

ExxonMobil Pipeline Company

**SCAT Area Transition Report for
C21**

Silvertip Pipeline Incident
Laurel, Montana

October 21, 2011



SCAT Area Transition Report for C21

Silvertip Pipeline Incident
Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

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Date:
October 21, 2011

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

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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 C21, 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 C21. 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 C21, 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 C21 is 38.9. There were access issues for the left bank.

1.2 Cultural, Historic, and Natural Resource Constraints

Due to very light oil observations, historic properties or cultural resources have not been investigated within this area.

Figure 2 summarizes the natural resources identified in this segment. International Bird Rescue and Resource Advisors from U.S. Fish and Wildlife Service conducted limited inspections of Area C21 due to the low level of oiling in Division C. No oiled wildlife was observed or recovered. No Wildlife Priority Cleanup Areas were identified. No active migratory bird nests were identified in Area C21.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area C21. 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 C21 are provided on Figure 3. However, to date, no samples have been collected in this area.

Table 1 Environmental Sampling Summary

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
	No Samples Collected*					

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 C21 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area C21.

1.5 Applicable Compiled Treatment Recommendations

The SCAT team developed compiled treatment recommendations (CTRs) providing approved treatment methods (ATMs) for each oiling zone identified during the initial SCAT surveys ([CTR No. 60](#) and [CTR No. 62](#)).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area C21 in accordance with the ATMs identified in the CTRs. [Appendix I](#) of the Summary of Assessment and Oil Removal Activities report presents this data including: date range/days worked, average number of people working per day, equipment used, and various types of bags removed: oily debris, personal protective equipment, plastic, trash, super sacks, wood chips, and contaminated wood.

1.7 Pre-Inspection Survey Transmittal

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

1.8 Post-Inspection Survey Transmittal

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

1.9 Summary of Final SCAT Surveys

Figure 5 shows the oiling conditions within Area C21 following completion of oil removal activities. The SCAT team performed final surveys of the left bank within SCAT Area C21 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, no oil was observed on the right bank. Based on the final SCAT surveys performed on the left bank within Area C21, no further treatment is recommended for this segment. SCAT Segment Sign-Off Forms are included as Appendix F.



**SCAT Area Transition
Report for C21**

Silvertip Pipeline Incident
Laurel, Montana

2. Transition Sign-Off Form

SCAT Area Transition Report for C21

Prepared for:

Unified Command

Date

Unified Command – RP



**SCAT Area Transition
Report for C21**

Silvertip Pipeline Incident
Laurel, Montana

SCAT Area Transition Report for C21

Prepared for:

Unified Command

Date

Unified Command – FOSC



**SCAT Area Transition
Report for C21**

Silvertip Pipeline Incident
Laurel, Montana

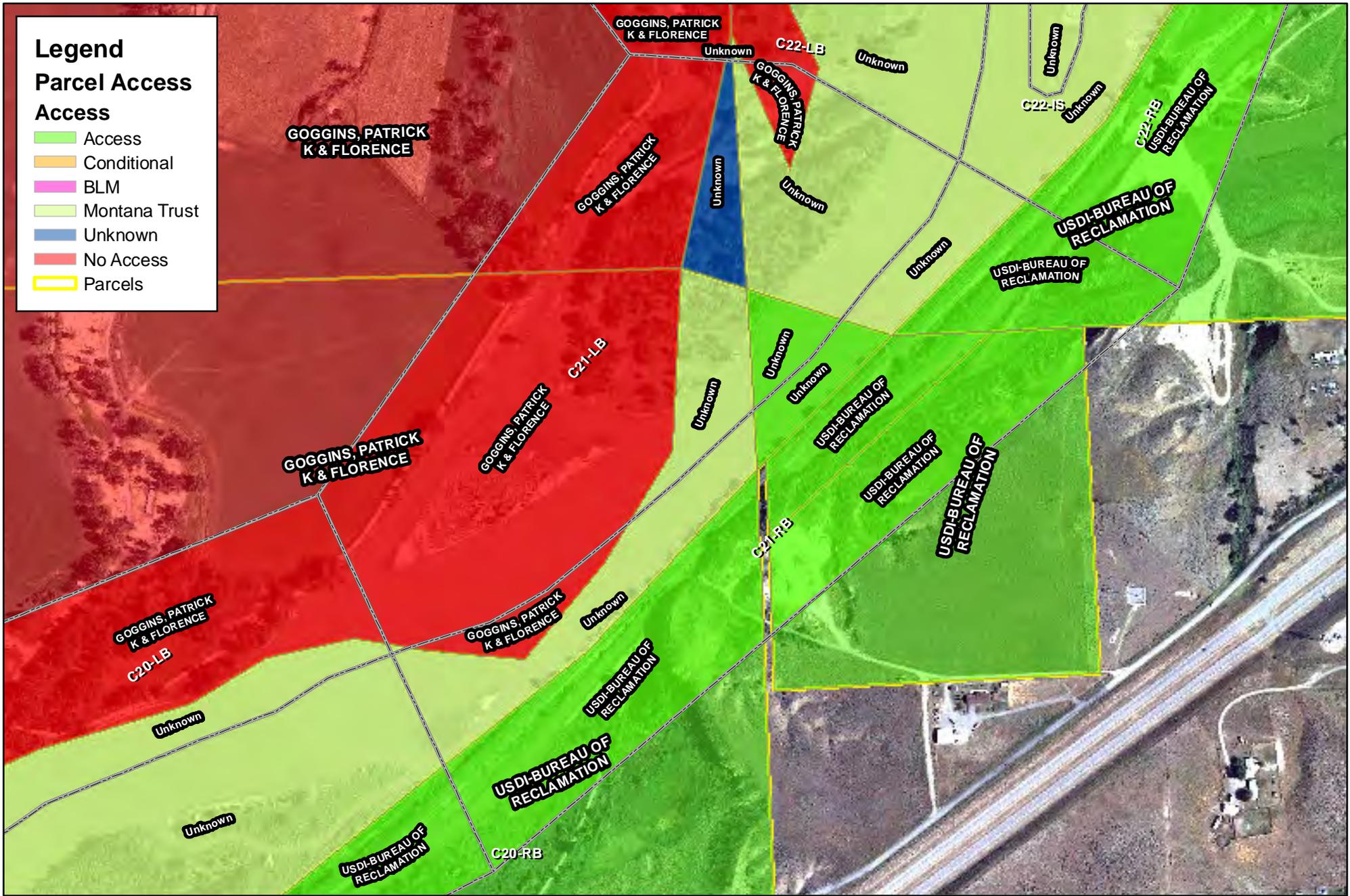
SCAT Area Transition Report for C21

Prepared for:

Unified Command

Date

Unified Command – MDEQ



Legend

Parcel Access

Access

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

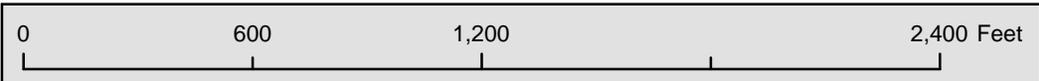
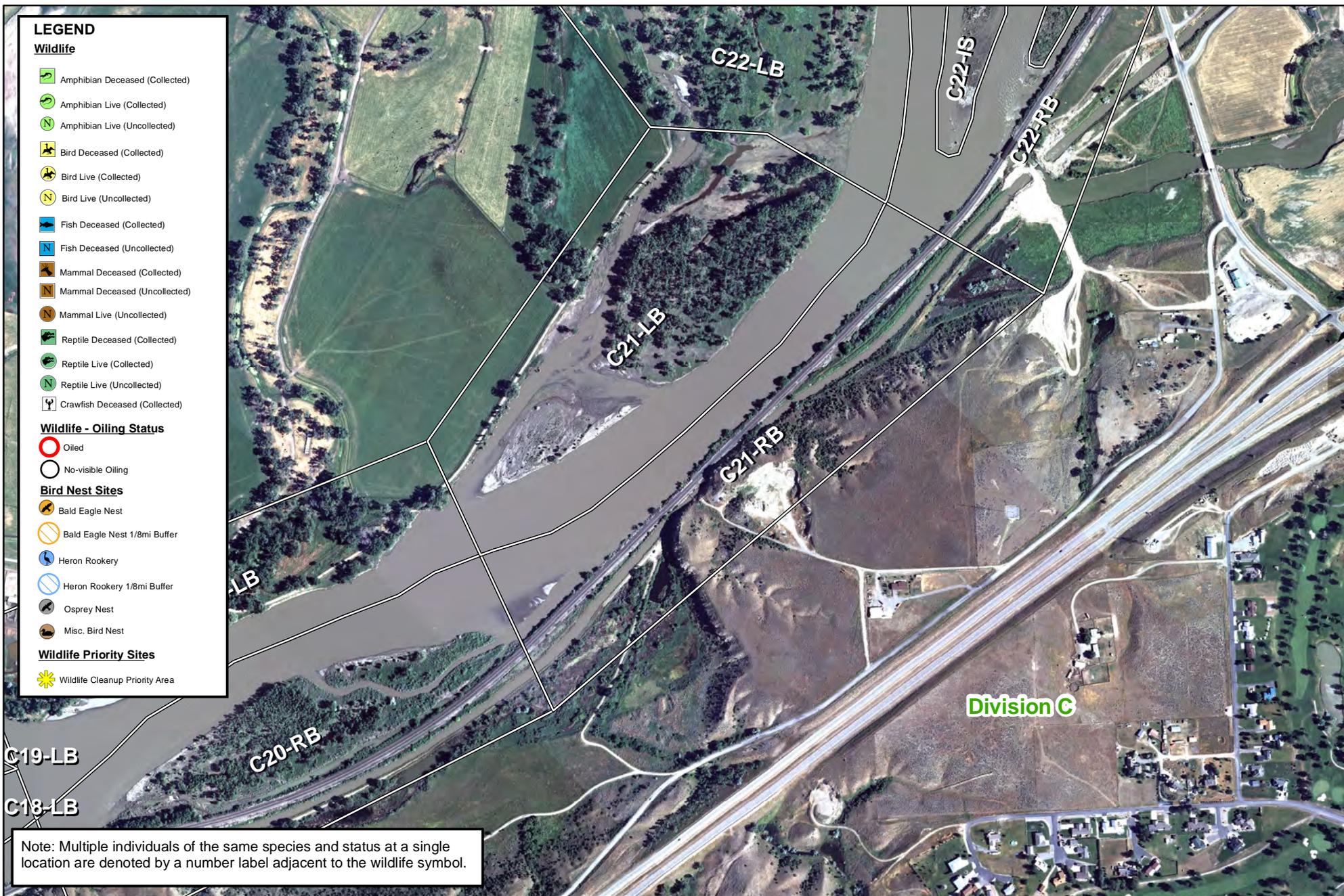


