

ExxonMobil Pipeline Company

**SCAT Area Transition Report for
C26**

Silvertip Pipeline Incident
Laurel, Montana

October 21, 2011



SCAT Area Transition Report for C26

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.:
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Date:
October 21, 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	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	2
1.8 Post-Inspection Survey Transmittal	3
1.9 Summary of Final SCAT Surveys	2
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 C26, 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 C26. 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 C26, 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 C26 is 79.4. There were no access issues for this area.

1.2 Cultural, Historic, and Natural Resource Constraints

No historic properties or cultural resources were observed or recorded due to limited inspections of Area C26 because of low levels of oiling in Division C.

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 C26 due to the low level of oiling in Division C. No oiled wildlife was observed or recovered. No Wildlife Priority Cleanup Areas were identified. A bald eagle (*Haliaeetus leucocephalus*) nest was identified in Area C26 and a buffer zone was provided to Operations to protect the nest.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area C26. 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 C26 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	SHMT0718DW101	7/18/2011	Water_Drinking	SHMT_375_DW101	45.921725	-108.320947
CTEH	SHMT0718DW102DUP	7/18/2011	Water_Drinking	SHMT_375_DW101	45.921725	-108.320947
CTEH	SHMT0718DW301	7/18/2011	Water_Drinking	SHMT_376_DW301	45.922961	-108.321762
CTEH	SHMT0817SO103	8/17/2011	Soil_Surface	SHMT_414_SO103	45.921879	-108.319861
EPA	SPDW211_071811	7/18/2011	Water_Drinking	SPDW211	45.922950	-108.321654

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

1.4 Summary of Initial SCAT Surveys

The SCAT teams used systematic evaluation criteria and treatment method tables approved by the National Oceanic and Atmospheric Administration to provide a standard approach for data collection and conducting field surveys. The forms and sketches from the initial SCAT surveys performed along the river bank (water edge) and floodplain within Area C26 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C26.

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. 61](#) and [CTR No. 62](#)).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area C26 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

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 C26 following completion of oil removal activities. The SCAT team performed final surveys of the island and right bank within SCAT Area C26 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

Although the initial SCAT surveys of the left bank recommended a light oiling zone be treated by ATMs No. 1, 2, and 3, these methods were not applied. No oil was observed in the remainder of the left bank. The light oiling zone will be addressed through natural attenuation. Based on the final SCAT surveys performed on the island and right bank within Area C26, no further treatment is recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition
Report for C26**

Silvertip Pipeline Incident
Laurel, Montana

2. Transition Sign-Off Form

SCAT Area Transition Report for C26

Prepared for:

Unified Command

Date

Unified Command – RP



**SCAT Area Transition
Report for C26**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for C26

Prepared for:

Unified Command

Date

Unified Command – FOSC



**SCAT Area Transition
Report for C26**

Silvertip Pipeline Incident
Laurel, Montana

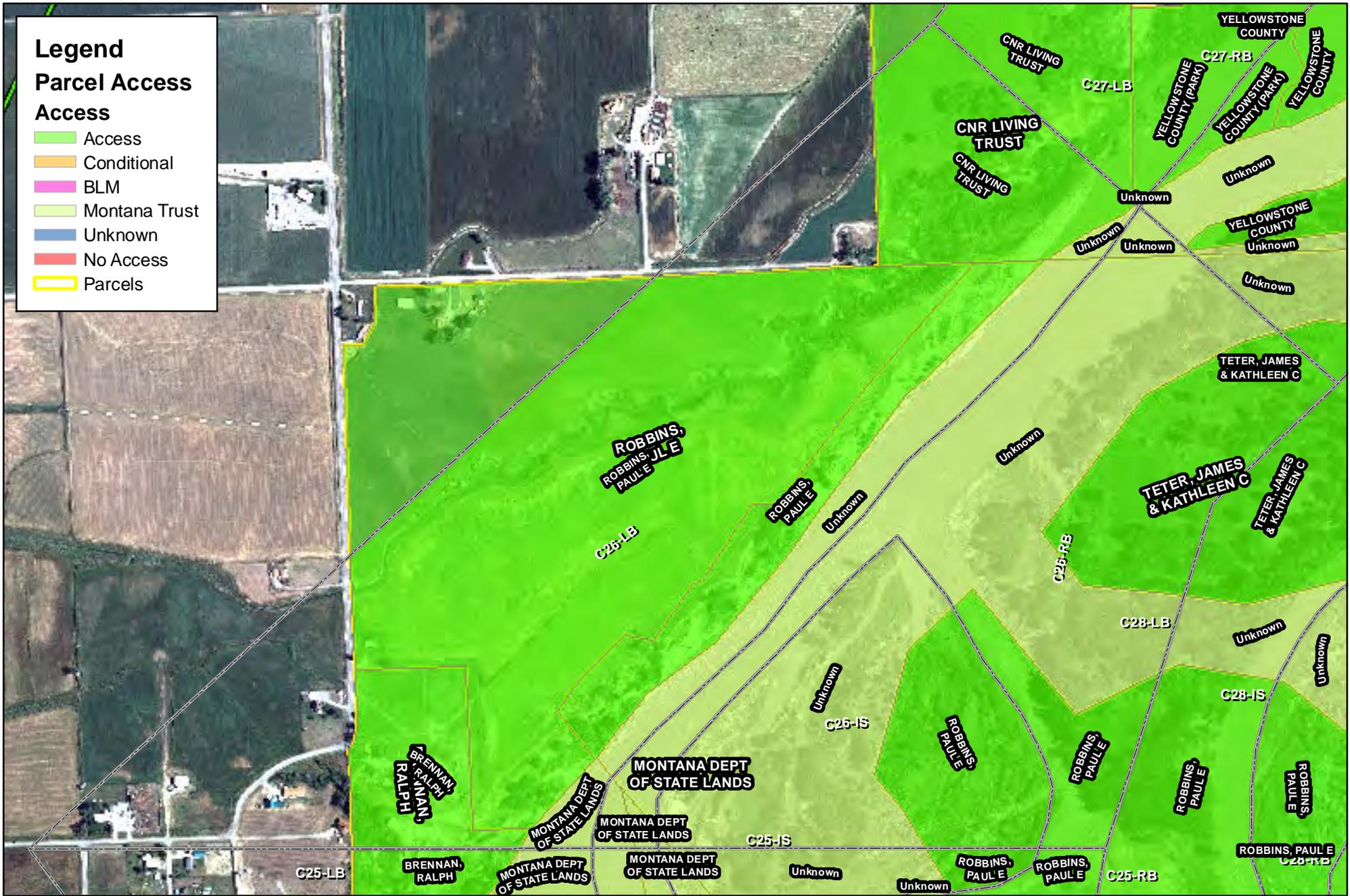
SCAT Area Transition Report for C26

Prepared for:

