

ExxonMobil Pipeline Company

**SCAT Area Transition Report for
C16**

Silvertip Pipeline Incident
Laurel, Montana

October 21, 2011



SCAT Area Transition Report for C16

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

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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	3
1.10 SCAT Area Conclusions	3
2. Transition Sign-Off Form	4
Tables	
Table 1 Environmental Sampling Summary	2
Figures	
Figure 1 Aerial Map with Parcel Boundaries	
Figure 2 Wildlife Resources	
Figure 3 Sample Location Map	
Figure 4 Maximum SCAT Observations	
Appendices	
A Sample Detections 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 C16, 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 C16. 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 C16, 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 C16 is 60.8. There were access issues for the left bank.

1.2 Cultural, Historic, and Natural Resource Constraints

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

Figure 2 summarizes the natural resources identified in this segment. International Bird Rescue and Resource Advisors from U.S. Fish and Wildlife Service conducted limited inspections of Area C16 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 C16.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area C16. 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 C16 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	BIMT0725SO202	7/25/2011	Soil_Surface	BIMT_404_SO202	45.870880	-108.370910
CTEH	BIMT0725SO204	7/25/2011	Soil_Surface	BIMT_404_SO204	45.870870	-108.370940
CTEH	BIMT0725SO206	7/25/2011	Soil_Surface	BIMT_404_SO206	45.870880	-108.370930
CTEH	BIMT0725SO207	7/25/2011	Soil_Surface	BIMT_404_SO207	45.870890	-108.370930
MDEQ	ST-072511-BS1	7/25/2011	Soil_Surface	ST-BS-01	45.870880	-108.370900
MDEQ	ST-072511-BS3	7/25/2011	Soil_Surface	ST-BS-02	45.870920	-108.370930

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 detections and therefore 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 C16 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C16.

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

1.6 Oil Removal Activities

Oil removal activities were conducted within Area C16 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

A final SCAT survey was not conducted for this area.

1.10 SCAT Area Conclusions

Based on the initial SCAT surveys performed within Area C16, only very light oiling was observed on a portion of the left bank and island, while no oiling was observed in the remainder of Area C16. The very light oiling zones will be addressed through natural attenuation. Therefore, a PIST, POST, and final SCAT survey were not performed and a SCAT Segment Sign-Off Form is not necessary.



**SCAT Area Transition
Report for C16**

Silvertip Pipeline Incident
Laurel, Montana

2. Transition Sign-Off Form

SCAT Area Transition Report for C16

Prepared for:

Unified Command

Date

Unified Command – RP



**SCAT Area Transition
Report for C16**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for C16

Prepared for:

