

ExxonMobil Pipeline Company

**SCAT Area Transition Report
for A08**

Silvertip Pipeline Incident
Laurel, Montana

October 25, 2011



SCAT Area Transition Report for A08

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 25, 2011

The observations described in this Report were made exclusively under the conditions at the time and subject to the limitations stated therein. It is understood by Client that ARCADIS has relied on the accuracy of documents, oral information, and other material and information provided by sources documented in this report, including but not limited to information provided by Client and Client's other contractors. ARCADIS has not independently verified any such information. The conclusions presented in the Report are based solely upon the observations and representations made by others.

| | |
|--|----------|
| 1. Executive Summary of Oil Removal Activities | 1 |
| 1.1 Land Ownership and Access Issues | 1 |
| 1.2 Cultural, Historic, and Natural Resource Constraints | 1 |
| 1.3 Summary of Environmental Sampling | 1 |
| 1.4 Summary of Initial SCAT Surveys | 2 |
| 1.5 Applicable Compiled Treatment Recommendations | 2 |
| 1.6 Oil Removal Activities | 2 |
| 1.7 Pre-Inspection Survey Transmittal | 2 |
| 1.8 Post-Inspection Survey Transmittal | 3 |
| 1.9 Summary of Final SCAT Surveys | 3 |
| 1.10 SCAT Area Conclusions | 3 |

| | |
|------------------------------------|----------|
| 2. Transition Sign-Off Form | 4 |
|------------------------------------|----------|

Tables

| | |
|--|---|
| Table 1 Environmental Sampling Summary | 2 |
|--|---|

Figures

| | |
|--|--|
| Figure 1 Aerial Map with Parcel Boundaries | |
| Figure 2 Wildlife Resources | |
| Figure 3 Sample Location Map | |
| Figure 4 Maximum SCAT Observations | |
| Figure 5 Final SCAT Observations | |

Appendices

| | |
|--|--|
| A Sample Detection Summary | |
| B Initial SCAT Survey Forms and Sketches | |
| C Pre-Inspection Survey Transmittal | |
| D Post-Inspection Survey Transmittal | |
| E Final SCAT Survey Forms and Sketches | |
| F Completed SCAT Segment Sign-Off Forms | |
| G Exception Memos | |

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 A08, 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 A08. 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 A08, 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 A08 is 17.9. There was one access issue for the western part 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 regular inspections of Area A08. Six oiled Woodhouse's toads (*Bufo woodhousii*) and one western terrestrial garter snake (*Thamnophis elegans*) were captured, cleaned, and released. One deceased beaver (*Castor canadensis*) and one golden eye fish (*Hiodon alosoides*) with no visible oiling were recovered in Area A08. No Wildlife Priority Cleanup Areas were identified. Two song sparrow (*Melospiza melodia*) nests were identified in Area A08.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area A08. 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 A08 are provided on Figure 3.

Table 1 Environmental Sampling Summary

| Agency | Sample Num | Date | Matrix | Location | Latitude | Longitude |
|--------|----------------|-----------|------------|----------|------------|--------------|
| CTEH | LAMT081650411 | 16-Aug-11 | Soil_River | 50-A08-1 | 45.650553 | -108.719328 |
| EPA | 5P5E105_071211 | 12-Jul-11 | Sediment | 5P5E105 | 45.6493287 | -108.7184372 |

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

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 A08 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area A08.

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. 6](#) and [CTR No. 10](#)).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area A08 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

SCAT Operations liaisons performed an inspection of the remediated areas of SCAT Area A08 and developed a Pre-Inspection Survey Transmittal (PIST) associated with the right bank within Area A08, which is presented in Appendix C.

1.8 Post-Inspection Survey Transmittal

SCAT Operations liaisons performed an inspection of the remediated areas of SCAT Area A08 and developed a Post-Inspection Survey Transmittal (POST) associated with the right bank within Area A08, which is presented in Appendix D.

1.9 Summary of Final SCAT Surveys

Figure 5 shows the oiling conditions within Area A08 following completion of oil removal activities. The SCAT team performed final surveys of the right bank within SCAT Area A08 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 left bank within Area A08, no oiling was observed. Based on the final SCAT surveys performed on the right bank within Area A08, no further treatment is recommended for this segment. SCAT Segment Sign-Off Forms are included as Appendix F. However additional monitoring is recommended for this area due to persistent sheen at several log depressions. The approved treatment plan for these areas is described in the Exception Memos, included as Appendix G, which are generated to track the treatment and monitoring of this area.



**SCAT Area Transition
Report for A08**

Silvertip Pipeline Incident
Laurel, Montana

2. Transition Sign-Off Form

SCAT Area Transition Report for A08

Prepared for:

Unified Command

Date

Unified Command – RP



**SCAT Area Transition
Report for A08**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for A08

Prepared for:

Unified Command

Date

Unified Command – FOSC



**SCAT Area Transition
Report for A08**

Silvertip Pipeline Incident
Laurel, Montana

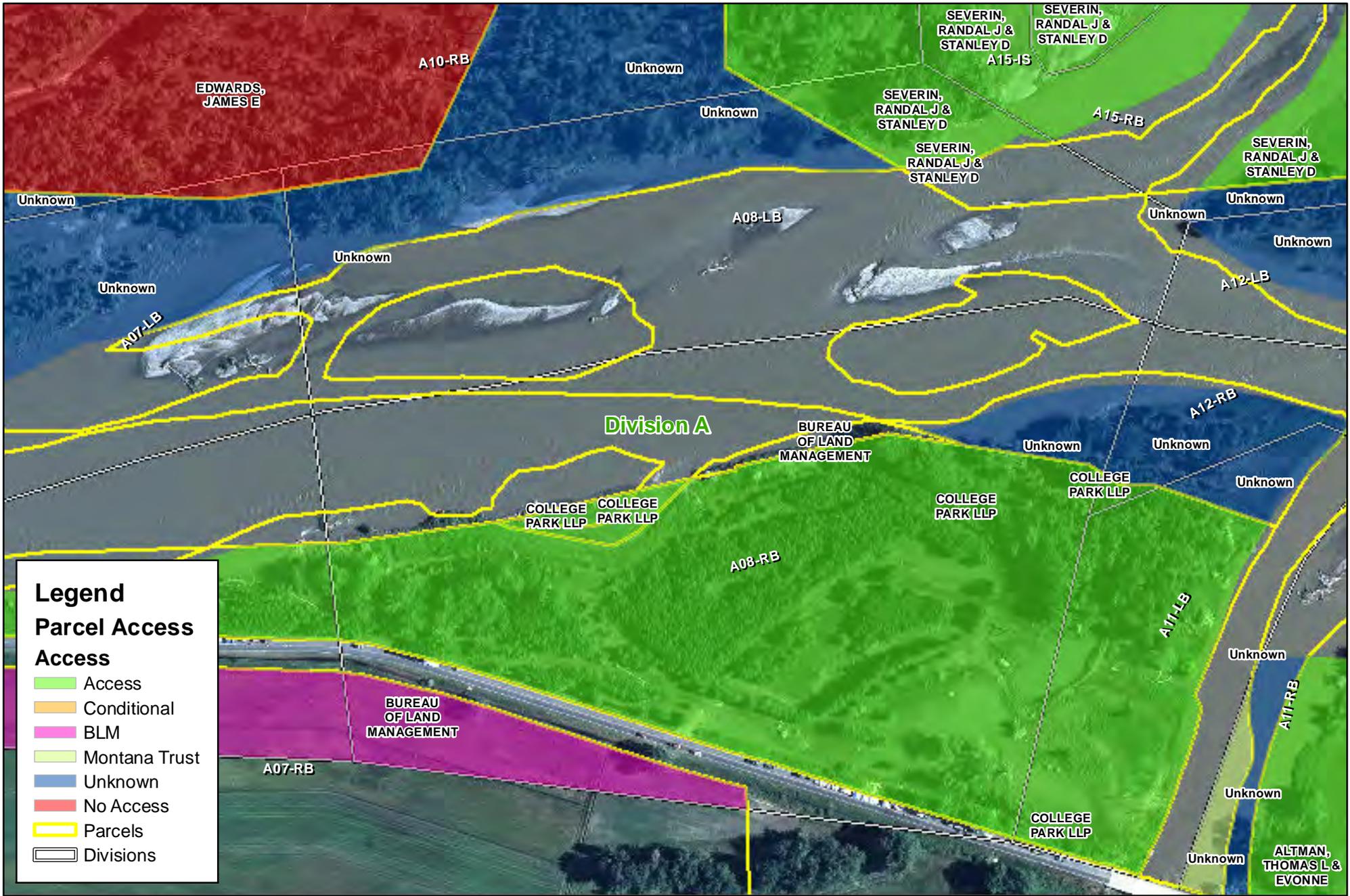
SCAT Area Transition Report for A08

Prepared for:

Unified Command

Date

Unified Command – MDEQ



Legend

Parcel Access

Access

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

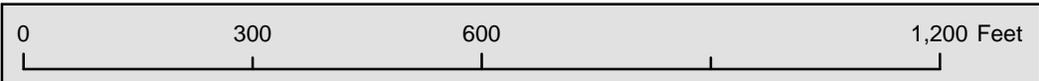
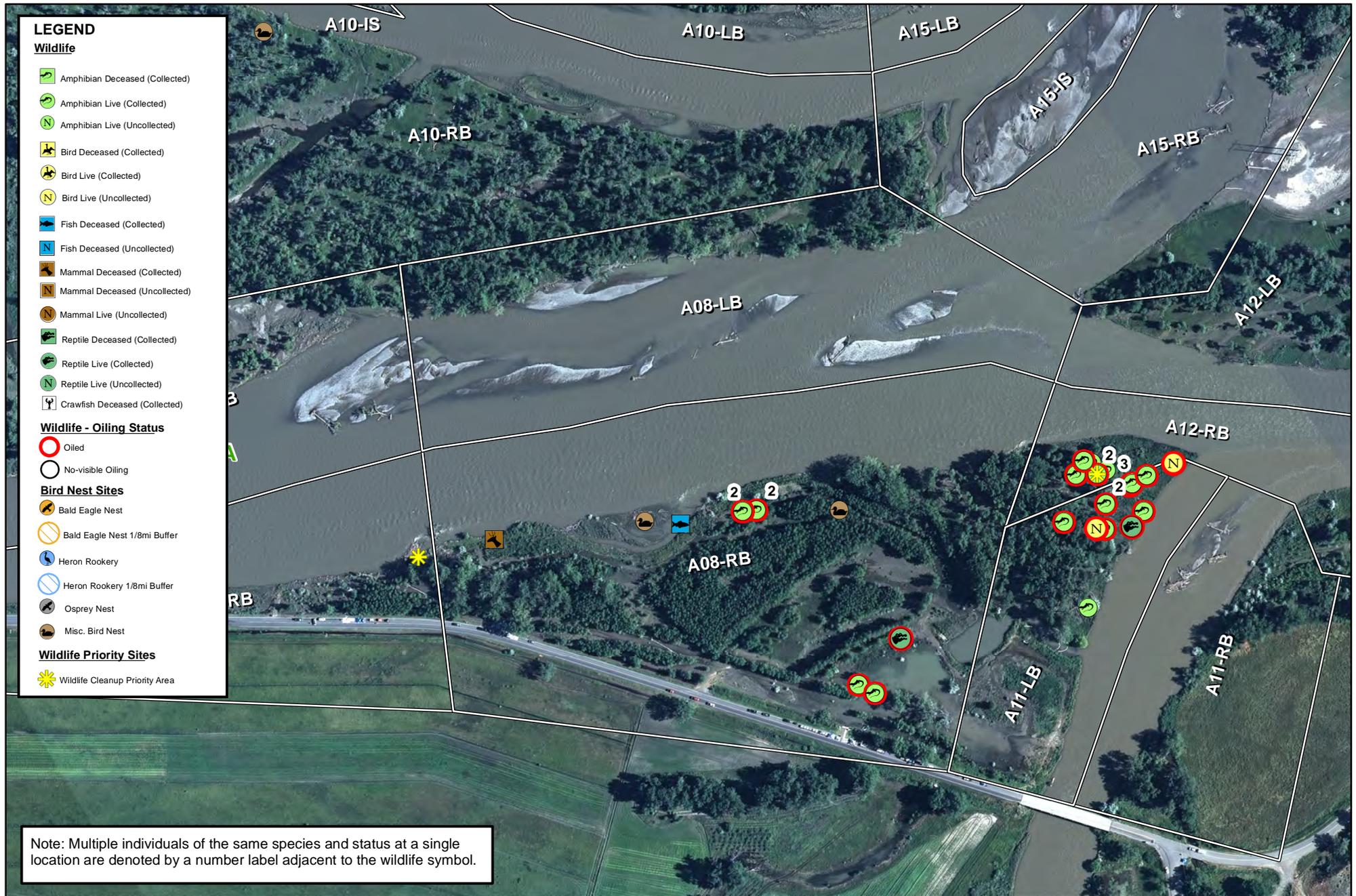