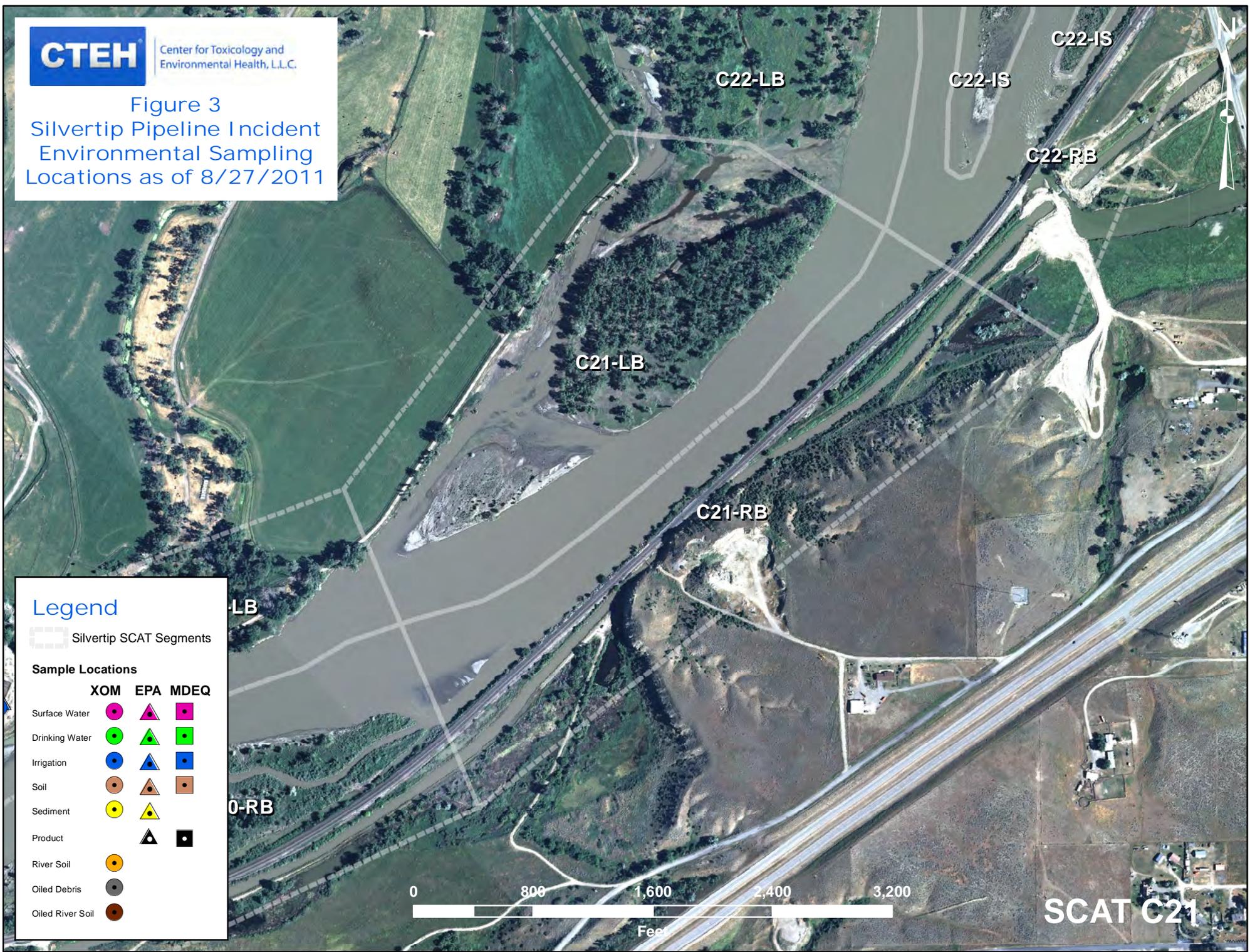
Figure 1





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 C21



**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: C21



Appendix A

Sample Detection Summary



Sample Results For
SCAT Area C21

Printed 10/7/2011

NA - Not Available

Detected Above Screening Level

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



Appendix B

Initial SCAT Survey Forms and
Sketches

DB 16/50

1 GENERAL INFORMATION Date (dd/mm/yy) 9 JUL 11 Time (24h): std / daylight 1430 hrs to 1435 hrs **Water Level**
 Segment/Reach ID: C21- Left Bank / Right Bank / Island overbank
 Operations Division: C falling - steady - rising
 Survey by: Foot / ATV / Boat / Helicopter / Overlook / AS Sun / Clouds / Fog / Rain / Snow / Windy / Calm Air Temp +/- deg C
2 SURVEY TEAM # name organization contact phone number
Andy Craham WILSON 206 419 1745
POLHEIS