Unified Command

Date

Unified Command – MDEQ



Legend
Parcel Access

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

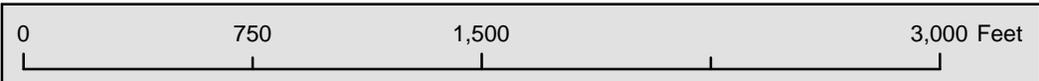


Figure 1



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

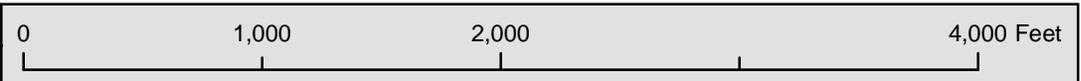
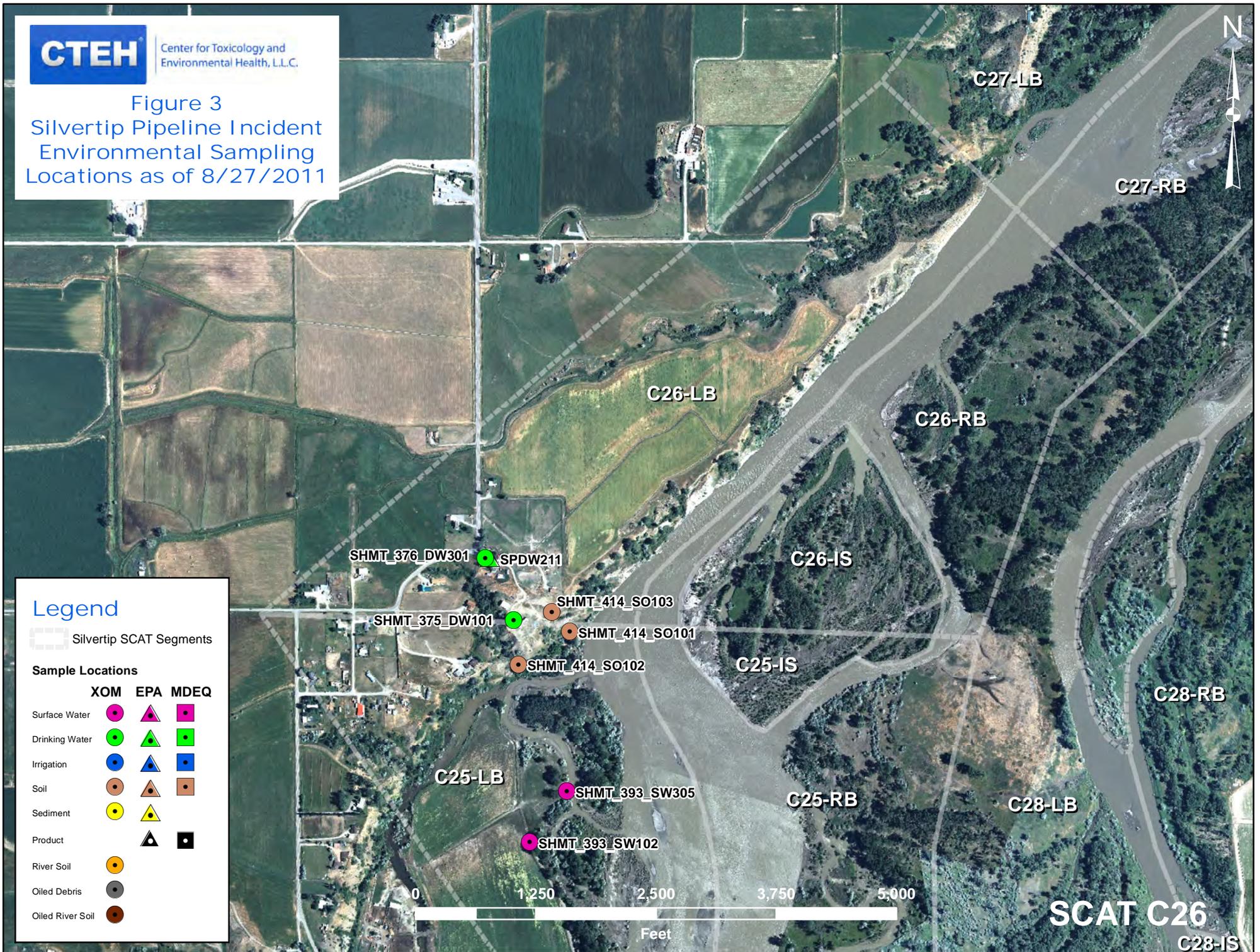


Figure 2
Wildlife Resources



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

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



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 C26
C28-IS

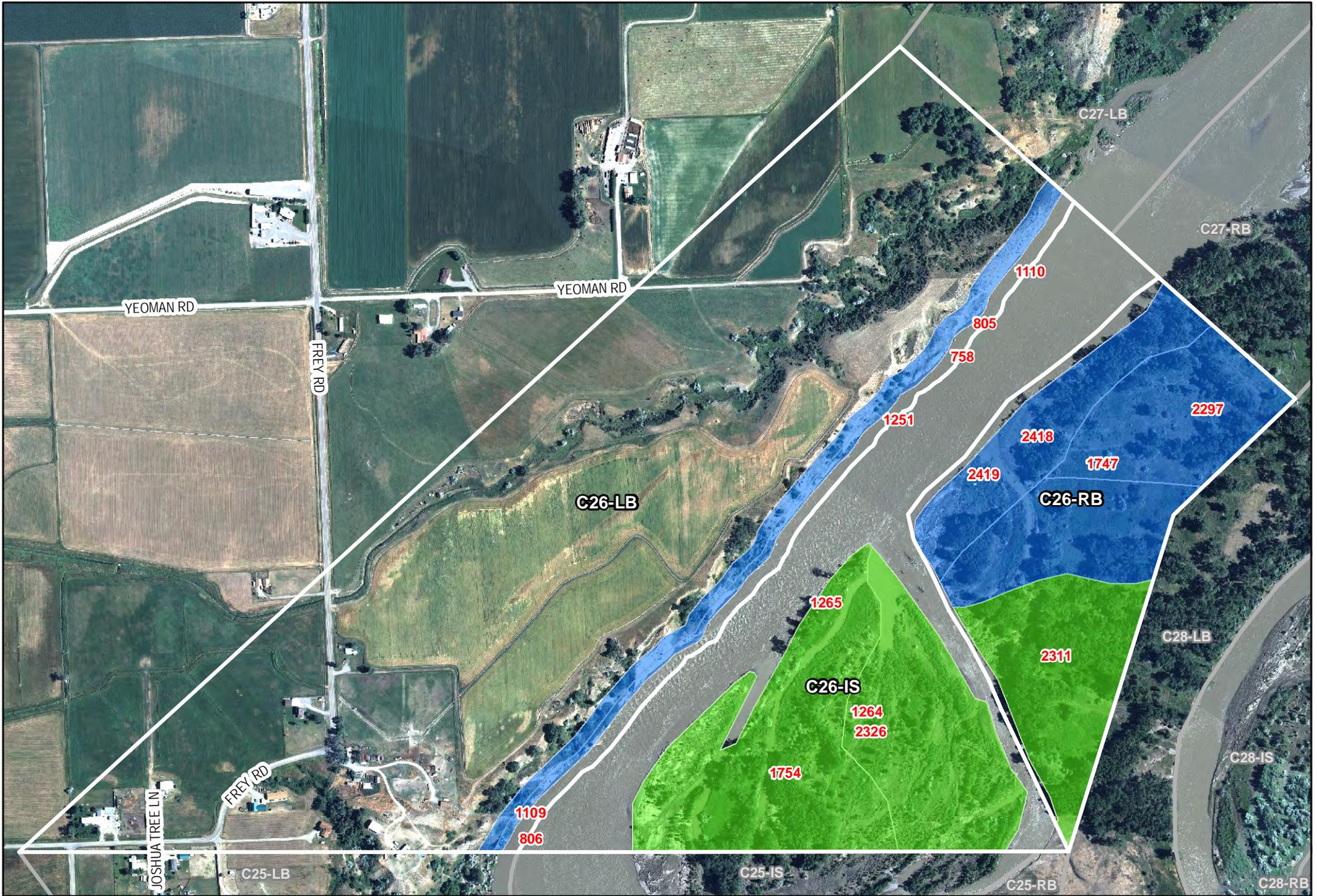
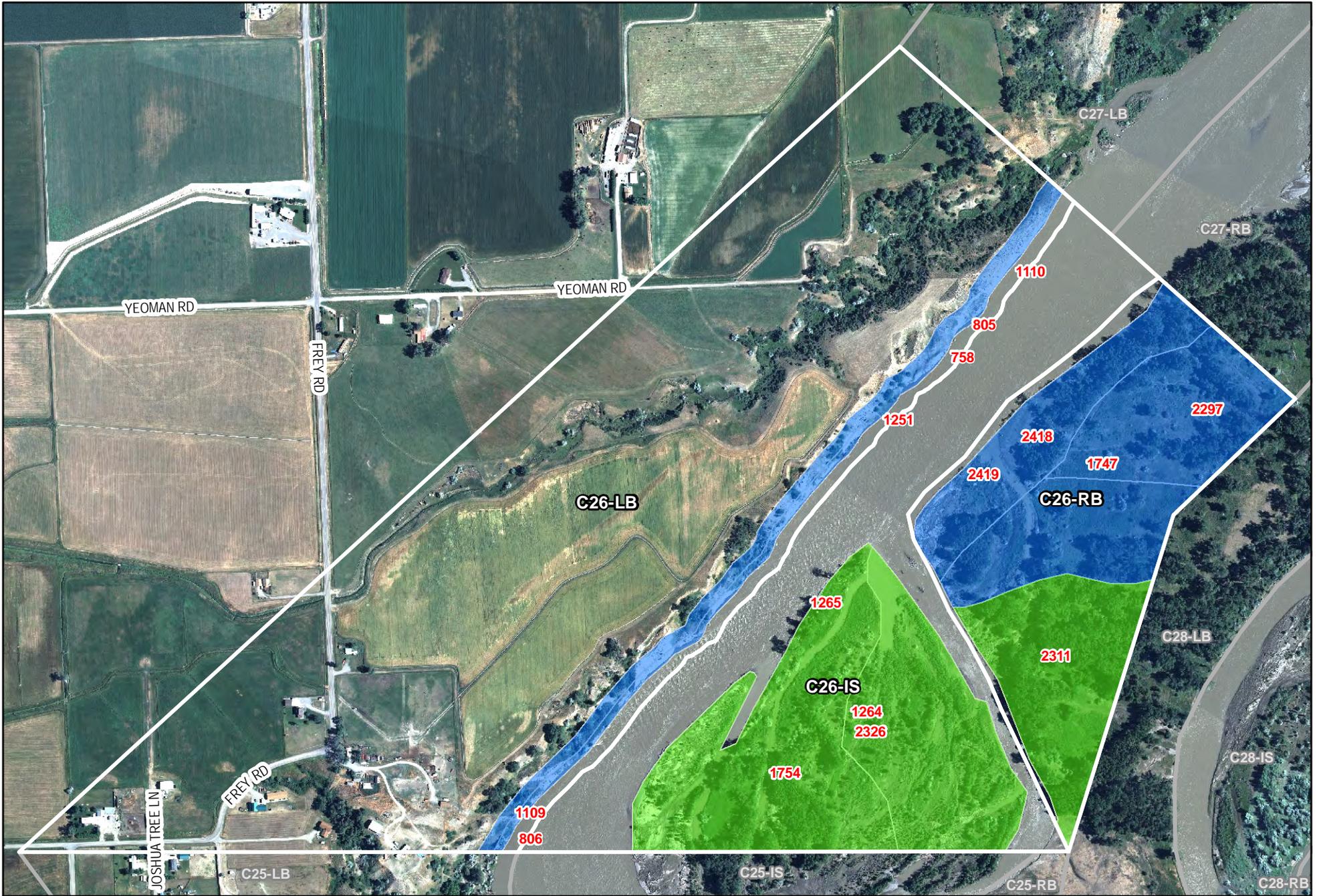


Figure 4 - Maximum SCAT Observations For SCAT Area: C26

9999 Oiling Zone ID
 Heavy Oiling
 Moderate Oiling
 Light Oiling
 Very Light Oiling
 No Oil Observed

500 0 500 1,000 Feet

POLARIS
 APPLIED SCIENCES, INC.



