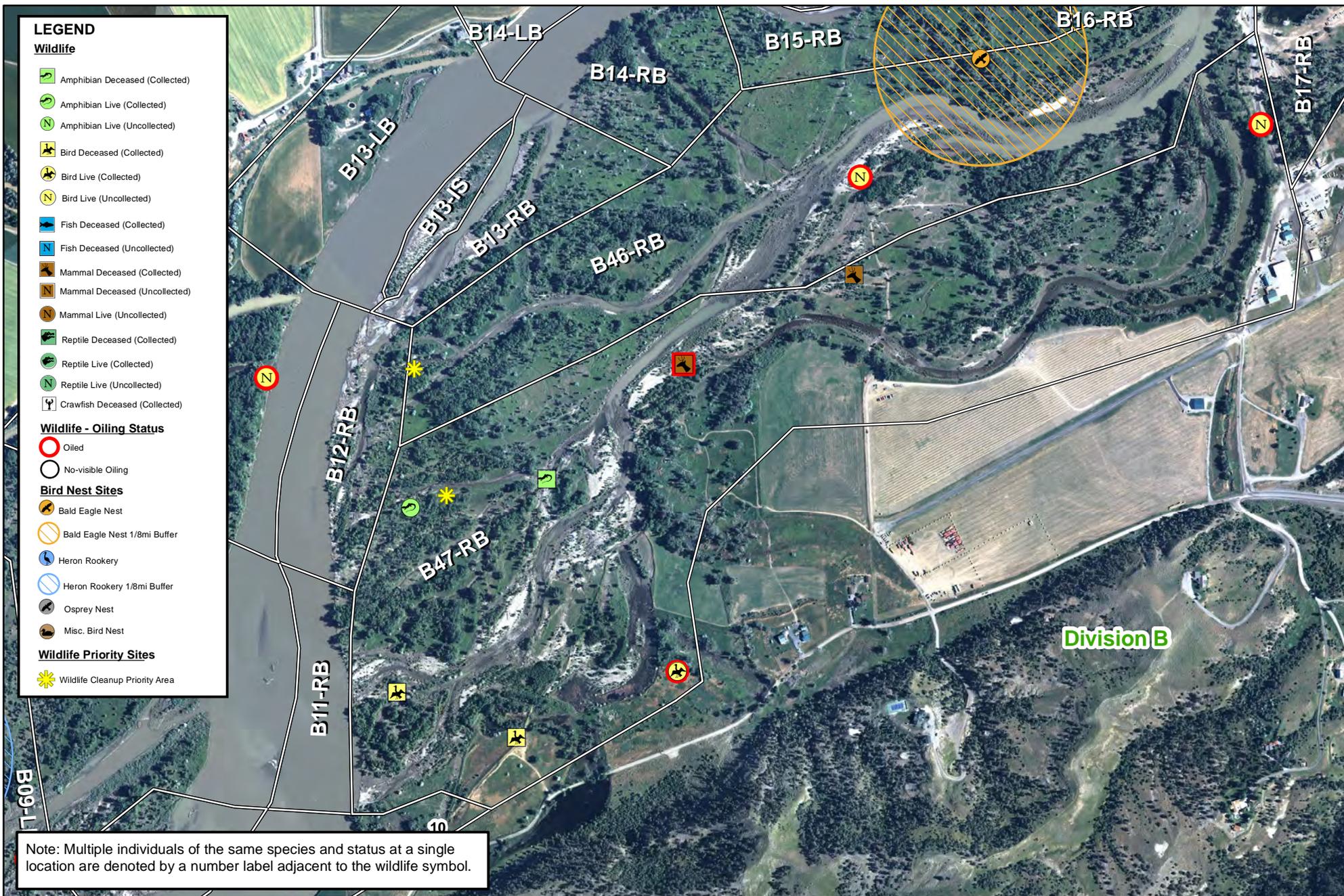
Legend

Parcel Access

Access

-  Access
-  Conditional
-  BLM
-  Montana Trust
-  Unknown
-  No Access
-  Parcels

Figure 1



Note: Multiple individuals of the same species and status at a single location are denoted by a number label adjacent to the wildlife symbol.

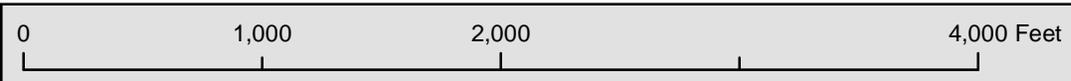
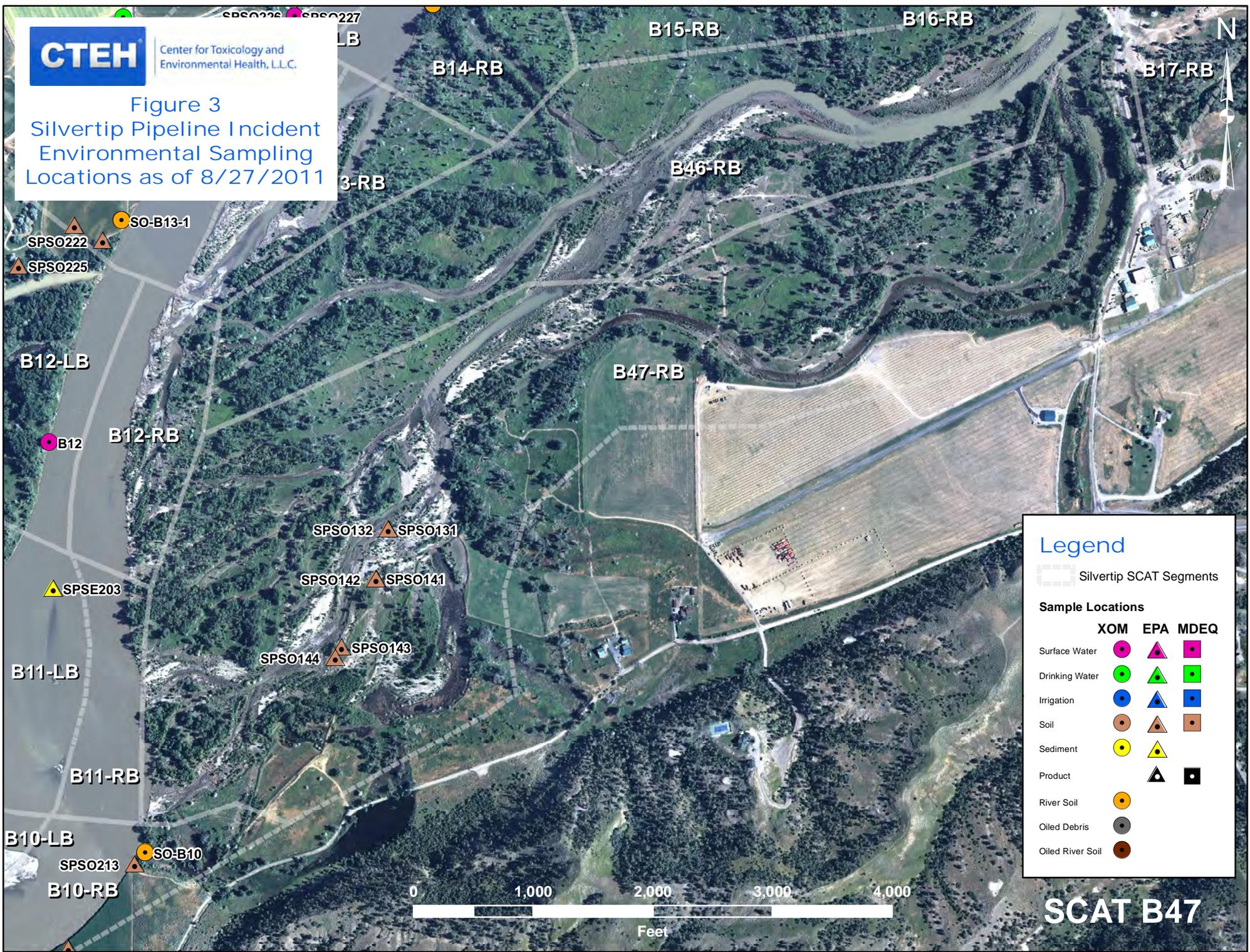