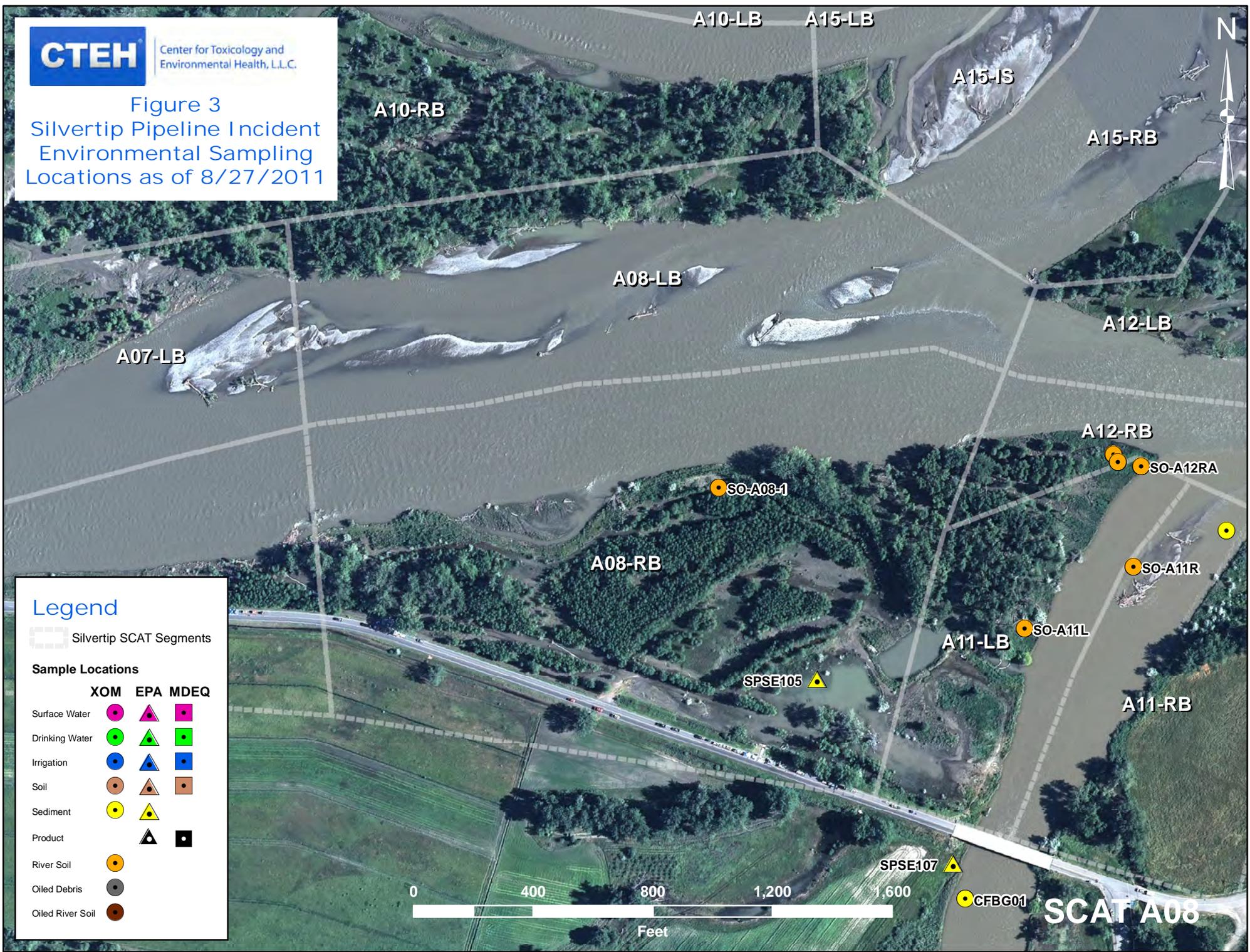
Figure 1





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

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



Legend

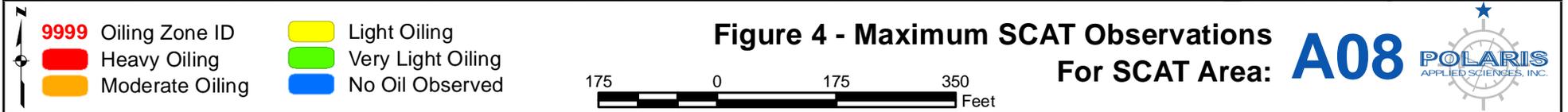
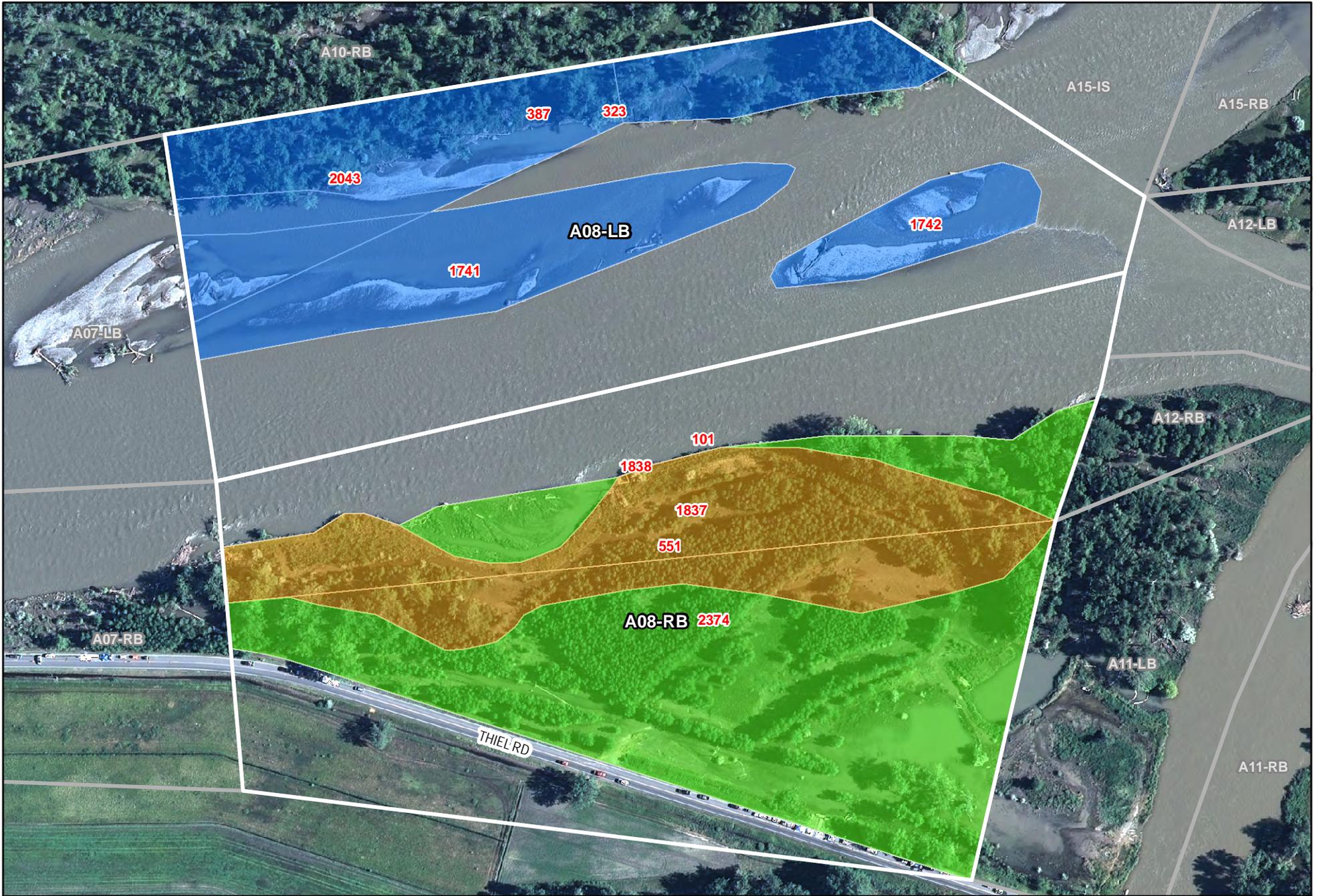
Silvertip SCAT Segments

Sample Locations

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



SCAT A08





- 9999 Oiling Zone ID
- Heavy Oiling
- Moderate Oiling

- Light Oiling
- Very Light Oiling
- No Oil Observed

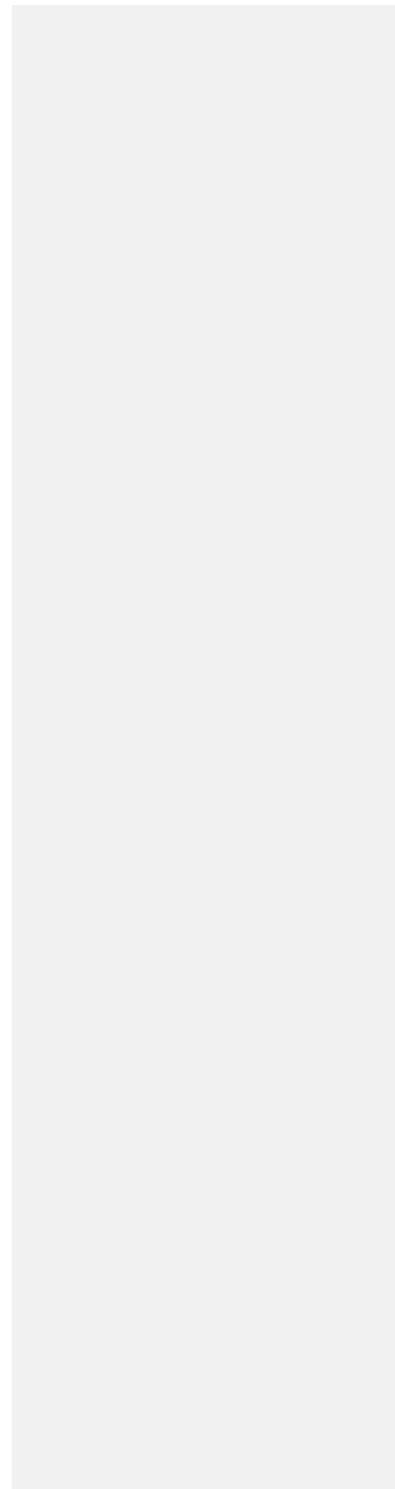
**Figure 5 - Final SCAT Observations
For SCAT Area: A08**





