

**ExxonMobil Pipeline Company**

**SCAT Area Transition Report for  
C22**

Silvertip Pipeline Incident  
Laurel, Montana

October 21, 2011



## **SCAT Area Transition Report for C22**

Silvertip Pipeline Incident  
Laurel, Montana

Prepared for:  
ExxonMobil Pipeline Company

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Our Ref.:  
B0085883.1103

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.*

<b>1. Executive Summary of Oil Removal Activities</b>	<b>1</b>
1.1 Land Ownership and Access Issues	1
1.2 Cultural, Historic, and Natural Resource Constraints	1
1.3 Summary of Environmental Sampling	1
1.4 Summary of Initial SCAT Surveys	2
1.5 Applicable Compiled Treatment Recommendations	2
1.6 Oil Removal Activities	2
1.7 Pre-Inspection Survey Transmittal	2
1.8 Post-Inspection Survey Transmittal	2
1.9 Summary of Final SCAT Surveys	3
1.10 SCAT Area Conclusions	3
<b>2. Transition Sign-Off Form</b>	<b>4</b>
<b>Tables</b>	
Table 1 Environmental Sampling Summary	2
<b>Figures</b>	
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	
<b>Appendices</b>	
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 C22, 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 C22. 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 C22, 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 C22 is 103.3. There were access issues for a portion of the left bank.

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

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

Figure 2 summarizes the natural resources identified in this segment. International Bird Rescue and Resource Advisors from U.S. Fish and Wildlife Service conducted limited inspections of Area C22 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 C22.

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

Table 1 (below) summarizes samples collected within Area C22. 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 C22 are provided on Figure 3.

**Table 1 Environmental Sampling Summary**

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	HUMT0812DW208	8/12/2011	Water_Drinking	HUMT_514_DW208	45.893090	-108.313320

Appendix A contains a summary of sample results with detections for this sample set; there were no detections for this area 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 C22 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C22.

#### 1.5 Applicable Compiled Treatment Recommendations

The SCAT team developed compiled treatment recommendations (CTRs) providing approved treatment methods (ATMs) for each oiling zone identified during the initial SCAT surveys ([CTR No. 60](#) and [CTR No. 61](#)).

#### 1.6 Oil Removal Activities

Oil removal activities were conducted within Area C22 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 C22 following completion of oil removal activities. The SCAT team performed final surveys of the left bank within SCAT Area C22 to confirm the agreed-upon cleanup endpoints identified in the applicable CTRs had been achieved. The final SCAT survey documentation is presented in Appendix E.

### **1.10 SCAT Area Conclusions**

Based on the initial SCAT surveys performed on the right bank and island within Area C22, only very light oiling was observed. The very light oiling zones will be addressed through natural attenuation. Based on the final SCAT surveys performed on the left bank within Area C22, no further treatment is recommended for this segment. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition  
Report for C22**

Silvertip Pipeline Incident  
Laurel, Montana

**2. Transition Sign-Off Form**

**SCAT Area Transition Report for C22**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – RP



**SCAT Area Transition  
Report for C22**

Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for C22**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – FOSC



**SCAT Area Transition  
Report for C22**

Silvertip Pipeline Incident  
Laurel, Montana

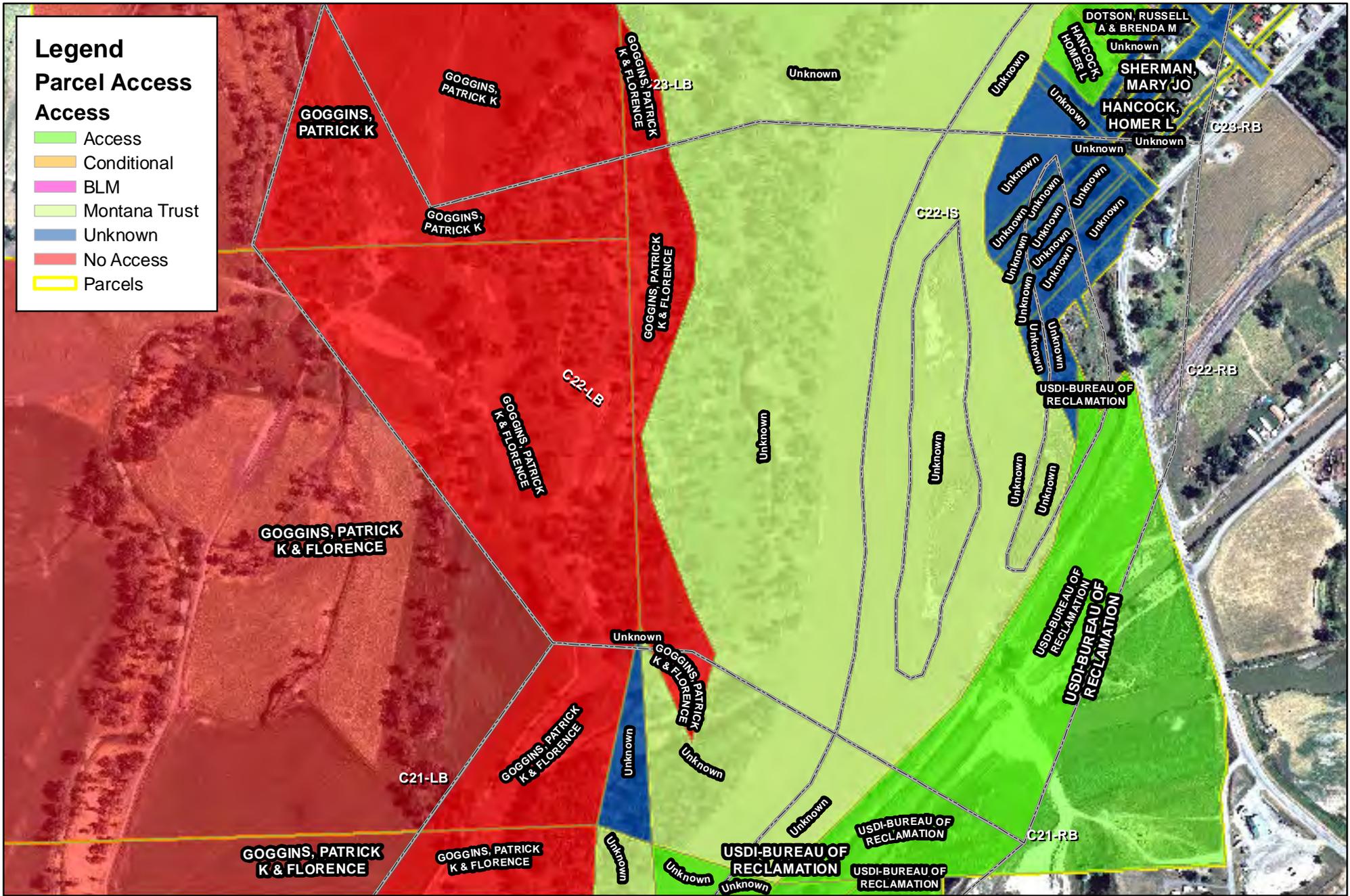
**SCAT Area Transition Report for C22**

**Prepared for:**

**Unified Command**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Unified Command – MDEQ



**Legend**

**Parcel Access**

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

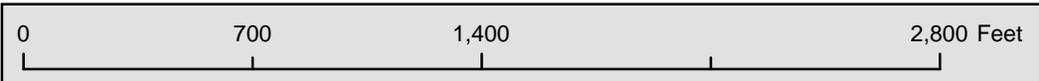
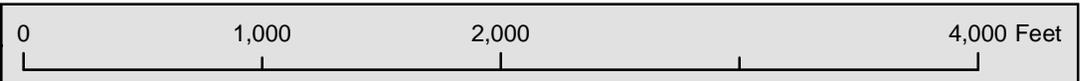