Figure 2
Wildlife Resources



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

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



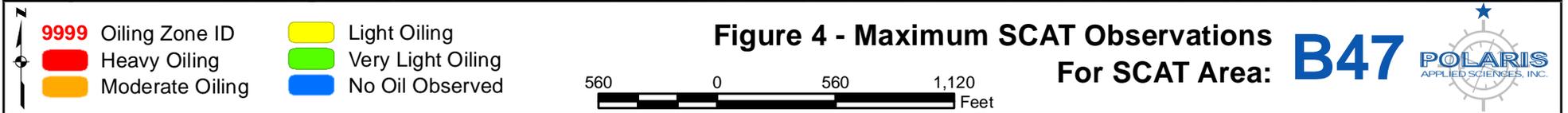
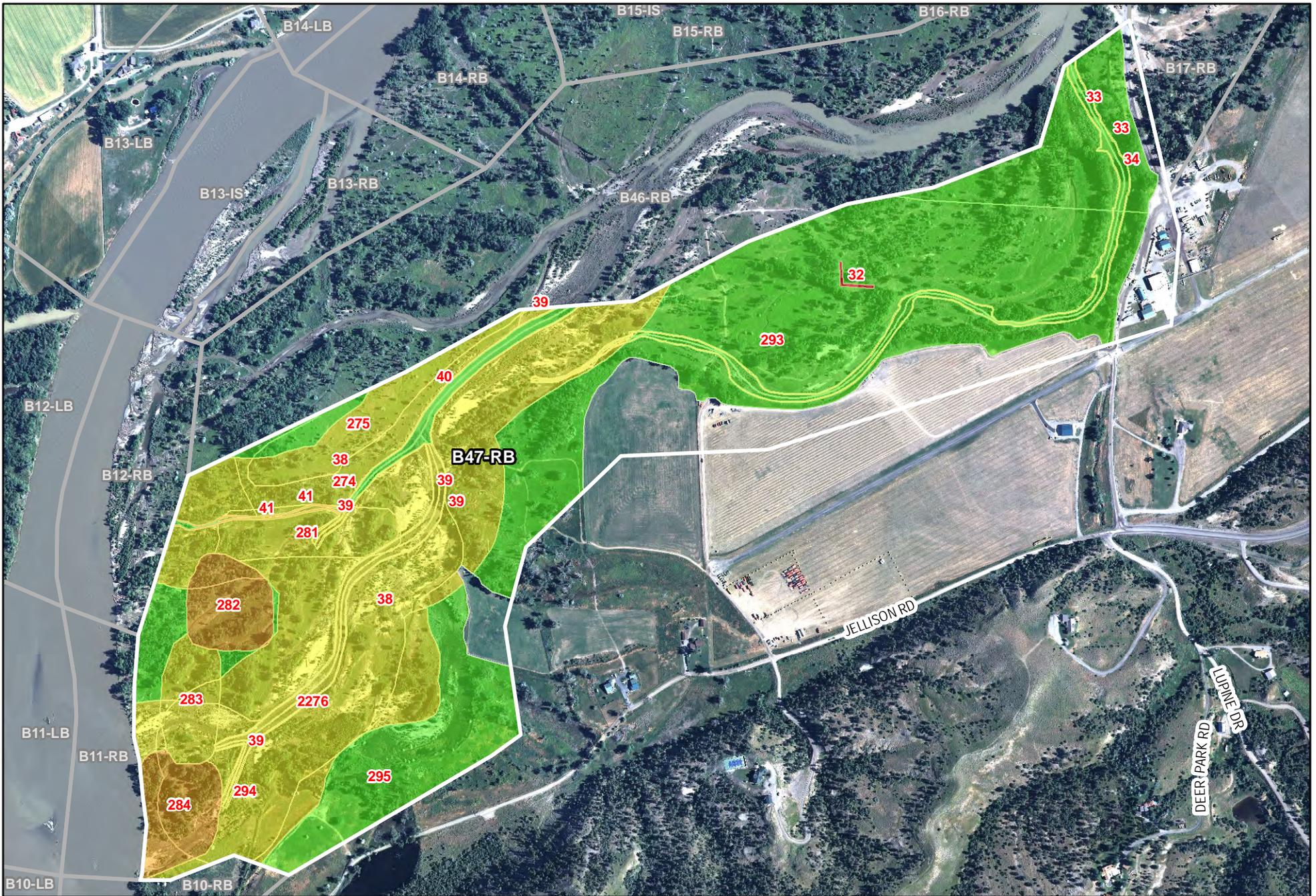
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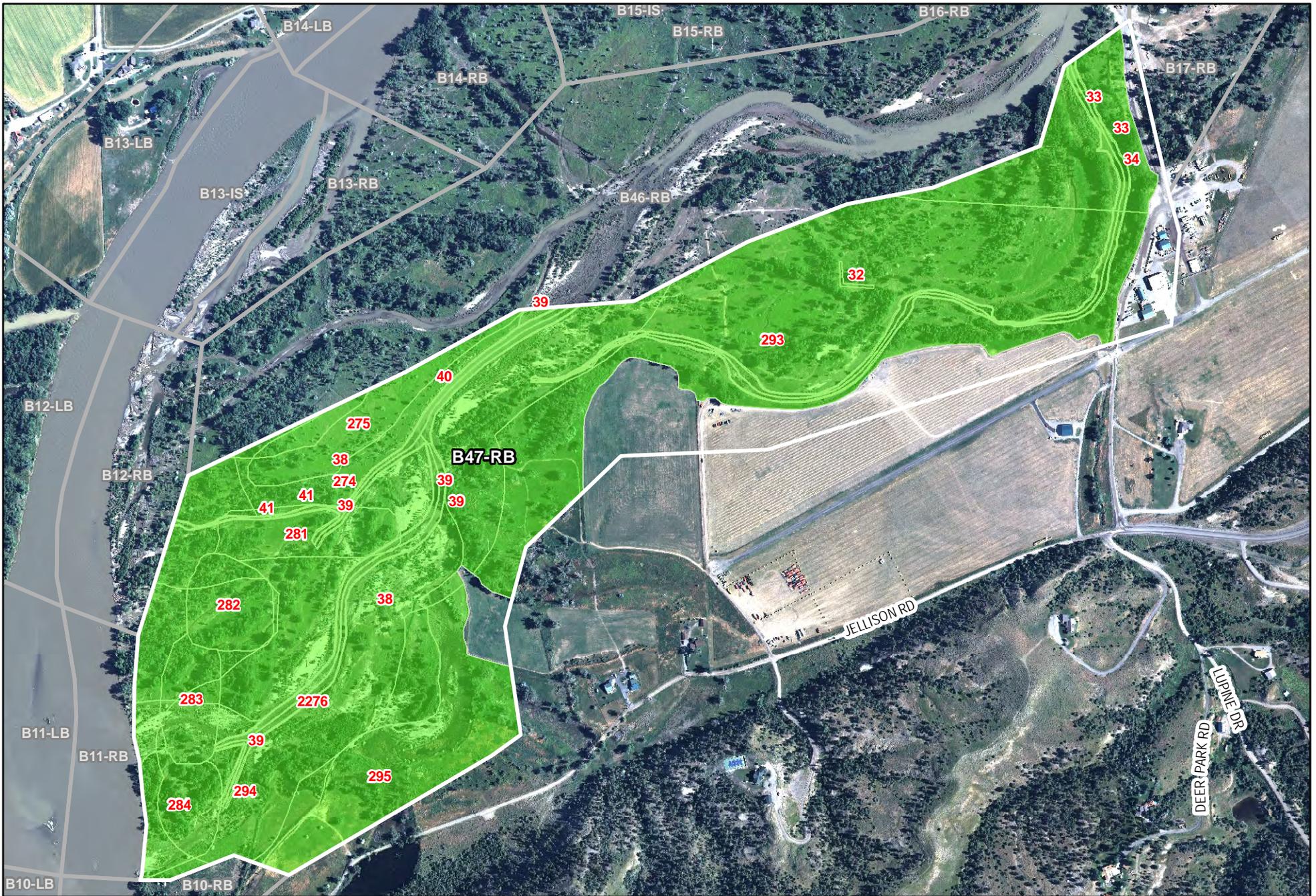
Silvertip SCAT Segments