Unified Command

10/11/2011

Date

[Signature] *S. METTUS*

Unified Command – FOSC



**SCAT Area Transition
Report for C16**

Silvertip Pipeline Incident
Laurel, Montana

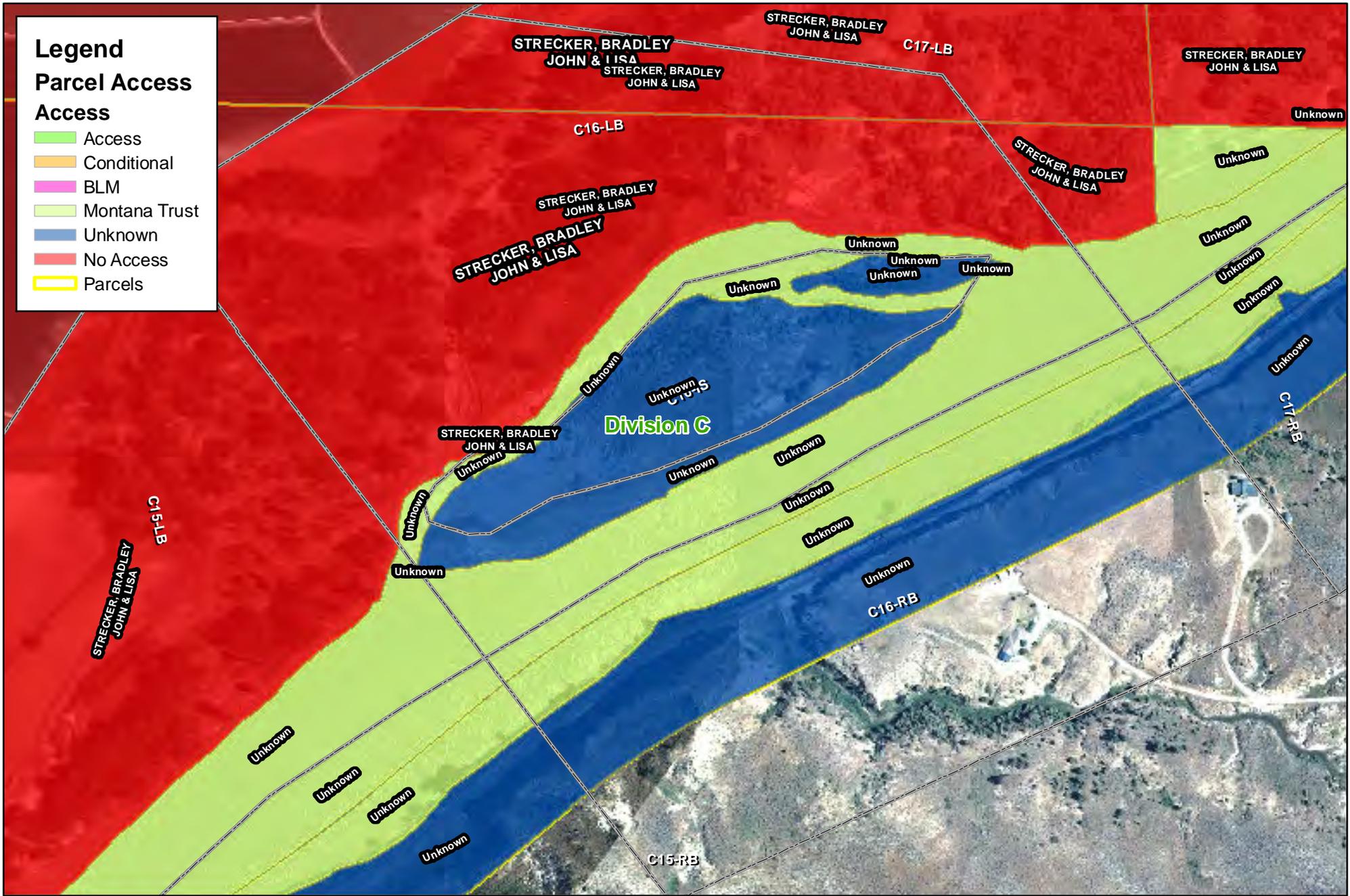
SCAT Area Transition Report for C16

Prepared for:

Unified Command

Date

Unified Command – MDEQ



Legend

Parcel Access

Access

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

Parcels

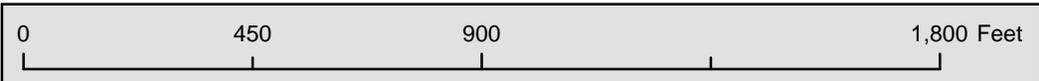


Figure 1

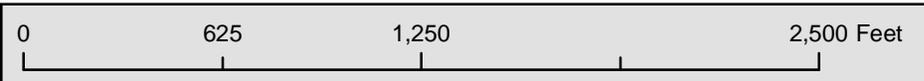
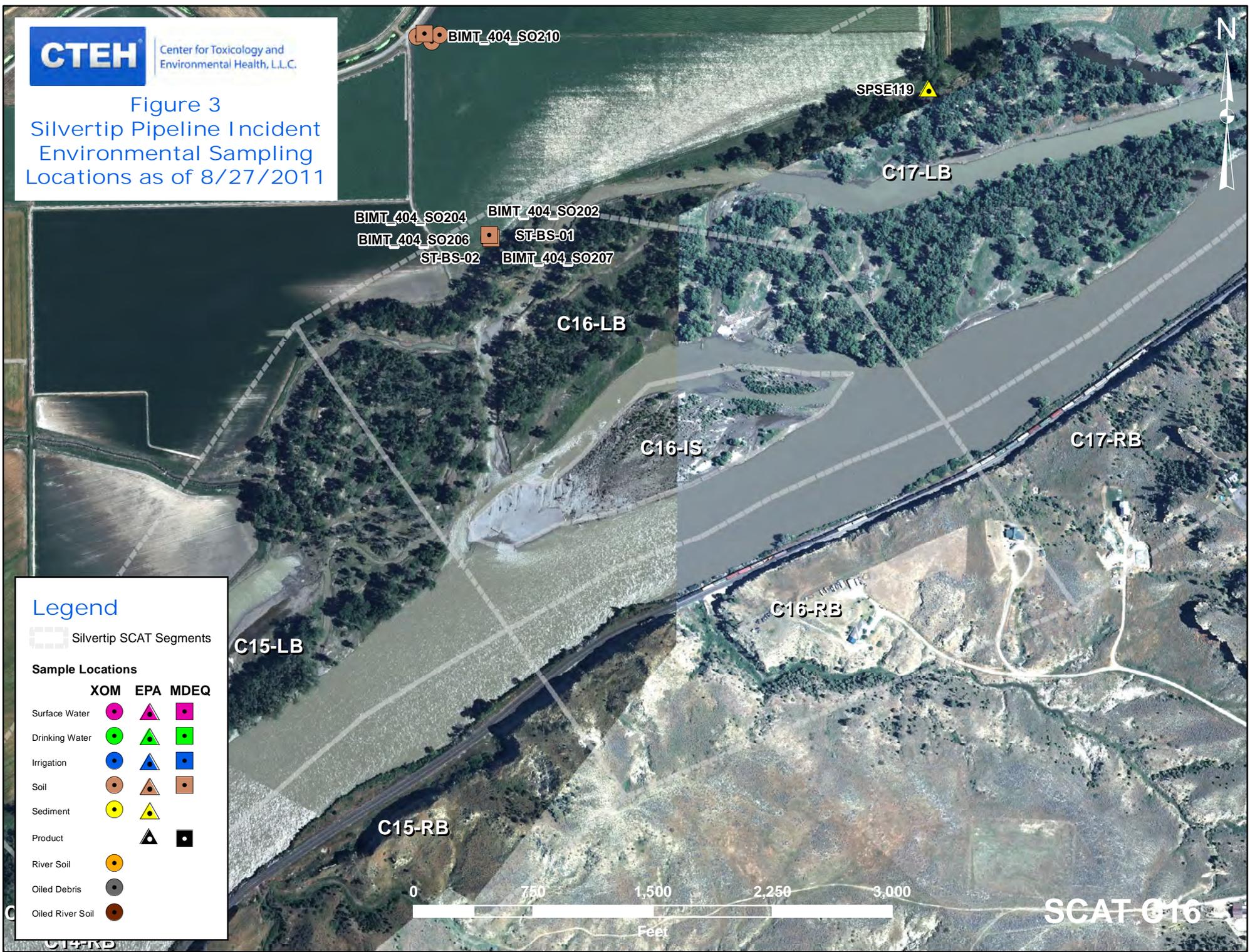