Figure 1



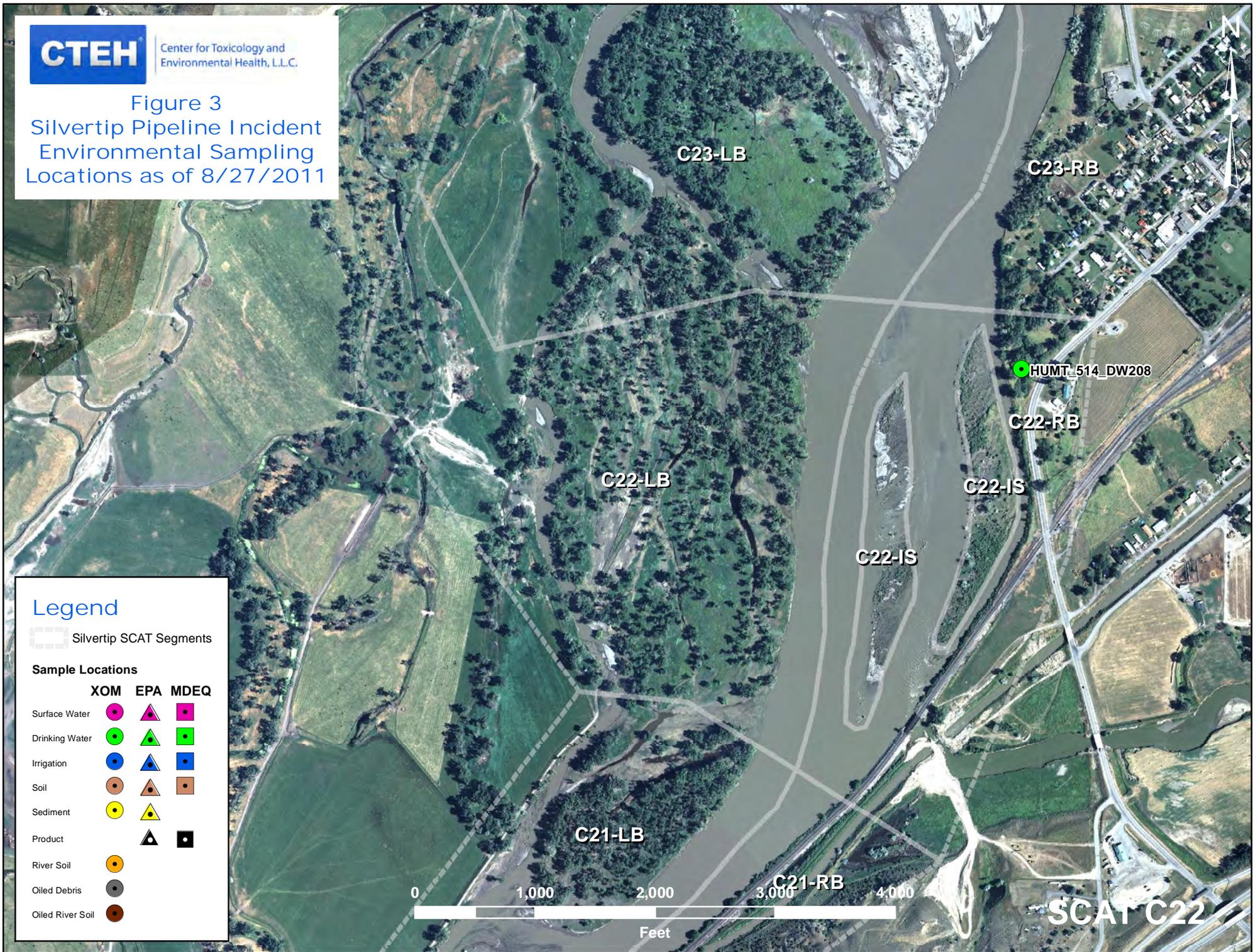
- LEGEND**
- Wildlife**
- Amphibian Deceased (Collected)
  - Amphibian Live (Collected)
  - Amphibian Live (Uncollected)
  - Bird Deceased (Collected)
  - Bird Live (Collected)
  - Bird Live (Uncollected)
  - Fish Deceased (Collected)
  - Fish Deceased (Uncollected)
  - Mammal Deceased (Collected)
  - Mammal Deceased (Uncollected)
  - Mammal Live (Uncollected)
  - Reptile Deceased (Collected)
  - Reptile Live (Collected)
  - Reptile Live (Uncollected)
  - Crawfish Deceased (Collected)
- Wildlife - Oiling Status**
- Oiled
  - No-visible Oiling
- Bird Nest Sites**
- Bald Eagle Nest
  - Bald Eagle Nest 1/8mi Buffer
  - Heron Rookery
  - Heron Rookery 1/8mi Buffer
  - Osprey Nest
  - Misc. Bird Nest
- Wildlife Priority Sites**
- Wildlife Cleanup Priority Area

