

**ExxonMobil Pipeline Company**

**SCAT Area Transition Report  
for C19**

Silvertip Pipeline Incident  
Laurel, Montana

October 19, 2011



## **SCAT Area Transition Report for C19**

Silvertip Pipeline Incident  
Laurel, Montana

Prepared for:  
ExxonMobil Pipeline Company

Prepared by:  
ARCADIS G&M of North Carolina, Inc.  
11000 Regency Parkway  
West Tower, Suite 205  
Cary, North Carolina 27518-8518  
Tel 919.469.1952  
Fax 919.469.5676

Our Ref.:  
B0085883.1103

Date:  
October 19, 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.*

<b>1. Executive Summary of Oil Removal Activities</b>	<b>1</b>
1.1 Land Ownership and Access Issues	1
1.2 Cultural, Historic, and Natural Resource Constraints	1
1.3 Summary of Environmental Sampling	1
1.4 Summary of Initial SCAT Surveys	2
1.5 Applicable Compiled Treatment Recommendations	2
1.6 Oil Removal Activities	2
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**

**Table**

Table 1	Environmental Sampling Summary	2
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**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 C19, 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 C19. 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 C19, 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 C19 is 55.0. There was an access issue for the left bank but access was granted for SCAT, operations, and SCAT reassessments at scheduled times.

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

No historic properties or cultural resources have been identified within this area 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 limited inspections of Area C19 due to the low level of oiling in Division C. No oiled wildlife was observed or recovered. No Wildlife Priority Cleanup Areas were identified. No active migratory bird nests were identified in Area C19.

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

Table 1 (below) summarizes samples collected within Area C19. 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 C19 are provided on Figure 3.

**Table 1 Environmental Sampling Summary**

Area	Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
C19	CTEH	BIMT0820SOBKG107	8/20/2011	Soil_Surface	BIMT_550_SO105	45.883104	-108.350685
C19	CTEH	BIMT0820SO105	8/20/2011	Soil_Surface	BIMT_550_SO104	45.881045	-108.350176
C19	CTEH	BIMT0820SO104	8/20/2011	Soil_Surface	BIMT_550_SO103	45.881356	-108.349928
C19	CTEH	BIMT0820SO103	8/20/2011	Soil_Surface	BIMT_550_SO102	45.881771	-108.350008
C19	CTEH	BIMT0820SO102	8/20/2011	Soil_Surface	BIMT_550_SO102	45.881771	-108.350008
C19	CTEH	BIMT0820SO101	8/20/2011	Soil_Surface	BIMT_550_SO101	45.882187	-108.350730
C19	CTEH	BIMT0819SW102	8/19/2011	Water_Surface	BIMT_549_SW102	45.882267	-108.350523
C19	CTEH	BIMT0819DW101	8/19/2011	Water_Drinking	BIMT_549_DW101	45.885268	-108.350300

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 for Area C19.

#### 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 C19 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C19.

#### 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. 60](#)).

#### 1.6 Oil Removal Activities

Oil removal activities were conducted within Area C19 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 area.

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

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

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

Figure 5 shows the oiling conditions within Area C19 following completion of oil removal activities. The SCAT team performed final surveys of the island, left bank, and right bank within SCAT Area C19 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 island, left bank, and right bank within Area C19, no further treatment is recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition  
Report for C19**

Silvertip Pipeline Incident  
Laurel, Montana

**2. Transition Sign-Off Form**

**SCAT Area Transition Report for C19**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – RP



**SCAT Area Transition  
Report for C19**

Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for C19**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – FOSC



**SCAT Area Transition  
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Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for C19**

