

**ExxonMobil Pipeline Company**

**SCAT Area Transition Report  
for C03**

Silvertip Pipeline Incident  
Laurel, Montana

October 24, 2011



## **SCAT Area Transition Report for C03**

Silvertip Pipeline Incident  
Laurel, Montana

Prepared for:  
ExxonMobil Pipeline Company

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

Our Ref.:  
B0085883.1103

Date:  
October 24, 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.*

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## **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 C03, 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 C03. 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 C03, 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 C03 is 53.6. There were no access issues for this area.

### **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 C03 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 portion of a bald eagle (*Haliaeetus leucocephalus*) nesting buffer zone extended into Area C03 and was maintained based upon the type of work activity.

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

Table 1 (below) summarizes samples collected within Area C03. 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 C03 are provided on Figure 3.

**Table 1 Environmental Sampling Summary**

| Agency | Sample Num     | Date      | Matrix   | Location | Latitude  | Longitude   |
|--------|----------------|-----------|----------|----------|-----------|-------------|
| EPA    | SP5E118_071411 | 7/14/2011 | Sediment | SP5E118  | 45.808524 | -108.461525 |

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 for Area C03.

#### **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 C03 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C03.

#### **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. 30](#) and [CTR No. 57](#)).

#### **1.6 Oil Removal Activities**

Oil removal activities were conducted within Area C03 in accordance with the ATMs identified in the CTRs. [Appendix I](#) of the Summary of Assessment and Oil Removal Activities report presents this data including: date range/days worked, average number of people working per day, equipment used, and various types of bags removed: oily debris, personal protective equipment (PPE), plastic, trash, super sacks, wood chips, and contaminated wood.

#### **1.7 Pre-Inspection Survey Transmittal**

A Pre-Inspection Survey Transmittal (PIST) was not conducted for this area.

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

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

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

Figure 5 shows the oiling conditions within Area C03 following completion of oil removal activities. The SCAT team performed final surveys of the island, left bank, and right bank within SCAT Area C03 to confirm the agreed-upon cleanup endpoints identified in the applicable CTRs had been achieved. The final SCAT survey documentation is presented in Appendix E.

### **1.10 SCAT Area Conclusions**

Based on the final SCAT surveys performed on the island, left bank, and right bank within Area C03, no further treatment is recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition  
Report for C03**

Silvertip Pipeline Incident  
Laurel, Montana

**2. Transition Sign-Off Form**

**SCAT Area Transition Report for C03**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – RP



**SCAT Area Transition  
Report for C03**

Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for C03**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – FOSC



**SCAT Area Transition  
Report for C03**

Silvertip Pipeline Incident  
Laurel, Montana

**SCAT Area Transition Report for C03**

**Prepared for:**

**Unified Command**

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Date

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Unified Command – MDEQ



**Legend**

**Parcel Access**

**Access**

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

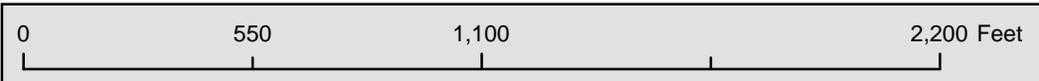
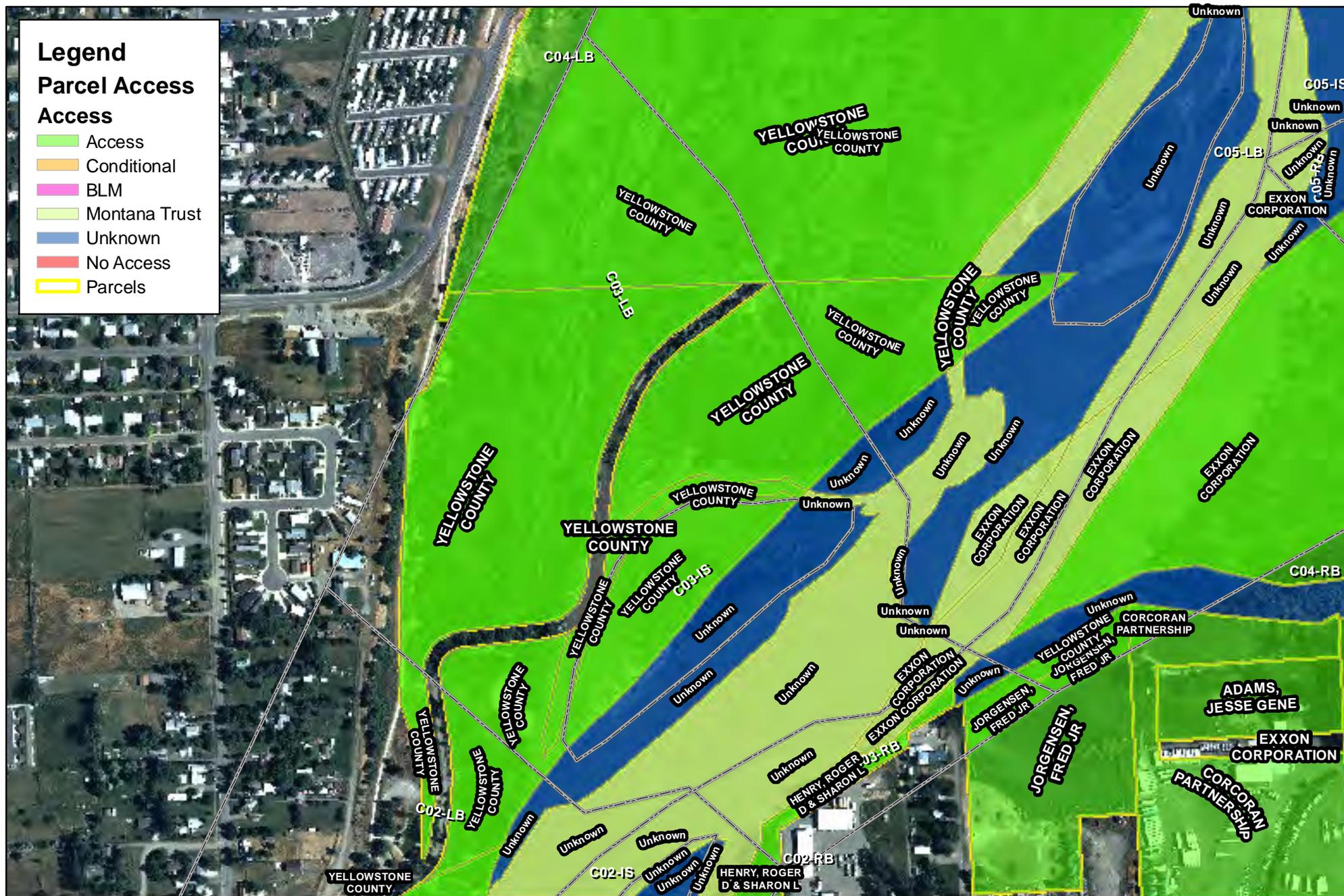
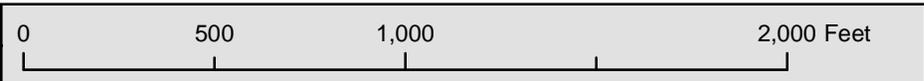