Appendix A

Sample Detection Summary





Detections in Samples Collected in SCAT Area A08

Printed 9/9/2011

NA - Not Available

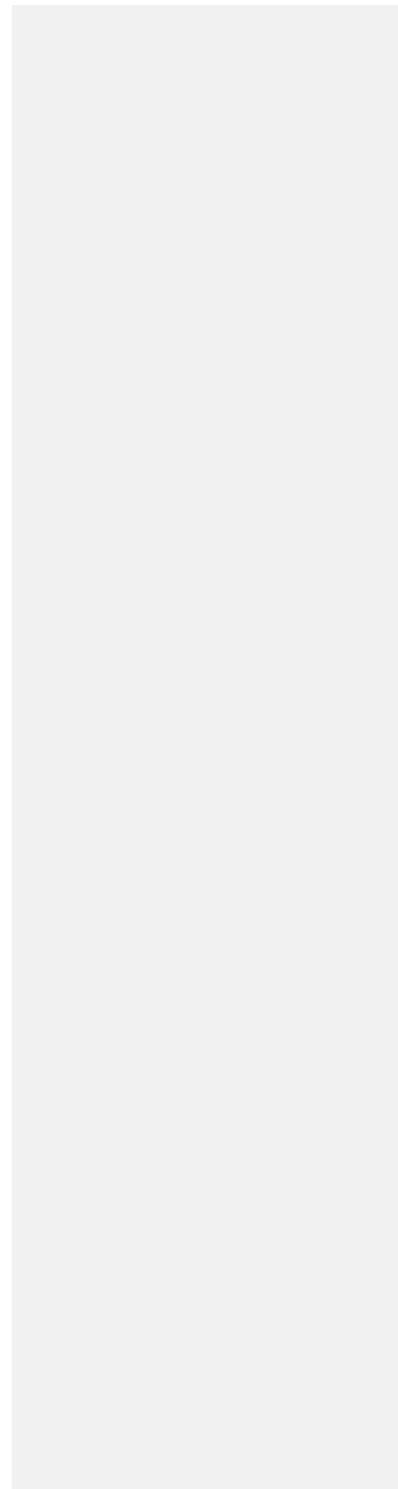
Detected Above Screening Level

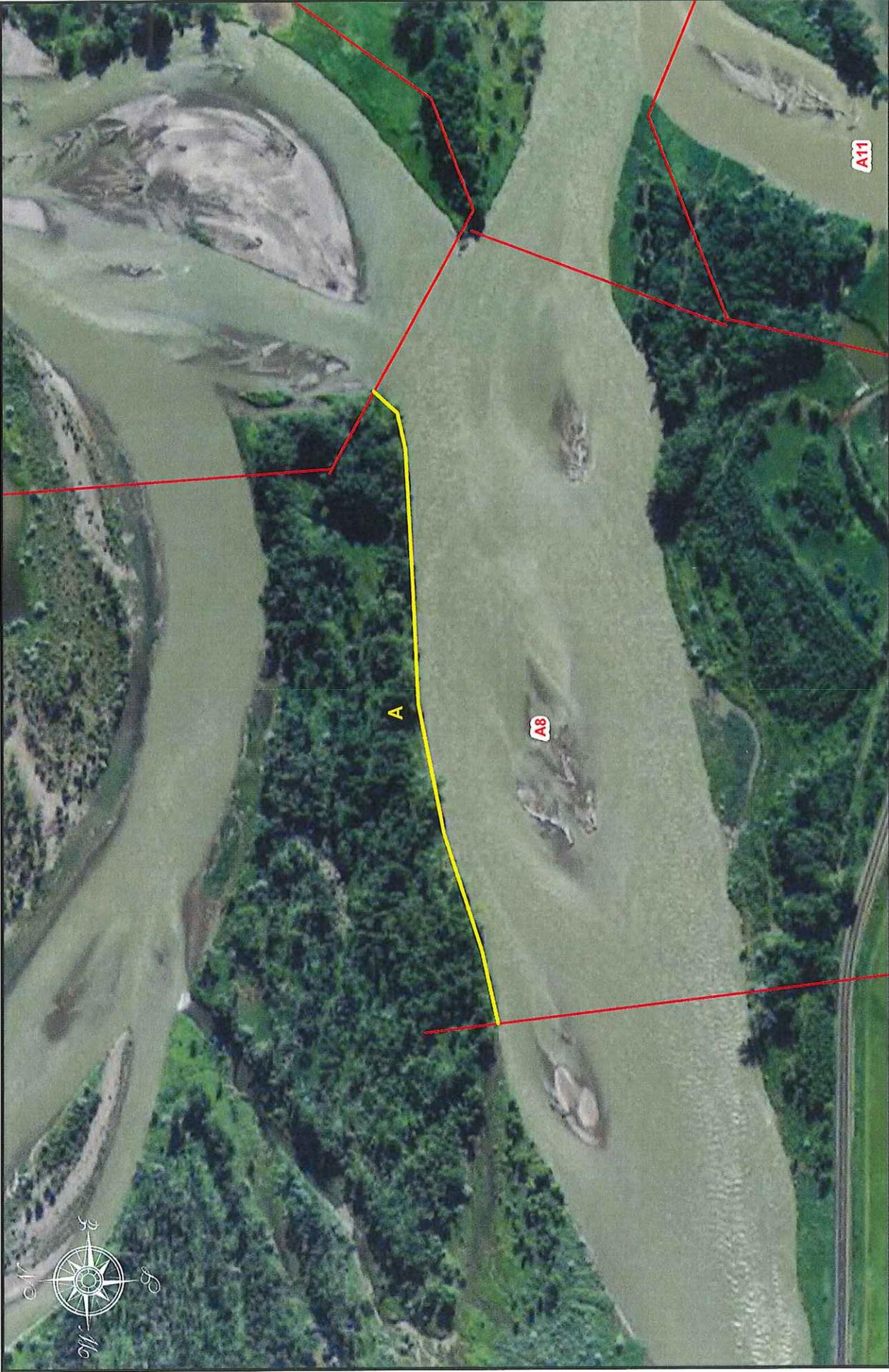
| Sample Num | Date | Sample Type | Matrix | Analytical Method | Analyte | Detected | Result | Screening Level | Result Qualifier | Units | Above? |
|----------------|-----------|-------------|----------|-------------------|--------------------------------|----------|--------|-----------------|------------------|-------|--------|
| SPSE105_071211 | 12-Jul-11 | Field | Sediment | MADEP EPH | Total Extractable Hydrocarbons | Y | 76.4 | 200 | | mg/kg | no |



Appendix B

Initial SCAT Survey Forms and
Sketches





Legend

- Segment Boundaries
- Oiling Zones



SCAT Teams 1 & 2 Survey

Segment A07 - Left Bank

18 July 2011

1 GENERAL INFORMATION

Segment/Reach ID: A6 (Left Bank / Right Bank / Island) Date (dd/mm/yy) 20/07/11 Time (24h): std / daylight 1000 hrs to 1400 hrs Water Level low - mean - bank full - overbank
 Operations Division: A falling - steady - rising Air Temp +/- 20 deg C
 Survey by: Foot / ATV / Boat / Helicopter / Overlook / (Sun) Clouds / Fog / Rain / Snow / Windy / Calm

2 SURVEY TEAM # 465

| name | organization | contact phone number |
|-----------------------|----------------------|----------------------|
| <u>John Williams</u> | <u>Cardno ENTRIX</u> | <u>361 676 8138</u> |
| <u>Joe Boyle</u> | <u>Cardno ENTRIX</u> | <u>386 214 6858</u> |
| <u>Courtney Tyree</u> | <u>FWP</u> | <u>406 860 7814</u> |
| <u>Mike Ruggles</u> | <u>FWP</u> | <u>406 671 0843</u> |
| <u>Colin Riley</u> | <u>EPA</u> | <u>415 215 0690</u> |

3 SEGMENT Total Segment/Reach Length 400 m Segment/Reach Length Surveyed 400 m

Start GPS: LATITUDE 45.65744 deg. LONGITUDE 108.72324 deg. Datum GCS 84
 End GPS: LATITUDE 45.65294 deg. LONGITUDE 108.71819 deg.

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

Bedrock: Cliff/Ramp Shelf Manmade: Solid Permeable (type) Wetland: Swamp Bog/Fen Marsh
 Sediment Bank: Clay/Mud S Sand Mixed Pebble/Cobble Boulder Peat/Organic Vegetated Bank: P Wooded Upland:
 Sediment Flat: Clay/Mud Sand Mixed/Coarse Other: If snow and ice use Winter River SOS

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: Est Height m canyon manmade meander S confined or leveed Substrate Type: mud
 Sloped: (>5°)(15°)(30°) <5° straight braided P oxbow flood plain valley Forested Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m m est. water depth: <1m 1-3m 3-10m >10m m
 shoal(s) present Y/N point bar present Y/N bar-shoal substrate: silt / sand / gravel / cobble / boulder / bedrock / debris
 seasonal water level: low / mean / bank full / overbank flow est. change over next 7 days: falling -> same - rising

5 OPERATIONAL FEATURES Suitable backshore staging Y(N) Access: Direct from backshore Y(N) Alongshore from next segment Y(N)
 Debris: Y(N) oiled Y(N) amount bags or trucks access restrictions dense veg + soft mud
 Oiled trees/shrubs Y(N) River Current strong Y(N) Other Features:

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

| OIL ZONE ID | RIVER BANK ZONE | | | | OIL COVER | | | OIL THICKNESS | | | | | OIL CHARACTER | | | | | | | SUBST. TYPE(S) | | |
|-------------|-----------------|----|----------|----------|------------|-----------|----------|---------------|----|----|----|----|---------------|----|----|----|----|----|----|----------------|----------|------------|
| | | | | | Length | Width | Distrib. | | | | | | | | | | | | | | | |
| | MS | LB | UB | OB | m | m | % | TO | CV | CT | ST | FL | FR | MS | TB | PT | TC | SR | AP | | NO | |
| <u>A</u> | | | <u>S</u> | <u>P</u> | <u>400</u> | <u>20</u> | <u>0</u> | | | | | | | | | | | | | | <u>P</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 | TR | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

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

name Jenice Witul organization EPA contact phone number 415 816 6582
 Zone A recommendations = 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#)