Figure 2
Wildlife Resources

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



Legend

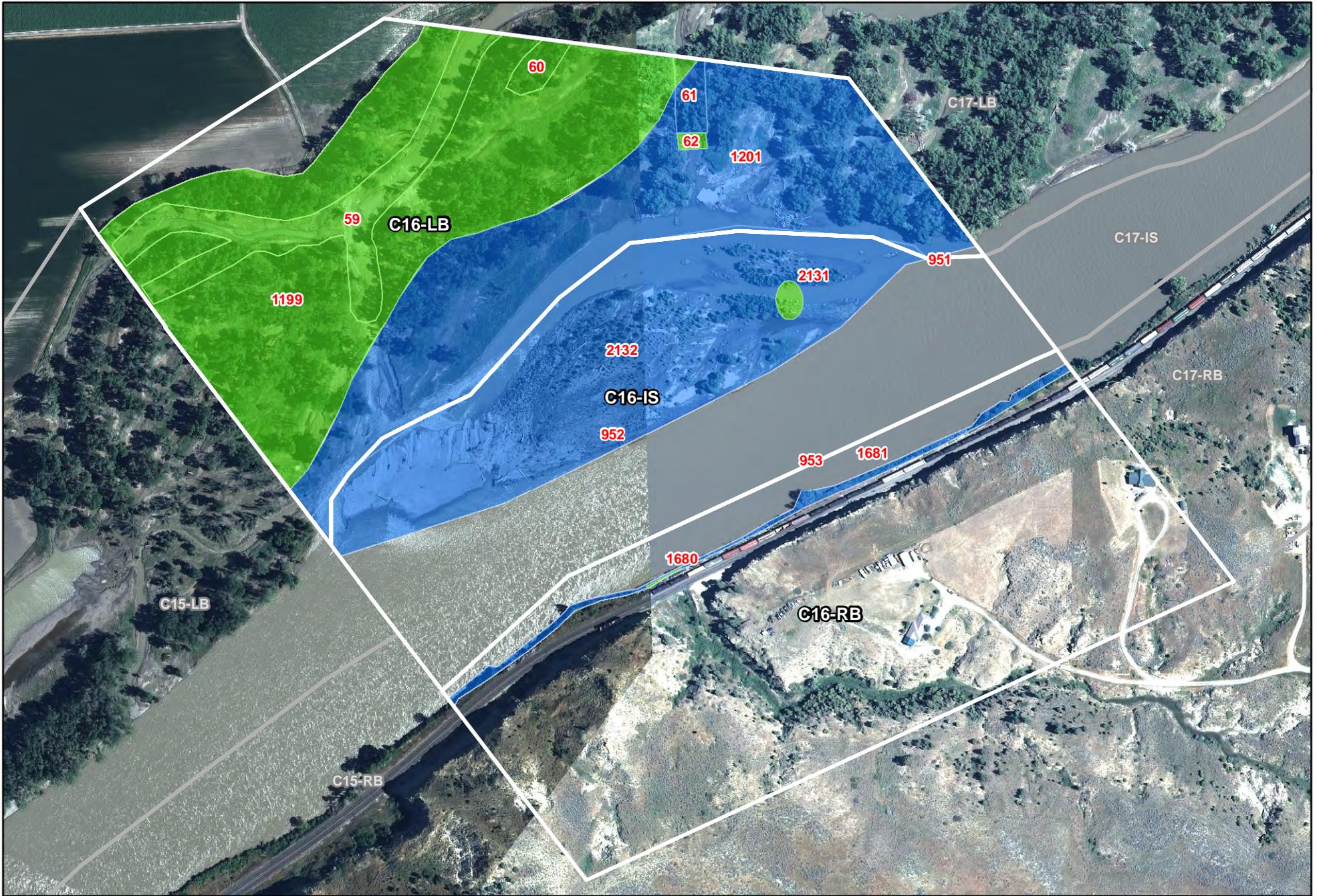
Silvertip SCAT Segments

Sample Locations

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



SCAT 016



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

Figure 4 - Maximum SCAT Observations For SCAT Area: C16



Appendix A

Sample Detections Summary



Appendix B

Initial SCAT Survey Forms and
Sketches

DB/G

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>C16</u>	Left Bank / <u>Right</u> Bank / Island	<u>27/07/11</u>	<u>1149</u> hrs to <u>1150</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				falling - 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 # <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 630 m Segment/Reach Length Surveyed 630 m

Start GPS: LATITUDE 45 deg. 52°06.60 min. LONGITUDE 108 deg. 21°48.52 min. Datum: WGS87

End GPS: LATITUDE 45 deg. 51°56.77 min. LONGITUDE 108 deg. 22°12.34 min.