Figure 1

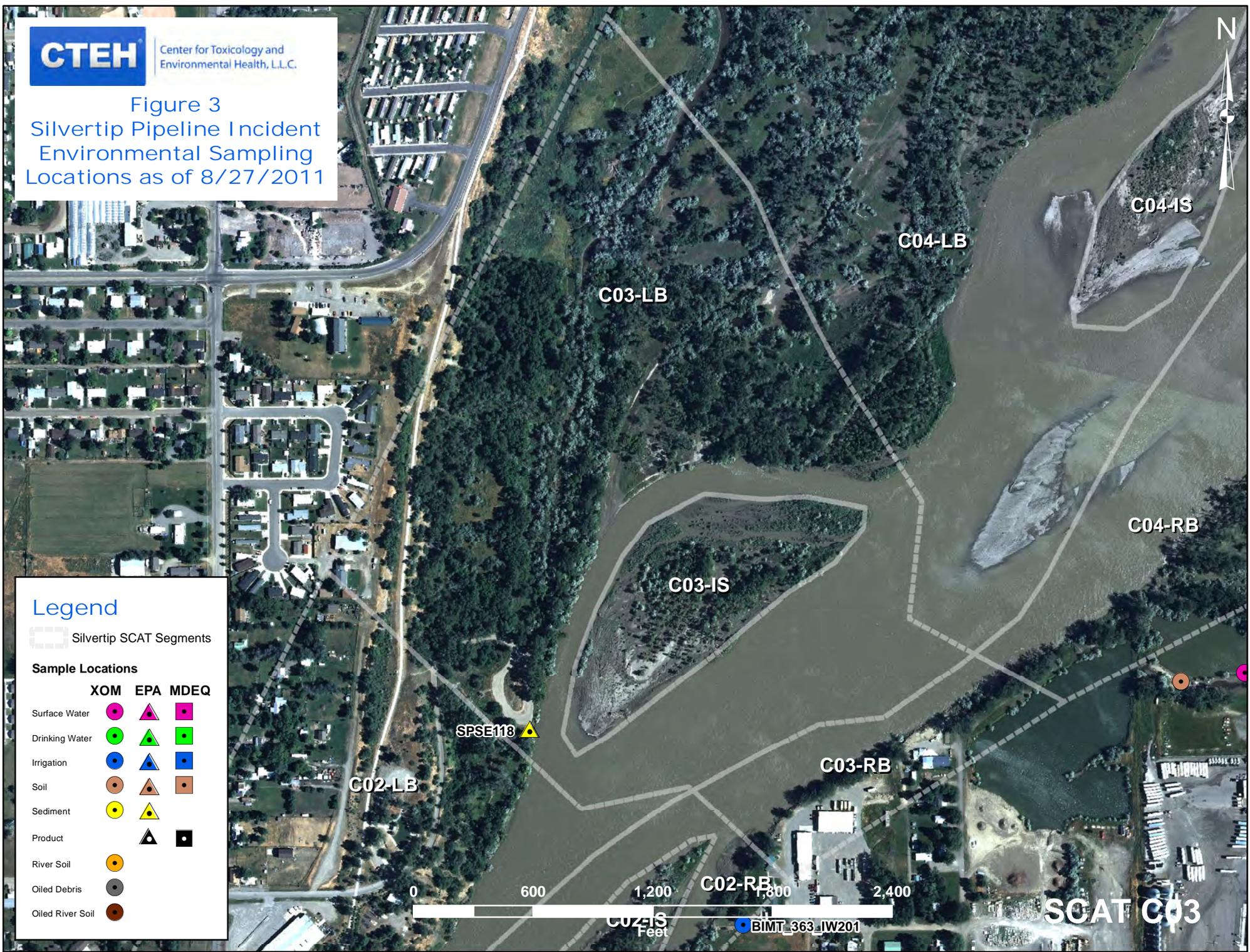


Note: Multiple individuals of the same species and status at a single location are denoted by a number label adjacent to the wildlife symbol.



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

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 |     |     |      |

0 600 1,200 1,800 2,400  
Feet  
BIMT\_363\_IW201

SCAT C03



**Figure 4 - Maximum SCAT Observations For SCAT Area: C03**





**Figure 5 - Final SCAT Observations  
For SCAT Area: C03**



- 9999 Oiling Zone ID
- Heavy Oiling
- Moderate Oiling

- Light Oiling
- Very Light Oiling
- No Oil Observed

350 0 350 700  
Feet



## **Appendix A**

Sample Detection Summary





## **Appendix B**

Initial SCAT Survey Forms  
and Sketches

DB

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>C3</u>                                   | <u>Left Bank</u> / Right Bank / Island                 | <u>27/07/11</u> | <u>947</u><br><del>930</del> hrs to <u>949</u> hrs | low - mean - bankfull - overbank |
| Operations Division: <u>C</u>                                 | <u>ck 10/3/11</u>                                      |                 |  | falling - steady - rising        |
| Survey by: <u>Foot / ATV / Boat</u> / Helicopter / Overlook / | <u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm |                 |  | Air Temp +/- <u>30</u> deg C     |

| 2 SURVEY TEAM # | Name                  | Organization         | Signature          |
|-----------------|-----------------------|----------------------|--------------------|
| <u>1</u>        | <u>Chuck Pore</u>     | <u>Concho 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 400 m Segment/Reach Length Surveyed 400 m

Start GPS: LATITUDE 45 deg. 48°39.02 min. LONGITUDE 108 deg. 27°22.71 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 48°27.90 min. LONGITUDE 108 deg. 27°39.07 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: (C) Wooded Upland: (\*)

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

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

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

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

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

est. width: <1m 1-10m 10-100m (100m) 100m 110 est. water depth: <1m (1-3m) 3-10m >10m \_\_\_\_\_ m

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

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

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

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

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

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

| OIL ZONE ID | RIVER BANK ZONE |    |    |    | OIL COVER |         |            | OIL THICKNESS |    |    |    |    | OIL CHARACTER |    |    |    |    |    | SUBST. TYPE(S) |    |    |        |
|-------------|-----------------|----|----|----|-----------|---------|------------|---------------|----|----|----|----|---------------|----|----|----|----|----|----------------|----|----|--------|
|             | MS              | LB | UB | OB | Length m  | Width m | Distrib. % | TO            | CV | CT | ST | FL | FR            | MS | TB | PT | TC | SR |                | AP | NO |        |
| A           |                 |    | X  | X  | 400       | 2       | 0          |               |    |    |    |    |               |    |    |    |    |    |                |    | X  | S-1/16 |