- 9999 Oiling Zone ID
- Heavy Oiling
- Moderate Oiling

- Light Oiling
- Very Light Oiling
- No Oil Observed



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





Appendix A

Sample Detection Summary



Detections in Samples Collected in SCAT Area C26

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
SHMT0817SOBKG103	08/17/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	20	40		mg/kg	no
SHMT0817SOBKG103	08/17/2011	Field	Soil_Surface	EPA 6010	Barium	Y	142	820		mg/kg	no
SHMT0817SOBKG103	08/17/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.83	3.8		mg/kg	no
SHMT0817SOBKG103	08/17/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	17.6	280		mg/kg	no
SHMT0817SOBKG103	08/17/2011	Field	Soil_Surface	EPA 6010	Lead	Y	12	400		mg/kg	no
SHMT0817SOBKG103	08/17/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.025	1		mg/kg	no
SHMT0817SOBKG103	08/17/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	17.1	150		mg/kg	no
SHMT0817SOBKG103	08/17/2011	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	13.6	200		mg/kg	no
SHMT0817SOBKG103	08/17/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	34.6	39		mg/kg	no



Appendix B

Initial SCAT Survey Forms and
Sketches

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>CAG</u> Left Bank / Right Bank / Island		<u>08/08/11</u>	<u>1150</u> hrs to <u>1330</u> hrs	low - mean - bankfull - overbank
Operations Division:				falling - steady - rising
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<u>(Sun)</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>27</u> deg C

2 SURVEY TEAM # <u>1 & 2</u>	Name	Organization	Signature
	<u>Nathan Hammond</u>	<u>Cardno Entrix</u>	<u>See attached</u>
	<u>Lisa Gerencner</u>	<u>Cardno Entrix</u>	
	<u>Peter Reich</u>	<u>EPA</u>	
	<u>Betsy Hvarda</u>	<u>DEQ</u>	
	<u>Adam Bausch</u>	<u>Cardno Entrix</u>	
	<u>Jack Smith</u>	<u>USCG</u>	
	<u>Eari Radonsky</u>	<u>FNP</u>	

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed _____ 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: 3 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: _____

Sloped: (>5°) (15°) (30°) straight _____ braided X oxbow _____ flood plain valley _____ Forested (P) 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 (N) / N point bar present (Y) / N bar-shoal substrate: (S) silt (S) sand / gravel / cobble / boulder / bedrock / debris

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

5 OPERATIONAL FEATURES

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

Debris (Y) / N oiled (Y) / N amount 1 bags or _____ trucks access restrictions

Oiled trees/shrubs (Y) / N River Current strong (Y) / N Other Features: Boat Access

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>1264</u> <u>1265</u> A			<u>X</u>	<u>(X)</u>	<u>596</u>	<u>558</u>	<u>-</u>														<u>✓</u>	<u>Grass</u>
B			<u>X</u>	<u>X</u>	<u>1</u>	<u>1</u>	<u><1</u>				<u>(X)</u>		<u>X</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

A-N00
B-NTR



C26-LB ZONE B

very light

C26-RB

C26-HS

ZONE A

N00

Google

© 2011 Google

Imagery © 2011 DigitalGlobe

DB/G

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>C26</u>	Left Bank / Right Bank / Island	<u>08/08/11</u>	<u>1150</u> hrs to <u>1330</u> hrs	low - mean - bankfull - overbank
Operations Division:				falling - steady - rising
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>1, 2</u>	Name	Organization	Signature
	<u>Nathan Hammond</u>	<u>Carolina Entrix</u>	<u>Nathan Hammond</u>
	<u>Lisa Gorencher</u>	<u>Carolina Entrix</u>	<u>Lisa Gorencher</u>
	<u>Peter Reich</u>	<u>FPA</u>	<u>Peter Reich</u>
	<u>Betsy Horda</u>	<u>DEQ</u>	<u>Betsy Horda</u>
	<u>Adam Busch</u>	<u>Carolina Entrix</u>	<u>Adam Busch</u>
	<u>Jack Smith</u>	<u>VSCG</u>	<u>Jack Smith</u>
	<u>Earl Radowski</u>	<u>FWP</u>	<u>Earl Radowski</u>

3 SEGMENT Total Segment/Reach Length 1115 m Segment/Reach Length Surveyed 1115 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: 5 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: _____

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 1 bags or _____ trucks access restrictions

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

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>(A)</u>	<u>1115</u>	<u>425</u>	<u>0</u>														<u>✓</u>
B				<u>X</u>	<u>1</u>	<u>1</u>	<u><1</u>			<u>(B)</u>	<u>(B)</u>		<u>X</u>								<u>Grass Veg.</u>
C				<u>X</u>	<u>1</u>	<u>3</u>	<u><1</u>			<u>(C)</u>	<u>(C)</u>		<u>X</u>								<u>Debris</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

Zone A - NCC
Zone BC - NTR

VOID
Split into
RB + IS

Sketch (Yes)/No Photos (Yes)/No Frames _____ Photographer _____

ZONE B LIGHT

Zone C

ZONE A - NOO

C26

319

31F

C203-1

313

Image © 2011 DigitalGlobe

45°55'32.50" N 108°18'34.61" W elev 2996 ft

WORK - ZONES A, B, & C - Teams 1 & 2 - 08/08/11



1996

07

©2010

DB/A

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) <u>22/08/11</u>	Time (24h): std / daylight <u>1100 hrs to 1530 hrs</u>	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>C26</u>	Left Bank / Right Bank / Island <u>(C)</u>	Survey by: <u>(Foot) ATV / Boat / Helicopter / Overlook /</u>		
Operations Division: <u>C</u>		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		
Air Temp +/- <u>31</u> deg C				

2 SURVEY TEAM # <u>132</u>	Name	Organization	Signature
	<u>Joe Boyle</u>	<u>Cardno EWR IX</u>	<u>[Signature]</u>
	<u>Lance Richman</u>	<u>US EPA</u>	<u>[Signature]</u>
	<u>John Brown</u>	<u>MDEQ</u>	<u>[Signature]</u>
	<u>Chad Pen</u>	<u>Cardno EWR</u>	<u>[Signature]</u>
	<u>Robert Ashton</u>	<u>MDEQ</u>	<u>[Signature]</u>
	<u>Linda Watson</u>	<u>EPA</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length 615 m Segment/Reach Length Surveyed 615 m

Start GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min. Datum: _____

End GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min.