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

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

Sediment Bank: Clay/Mud ___ Sand P Mixed ___ Pebble/Cobble S Boulder ___ Peat/Organic ___ Vegetated Bank: [X] Wooded Upland: [X]

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/veg

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 [X] / N point bar present [X] / 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 [X] / N Access: Direct from backshore [X] / N Alongshore from next segment [X] / N

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

Oiled trees/shrubs Y / N River Current strong [X] / 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

953

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>630</u>	<u>2</u>	<u>0</u>													<u>X</u>	<u>[Signature]</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	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 [X] / N

No O.I. Observed

Sketch [X] / No Photos Yes [No] Frames _____ Photographer _____



45°52'N 108°23'W 108°22.75'W 45°52.25'N 108°22.5'W 108°22.25'W 45°52'N



45° 51.786' N
108° 22.709' W

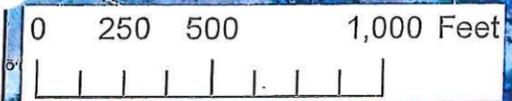
45° 52.033' N
108° 22.299' W

45° 52.163' N
108° 21.830' W

45° 51.716' N
108° 22.613' W

45° 51.943' N
108° 22.208' W

45° 52.095' N
108° 21.761' W



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: C16	Left Bank / <u>Right Bank</u> / Island	20/08/11	0915 hrs to 0935 hrs	low - <u>mean</u> - bankfull - overbank
Operations Division: C		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		falling - steady - rising
Survey by: Foot / <u>ATV</u> / Boat / Helicopter / Overlook /				Air Temp +/- 28 deg C

2 SURVEY TEAM #	Name	Organization	Signature
1	Ariel Blanc	Polaris	<i>Ariel Blanc</i>
	Joe Busalacchi	Corona Enbriv	<i>Joe Busalacchi</i>
	Jessica Ross	DEQ	<i>Jessica Ross</i>

3 SEGMENT Total Segment/Reach Length 650 m Segment/Reach Length Surveyed 650 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 P Shelf S Manmade: Solid P Permeable P (type) P Wetland: Swamp Bog/Fen Marsh

Sediment Bank: Clay/Mud S Sand Mixed Pebble/Cobble Boulder Peat/Organic S 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: Est Height 5 m canyon manmade meander S confined or leveed S Substrate Type: Mud

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 120m est. water depth: <1m 1-3m 3-10m >10m _____ m

shoal(s) present Y 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 Y Access: Direct from backshore Y Alongshore from next segment Y

Debris: Y/N oiled Y/N amount _____ bags or _____ trucks access restrictions railroad & shear bluff

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

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

1680
1681

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		P	S		30	.5	<1				P						P					med/veg
B		P	S		650	2	0															P Rip Rap

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

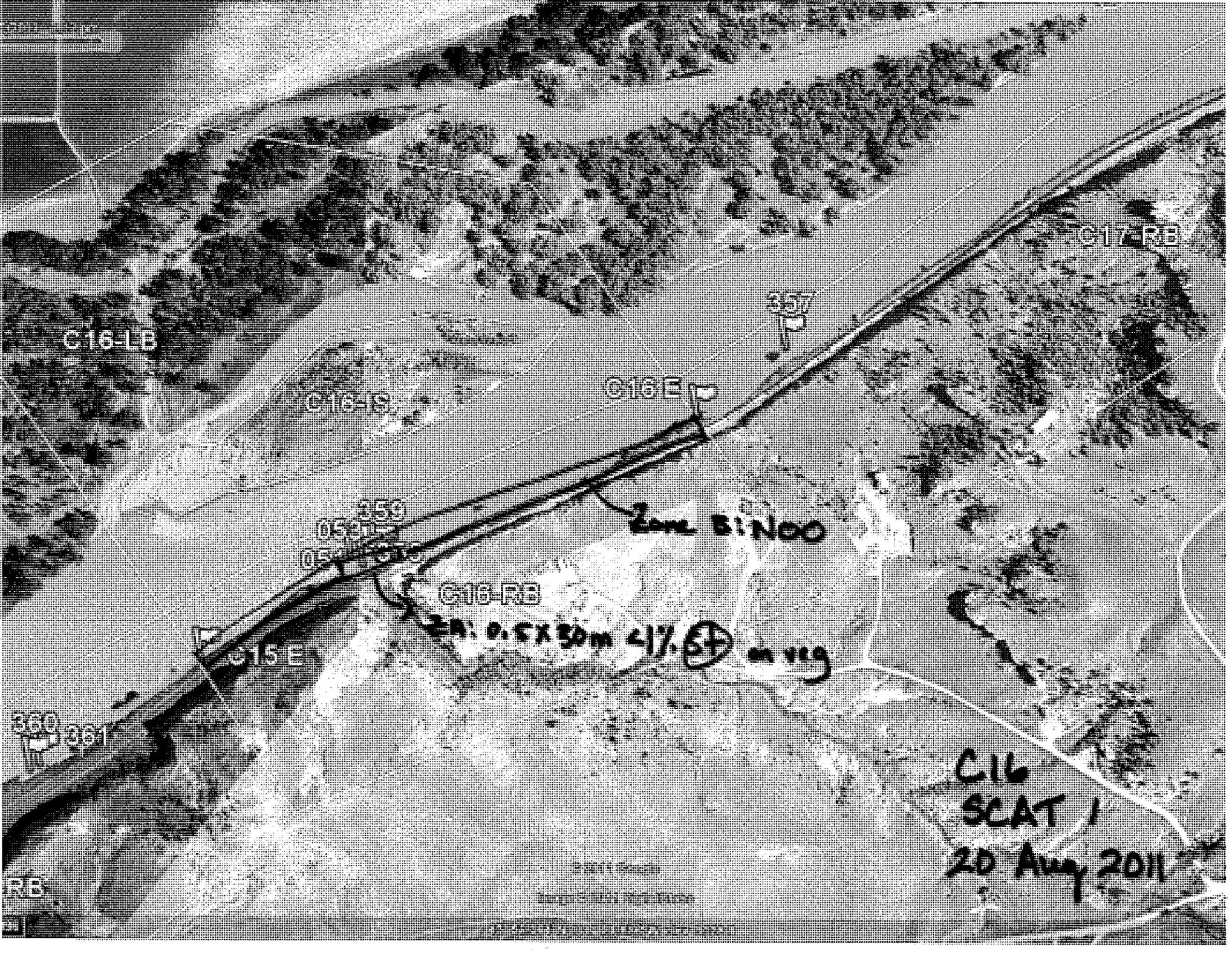
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A: trace distribution oil stained veg: NFT