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

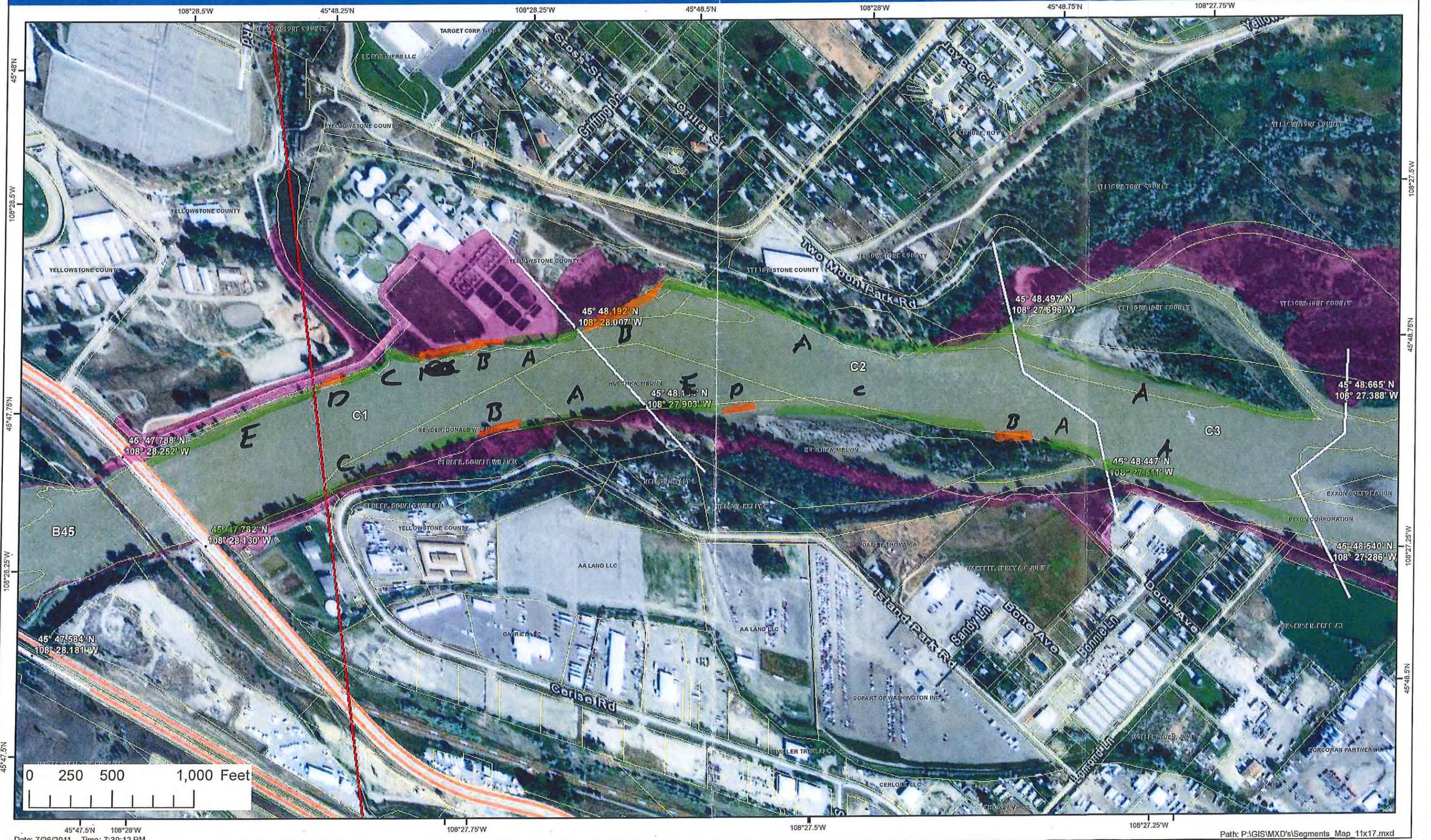
| TRENCH or PIT NO. | RIVER BANK ZONE |    |    |    | MAX. PIT DEPTH cm | OILED ZONE | SUBSURFACE OIL CHARACTER |    |    |    |    |    | WATER TABLE cm | SHEEN COLOUR B, R, S, N | CLEAN BELOW Yes / No | SUBST. TYPE(S) |    |  |  |  |  |  |
|-------------------|-----------------|----|----|----|-------------------|------------|--------------------------|----|--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

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

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

Zone A had NO OIL observed

No ~~recommendation~~ recommendation



D13/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

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

|  |  |   |   |  |
|--|--|---|---|--|
| <b>1 GENERAL INFORMATION</b>                                   |  | Date (dd/mm/yy)<br>07/30/2011                   | Time (24h): std / daylight<br>1330 1410<br>hrs to hrs | Water Level<br>low - mean - bankfull - overbank<br>falling - steady - rising |
| Segment/Reach ID: C3 Left Bank / Right Bank (Island)           |  |   |   |  |
| Operations Division: A   |  |   |   |  |
| Survey by: (Foot) / ATV / Boat / Helicopter / Overlook / _____ |  | (Sun) Clouds / Fog / Rain / Snow / Windy (Calm) |   | Air Temp + / - 35 deg C  |

|                        |                      |                               |                      |
|------------------------|----------------------|-------------------------------|----------------------|
| <b>2 SURVEY TEAM #</b> | name                 | organization                  | contact phone number |
| Bruce Kvam             | <i>Bruce Kvam</i>    | Polaris Applied Sciences, LLC | (206) 953-6904       |
| Mark Peterson          | <i>Mark Peterson</i> | MTDEQ                         | (406) 498-4835       |
| Peter Reich            | <i>Peter Reich</i>   | USEPA                         | (415) 595-8352       |

**3 SEGMENT** Total Segment/Reach Length 747 m Segment/Reach Length Surveyed 747 m

Start GPS: LATITUDE 45 deg. 4831 min. LONGITUDE 108 deg. 2736 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 4837 min. LONGITUDE 108 deg. 2725 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: S Wooded Upland: (P)

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

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

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

Sloped: <5 (>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 347 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 1 bags or \_\_\_\_\_ trucks access restrictions

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

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

| OIL ZONE ID | RIVER BANK ZONE |    |    |    | OIL COVER |         |            | OIL THICKNESS |    |    |            |    | OIL CHARACTER |    |    |    |    |    |    | SUBST. TYPE(S) |    |                      |
|-------------|-----------------|----|----|----|-----------|---------|------------|---------------|----|----|------------|----|---------------|----|----|----|----|----|----|----------------|----|----------------------|
|             | MS              | LB | UB | OB | Length m  | Width m | Distrib. % | TO            | CV | CT | ST         | FL | FR            | MS | TB | PT | TC | SR | AP |                | NO |                      |
| A           |                 |    |    | X  | 350       | 2       | <1         |               |    |    | <u>(X)</u> |    | X             |    |    |    |    |    |    |                |    | Shrubs, grass, trees |
| B           |                 |    |    | X  | 397       | 57      |            |               |    |    |            |    |               |    |    |    |    |    |    |                | 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

Oil band height on grass: 8 cm

**Treatment Recommendations:**

Zone A: No further treatment recommended.

Zone B: No treatment necessary.

EBK034-037

(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#)



7/30/2011  
 Zones A+B  
 Team 2

C3-  
 (L/R)??