**Prepared for:**

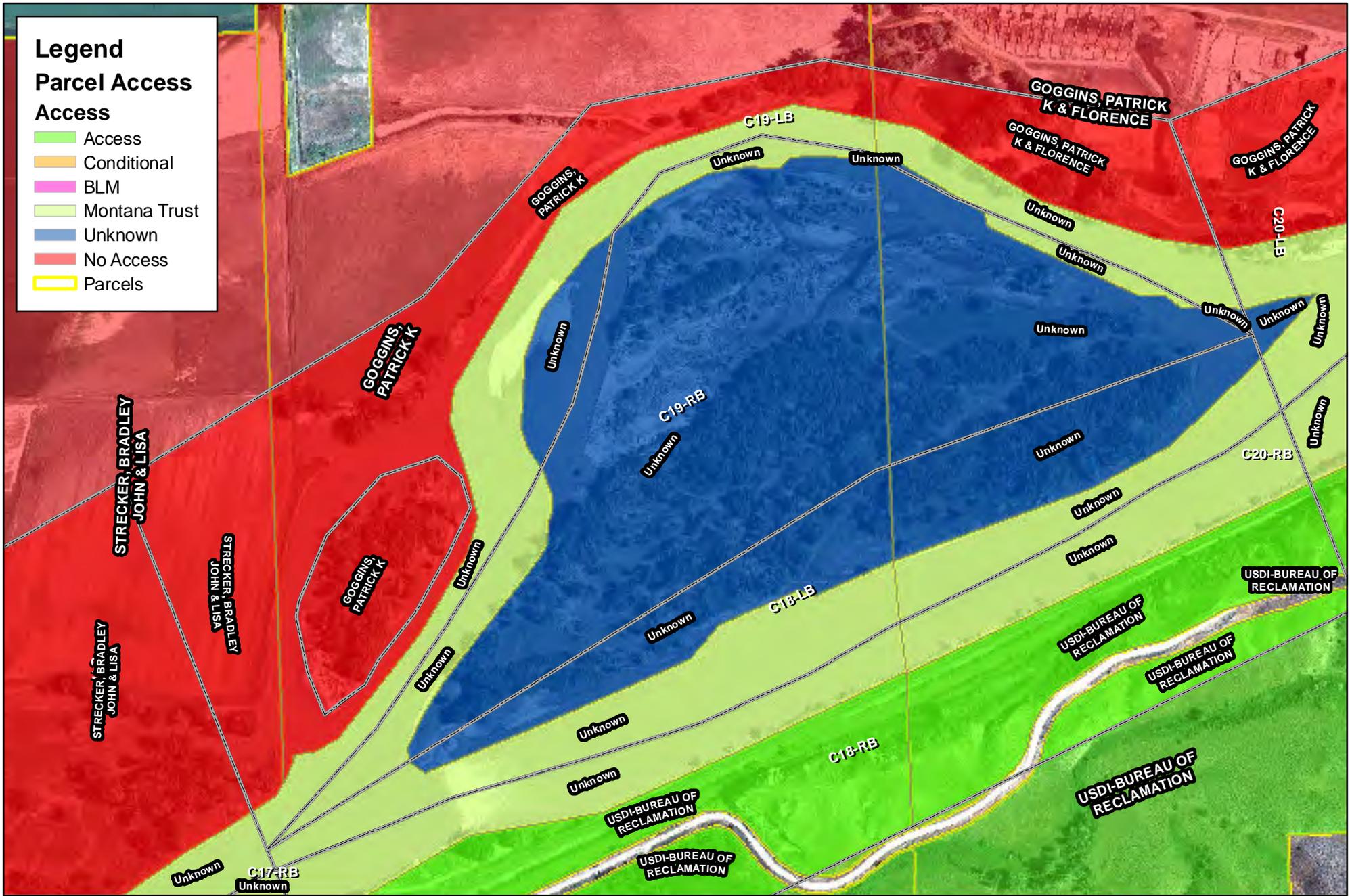
**Unified Command**

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Date

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Unified Command – MDEQ



**Legend**  
**Parcel Access**

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

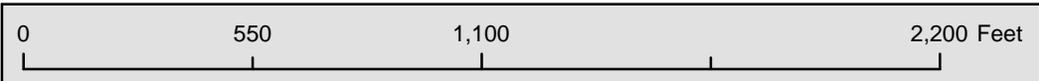
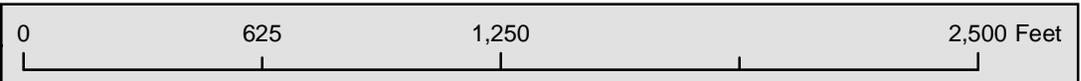


