

ExxonMobil Pipeline Company

**SCAT Area Transition Report for
B18**

Silvertip Pipeline Incident
Laurel, Montana

October 19, 2011



SCAT Area Transition Report for B18

Silvertip Pipeline Incident
Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

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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 B18, 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 B18. 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 B18, 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 B18 is 57.0. There were no access issues associated with the island or right bank; however, there was a conditional access agreement for a small upland portion of the left bank in 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 regular inspections of Area B18. No oiled wildlife was observed or recovered. No Wildlife Priority Cleanup Areas were identified. No active migratory bird nests were identified in Area B18.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area B18. 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 B18 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	BIMT0823SO503	8/23/2011	Soil_River	SO-B17	45.725488	-108.567603
CTEH	BIMT0823SO504	8/23/2011	Soil_River	SO-B17	45.725488	-108.567603
CTEH	BIMT0823SO505	8/23/2011	Soil_River	SO-B17	45.725488	-108.567603
CTEH	BIMT0823SO506	8/23/2011	Soil_River	SO-B17	45.725488	-108.567603
CTEH	LAMT0709IW105	7/9/2011	Water_Irrigation	LAMT_279_IW105	45.730830	-108.571030
EPA	SPSO129D01_071511	7/15/2011	Soil_Surface	SPSO129	45.728954	-108.573088
EPA	SPSW01_070911	7/9/2011	Water_Surface	SPSW01	45.729470	-108.572981
MDEQ	B11070821-001	7/10/2011	Soil_Surface	ST-KG-01	45.729020	-108.574330
MDEQ	B11070821-002	7/10/2011	Soil_Surface	ST-KG-01	45.729020	-108.574330
MDEQ	B11070821-010	7/10/2011	Soil_Surface	ST-KG-01	45.729020	-108.574330
MDEQ	B11070821-011	7/10/2011	Soil_Surface	ST-KG-01	45.729020	-108.574330
MDEQ	B11070821-032	7/10/2011	Soil_Surface	ST-KG-01	45.729020	-108.574330
MDEQ	B11070821-034	7/10/2011	Soil_Surface	ST-KG-01	45.729020	-108.574330
MDEQ	ST-071411-KG1	7/10/2011	Soil_Surface	ST-KG-01	45.729020	-108.574330

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 are no exceedances.

1.4 Summary of Initial SCAT Surveys

The SCAT teams used systematic evaluation criteria and treatment method tables approved by the National Oceanic and Atmospheric Administration to provide a standard approach for data collection and conducting field surveys. The forms and sketches from the initial SCAT surveys performed along the river bank (water edge) and floodplain within Area B18 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area B18.

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-18 and CTR-24).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area B18 in accordance with the ATMs identified in the CTRs. [Appendix I](#) of the Summary of Assessment and Oil Removal Activities report presents this data including: date range/days worked, average number of people working per day, equipment used, and various types of bags removed: oily debris, personal protective equipment, plastic, trash, super sacks, wood chips, and contaminated wood.

1.7 Pre-Inspection Survey Transmittal

SCAT Operations liaisons performed an inspection of the remediated areas of SCAT Area B18 and developed a Pre-Inspection Survey Transmittal (PIST) associated with the right bank and the island within Area B18, which is presented in Appendix C.

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 B18 following completion of oil removal activities. The SCAT team performed final surveys of the right and left bank and the island within SCAT Area B18 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 right bank, left bank, and island within Area B18, no further treatment is recommended for this area. The SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition
Report for B18**

Silvertip Pipeline Incident
Laurel, Montana

2. Transition Sign-Off Form

SCAT Area Transition Report for B18

Prepared for:

Unified Command

Date

Unified Command – RP



SCAT Area Transition
Report for B18

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for B18

Prepared for:

Unified Command

10/11/2011

Date

 S. NEFFERT

Unified Command – FOSC



**SCAT Area Transition
Report for B18**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for B18

Prepared for:

Unified Command

Date

Unified Command – MDEQ

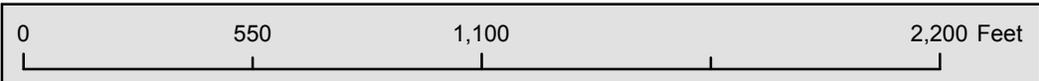
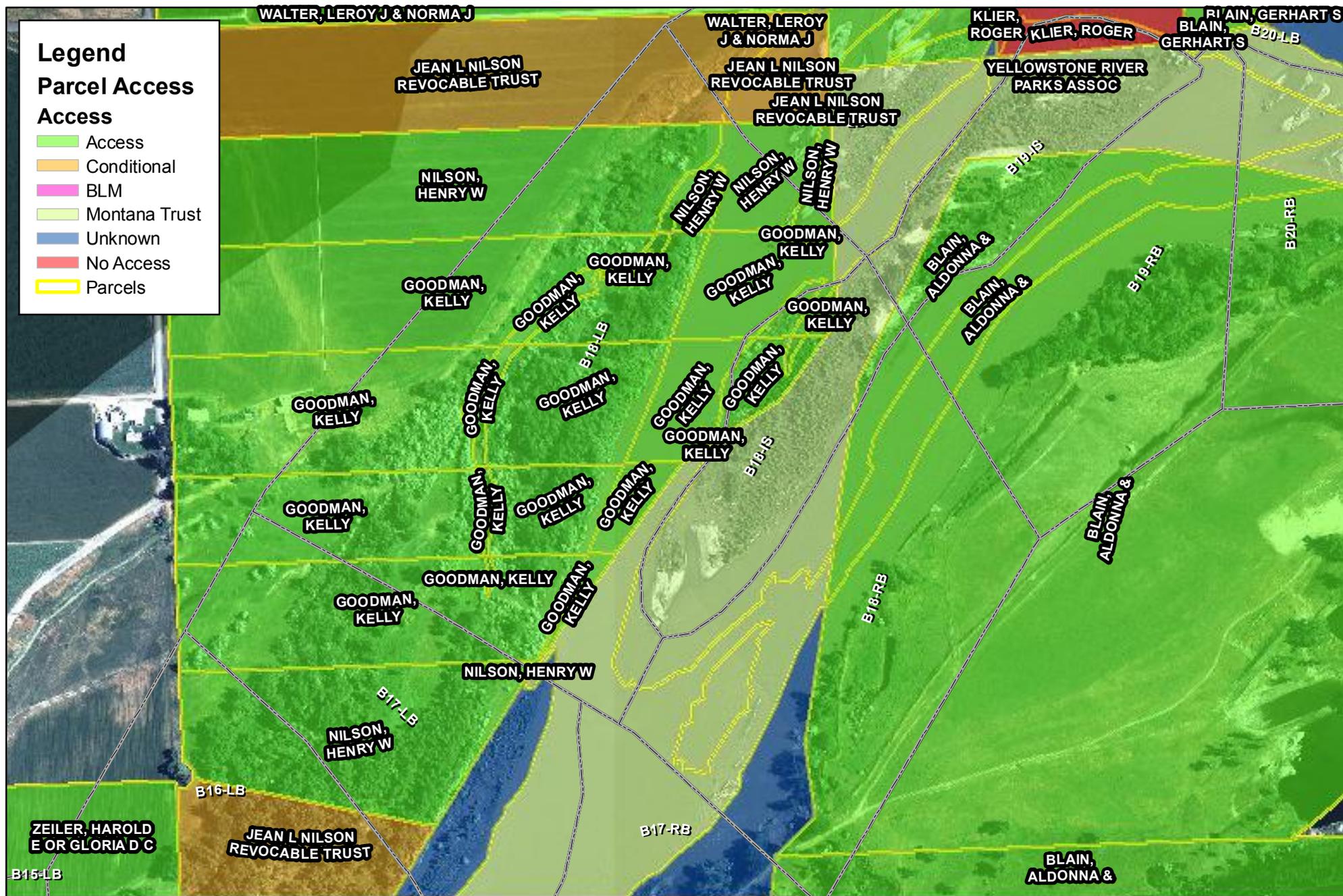