PB/6/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

|  |  |   |                                    |   |
|--|--|---|------------------------------------|---|
| <b>1 GENERAL INFORMATION</b>                                       |  | Date (dd/mm/yy)   | Time (24h): std / daylight         | Water Level                             |
| Segment/Reach ID: <u>C3</u> <u>Left Bank</u> / Right Bank / Island |  | <u>24/07/11</u>   | <u>1100</u> hrs to <u>1300</u> hrs | low - mean - <u>bankfull</u> / overbank |
| Operations Division:   |  |   |                                    | <u>falling</u> / steady - rising        |
| Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /      |  | <u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / <u>Calm</u> |                                    | Air Temp +/- <u>27</u> deg C            |

| 2 SURVEY TEAM # | Name                | Organization   | Signature          |
|-----------------|---------------------|----------------|--------------------|
| <u>1</u>        | <u>Jahn Bauer</u>   | <u>Polaris</u> | <u>[Signature]</u> |
|                 | <u>Larry Alheim</u> | <u>DEQ</u>     | <u>[Signature]</u> |
|                 | <u>Austin West</u>  | <u>USCG</u>    | <u>[Signature]</u> |

**3 SEGMENT** Total Segment/Reach Length 650 m Segment/Reach Length Surveyed 650 m

Start GPS: LATITUDE 45 deg. 48.510 min. LONGITUDE 108 deg. 27.715 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 48.671 min. LONGITUDE 108 deg. 27.394 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: PS Wooded Upland: P

Sediment Flat: Clay/Mud \_\_\_ Sand \_\_\_ Mixed/Coarse X 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: X (>5°) (15°) (30°) straight P braided S 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 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 5 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     | Width     | Distrib. | TO            | CV       | CT       | ST       | FL | FR            | MS | TB | PT | TC       |                | SR | AP       | NO |            |
|             | m               | m  | %  |          |            |           |          |               |          |          |          |    |               |    |    |    |          |                |    |          |    |            |
| <u>A</u>    |                 |    |    | <u>X</u> | <u>400</u> | <u>1</u>  | <u>1</u> |               | <u>X</u> | <u>X</u> | <u>X</u> |    | <u>X</u>      |    |    |    | <u>X</u> |                |    |          |    | <u>veg</u> |
| <u>B</u>    |                 |    |    | <u>X</u> | <u>250</u> | <u>20</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

Zone A cut + remove oil coated vegetation less than 4", Remove oil coated debris smaller than 4" wipe larger than oil debris / vegetation over 4"

\* Note C3 is Two Moon park

Zone B - No oil

C3 L 24 JUL 2011 TEAM 1 2 of 2



DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

|   |             |   |  |  |
|---|-------------|---|--|--|
| <b>1 GENERAL INFORMATION</b>  |             | Date (dd/mm/yy)<br>30/07/11                     | Time (24h): std / daylight<br>1356 hrs to 1530 hrs | Water Level<br>low - mean - bankfull - overbank<br>falling - steady - rising |
| Segment/Reach ID: <u>C3</u> <input checked="" type="checkbox"/> Left Bank / Right Bank / Island |             |   |  |  |
| Operations Division:  |             |   |  |  |
| Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>                                   |             | Sun / Clouds / Fog / Rain / Snow / Windy / Calm |  | Air Temp +/- 2.5 deg C   |
| <b>2 SURVEY TEAM #</b> <u>3</u>   | Name        | Organization                                    | Signature  |  |
|   | John Bauer  | Polaris   |  |  |
|   | Mark Ewanic | MT DEQ  |  |  |
|   | Gary Riley  | EPA   |  |  |
|   | Travis Cain | EPA   |  |  |
|   | Josh Hofkes | Cardno Entrix                                   |  |  |

**3 SEGMENT** Total Segment/Reach Length 515 m Segment/Reach Length Surveyed 470 m

Start GPS: LATITUDE 45 deg. 48.522 min. LONGITUDE 108 deg. 27.685 min. Datum: WGS84 End

GPS: LATITUDE 45 deg. 48.696 min. LONGITUDE 108 deg. 27.421 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 Banks  Wooded Upland:

Sediment Flat: Clay/Mud s  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:

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 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 10 bags or 10 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  | 50        | 25      | <1         |               |    | ⊗  | X  |    | ⊗             |    |    |    | ⊗  |    |    |                |    | veg |
| B           |                 |    |    | X  | 40        | 20      | <1         |               |    | ⊗  | X  |    | ⊗             |    |    |    | ⊗  |    |    |                |    | veg |
| C           |                 |    |    | X  | 200       | 30      | <1         |               |    | ⊗  | X  |    | ⊗             |    |    |    | ⊗  |    |    |                |    | veg |
| D           |                 |    |    | X  |           |         |            |               |    |    |    |    |               |    |    |    |    |    |    | X              |    |     |

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

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

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

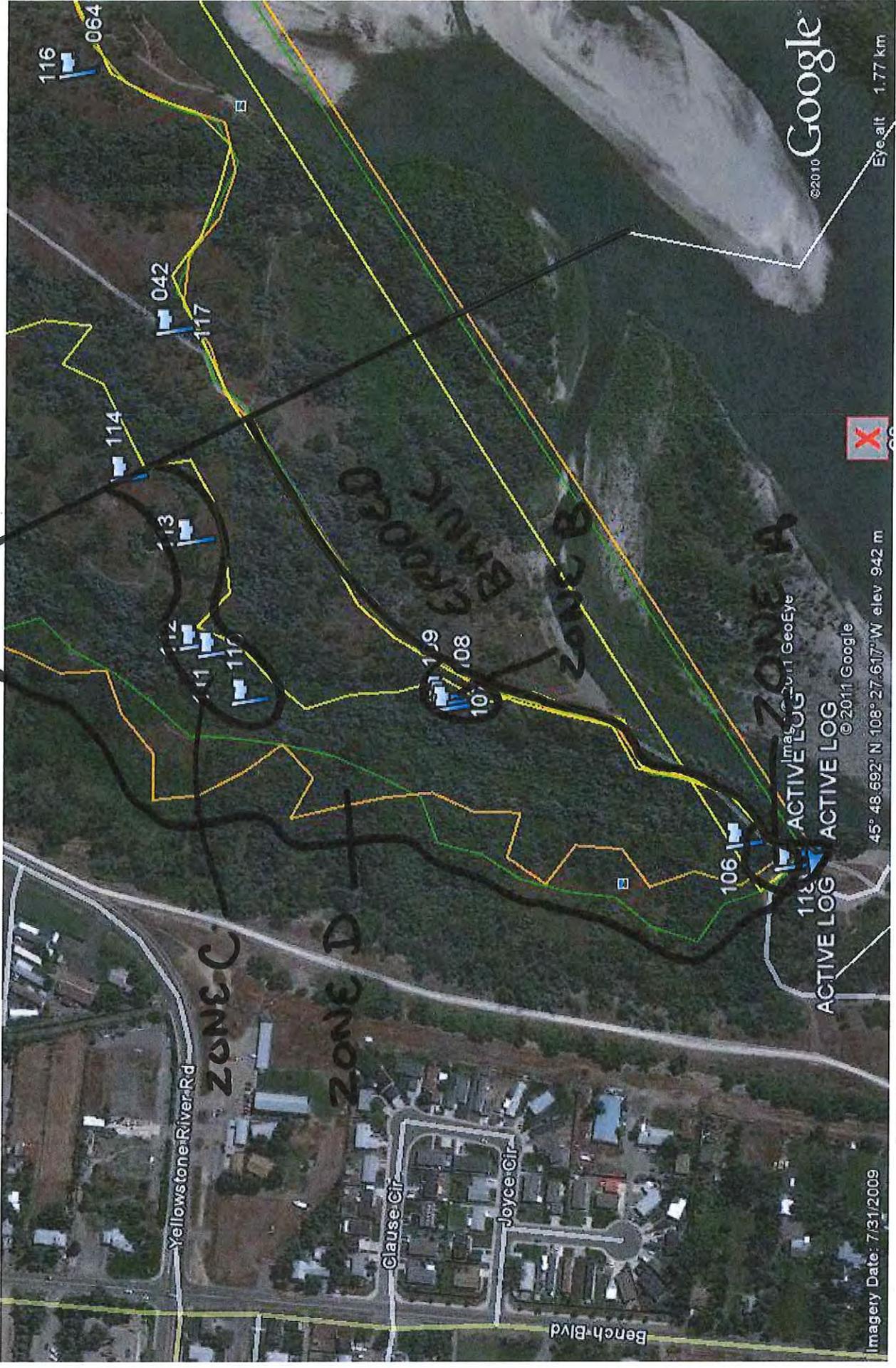
Overbank Survey Required Y/N Overbank Survey Completed Y/N Shoreline Survey Completed Y/N