Sample Locations

	XOM	EPA	MDEQ
Surface Water			
Drinking Water			
Irrigation			
Soil			
Sediment			
Product			
River Soil			
Oiled Debris			
Oiled River Soil			

SCAT B47





**Figure 5 - Final SCAT Observations
For SCAT Area: B47**





Appendix A

Sample Detection Summary



Sample Results For SCAT Area B47

Printed 9/20/2011

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
SPSO132D01_071511	15-Jul-11	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	164	200		mg/kg	no
SPSO141D01_071611	16-Jul-11	Field	Soil_Surface	MADEP VPH	Total Purgeable Hydrocarbons	Y	17.3	200		mg/kg	no
SPSO141D01_071611	16-Jul-11	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	11000	200		mg/kg	YES
SPSO141D01_071611	16-Jul-11	Field	Soil_Surface	MADEP VPH	Aliphatic (C09-C12), Adjusted	Y	6.8	100		mg/kg	no
SPSO141D01_071611	16-Jul-11	Field	Soil_Surface	MADEP VPH	Aliphatic (C09-C12).Unadjusted	Y	9.4	100		mg/kg	no
SPSO141D01_071611	16-Jul-11	Field	Soil_Surface	MADEP VPH	Aromatic (C09-C10)	Y	3.2	100		mg/kg	no
SPSO141D01_071611	16-Jul-11	Field	Soil_Surface	MADEP VPH	Naphthalene	Y	1.2	4		mg/kg	no
SPSO141D01_071611	16-Jul-11	Field	Soil_Surface	MADEP VPH	Total Purgeable Hydrocarbons	Y	17.3	200		mg/kg	no
SPSO142D01_071611	16-Jul-11	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	9110	200		mg/kg	YES
SPSO142D01_071611	16-Jul-11	Field	Soil_Surface	MADEP VPH	Aromatic (C09-C10)	Y	2.6	100		mg/kg	no
SPSO143D01_071611	16-Jul-11	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	3550	200		mg/kg	YES



Appendix B

Initial SCAT Survey Forms and
Sketches

(Fixed) DB/G/Sc

1 GENERAL INFORMATION Date (dd/mm/yy) 7/7/20 Time (24h): std / daylight 8:50 hrs to 11:40 hrs **Water Level** low - mean - bankfull - overbank

Segment/Reach ID: B-47 Left Bank/ Right Bank / Island Both Banks Operations Division: Both Banks Survey by: Foot / ATV / Boat / Helicopter / Overlook / Sun / Clouds / Fog / Rain / Snow / Windy / Calm Air Temp + / - deg C

2 SURVEY TEAM # 132 name organization contact phone number

Tom Freeman - Polaris David Rouse - FWL/USFWS Thomas Freeman

Randy Henry - Polaris Trevor Selch - FWL/State

Andrew Johnson - USCG

Travis Olson - USCG

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 1775 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 _____ Pebble/Cobble _____ Boulder _____ Peat/Organic _____ Vegetated Bank: (P) (S) 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 _____ complete for primary

Sloped: (>5°) (15°) (30°) straight _____ braided _____ oxbow X flood plain valley _____ Substrate Type: grass/shrub

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 (B/D) bags or _____ trucks access restrictions Confine to boat ramp launch

Oiled trees/shrubs (Y/N) River Current strong (Y/N) Other Features: Launch behind hangar

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

32
33
34

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	110	5	100		X					X							
B				X	1775	2	30			X											
C				X	1775	1	10		X	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

A) WPT 031 - Stagnant backwater w/ oil on surface, 5 "pockets" pooled along edge of upland (see map)

B) Intermittent grassy banks along edge of channels

C) Stained and oiled River Willow & River Aspen

* see attached diagram depicting relative positions of zones A-C

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

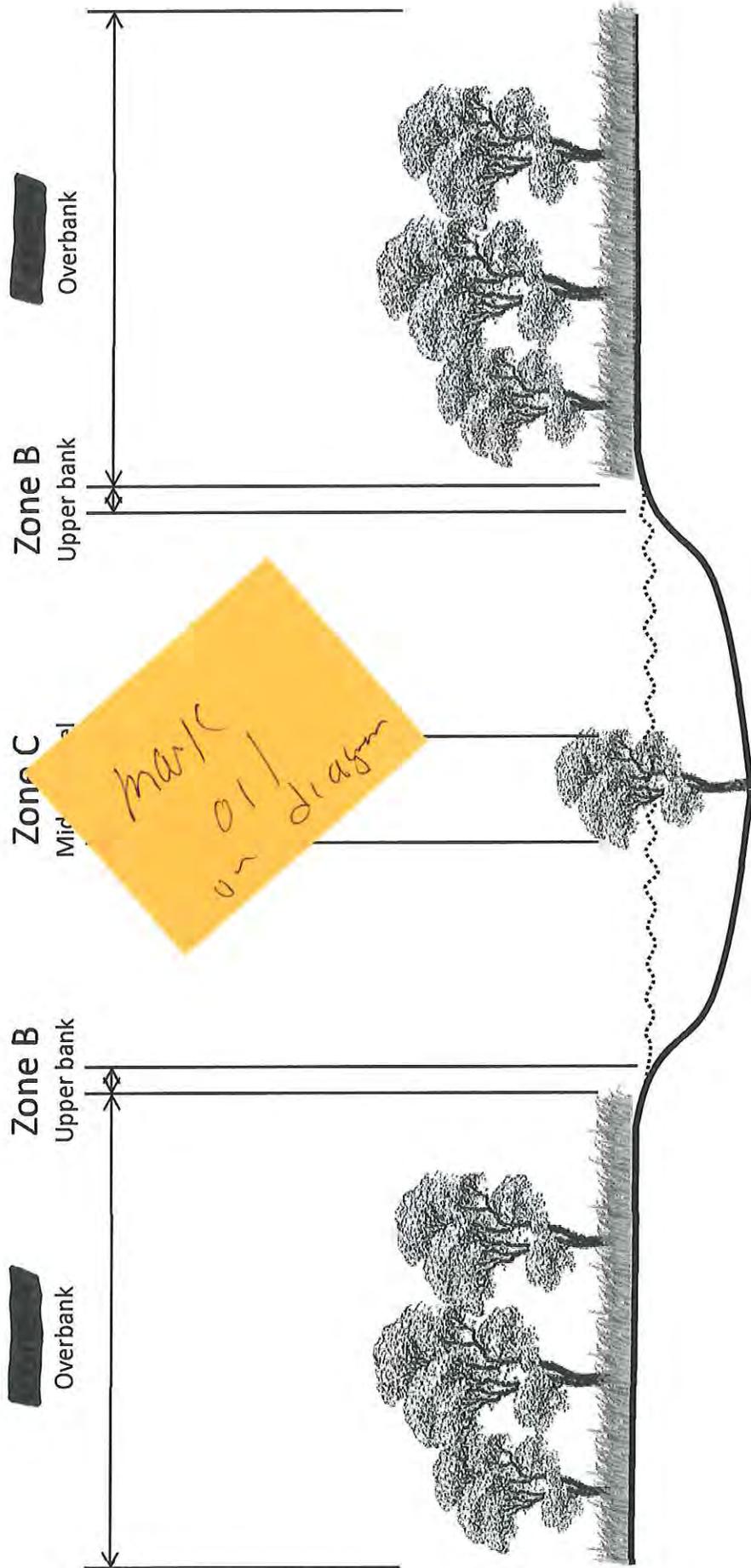
Sketch Yes/No Photos Yes/No (Roll # _____ Frames _____) Video Tape Yes/No (tape# _____)