Figure 1



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

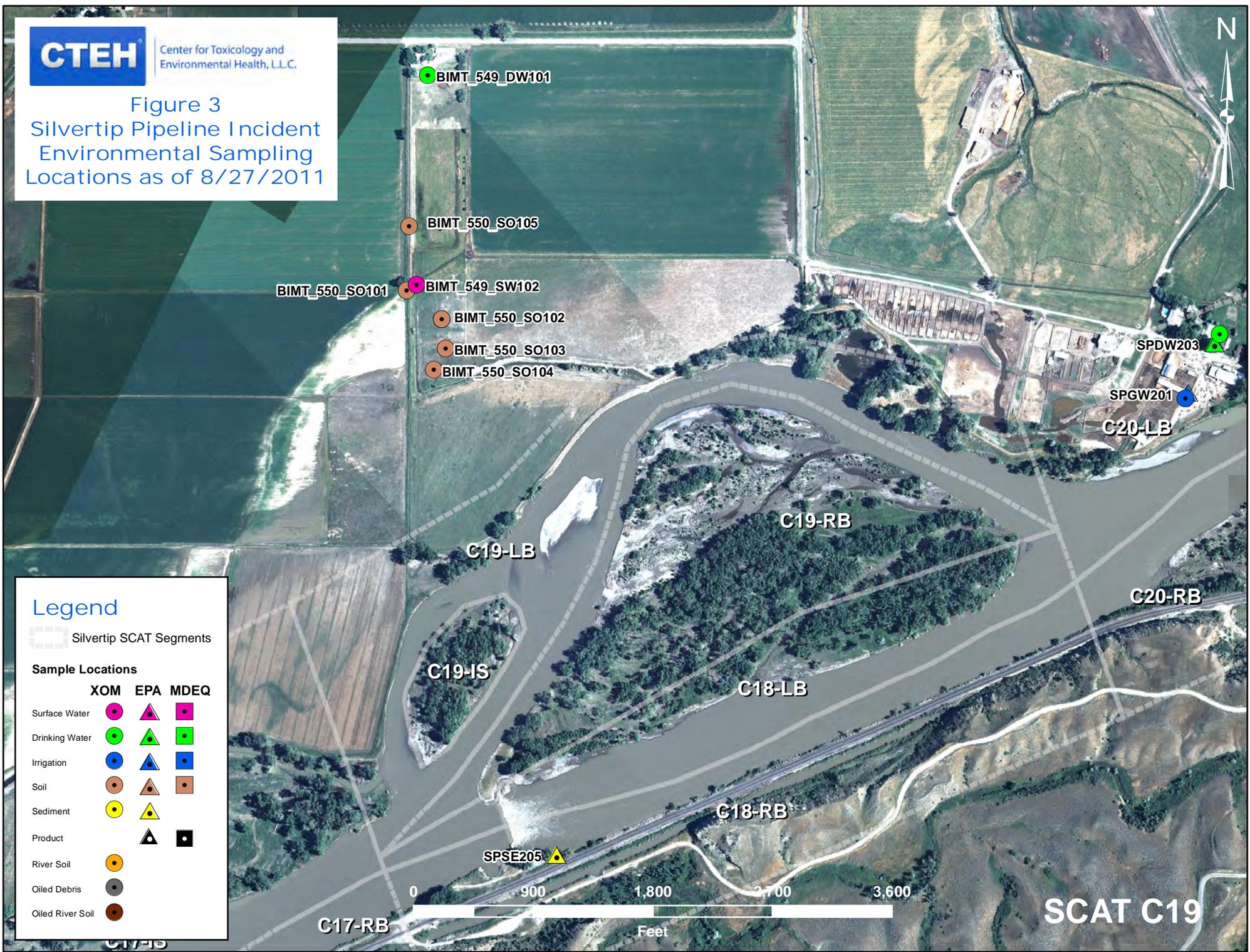


**Figure 2**  
**Wildlife Resources**



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

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



### Legend

Silvertip SCAT Segments

#### Sample Locations

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

SCAT C19



	<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:**





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



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





## **Appendix A**

Sample Detection Summary



## Detections in Samples Collected in SCAT Area C19

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	2.9	40		mg/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	125	820	J-	mg/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.21	3.8		mg/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	20.9	280		mg/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 8270 by SIM	Chrysene	Y	18.6	20000		ug/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	18.1	400	J-	mg/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.029	1		mg/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	17.1	150	J-	mg/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	2.3	2.6		mg/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	42.3	200	J	mg/kg	no
BIMT0820SO101	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	34.7	39		mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	3.5	40		mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	117	820	J-	mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.17	3.8		mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	19.8	280		mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	16.8	400	J-	mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.021	1		mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	16.4	150	J-	mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	2.2	2.6		mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	26.3	200	J	mg/kg	no
BIMT0820SO102	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	33	39		mg/kg	no
BIMT0820SO103	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	3.5	40		mg/kg	no
BIMT0820SO103	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	113	820	J-	mg/kg	no
BIMT0820SO103	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.16	3.8		mg/kg	no
BIMT0820SO103	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	18.7	280		mg/kg	no
BIMT0820SO103	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	16.5	400	J-	mg/kg	no
BIMT0820SO103	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	16	150	J-	mg/kg	no
BIMT0820SO103	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.4	2.6		mg/kg	no
BIMT0820SO103	08/20/2011	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	31.1	200	J	mg/kg	no
BIMT0820SO103	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	31.2	39		mg/kg	no
BIMT0820SO104	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	3.5	40		mg/kg	no



## Detections in Samples Collected in SCAT Area C19

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0820SO104	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	120	820	J-	mg/kg	no
BIMT0820SO104	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.19	3.8		mg/kg	no
BIMT0820SO104	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	19.4	280		mg/kg	no
BIMT0820SO104	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	15.7	400	J-	mg/kg	no
BIMT0820SO104	08/20/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.021	1		mg/kg	no
BIMT0820SO104	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	17.1	150	J-	mg/kg	no
BIMT0820SO104	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.7	2.6		mg/kg	no
BIMT0820SO104	08/20/2011	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	30.1	200	J	mg/kg	no
BIMT0820SO104	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	32.1	39		mg/kg	no
BIMT0820SO105	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	4	40		mg/kg	no
BIMT0820SO105	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	138	820	J-	mg/kg	no
BIMT0820SO105	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.22	3.8		mg/kg	no
BIMT0820SO105	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	21.6	280		mg/kg	no
BIMT0820SO105	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	17.5	400	J-	mg/kg	no
BIMT0820SO105	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	18.3	150	J-	mg/kg	no
BIMT0820SO105	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.9	2.6		mg/kg	no
BIMT0820SO105	08/20/2011	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	53.3	200	J	mg/kg	no
BIMT0820SO105	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	35.8	39		mg/kg	no
BIMT0820SOBKG107	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	3.2	40		mg/kg	no
BIMT0820SOBKG107	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	107	820	J-	mg/kg	no
BIMT0820SOBKG107	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.2	3.8		mg/kg	no
BIMT0820SOBKG107	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	18.2	280		mg/kg	no
BIMT0820SOBKG107	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	15.6	400	J-	mg/kg	no
BIMT0820SOBKG107	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	14.2	150	J-	mg/kg	no
BIMT0820SOBKG107	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	2.1	2.6		mg/kg	no
BIMT0820SOBKG107	08/20/2011	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	76.4	200	J	mg/kg	no
BIMT0820SOBKG107	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	32.1	39		mg/kg	no



## **Appendix B**

Initial SCAT Survey Forms and  
Sketches

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident PARTIAL SURVEY

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 09/08/2011	Time (24h): std / daylight 926 hrs to 1021 hrs	<b>Water Level</b> low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: C19 <u>Left Bank / Right Bank / Island</u>		Operations Division:		
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>27</u> deg C

2 SURVEY TEAM # <u>NA 3</u>	Name	Organization	Signature
Richard Marty	Polaris		<i>Richard Marty</i>
Travis Cain	USEPA		<i>Travis Cain</i>
Jessica Ross	State of Montana		<i>Jessica Ross</i>