Figure 1

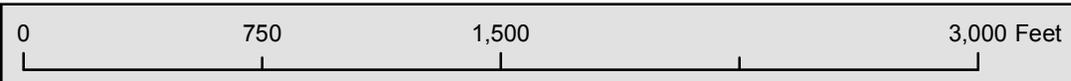
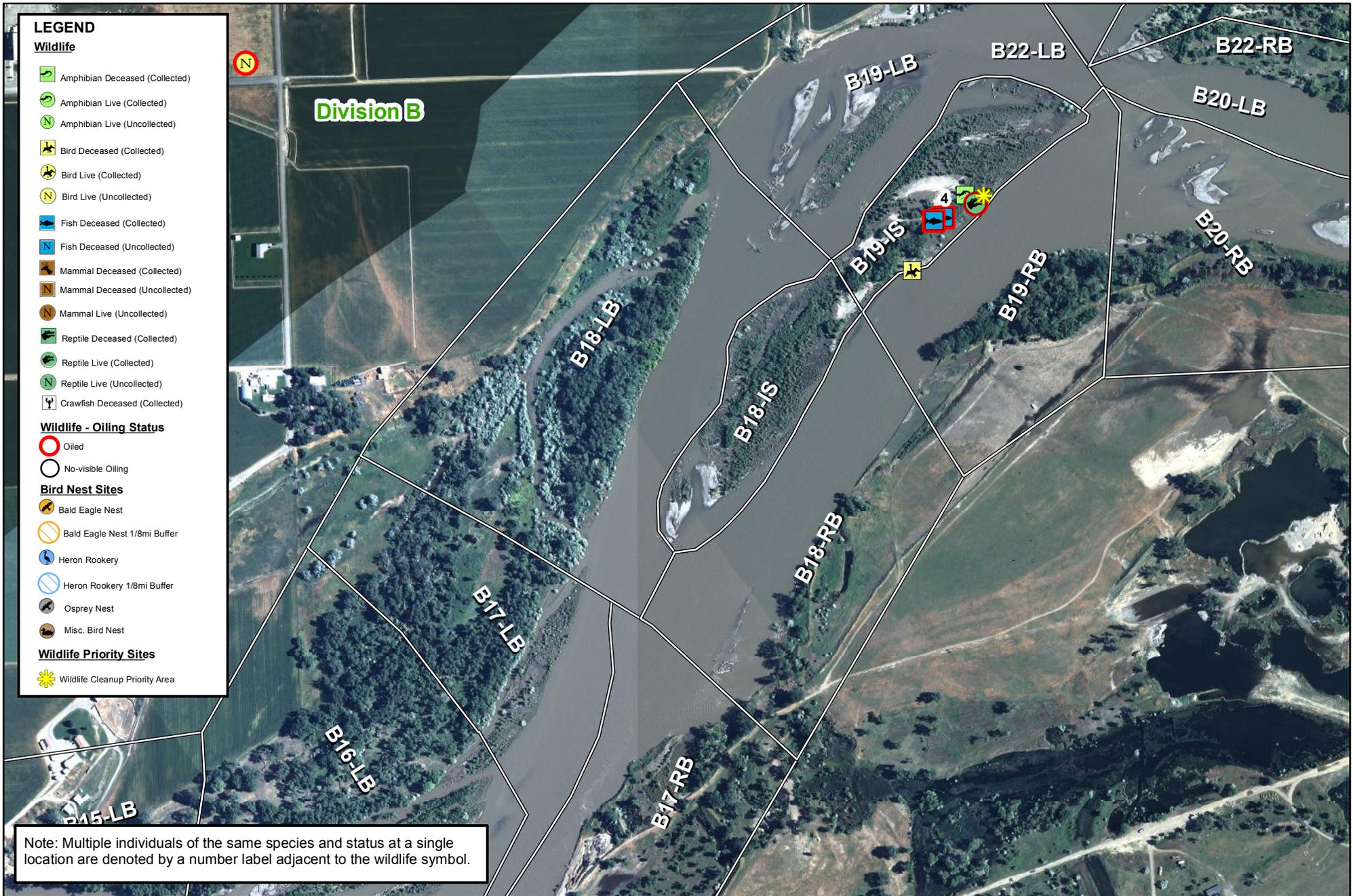
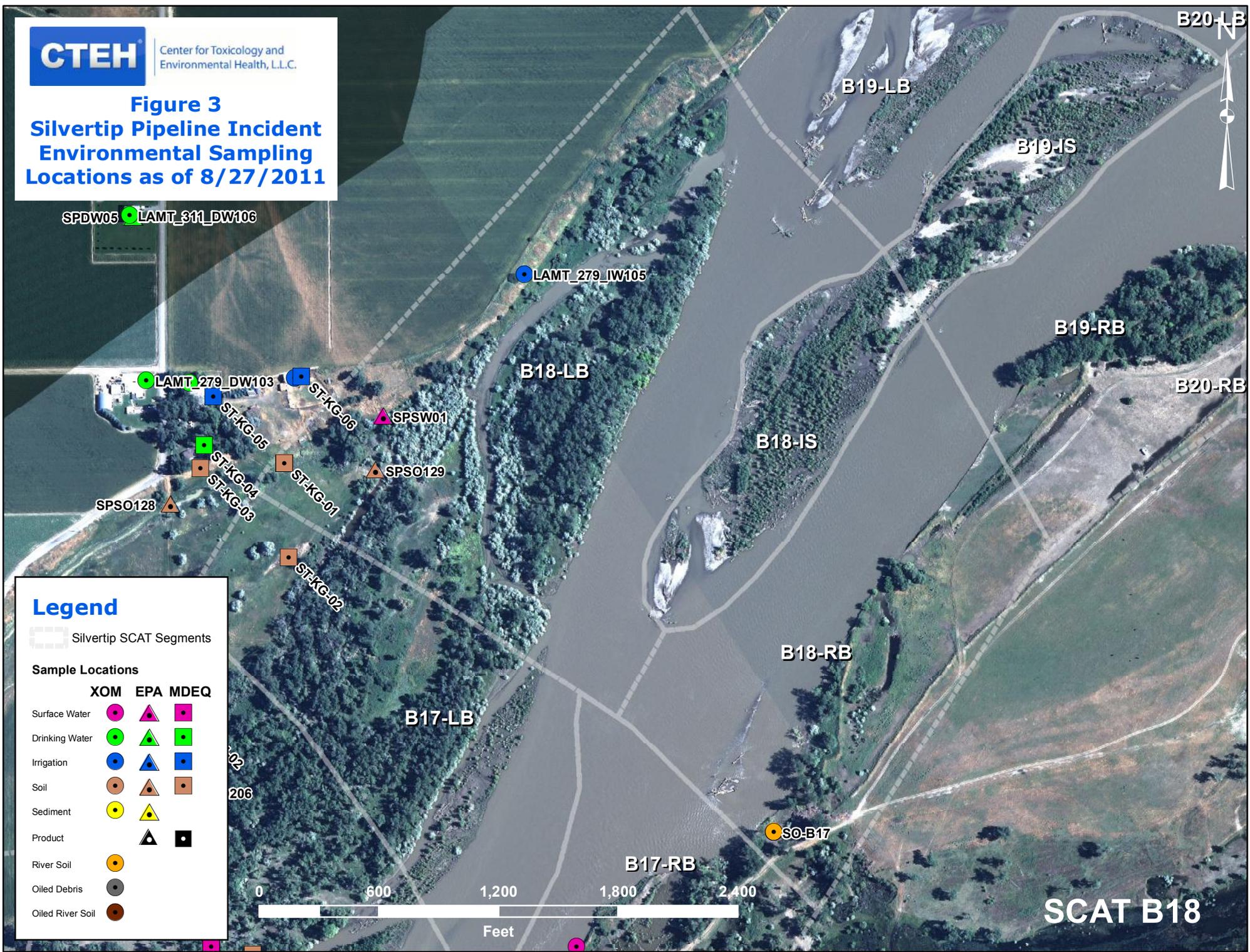