3 SEGMENT Total Segment/Reach Length m Segment/Reach Length Surveyed 735 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 5 Sand Mixed P Pebble/Cobble Boulder Peat/Organic Vegetated Bank S Wooded Upland:
 Sediment Flat: Clay/Mud Sand Mixed/Coarse Other: If snow and ice use Winter River SOS

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate
 est. width: <1m 1-10 m 10-100 m <100m m est. water depth: <1m 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 / ~~rising~~ / ~~stable~~

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: vermillion ranch - levee

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					735	2	5			X	X							X					VEG

53

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 - band of oil very sporadic, dist. up to 20%
 width up to 3m, some areas w/ no oil band ~ 15cm

no treatment recommended but on private property

(for ALL sub-segments record: sub-segment ID, length, length surveyed, and GPS start/end fixes)
 Sketch Yes/No Photos Yes/No (Roll # Frames) Video Tape Yes/No (tape #)



C21 - LB
 (L/R/I)??

DATE: 9 Jul 11
 TEAM: Caraham

COMMENTS:



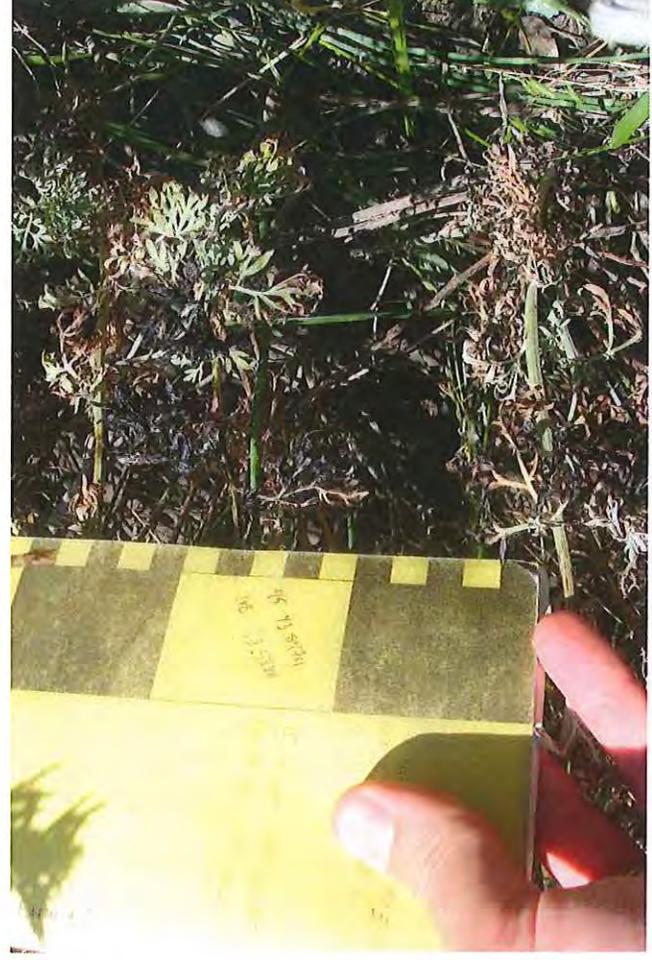
C21-LB, zone A, downriver end of seg



C21-LB, zone A, looking up river



C21-LB, zone A, downriver end of seg looking up river



C21-LB, zone A

C21-LB Graham 9 Jul 11

DB7G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>21</u>	<input checked="" type="radio"/> Left Bank / <input type="radio"/> Right Bank / Island	<u>27/07/11</u>	<u>9:14</u> hrs to <u>9:16</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				<input checked="" type="radio"/> falling - <input type="radio"/> steady - <input type="radio"/> rising
Survey by: <u>Foot / ATV / Boat</u> / <input checked="" type="radio"/> Helicopter / <input type="radio"/> Overlook / _____		<input checked="" type="radio"/> Sun / <input type="radio"/> Clouds / <input type="radio"/> Fog / <input type="radio"/> Rain / <input type="radio"/> Snow / <input type="radio"/> Windy / <input type="radio"/> Calm		Air Temp + / - <u>30</u> deg C

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

3 SEGMENT Total Segment/Reach Length 965 m Segment/Reach Length Surveyed 965 m

Start GPS: LATITUDE 45 deg. 53'10 min. LONGITUDE 109 deg. 19'12 min. Datum: WGS 84

End GPS: LATITUDE 45 deg. 52'56 min. LONGITUDE 108 deg. 19'39 min.

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate

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

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

5 OPERATIONAL FEATURES

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

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

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

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

1036
1037
1038

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)		
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
A			X	X	425	2	60			S	P			X								Sand/Veg
B			X	X	430	2	0													X		Sand/Veg
C			X	X	110	2	60			S	P			X								Sand/Veg

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

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

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

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

Zones A+C have stand + could veg / primarily grass.
Veg needs to be cut or trimmed where applicable and removed.