① TEAM 1 = 1-100

② TEAM 2 = 7001-70033

Distributary Stream SCAT Oiling Zones

Segment(s): B-47
Date: 7/7/2011
Team: Teams 1 & 2



7/7/2011
2011
996



Goog
©2010

Image USDA Farm Service Agency

lat: 45.720022° lon: -108.500042° elev: 065 m

6065

DBIG/Sc

1 GENERAL INFORMATION ~~Both Banks~~ Date (dd/mm/yy) 08/07/11 Time (24h): std / daylight 0853 hrs to 1031 hrs Water Level low - mean - bankfull - overbank (overbank)

Segment/Reach ID: B47 ~~Left Bank~~ Right Bank / Island Operations Division: AA 18 Oct (falling - steady - rising)

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

2 SURVEY TEAM # 2

name	organization	contact phone number
Tom Freeman	Polaris	Travis Olson USCG
Andrew Milnes	Polaris	Kira Dickerson USFWS
Andrew Johnson	USCG	
Randy Henry	Polaris	

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 1666 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 (S) Boulder _____ Peat/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: mixed

Sloped: (>5°)(15°)(30°) straight _____ braided _____ oxbow _____ flood plain valley (P) 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	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)		
					Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
	ID	MS	LB	UB	OB	m	%															
A				X	169%	100%	41%	X	(X)	X	X		X									debris, grass
B			X		1666	2	75%			X	(X)		X									grass, debris
C	X				1666	1	5%			(X)	X		X									grass, debris
D			X		320	2	75%			(X)	X		X									grass, debris

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)
							CHARACTER									
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR				

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

Zone B Stem Height: 340cm Zone C Stem Height: 80cm
Zone D Stem Height: 1m

See attached sketch for Zone locations. Zones A & B are on both sides of the channel. Widths for Zones A & B are doubled.

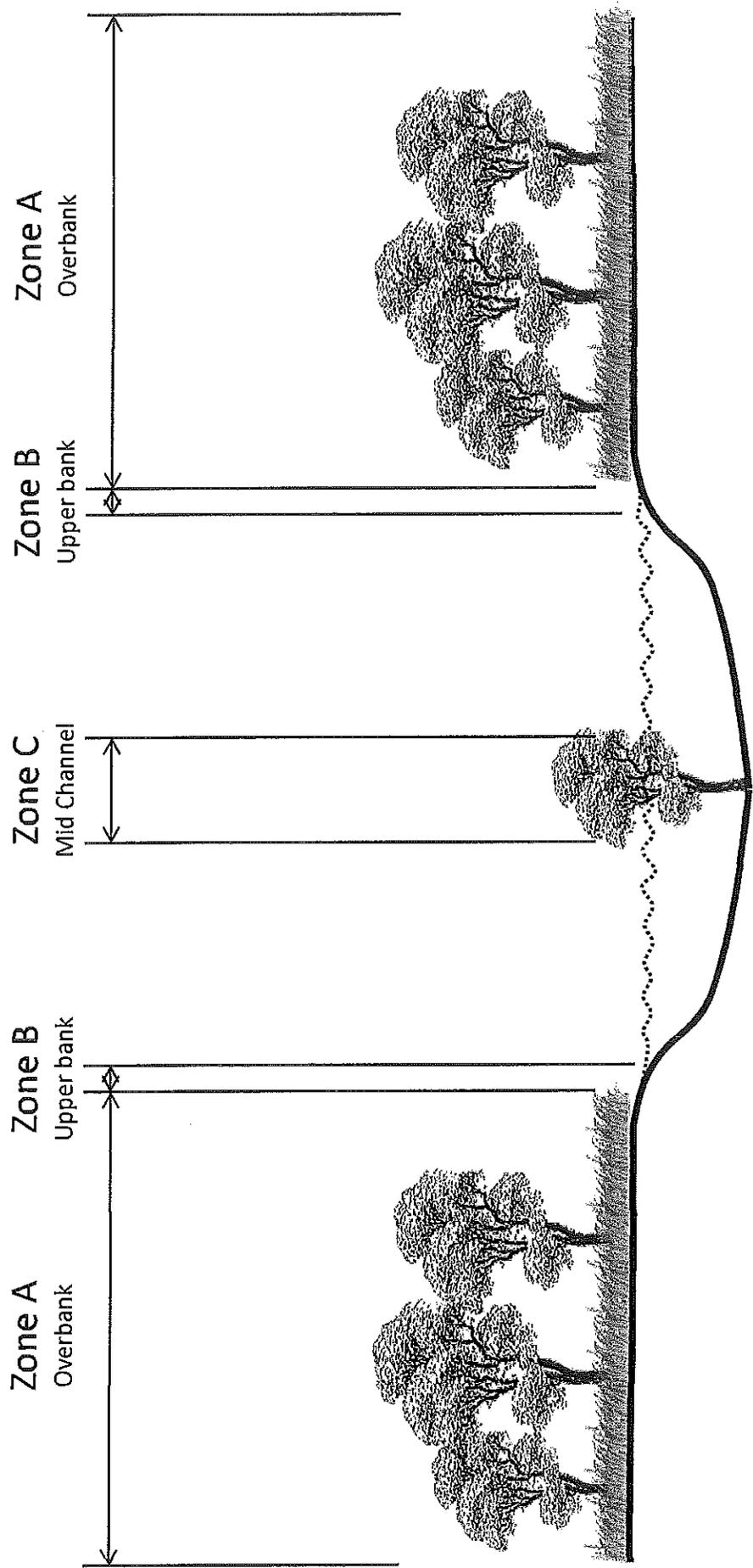
Treatment Recommendations: Zone A: Remove oiled debris greater than stain, clean large debris.
Zone B: Remove oiled vegetation greater than stain.
Zone C: Remove oiled vegetation and tree branches greater than stain.
Zone D: Remove oiled vegetation and debris greater than stain. Possible flushing of oiled banks.