Figure 2
Wildlife Resources

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



Legend

Silvertip SCAT Segments

Sample Locations

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

SCAT B18

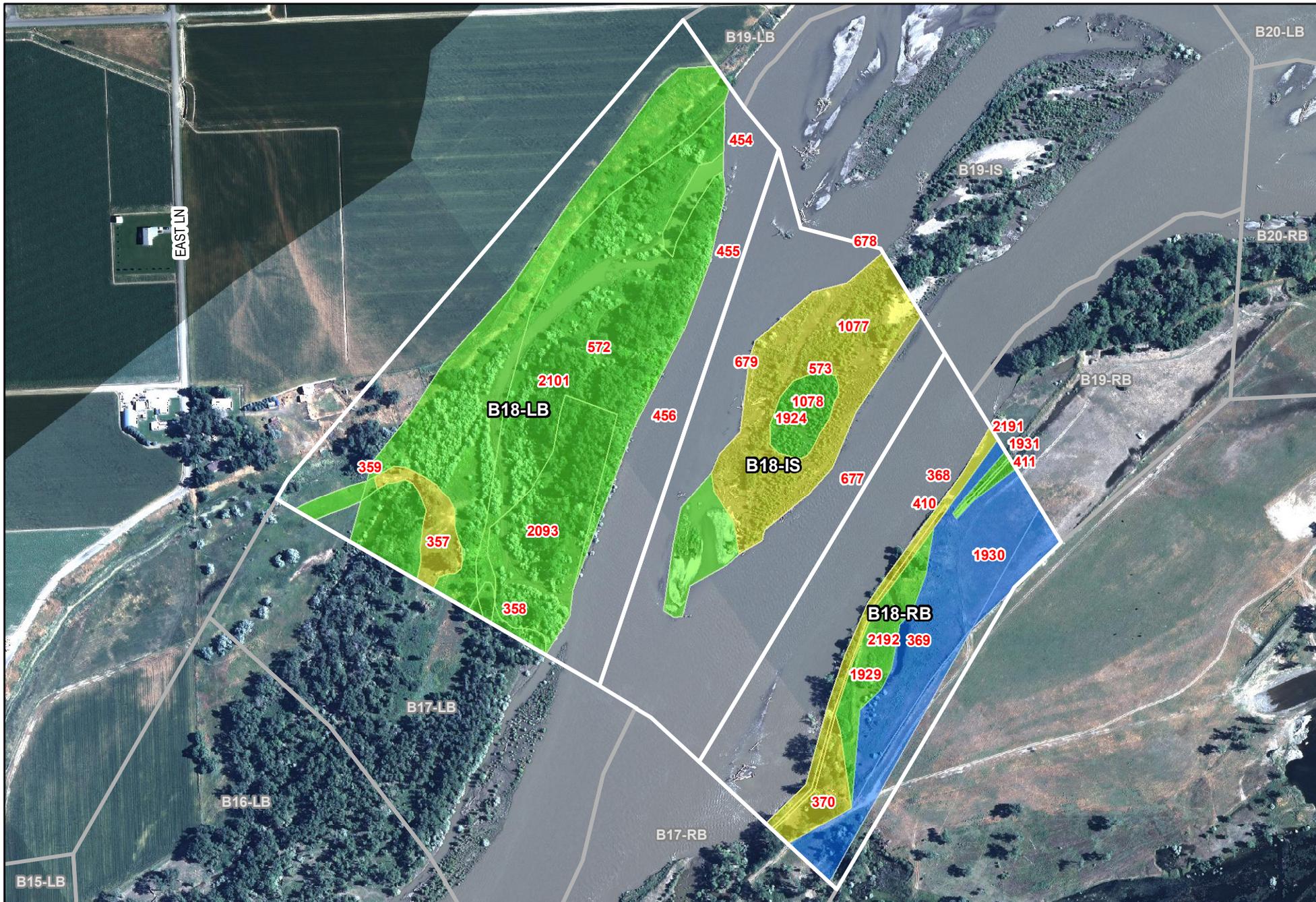


Figure 4 - Maximum SCAT Observations For SCAT Area:





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



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





Appendix A

Sample Detections Summary



Detections in Samples Collected in SCAT Area B18

Printed 9/7/2011

NA - Not Available

Detected Above Screening Level

Sample Number	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
B11070821-001	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aliphatics Surrogate	Y	87	NA		%	no
B11070821-001	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aromatics Surrogate	Y	94	NA		%	no
B11070821-001	Field	Soil_Surface	NONE-MDEQ-REM	Moisture content	Y	13	NA		% by wt	no
B11070821-002	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aliphatics Surrogate	Y	84	NA		%	no
B11070821-002	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aromatics Surrogate	Y	88	NA		%	no
B11070821-002	Field	Soil_Surface	NONE-MDEQ-REM	Moisture content	Y	23	NA		% by wt	no
B11070821-010	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aliphatics Surrogate	Y	71	NA		%	no
B11070821-010	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aromatics Surrogate	Y	79	NA		%	no
B11070821-010	Field	Soil_Surface	NONE-MDEQ-REM	Moisture content	Y	41	NA		% by wt	no
B11070821-011	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aliphatics Surrogate	Y	67	NA		%	no
B11070821-011	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aromatics Surrogate	Y	74	NA		%	no
B11070821-011	Field	Soil_Surface	NONE-MDEQ-REM	Moisture content	Y	35	NA		% by wt	no
B11070821-032	Field	Soil_Surface	MA-VPH-MDEQ-REM	Total Purgeable Hydrocarbons	Y	22	200	D	mg/kg	no
B11070821-032	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aliphatics Surrogate	Y	83	NA	D	%	no
B11070821-032	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aromatics Surrogate	Y	86	NA	D	%	no
B11070821-034	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aliphatics Surrogate	Y	84	NA	D	%	no
B11070821-034	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aromatics Surrogate	Y	87	NA	D	%	no
ST-071411-KG1	Field	Soil_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	86	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	126	200		mg/kg	no
ST-071411-KG1	Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	76	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8260B	Dibromofluoromethane	Y	81	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	84	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8260B	Toluene-d8	Y	96	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8270C	2,4,6-Tribromophenol	Y	80	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8270C	2-Fluorobiphenyl	Y	78	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8270C	Nitrobenzene-D5	Y	74	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8270C	o-Fluorophenol	Y	71	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8270C	Phenol-d5	Y	75	NA		%	no
ST-071411-KG1	Field	Soil_Surface	8270C	Terphenyl-d14	Y	80	NA		%	no
ST-071411-KG1	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aliphatics Surrogate	Y	71	NA		%	no
ST-071411-KG1	Field	Soil_Surface	MA-VPH-MDEQ-REM	VPH Aromatics Surrogate	Y	73	NA		%	no
ST-071411-KG1	Field	Soil_Surface	NONE-MDEQ-REM	Moisture content	Y	31	NA		% by wt	no
SPSO129D01_071511	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	38.3	200		mg/kg	no



Detections in Samples Collected in SCAT Area B18

Printed 9/7/2011

NA - Not Available

Detected Above Screening Level

Sample Number	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
SPSW01_070911	Field	Water_Surface	EPA 8260	3,3-Dimethyl-1-Butanol	Y	0	NA		ug/L	no
SPSW01_070911	Field	Water_Surface	EPA 8260	Acetone	Y	20.1	NA		ug/L	no
SPSW01_070911	Field	Water_Surface	EPA 8260	Diisopropyl ether	Y	0	NA		ug/L	no
SPSW01_070911	Field	Water_Surface	EPA 8260	Ethyl acetate	Y	0	NA		ug/L	no
SPSW01_070911	Field	Water_Surface	EPA 8260	Ethyl-tert-butyl ether	Y	0	NA		ug/L	no
SPSW01_070911	Field	Water_Surface	EPA 8260	Methyl acetate	Y	0	NA		ug/L	no
SPSW01_070911	Field	Water_Surface	EPA 8260	Methylcyclohexane	Y	0	NA		ug/L	no
SPSW01_070911	Field	Water_Surface	EPA 8260	tert-Amyl Alcohol	Y	0	NA		ug/L	no
SPSW01_070911	Field	Water_Surface	EPA 8260	tert-Amylmethyl ether	Y	0	NA		ug/L	no
SPSW01_070911	Field	Water_Surface	EPA 8260	tert-Butyl Formate	Y	0	NA		ug/L	no



Appendix B

Initial SCAT Survey Forms and
Sketches

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 19-Jul-2011	Time (24h): std / daylight 1056 hrs to 1058 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: B18 <u>Left Bank</u> / Right Bank / Island				
Operations Division: B				
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>31</u> deg C

2 SURVEY TEAM # 1	name	organization	contact phone number
Pete Lee	<u>PBL</u>	Polaris	
Larry Alheim		MTDEQ	
Andy Johnson	<u>AVSOLINEX</u>	USCG	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 646 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 _____ 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 P braided S oxbow _____ flood plain valley _____ Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 70m est. water depth: <1m 1-3m 3-10m >10m _____ m

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

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

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

Debris: Y/N oiled Y/N amount 80 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

454
455
456
457

OIL ZONE	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER						SUBST. TYPE(S)			
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO	
A				X	122	1															X	Grass, trees, debris
B				X	135	1	100			X	<u>X</u>			X								Grass, trees, debris
C				X	283	1															X	Grass, trees, debris
D				X	106	1	100			X	<u>X</u>			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

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

Oil band heights: Zones B, D - 30cm

Treatment Recommendations:
Zones A, C: No oil observed; no treatment required.
Zones B, D: Cut & remove oil coated vegetation smaller than 1" diameter. Wipe larger oil coated vegetation.