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**

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



**Legend**

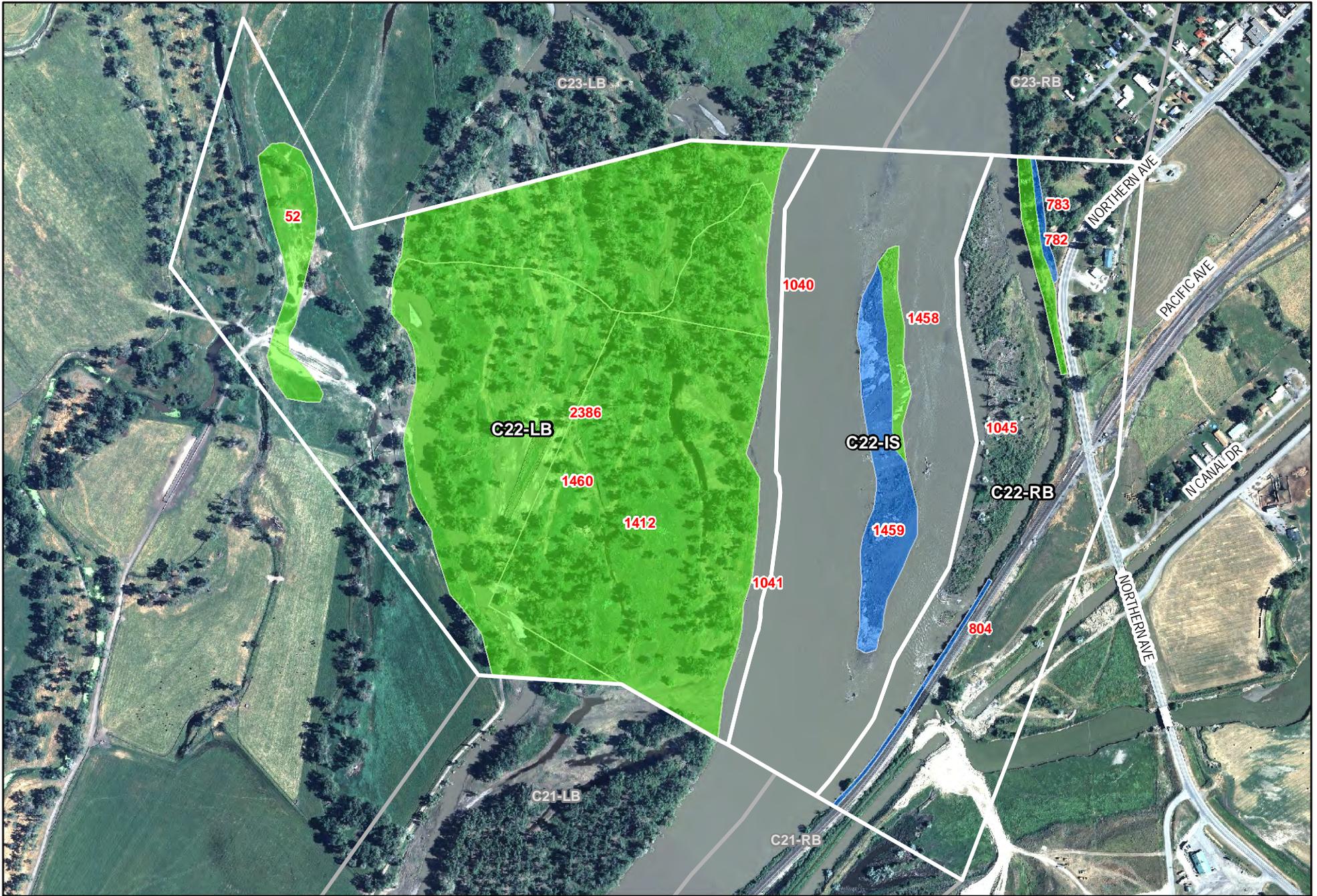
Silvertip SCAT Segments

**Sample Locations**

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



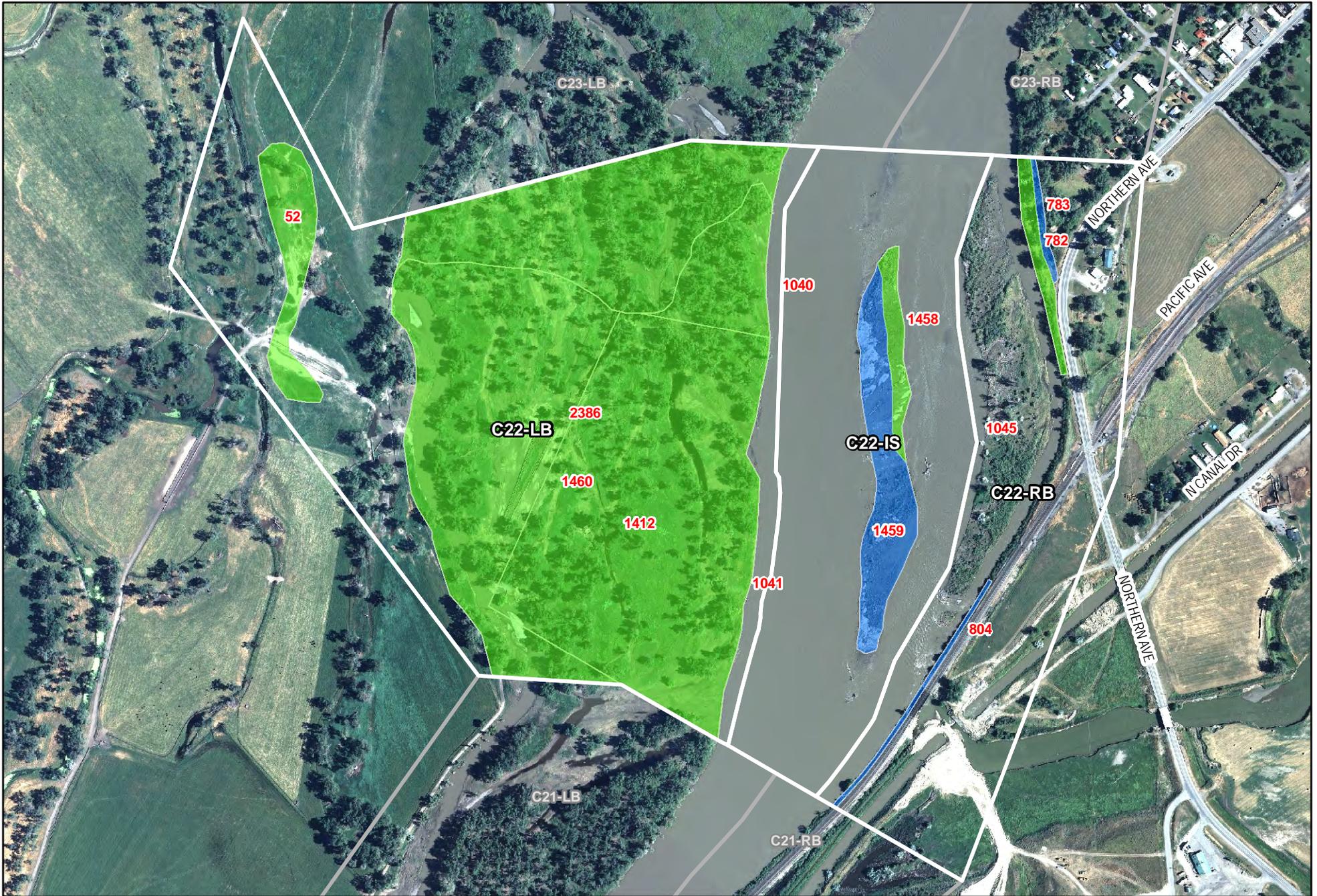
SCAT C22



 <p><b>9999</b> Oiling Zone ID  <b>Red</b> Heavy Oiling  <b>Yellow</b> Moderate Oiling</p>	<p><b>Light</b> Oiling  <b>Green</b> Very Light Oiling  <b>Blue</b> No Oil Observed</p>	<p><b>Figure 4 - Maximum SCAT Observations</b>  <b>For SCAT Area:</b></p>	
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440 0 440 880 Feet



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





## **Appendix A**

Sample Detection Summary



Sample Results For  
SCAT Area C22

Printed 10/7/2011

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
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No Detections Reported



## **Appendix B**

Initial SCAT Survey Forms and  
Sketches

DB/6/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) <u>26/07/11</u>	Time (24h): std / daylight <u>13:00</u> hrs to <u>15:30</u> hrs	<b>Water Level</b> low - mean - bankfull - overbank falling - steady - rising <u>mean</u>
Segment/Reach ID: <u>C22</u> Left Bank / Right Bank / Island		Operations Division: <u>SAT</u>		
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm		
Air Temp + / - <u>21</u> deg C				

<b>2 SURVEY TEAM #</b> <u>4</u>	Name	Organization	Signature
	<u>John Malouisek</u>	<u>Canada ENRITX</u>	<u>[Signature]</u>
	<u>Ken Frazier</u>	<u>MT FWP</u>	<u>[Signature]</u>
	<u>Janice Wirtel</u>	<u>US EPA</u>	<u>[Signature]</u>

**3 SEGMENT** Total Segment/Reach Length 900 m Segment/Reach Length Surveyed 318 m

Start GPS: LATITUDE 45° deg. 53.472 min. LONGITUDE 108 deg. 18.785 min. Datum: WGS 84

End GPS: LATITUDE 45° deg. 53.644 min. LONGITUDE 108 deg. 18.841 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 P Sand S Mixed \_\_\_ Pebble/Cobble \_\_\_ Boulder \_\_\_ Peat/Organic \_\_\_ Vegetated Bank: P Wooded Upland: S

Sediment Flat: Clay/Mud P 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 P confined or leveed \_\_\_ Substrate Type: \_\_\_

Sloped: (>5°)(15°)(30°) straight \_\_\_ braided S 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: silty sand / gravel / cobble / boulder / bedrock / debris

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

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

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

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

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER					SUBST. TYPE(S)			
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO
<u>A</u>			<u>S</u>	<u>P</u>	<u>318</u>	<u>100</u>	<u>1</u>			<u>S</u>	<u>P</u>						<u>P</u>				<u>veg</u>
<u>B</u>				<u>P</u>	<u>316</u>	<u>10</u>	<u>0</u>													<u>NOV</u>	<u>veg</u>