Oil band heights:

**Treatment Recommendations:**  
 Zone : A, B & C : Remove oiled small debris and vegetation  
 D: No oil observed - No cleanups required.

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 \_\_\_\_\_ Photographer \_\_\_\_\_



• C3 TEAM 3  
 July 30, 2011

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

|   |  |                 |                                    |   |
|---|--|-----------------|------------------------------------|---|
| <b>1 GENERAL INFORMATION</b>                                  |  | Date (dd/mm/yy) | Time (24h): std / daylight         | Water Level                             |
| Segment/Reach ID: <u>C3</u>                                   | Left Bank / Right Bank / Island                        | <u>24/07/11</u> | <u>1140</u> hrs to <u>1155</u> hrs | low - mean - <u>bankfull</u> - overbank |
| Operations Division: <u>0</u>                                 |  |                 |                                    | <u>falling</u> steady - rising          |
| Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / | <u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm |                 |                                    | Air Temp + / - <u>26</u> deg C          |

| 2 SURVEY TEAM # | Name                  | Organization         | Signature          |
|-----------------|-----------------------|----------------------|--------------------|
|                 | <u>Steve Kennedy</u>  | <u>Cardno ENTRIX</u> | <u>[Signature]</u> |
|                 | <u>Chelsea Murphy</u> | <u>Cardno ENTRIX</u> | <u>[Signature]</u> |
|                 | <u>Ron Lyne Jr.</u>   | <u>USCG</u>          | <u>[Signature]</u> |
|                 | <u>John Brown</u>     | <u>ADELG</u>         | <u>[Signature]</u> |

**3 SEGMENT** Total Segment/Reach Length 326 m Segment/Reach Length Surveyed 326 m

Start GPS: LATITUDE 45° 30' 34.3 deg. min. LONGITUDE 108° 45' 8.313 deg. min. Datum: WGS84

End GPS: LATITUDE 45° 30' 39.02 deg. min. LONGITUDE 108° 45' 46.96 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 P Sand Mixed Pebble/Cobble S Boulder S 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: Est Height m canyon manmade meander confined or leveed P Substrate Type: Mud

Sloped: 50 (>5°)(15°)(30°) straight S 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 segmen Y/N

Debris: Y(N) oiled Y(N) amount bags or trucks access restrictions private prop.

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

546

| 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>P</u> | <u>S</u>  | <u>21</u> | <u>21</u>  | <u>1</u>      |    |    | <u>P</u> | <u>S</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 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)

A: v. sporadic, mostly private property (permission granted)  
no further treatment.

7/24/2011 - 10:24 am 7/24/2011 - 2:57 pm 2 pm

C3

ZONE A

©2010 Google

© 2011 Europa Technologies  
© 2011 Google  
Image © 2011 GeoEye

45°48'29.13" N 108°27'24.07" W elev 3083 ft

Date: 7/31/2009 1996

Eye alt



DBJ

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>C3</u>   | Left Bank / <u>Right Bank</u> / Island | <u>27/07/11</u>  | <u>1220</u> hrs to <u>1221</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 # | Name                  | Organization         | Signature         |
|-----------------|-----------------------|----------------------|-------------------|
| <u>1</u>        | <u>Chuck Pons</u>     | <u>Cardno 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 400 m Segment/Reach Length Surveyed 400 m

Start GPS: LATITUDE 45 deg. 48°32.72 min. LONGITUDE 108 deg. 27°16.77 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 48°27.61 min. LONGITUDE 109 deg. 27°31.87 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: Vegetated / Wooded Upland: 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: S-1

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

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

est. width: <1m 1-10m 10-100m 100m 100m 110 est. water depth: <1m 1-3m 3-10m >10m \_\_\_\_\_ m

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

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

**5 OPERATIONAL FEATURES**

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

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

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

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

890

| 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>Y</u> | <u>400</u> | <u>2</u> | <u>0</u>   |               |    |    |    |    |               |    |    |    |    |    |                |    | <u>X</u> | <u>Sand</u> |
|             |                 |    |          |          |            |          |            |               |    |    |    |    |               |    |    |    |    |    |                |    |          |             |
|             |                 |    |          |          |            |          |            |               |    |    |    |    |               |    |    |    |    |    |                |    |          |             |