Length
38
39
40
41

grass, debris
grass, debris
grass, debris

Distributary Stream SCAT Oiling Zones

Segment(s): B46, B47
Date: 8-Jul-2011
Team: 1 & 2





7/8/2011

B16

B15

B14

B13

B46

B47

500 meters

B12

B11

Zone D

Image Date: 6/23/2009 1 1996

Image USDA Farm Service Agency

lat 45.721937° lon -108.995727° elev 973 m

©2010 Google

Eye alt 3.43 k

Zones A, B, C

DB/G/SC

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>47B</u>	Left Bank / Right Bank / Island	<u>17107111</u>	<u>10:15</u> hrs to <u>1400</u> hrs	low - mean - <u>bankfull</u> - overbank
Operations Division: <u>B</u>				<u>falling</u> steady - rising
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /	<u>Sup</u> Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp + / - <u>30</u> deg C

2 SURVEY TEAM # <u>5</u>		organization	contact phone number
<u>Bob Nailon</u>	<u>Bob Nailon</u>	<u>Cerdus ENTRIX</u>	<u>713-817-2469</u>
<u>Chuck Pow</u>	<u>Chuck Pow</u>	<u>Cerdus ENTRIX</u>	<u>813-927-1194</u>
<u>Matt Ladd</u>	<u>Matt Ladd</u>	<u>Montco FWP</u>	<u>406-860-7808</u>
<u>Josh Rogers</u>	<u>Josh Rogers</u>	<u>USCG</u>	<u>727-244-8292</u>

3 SEGMENT	Total Segment/Reach Length <u>640</u> m	Segment/Reach Length Surveyed <u>640</u> m
Start GPS: LATITUDE <u>45.71348</u> deg. _____ min.	LONGITUDE <u>108.59502</u> deg. _____ min.	Datum: _____
End GPS: LATITUDE <u>45.70792</u> deg. _____ min.	LONGITUDE <u>108.5916</u> 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 <u>P</u> Mixed _____ Pebble/Cobble <u>S</u> Boulder _____ Peat/Organic _____	Vegetated Bank: <u>P</u>		Wooded Upland: _____
Sediment Flat: Clay/Mud <u>P</u> Sand <u>S</u> Mixed/Coarse <u>S</u> 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: <u>Silt</u>		
Sloped: (>5°)(15°)(30°)	straight _____ braided <u>P</u> oxbow _____ flood plain valley _____	Forested / Vegetated / Bare		

4C RIVER CHANNEL CHARACTER		circle or select as appropriate	
est. width: < 1m 1-10m 10-100m <u>100m</u> <u>200m</u>	est. water depth: < 1 m 1-3 m <u>3-10 m</u> > 10 m _____ m		
shoal(s) present <input checked="" type="checkbox"/> point bar present <input checked="" type="checkbox"/>	bar-shoal substrate: <u>silt</u> / <u>sand</u> / gravel / <u>cobble</u> / boulder / bedrock / debris		
seasonal water level: low / mean / <u>bank full</u> / overbank flow	est. change over next 7 days: <u>falling</u> - same - rising		

5 OPERATIONAL FEATURES		Suitable backshore staging <input checked="" type="checkbox"/>	Access: Direct from backshore Y / <input checked="" type="checkbox"/> Alongshore from next segment Y / N
Debris: Y / N oiled Y / N amount _____ bags or <u>100</u> trucks	Oiled trees/shrubs <input checked="" type="checkbox"/>	River Current strong <input checked="" type="checkbox"/>	Other Features: _____

6 SURFACE OILING CONDITIONS																				SUBST. TYPE(S)	
OIL ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER									
ID	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO
A				/	275	100	10			P	S		/								Sand
B				/	230	115	30			P	S		/								Sand
C			/	/	240	75	1			P	S		/								Sand
D			/	/	175	150	50			P	S		/								Sand

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

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

A is a series of shoals and depressions that have sporadic areas of debris that is coated and some areas of stand and coastal veg. ~~at one area~~ One area has some pool under the debris. Needs Absorb pads. Debris can be manually removed, cut veg cut and bagged

B Area of coarse debris throughout. Needs to be manually removed or surgically burned

C This area has much coated debris but with less distribution. Manual rem!

D. Area of large debris piles and ~~coarse debris~~ stands that is coated, veg could be cut and rem!

(for ALL sub-segments record: sub-segment ID, length, length surveyed, and GPS start/end fixes) Debris can be removed or surgically burnt.

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



B47 -
(L/R/I)??

DATE:
TEAM:

COMMENTS:

0 110 220 330 440
Meters

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION

Segment/Reach ID: B47 Left Bank / Right Bank / Island

Operations Division: B

Survey by: Foot / ATV / Boat / Helicopter / Overlook / Sun / Clouds / Fog / Rain / Snow / Windy / Calm

Date (dd/mm/yy): 17/07/11 Time (24h): std / daylight 1045 hrs to 1240 hrs

Water Level: low - mean bankfull - overbank
falling - steady - rising

Air Temp +/- 21 deg C

2 SURVEY TEAM # 4

name	organization	contact phone number
<u>John Williams</u>	<u>Cardno ENTRIX</u>	<u>361-676-8138</u>
<u>Connor Kobeski</u>	<u>Cardno ENTRIX</u>	<u>847 926 9300</u>
<u>Patrick Kriske</u>	<u>USCG</u>	<u>415-324-5348</u>
<u>Ray Muli</u>	<u>MT FWP</u>	<u>406-247-2960</u>

3 SEGMENT

Total Segment/Reach Length 2060 m Segment/Reach Length Surveyed 1050 m

Start GPS: LATITUDE N45° deg. 42.813 min. LONGITUDE W108° deg. 35.385 min. Datum: NAD83

End GPS: LATITUDE N45° deg. 42.820 min. LONGITUDE W106° deg. 35.632 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 S Sand ___ Mixed ___ Pebble/Cobble ___ Boulder ___ Peat/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

Cliff or Bluff: ___ Est Height ___ m canyon ___ manmade ___ meander ___ confined or leveed ___

Sloped: Q (>5°)(15°)(30°) straight ___ braided ✓ oxbow ___ flood plain valley ___

Substrate Type: Vegetated

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)		
					Length	Width	Distrib.	OIL THICKNESS					OIL CHARACTER									
	MS	LB	UB	OB	m	m	%	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
<u>A</u>			<u>S</u>	<u>P</u>	<u>560</u>	<u>65</u>	<u><1</u>			<u>P</u>	<u>S</u>		<u>S</u>				<u>P</u>					<u>veg</u>
<u>B</u>				<u>P</u>	<u>560</u>	<u>60</u>	<u>0</u>													<u>P</u>		<u>veg</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

Recommendations for Oil ZONE A: Cutting of vegetated shorelines/overbank and removal of dead oiled vegetations and small oiled debris. Reference fieldnotes and track log/GPS waypoints for "hot spots" marked in field. Team 4 took GPS coordinates at areas with concentrated oiled debris that can be referenced in tracklog. Entire zone survey via transects is recommended for treatment. Flagged areas are only guides to oil encountered by TEAM 4 and are not all encompassing for segment B47.