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

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

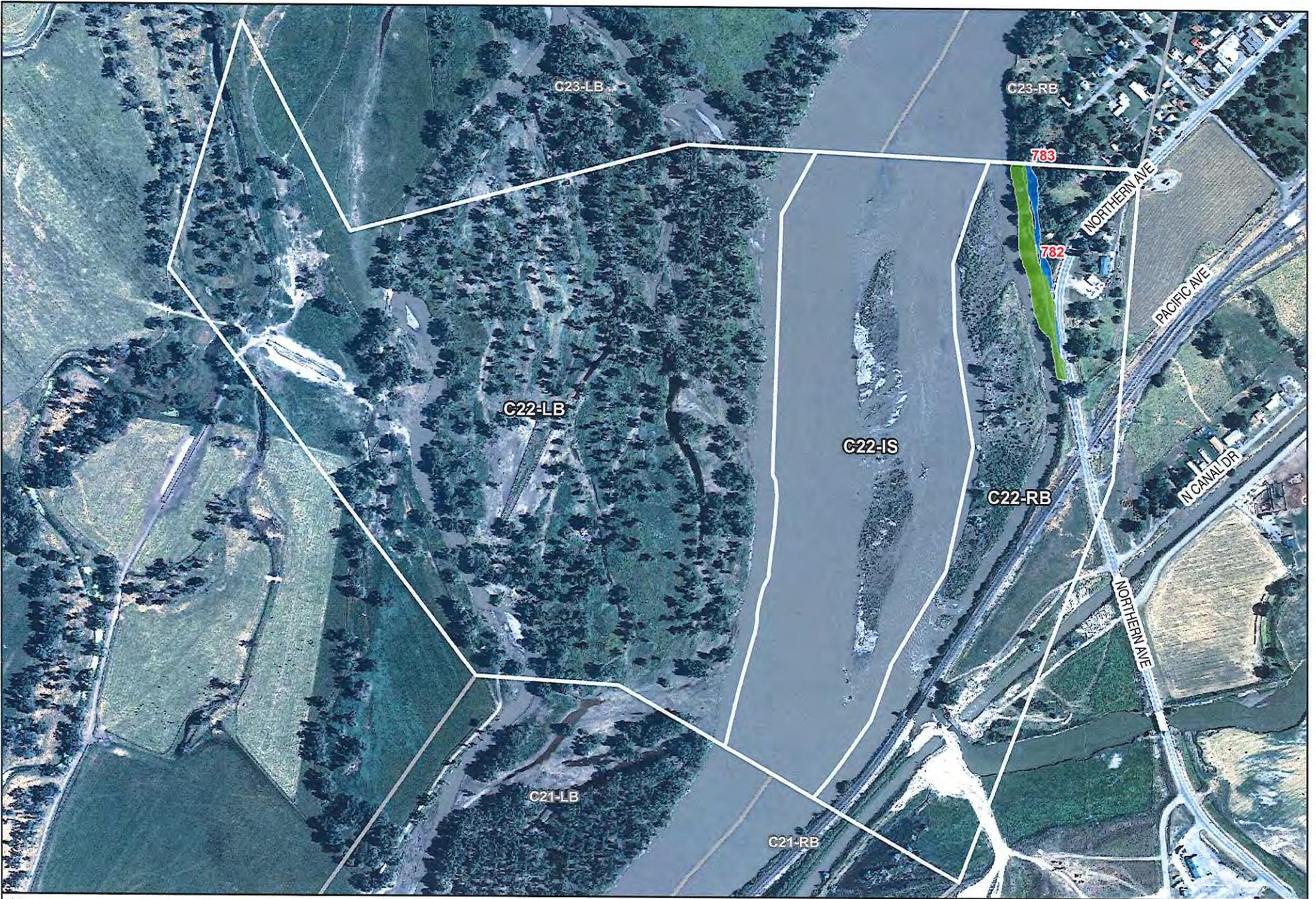
**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A - Recommend no action (natural attenuation)

Zone B - No oil

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



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

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



D/B/G

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C22</u>	Left Bank / <u>Right Bank</u> / Island	<u>27/07/11</u>	<u>1141</u> hrs to <u>1142</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

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

**3 SEGMENT** Total Segment/Reach Length 865 m Segment/Reach Length Surveyed 865 m

Start GPS: LATITUDE 45 deg. 54'14.70 min. LONGITUDE 108 deg. 19'03.76 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 53'10.69 min. LONGITUDE 108 deg. 19'03.47 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: \_\_\_

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

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>1095</u> A			<u>X</u>	<u>V</u>	<u>865</u>	<u>2</u>	<u>0</u>														<u>X</u>	<u>S&amp;V</u>		

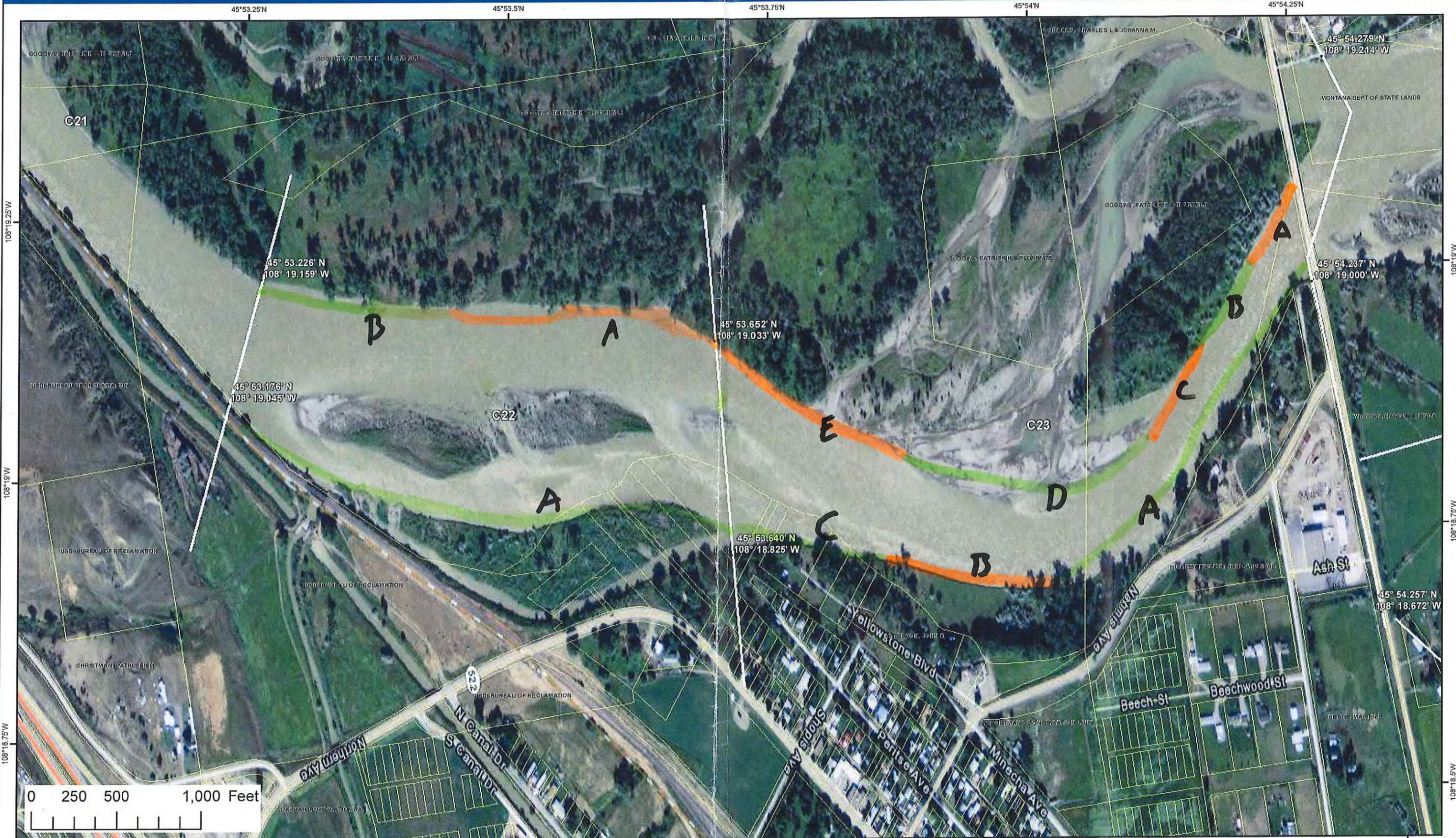
**7 SUBSURFACE OILING CONDITIONS** use letter for ZONE location plus Number of pit or trench - e.g., "A1"