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

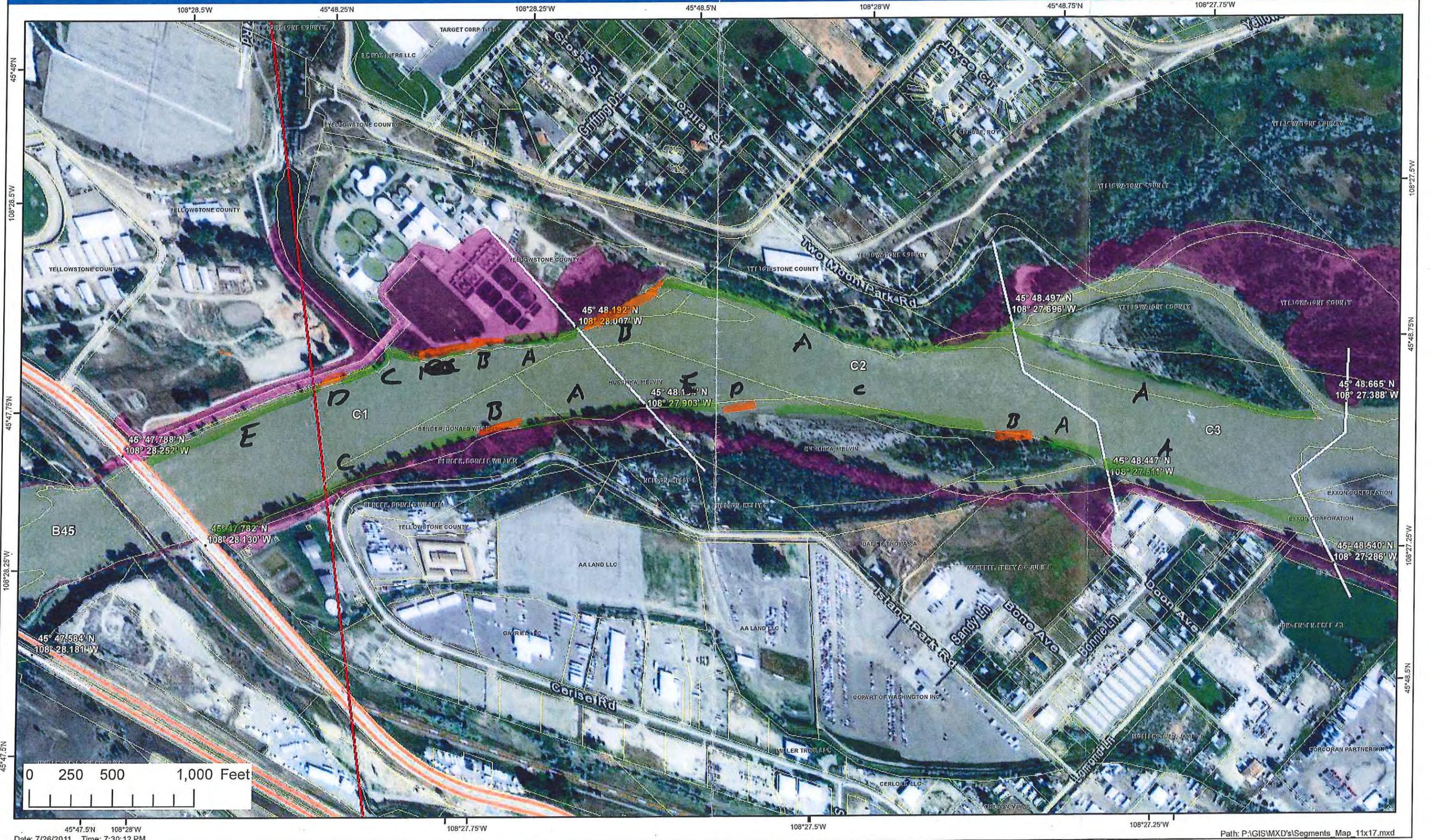
| TRENCH or PIT NO. | RIVER BANK ZONE |    |    |    | MAX. PIT DEPTH cm | OILED ZONE cm-cm | SUBSURFACE OIL CHARACTER |    |    |    |    |    | WATER TABLE cm | SHEEN COLOUR B, R, S, N | CLEAN BELOW Yes / No | SUBST. TYPE(S) |    |
|-------------------|-----------------|----|----|----|-------------------|------------------|--------------------------|----|----|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

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

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

No oil observed

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





## **Appendix C**

Pre-Inspection Survey Transmittal

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



## **Appendix D**

Post-Inspection Survey Transmittal

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



## **Appendix E**

Final SCAT Survey Forms  
and Sketches

D/B

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

|  |  |   |  |   |
|--|--|---|--|---|
| <b>1 GENERAL INFORMATION</b>                                 |  | Date (dd/mm/yy)<br>01/09/11   | Time (24h): std / daylight<br>0930 hrs to 1000 hrs     | Water Level<br>low - <u>mean</u> - bankfull - overbank<br>falling - steady - rising |
| Segment/Reach ID: C03 Left Bank / Right Bank / <u>Island</u> |  |   |  | Air Temp + / <u>20</u> deg C  |
| Operations Division: C                                       |  | Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / _____ | <u>Sun</u> / Clouds / Fog / Rain / Snow / Windy / Calm |   |

|                                |      |               |           |
|--------------------------------|------|---------------|-----------|
| <b>2 SURVEY TEAM # 1 and 3</b> | Name | Organization  | Signature |
| Josh Hofkes                    |      | Cardno ENTRIX |           |
| Matthew Kent                   |      | DEQ           |           |
| Juan Patino                    |      | USCG          |           |
|                                |      |               |           |
|                                |      |               |           |

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 412 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 P 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: cobble

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

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

est. width: <1m 1-10 m 10-100 m >(100m) 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

| OIL ZONE ID | RIVER BANK ZONE |    |    |    | OIL COVER   |            |               | OIL THICKNESS |    |    |    |    | OIL CHARACTER |    |    |    |    |    | SUBST. TYPE(S) |    |    |     |
|-------------|-----------------|----|----|----|-------------|------------|---------------|---------------|----|----|----|----|---------------|----|----|----|----|----|----------------|----|----|-----|
|             | MS              | LB | UB | OB | Length<br>m | Width<br>m | Distrib.<br>% | TO            | CV | CT | ST | FL | FR            | MS | TB | PT | TC | SR |                | AP | NO |     |
|             |                 |    |    |    |             |            |               |               |    |    |    |    |               |    |    |    |    |    |                |    |    |     |
| A           |                 |    |    | X  | 412         | 100        | <1            |               |    | X  | ⊗  |    |               |    |    |    | 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<br>cm | OILED ZONE<br>cm-cm | SUBSURFACE OIL CHARACTER |    |    |    |    |    | WATER TABLE<br>cm | SHEEN COLOUR<br>B, R, S, N | CLEAN BELOW<br>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  / N Shoreline Survey Completed  / N

A: < 1/2 stain  
N.F.T.  
Ops removed 1 bag of oil coat

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



TEAM 5  
September 1, 2011

CO3-IS A: Less than 1% stain  
⇒ N.F.T.

DBIG

|   |  |   |  |   |
|---|--|---|--|---|
| <b>1 GENERAL INFORMATION</b>                                  |  | Date (dd/mm/yy)<br>01/09/11                     | Time (24h): std / daylight<br>0800 hrs to 0830 hrs | Water Level<br>low - <u>mean</u> - bankfull - overbank<br>falling - steady - rising |
| Segment/Reach ID: C03 <u>Left Bank</u> / Right Bank / Island  |  |   |  |   |
| Operations Division: C  |  |   |  |   |
| Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / |  | Sun / Clouds / Fog / Rain / Snow / Windy / Calm |  | Air Temp + / - <u>20</u> deg C  |

| 2 SURVEY TEAM # 1 and 3 | Name          | Organization | Signature          |
|-------------------------|---------------|--------------|--------------------|
| Josh Hofkes             | Cardno ENTRIX |              | <i>[Signature]</i> |
| Matthew Kent            | DEQ           |              | <i>[Signature]</i> |
| Juan Patino             | USCG          |              | <i>[Signature]</i> |
|                         |               |              |                    |
|                         |               |              |                    |

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 570 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 \_\_\_\_\_ Boulder \_\_\_\_\_ Peat/Organic P 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: mix

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

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

est. width: <1m 1-10m 10-100m <100m 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    | Width | Distrib. | TO            | CV | CT       | ST         | FL | FR            | MS | TB | PT | TC       | SR | AP |                | NO |     |
|             | m               | m  | %  |          |           |       |          |               |    |          |            |    |               |    |    |    |          |    |    |                |    |     |
| 2032 A      |                 |    |    | <u>X</u> | 570       | 250   | <1       |               |    | <u>X</u> | <u>(R)</u> |    |               |    |    |    | <u>X</u> |    |    |                |    | mix |
|             |                 |    |    |          |           |       |          |               |    |          |            |    |               |    |    |    |          |    |    |                |    |     |