A10

A15

A11

A8

A7

A

Low on A
Low on A4, A5, A6,
A7, A8, A9, A10

see second map

A6

A9

A5

A4

A3

© 2011 Google

Image © 2011 DigitalGlobe

45° 39.316' N 108° 43.941' W elev. 3254 ft

1996

Date: 5/1/2004



2086 ft

© 2010 Google

Eye alt 12

DB/G

Left bank
AA 9/29/11

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 2

1 GENERAL INFORMATION

Segment/Reach ID: A08 Left Bank Right Bank Island Date (dd/mm/yy) 2010811 Time (24h): std / daylight 1155 hrs to 1200 hrs Water Level falling - steady - rising

Operations Division: 2010811 Air Temp +/- deg C

Survey by: Foot / ATV / Boat / Helicopter / Overlook / sun / Clouds / Fog / Rain / Snow / Windy / Calm

2 SURVEY TEAM # 3

| Name | Organization | Signature |
|--------------------------|----------------|--------------------|
| <u>Todd Farrar</u> | <u>Polaris</u> | <u>[Signature]</u> |
| <u>Lisa Geremker</u> | <u>EntriX</u> | <u>[Signature]</u> |
| <u>Jeffrey Herriek</u> | <u>DEQ</u> | <u>[Signature]</u> |
| <u>Rachelle Thompson</u> | <u>EPA</u> | <u>[Signature]</u> |
| <u>Ethan Stapp</u> | <u>DNRC</u> | <u>[Signature]</u> |

3 SEGMENT Total Segment/Reach Length m Segment/Reach Length Surveyed 460 m

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

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

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

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

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

Sediment Flat: Clay/Mud Sand S 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 Substrate Type:

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 160m 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 |
| | | | | | | | | | | | | | | | | | | | | | |
| 1741 A | | X | | | 280 | 67 | | | | | | | | | | | | | | | X |
| 1742 B | | X | | | 160 | 34 | | | | | | | | | | | | | | | X |

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

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

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

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

Zone A - NOO . NPT

Zone B - NOO . NPT



8/20/2011 9:05 am 8/20/2011 1:57 pm 1 pm

1996

© 2011 Google

45°39'07.49" N 108°43'10.90" W elev 3245 ft

Eye alt

Thiel Rd

A08

A11-LB

A08-RB

A08-LB

A15-IS

Zone B

Zone A

©2010 Goo

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

| | | | | |
|---|--|---|--|---|
| 1 GENERAL INFORMATION | | Date (dd/mm/yy) 03/09/11 | Time (24h): std / daylight 1000 hrs to 1330 hrs | Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising |
| Segment/Reach ID: A <u>8</u> Left Bank / Right Bank / Island | | Operations Division: A | | |
| Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / | | Sun / Clouds / Fog / Rain / Snow / Windy / Calm | | Air Temp + / - <u>22</u> deg C |

| | | | |
|--------------------------|---------|--------------|------------------|
| 2 SURVEY TEAM # 2 | Name | Organization | Signature |
| Pete Lee | Polaris | | <i>P. Lee</i> |
| Larry Alheim | MTDEQ | | <i>L. Alheim</i> |
| Stephen Ball | USEPA | | <i>S. Ball</i> |

3 SEGMENT Total Segment/Reach Length 425 m Segment/Reach Length Surveyed 240 m

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

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

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

5 OPERATIONAL FEATURES

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

Debris Y/N oiled Y/N amount _____ bags or _____ trucks Access restrictions: Boat only

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

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

| 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>240</u> | <u>70</u> | | | | | | | | | | | | | | | <u>X</u> | Grass, trees, debris |

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

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

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

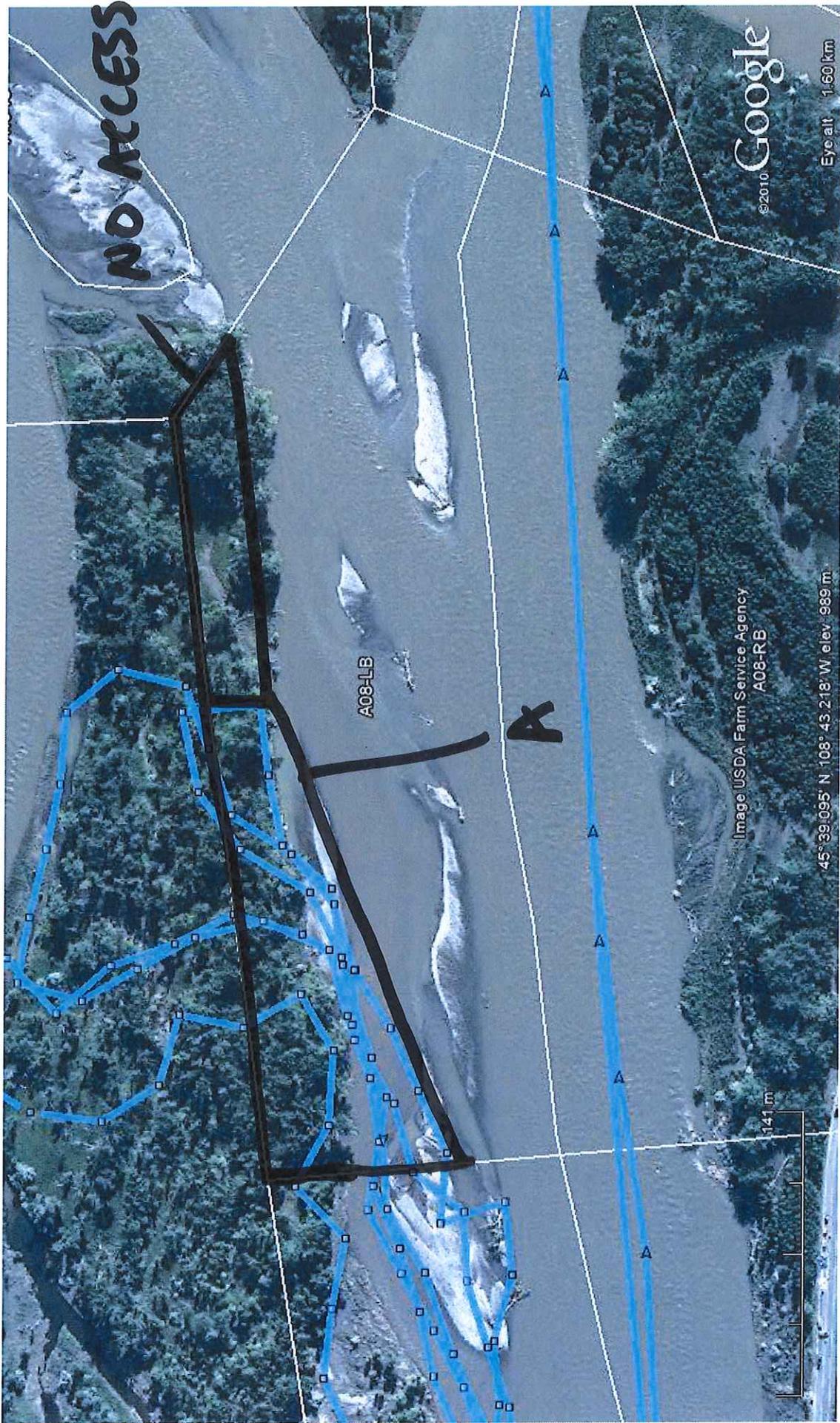
Overbank Survey Required Y/N Overbank Survey Completed Y/N Shoreline Survey Completed Y/N

Oil height:

Treatment recommendations:
 Zone A : No oil; no treatment required
 Zone :

Private landowner; eastern portion is no access

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



A08 LB
T2 9/2/11

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

| | | | | |
|---|--|---|--|---|
| 1 GENERAL INFORMATION | | Date (dd/mm/yy) 11-Jul-2011 | Time (24h): std / daylight 1102 hrs to 1103 hrs | Water Level low - mean - bankfull - <u>overbank</u> falling - steady - rising |
| Segment/Reach ID: A8 Left Bank / <u>Right Bank</u> / Island | | | | |
| Operations Division: A | | | | |
| Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____ | | Sun / Clouds / Fog / Rain / Snow / Windy / Calm | | Air Temp + / - <u>29.4</u> deg C |

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

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 507 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 _____ Peal/Organic _____ Vegetated Bank: P Wooded Upland: S

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

Sloped: (>5°)(15°)(30°) straight Q 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 170m 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 0.25 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

(0)

| 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 | | 507 | 1 | 95 | | | X | X | | X | | | | | | | | Grass, trees, debris | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |

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

| TRENCH or PIT NO. | RIVER BANK ZONE | | | | MAX. PIT DEPTH cm | OILED ZONE 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

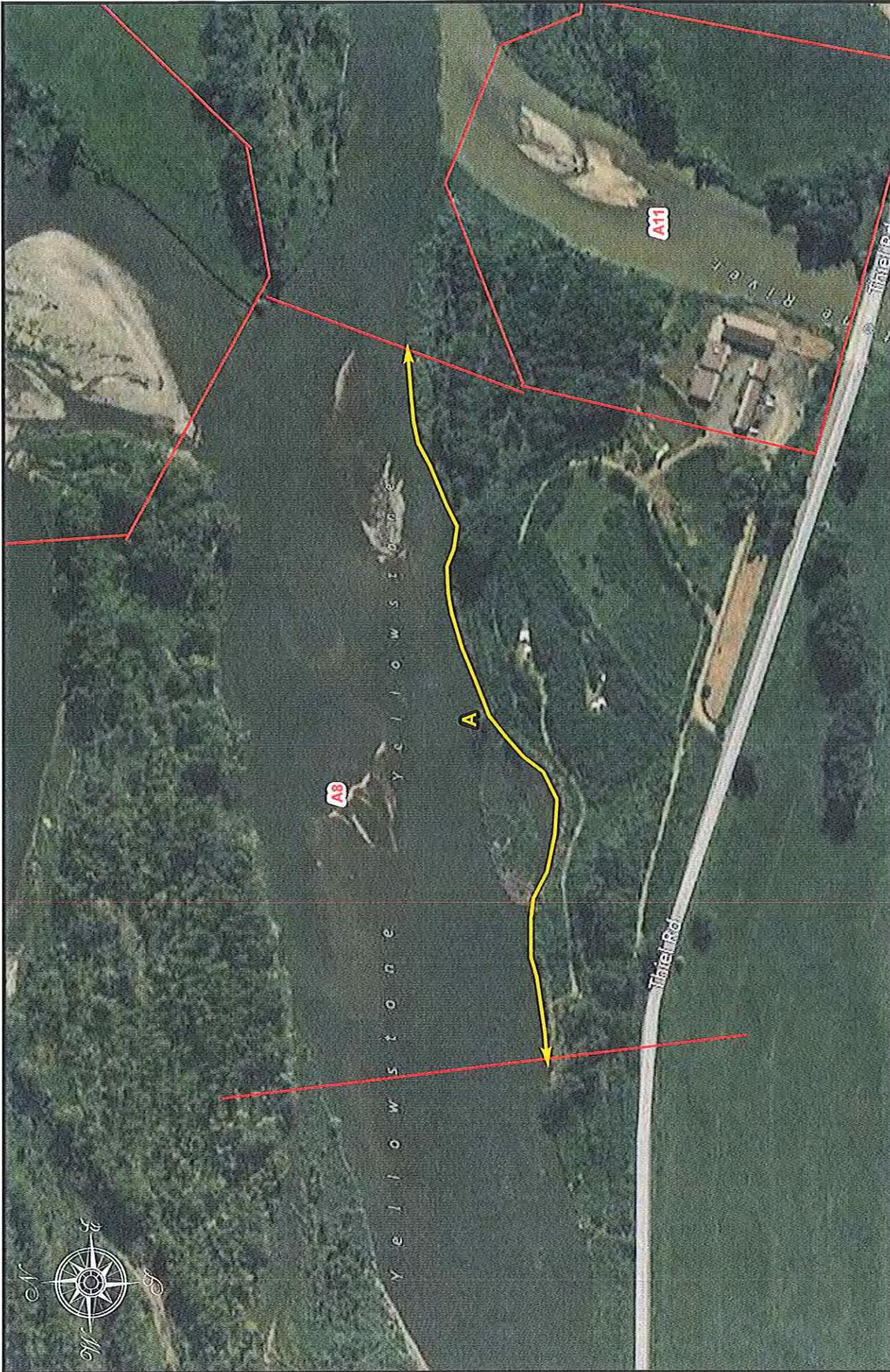
Zone A Oiled Band Height: 30cm

Due to survey platform (jet-drive boat) oil band width and heights are estimates. Unable to verify by foot.