Zone B: no oil observed: NFT

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



C16-LE

C16-RB

C16-S

C16-E

359
0520
0521

Zone B1000

C16-RB

2A. 0.5 X 30m 41% SP

C16-E

360
061

C16
SCAT 1
20 Aug 2011

RB

AGRICULTURAL RESEARCH

1000 1000 1000 1000 1000

DB/G/Sc

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 10-Jul-2011	Time (24h): std / daylight 1450 hrs to 1534 hrs	Water Level low - mean - bankfull - <u>overbank</u> falling - steady - rising
Segment/Reach ID: C16 <u>Left Bank</u> / Right Bank / Island		Operations Division: C		
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>29.4</u> deg C

2 SURVEY TEAM # 2 & 4		name	organization	contact phone number
Andrew Milanes			Polaris	
Tom Freeman			Polaris	
Andrew Johnson			USCG	
Travis Olson			USCG	

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 779 m

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

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

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

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

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

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

59
60
61
62

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	643	15														X	Grass, trees, debris
B			X	X	55	15														X	Grass, trees, debris
C			X	X	68	15														X	Grass, trees, debris
D				X	15	1	<1				X		X								Trees

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

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

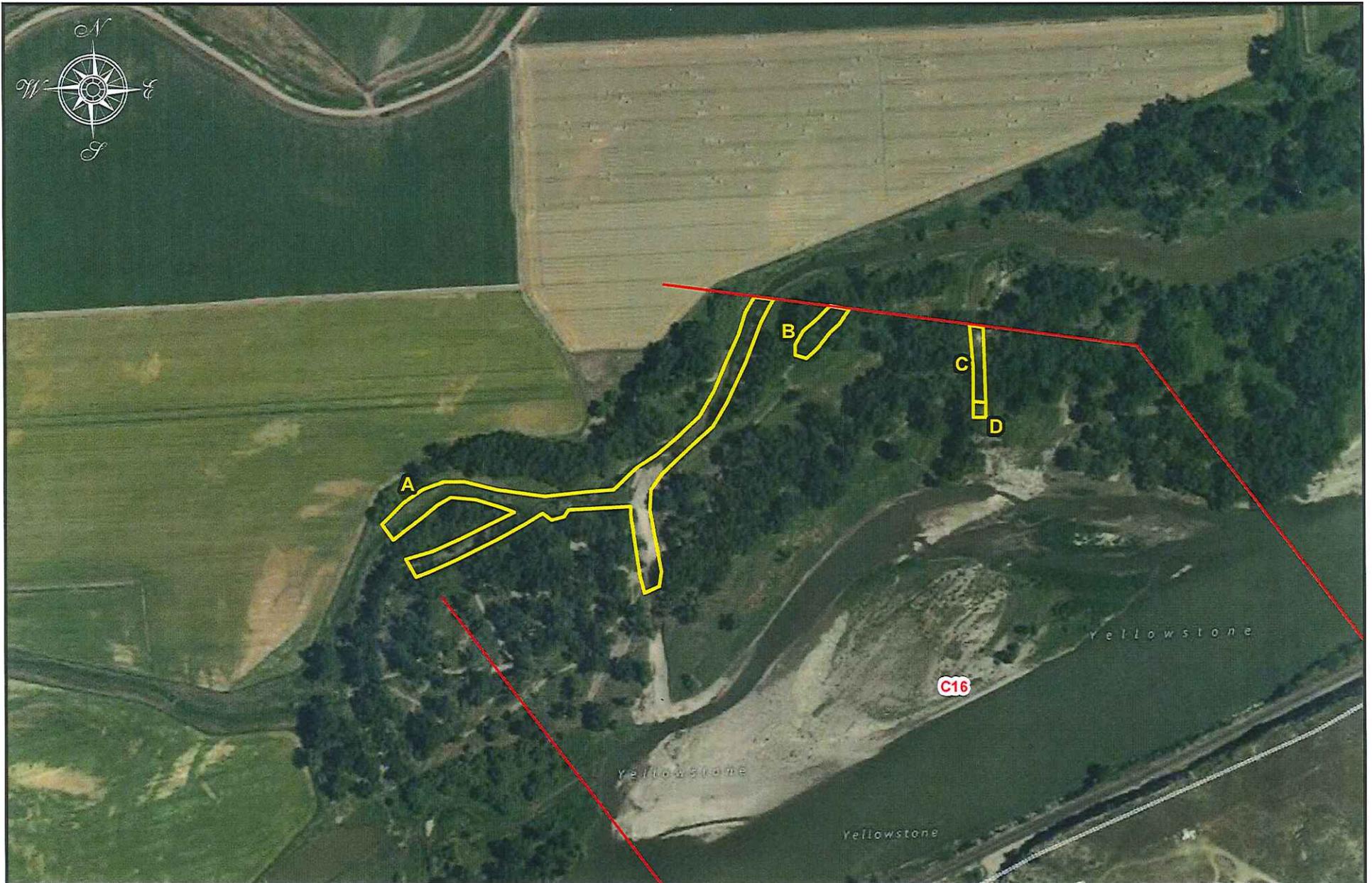
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Zone D Oiled Band Height: 5cm