**3 SEGMENT** Total Segment/Reach Length 1200 m Segment/Reach Length Surveyed 450 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 S \_\_\_\_\_ Sand \_\_\_\_\_ Mixed \_\_\_\_\_ Pebble/Cobble \_\_\_\_\_ Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ **Vegetated Bank** P **Wooded Upland:** S

Sediment Flat: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed/Coarse \_\_\_\_\_ **Other:** \_\_\_\_\_ 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 X confined or leveed \_\_\_\_\_ Substrate Type: Silt/mud

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

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

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

1417  
1418  
1419

OIL ZONE	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	<u>50</u>	<u>20</u>														x	Sandy soil
B				x	140	<u>35</u>	<u>&lt;1</u>			x							x					Woody debris Sandy soil
C				x	160	<u>50</u>															x	Sandy soil

**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
None																	

**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

One dead five-point deer was present at the NE end of the surveyed zone.

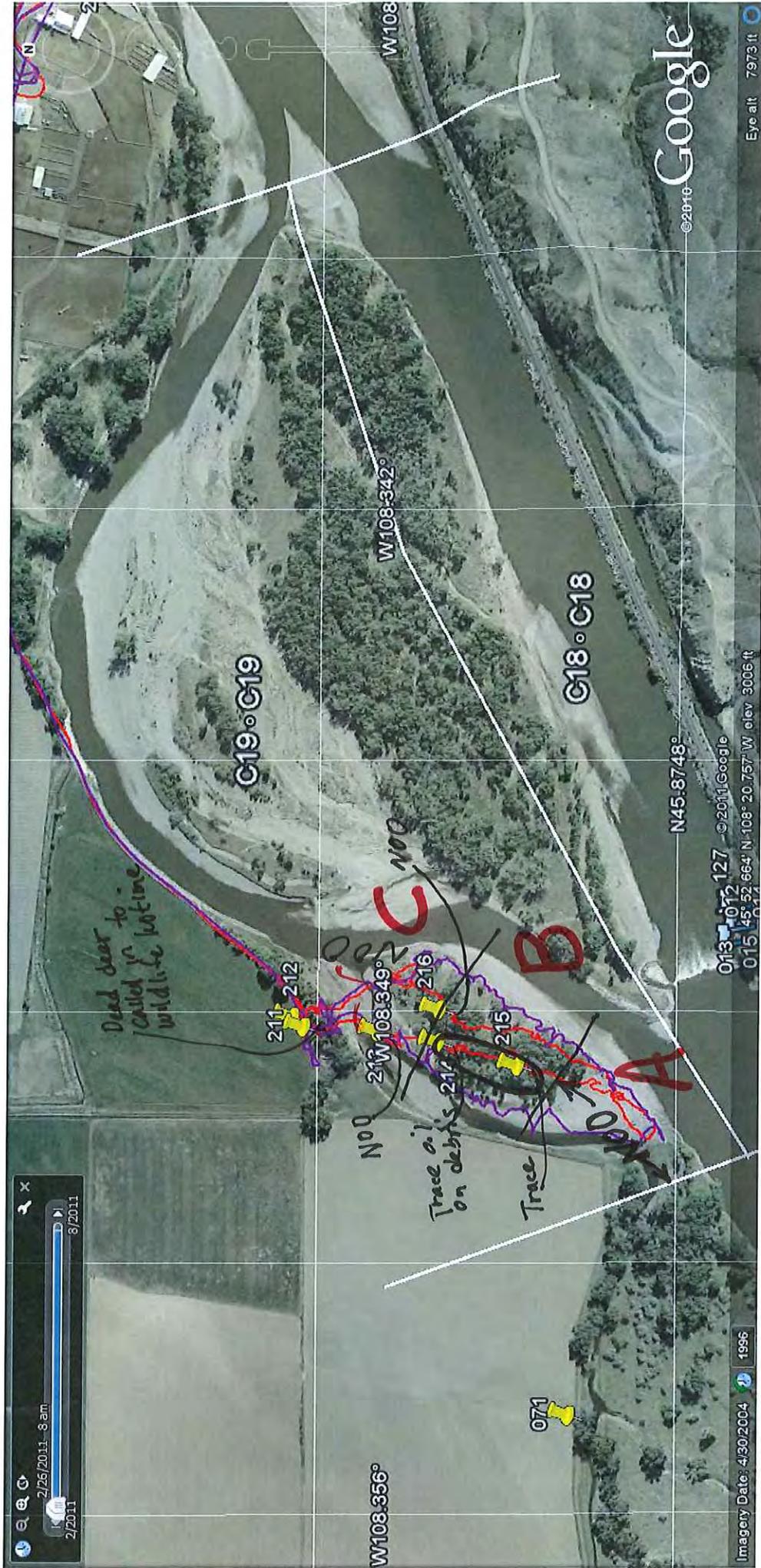
Trace oiling on debris is transferable and is probably best addressed by using a small crew with UTVs to remove oiled debris.

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

PARTIAL SURVEY  
C-19L

9 August 2011

Team # 3



A = N00 - 150m  
B = Vary length - 140m  
C = N00 - 160m.

450m Surveyed.