4A RIVER BANK TYPE PK 9/23/11 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 P Bog/Fen _____ Marsh _____

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 160m 70m 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 channel soft mud

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

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

1754

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)		
	MS	LB	UB	OB	Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
	m	m	%	m	m	%																
A		<u>S</u>	<u>S</u>	<u>P</u>	<u>615</u>	<u>330</u>	<u>0</u>														<u>P</u>	<u>multiveg</u>

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

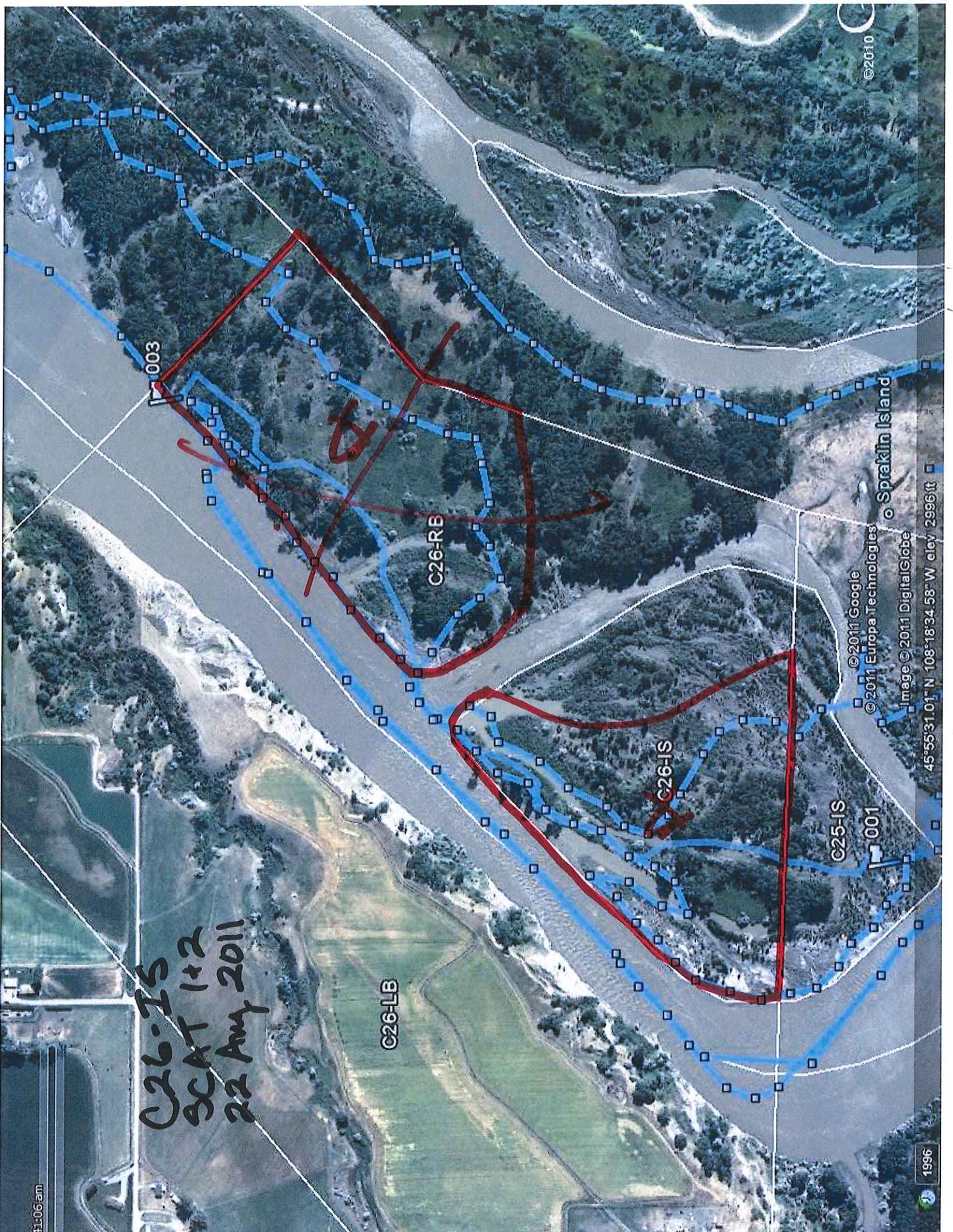
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER								WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)				
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR	NO									

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

Zone A: no oil observed - NFT

Sketch Yes / No Photos Yes / No Frames _____ Photographer _____



C26-IS
SCAT 1+2
22 Aug 2011

4:06 am

1996

DB/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C-26</u> (Left Bank / Right Bank / Island)		<u>26/07/11</u>	<u>1230</u> hrs to <u>1:19</u> hrs	low - mean - bankfull - overbank
Operations Division:				falling - steady - rising
Survey by: (Foot) / ATV / Boat / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>27</u> deg C

2 SURVEY TEAM # <u>3</u>	Name <u>SAK</u>	Organization <u>Cardno Entrep</u>	Signature <u>Steve Kennedy</u>
<u>Steve Kennedy</u>		<u>Cardno Entrep</u>	<u>Steve Kennedy</u>
<u>Gary Riley</u>		<u>USEM</u>	<u>Gary Riley</u>
<u>John Brown</u>		<u>MDEQ</u>	<u>John Brown</u>

3 SEGMENT Total Segment/Reach Length 1360 m Segment/Reach Length Surveyed _____ m

Start GPS: LATITUDE 45° 55.812 deg. _____ min. LONGITUDE 108° 18.199 deg. _____ min. Datum: WGS84

End GPS: LATITUDE 45° 55.801 deg. _____ min. LONGITUDE 108° 18.533 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 P Shelf S Manmade: Solid _____ Permeable _____ (type) _____ Wetland: Swamp _____ Bog/Fen _____ Marsh _____

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

Sediment Flat: Clay/Mud _____ Sand _____ Mixed/Coarse P Other: S Barley field If snow and ice use Winter River SOS Field

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: P Est Height 50 m canyon S manmade _____ meander _____ confined or leveed _____ Substrate Type: _____

Sloped: TD (>5°)(15°)(30°) straight P 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 160m est. water depth: <1m 1-3m 3-10m >10m _____ m

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

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

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

Debris: Y(N) oiled Y(N) amount _____ bags or _____ trucks access restrictions Steep bank

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	m	%														
A			<u>P</u>	<u>S</u>	<u>1360</u>	<u>30</u>	<u>0</u>														<u>P</u>

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

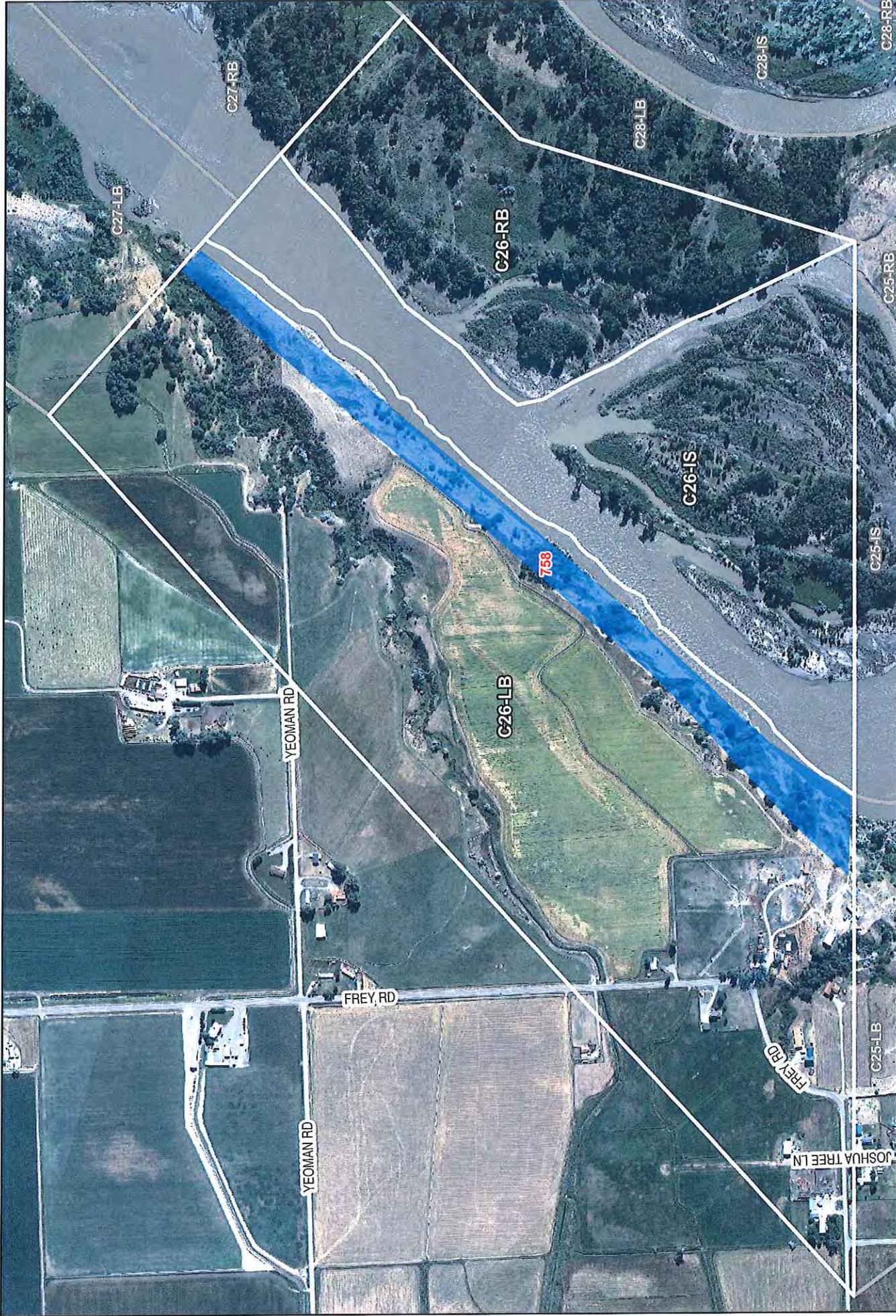
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH	OILED ZONE	SUBSURFACE OIL CHARACTER					WATER TABLE	SHEEN COLOUR	CLEAN BELOW	SUBST. TYPE(S)
							SAP	OP	PP	OR	OF				
	MS	LB	UB	OB	cm	cm-cm									

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

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

C-26; Zone A no impact observed. No access to UB. Recommend boat survey of UB.