Cleanup Recommendations: No Further Treatment

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

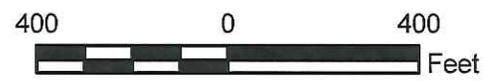
Sketch (Yes/No) Photos (Yes/No (Roll # _____ Frames _____)) Video Tape Yes/No (tape# _____)



SCAT Teams 2 & 4 Survey

Segment C16 Left Bank

10-Jul-2011



Legend

- Segment Boundaries
- ▭ C16 Oil Zones

DB/G

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>C16</u>	<input checked="" type="radio"/> Left Bank <input type="radio"/> Right Bank / Island	<u>27/07/11</u>	<u>9:26</u> hrs to <u>9:28</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 / ATV / Boat <input type="radio"/> Helicopter / Overlook / _____		<input checked="" type="radio"/> Sun <input type="radio"/> Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>30</u> deg C

2 SURVEY TEAM #	Name	Organization	Signature
	<u>Chuck Pons</u>	<u>Cardno ENTRIX</u>	<u>Clare em</u>
	<u>Joy Watson</u>	<u>MFWP</u>	
	<u>Ernie McKenzie</u>	<u>US BLM</u>	

3 SEGMENT Total Segment/Reach Length 630 m Segment/Reach Length Surveyed 670 m

Start GPS: LATITUDE 45 deg. 52'09.27 min. LONGITUDE 108 deg. 20'15.56 min. Datum: WGS 87

End GPS: LATITUDE 45 deg. 51'58.63 min. LONGITUDE 108 deg. 22'14.22 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: Sand

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m 100m 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 / oiled Y / N amount ___ bags or ___ trucks access restrictions

Oiled trees/shrubs Y / River Current strong / 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

951
952

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>600</u>	<u>20/2</u>	<u>60</u>				<u>S</u>	<u>P</u>		<u>X</u>								<u>Vg/Sand</u>
B					<u>360</u>	<u>2</u>	<u>0</u>													<u>X</u>		<u>Vg/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

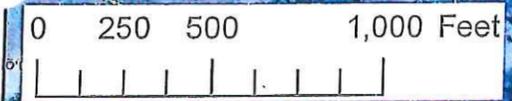
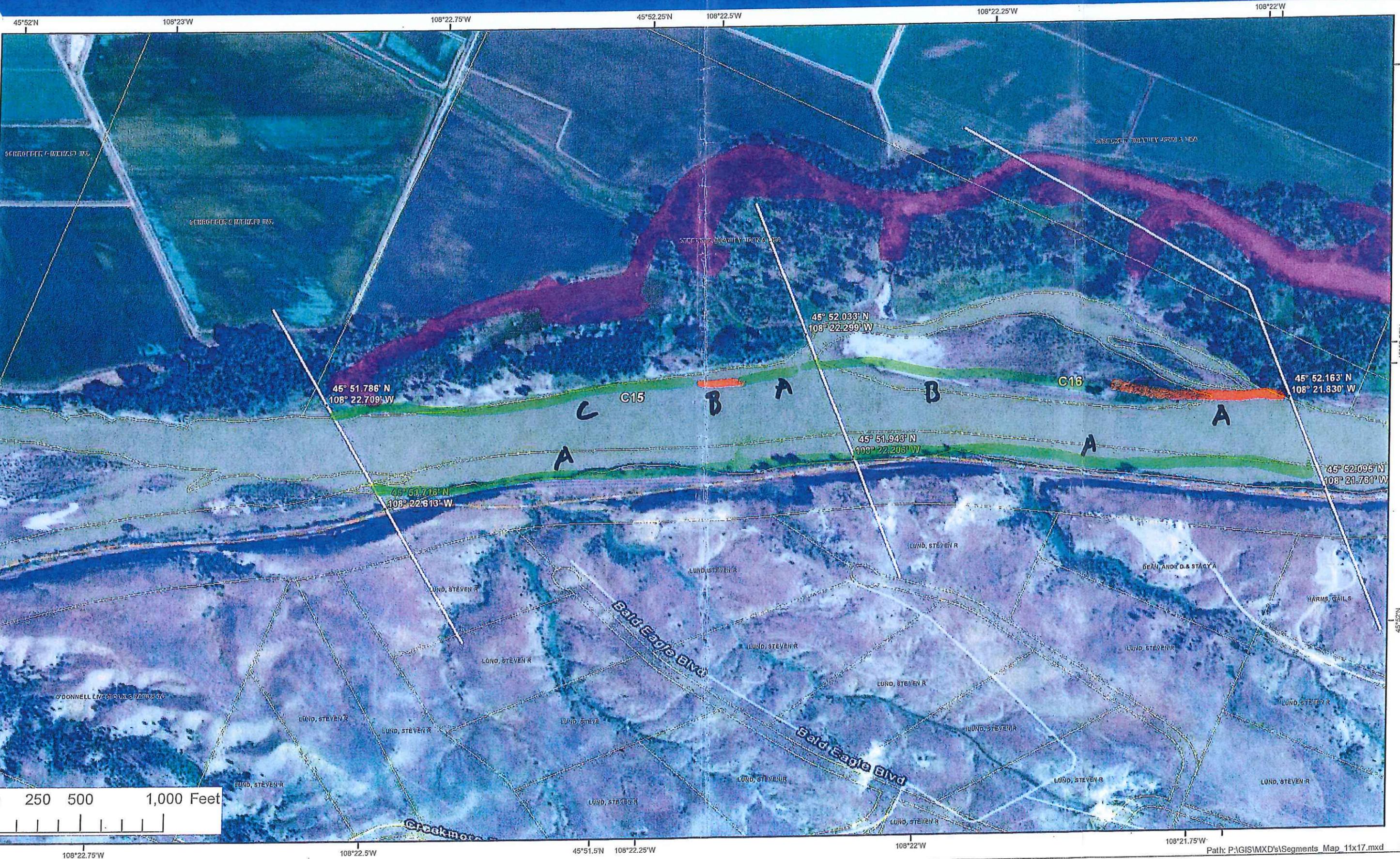
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A has strand and coastal veg (primarily s.s.s.r)
Veg needs to be cut either trimmed and removed