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

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



DATE: 17 Jul 2011
TEAM: 4

B47

DB/G/SO

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

1 GENERAL INFORMATION		Date (dd/mm/yy) <u>18/07/11</u>	Time (24h): std / daylight <u>0916</u> hrs to <u>1246</u> hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>B47</u> Left Bank / <u>Right Bank</u> / Island				Air Temp +/- <u>28</u> deg C
Operations Division: <u>B</u>				
Survey by: <u>(Foot) / ATV / Boat / Helicopter / Overlook /</u>		<u>(Sun)</u> / Clouds / Fog / Rain / Snow / Windy / Calm		
2 SURVEY TEAM # <u>4</u>		contact phone number		
<u>John Williams</u>	<u>Cardno ENTRIX</u>	<u>361 676 8138</u>		
<u>Connor Kobacki</u>	<u>Cardno ENTRIX</u>	<u>847-922-5300</u>		
<u>Gary Riley</u>	<u>EPA</u>	<u>415 215 0690</u>		
<u>Courtney Tyler</u>	<u>FWP</u>	<u>406 860 7814</u>		

3 SEGMENT	Total Segment/Reach Length <u>2000</u> m	Segment/Reach Length Surveyed <u>6100</u> m
Start GPS: LATITUDE <u>45°</u> deg. <u>43.023</u> min. LONGITUDE <u>108°</u> deg. <u>34.504</u> min. Datum: <u>WGS84</u>		
End GPS: LATITUDE <u>45°</u> deg. <u>42.661</u> min. LONGITUDE <u>108°</u> deg. <u>35.302</u> 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 <u>Shelf</u>	Manmade: Solid <u>Permeable</u> (type)	Wetland: Swamp <u>Bog/Fen</u> Marsh <u>S</u>	
Sediment Bank: Clay/Mud <u>Sand</u> Mixed <u>S</u> Pebble/Cobble <u>Boulder</u> Peat/Organic	Vegetated Bank: <u>S</u>	Wooded Upland: <u>(P)</u>	
Sediment Flat: Clay/Mud <u>Sand</u> Mixed/Coarse	Other:	If snow and ice use Winter River SOS	

4B RIVER VALLEY CHARACTER select as appropriate				complete for primary
Cliff or Bluff: <u>Est Height</u> <u>0</u> m	canyon <u>manmade</u> meander <u>confined or leveed</u>	Substrate Type: <u>Vegetated</u>		
Sloped: <u>(>5°) (15°) (30°)</u>	straight <u>braided</u> oxbow <u>flood plain valley</u>	Forested / <u>Vegetated</u> / Bare		

4C RIVER CHANNEL CHARACTER circle or select as appropriate			
est. width: <u><1m</u> 1-10 m 10-100 m <u>>100m</u> m	est. water depth: <u><1 m</u> 1-3 m 3-10 m <u>>10 m</u> m		
shoal(s) present <u>(Y)N</u> point bar present <u>(Y)N</u>	bar-shoal substrate: silt / <u>sand</u> gravel / <u>cobble</u> / boulder / bedrock / debris		
seasonal water level: low / <u>mean</u> / bank full / overbank flow	est. change over next 7 days: <u>(falling)</u> same rising		

5 OPERATIONAL FEATURES		Suitable backshore staging <u>(Y)N</u>	Access: Direct from backshore <u>(Y)N</u> Alongshore from next segment <u>(Y)N</u>
Debris: <u>(Y)N</u> oiled <u>(Y)N</u> amount <u>1</u> bags or <u>1</u> trucks		access restrictions	Other Features:
Oiled trees/shrubs <u>(Y)N</u> River Current strong <u>(Y)N</u>			

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		S	P	1360	300	<1			P	S	S	S				P					veg/debris

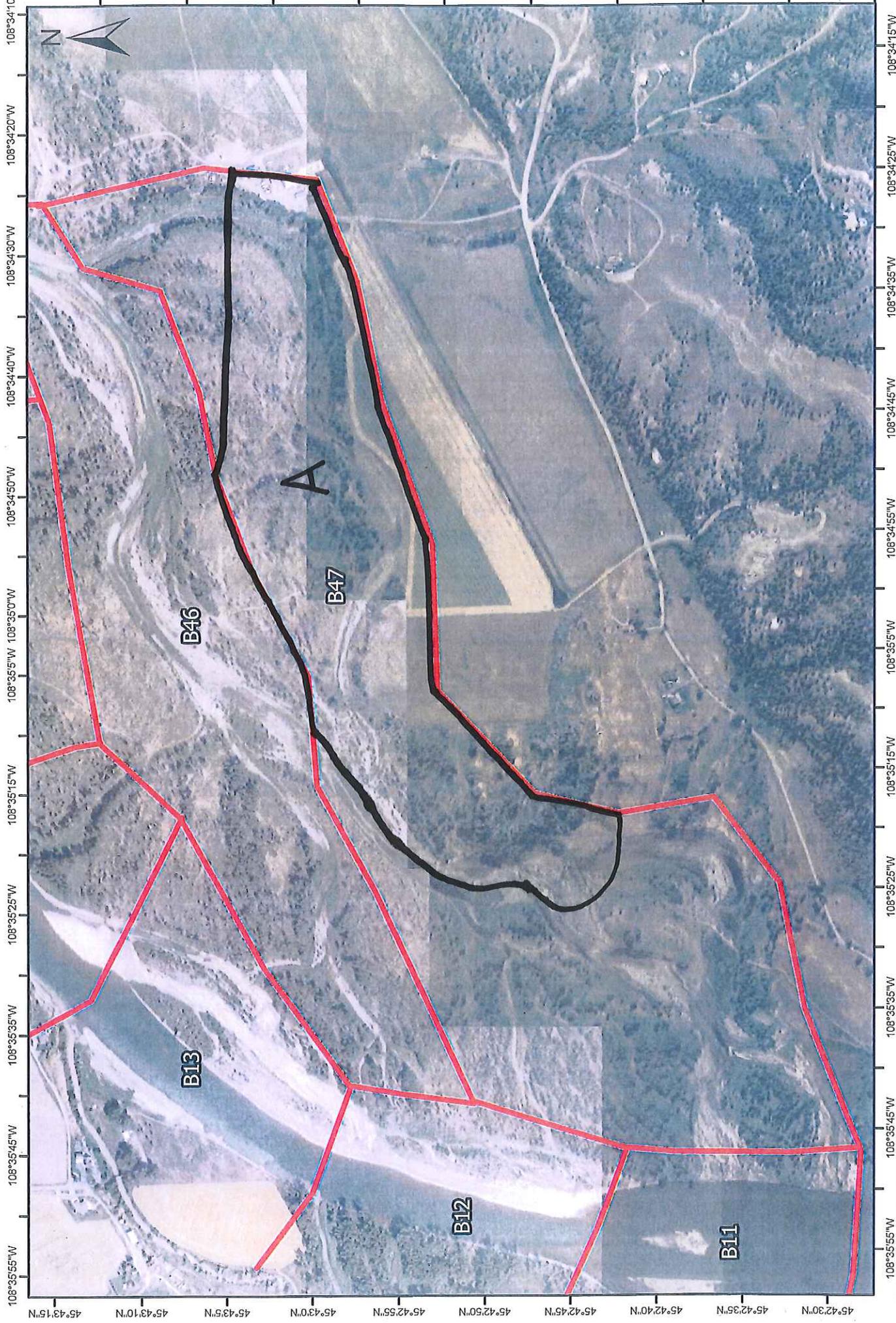
7 SUBSURFACE OILING CONDITIONS use letter for ZONE location plus Number of pit or trench - e.g., "A1"																
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR				

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

Oil Zone A: Active cleanup observed throughout Oil Zone A. SCAT Team 4 recommends continuing cutting of oiled ^{dw} ~~vegetated~~ vegetation and small woody debris. "Hot spots" of oiled debris were flagged by ^{dw} ~~ES~~ SCAT TEAM 4 with pink/orange tape. Hand tool/shovel removal of oiled ^{CK} ~~sorted~~ soils.