Sketch Yes (No) Photos Yes (No) Frames _____ Photographer _____



C26

Figure 4 - Maximum SCAT Observations For SCAT Area:

- 9999 Oiling Zone ID
- Light Oiling
- Heavy Oiling
- Very Light Oiling
- Moderate Oiling
- No Oil Observed



DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 26/07/11	Time (24h): std / daylight 1247 hrs to 1250 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: C <u>26</u> <u>Left Bank</u> / Right Bank / Island		Operations Division: <u>A-</u>		
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>28</u> deg C

2 SURVEY TEAM # 1	name	organization	contact phone number
Pete Lee	<u>POL</u>	Polaris	225-892-6459
John Beach		US EPA	415-972-3347
Larry Alheim		MT DEQ	406-461-7516

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 1303 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: mixed _____

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 150 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 3 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	V	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO	
<u>A</u>				<u>X</u>	<u>3</u>	<u>1</u>	<u>100</u>			<u>X</u>	<u>X</u>		<u>X</u>									Grass, trees
<u>B</u>				<u>X</u>	<u>1300</u>	<u>1</u>														<u>X</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

Oil ht. = 30cm

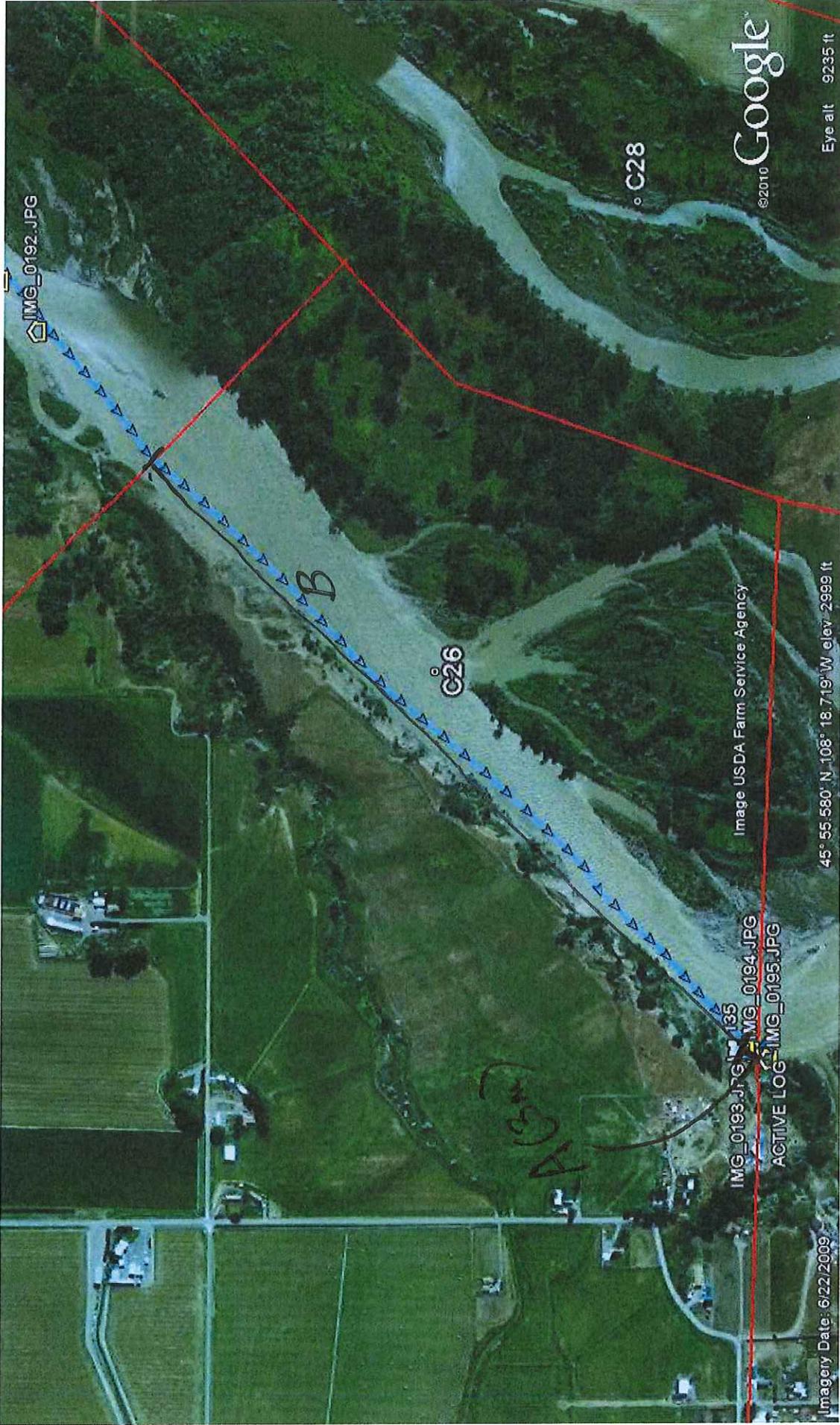
Treatment Recommendations:

Zone A : Cut and remove vegetation < 1" diameter

Zone B : No treatment required

WAYPOINT 135 (Alheim) Lep

Sketch Yes / No Photos Yes / No Frames 0193 (Beach)



A begins @ segment pond day down stream 3 m

Zones A + B

C26L

Team #1

26/07/11

DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 26/07/11	Time (24h): std / daylight 1:47 hrs to 1:51 hrs	Water Level low - mean - bankfull - overbank falling - steady - rising <u>(S)</u>
Segment/Reach ID: C <u>26</u> Left Bank / Right Bank / Island		Operations Division:		
Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>28</u> deg C

2 SURVEY TEAM # 1	Name	Organization	Signature
Pete Lee	<u>PBL</u>	Polaris	225.892.6459
John Beach	<u>JBS</u>	US EPA	415.972.3347
Larry Alheim		MT DEQ	406.461.7516

3 SEGMENT Total Segment/Reach Length 1290 m Segment/Reach Length Surveyed 1290 m

Start GPS: LATITUDE 45 deg. 55.806 min. LONGITUDE 108 deg. 18.422 min. Datum: _____

End GPS: LATITUDE 45 deg. 55.298 min. LONGITUDE 108 deg. 19.113 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 (P) Shelf _____ Manmade: Solid _____ Permeable _____ (type) _____ Wetland: Swamp _____ Bog/Fen _____ Marsh _____

Sediment Bank: Clay/Mud _____ Sand _____ Mixed _____ Pebble/Cobble _____ Boulder _____ Peat/Organic _____ Vegetated Bank: (S) 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: (X) Est Height 25 m canyon _____ manmade _____ meander _____ confined or leveed _____ Substrate Type: _____

Sloped: (>5°)(15°)(30°) 760° straight _____ braided (X) oxbow _____ flood plain valley (X) Forested / Vegetated / Bare (S)

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 (N) point bar present (Y) 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 (Y) / (N) Alongshore from next segment (Y) / (N)

Debris: (N) oiled (N) amount 3 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

805
806

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			1280	1															X	
B		X			10	1	100				X		X									Veg.