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 [X] / N Overbank Survey Completed Y / [N] Shoreline Survey Completed [X] / N

No oil observed



DB 16/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C22</u>	Left Bank / Right Bank / Island	<u>27/07/11</u>	<u>0900</u> hrs to <u>1230</u> hrs	low - 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>29</u> deg C

<b>2 SURVEY TEAM #</b> <u>4</u>	Name	Organization	Signature
	<u>Joe Boyle</u>	<u>Cardno ENTRIX</u>	<u>[Signature]</u>
	<u>Lois Williams</u>	<u>Cardno ENTRIX</u>	<u>[Signature]</u>
	<u>EARL RADONSKI</u>	<u>US MT FWP</u>	<u>[Signature]</u>
	<u>John Beach</u>	<u>US EPA</u>	<u>[Signature]</u>

**3 SEGMENT** Total Segment/Reach Length 615 m Segment/Reach Length Surveyed 370 m

Start GPS: LATITUDE 45.58623 deg. min. LONGITUDE 108.31721 deg. min. Datum: WGS84

End GPS: LATITUDE 45.58880 deg. min. LONGITUDE 108.31449 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: \_\_\_ Wooded Upland: \_\_\_

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

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

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

Sloped: \_\_\_ (>5°)(15°)(30°) straight \_\_\_ braided \_\_\_ 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 170 est. water depth: <1m 1-3m 3-10m >10m \_\_\_ m

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

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

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

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

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

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER					SUBST. TYPE(S)				
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO	
A			S	P	370	5	0															ob/gaw

**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

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

ZONE A: no oil observed

recommendations: resat lowerbank by boat at low speed, Idle

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



45°53.25'N

45°53.5'N

45°53.75'N

45°54'N

DB10/50

**1 GENERAL INFORMATION** Date (dd/mm/yy) 9 Jul 11 Time (24h): std / daylight 1445 hrs to 1445 hrs Water Level overbank  
 Segment/Reach ID: 222 Left Bank / Right Bank / Island Left Bank falling - mean - bankfull overbank  
 Operations Division: C Air Temp +/- deg C \_\_\_\_\_  
 Survey by: Foot / ATV / Boat / Helicopter / Overlook / APS Sun / Clouds / Fog / Rain / Snow / Windy / Calm  
**2 SURVEY TEAM #** name organization contact phone number  
Andy Craham Polaris 206 419 1745

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 450 m  
 Start GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. Datum: \_\_\_\_\_  
 End GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min.

**4A RIVER BANK TYPE** SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED  
 Bedrock: Cliff/Ramp Shelf \_\_\_\_\_ Manmade: Solid Permeable (type) \_\_\_\_\_ Wetland: Swamp Bog/Fen Marsh \_\_\_\_\_  
 Sediment Bank: Clay/Mud Sand Mixed Pebble/Cobble Boulder Peat/Organic \_\_\_\_\_ Vegetated Bank: \_\_\_\_\_ Wooded Upland: \_\_\_\_\_  
 Sediment Flat: Clay/Mud Sand Mixed/Coarse \_\_\_\_\_ Other: Ranch Field If snow and ice use Winter River SOS \_\_\_\_\_

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

**4C RIVER CHANNEL CHARACTER** circle or select as appropriate  
 est. width: <1m 1-10m 10-100m <100m \_\_\_\_\_ m est. water depth: <1m 1-3m 3-10m >10m \_\_\_\_\_ m  
 shoal(s) present Y/N \_\_\_\_\_ point bar present Y/N \_\_\_\_\_ bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris  
 seasonal water level: low / mean / bank full / overbank \_\_\_\_\_ 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

52

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	%																			
A				X	470	30	0.01		X	(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

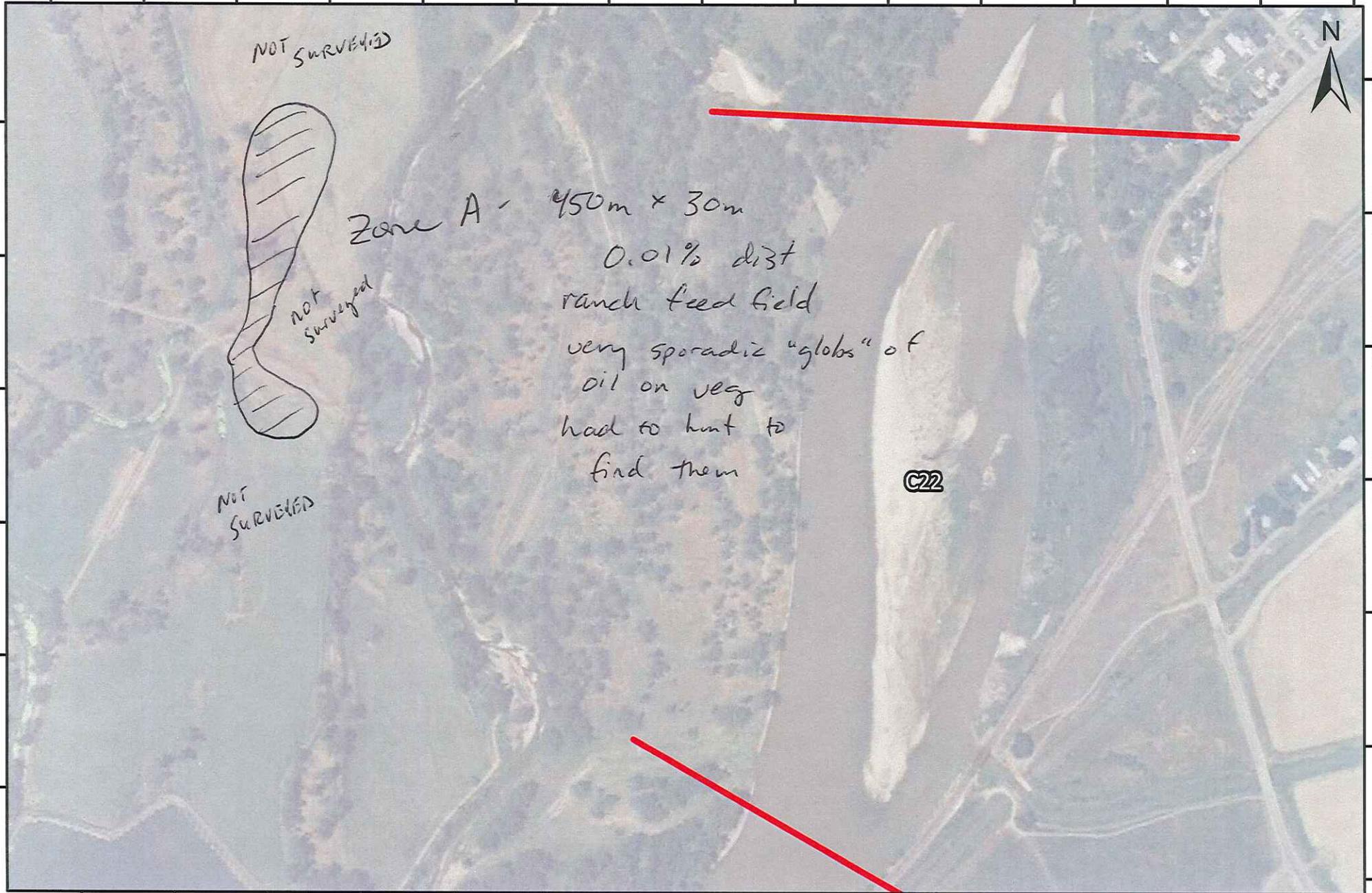
zone A - feed field @ Vermillion Ranch  
 occasional "globs" of oil ~ 15-20cm up from sed.  
 band ranges from 1 - 10 cm  
 had to hunt to find them  
 no treatment recommended but is on private property