Cleanup Recommendations: Trim oiled vegetation; wipe large oiled debris; remove small oiled debris; wipe oiled trees;

(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 # _____)



Legend

Oil Zones

Segment Boundaries



SCAT Teams 2 & 4 Survey

Segment A8 Right Bank

11-Jul-2011

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

| | | | | |
|---|--|-----------------|------------------------------------|----------------------------------|
| 1 GENERAL INFORMATION | | Date (dd/mm/yy) | Time (24h): std / daylight | Water Level |
| Segment/Reach ID: <u>A B</u> | Left Bank (Right Bank) / Island | <u>23/07/11</u> | <u>0913</u> hrs to <u>0959</u> hrs | low - mean - bankfull - overbank |
| Operations Division: <u>A</u> | | | | falling - steady - rising |
| Survey by: <u>(Foot) / ATV / Boat / Helicopter / Overlook /</u> | <u>(Sun) / Clouds / Fog / Rain / Snow / Windy / Calm</u> | | | Air Temp + / - <u>25</u> deg C |

| | | | |
|---------------------------------|-----------------------|----------------------|--------------------|
| 2 SURVEY TEAM # <u>6</u> | Name | Organization | Signature |
| | <u>Chelsea Murphy</u> | <u>Cardno ENTRIX</u> | <u>[Signature]</u> |
| | <u>Darrah Turner</u> | <u>MT DEP</u> | <u>[Signature]</u> |
| | <u>Ron Lynn de</u> | <u>USCG</u> | <u>[Signature]</u> |
| | <u>Steve Kennedy</u> | <u>Cardno ENTRIX</u> | <u>[Signature]</u> |

3 SEGMENT Total Segment/Reach Length ~ 440 m Segment/Reach Length Surveyed ~ 440 m

Start GPS: LATITUDE 45.65006 deg. — min. LONGITUDE 108.722843 deg. — min. Datum: WGS 84

End GPS: LATITUDE 45.65007 deg. — min. LONGITUDE 108.71720 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 — Boulder — Peat/Organic — Vegetated Bank: (S) 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: mud

Sloped: (S) (>5°)(15°)(30°) straight — braided (P) 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) >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 50 bags or — trucks Airbuds access restrictions Good backshore staging +

Oiled trees/shrubs (Y/N) River Current strong (Y/N) 100 Other Features: access along Rd

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>(P)</u> | <u>440</u> | <u>100</u> | <u>15</u> | | <u>(S)</u> | <u>(P)</u> | <u>(S)</u> | | | <u>(P)</u> | | | | | | | | <u>mud</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

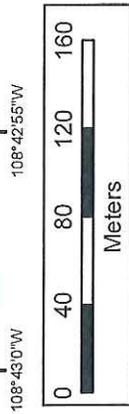
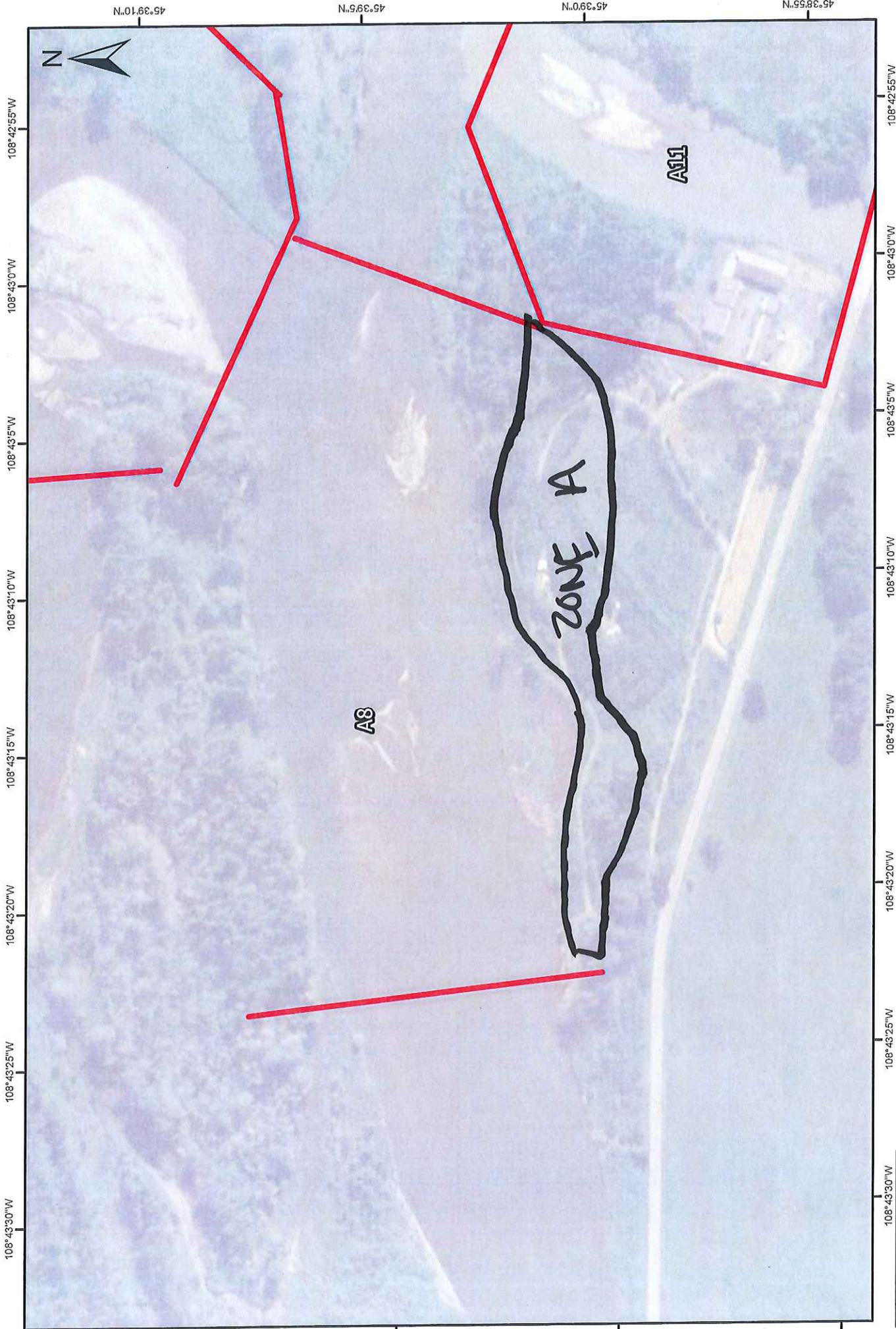
Overbank Survey Required (Y/N) Overbank Survey Completed (Y/N) Shoreline Survey Completed (Y/N)

Zone A Recommendations - Continue cleanup efforts on debris, vegetation & sediment. Recommend another survey when crews make more progress.

Cleanup methods 1-5

Sketch (Yes) / No Photos (Yes) / No Frames 20-31 2B ^{can 7/23/11} Photographer Chelsea Murphy

Pic # 20-31^{cm} 2B



108°43'30"W 108°43'25"W 108°43'20"W 108°43'15"W 108°43'10"W 108°43'5" W 108°43'0"W 108°42'55"W

COMMENTS:

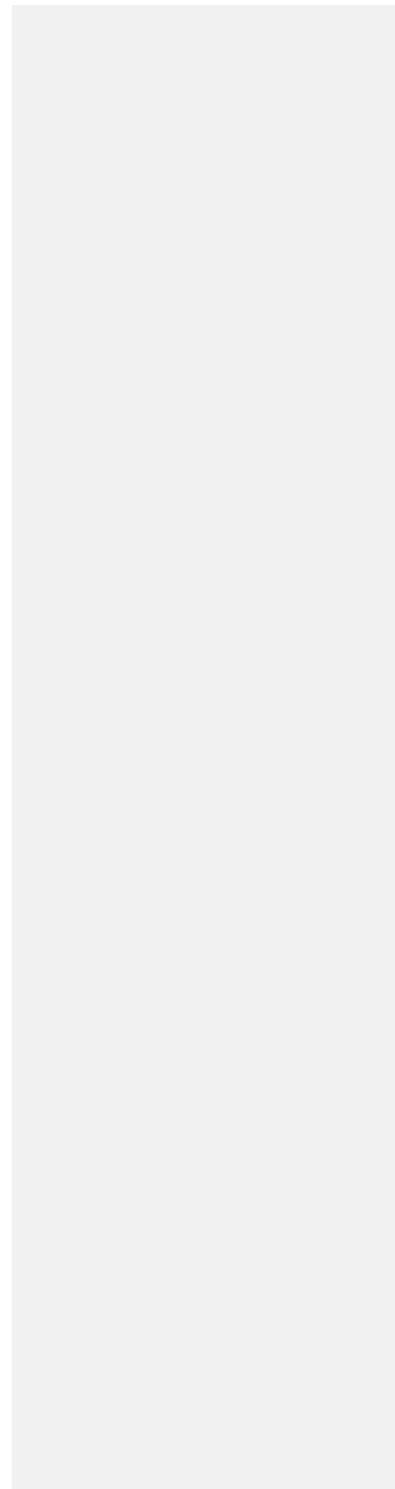
DATE: 7/23/11
 TEAM: #6

A08 - A
 (L/R)??



Appendix C

Pre-Inspection Survey Transmittal

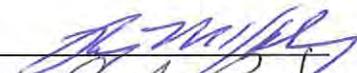


Copy given to Ops.