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline/Incident

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

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 19/08/11	Time (24h): std / daylight 08:40 hrs to 10:10 hrs	Water Level low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>C16 &amp; 19</u> Left Bank / Right Bank / Island				
Operations Division: C				
Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>26</u> deg C

<b>2 SURVEY TEAM #</b> <u>103</u>	Name	Organization	Signature
	Lisa Gerencher	Cardno ENTRIX	<i>[Signature]</i>
	Joe Busalucci	Cardno ENTRIX	<i>[Signature]</i>
	Jessica Ross	DEQ	<i>[Signature]</i>
	Jon Davis	USCG	<i>[Signature]</i>
	Jeffrey Frank	DEQ <i>[Signature]</i>	<i>[Signature]</i>
	Rachelle Thompson	<del>EPA</del> EPA	<i>[Signature]</i>

**3 SEGMENT** Total Segment/Reach Length 1200 m Segment/Reach Length Surveyed 1067 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 \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: S \_\_\_\_\_ Wooded Upland: P \_\_\_\_\_

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 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 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 3 bags or \_\_\_\_\_ trucks access restrictions Island is only accessible by boat

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		187	250	<1			X	(X)					X	(X)					
B				X	911	180														X			
A			X		363	132	<1			X	(X)					X	(X)					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					NO

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

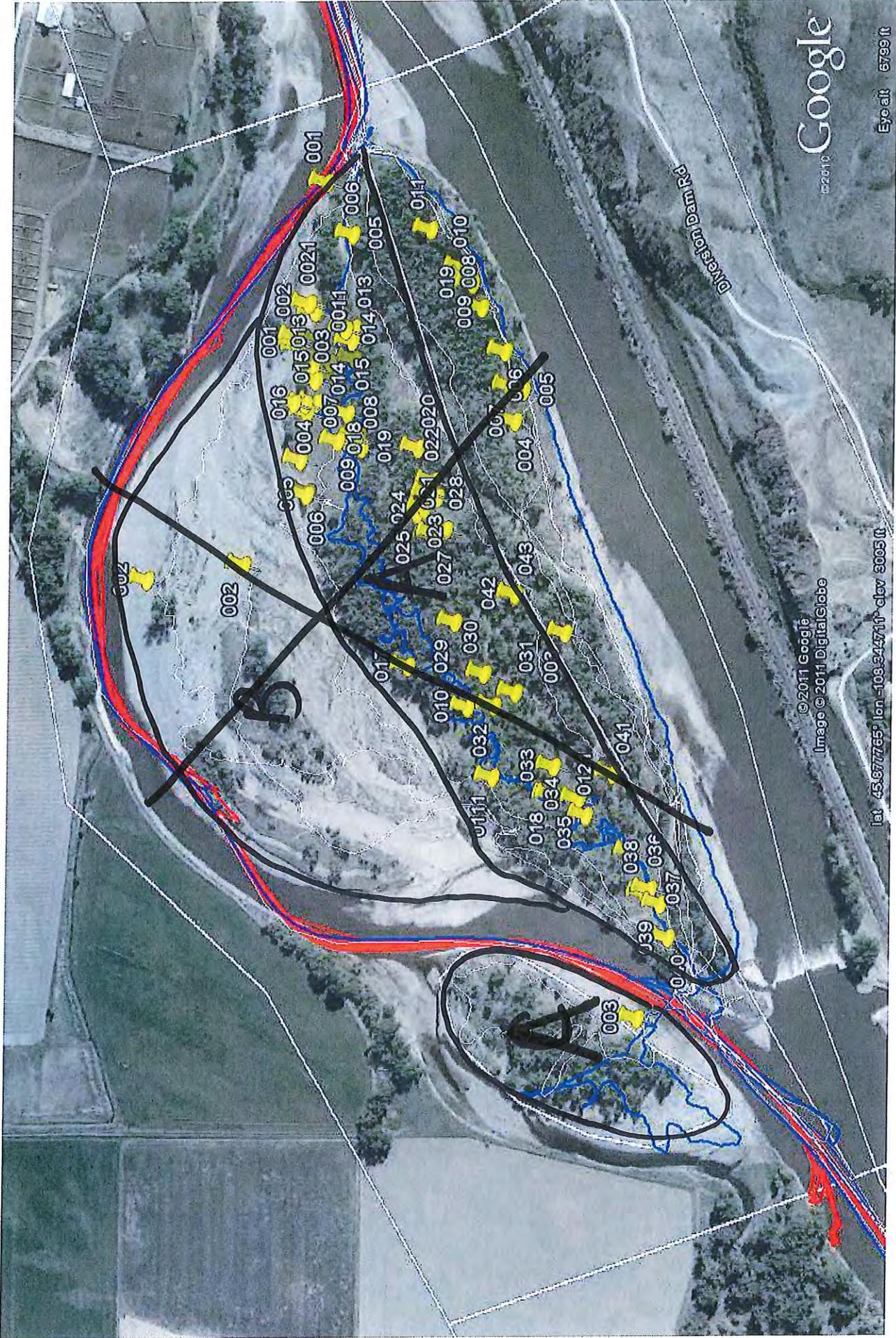
Overbank Survey Required Y / N Overbank Survey Completed Y / N Shoreline Survey Completed Y / N

Zone A. sporadic oiling on vegetation and debris, staining, tar coat, not easily transferable. ~~Hot shot crew recommended.~~ ~~approximate 3 bags anticipated to be generated.~~