(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 # \_\_\_\_\_)

108°19'45"W 108°19'40"W 108°19'35"W 108°19'30"W 108°19'25"W 108°19'20"W 108°19'15"W 108°19'10"W 108°19'5"W 108°19'0"W 108°18'55"W 108°18'50"W 108°18'45"W 108°18'40"W 108°18'35"W

45°53'40"N  
45°53'35"N  
45°53'30"N  
45°53'25"N  
45°53'20"N  
45°53'15"N

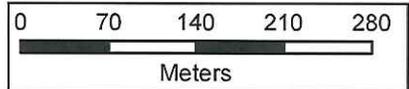
45°53'40"N  
45°53'35"N  
45°53'30"N  
45°53'25"N  
45°53'20"N  
45°53'15"N  
45°53'10"N



**C22 - LB**  
(L/R/I)??

DATE: 9 Jul 11  
TEAM: Grahm

COMMENTS:





C22-LB, zone A



C22-LB, zone A

C22-L  
9 Jul 11  
Graham



C22-LB, zone A

DB/6/5

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

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

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C22</u>	Left Bank <input checked="" type="checkbox"/> Right Bank / Island	<u>27/07/11</u>	<u>9:10</u> hrs to <u>9:14</u> hrs	low - mean - bankfull <input checked="" type="checkbox"/> overbank
Operations Division: <u>C</u>				falling - steady - rising <input checked="" type="checkbox"/>
Survey by: Foot / ATV / Boat <input checked="" type="checkbox"/> Helicopter / Overlook / _____		<input checked="" type="checkbox"/> Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>20</u> deg C

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

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

Start GPS: LATITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. LONGITUDE \_\_\_\_\_ deg. \_\_\_\_\_ min. Datum: WGS 81

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 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: Silt/Clay

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 110 est. water depth: <1m 1-3m >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 /  amount \_\_\_\_\_ bags or \_\_\_\_\_ trucks access restrictions \_\_\_\_\_

Oiled trees/shrubs Y / N 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

1040  
1041

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	610	2	60			S	P		X											Silt/Clay
B			X	X	355	2	0															X		Silt/Clay

**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

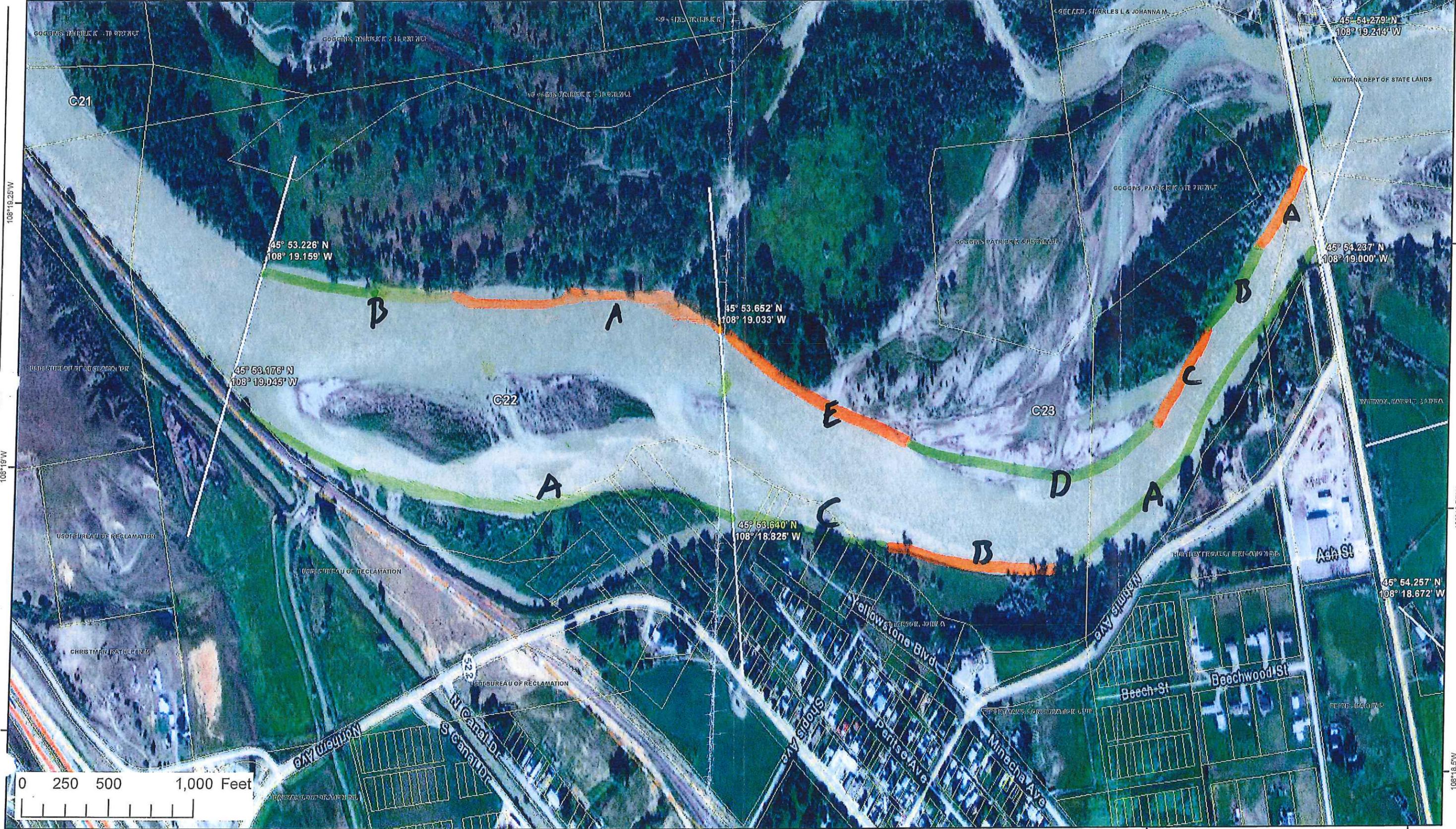
Overbank Survey Required  / N Overbank Survey Completed Y /  Shoreline Survey Completed  / N

Zone A has bank stream and coastal vegetation primarily grass  
Veg needs to be cut out or treated and removed.

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



45°53.25'N 45°53.5'N 45°53.75'N 45°54'N 45°54.25'N



DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident PARTIAL SURVEY

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 09/08/2011	Time (24h): std / daylight 1330 hrs to 1410 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: C22 <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 + / - <u>27</u> deg C

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

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 420 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 \_\_\_\_\_ Bar/Island \_\_\_\_\_ Marsh \_\_\_\_\_

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

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

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

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

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

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

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

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

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

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

Debris: Y/N oiled Y/N amount \_\_\_\_\_ bags or 5 trucks access restrictions: Must have landowner permission

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	420	200	<1			X							X							Vegetation Debris

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

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					NO
None																	

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

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

Oiled debris in Zone A should be removed manually. Piles of oiled debris are widely scattered through the zone. Oiled vegetation should be cut, bagged and removed. Oiling is transferable.