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

Sketch Yes / No Photos Yes / No Frames 1230-1234 (Lee)

1 GENERAL INFORMATION		Date (dd/mm/yy) 19-Jul-2011	Time (24h): std / daylight 56 59 1030 hrs to 1036 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: <u>B28 / 18</u> <u>Left Bank</u> / Right Bank / Island		Operations Division: B		
Survey by: <u>Foot / ATV / Boat</u> / Helicopter / Overlook / _____		<u>Sun</u> / Clouds / Fog / Rain / Snow / <u>Windy</u> / Calm		Air Temp +/- <u>31</u> deg C
2 SURVEY TEAM # 1	name	organization	contact phone number	
	Pete Lee	Polaris		
	Larry Alheim	MTDEQ		
	Andy Johnson	USCG		

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 696 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 S (type) Flow Wetland: Swamp _____ Bog/Fen _____ Marsh _____

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 30m 70 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 X(N) Access: Direct from backshore X(N) Alongshore from next segment Y / N

Debris: Y/N oiled Y/N amount 80 bags or _____ trucks access restrictions

Oiled trees/shrubs Y/N 80 River Current strong Y/N Other Features:

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

OIL ZONE	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER						SUBST. TYPE(S)				
					Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO		
A				X	82	1	100			X	(X)			X									Grass, trees, debris
B				X	203	1																X	Grass, trees, debris
C				X	20	1	100			X	(X)			X									//
D				X	57	1																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

Oil band heights: Zone B - 30cm

A, C, D

Treatment Recommendations:

Zone B, D: No oil observed; no treatment required.

Zone A, C: Cut & remove oil coated vegetation smaller than 1" diameter. Wipe larger oil coated vegetation.

B, D

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

1230-1234

Sketch Yes / No Photos Yes / No Frames 1204-1205 (Lee)



Imagery Date: 8/5/2009

45°43'47.78" N 108°54'05.24" W elev 3160 ft

©2010 Google

Eye alt 6200 ft

Image © 2011 GeoEye

B19

B18

DB/6/5

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident Page 1 of 1

1 GENERAL INFORMATION

Segment/Reach ID: B18 Left Bank / Right Bank/Island
 Date (dd/mm/yy) 19/07/2011
 Time (24h): std / daylight
 Water Level low - mean - bankfull - overbank
 falling - steady - rising
 Operations Division: B
 Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____
 Sun / Clouds / Fog / Rain / Snow / Windy / Calm
 Air Temp +/- 34 deg C
 15:20 hrs to 15:45 hrs

2 SURVEY TEAM # 3

Name:	Organization:	Signature:
Jenni Nelson	Polaris	<i>[Signature]</i>
Jay Watson	Montana Fish Wildlife and Parks	<i>[Signature]</i>
Janice Witul	EPA	<i>[Signature]</i>
Rebecca Ridenour	MDEQ	<i>[Signature]</i>

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 100 m

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m _____ 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 10 bags or _____ trucks Access restrictions: Area is wet, and has some running channels,
 Oiled trees/shrubs Y/N River Current strong Y/N Other Features: areas of deep mud and wet unstable sand; fences; very thick veg.

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

557
358
359

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	20	1		X	X	X		X									veg		
B				X	75	15	<1		X	X	X		X									veg		
C				X	75	10	<1		X	X	X		X											

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

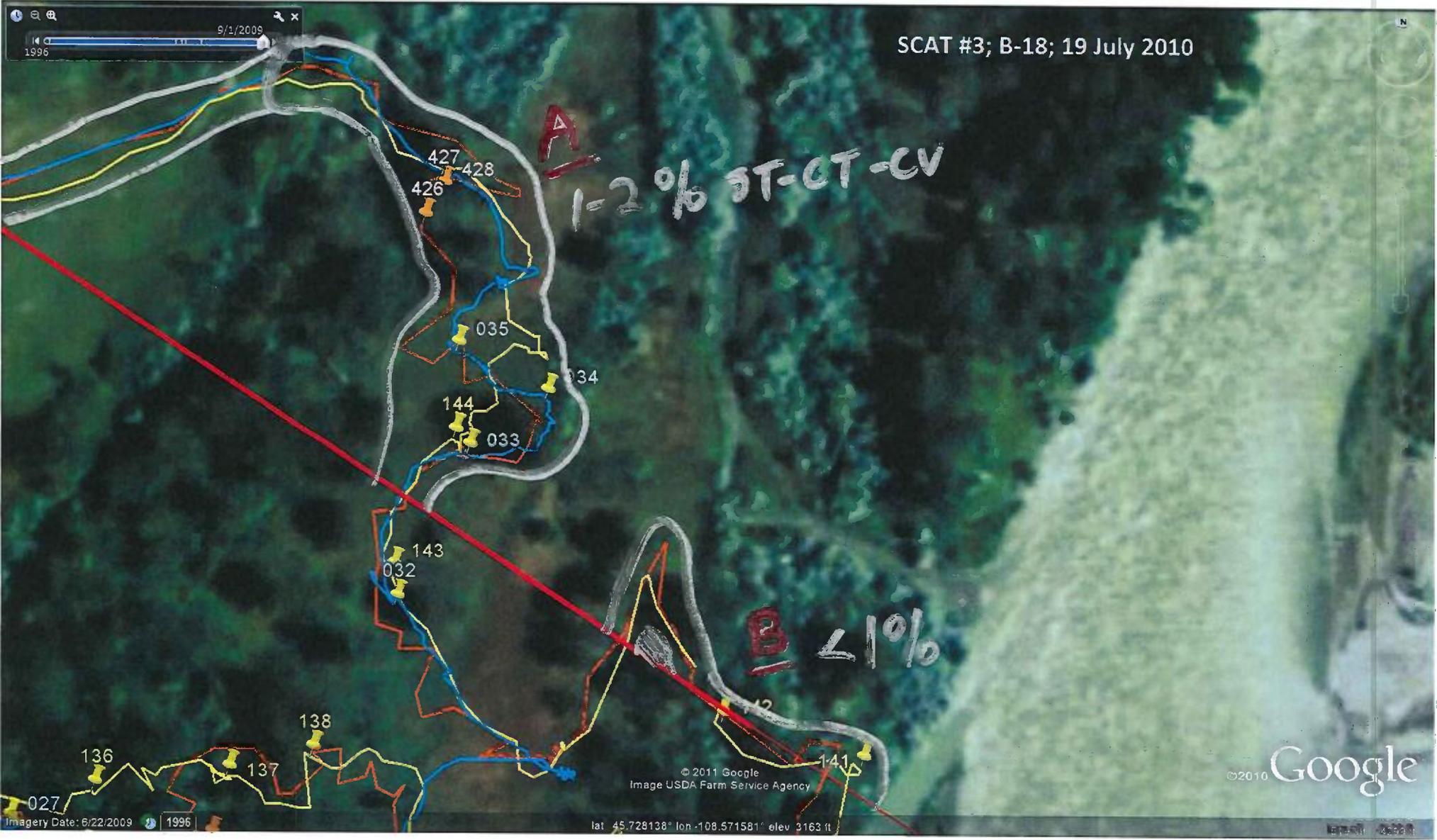
TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER								WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR	NO					
NONE																		

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

A-grassy drainage "valley" with sporadic oiling on grass, woody debris, & tree branches. Some patches lying on substrate - intermittent
 Recommend further SCAT assessment in this segment to cover more area & determine if collection warranted.
 B- Drainage with trace oiling primarily on sides under trees & in grass at high water level, & on wood debris piles.

(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 # _____)

C- stain on grasses, intermittent trace.