NTR

Zone B. no oiling observed. NFT JB

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



C19T  
TEAM 3+1  
19/08/11

DB/G

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>19</u>	<input checked="" type="radio"/> Left Bank / <input type="radio"/> Right Bank / <input type="radio"/> Island	<u>27/07/11</u>	<u>9:21</u> hrs to <u>9:24</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				<input checked="" type="radio"/> falling - <input type="radio"/> steady - <input type="radio"/> rising
Survey by: <input checked="" type="radio"/> Foot / <input type="radio"/> ATV / <input type="radio"/> Boat / <input type="radio"/> Helicopter / <input type="radio"/> Overlook /	<input checked="" type="radio"/> Sun / <input type="radio"/> Clouds / <input type="radio"/> Fog / <input type="radio"/> Rain / <input type="radio"/> Snow / <input type="radio"/> Windy / <input type="radio"/> Calm			Air Temp +/- <u>30</u> deg C

<b>2 SURVEY TEAM #</b> <u>1</u>	Name	Organization	Signature
	<u>Chuck Pans</u>	<u>Cardno ENTRIX</u>	<u>[Signature]</u>
	<u>Jay Watson</u>	<u>MFWP</u>	
	<u>Ernie McKenzie</u>	<u>US BLM</u>	

**3 SEGMENT** Total Segment/Reach Length 1885 m Segment/Reach Length Surveyed 1885 m

Start GPS: LATITUDE 45 deg. 52'45.63 min. LONGITUDE 108 deg. 20'15.56 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 52'27.89 min. LONGITUDE 108 deg. 21'05.39 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:  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 \_\_\_ 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 100m 110 est. water depth: <1m 1-3m 3-10m >10m \_\_\_ m

shoal(s) present  / N point bar present  / 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  / N Access: Direct from backshore  / N Alongshore from next segment  / 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

1018  
1019  
1020  
1021  
1022  
1023

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	X	360	2	0														X	Yellow
B			X	X	25	2	60			S	P		X									Yellow
C			X	X	315	2	0														X	Yellow
D			X	X	230	2	60			S	P		X									Yellow
E			X	X	340	2	60														X	Yellow
F			X	X	120	2	60			S	P		X									Yellow

**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					

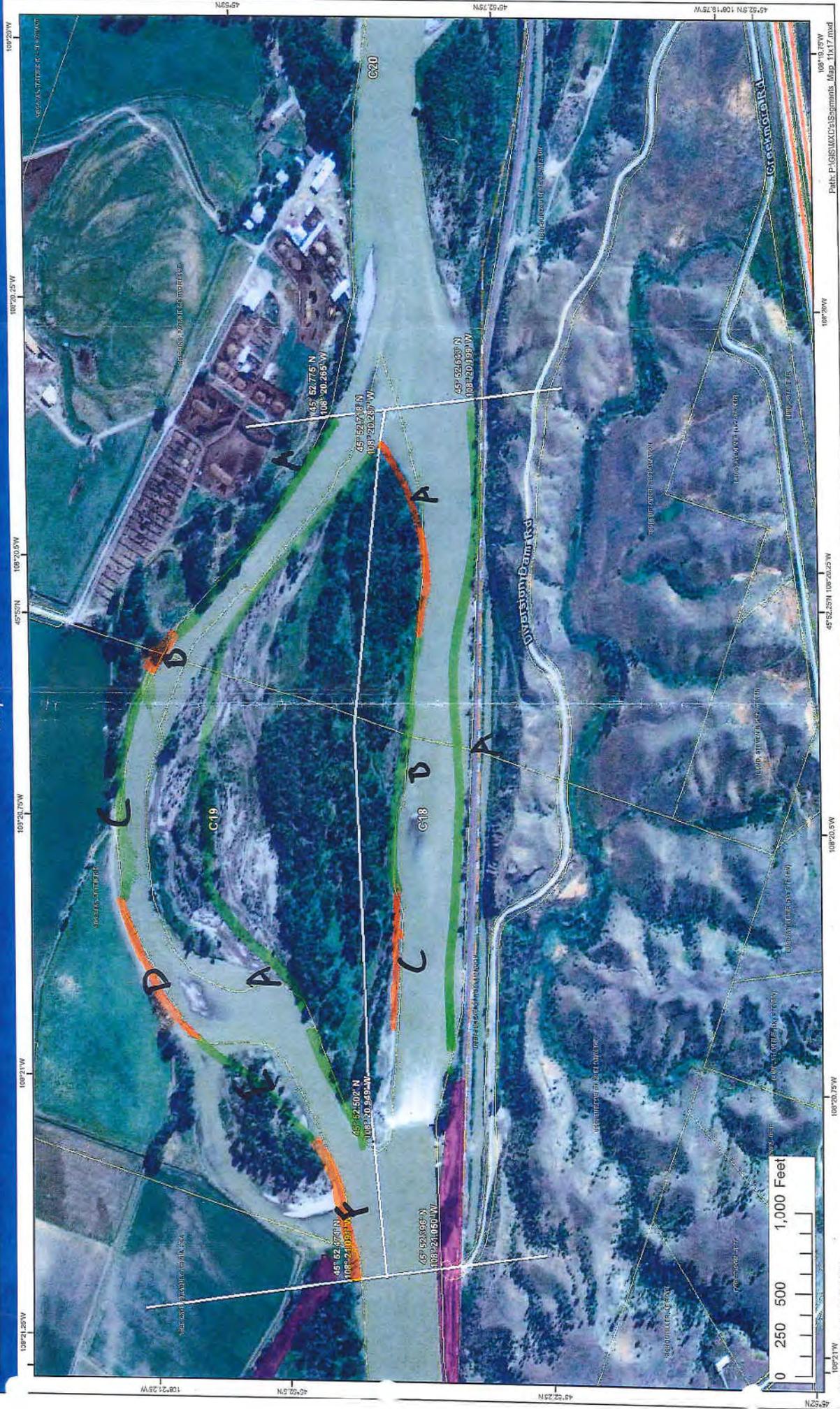
**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone B, D, + F have stained and coated veg (primarily grass)