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

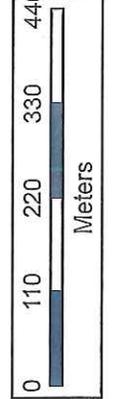
Sketch (Yes/No) Photos (Yes/No (Roll # NA Frames 7) Video Tape Yes/No (Tape #)



108°35'55"W 108°35'45"W 108°35'35"W 108°35'25"W 108°35'15"W 108°35'5"W 108°35'0"W 108°34'50"W 108°34'40"W 108°34'30"W 108°34'20"W 108°34'10"W

45°43'15"N 45°43'10"N 45°43'5"N 45°43'0"N 45°42'55"N 45°42'50"N 45°42'45"N 45°42'40"N 45°42'35"N 45°42'30"N

108°35'55"W 108°35'45"W 108°35'35"W 108°35'25"W 108°35'15"W 108°35'5"W 108°35'0"W 108°34'55"W 108°34'45"W 108°34'35"W 108°34'25"W 108°34'15"W



COMMENTS:
DATE: 18 Jul 2011
TEAM: 4

B47 - A
(L/R/I)??

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

DB/G/Sc

1 GENERAL INFORMATION		Date (dd/mm/yy) <u>18/07/11</u>	Time (24h): std / daylight <u>0958</u> hrs to <u>1246</u> hrs	Water Level low - mean <u>bankfull</u> - overbank <u>falling</u> - steady - rising
Segment/Reach ID: <u>47B</u> Left Bank / Right Bank / Island				
Operations Division: <u>B</u>				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - ___ deg C
2 SURVEY TEAM # <u>5</u>				
name		organization		contact phone number
<u>Bob Nailon</u>		<u>Cardno ENTRIX</u>		<u>713-817-2469</u>
<u>Chuck Pans</u>		<u>Cardno ENTRIX</u>		<u>817-927-1194</u>
<u>Matt Ladd</u>		<u>Montana FWP</u>		<u>406-860-7808</u>
<u>Juan Patino</u>		<u>USCG</u>		<u>251-680-1295</u>

3 SEGMENT Total Segment/Reach Length 1835 m Segment/Reach Length Surveyed 1000 m

Start GPS: LATITUDE 45 deg. 42.522 min. LONGITUDE 108 deg. 35.681 min. Datum: WGS84

End GPS: LATITUDE 45 deg. 42.724 min. LONGITUDE 108 deg. 35.382 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: P Wooded Upland: ___

Sediment Flat: Clay/Mud P Sand S Mixed/Coarse S 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: Sand

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 200 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 shoals, shallow water

Oiled trees/shrubs: Y N River Current strong Y N Other Features: large woody debris piles

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>294</u> <u>295</u> A			/	/	850	150	1-10	S		P	S		/									silt, sand
B			/		360	375	N00														/	silt sand

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

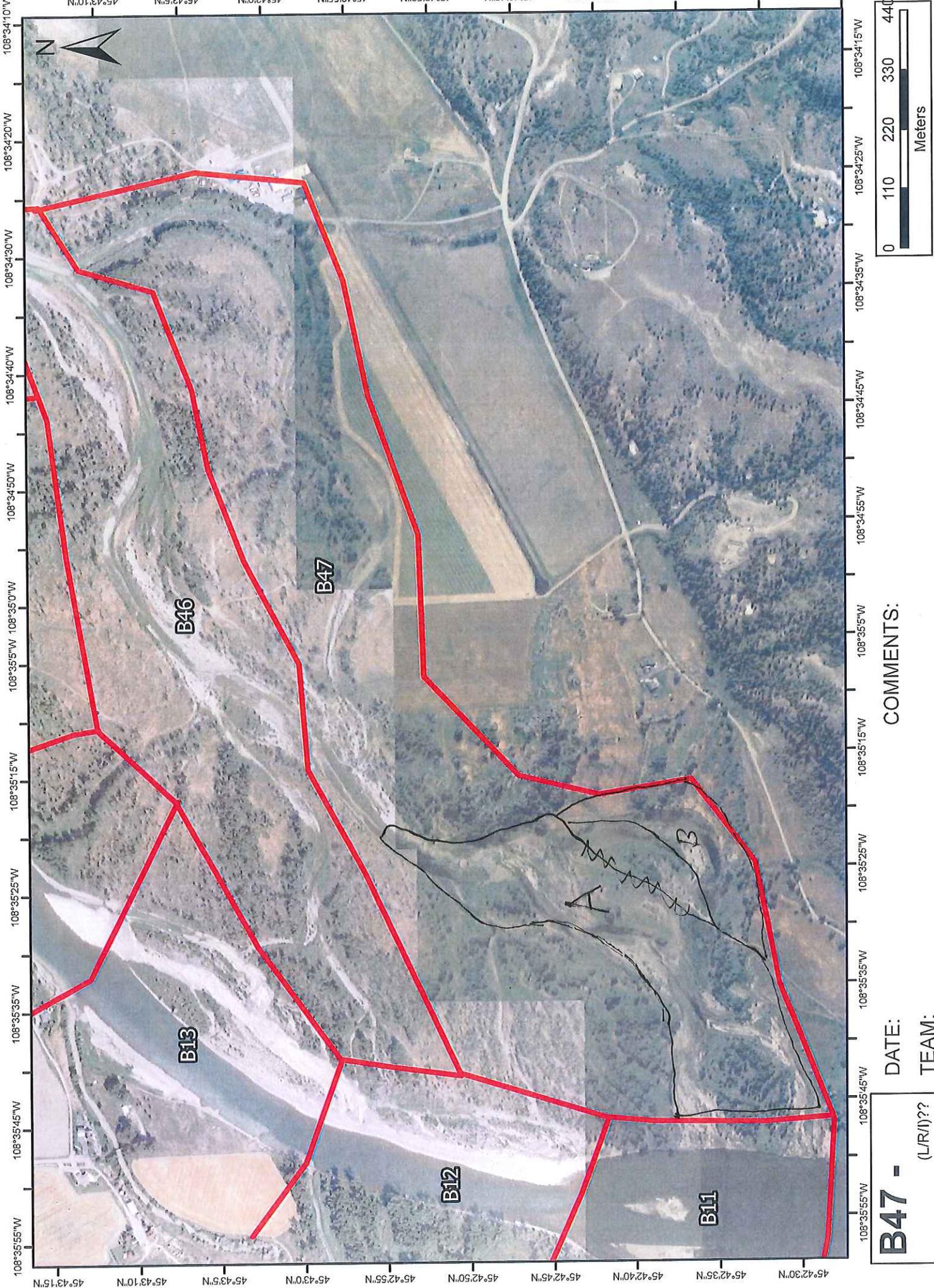
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO

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

Zone A is the main channel of a creek with some branching. Many piles of debris, ~~and~~ shrubs ~~and~~ trees and ~~herbaceous~~ veg coated and stained. Many trees had banded oil at trunks and stems. Small debris can be collected, bagged and removed. Trees and shrubs and herbaceous can be cut and/or treated. Larger piles may need to ~~be~~ be removed using hand tools and/or surgically burned. Cleanup operation have been started. Noted that track vehicles used for access by crew. The vehicles need to be confined to a fixed route and restriction may be necessary afterwards in riparian approaches (stream bank area.)

(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# ___)



B47 -
(L/R/I)??

DATE:
TEAM:

COMMENTS:



Appendix C

Pre-Inspection Survey Transmittal

Liaison- Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: August 25, 2011

Segment: B-47 RB

Team:

RP SCAT/Ops: Pete Pritchard

Signed: 

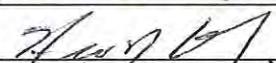
RP SCAT/Ops: Gary Reiter

Signed 

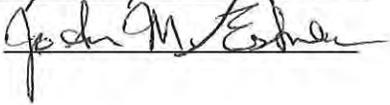
RP SCAT/Ops: David Oge

Signed 

RP SCAT/Ops: Herb Woods

Signed 

Federal SCAT/Ops John Eskelsen

Signed: 

Segment meets criteria? YES X NO

RBOS attached? YES NO X

If NO:

Location Sketch attached? YES NO X

CTR continue? YES NO X

Comments:

There were several areas marked with green tape that did not appear to be culturally wildlife oriented. One of the taped zones with oiled wood debris was at 45° 42' 48" N and 105° 34: 55".