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

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

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

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

Oil height: _____

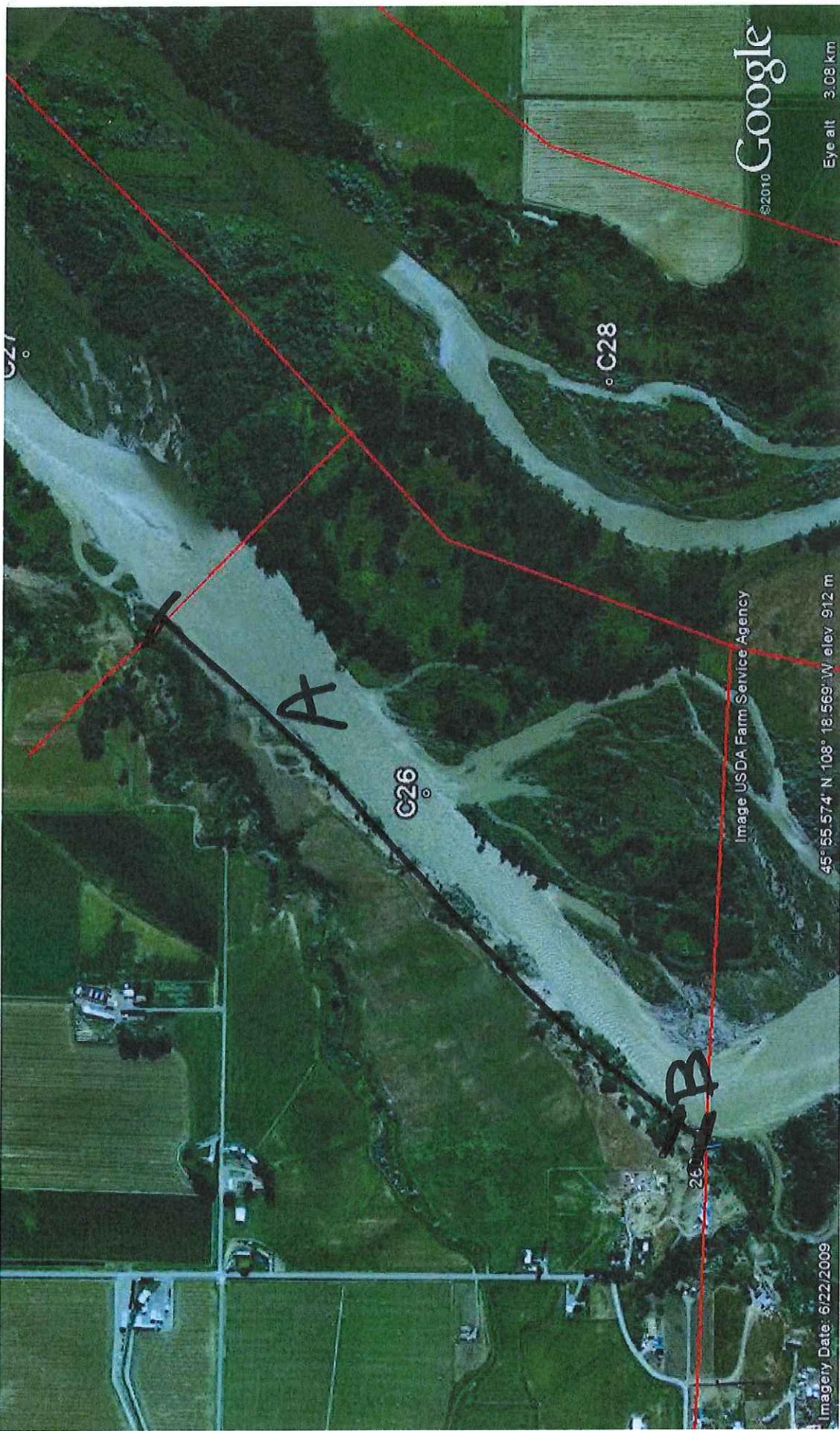
Treatment recommendations:

Zone B : No oil observed; no treatment required.

Zone A : Cut & remove oil coated vegetation smaller than 1" diameter. Remove debris smaller than 4" diameter. Wipe larger oil coated vegetation.

*Refer to current approved treatment methods #1 (Cutting of Vegetation), #2 (Dead Vegetation and Small Debris), #3 (Large Woody Debris), #6 (Sorbent Use), # (Unconsolidated Sediments)

Sketch (Yes) / (No) Photos (Yes) / (No) Frames 0058-0059 Photographer Beach



©2010 Google

Eye alt 3.08 km

C27

C28

A

C26

Image US DA Farm Service Agency

45° 55.574' N 108° 18.569' W elev 912 m

B

26

Imagery Date: 6/22/2009

DB/9

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 08/06/2011	Time (24h): std / daylight 0855 hrs to 0930 hrs	Water Level low - mean - <u>bankfull</u> - overbank <u>falling</u> , steady - rising
Segment/Reach ID: C26 <u>Left Bank</u> / Right Bank / Island				
Operations Division:				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>3.2</u> deg C

2 SURVEY TEAM # <u>6</u>	Name	Organization	Signature
Chris Arredondo		CardnoENTRIX	
Dominic Ventura		EPA	
Jeremiah Wood		FWP	

3 SEGMENT Total Segment/Reach Length 1300 m Segment/Reach Length Surveyed 884 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 S Shelf _____ Manmade: Solid _____ Permeable _____ (type) _____ Wetland: Swamp _____ Bog/Fen _____ Marsh _____

Sediment Bank: Clay/Mud _____ Sand _____ Mixed P Pebble/Cobble S Boulder _____ Peat/Organic _____ Vegetated Bank: PS 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 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 0 bags or 0 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

1251

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	884	10															X	

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

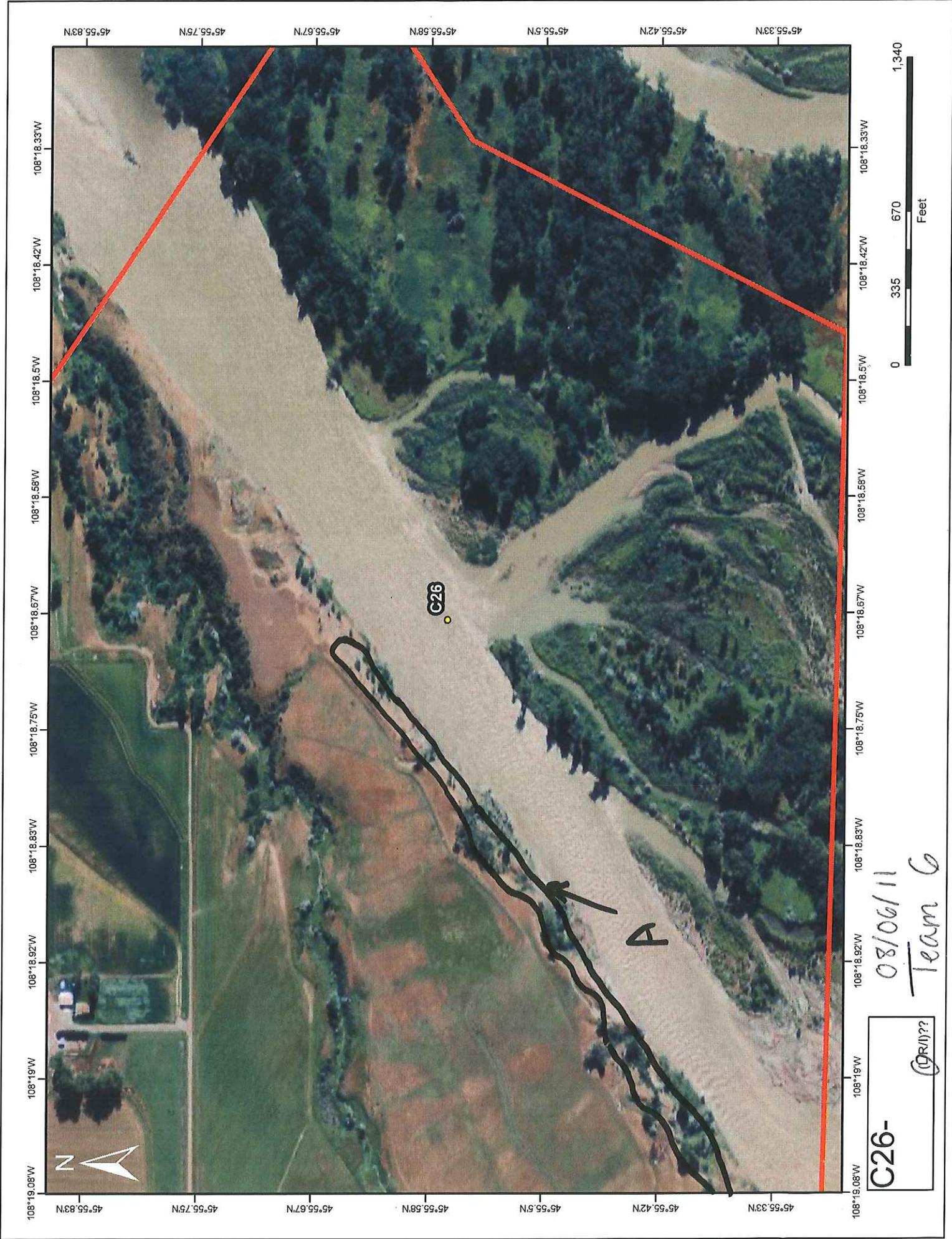
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO

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: No treatment required. The entire segment length was not surveyed due to inaccessible landforms (cliff).

Sketch Yes / No Photos Yes / No Frames _____ Photographer _____



C26-

08/06/11
Team C

(GR1)??