Veg needs to be cut either treated and removed when applicable

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



*DB/6*

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C19</u>	Left Bank / <u>Right Bank</u> / Island	<u>27/07/11</u>	<u>1146</u> hrs to <u>1147</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				<u>falling</u> - steady - rising
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____	<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp +/- <u>30</u> deg C

2 SURVEY TEAM #	Name	Organization	Signature
<u>1</u>	<u>Chuck Pons</u>	<u>Cardno ENTRIX</u>	<u>Chuck C/P</u>
	<u>Jay Watson</u>	<u>MFWP</u>	
	<u>Ernie McKenzie</u>	<u>US BLM</u>	

**3 SEGMENT** Total Segment/Reach Length 1885 m Segment/Reach Length Surveyed 1885 m

Start GPS: LATITUDE 45 deg. 52°43.91 min. LONGITUDE 108 deg. 20°14.56 min. Datum: WGS 81

End GPS: LATITUDE 45 deg. 52°26.78 min. LONGITUDE 108 deg. 21°01.54 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: Y Wooded Upland: Y

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: Sand/10s

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 100m 110 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

1017  
2007

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			<u>X</u>	<u>X</u>	<u>1885</u>	<u>7</u>	<u>0</u>														<u>X</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 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

*No oil observed*



DB / GA

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

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

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 19/08/11	Time (24h): std / daylight 08:40 hrs to 10:10 hrs	Water Level low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>C18 &amp; 19</u> Left Bank (Right Bank) Island				
Operations Division: C				
Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>26</u> deg C

<b>2 SURVEY TEAM #</b> <u>103</u>	Name	Organization	Signature
	Lisa Gerencher	Cardno ENTRIX	<i>[Signature]</i>
	Joe Busalucci	Cardno ENTRIX	<i>[Signature]</i>
	Jessica Ross	DEQ	<i>[Signature]</i>
	Jon Davis	USCG	<i>[Signature]</i>
	Jeffrey Frank	DEQ	<i>[Signature]</i>
	Rachelle Thompson	<del>DEQ</del> EPA	<i>[Signature]</i>

**3 SEGMENT** Total Segment/Reach Length 1200 m Segment/Reach Length Surveyed 1067 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 \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: S Wooded Upland: P

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 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 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 3 bags or \_\_\_\_\_ trucks access restrictions Island is only accessible by boat

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	
<del>A</del>				X	187	250	<1			X	(X)						X	(X)				veg, debris
<del>B</del>				X	911	180															X	
A					882	128	<1			X	(X)						X	(X)				veg, debris
B					570	188															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. sporadic oiling on vegetation and debris, staining, tar coat, not easily transferable. Hot shot crew recommended. approximate 3 bags anticipated to be generated.

Zone B. no oiling observed. NFT

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





## **Appendix C**

Pre-Inspection Survey Transmittal

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



## **Appendix D**

Post-Inspection Survey Transmittal

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



## **Appendix E**

Final SCAT Survey Forms and  
Sketches

DB 16

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 23/09/11	Time (24h): std / daylight 1000 hrs to 1100 hrs	<b>Water Level</b> low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>C 19</u> Left Bank / Right Bank / Island				
Operations Division: C				
Survey by: <u>Foot / ATV / Boat</u> / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>36</u> deg C

<b>2 SURVEY TEAM # 1</b>	Name	Organization	Signature
Todd Farrar		Polaris	<i>[Signature]</i>
Pete Lee		Polaris	<i>[Signature]</i>
Jeffrey Frank Herrick		MTDEQ	<i>[Signature]</i>

**3 SEGMENT** Total Segment/Reach Length 290 m Segment/Reach Length Surveyed 290 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 \_\_\_\_\_ 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: \_\_\_\_\_

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 >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: Island

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				<u>X</u>	<u>290</u>	<u>105</u>															<u>X</u>	Grass, trees, 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					NO

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

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

Oil height: NA

**Treatment recommendations:**

Zone A : NOD

Zone : \_\_\_\_\_

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

TEAM 1  
C19 ISL  
SEPT. 23, 2011

9/23/2011 4:23 pm



DB/

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 23/09/11	Time (24h): std / daylight 1100 hrs to 1200 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: C <u>19</u> (Left Bank / Right Bank / Island)				
Operations Division: C				
Survey by: <u>Foot / ATV (Boat) / Helicopter / Overlook /</u>		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>36</u> deg C

<b>2 SURVEY TEAM # 1</b>	Name	Organization	Signature
Todd Farrar		Polaris	<i>Todd Farrar</i>
Pete Lee		Polaris	<i>Pete Lee</i>
Jeffrey Frank Herrick		MTDEQ	<i>Jeffrey Frank Herrick</i>

**3 SEGMENT** Total Segment/Reach Length 1,150 m Segment/Reach Length Surveyed 1,150 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 X (type) Pileup Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed X 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 complete for primary

Cliff or Bluff: X Est Height \_\_\_\_\_ m canyon \_\_\_\_\_ manmade P 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 0-100m >100m m est. water depth: <1m 1-3m >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: Gossins property