SILVERTIP PIPELINE INCIDENT Yellowstone River Map 32



DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 04/08/11	Time (24h): std / daylight 1015 hrs to 1130 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: C16 <u>Left Bank</u> / Right Bank / Island		Operations Division:		
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- 2.5 - 3.5 deg C

2 SURVEY TEAM # 5		Name	Organization	Signature
		Josh Hofkes	Cardno ENTRIX	
		Ron Lynn	USCG	
		Mike Ruggles	FWP	
		John Brown	DEQ	

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 636 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 S Mixed S Pebble/Cobble S Boulder _____ Peat/Organic P 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 S confined or leveed _____ Substrate Type: organic

Sloped: >5° (15°) (30°) straight _____ braided _____ oxbow S flood plain valley P 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 NA bags or NA 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

1199
1201

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	%																	
<u>A</u>				X	<u>468</u>	<u>130</u>	<1			S	P	S	S											vegetative
B				X	3	3	<1			S	P													Vegetative/cobble
<u>C</u>				X	<u>638</u>	<u>270</u>																	X	mix

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	TR					NO
					cm	cm-cm											

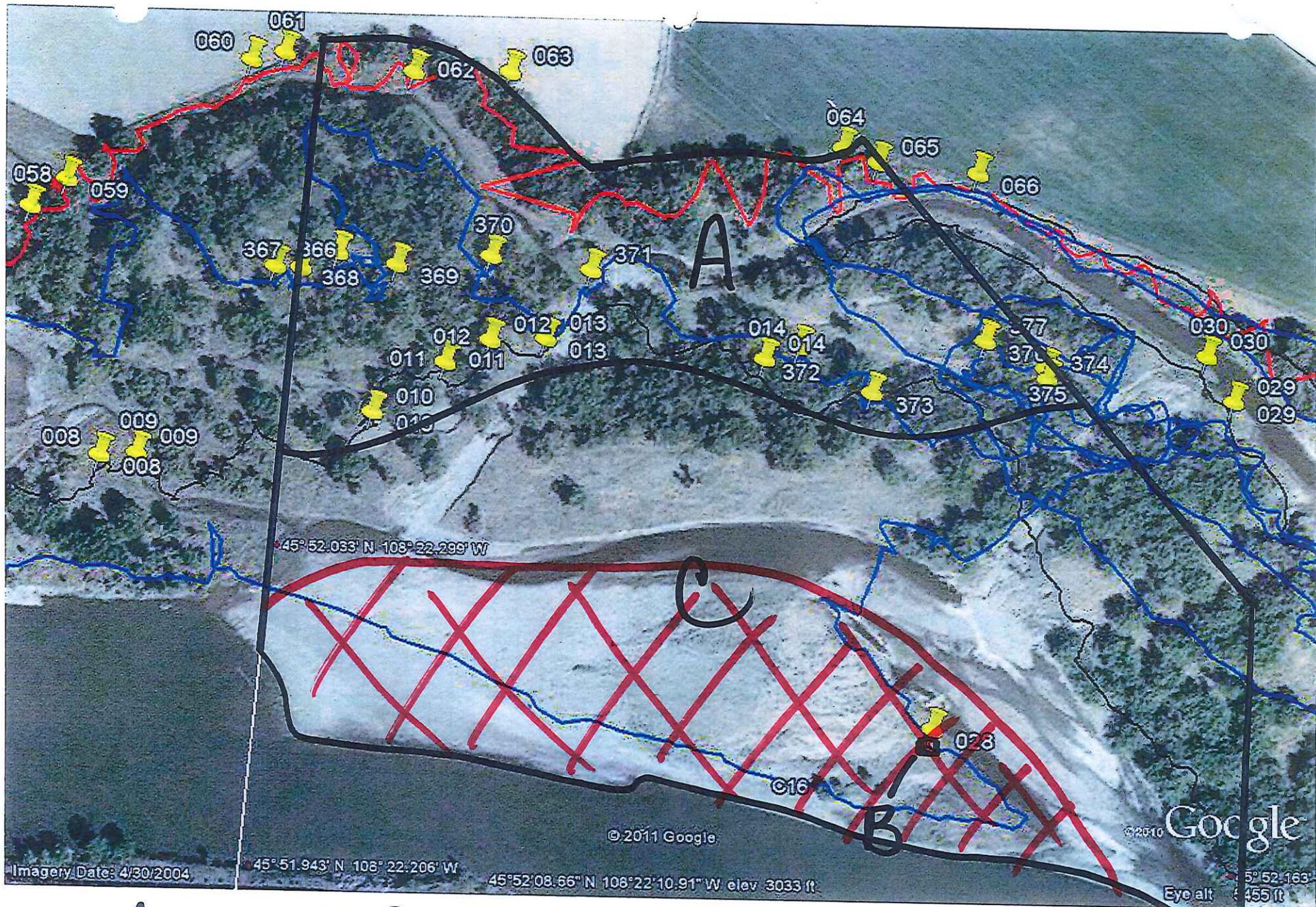
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A: Isolated and contiguous trace (<1%) oiling coat and stain on vegetation and small vegetative debris. Silver oil sheen within isolated slack waters/ox bows within floodplain. No further treatment (NFT) recommended.