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

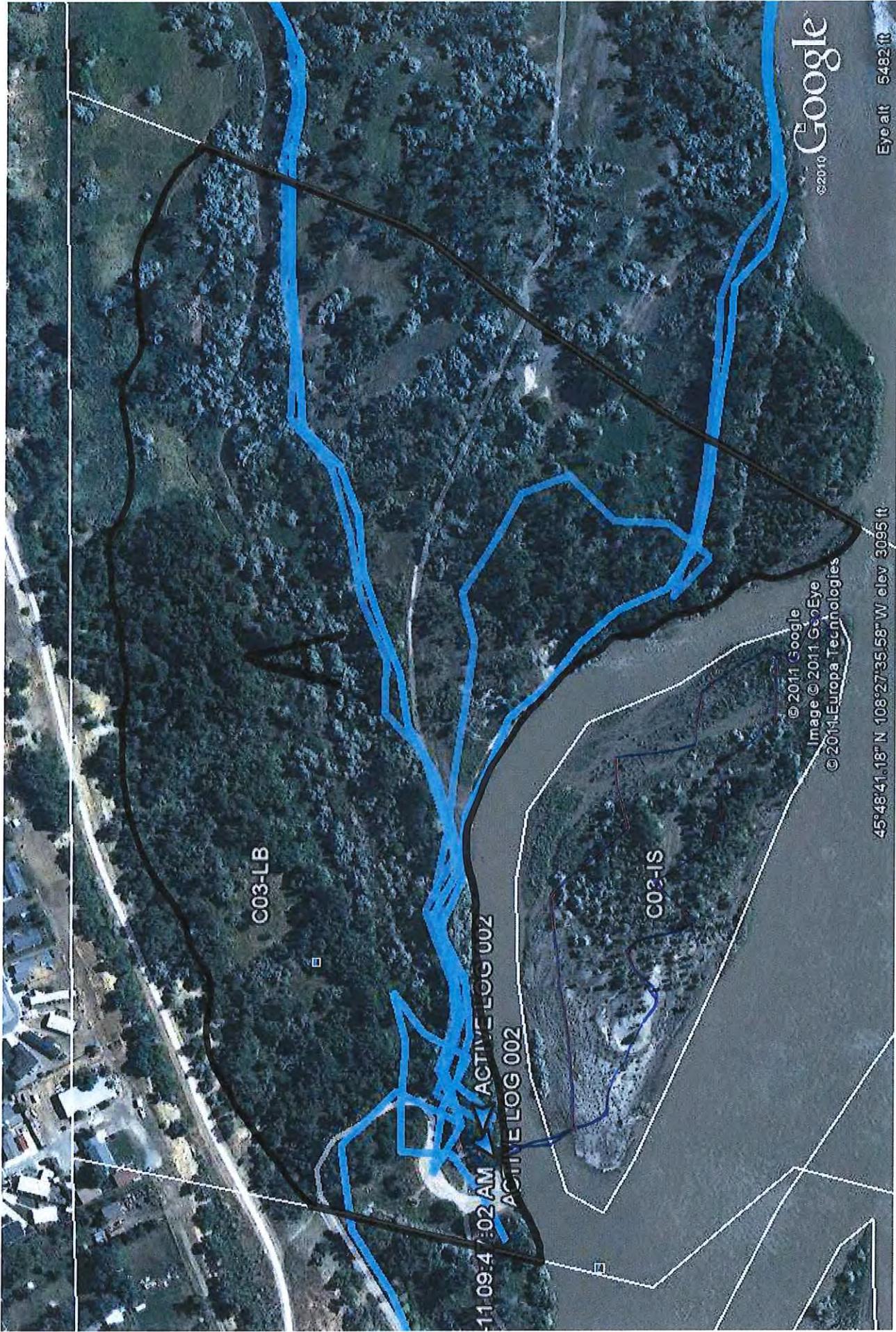
| TRENCH or PIT NO. | RIVER BANK ZONE |    |    |    | MAX. PIT DEPTH cm | OILED ZONE cm-cm | SUBSURFACE OIL CHARACTER |    |    |    |    | WATER TABLE cm | SHEEN COLOUR B, R, S, N | CLEAN BELOW Yes / No | SUBST. TYPE(S) |    |
|-------------------|-----------------|----|----|----|-------------------|------------------|--------------------------|----|----|----|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

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

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

A: < 1% stain  
N.F.T.  
Ops removed 2 bags of oil coat

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



TEAM 5 C03-LB A: Less than 1% stain

September 1, 2011

⇒ N.F.T.

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

DB/G

R

|  |  |   |  |  |
|--|--|---|--|--|
| <b>1 GENERAL INFORMATION</b>                           |  | Date (dd/mm/yy)<br>27/AUG/2011                  | Time (24h): std / daylight<br>12:28 hrs to 13:01 hrs | Water Level<br>low - mean - bankfull - overbank<br>falling - steady - rising |
| Segment/Reach ID: C03 Left Bank / Right Bank / Island  |  |   |  |  |
| Operations Division: C03 RB                            |  |   |  |  |
| Survey by: Foot / ATV / Boat / Helicopter / Overlook / |  | Sun / Clouds / Fog / Rain / Snow / Windy / Calm |  | Air Temp +/- 30 deg C  |

| 2 SURVEY TEAM # 5 | name | organization  | contact phone number  |
|-------------------|------|---------------|-----------------------|
| Ariel Blanc       |      | Polaris       | <i>Ariel Blanc</i>    |
| Daniel Elefant    |      | Cardno ENTRIX | <i>Daniel Elefant</i> |
| Earl Radonski     |      | DEQ MFWP      | <i>Earl Radonski</i>  |
| Darrick Turner    |      | DEQ           | <i>Darrick Turner</i> |
| Larisa Leonova    |      | EPA           | <i>Larisa Leonova</i> |
| Stephen Ball      |      | EPA           | <i>Stephen Ball</i>   |

**3 SEGMENT** Total Segment/Reach Length \_\_\_\_\_ m Segment/Reach Length Surveyed 327 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 P \_\_\_\_\_ (type) rip-rap Wetland: Swamp \_\_\_\_\_ Bog/Fen \_\_\_\_\_ Marsh \_\_\_\_\_

Sediment Bank: Clay/Mud \_\_\_\_\_ Sand \_\_\_\_\_ Mixed S \_\_\_\_\_ 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

Cliff or Bluff: \_\_\_\_\_ Est Height 2-3 m canyon \_\_\_\_\_ manmade \_\_\_\_\_ meander S confined or leveed P Substrate Type: cement

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 1-10 m 10-100m >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

| 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 |                |     |
| 1909 A      |                 |    |    | X  | 327       | 10      | 4          |               |    | 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

ReSCAT  
 Zone A: Trace oiled vegetation (grass) and trees/shrubs. Hotshot crew accompanied ReSCAT team. Remaining transferable oil removed by Hotshot crew during ReSCAT. Segment meets operational endpoints. NFT