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 8/20/11

Segment: A8 RB

Team: SCAT Liaison Ray McKelvey Signed: 
 Observer Gary Reiter Signed: 
 Observer _____ Signed: _____
 Observer _____ Signed: _____

Segment meets criteria? YES ___ NO X

RBOS attached? YES ___ NO X

If NO:

Location Sketch attached? YES ___ NO X

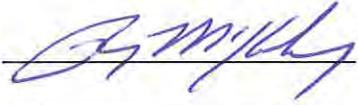
CTR continue? YES X NO ___

Comments: **Segment was pre-inspected for re-scat and did not meet CTR criteria. Area's needing attention were flagged out and shown to the segment supervisor Paul Reed.**

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 8/23/11

Segment: A8 RB

Team: SCAT Liaison Ray McKelvey Signed: 
Observer _____ Signed: _____
Observer _____ Signed: _____
Observer _____ Signed: _____

Segment meets criteria? YES X NO _____

RBOS attached? YES _____ NO X

If NO:

Location Sketch attached? YES _____ NO X

CTR continue? YES _____ NO X

Comments: **Segment is ready for re-scat.**

1. Property name: BLM
2. Property name: College Park LLP

full seg

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 25 August 2011

Segment: A08 RB

Team:

RP Team Leader Eric Harlow

Signed: David Harbor

Federal Rep Terry Tanner

Signed: [Signature]

State Rep Marcile Sigler

Signed: Marcile Sigler

Other trustee _____

Signed: _____

Segment meets criteria? YES ___ NO X

RBOS attached? YES X NO ___

If NO:

Location Sketch attached? YES ___ NO ___

CTR continue? YES ___ NO ___

Comments:

OK 8/26/11

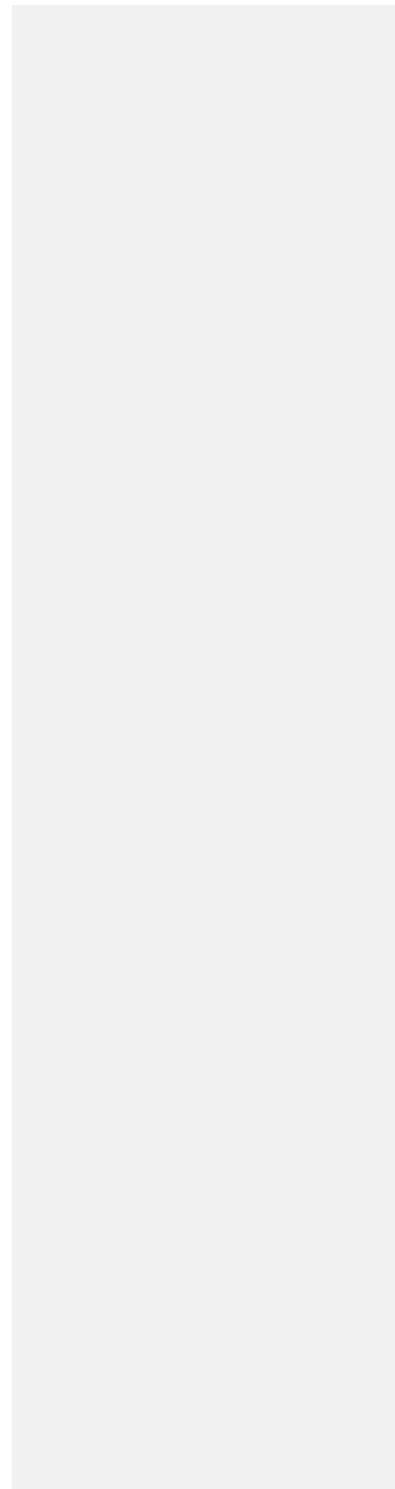
Zone B on map:

Deploy sorbents to catch sheen releasing to Yellowstone River from cavity beneath fallen tree. TAG is aware of the issue at Zone B and treating similar problem at the boundary between A7 + A8



Appendix D

Post-Inspection Survey Transmittal



POST

Post Inspection Survey Transmittal

*Created by Connor Kobeski / Carlos ENTREX 8/30/11
QA/QC*

Segment A08-RB

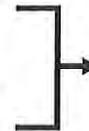
Date of Survey 08/25/11

SCAT Team Member Eric Harlow Signed: (see attached PIST)

SCAT Team Member Terry Tanner Signed: (see attached PIST)

SCAT Team Member Marcile Sigler Signed: (see attached PIST)

Segment FAILED ReSCAT



Referred to Ops
For Further Treatment

Segment Conditionally PASSES ReSCAT



IF the Segment FAILED ReSCAT, another ReSCAT is required after treatment has been completed.
IF the Segment Conditionally PASSES ReSCAT, a SCAT/Ops Liaison will verify treatment completion.

Describe the zone requiring further treatment. Comment on oiling conditions, relevant portions of the CTR(s), the appropriate ATMs to use, GPS waypoints, additional comments, etc. Attach map.

Zone B on attached map requires deployment of sorbents to catch sheen releasing to Yellowstone River. Source of oil release is beneath fallen tree cavity and requires clean up. TAG is aware of the issue and treating a similar problem at the A7/A8 boundary

Zone Dimensions: Length 4m Width 4m GPS Waypoint: Lat. _____ Long. _____
(required) (center of zone)

Estimated Work Effort: Number of People _____ Hours of Work _____ ^{CTR} Access Issues? 6
(required)

The undersigned attests that the above treatment has been completed and the identified area meets the Approved Treatment Methods Target Endpoints.

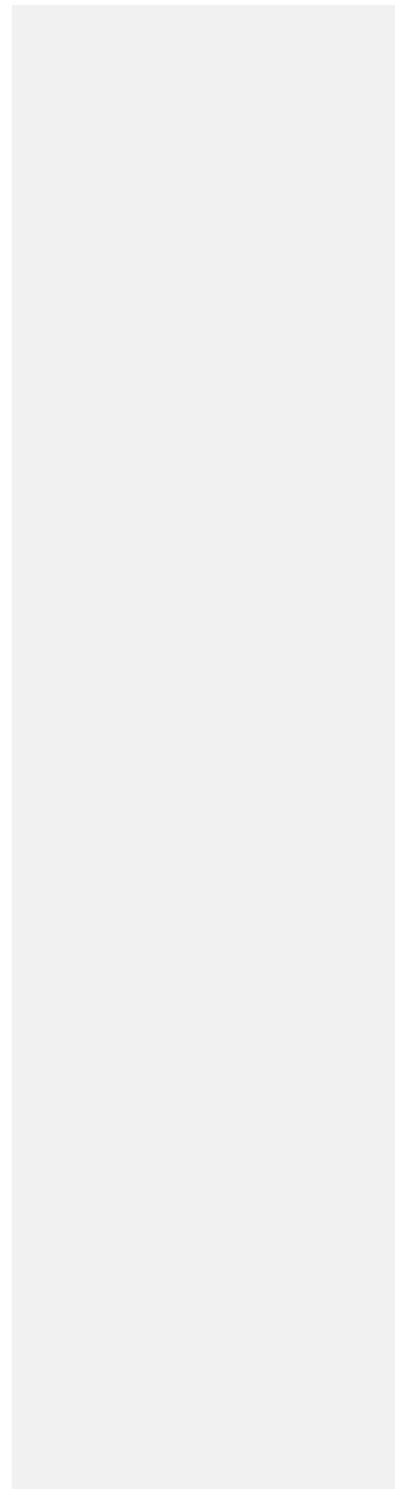
Sign Name _____ Print Name/ Affiliation _____ Date _____

Sign Name _____ Print Name/ Affiliation _____ Date _____



Appendix E

Final SCAT Survey Forms and
Sketches



DB/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

| | | | | |
|---|--|---|--|--|
| 1 GENERAL INFORMATION | | Date (dd/mm/yy) 08/25/11 | Time (24h): std / daylight 0915 hrs to 1015 hrs | Water Level low <u>mean</u> bankfull - overbank <u>falling</u> steady - rising |
| Segment/Reach ID: A08 Left Bank <u>(Right Bank)</u> Island | | Operations Division: | | |
| Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook / | | Sun / <u>(Clouds)</u> / Fog / Rain / Snow / Windy / <u>Calm</u> | | Air Temp +/- <u>30</u> deg C |

| | | | |
|--------------------------|------|-------------------------------|--------------------|
| 2 SURVEY TEAM # 6 | Name | Organization | Signature |
| Mike Herman | | MF&P | <i>[Signature]</i> |
| David Eric Harlow | | Cardno Entrix | <i>[Signature]</i> |
| Bruce Kvam | | Polaris Applied Sciences, LLC | <i>[Signature]</i> |
| Jay Parks | | BLM | |
| Marcile Sigler | | MDEQ | <i>[Signature]</i> |
| Terry Tanner | | USEPA | <i>[Signature]</i> |

3 SEGMENT Total Segment/Reach Length 466 m Segment/Reach Length Surveyed 466 m

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

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

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

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

Sediment Bank: Clay/Mud _____ Sand X Mixed _____ Pebble/Cobble _____ Boulder _____ Peat/Organic _____ Vegetated Bank: 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 X oxbow _____ flood plain valley X (Forested) Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 161m 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 | 462 | 128 | <1 | | | X | (X) | | | | | | X | | | | | Shrubs, trees, grass, woody debris |
| B | | | | X | 4 | 4 | 100 | | | | | X | X | | | | | | | | | Water |

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

Treatment Recommendations*:

Zone A: Used hot shot Operations team to: 1) cut and remove oil coated vegetation smaller than 1" diameter; 2) remove oil coated debris smaller than 4" diameter; and 3) dust oil coated debris. No further treatment required.

Zone B: Deploy sorbents to catch sheen releasing to Yellowstone River from cavity beneath fallen tree. TAG is presently treating Zone B using this method. *and using treating a similar problem at the boundary between A7 & A8.*

* Refer to current (8-24-11 version) treatment recommendations.

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

sware of the issue at

DB/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

| | | | | |
|---|--|---|--|--|
| 1 GENERAL INFORMATION | | Date (dd/mm/yy) 08/25/11 | Time (24h): std / daylight 0915 hrs to 1015 hrs | Water Level low <u>(mean)</u> bankfull - overbank <u>(falling)</u> steady - rising |
| Segment/Reach ID: A08 Left Bank <u>(Right Bank)</u> Island | | Operations Division: | | |
| Survey by: <u>(Foot)</u> ATV / Boat / Helicopter / Overlook / _____ | | Sun / <u>(Cloudy)</u> Fog / Rain / Snow / Windy / <u>(Calm)</u> | | |
| Air Temp +/- 30 deg C | | | | |

| 2 SURVEY TEAM # 6 | Name | Organization | Signature |
|-------------------|------|-------------------------------|--------------------|
| Mike Herman | | MFW&P | <i>[Signature]</i> |
| David Eric Harlow | | Cardno Entrix | <i>[Signature]</i> |
| Bruce Kvam | | Polaris Applied Sciences, LLC | <i>[Signature]</i> |
| Jay Parks | | BLM | <i>[Signature]</i> |
| Marcile Sigler | | MDEQ | <i>[Signature]</i> |
| Terry Tanner | | USEPA | <i>[Signature]</i> |

3 SEGMENT Total Segment/Reach Length 466 m Segment/Reach Length Surveyed 466 m

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

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

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

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

Sediment Bank: Clay/Mud _____ Sand X Mixed _____ Pebble/Cobble _____ Boulder _____ Peat/Organic _____ Vegetated Bank: 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 X oxbow _____ flood plain valley X (Forested) Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 1 6 1 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