SCAT #3; B-18; 19 July 2010

A 1-2% ST-CT-CV

B < 1%

©2010 Google

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Image USDA Farm Service Agency

lat 45.728138° lon -108.571581° elev 3163 ft

9/1/2009
1996

Imagery Date: 6/22/2009
1996

18 19 20 21 22 23 24 25 26 27 28 29 30

B-1BL ZONE A
oil on fence & debris

7/19/2011 11:02:11 18.31



oil in grasses - sporadic throughout area



B18L
ZONE A

overview of drainage "valley"



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>B18</u>	Left Bank / Right Bank / Island	<u>23/07/11</u>	<u>0900</u> hrs to <u>1700</u> hrs	low - mean - bankfull - overbank
Operations Division:		(Sun /) Clouds / Fog / Rain / Snow / Windy / Calm		falling, steady - rising
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		(Sun /) Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>27</u> deg C

2 SURVEY TEAM # <u>283</u>	Name	Organization	Signature
	<u>Cheryl Pans</u>	<u>Chico ENGINE</u>	<u>Cheryl Pans</u>
	<u>(3) KIEH</u>	<u>MT DEC 406-891-5057</u>	<u>[Signature]</u>
	<u>WANCE WITUL</u>	<u>US EPA</u>	<u>[Signature]</u>
	<u>Nick Taylor</u>	<u>FWP</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length 620 m Segment/Reach Length Surveyed 620 m

Start GPS: LATITUDE 45 deg. 43° 37.85' min. LONGITUDE 108 deg. 34° 15.46' min. Datum: WGS84

End GPS: LATITUDE 45 deg. 43° 57.5' min. LONGITUDE 108 deg. 34° 05.61' min.

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

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

Sediment Bank: Clay/Mud S Sand Mixed 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 S confined or leveed Substrate Type: Mud

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 160m 190m est. water depth: <1m 1-3m 3-10m >10m

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

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

5 OPERATIONAL FEATURES Suitable backshore staging 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					<u>620</u>	<u>175</u>	<u>1</u>			<u>PS</u>	<u>P</u>		<u>X</u>									<u>S-M-186</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 had isolable areas of greeny strand and some coastal veg (grass + shrubs)

Also there was a few isolable areas of coastal debris

Zone A made to have areas of coastal grass + shrubs cut along strand and remove debris can be bagged and removed

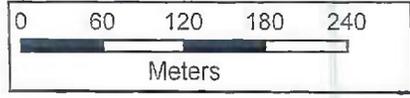
Sketch (Yes/No) Photos (Yes/No) Frames _____ Photographer _____



B18-19
 B18 L/I (L/R)??

DATE: 7/23/14
 TEAM: 2+3
 2+3

COMMENTS:



DB 16

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 19-Jul-2011	Time (24h): std / daylight 1051 hrs to 1052 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: B <u>18</u> Left Bank / Right Bank <u>(Island)</u>		Operations Division: B		
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / <u>Windy</u> / Calm		Air Temp +/- <u>31</u> deg C

2 SURVEY TEAM # 1	name	organization	contact phone number
Pete Lee		Polaris	
Larry Alheim		MTDEQ	
Andy Johnson		USCG	
<u>Bob Nailon</u>		<u>Cardno EMPRIx</u>	
<u>John Beach</u>		<u>EPA</u>	
<u>Ken Frazer</u>		<u>FLUP</u>	

3 SEGMENT Total Segment/Reach Length 582 m Segment/Reach Length Surveyed 582 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 _____ 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 P braided S oxbow _____ flood plain valley _____ Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m (10-100m) >100m 70 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 20 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	70	1																	X	Grass, trees, debris
B				X	55	1	100			X	(X)		X											"
C				X	325	1				S	P		X										X	"
D				X	293	1	3			S	(P)		X											"
E				X	284																		X	
F																								
G																								

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: No oil observed; no treatment required. (Zone A, C)

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

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

Sketch Yes / No Photos Yes / No Frames 1228-1229 5240-5241 5247-5249 Lee Nailon

DB 16

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 19-Jul-2011	Time (24h): std / daylight 1051 hrs to 1052 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: B <u>18</u> Left Bank / Right Bank <u>(Island)</u>		Operations Division: B		Air Temp +/- <u>31</u> deg C
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / <u>Windy</u> / Calm		

2 SURVEY TEAM # 1	name	organization	contact phone number
Pete Lee		Polaris	
Larry Alheim		MTDEQ	
Andy Johnson		USCG	
Bob Nailon		Charles Emery	
John Beach		EPA	
Ken Frazer		FLUP	

ORIGINAL

3 SEGMENT Total Segment/Reach Length 582 m Segment/Reach Length Surveyed 582 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 _____ 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 P braided S oxbow _____ flood plain valley _____ Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: < 1m 1-10m 10-100m >100m 70 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 20 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	70	1															X	Grass, trees, debris
B				X	55	1	100			X	(X)		X									"
C				X	325	1				S	(B)		X								X	"
D				X	243		3			S	(P)		X									"
E				X	284																X	"
F																						
G																						

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 band heights:

Treatment Recommendations:
 Zone A: No oil observed; no treatment required. (Zone A, C)
 Zone B: Cut & remove oil coated vegetation smaller than 1" diameter. Remove oil coated debris smaller than 4" diameter. Wipe larger oil coated vegetation.

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

Sketch Yes / No Photos (Yes) / No Frames 1228-1229 5240-5241 5247-5249 Lee Nailon



B18 I
Zones A, B, C, D, + E
Team #1
19/07/2011

AB 16

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>B18</u>	Left Bank / Right Bank / <u>Island</u>	<u>23/04/11</u>	<u>0900</u> hrs to <u>1600</u> hrs	low - <u>mean</u> - bankfull - overbank
Operations Division:		<u>(Sun)</u> Clouds / Fog / Rain / Snow / Windy / Calm	falling - steady - rising	
Survey by: <u>(Foot)</u> / ATV / Boat / Helicopter / Overlook /		Air Temp +/- <u>27</u> deg C		

2 SURVEY TEAM # <u>233</u>	Name	Organization	Signature
	<u>Joe Boyl</u>	<u>Corduro ENTRIX</u>	<u>[Signature]</u>
	<u>ED KIEBT</u>	<u>MT. DEP. 906-B41-5057</u>	<u>[Signature]</u>
	<u>Charles Pen</u>	<u>Cuba ENTRIX</u>	<u>[Signature]</u>
	<u>JANICE WITOL</u>	<u>US EPA</u>	<u>[Signature]</u>
	<u>AUSTIN WASS</u>	<u>USCG</u>	<u>[Signature]</u>
	<u>Nick Taylor</u>	<u>EUP</u>	<u>[Signature]</u>
	<u>[Signature]</u>	<u>POCATIS</u>	<u>[Signature]</u>

3 SEGMENT Total Segment/Reach Length 500 m Segment/Reach Length Surveyed 325 m

Start GPS: LATITUDE 45 deg. 43' 50.34" min. LONGITUDE 108 deg. 33' 57.05" min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 43' 42.67" min. LONGITUDE 108 deg. 34' 05.11" min.

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

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

Sediment Bank: Clay/Mud S Sand Mixed Pebble/Cobble S Boulder Peat/Organic Vegetated Bank: (P) 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 2 m canyon manmade meander 2 confined or leveed

Sloped: (>5°)(15°)(30°) 25° straight braided P oxbow flood plain valley

Substrate Type: med/veg

Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width: <1m 1-10m 10-100m >100m 160m 150m est. water depth: <1m (1-3m) 3-10m >10m

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 / staked, soft mud dense veg

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

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER					SUBST. TYPE(S)					
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC		SR	AP	NO		
<u>573</u> A			<u>S</u>	<u>P</u>	<u>325</u>	<u>150</u>	<u>10</u>			<u>S</u>	<u>P</u>	<u>S</u>	<u>P</u>									<u>med/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

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

Zone A: light oil staining (bath tub ring) on vegetation, recommendations: cut/trim oil stained veg where practical

Sketch Yes / No Photos Yes / No Frames Photographer

108°34'35"W 108°34'30"W 108°34'25"W 108°34'20"W 108°34'15"W 108°34'10"W 108°34'5"W 108°34'0"W 108°33'55"W 108°33'50"W 108°33'45"W 108°33'40"W 108°33'35"W

45°43'40"N

45°43'55"N

45°43'50"N

45°43'45"N

45°43'40"N

45°43'35"N



45°43'55"N

45°43'50"N

45°43'45"N

45°43'40"N

45°43'35"N

45°43'30"N



B19

ZONE B

ZONE A

B18

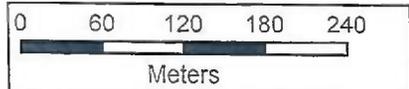
A

~~B18-19~~
B18 L/I (LRI?)