Appendix D

Post-Inspection Survey Transmittal

POST

Post Inspection Survey Transmittal

COMPLETED

Segment B-47 RB

Date of Survey 28 AUG 2011

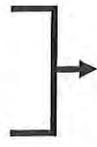
SCAT Team Member PETE PRITCHARD Signed: [Signature]

SCAT Team Member DAVID OGE' Signed: _____

SCAT Team Member _____ Signed: _____

SCAT Team Member _____ Signed: _____

Segment FAILED ReSCAT



Referred to Ops
For Further Treatment

Segment Conditionally PASSES ReSCAT

IF the Segment FAILED ReSCAT, another ReSCAT is required after treatment has been completed.
IF the Segment Conditionally PASSES ReSCAT, a SCAT/Ops Liaison will verify treatment completion.

Describe the zone requiring further treatment. Based on the CTR(s), comment on oiling conditions, the appropriate ATMs to use, GPS waypoints, additional comments, attach a map, etc.

SEE BLOCK 8 (COMMENTS) OF RIVER BANK OILING SUMMARY FORM. VEGETATION REMOVED DUE TO OILING, METALLIC SHEEN TREATED IN BANK MUD.

Zone Dimensions: Length _____ Width _____ GPS Waypoint: Lat. _____ Long. _____
(required) (center of zone)

The undersigned attests that the above treatment has been completed and the identified area meets the Approved Treatment Methods Target Endpoints:

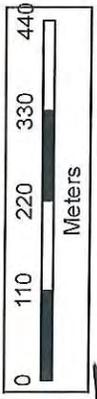
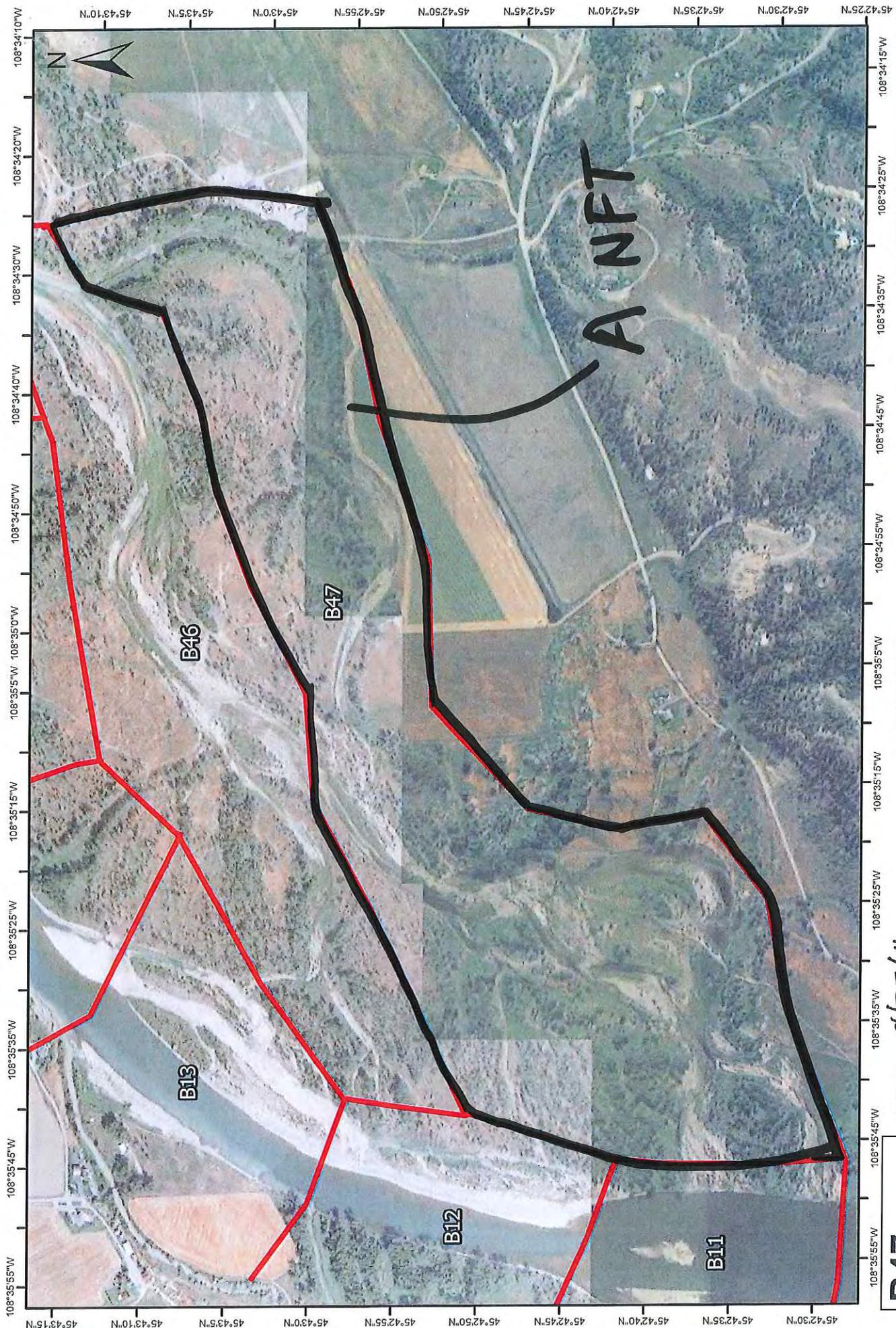
[Signature] PC PRITCHARD / POWERS 29 AUG 2011
Sign Name Print Name/ Affiliation Date

[Signature] MTDER 8/30/11
SCAT/Ops Liaison (SCAT RP Representative)
Silvertip Pipeline Response



Appendix E

Final SCAT Survey Forms and
Sketches



COMMENTS:

ZONE A <1% ST

DATE: 8/27/11

TEAM: T-6
RESCAT

B47 - (U?)??



Appendix F

Completed SCAT Segment Sign-Off
Forms

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment BWR^{47 Cap} Date of Survey 8-27-11

Dates of Initial SCAT Assessments _____
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment CTR 8

Segment has been treated by Operations or an Operations Hotshot Team YES NO

Segment Assessment Complete¹

Partial Segment Assessment

Special Conditions Small area near staging area the ops is cleaning
(If applicable)

The undersigned are in agreement that the above segment or partial segment meets the Approved Treatment Methods Target Endpoints:

[Signature] TERRY KANNER EPA 8/27/11
Sign Name Print Name/ Affiliation Date
Federal Representative (EPA/USCG)

[Signature] MARILE SYLVE PRR 8/27/11
Sign Name Print Name/ Affiliation Date
State Representative (DEQ/FWP)

[Signature] David Harlow Cordus Eutrix 8/27/11
Sign Name Print Name/ Affiliation Date
RP Representative (SCAT Contractor)

Once all applicable SCAT Segments (i.e. LB, RB, and IS) within a particular SCAT Area (i.e. A21) have been successfully signed-off during a formal SCAT Assessment, the SCAT Area will achieve the Response Endpoints and an Area Transition Report will be completed and submitted to EPA and DEQ.

¹ A Segment Sign-Off Assessment is considered complete when all accessible lands that have not already been signed-off by a claims liaison have been surveyed. If any previous SCAT Assessments were conducted, all lands that were originally recommended for treatment must be re-surveyed in the Sign-Off Assessment. If the conducted survey does not meet these conditions it is considered a Partial Assessment.