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

# ~~PARTIAL COMPLETE~~ SURVEY

C 22 LB

9 AUGUST 2011 Team # 3



A = Very Light Oiling 420 m

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

*DB/G*

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 12/08/11	Time (24h): std / daylight 0934 hrs to 1050 hrs	Water Level low - mean - bankfull - overbank <u>falling</u> - steady - rising
Segment/Reach ID: C22 <u>Left Bank</u> / Right Bank / Island				
Operations Division: C				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		<u>Sup</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- 3.0 deg C

<b>2 SURVEY TEAM # 1,2</b>	Name	Organization	Signature
Joe Busalacchi	Cardno Entrix		<i>[Signature]</i>
John Davis	USCG		<i>[Signature]</i>
Jessica Ross	DEQ		<i>[Signature]</i>
Adam Bausch	Cardno Entrix		<i>[Signature]</i>
Larkin Chandler	Cultural Resources		<i>[Signature]</i>
Jack Smith	USCG		<i>[Signature]</i>
Tom Bovington	DEQ		<i>[Signature]</i>

**3 SEGMENT** Total Segment/Reach Length 872 m Segment/Reach Length Surveyed 750 m

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

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

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

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

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

Sediment Flat: Clay/Mud \_\_\_\_\_ Sand X 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 (S) Vegetated (S) 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 2 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 m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO
A				<u>X</u>	750	450	<10			<u>X</u>	<u>(S)</u>		<u>X</u>								<u>Zone 55 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

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

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

*Zone A - Sporadic light staining on grasses throughout segment <10% cover. 6-8 lightly coated debris piles. Applied dust fixative in place wherever possible. Treatment recommendation Natural Attenuation*

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



DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

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

<b>1 GENERAL INFORMATION</b>		Date (dd/mm/yy) 12/08/11	Time (24h): std / daylight 1109 hrs to 1136 hrs	Water Level low - <u>mean</u> - bankfull / overbank <u>falling</u> - steady - rising
Segment/Reach ID: C22 Left Bank / Right Bank / <u>Island</u>				
Operations Division: C				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____		Sun / ☁ / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- 30 deg C

2 SURVEY TEAM # 1,2	Name	Organization	Signature
Joe Busalacchi	Cardno Entrix		<i>[Signature]</i>
John Davis	USCG		<i>[Signature]</i>
Jessica Ross	DEQ		<i>[Signature]</i>
Adam Bausch	Cardno Entrix		<i>[Signature]</i>
Larkin Chandler	Cultural Resources		<i>[Signature]</i>
Jack Smith	USCG		<i>[Signature]</i>
Tom Bovington	DEQ		<i>[Signature]</i>

**3 SEGMENT** Total Segment/Reach Length 872 m Segment/Reach Length Surveyed 785 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: 2 Wooded Upland: 5

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

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

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

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

Substrate Type: Mixed

Forested / Vegetated / Bare

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

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

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

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

**5 OPERATIONAL FEATURES**

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

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

Oiled trees/shrubs Y N River Current strong Y N Other Features: 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>150</u>	<u>120</u>	<u>&lt;1</u>			<u>X</u>	<u>X</u>		<u>X</u>									<u>Veg.</u>
B				<u>X</u>	<u>65</u>	<u>120</u>																<u>✓</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

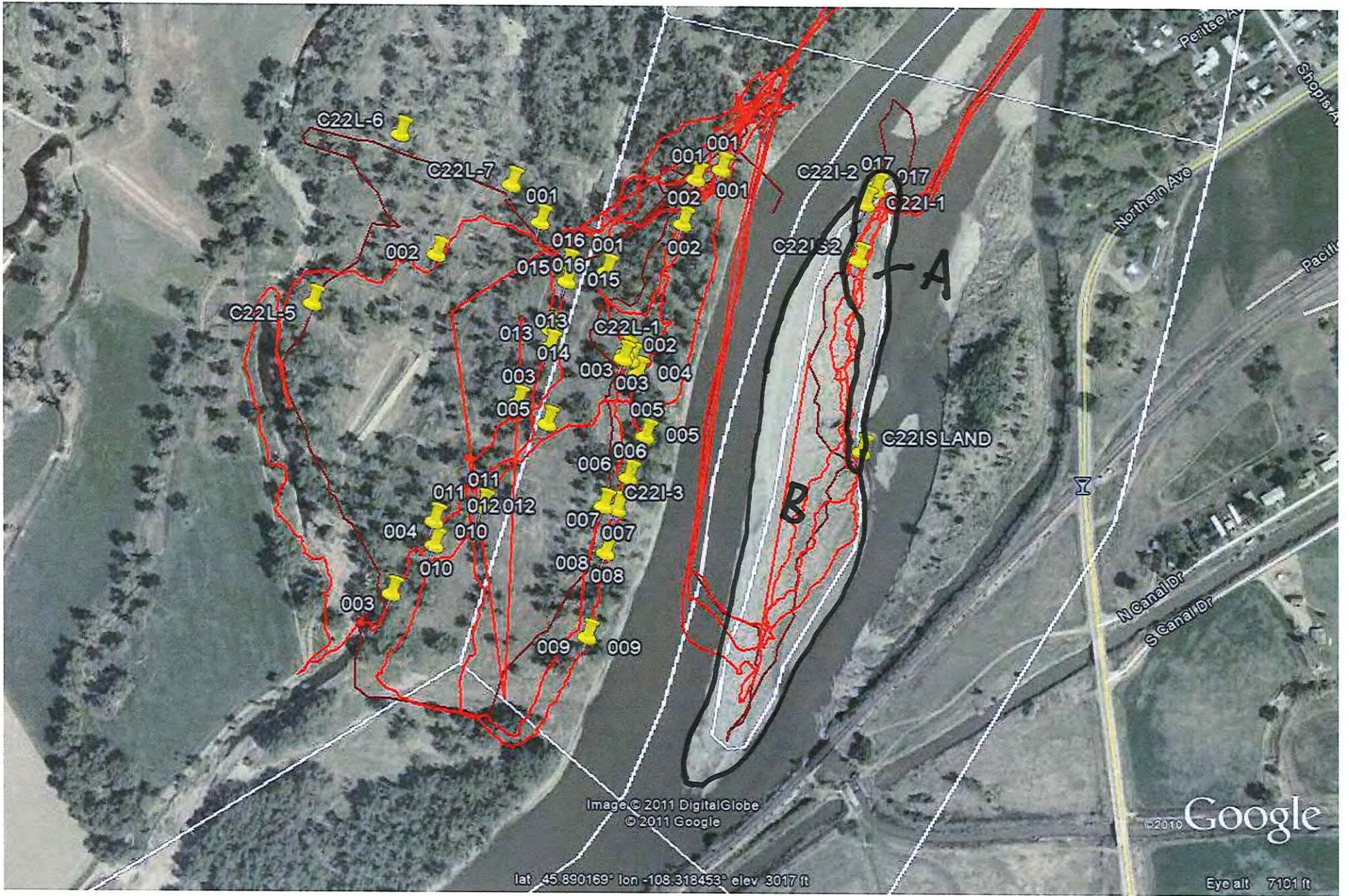
**8 COMMENTS** ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A - Very light coat and stain on several willows on downstream portion of island Recommended treatment Natural Attenuation