DATE: 7/23/11

TEAM: JAS
2 + 3

COMMENTS:



108°34'35"W 108°34'30"W 108°34'25"W 108°34'20"W 108°34'15"W 108°34'10"W 108°34'5"W 108°34'0"W 108°33'55"W 108°33'50"W 108°33'45"W 108°33'40"W 108°33'35"W

DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 28/07/11	Time (24h): std / daylight 1300 hrs to 1430 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: <u>B 18</u> 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 +/- <u>2.8</u> deg C

2 SURVEY TEAM # 1	Name	Organization	Signature
Pete Lee	<i>PL</i>	Polaris	225.892.6459
Janice Witul	<i>JW</i>	US EPA	415.816.6582 <i>Janice Witul</i>
Mark Ewanic		MT DEQ	406.533.5216 <i>Mark Ewanic</i>

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 676 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 60 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 100 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 zones that correspond to primary shoreline type

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)		
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
<u>1077</u> A				<u>X</u>	<u>676</u>	<u>35</u>	<u>10</u>			<u>X</u>			<u>X</u>									<u>Grass, trees</u>
<u>1078</u> B				<u>X</u>	<u>130</u>	<u>40</u>														<u>X</u>		<u>"</u>

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

TRENCH or PIT NO.	RIVER BANK ZONE				MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER						WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)	
	MS	LB	UB	OB			SAP	OP	PP	OR	OF	TR					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: 50-100cm

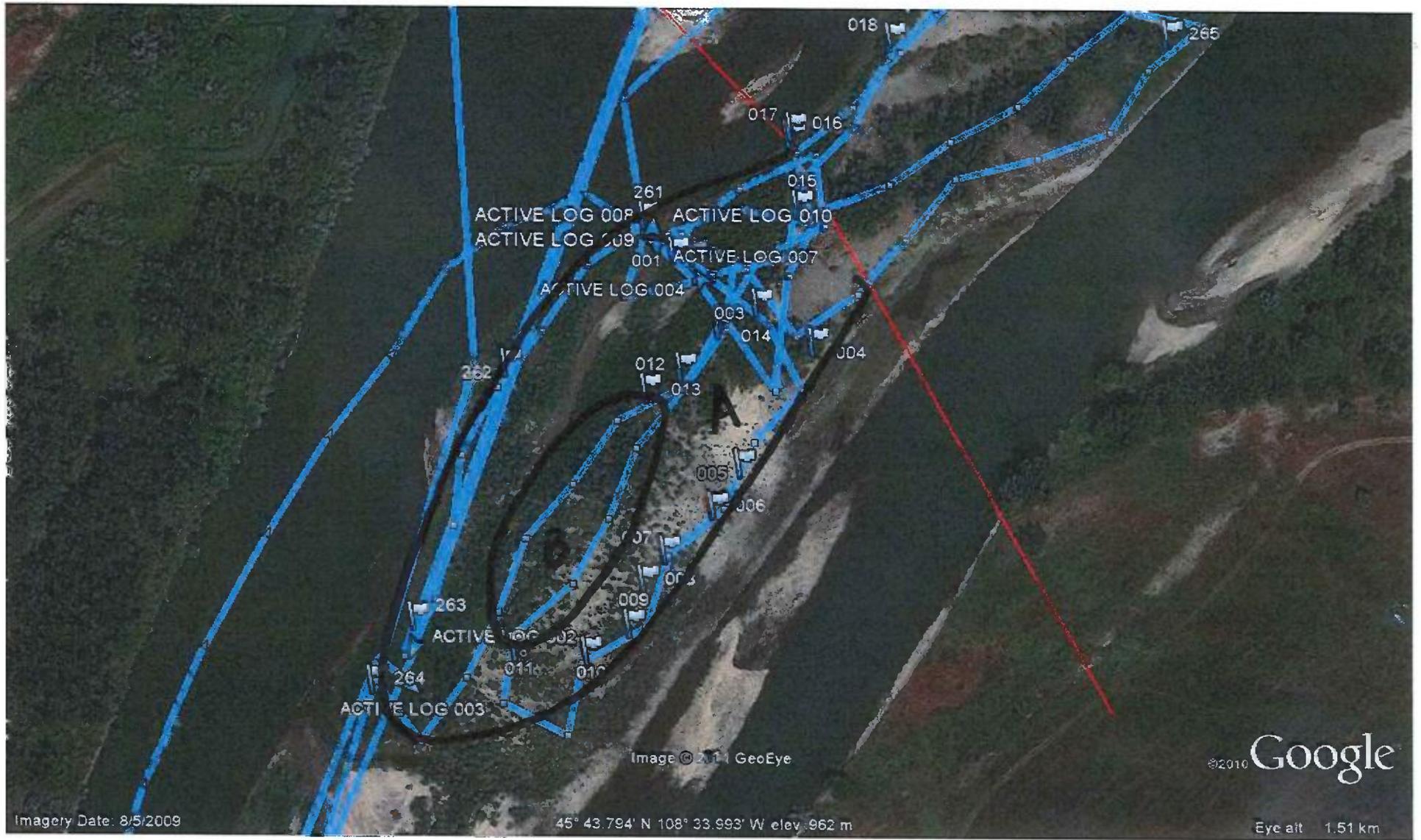
Treatment recommendations:

Zone B : No oil observed; no treatment required.

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

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

A = 248 + 87 + 341



Imagery Date: 8/5/2009

45° 43.794' N 108° 33.993' W elev. 962 m

Image © 2010 GeoEye

©2010 Google

Eye alt 1.51 km

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 19/07/11	Time (24h): std / daylight 1158 hrs to 1159 hrs	Water Level low - mean <u>bankfull</u> - overbank falling steady - rising
Segment/Reach ID: <u>B18</u> Left Bank / <u>Right Bank</u> / Island				
Operations Division: <u>B</u>				
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		<u>Sun</u> Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp + / - <u>35</u> deg C	

2 SURVEY TEAM # <u>5</u>	name	organization	contact phone number
	Bob Nailon	Cardno ENTRIX	713 817 2469
	John Beach	EPA	707 364 0491
	Ken Frazer	FWP	406 247 2961

3 SEGMENT Total Segment/Reach Length 573 m Segment/Reach Length Surveyed 573 m

Start GPS: LATITUDE N deg. min. LONGITUDE W deg. min. Datum: WGS 84

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

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

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

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

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: Forested / Vegetated / Bare

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

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

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

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER						SUBST. TYPE(S)			
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO	
<u>1191</u>				X	181	1																Wz bank
<u>1192</u>				X	392	1	5			P	S		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

OSR = 4 OSC = unk SSC = unk

5277-5281

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

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

108°34'35"W 108°34'30"W 108°34'25"W 108°34'20"W 108°34'15"W 108°34'10"W 108°34'5"W 108°34'0"W 108°33'55"W 108°33'50"W 108°33'45"W 108°33'40"W 108°33'35"W



45°43'55"N
45°43'50"N
45°43'45"N
45°43'40"N
45°43'35"N
45°43'30"N



B18 - R
(L/R/I)??
ZONES G + F

DATE: 19/07/11
TEAM: S

COMMENTS:



108°34'35"W 108°34'30"W 108°34'25"W 108°34'20"W 108°34'15"W 108°34'10"W 108°34'5"W 108°34'0"W 108°33'55"W 108°33'50"W 108°33'45"W 108°33'40"W 108°33'35"W

DB/G/S

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>B18</u>	Left Bank / Right Bank / Island	<u>19/07/11</u>	<u>0850</u> hrs to <u>0930</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>B</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>28</u> deg C

2 SURVEY TEAM # <u>4</u>	name	organization	contact phone number
	<u>John Williams</u>	<u>CardnoENTRIX</u>	<u>311 674 8138</u>
	<u>Connor Kaleski</u>	<u>CardnoENTRIX</u>	
	<u>Courtney Tyler</u>	<u>FWP</u>	<u>406 860 7814</u>
	<u>Barry Ritty</u>	<u>EPA</u>	<u>415 215 0690</u>

3 SEGMENT	Total Segment/Reach Length <u>490</u> m	Segment/Reach Length Surveyed <u>1340</u> m
Start GPS: LATITUDE <u>45</u> deg. <u>43.522</u> min.	LONGITUDE <u>108</u> deg. <u>34.877</u> min.	Datum: <u>WGS84</u>
End GPS: LATITUDE <u>45</u> deg. <u>43.745</u> min.	LONGITUDE <u>108</u> deg. <u>33.870</u> 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 <u>Shelf</u>	Manmade: Solid <u>Permeable</u> (type)	Wetland: Swamp <u>Bog/Fen</u> Marsh <u>S</u>	
Sediment Bank: Clay/Mud <u>Sand</u> Mixed <u>Pebble/Cobble</u> Boulder <u>Peat/Organic</u>	Vegetated Bank: <u>(P)</u>	Wooded Upland: <u>S</u>	
Sediment Flat: Clay/Mud <u>Sand</u> Mixed/Coarse <u>Other:</u>	If snow and ice use Winter River SOS		

