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ExxonMobil Pipeline Company

SCAT Area Transition Report for B34

Silvertip Pipeline Incident
Laurel, Montana

October 20, 2011

SCAT Area Transition Report for B34

Silvertip Pipeline Incident
Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

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Our Ref.:
B0085883.1103

Date:
October 20, 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.

ARCADIS

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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 B34, 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 B34. 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 B34, 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 B34 is 33.8. There was no access granted to the entire right bank segment.

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 inspections of Area B34. One lightly oiled mallard (*Anas platyrhynchos*) was observed but not captured. No Wildlife Priority Cleanup Areas were identified. No active migratory bird nests were identified in Area B34.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area B34. 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 B34 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	BIMT0824SO113	8/24/2011	Soil_Surface	BIMT_535_SO113	45.746244	-108.499618

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, one exceedance is shown for vanadium.

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 B34 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area B34.

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. 19 and CTR No. 42).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area B34 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 B34 following completion of oil removal activities. The SCAT team performed final surveys of the left bank within SCAT Area B34 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 left bank within Area B34, no further treatment is recommended for this area. A SCAT Segment Sign-Off Form is included as Appendix F. Access was not granted to SCAT teams for a survey of the right bank.

2. Transition Sign-Off Form

SCAT Area Transition Report for B34

Prepared for:

Unified Command

_____

Date

_____

Unified Command – RP

SCAT Area Transition Report for B34

Prepared for:

Unified Command

10/11/2011

Date

S. Nelson

Unified Command – FOSC

SCAT Area Transition Report for B34

Prepared for:

Unified Command

_____

Date

_____

Unified Command – MDEQ

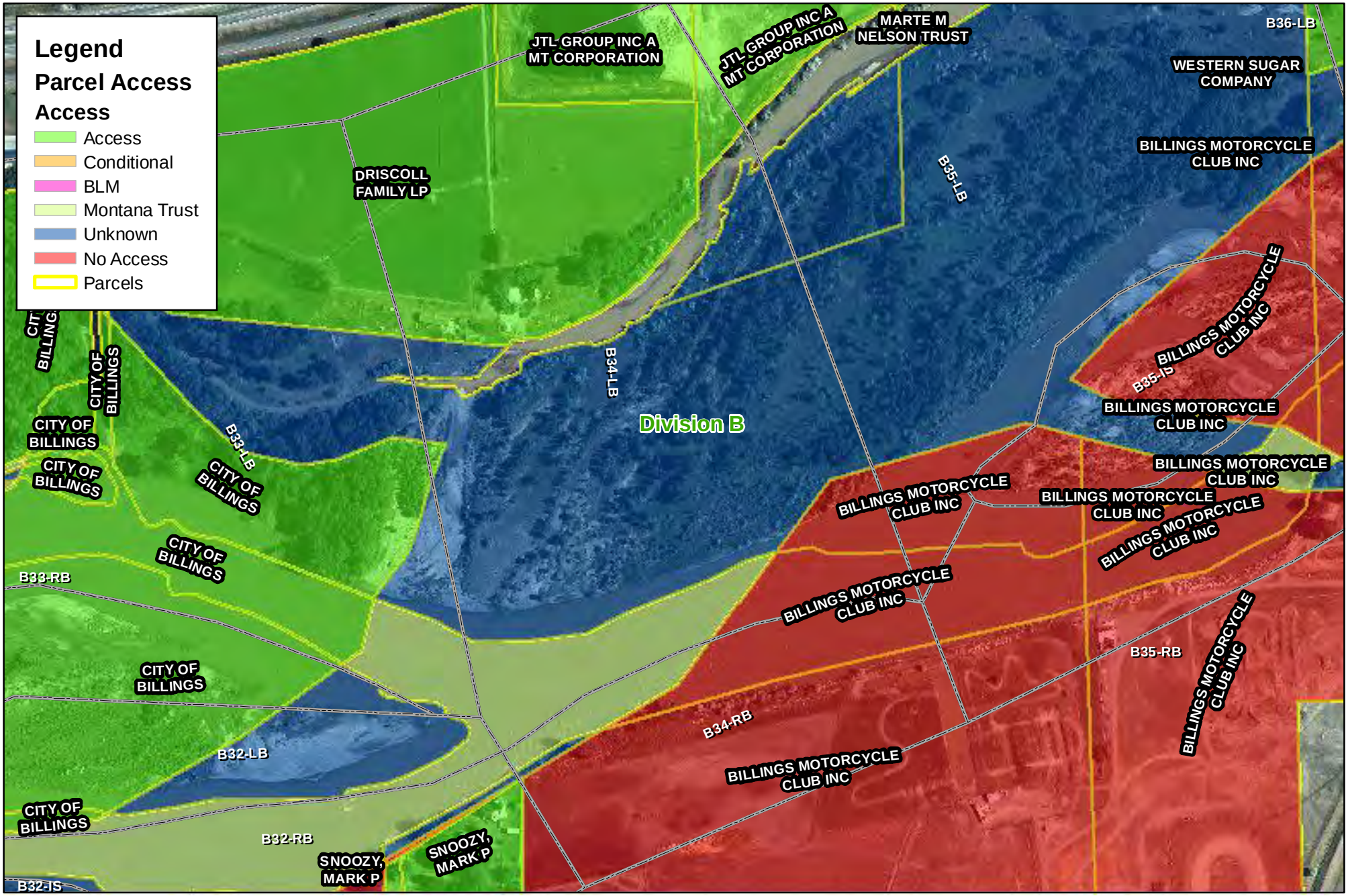
ExxonMobil Pipeline

Silvertip Pipeline Incident
Area Transition Report Map - Parcels
Segment - B34

9/27/2011

The Response Group

1:5,000



0 500 1,000 2,000 Feet

Figure 1

Date: 9/27/2011 Time: 1:11:03 PM

Path: P:\GIS\MXD's\Area_Transition_Figures\A1-Fig1-Parcels.mxd