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.																
	ID	MS	LB	UB	OB	m	m	%	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO	
A					1,150	120																X	Grass, trees, 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	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: NA

Treatment recommendations:

Zone A: NOO

Zone : \_\_\_\_\_

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

Team 1  
C19 LB  
Sept 23, 2011

zones  
NOD



9/23/2011 4:23 pm

Image © 2011 GeoEye  
© 2011 Google

45°52'39.93" N 108°20'34.15" W elev 3008 ft

1996

Eye alt

DB16

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 10/09/11	Time (24h): std / daylight 9:30 hrs to 11:40 hrs	<b>Water Level</b> low - MEAN - bankfull - overbank falling - STEADY - rising
Segment/Reach ID: <u>C 19</u> Left Bank / <u>Right Bank</u> / Island				
Operations Division:				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp +/- <u>24</u> deg C	

<b>2 SURVEY TEAM # 1</b>	name	organization	contact phone number
	Tom Freeman	Polaris Applied Sciences	Tom Freeman
	Sheila McAtee	DNR	Sheila McAtee

**3 SEGMENT** Total Segment/Reach Length 900 m Segment/Reach Length Surveyed 900 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 X \_\_\_\_\_ Mixed  \_\_\_\_\_ Pebble/Cobble  \_\_\_\_\_ Boulder \_\_\_\_\_ Peat/Organic \_\_\_\_\_ Vegetated Bank: Yes 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 \_\_\_\_\_ confined or leveed \_\_\_\_\_ Substrate Type: MIXED

Sloped: \_\_\_\_\_ (>5°)(15°)(30°) straight \_\_\_\_\_ braided  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	
A				X	900	130	<1			S	P						X					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					NO					

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

Zone A: This Zone was designated for treatment in a previous SCAT survey (19/8/11). With our Hot Shot team we were able to achieve NFT throughout area. H.S. Team removed 4-5 bags of grass and debris w/ transferable product.

Seg C-19 RB now 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 # \_\_\_\_\_)

C-19 RB

SCAT TEAM 1 Sept 10, 2011





## **Appendix F**

Completed SCAT Segment Sign-Off  
Forms

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment C19-Is1 Date of Survey Sept. 23, 2011

Dates of Initial SCAT Assessments 19 Aug 2011 (RB)  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 60

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

Segment Assessment Complete<sup>1</sup>   
Partial Segment Assessment

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

This Segment is Conditionally Approved   
(See attached Post Inspection Survey Transmittal (POST))

*The undersigned are in agreement that the above segment meets the Approved Treatment Methods Target Endpoints conditional upon completion of the treatment identified in the attached Post Inspection Survey Transmittal (POST).*

*No Federal Rep Present*

Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**Federal Representative (EPA/USCG)**

Sign Name Jeffrey Frank Herrick Print Name/ Affiliation Jeffrey Frank Herrick Date 23 Sept. 2011  
**State Representative (DEQ/FWP)** MT DEQ

Sign Name Tedd Farrear Print Name/ Affiliation Tedd Farrear / Polaris Date 9/23/2011  
**RP Representative (SCAT RP Representative)**

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.

<sup>1</sup> 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. Multiple Partial Assessments that meet the conditions of a Complete Assessment may together constitute a Complete Sign-Off Assessment.

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment C-19 LB

Date of Survey Sept. 23, 2011

Dates of Initial SCAT Assessments

27 Jul 2011  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment

60

Segment has been treated by Operations or an Operations Hotshot Team

YES

NO

Segment Assessment Complete<sup>1</sup>

Partial Segment Assessment

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

This Segment is Conditionally Approved   
(See attached Post Inspection Survey Transmittal (POST))

*The undersigned are in agreement that the above segment meets the Approved Treatment Methods Target Endpoints conditional upon completion of the treatment identified in the attached Post Inspection Survey Transmittal (POST).*

*No Federal Rep Present*

Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**Federal Representative (EPA/USCG)**

Sign Name Jeffrey Frank Herrich Print Name/ Affiliation Robert Frank Herrich MT DEQ Date 23 Sept. 2011  
**State Representative (DEQ/FWP)**

Sign Name Todd Farrar Print Name/ Affiliation Todd Farrar / Polaris Date 9/23/11  
**RP Representative (SCAT RP Representative)**

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.

<sup>1</sup> 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. Multiple Partial Assessments that meet the conditions of a Complete Assessment may together constitute a Complete Sign-Off Assessment.

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment C-19 RB

Date of Survey Sept 10, 2011

Dates of Initial SCAT Assessments

27 JUL 11 (E)  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment

CTR # 60

Segment has been treated by Operations or an Operations Hotshot Team

YES

NO

Segment Assessment Complete<sup>1</sup>

Partial Segment Assessment

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

This Segment is Conditionally Approved   
(See attached Post Inspection Survey Transmittal (POST))

*The undersigned are in agreement that the above segment meets the Approved Treatment Methods Target Endpoints conditional upon completion of the treatment identified in the attached Post Inspection Survey Transmittal (POST).*

No federal rep.

Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**Federal Representative (EPA/USCG)**

Sheila Melton Sheila McAtee/NRC 9/10/11  
Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**State Representative (DEQ/FWP)**

Tom Freeman Tom Freeman / Polaris Sept 10, 2011  
Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**RP Representative (SCAT RP Representative)**

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.

<sup>1</sup> 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. Multiple Partial Assessments that meet the conditions of a Complete Assessment may together constitute a Complete Sign-Off Assessment.