~~Zone B: Isolated trace (<1%) oiling coat and stain on vegetation and small vegetative debris. No further treatment (NFT) recommended.~~

Zone C: No oiling observed. No further treatment (NFT) recommended.



August 4, 2011
 TEAM 5

C16LB
 Zones A, B - C

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION				Date (dd/mm/yy) 04/08/11	Time (24h): std / daylight 1015 hrs to 1130 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising															
Segment/Reach ID: C16 <u>Left Bank</u> / Right Bank / Island				Operations Division:		Air Temp +/- 2 5 - 3 5 deg C															
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /				Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- 2 5 - 3 5 deg C															
2 SURVEY TEAM # 5				Name	Organization	Signature															
Josh Hofkes					Cardno ENTRIX																
Ron Lynn					USCG																
Mike Ruggles					FWP																
John Brown					DEQ																
3 SEGMENT				Total Segment/Reach Length _____ m	Segment/Reach Length Surveyed <u>636</u> 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 <u>S</u> Sand <u>S</u> Mixed <u>S</u> Pebble/Cobble <u>S</u> Boulder _____ Peat/Organic <u>P</u>					Vegetated Bank: <input checked="" type="checkbox"/>		Wooded Upland: <input checked="" type="checkbox"/>														
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 <u>S</u> confined or leveed _____		Substrate Type: <u>organic</u>																	
Sloped: _____ (>5°)(15°)(30°)		straight _____ braided _____ oxbow <u>S</u> flood plain valley <u>P</u>		Forested / Vegetated / Bare																	
4C RIVER CHANNEL CHARACTER circle or select as appropriate																					
est. width: <1m 1-10 m 10-100 m <u>>100m</u>				est. water depth: <1 m <u>1-3 m</u> 3-10 m >10 m _____ m																	
shoal(s) present <u>Y/N</u> point bar present <u>Y/N</u>				bar-shoal substrate: <u>silt / sand / gravel / cobble</u> / boulder / bedrock / debris																	
seasonal water level: low / mean / <u>bank full</u> / overbank flow				est. change over next 7 days: <u>falling</u> — same — rising																	
5 OPERATIONAL FEATURES				Suitable backshore staging <u>Y/N</u>		Access: Direct from backshore <u>Y/N</u> Alongshore from next segment <u>Y/N</u>															
Debris: <u>Y/N</u> oiled <u>Y/N</u> amount <u>NA</u> bags or <u>NA</u> trucks				access restrictions		Other Features:															
Oiled trees/shrubs <u>Y/N</u>				River Current strong <u>Y/N</u>																	
6 SURFACE OILING CONDITIONS begin with "A" in the lowest tidal zone - circle the zone/s that correspond to primary shoreline type																					
OIL ZONE	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				X	468	130	<1			S	P	S	S				P				vegetative
B				X	3	3	<1			S	P						P				Vegetative/cobble
C				X	638	270														X	mix
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)						
																cm	cm-cm	SAP	OP	PP	OR
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations																					
Overbank Survey Required <u>Y/N</u> Overbank Survey Completed <u>Y/N</u> Shoreline Survey Completed <u>Y/N</u>																					
Zone A: Isolated and contiguous trace (<1%) oiling coat and stain on vegetation and small vegetative debris. Silver oil sheen within isolated slack waters/ox bows within floodplain. No further treatment (NFT) recommended.																					
Zone B: Isolated trace (<1%) oiling coat and stain on vegetation and small vegetative debris. No further treatment (NFT) recommended.																					
Zone C: No oiling observed. No further treatment (NFT) recommended.																					
Sketch Yes / No Photos Yes / No Frames/Photographer: _____																					

ORIGINAL

1199
1200
1201

DB/G

1 GENERAL INFORMATION		Date (dd/mm/yy) 04/08/11	Time (24h): std / daylight 1015 hrs to 1130 hrs	Water Level low - mean - bankfull - overbank falling - steady - rising
Segment/Reach ID: C16 <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 +/- 2.5 - 3.5 deg C	

2 SURVEY TEAM # 5	Name	Organization	Signature
Josh Hofkes		Cardno ENTRIX	
Ron Lynn		USCG	
Mike Ruggles		FWP	
John Brown		DEQ	

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 636 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 S Mixed S Pebble/Cobble S Boulder _____ Peat/Organic P 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 S confined or leveed _____ Substrate Type: organic

Sloped: (>5°)(15°)(30°) straight _____ braided _____ oxbow S flood plain valley P 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 NA bags or NA 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	468	130	<1			S	P	S	S				P				vegetative
2131 B				X	3	3	<1			S	P						P				Vegetative/cobble
2132 C				X	638	270														X	mix

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: Isolated and contiguous trace (<1%) oiling coat and stain on vegetation and small vegetative debris. Silver oil sheen within isolated slack waters/ox bows within floodplain. No further treatment (NFT) recommended.~~

Zone B: Isolated trace (<1%) oiling coat and stain on vegetation and small vegetative debris. No further treatment (NFT) recommended.

Zone C: No oiling observed. No further treatment (NFT) recommended.



August 4, 2011
 TEAM 5

C16LB
 Zones A.B-C



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

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



Appendix F

Completed SCAT Segment Sign-Off
Forms

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