4B RIVER VALLEY CHARACTER			select as appropriate	complete for primary
Cliff or Bluff: <u>Est Height</u> <u>1</u> m	canyon <u>manmade</u> meander <u>confined or leveed</u> <input checked="" type="checkbox"/>			Substrate Type: <u>Neg</u>
Sloped: <u>(>5°)(15°)(30°)</u>	straight <u>braided</u> oxbow <u>flood plain valley</u>			Forested / <u>Vegetated</u> / Bare

4C RIVER CHANNEL CHARACTER				circle or select as appropriate
est. width: <1m <u>1-10m</u> 10-100m <u>100m</u> m	est. water depth: <1m <u>1-3m</u> 3-10m >10m m			
shoal(s) present <u>(Y)N</u>	point bar present <u>(Y)N</u>	bar-shoal substrate: silt / sand / gravel <u>cobble</u> / boulder / bedrock / debris		
seasonal water level: low / mean <u>(bank full)</u> / overbank flow	est. change over next 7 days: <u>(falling)</u> - same - rising			

5 OPERATIONAL FEATURES		Suitable backshore staging <u>(Y)N</u>	Access: Direct from backshore <u>(Y)N</u> Alongshore from next segment <u>(Y)N</u>
Debris: <u>(Y)N</u> oiled <u>(Y)N</u> amount <u>bags or trucks</u>	access restrictions		
Oiled trees/shrubs <u>(Y)N</u>	River Current strong <u>(Y)N</u>	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	%																				
A		S	P	S	490	15	40			S	P						P						Veg
B				P	490	160	0													P			Veg
C				P	142	65	40			P	S						P						

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: Amount of oiled vegetation does not warrant removal - no treatment recommended.

Zone B: No oiling - no treatment recommended.

Zone C: 6-12in band of oil coated on tree branches and oiled brush pile selective cutting and debris removal recommended. No overland heavy machinery necessary.

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

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

7/19/2011
2009



B18

B

A

C

B17

© 2011 Google

© 2011

Image USDA Farm Service Agency

45° 43.644' N 108° 34.056' W elev 3160 ft

1996

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yy) 07/20/2011	Time (24h): std / daylight 1445 1530 hrs to hrs	Water Level low - mean - <u>bankfull</u> - overbank <u>falling</u> - steady - rising
Segment/Reach ID: B18 Left Bank (<u>Right Bank</u>) / Island				
Operations Division: A				
Survey by: (<u>Foot</u>) / ATV / Boat / Helicopter / Overlook / _____		<u>Sup</u> / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - _____ deg C

2 SURVEY TEAM # <u>2</u>	name	organization	contact phone number
Bruce Kvam	<u>EBV</u>	Polaris Applied Sciences, LLC	(206)-953-6904
Aaron Anderson	<u>AK</u>	MTDEQ	(406) 431-2583
Patrick Kiske	<u>PK</u>	USCG	(415) 596-6587
<u>EDWARD KILBY</u>	<u>AK</u>		

3 SEGMENT Total Segment/Reach Length 507 m Segment/Reach Length Surveyed 507 m

Start GPS: LATITUDE 45 deg. 4332 min. LONGITUDE 108 deg. 3406 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 4346 min. LONGITUDE 108 deg. 3353 min.

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: _____ Est Height _____ m canyon _____ manmade _____ meander _____ confined or leveed _____ Substrate Type: 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 290 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 10 bags or _____ trucks access restrictions _____

Oiled trees/shrubs (Y) N River Current strong (Y) N Other Features: B17

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.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO	
	MS	LB	UB	OB	m	m	%															
A				X	321	1.0	30			<u>(X)</u>	X			X								Small woody debris, grass, trees
B				X	186	1.0	5			<u>(X)</u>	X			X								grass

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

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

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

Oil band height: 3 cm

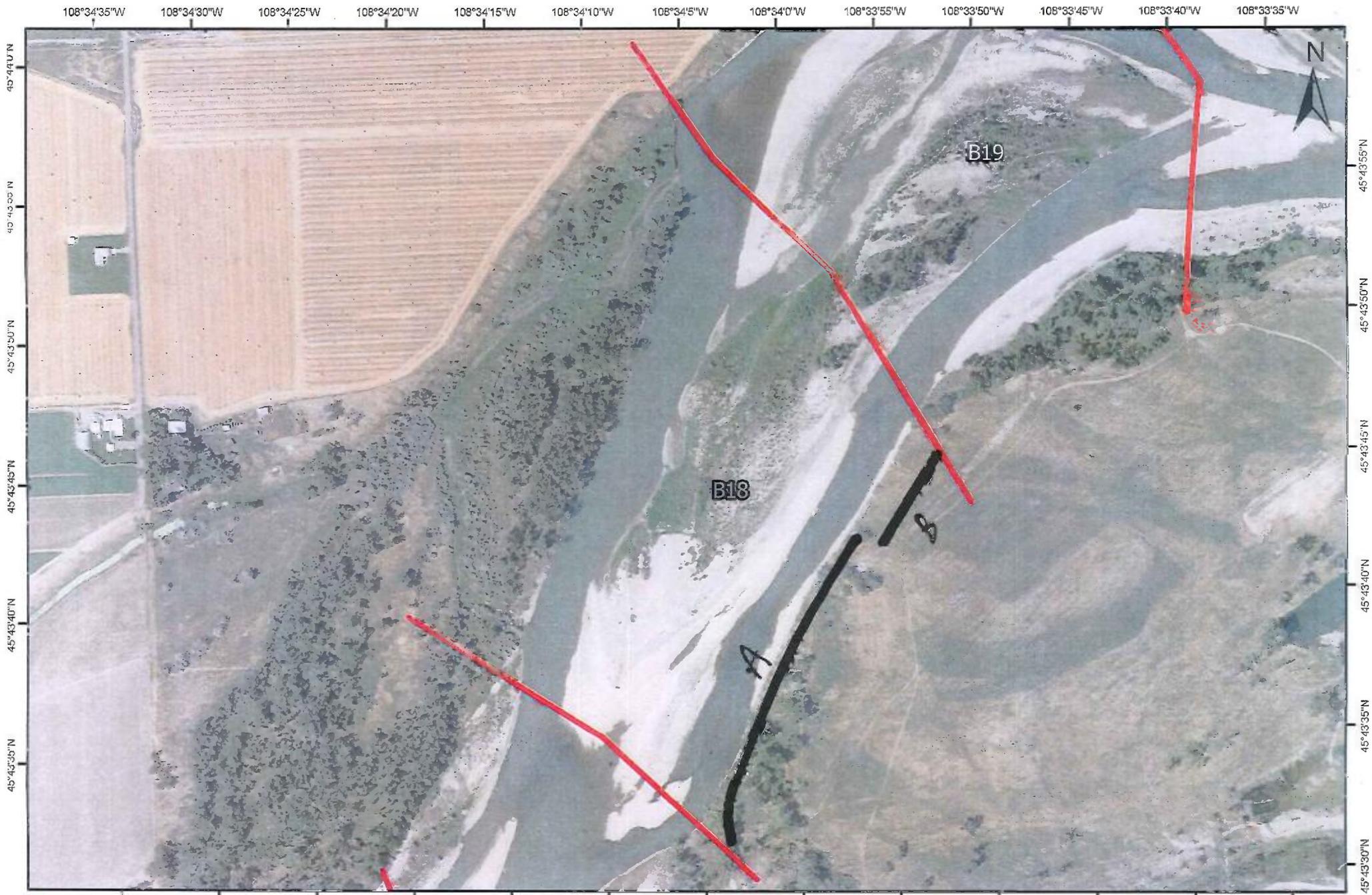
Treatment Recommendations:

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

Zone B: Cut and remove oil coated vegetation smaller than 1" diameter.

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

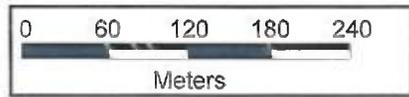
Sketch Yes/No Photos Yes/No (Roll # _____ Frames _____) Video Tape Yes/No (tape# _____)



B18 -
(L/R/I)??

DATE:
TEAM:

COMMENTS:





Segment B18, Zone A.



Appendix C

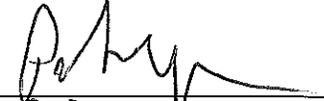
Pre-Inspection Survey Transmittal

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 26 AUG 2011

Segment: B-18 RB

Team: SCAT Liaison PETE PRITCHARD

Signed: 

Observer DAVID OGE'

Signed: 

Observer _____

Signed: _____

Observer _____

Signed: _____

X
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:

Copy given
to Ops.