ZONE A

ZONE B

C26-LB

C26-RB

C26-IS

Google

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Image © 2011 DigitalGlobe

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION

Segment/Reach ID: C26 Left Bank / Right Bank / Island

Date (dd/mm/yy) 08/08/11 Time (24h): std / daylight 1150 hrs to 1330 hrs

Water Level: low - mean - bankfull - overbank

Operations Division: falling - steady - rising

Survey by: Foot / ATV / Boat / Helicopter / Overlook / Sun / Clouds / Fog / Rain / Snow / Windy / Calm Air Temp + / - 27 deg C

2 SURVEY TEAM # 12

Name	Organization	Signature
<u>Nathan Hammond</u>	<u>Carbo Entrix</u>	<u>Nathan Hammond</u>
<u>Lisa Gorencher</u>	<u>Carbo Entrix</u>	<u>Lisa Gorencher</u>
<u>Peter Reich</u>	<u>FPA</u>	<u>Peter Reich</u>
<u>Betsy Horda</u>	<u>DEQ</u>	<u>Betsy Horda</u>
<u>Adam Bausch</u>	<u>Caroline Entrix</u>	<u>Adam Bausch</u>
<u>Jack Smith</u>	<u>VSCG</u>	<u>Jack Smith</u>
<u>Earl Radonski</u>	<u>FWP</u>	<u>Earl Radonski</u>

3 SEGMENT Total Segment/Reach Length 1115 m Segment/Reach Length Surveyed 1115 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: 5 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: _____

Sloped: (>5°)(15°)(30°) straight _____ braided X oxbow _____ flood plain valley _____ Forested (P) 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 1 bags or _____ trucks access restrictions _____

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

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)			
	MS	LB	UB	OB	Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO
A			<u>X</u>	<u>(P)</u>	<u>1115</u>	<u>425</u>	<u>0</u>														<u>✓</u>
B				<u>X</u>	<u>1</u>	<u>1</u>	<u><1</u>			<u>(X)</u>	<u>(X)</u>		<u>X</u>								<u>Grass Veg</u>
C				<u>X</u>	<u>1</u>	<u>3</u>	<u><1</u>			<u>(X)</u>	<u>X</u>		<u>X</u>								<u>Debris</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				

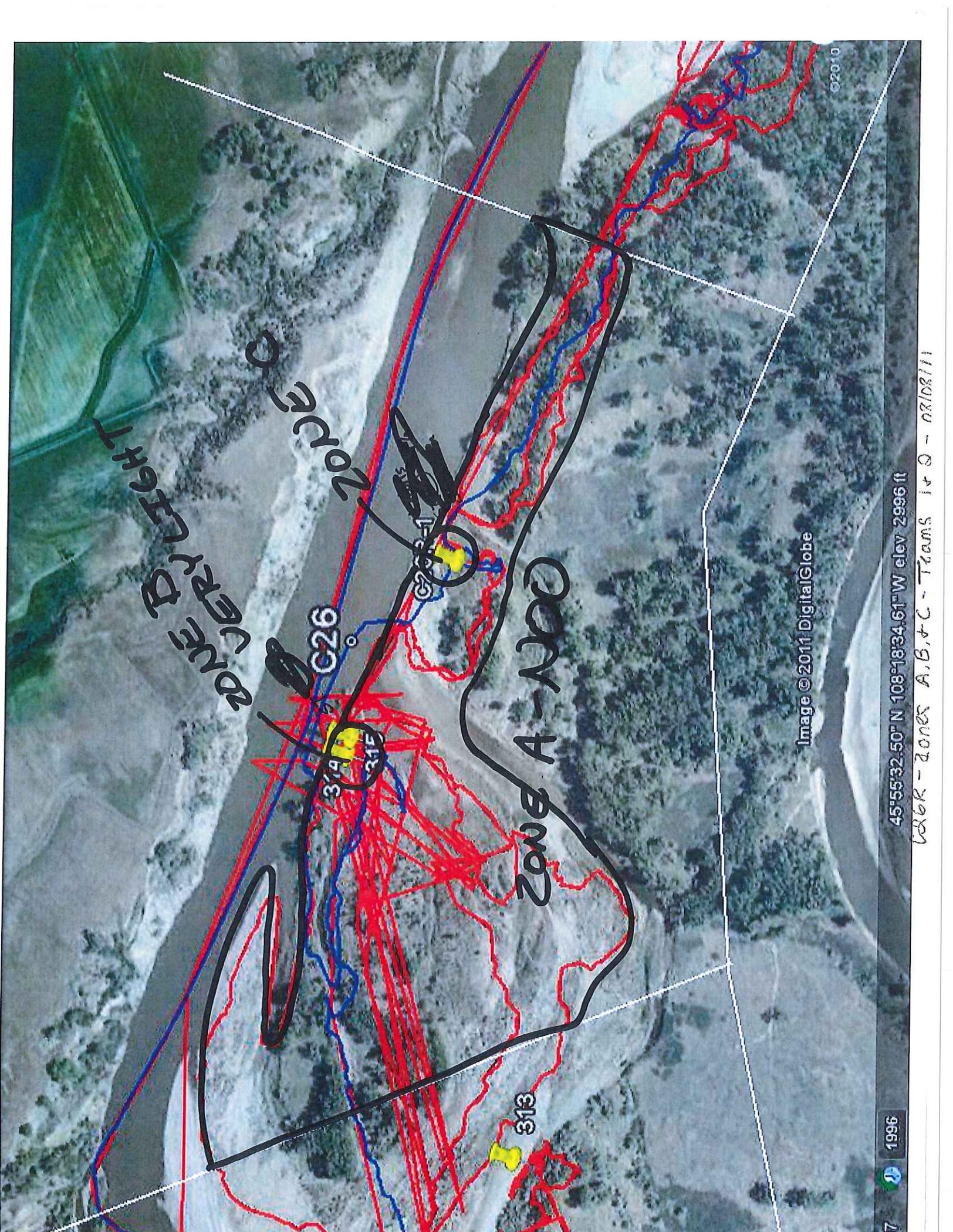
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A - NOC
Zone BC - NTR

VOID
Split into
RB + IS

Sketch Yes/No Photos Yes/No Frames _____ Photographer _____



BONE B-C-TH

ZONE B

ZONE A-NOD

G26

31A

31F

G26-1

313

Image © 2011 DigitalGlobe

1996

7

45°55'32.50" N 108°18'34.61" W elev 2996 ft

BACK - ZONES A, B, & C - Teams 1 & 2 - 08/08/11

©2010

DB/G

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>C26</u> Left Bank / <u>Right Bank</u> / Island		<u>17/08/11</u>	<u>1100</u> hrs to <u>1155</u> hrs	low / <u>mean</u> / bankfull - overbank
Operations Division: <u>C</u>				falling / steady - rising
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>30</u> deg C

2 SURVEY TEAM # <u>3</u>	Name	Organization	Signature
	<u>Damien Korte</u>	<u>Cardup Entrix</u>	<u>See Attached</u>
	<u>Lance Richman</u>	<u>EPA</u>	<u>See Attached</u>
	<u>Jeffrey Herrick</u>	<u>DEU</u>	<u>see Attached</u>

3 SEGMENT Total Segment/Reach Length 860 m Segment/Reach Length Surveyed 205 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 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: Grass, trees

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 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

2297

OIL ZONE	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER						SUBST. TYPE(S)		
	MS	LB	UB	OB	Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO
A				<u>X</u>	<u>205</u>	<u>160</u>	<u>0</u>														<u>Grass, trees</u>

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

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

Instructed to only survey Peter property.

Sketch (Yes/No) Photos (Yes/No) Frames/Photographer: _____

SCAT
Team 3
8/17/11
C26-RB

C28N

005

002

001

001

C28S

C28

004

002-003

001

C2E N

C26-RB

©2010

© 2011 Google

45°55'35.88" N 108°18'03.36" W elev 2996 ft

1996



9/1/2009
2009
2 x

C27EB

C26RB

C28L

C28R

C28H

light cont on
C28H, N28H

cont on
C28H, N28H

004

002

003

003

001

002

005

001

002

001

002

C28

C28

C28W

1996

© 2011 Google
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Image USA Farm Service Agency

45°55'35.81" N 108°18'02.84" W elev 2996 ft

©2010

DB19

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 2

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C26</u>	Left Bank / Right Bank / Island	<u>22/08/11</u>	<u>1100</u> hrs to <u>1530</u> hrs	low - (mean) bankfull - overbank
Operations Division:				falling - steady - rising
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>	<u>Sun</u> Clouds / Fog / Rain / Snow / Windy / Calm			Air Temp +/- <u>34</u> deg C

2 SURVEY TEAM # <u>1 & 2</u>	Name	Organization	Signature
	<u>Joe Boyle</u>	<u>Canada ENTRY</u>	<u>[Signature]</u>
	<u>John Brown</u>	<u>MDEQ</u>	<u>[Signature]</u>
	<u>Robert Ashton</u>	<u>MDEQ</u>	<u>[Signature]</u>
	<u>Chuk's [unclear]</u>	<u>Canada ENM</u>	<u>[Signature]</u>
	<u>Lance Richman</u>	<u>US EPA</u>	<u>[Signature]</u>
	<u>Linda Watson</u>	<u>EPA</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length 1170 m Segment/Reach Length Surveyed 1170-465 m
 Start GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min. Datum: CR 8/23/11
 End GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min.