SILVERTIP PIPELINE INCIDENT Yellowstone River Map 35



DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident COMPLETE SURVEY

1 GENERAL INFORMATION		Date (dd/mm/yy) 09/08/2011	Time (24h): std / daylight 1135 hrs to 1330 hrs	Water Level low - mean - <u>bankfull</u> - overbank falling - steady - rising
Segment/Reach ID: C21 <u>Left Bank</u> / Right Bank / Island				
Operations Division:				
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - <u>27</u> deg C

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

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 1147 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/Feen _____ Marsh _____

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

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

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

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

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

Debris: Y / N oiled Y / N amount _____ bags or 10 trucks access restrictions: Must have landowner permission

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

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

OIL ZONE	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER							SUBST. TYPE(S)			
	ID	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO	
A					X	250	2	5			x							x					Vegetation
B					X	135	<u>25</u>															x	All
C					X	375	<u>75</u>															x	All
D					X	387	200	<1			x								x				Vegetation Debris

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

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

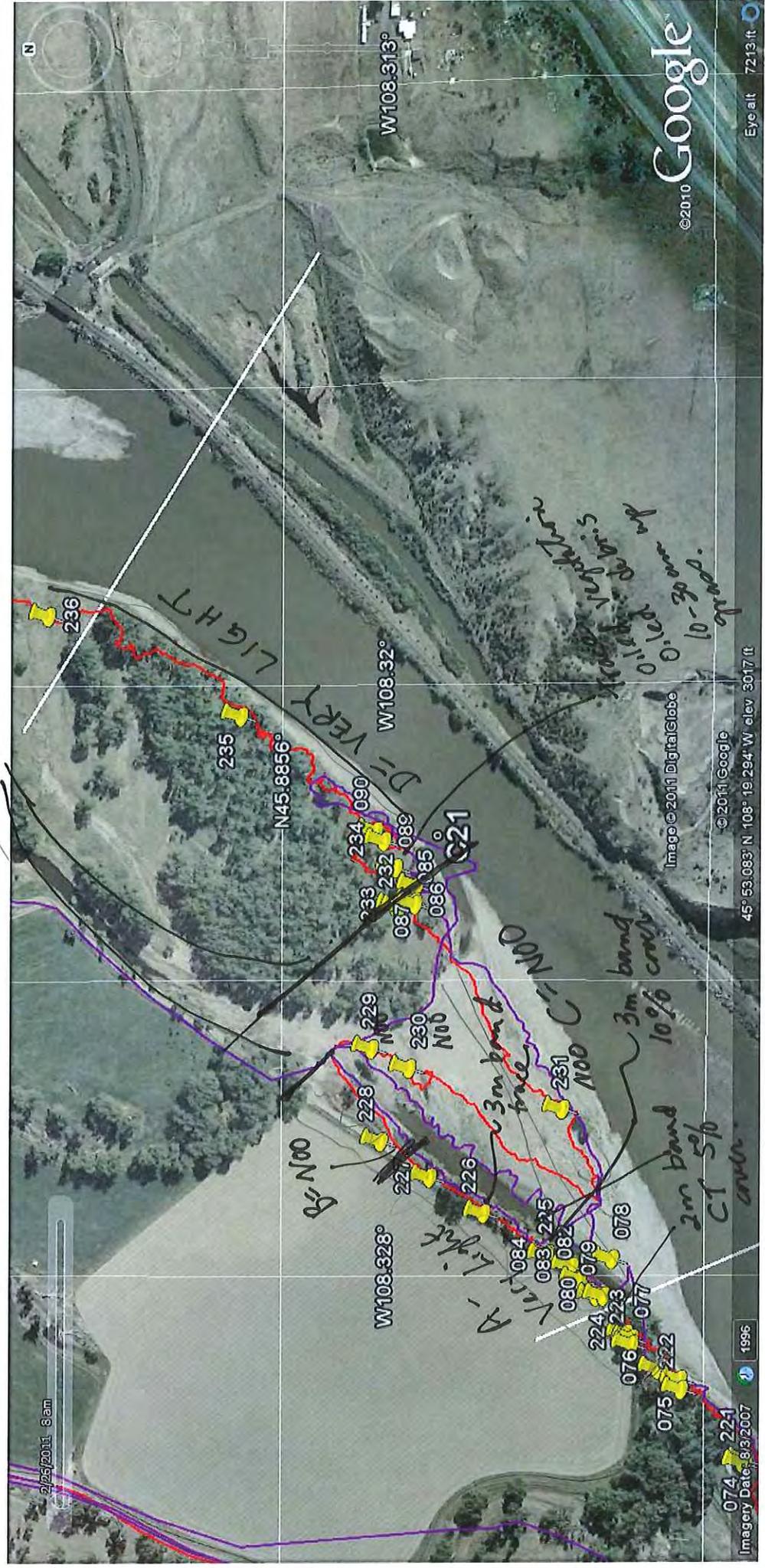
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Sporadic oiling on vegetation in Zone A should be addressed by cutting bagging and removing oiled vegetation. Oiled debris in Zone D should be removed manually. Piles of oiled debris and widely scattered through the zone. Oiling is transferable.

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

COMPLETE SURVEY
 C 21 LB
 9 AUGUST 2011
 Team #3



A = Very Light 250m
 B = NOO 135m
 C = NOO 375m
 D = VERY LIGHT 387m.
 Total = 853m.