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

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

8/27/2011 2:28 pm

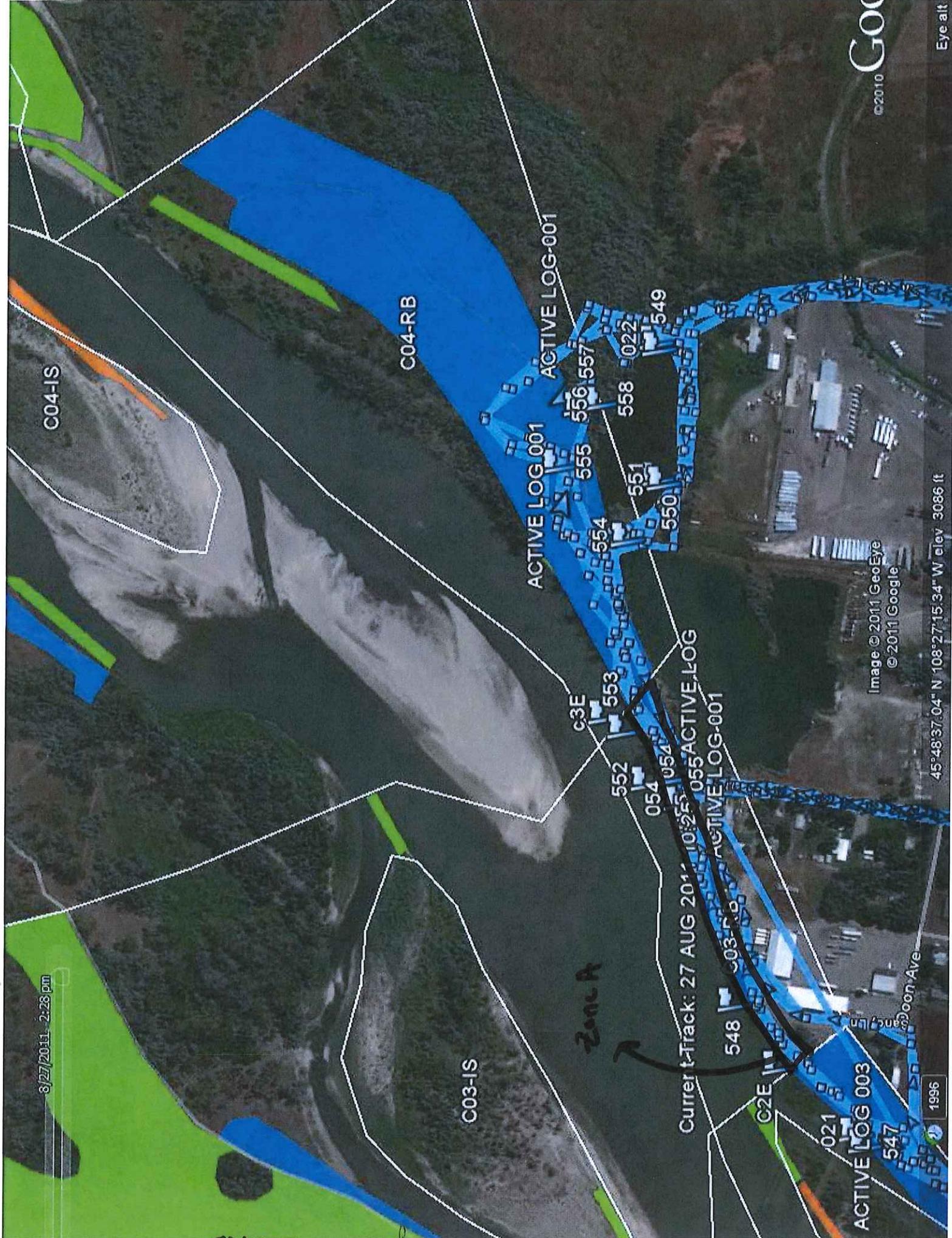


Image © 2011 GeoEye  
© 2011 Google

45°48'37.04" N 108°27'15.34" W elev 3086 ft

1996

©2010 Google

Eye alt



## **Appendix F**

Completed SCAT Segment  
Sign-Off Forms

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment CO3 IS

Date of Survey September 1, 2011

Dates of Initial SCAT Assessments

30 JUL 11 IL  
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment

\_\_\_\_\_

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).*



USCG GST

02 AUG 2011

Sign Name

Print Name/ Affiliation

Date

**Federal Representative (EPA/USCG)**



DEQ

9/2/11

Sign Name

Print Name/ Affiliation

Date

**State Representative (DEQ/FWP)**



Josh Hoffkes/Cardano

9/1/11

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.

# SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

## SILVERTIP PIPELINE RELEASE

Segment CO3 LB

Date of Survey September 1, 2011

Dates of Initial SCAT Assessments

29 JUL 11 **EG**

(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment

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).*

[Signature] JUAN PATINO USCG GST 02/AUG/2011  
Sign Name Print Name/ Affiliation Date  
**Federal Representative (EPA/USCG)**

[Signature] DEQ 9/2/11  
Sign Name Print Name/ Affiliation Date  
**State Representative (DEQ/FWP)**

[Signature] Josh Hofkes/Cardno 9/2/01/11  
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.

# Silvertip Pipeline Spill SCAT Segment Sign-Off Sheet

COMPLETED

|   |
|---|
| Operations Division:    A            B            C <u>X</u>        |
| SCAT Area Number (i.e. A12): <u>  C03  </u>                         |
| SCAT Segment Number (i.e. A12-LB/IS/ <u>RB</u> ): <u>  C03-RB  </u> |

- |   |  |
|---|--|
|   | Check if Complete:                         |
| 1. Completion Date for Initial SCAT Assessment: <u>  24 July 2011  </u>   | <input checked="" type="checkbox"/>        |
| 2. Combined Treatment Recommendations (CTRs) Developed/Issued:<br>List CTRs Applicable to SCAT Segment: <u>  CTR 30  </u> | <input checked="" type="checkbox"/> Yes/No |
| 3. Clean-Up Operations Conducted:   | <input type="checkbox"/>                   |
| 4. Meets Qualitative Approved Treatment Methods Target Endpoints:   | <input checked="" type="checkbox"/> Yes/No |
| 5. SCAT Reassessment:   |  |

|  |                       |             |
|--|-----------------------|-------------|
| <i>L. Leonora</i>                                | LARISSA LEONORA       | 8/27/11     |
| Sign Name<br>Federal Representative (EPA/DSCG)   | Print Name            | Date        |
| <i>Earl Redosh</i>                               | Earl Redosh, FWP      |             |
| <i>Derrick Turner</i>                            | DARRICK TURNER        | 8/28/11     |
| Sign Name<br>State Representative (DEQ/FWP)      | Print Name            | Date        |
| <i>Wilbur</i>                                    | Ariel Blanc (Polaris) | 27-AUG-2011 |
| Sign Name<br>RP Representative (SCAT Contractor) | Print Name            | Date        |

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 Reassessment, the SCAT area will achieve the response endpoints and an Area Transition Report will be completed and submitted to EPA and DEQ upon completion.