4A RIVER BANK TYPE CR 8/23/11 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 P Bog/Fen _____ Marsh _____
 Sediment Bank: Clay/Mud PS Sand _____ Mixed _____ Pebble/Cobble _____ Boulder _____ Peat/Organic _____ Vegetated Bank: S Wooded Upland: S
 Sediment Flat: Clay/Mud PS Sand _____ Mixed/Coarse _____ Other: _____ If snow and ice use Winter River SOS

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: Est Height _____ m canyon _____ manmade _____ meander S confined or leveed _____ Substrate Type: mud
 Sloped: (5-15) (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 90m 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 N
 Debris Y/N oiled Y/N amount _____ bags or _____ trucks access restrictions channels soft mud
 Oiled trees/shrubs Y/N River Current strong Y/N Other Features:

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER					SUBST. TYPE(S)				
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO	
1747 A		<u>S</u>	<u>S</u>	<u>P</u>	<u>1170</u>	<u>400</u>	<u>0</u>														<u>P</u>	<u>mudveg</u>
					<u>465</u>																	

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

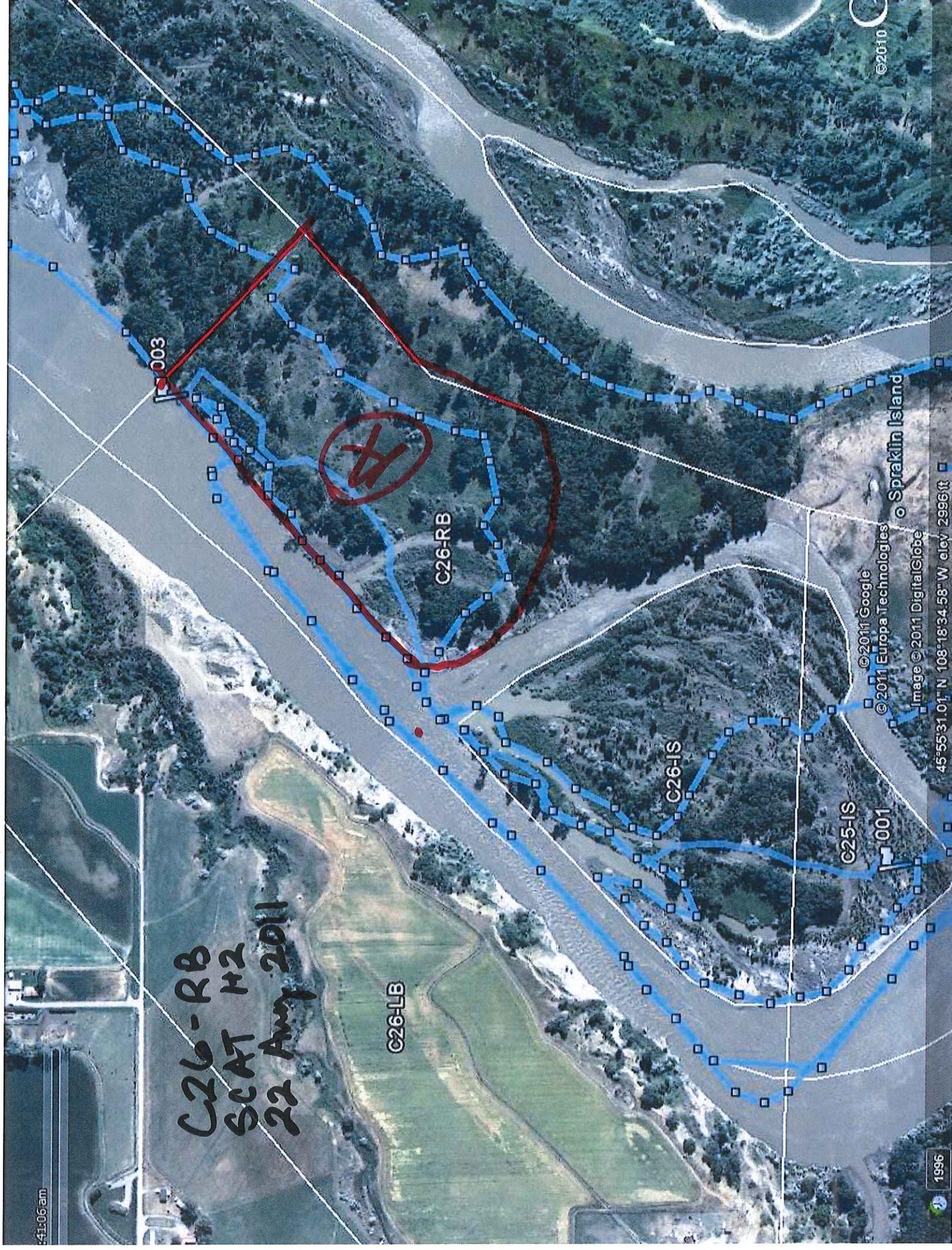
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO

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

zone A: no oil observed - NFI

Sketch Yes / No Photos Yes / No Frames _____ Photographer _____



C26-RB
SCAT M2
22 Aug 2011

C26-LB

C26-RB

C26-IS

C25-IS

003

001

Spraklin Island

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© 2011 Europa Technologies
Image © 2011 DigitalGlobe

45°55'31.01" N 108°18'34.58" W elev 2996 ft

1996

© 2010

4:06 am



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/G

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>C26</u> Left Bank / Right Bank / Island		<u>16/09/11</u>	<u>1045</u> hrs to <u>1245</u> hrs	low / <u>mean</u> / bankfull - overbank
Operations Division: <u>S</u>				<u>falling</u> / steady - rising
Survey by: <u>Fog / ATV / Boat</u> Helicopter / Overlook /		<u>Sun</u> / <u>Clouds</u> / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>24</u> deg C

2 SURVEY TEAM # <u>1+2</u>	Name	Organization	Signature
	<u>Mercle Gauthreau</u>	<u>Polaris</u>	<u>[Signature]</u>
	<u>Todd Farrar</u>	<u>Polaris</u>	<u>[Signature]</u>
	<u>Damien Koite</u>	<u>Cardus Entrix</u>	<u>[Signature]</u>
	<u>Daryl Reed</u>	<u>DEQ</u>	<u>[Signature]</u>
	<u>Jessica Ross</u>	<u>DEQ</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length 575 m Segment/Reach Length Surveyed 460 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) 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 _____ Forested (Vegetated) / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 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 Boat access only

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

2326

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>575</u>	<u>460</u>	<u><1</u>															<u>Grass, trees</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

Zone A - Very light oil distribution, primarily stain. Hot shot crew utilized ATMs 1, 2, and 9 to remove 15 bags of oiled vegetation and debris. Meets CTR requirements, NFT.

RESCAT

Sketch (Yes) No Photos (Yes) No Frames/Photographer: _____



Re-SCAT
Teams 1+2
9/16/11
C26-IS

DB16

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>26</u>	Left Bank / Right Bank / Island	<u>15/09/2011</u>	<u>14:00</u> hrs to <u>15:00</u> hrs	<u>low</u> mean - bankfull - overbank
Operations Division: <u>C</u>		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		falling - steady - rising
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		Air Temp +/- <u>30</u> deg C		

2 SURVEY TEAM # <u>2</u>	Name	Organization	Signature
	<u>Yerlo Gourelan</u>	<u>Polaris</u>	<u>[Signature]</u>
	<u>Damien Korte</u>	<u>Entra</u>	<u>[Signature]</u>
	<u>Daryl Reed</u>	<u>DEG</u>	<u>[Signature]</u>
	<u>Jessica Ross</u>	<u>DEG</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length 955 m Segment/Reach Length Surveyed 340 m

Start GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min. Datum: _____

End GPS: LATITUDE _____ deg. _____ min. LONGITUDE _____ deg. _____ min.

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

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

Sediment Bank: Clay/Mud _____ Sand S Mixed S Pebble/Cobble S 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: _____

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

2311

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	300	180	<1				X								X			V3, D6

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: Re SCAT for fill-ins with Ops Hot shot team

Stain on vegetation, meet the CTR, NFT

Sketch Yes / No Photos Yes / No Frames/Photographer: _____

SCAT
Teams 1+2
9/15/11
C26-RB

C26

C28W

C26-RB

C26-IS

C25-IS

B5

B4

003 002 004

001 001

002

Image © 2011 DigitalGlobe

© 2011 Google

45°55'27.77" N 108°18'27.98" W elev 2996 ft

1996

1 12:43 pm





Appendix F

Completed SCAT Segment Sign-Off
Forms

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment C26-IS Date of Survey 09/16/11

Dates of Initial SCAT Assessments 17 AUG 2011
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 61

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

Segment Assessment Complete¹
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)

Daryl Reed *Daryl Reed, DEQ* *9/16/11*
Sign Name _____ Print Name/ Affiliation _____ Date _____
State Representative (DEQ/FWP)

[Signature] *Heidi Gouvenor, Pokois* *16/09/2011*
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.

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. 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 C26 RB Date of Survey 15/09/2011

Dates of Initial SCAT Assessments 17 Aug 2011
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 601

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

Segment Assessment Complete¹
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).

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

Daryl Reed Daryl Reed DEQ 9/15/11

Sign Name Print Name/ Affiliation Date
State Representative (DEQ/FWP)

[Signature] Gerlo Gouvenur Parris 15/09/2011

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.

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. Multiple Partial Assessments that meet the conditions of a Complete Assessment may together constitute a Complete Sign-Off Assessment.