DB/C

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page _____ of _____

1 GENERAL INFORMATION		Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: <u>C21</u>	Left Bank / <u>Right Bank</u> / Island	<u>27/07/11</u>	<u>1142</u> hrs to <u>1143</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</u>				<input checked="" type="radio"/> falling - <input type="radio"/> steady - <input type="radio"/> rising
Survey by: Foot / ATV / <u>Boat</u> / Helicopter / Overlook / _____		<input checked="" type="radio"/> Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>30</u> deg C

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

3 SEGMENT Total Segment/Reach Length 855 m Segment/Reach Length Surveyed 855 m

Start GPS: LATITUDE 45 deg. 53'10.65 min. LONGITUDE 109 deg. 19'03.43 min. Datum: WGS84

End GPS: LATITUDE 45 deg. 52'53.42 min. LONGITUDE 109 deg. 19'39.00 min.

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

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

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

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

4B RIVER VALLEY CHARACTER select as appropriate

Cliff or Bluff: _____ Est Height _____ m canyon _____ manmade _____ meander _____ confined or leveed _____ complete for primary

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

Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

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

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

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

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

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>1039</u> A			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>855</u>	<u>2</u>	<u>0</u>													<input checked="" type="checkbox"/>	<u>S-1/Sx</u>

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

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

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

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

No oil observed No recommendations.

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



SILVERTIP PIPELINE INCIDENT
Yellowstone River
Map 35



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>C01</u>	Left Bank / Right Bank / Island	<u>27/07/11</u>	<u>0900</u> hrs to <u>1330</u> hrs	low - mean - bankfull - overbank
Operations Division: <u>C</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>29</u> deg C

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

3 SEGMENT Total Segment/Reach Length 970 m Segment/Reach Length Surveyed 970 m

Start GPS: LATITUDE 45.88026 deg. _____ min. LONGITUDE 108.32650 deg. _____ min. Datum: WGS84

End GPS: LATITUDE 45.88618 deg. _____ min. LONGITUDE 108.31728 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: S Wooded Upland: _____

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

4B RIVER VALLEY CHARACTER select as appropriate complete for primary

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

Sloped: (>5°)(15°)(30°) 760 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 120m 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 rac road

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	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER						SUBST. TYPE(S)			
					Length	Width	Distrib.	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR		AP	NO	
ID	MS	LB	UB	OB	m	m	%															
A			<u>S</u>	<u>P</u>	<u>970</u>	<u>5</u>	<u>0</u>														<u>P</u>	<u>Cob/grav</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	OILED ZONE	SUBSURFACE OIL CHARACTER						WATER TABLE	SHEEN COLOUR	CLEAN BELOW	SUBST. TYPE(S)	
							SAP	OP	PP	OR	OF	TR					NO
					cm	cm-cm											

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

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

zone A = NO oil observed

recommendations: rescat lower bank by boat at low speed

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

COCCATIS, PATRICK & FLORENCE

C20

C21

ZONE A

USDI BUREAU OF RECLAMATION

UNNAMED STREET

UNNAMED STREET

OPENSHAW, ALICE & DAVE

ROAD

194

GABEL CONSTRUCTION INC

DARRAH CORPORATION INC

SIEMSEN, KLINT L & WENDY

108°19.75'W

45°52.5'N

108°19.5'W

108°19.25'W

108°18'W





Appendix C

Pre-Inspection Survey Transmittal

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



Appendix D

Post-Inspection Survey Transmittal

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



Appendix E

Final SCAT Survey Forms and
Sketches

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 07/09/11	Time (24h): std / daylight 13:30 hrs to 14:30 hrs	Water Level low - MEAN - bankfull - overbank falling - STEADY - rising
Segment/Reach ID: <u>C-21</u> <u>Left Bank</u> / Right Bank / Island		Operations Division:		
Survey by: <u>Foot</u> / ATV / Boat / Helicopter / Overlook /		<u>Sun</u> Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp +/- <u>26</u> deg C

2 SURVEY TEAM # <u>1</u>	name	organization	contact phone number
	Tom Freeman	<u>Polaris</u>	<u>Tom Freeman</u>
	Jeffrey Herrick	<u>MT DEC</u>	<u>Jeffrey Herrick</u>
	Griff Miller	<u>USFPA</u>	<u>Griff Miller</u>

3 SEGMENT Total Segment/Reach Length 290 m Segment/Reach Length Surveyed 290 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 Q Pebble/Cobble Q Boulder _____ Peat/Organic _____ **Vegetated Bank:** Yes _____ **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: MIXED

Sloped: (>5°)(15°)(30°) straight _____ braided Q 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 3-10m >10m _____ m

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

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

5 OPERATIONAL FEATURES Suitable backshore staging Y/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 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.	THICKNESS					CHARACTER									
	MS	LB	UB	OB	m	m	%	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP		NO	
A				X	290	80	<1				X						X					Veg/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					