1837
1838

| 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 | 462 | 128 | <1 | | | X | (X) | | | | | | X | | | | | Shrubs, trees, grass, woody debris |
| B | | | | X | 4 | 4 | 100 | | | | | X | X | | | | | | | | | Water |

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

Treatment Recommendations*:

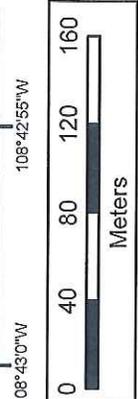
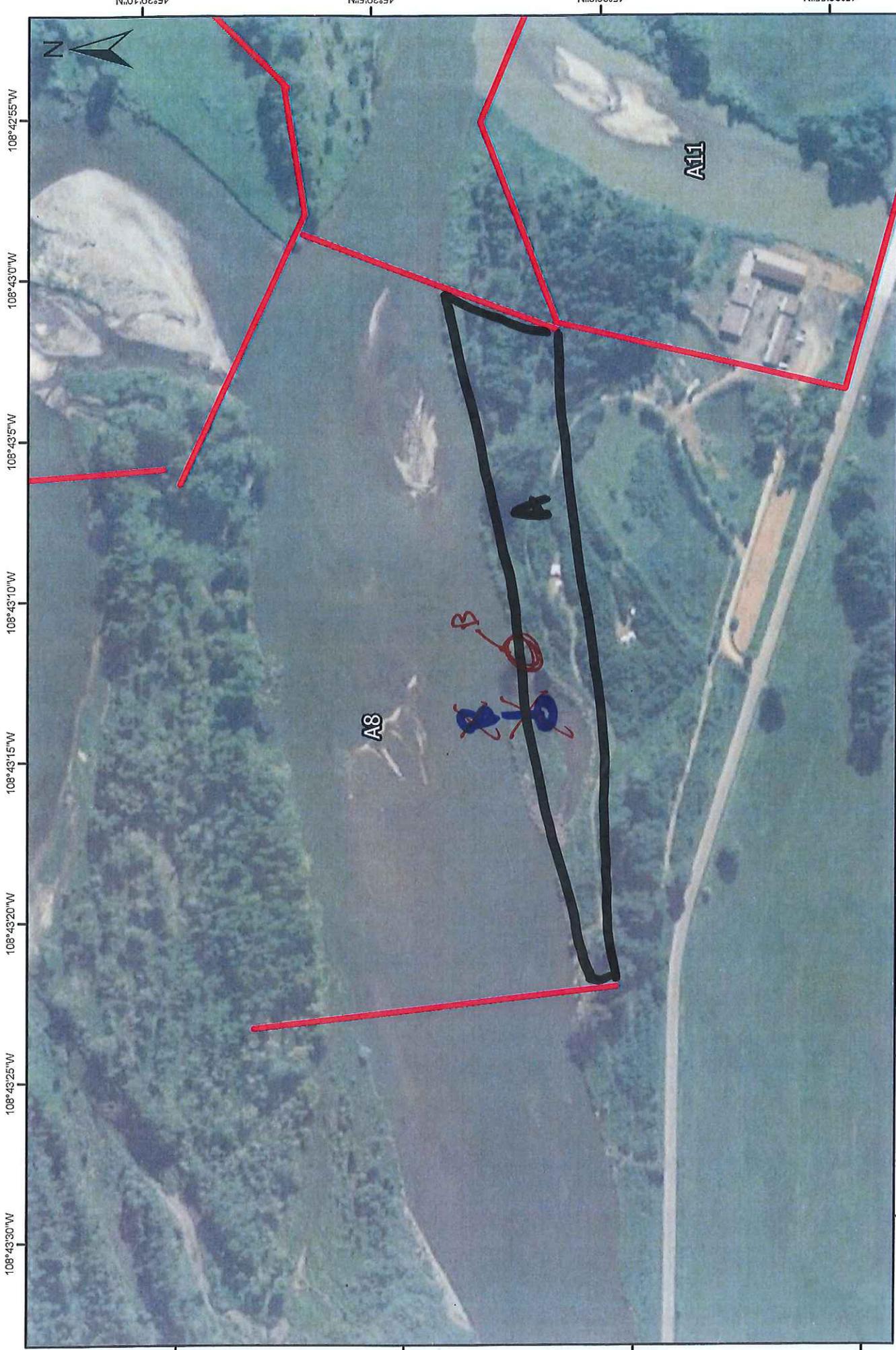
Zone A: Used hot shot Operations team to: 1) cut and remove oil coated vegetation smaller than 1" diameter; 2) remove oil coated debris smaller than 4" diameter; and 3) dust oil coated debris. No further treatment required.

Zone B: Deploy sorbents to catch sheen releasing to Yellowstone River from cavity beneath fallen tree. TAG is presently treating Zone B using this method. *and using treating a similar problem at the boundary between A7 & A8.*

* Refer to current (8-24-11 version) treatment recommendations.

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

aware of the issue at



COMMENTS:

DATE: 08/25/2014
TEAM: 6

A08 - (L?)??

DB/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

| | | | | |
|---|--|--|--------------------------------------|---|
| 1 GENERAL INFORMATION | | Date (dd/mm/yy) | Time (24h): std / daylight | Water Level |
| Segment/Reach ID: <u>48</u> | Left Bank / <u>Right Bank</u> / Island | <u>23/09/2011</u> | <u>11:00</u> hrs to <u>12:30</u> hrs | <u>low</u> - mean - bankfull - overbank |
| Operations Division: <u>A</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>4</u> / <u>35</u> deg C |

| | | | |
|---------------------------------|-----------------------|----------------|--------------------|
| 2 SURVEY TEAM # <u>2</u> | Name | Organization | Signature |
| | <u>Herb GAVURETU</u> | <u>Polaris</u> | <u>[Signature]</u> |
| | <u>Sheila Mc Atee</u> | <u>DNRC</u> | <u>[Signature]</u> |
| | | | |
| | | | |

3 SEGMENT Total Segment/Reach Length 445 m Segment/Reach Length Surveyed 445 m

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

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

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

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

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

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

2374

| 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 | 445 | 173 | <1 | | | S | P | | | | | | | | X | | | lg. Db, Tree |
| | | | | | | | | | | | | | | | | | | | | | | |

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

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

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

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

A: ReSCAT with Ops Hot Shots
 - stain and tag debris, stain and coat on large debris tree. The Hot Shots cleaned the segment, 3 bags
 Meet the condition of the CTR, NFT
 • WP sorbent booms on site need to be removed (see sketch)

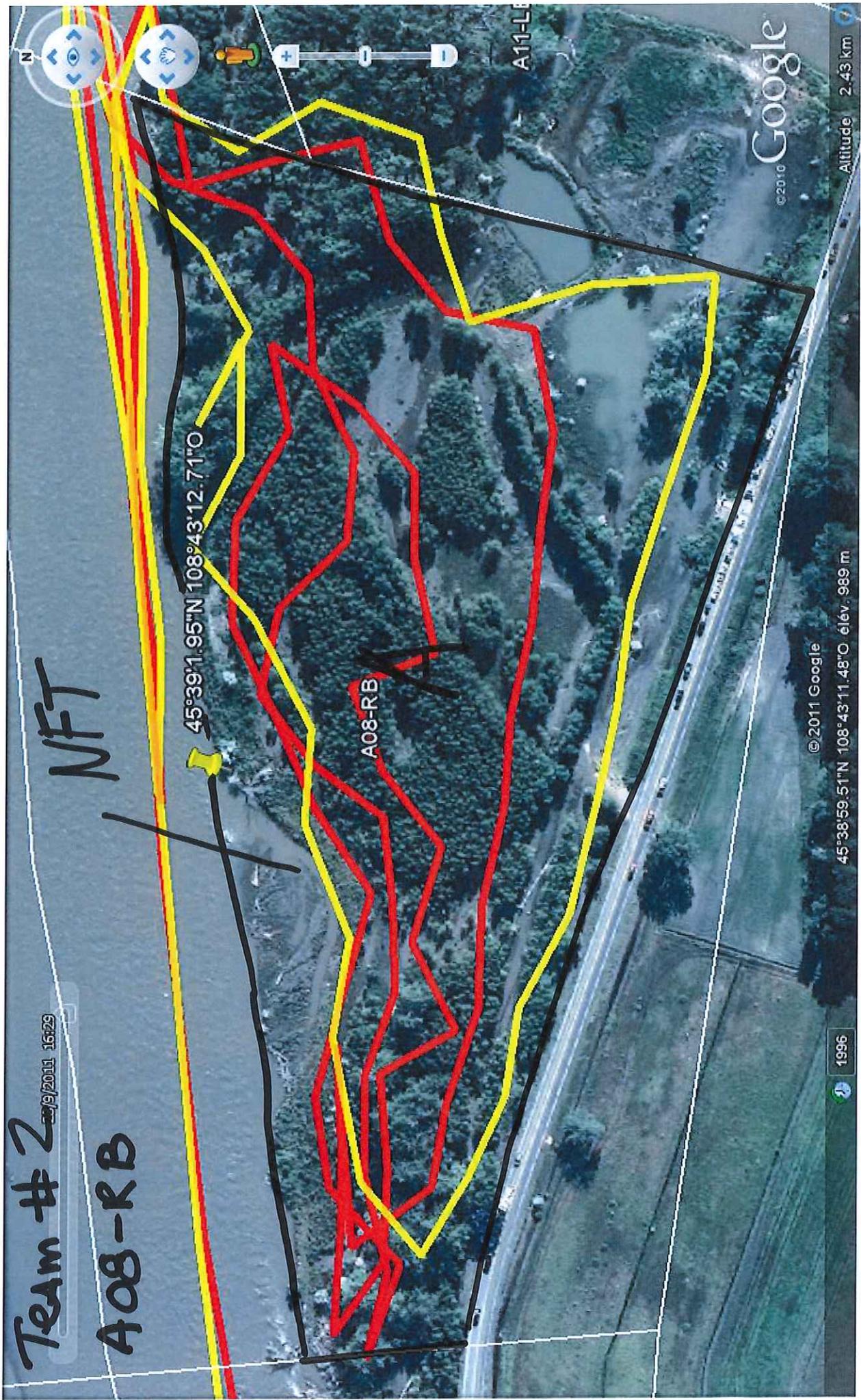
Sketch Yes / No Photos Yes / No Frames _____ Photographer _____