Zone B - No Oil Observed

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



C22I  
Teams 1+2  
12/08/11



## **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**

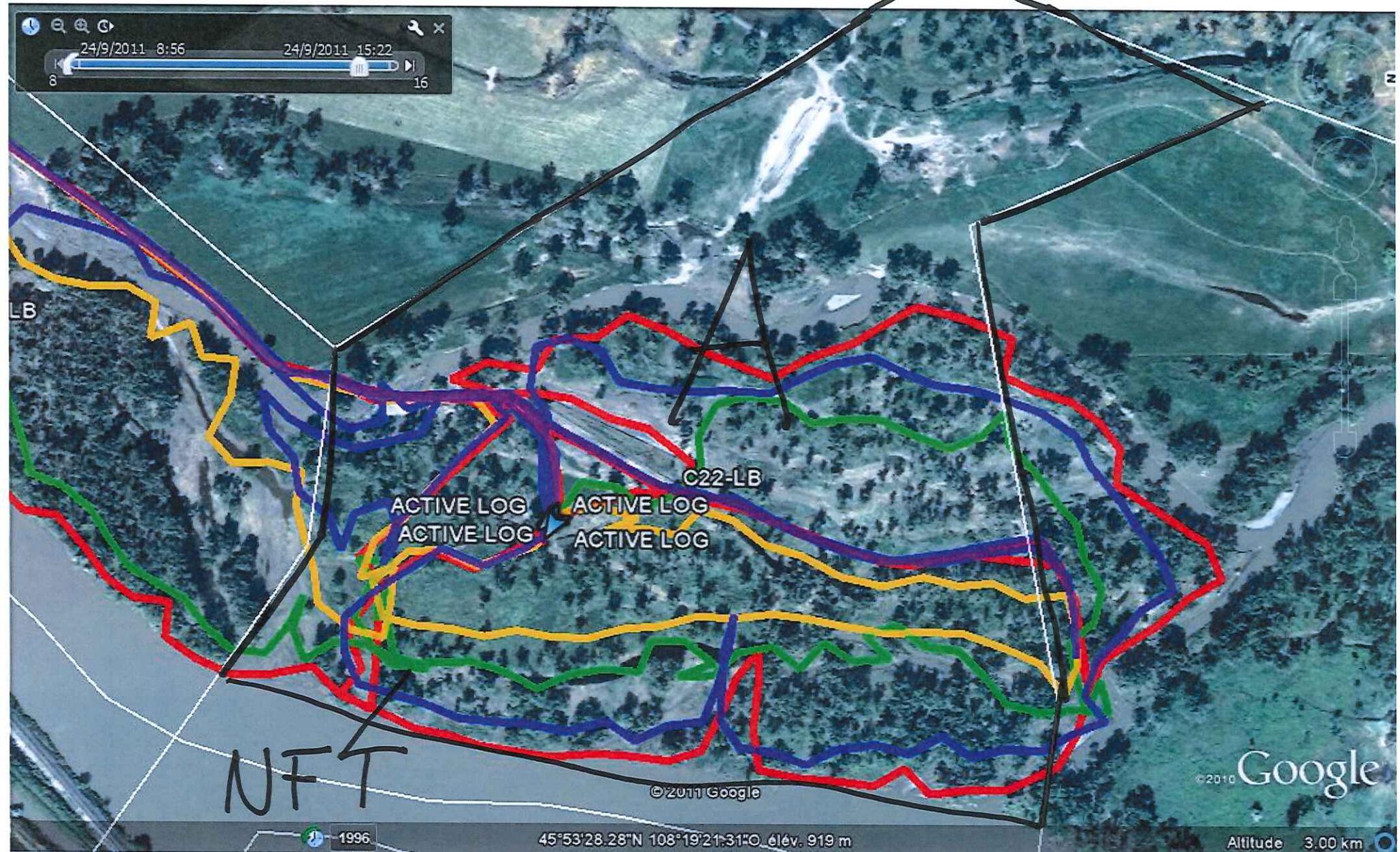
Final SCAT Survey Forms and  
Sketches



24/09/2011

TEAM # 2-3

C22-LB

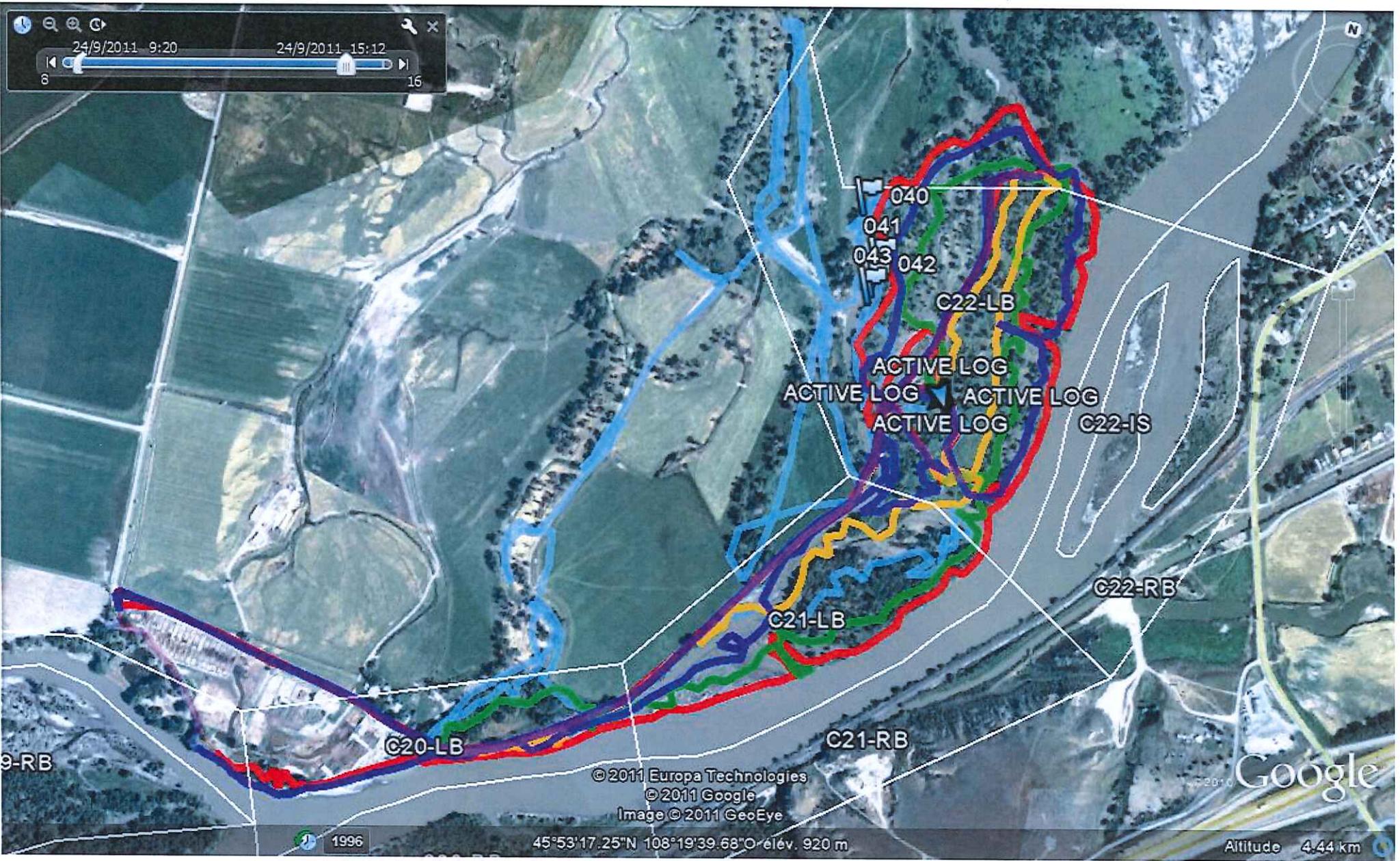


24/09/2011

Team # 2-3

C22-LB

Map 2





## **Appendix F**

Completed SCAT Segment Sign-Off  
Forms

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment C22LB Date of Survey 24/09/2011

Dates of Initial SCAT Assessments 09 Jul 2011   
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 60

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

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

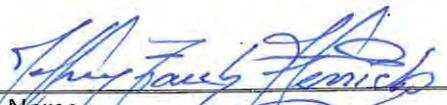
*The undersigned are in agreement that the above segment or partial segment meets the Approved Treatment Methods Target Endpoints.*

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

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

*No Federal Rep Present*

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

  24 Sept. 2011  
Sign Name \_\_\_\_\_ Print Name/ Affiliation \_\_\_\_\_ Date \_\_\_\_\_  
**State Representative (DEQ/FWP)**

  24/09/2011  
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.

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