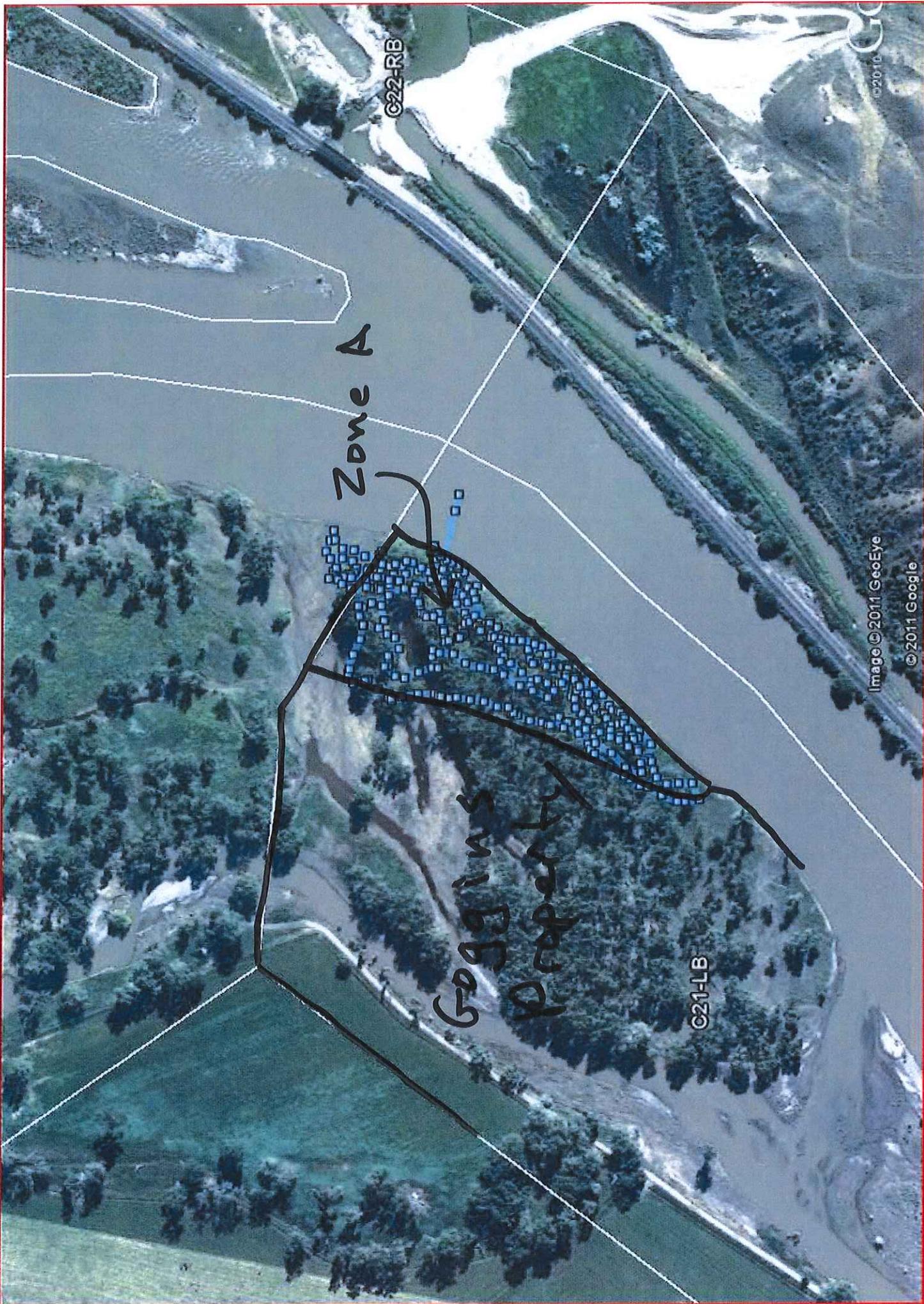
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Zone A: Former recommendation treatment. Currently meets NFT threshold.

Note: Remainder of Segment is "no access" by landowner's Request. (Mr. Goggins)

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

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



C22-RB

Zone A

Goggins Property

C21-LB

Image © 2011 GeoEye

© 2011 Google

© 2010

D3 / 6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION		Date (dd/mm/yy) 24/09/11	Time (24h): std / daylight 1030 hrs to 1300 hrs	Water Level low - <u>mean</u> - bankfull - overbank falling - steady - rising
Segment/Reach ID: C 21 (Left Bank) Right Bank / Island		Operations Division: C		
Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - 33 deg C

2 SURVEY TEAM # 2 & 3	Name	Organization	Signature
Merlo Gauvreau	Polaris		<i>[Signature]</i>
Pete Lee	Polaris		<i>[Signature]</i>
Bruce Kvam	Polaris		<i>[Signature]</i>
Jeffrey Frank Herrick	MTDEQ		<i>[Signature]</i>
Bob Roll	MTDEQ		<i>[Signature]</i>

3 SEGMENT Total Segment/Reach Length 830 m Segment/Reach Length Surveyed 830 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 (leveled) P _____ 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 1-10 m 10-100 m (>100m) m est. water depth: < 1 m (1-3 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: Coggins property

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

2084

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	830	300	< 1			S	P							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 height: 30-60 cm

Treatment recommendations:

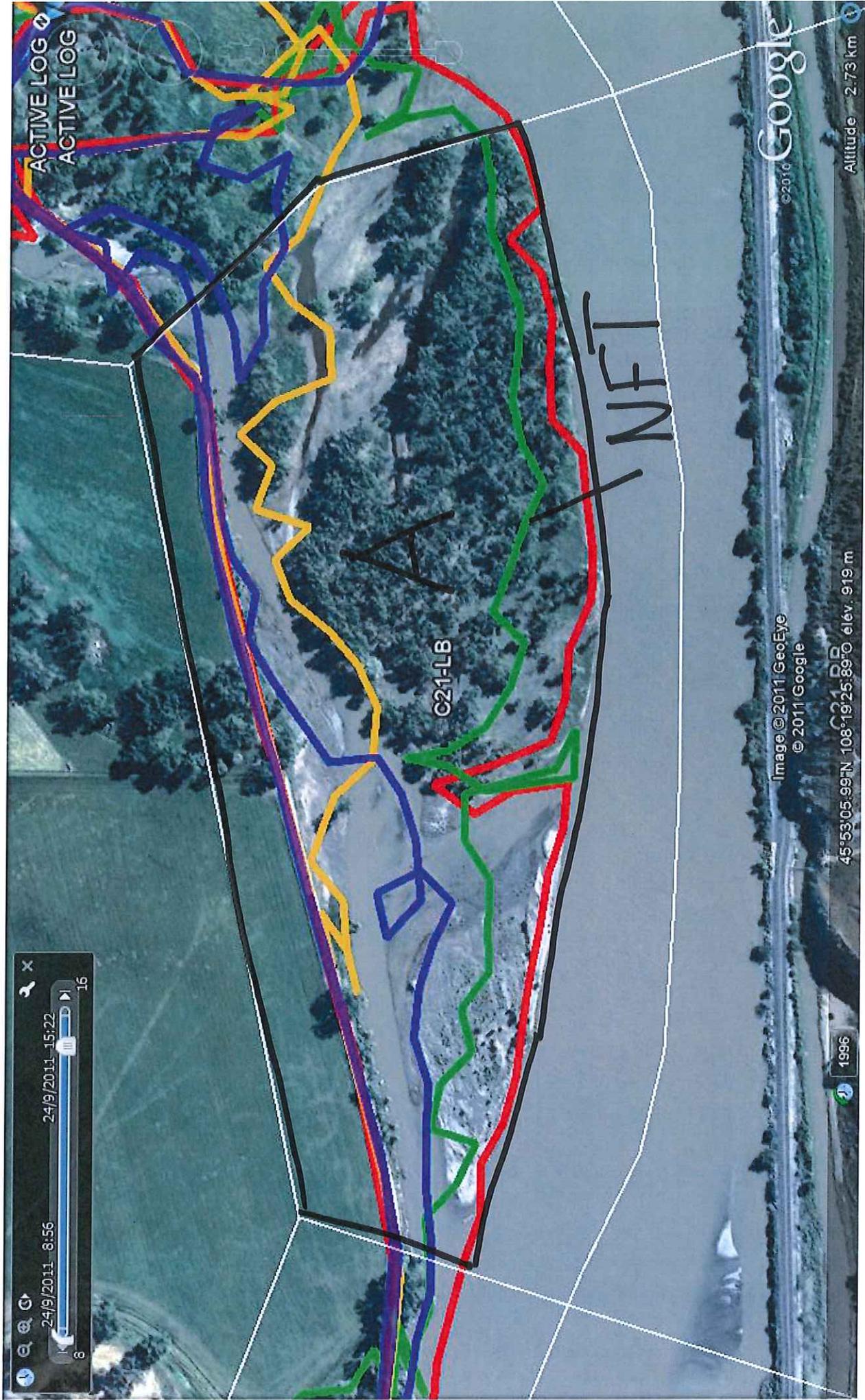
Zone A : No Further Treatment (NFT)

Zone :

Treated by Ops Hot Shot crew

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

24/09/2011 Team # 2-3 C21-LB 2/2





Appendix F

Completed SCAT Segment Sign-Off
Forms

SCAT SEGMENT OPERATIONS COMPLETION SIGN-OFF SHEET

SILVERTIP PIPELINE RELEASE

Segment C-21 Left Bank Date of Survey Sept 7, 2011

Dates of Initial SCAT Assessments 09 JUL 11
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment N/A

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

Segment Assessment Complete¹ THF

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).

Am Bill Miller / EPA 9-7-11
Sign Name Print Name/ Affiliation Date
Federal Representative (EPA/USCG)

Julie Ann ... Frank Herrick 07 Sept. 2011
Sign Name Print Name/ Affiliation Date
State Representative (DEQ/FWP)

Tom Freeman Tom Freeman / Polaris Sept 7, 2011
Sign Name Print Name/ Affiliation Date
RP Representative (SCAT RP Representative)

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

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 C21LB Date of Survey 24/09/2011

Dates of Initial SCAT Assessments 09 Jul 2011 (13)
(to be filled out by SCAT Data Management)

CTR(s) Associated with SCAT Segment 60

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

Segment Assessment 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 _____ Print Name/ Affiliation _____ Date _____
State Representative (DEQ/FWP)

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.