23/09/2011 ReSCAT

2/2

Team #2
A08-RB

NFT



$45^{\circ}39'1.95''\text{N } 108^{\circ}43'12.71''\text{O}$

A08-RB

Google

Altitude 2.43 km

© 2011 Google

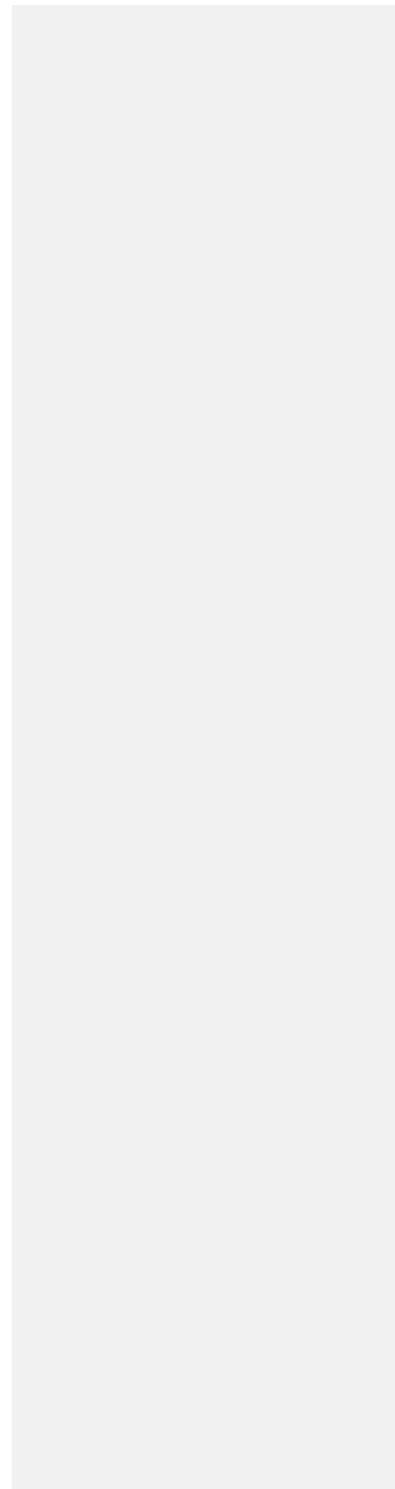
$45^{\circ}38'59.51''\text{N } 108^{\circ}43'11.48''\text{O}$ elev. 989 m

1996



Appendix F

Completed SCAT Segment Sign-Off
Forms



SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment A8 RB Date of Survey 23/09/2011

Dates of Initial SCAT Assessments 11 Jul 2011 (3)
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 6

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

Segment Assessment Complete¹
Partial Segment Assessment

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

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

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

No Federal Rep Present

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

Sign Name Sheila McAtee Print Name/ Affiliation Sheila McAtee/DNAC Date 9/23/2011
State Representative (DEQ/FWP)

Sign Name [Signature] Print Name/ Affiliation Herb Gavurek, Polaris Date 23/09/2011
RP Representative (SCAT RP Representative)

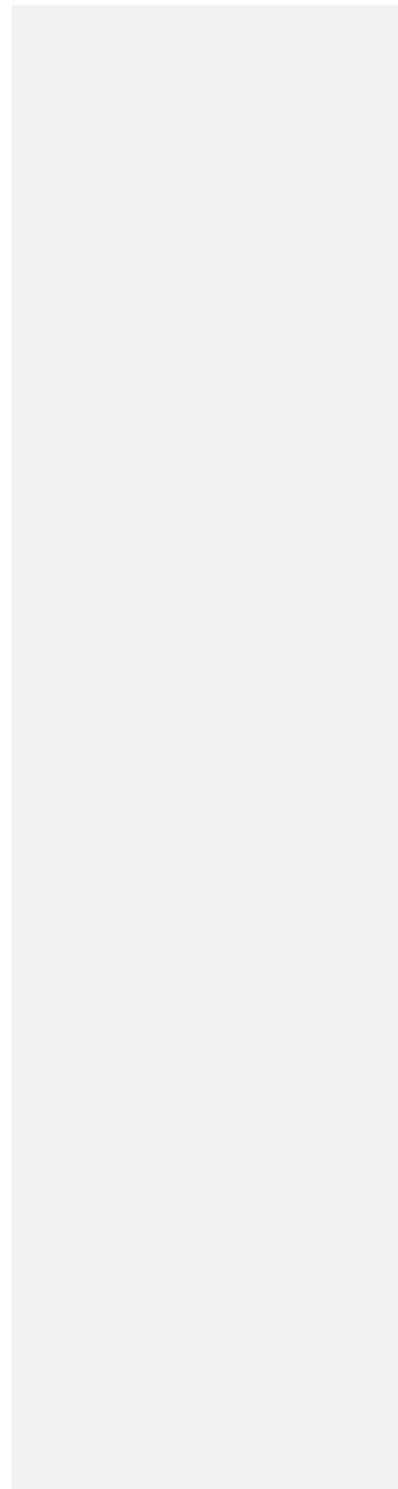
Once all applicable SCAT Segments (i.e. LB, RB, and IS) within a particular SCAT Area (i.e. A21) have been successfully signed-off during a formal SCAT Assessment, the SCAT Area will achieve the Response Endpoints and an Area Transition Report will be completed and submitted to EPA and DEQ.

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



Appendix G

Exception Memos



GENERAL MESSAGE

TO: Greg Weigel

POSITION: EPA Operations

FROM: JoAnn Eskelsen
Gary Reiter, Ray McKelvey

POSITION: SCAT/Ops Liaison

SUBJECT: Remediation of A-7 and A-8 RB Log Depressions

DATE: 8/26/2011

TIME: 1130

MESSAGE:

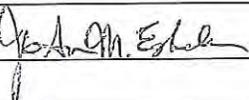
We visited the two log depression sites located at A-7 and A-8 respectively today to observe the success of the present treatment methods. We concluded that they have reached the end of their effectiveness and that the NEB may be better served by removing the sorbents from both locations and allowing the air, wind and sun to more readily attenuate the minor amount of oil still left in the depressions, and the minor sheen that may continue to emanate from them.

We recommend that at A-7 the flushing operations be stopped and it be allowed to sheen naturally if it does so. The boom should be maintained, but at a distance away from the depression to allow any sheen that may emanate from the depression to disperse and degrade from sun exposure. Once flushing is stopped, locally obtained dirt should be used to immediately dust the depression area and exposed roots while still damp to minimize possibility of oil being transferred to any wildlife that may enter the depressions.

As recommended for A-7, we also recommend that the sorbents at both A-8 depressions be removed to facilitate natural evaporation and drying of sediment and wood in the depression. If possible, oiled roots that can be safely reached should be trimmed to extent possible. The sorbent boom should be maintained at a distance from the depressions to allow sheen to disperse and degrade from sun exposure, but to also ensure sheen does not escape from site and into the river.

Please contact us if you have any questions regarding these suggested changes to the treatment plan.

SIGNATURE: JoAnn Eskelsen

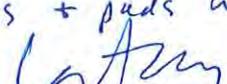


POSITION: EPA SCAT/Ops Liaison

REPLY:

Boom maintenance no longer required at current river water level.

these log depressions will now transition into long term monitoring + maintenance. Site will be inspected when water level rises to ensure "no sheen" continues. If sheen is found, booms + pads will be placed as appropriate.

STATE REP:  Laura Alvey / MT DEQ 27 Sept 11

RD REP:  LAUREN GLUSHIK / POLARIS 27 SEPT 11

DATE:

TIME:

SIGNATURE/POSITION:

GENERAL MESSAGE - SCAT AND OPERATIONS GUIDANCE FOR A7RB & A8RB EMBEDDED DEBRIS PILE SHEENING

| | |
|---|---|
| TO: Jimmie James, RPIC Mike Trombetta, SOSC Steven Merritt, FOSC | POSITION: ExxonMobil Montana DEQ State On-Scene Coordinator EPA Federal On-Scene Coordinator |
|---|---|

| | |
|--|------------------------------------|
| FROM: JoAnn Eskelsen, Gary Reiter, Ray McKelvey | POSITION: SCAT/Ops Liaisons |
|--|------------------------------------|

| | | |
|--|------------------------|-------------------|
| SUBJECT: Remediation of A7RB and A8RB Depressions | DATE: 8/26/2011 | TIME: 1130 |
|--|------------------------|-------------------|

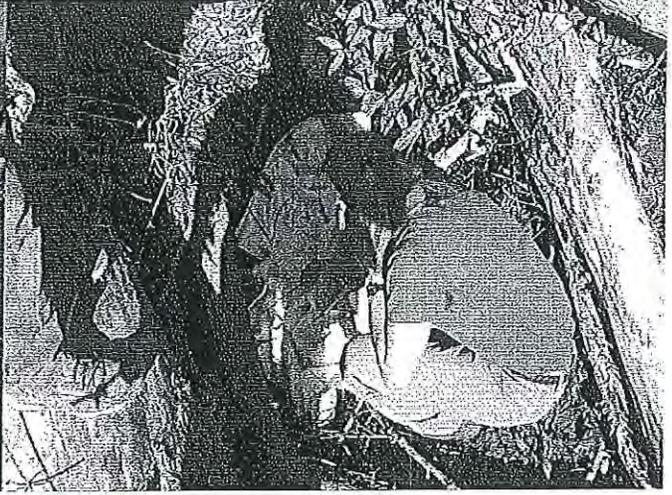
MESSAGE:

We visited the two log depression sites located at A-7 and A-8 respectively today to observe the success of the present treatment methods. We concluded that they have reached the end of their effectiveness and that the NEB may be better served by removing the sorbents from both locations and allowing the air, wind and sun to more readily attenuate the minor amount of oil still left in the depressions, and the minor sheen that may continue to emanate from them.

We recommend that at A-7 the flushing operations be stopped and it be allowed to sheen naturally if it does so. The boom should be maintained, but at a distance away from the depression to allow any sheen that may emanate from the depression to disperse and degrade from sun exposure. Once flushing is stopped, locally obtained dirt should be used to immediately dust the depression area and exposed roots while still damp to minimize possibility of oil being transferred to any wildlife that may enter the depressions.

As recommended for A-7, we also recommend that the sorbents at both A-8 depressions be removed to facilitate natural evaporation and drying of sediment and wood in the depression. If possible, oiled roots that can be safely reached should be trimmed to extent possible. The sorbent boom should be maintained at a distance from the depressions to allow sheen to disperse and degrade from sun exposure, but to also ensure sheen does not escape from site and into the river.

Please contact us if you have any questions regarding these suggested changes to the treatment plan.

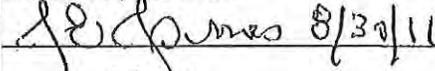


SIGNATURE: *JoAnn Eskelsen* JoAnn Eskelsen, EPA ERT

POSITION: EPA SCAT/Ops Liaison

REPLY: SCAT and Operations

The Unified Command is aware of this area within SCAT Segments A7RB and A8RB and that operations within these segments are now complete with the exception of this area by the Pre-Inspection Survey Teams and Re-SCAT efforts. We agree with the recommended treatment proposed above for this area, but request that water-based operations crews or wildlife branch personnel continue to monitor these areas from the river to ensure that sheen is not released from saturated substrates, as pictured above. ExxonMobil will coordinate any future remediation activities at this site with MTDEQ. In the meantime, this segment will be flagged and excised within GIS maps from the Re-SCAT report that will be produced to close-out the segment. This document will be included as an attachment to the Area Transition Report to document the need for additional work and monitoring within this segment.

| DATE: | TIME: | SIGNATURE/POSITION: |
|-----------|-------|---|
| 8/30/2011 | 1030 |  8/30/11 Jimmie James, RPIC |
| | |  8/30/11 Mike Trombetta, SOSC |
| | |  Steven Merritt, FOSC |



Laurel-20110824-00038.jpg



Laurel-20110824-00041.jpg



Laurel-20110824-00042.jpg



Laurel-20110824-00044.jpg



South Yellowstone-20110824-00043.jpg



South Yellowstone-20110824-00039.jpg



DSC_0455.JPG