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 19 AUG 2011

Segment: B18 ISLAND

Team: SCAT Liaison LAUREN GLUSHIK Signed: [Signature]

Observer Ray McKelvey Signed: [Signature]

Observer Fred Stroud Signed: [Signature]

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:

Areas for continued treatment on B18 island flagged includes cutting grass, trimming branches and fixative application to trees. Also some dead oiled herbaceous vegetation that should be removed.

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 25 Aug 2011

Segment: B18 Island

Team: SCAT Liaison Lauren Glushik-Polaris Signed: 

Observer _____ Signed: _____

Observer _____ Signed: _____

Observer _____ Signed: _____

Segment meets criteria? YES NO

RBOS attached? YES NO

If NO:

Location Sketch attached? YES NO

CTR continue? YES NO

Comments:

This PIST covers the B18 side of an island.

Note that wildlife has marked exclusions on one abandoned beaver lodge and one active beaver lodge.

There is caution tape surrounding a hornet nest.



Image © 2011 GeoEye

© 2011 Google

© 2011 Europa Technologies

Google

Imagery Date: 8/5/2009

45°43'48.02" N 108°33'56.70" W elev 3162 ft

Eye alt 7580 ft



Appendix D

Post-Inspection Survey Transmittal

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



Appendix E

Final SCAT Survey Forms and
Sketches

DB16

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 28/08/11	Time (24h): std / daylight 0830 hrs to 1000 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: <u>B 18</u> Left Bank / Right Bank / Island		Operations Division: B		
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>30</u> deg C

2 SURVEY TEAM # 2	Name	Organization	Signature
Pete Lee		Polaris	<i>PDLee</i>
Eric Harlow		Cardno ENTRIX	<i>Eric Harlow</i>
Griff Miller		USEPA	<i>Griff Miller</i>
Marcile Sigler		MTDEQ	<i>Marcile Sigler</i>
Dave Hergenrider		MTFWP	<i>Dave Hergenrider</i>

3 SEGMENT Total Segment/Reach Length 500 m Segment/Reach Length Surveyed 500 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 X 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 m >10m _____ m

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

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

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

Debris: Y / N oiled Y / N amount _____ bags or _____ trucks Access restrictions: Private Landowners

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
1929 A				X	500	60	<1				X						X				Grass, trees, debris
1930 B				X	500	15	100													X	
1931 C				X	85	15	<1				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 height: 30-90 cm

Treatment recommendations: RESCAT

Zone A, C : No further treatment required.

Zone B : NOO

Ops Hot Shot (Rich Jessup)

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



RESCAT

B18RB

TZ - 8/28/11



TEAM 4
09/05/11

ZONE A: NFT

DB/6

1 GENERAL INFORMATION		Date (dd/mm/yy) 03/09/11	Time (24h): std / daylight 1400 hrs to 1440 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: B18 <u>Left Bank / Right Bank / Island</u>				
Operations Division: B				
Survey by: <u>Foot / ATV / Boat / Helicopter / Overlook /</u>		<u>Sun / Clouds / Fog / Rain / Snow / Windy / Calm</u>		Air Temp + / - 7 0 F deg

2 SURVEY TEAM # 4	Name	Organization	Signature
	Michael Dirks	Cardno ENTRIX	<i>Michael Dirks</i>
	David Eric Harlow	Cardno ENTRIX	<i>David Harlow</i>
	Larisa Leonova	EPA	<i>L. Leonova</i>
	Earl Radonski	FWP	<i>Earl Radonski</i>

3 SEGMENT Total Segment/Reach Length 400 m Segment/Reach Length Surveyed 260 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 x - P _____ Pebble/Cobble x _____ Boulder _____ Peat/Organic _____ Vegetated Bank: S Wooded Upland: P

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

Sloped: _____ (>5°)(15°)(30°) straight x _____ braided _____ oxbow _____ flood plain valley x - 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	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO
					m	m	%														
A			<u>O</u>	<u>P</u>	<u>650</u>	<u>200</u>	<u>unknown</u>														unknown
<u>2093</u> <u>BA</u>				<u>P</u>	<u>260</u>	<u>110</u>	<u>1</u>			<u>S</u>	<u>P</u>						<u>P</u>				Sand, shrubs, grass, trees, debris piles

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

RESCAT

Zone A: Not visited during this SCAT visit.

Zone B: Light treatment by ops- no flags observed in unit from previous SCAT review. Scattered small stains on shrubs and vegetation. NFT.

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



B18LB
9/3/11
Team 4

DB/G

Rescat

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION

Segment/Reach ID: B18 Left Bank / Right Bank (Island) Date (dd/mm/yy) 28/08/2011 Time (24h): std / daylight 930 hrs to 1100 hrs Water Level low - MEAN - bankfull - overbank falling - steady - rising

Operations Division: B18 Survey by: FOOT / ATV / Boat / Helicopter / Overlook / SUN / Clouds / Fog / Rain / Snow / Windy / Calm Air Temp + / - 37 deg C

2 SURVEY TEAM # 3

name	organization	contact phone number
Tom Freeman	Polaris	
Chuck Pons	ENTREX	
Terry Tanner	EPA	
Laura Alvey	DEQ	
Darrick Turner	DEQ	

3 SEGMENT Total Segment/Reach Length 450 meters m Segment/Reach Length Surveyed 450 meters m

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

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

Cliff or Bluff: Est Height m canyon manmade meander confined or leveed Substrate Type: Sloped: (>5°)(15°)(30°) straight braided 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 0 bags or 0 trucks access restrictions

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

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

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	450	115	<1				P								X			VG.DB

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 - shoreline biota and wildlife observations - cleanup recommendations

Zone A: This zone had some very rare (approximately 3-widely spaced) small patches of oiled debris and oiled vegetation. Hot Shot team was able to remove or treat all.

Rescat

Segment B-18 is now NFT.

1924

(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# _____)

B18 IS

SCAT TEAM 3

28 AUG 2011



B18-LB

A

B18-IS

Current Track: 28 AUG 2011 09:59

ACTIVE LOG 008

Current Track: 28 AUG 2011 08:02

203

B18-RB

Image © 2011 GeoEye
© 2011 Google

Google

Imagery Date: 8/6/2009

lat 45.731637 lon -108.573418 elev 971 m

Eye alt 1.68 km



Appendix F

Completed SCAT Segment Sign-Off
Forms

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment B18 RB Date of Survey 8/28/11

Dates of Initial SCAT Assessments _____
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 24

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).

[Signature] GRIFF MILLER / USEPA 8-28-11
Sign Name Print Name/ Affiliation Date
Federal Representative (EPA/USCG)

[Signature] DAVE HERSCHMIDT 8/28/2011
Sign Name Print Name/ Affiliation Date
State Representative (DEQ/FWP)

[Signature] DAVID ERIC HARLOW 8/28/11
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.

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

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment B18 LB Date of Survey 09/05/2011

Dates of Initial SCAT Assessments 19 JUL 11
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 18

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).

Jamel H. Dawas JAMEL H. DAWAS 9/6/11
Sign Name Print Name/ Affiliation Date
Federal Representative (EPA/USCG)

Earl Radonster Earl Radonster FWP 9/5/11
Sign Name Print Name/ Affiliation Date
State Representative (DEQ/FWP)

Michael D. Dirks MICHAEL DIRKS / Cardoso ENTRIX 09/05/11
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.

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

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment B 18 LB Date of Survey 09/03/11

Dates of Initial SCAT Assessments 07/23/11
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 18

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

Segment Assessment Complete¹

Partial Segment Assessment 25% COMPLETE

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).

Larisa Leonova LARISA LEONOVA 9/3/11
Sign Name Print Name/ Affiliation Date
Federal Representative (EPA/USCG)

Earl Radonski FWP Earl Radonski 9/3/11
Sign Name Print Name/ Affiliation Date
State Representative (DEQ/FWP)

Michael D. Dirks MICHAEL DIRKS/ Corduro ENTRIX 09/03/11
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.

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

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment B1815 Date of Survey 8-28-11

Dates of Initial SCAT Assessments _____
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 18

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).

[Signature] TERRY TANNER 8-28-11
Sign Name Print Name/ Affiliation Date
Federal Representative (EPA/USCG)

[Signature] Darrick Turner DEQ 8-28-11
Sign Name Print Name/ Affiliation Date
State Representative (DEQ/FWP)

[Signature] Charles Penn/Code ENTNA 8-28-11
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.

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.