Silvertip Pipeline Incident
SCAT Area Transition Report Map
Area - B34

ExxonMobil Pipeline

N

1:6,000

9/25/2011

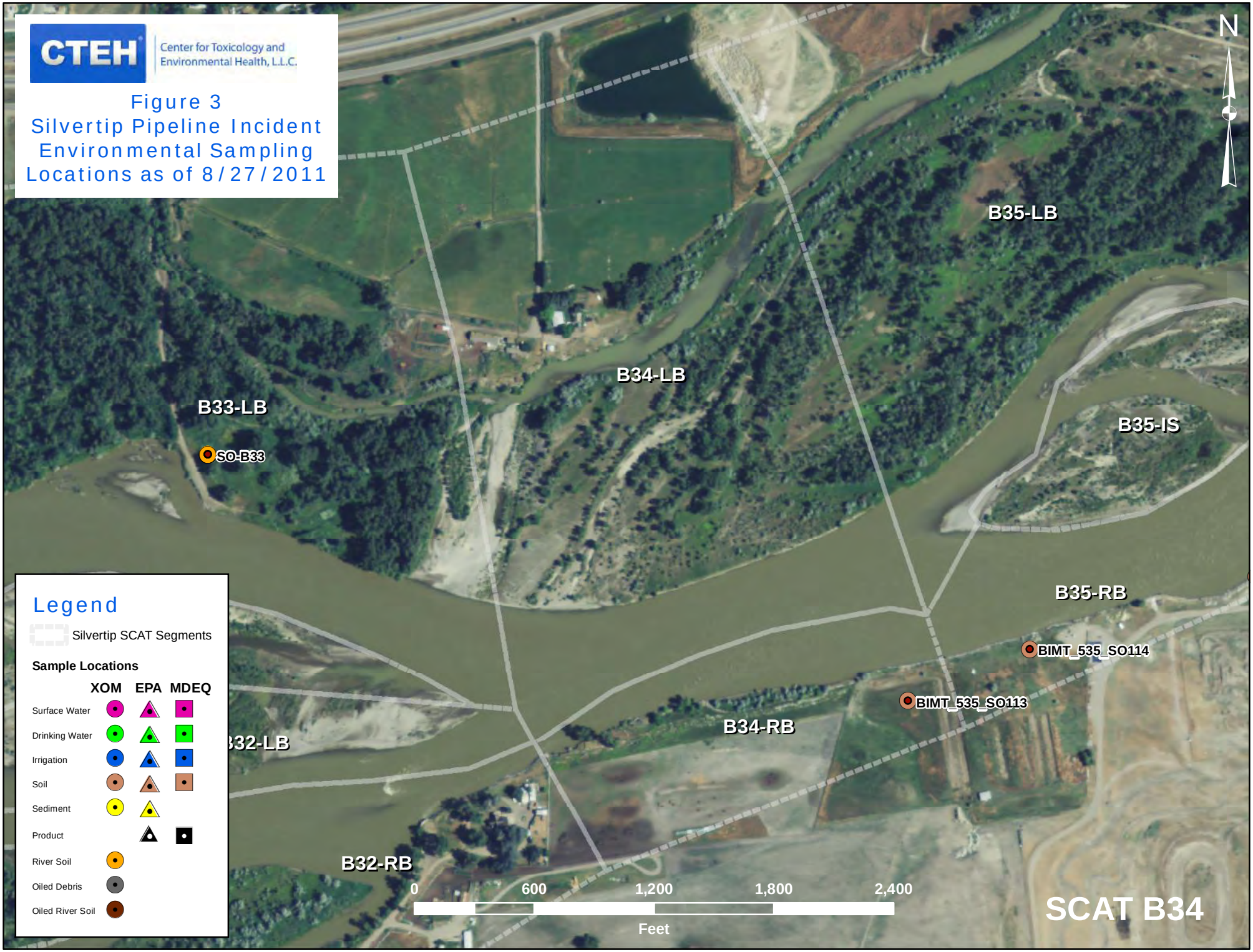
The Response Group

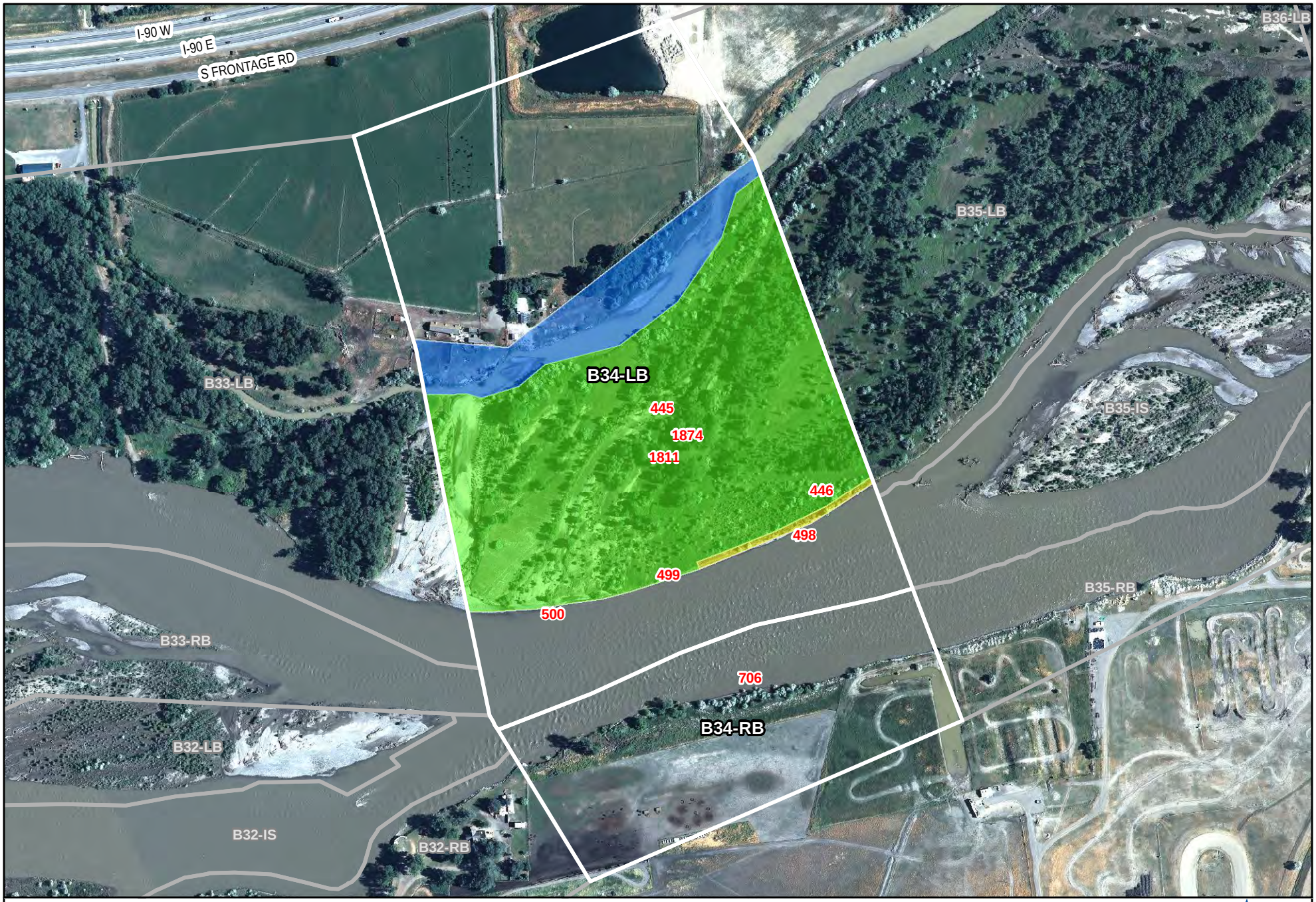
Path: P:\GIS\MXD's\Wildlife\ATR Maps - Figure 2\ATR Map_Div.B_Fig2_09252011.mxd

0 625 1,250 2,500 Feet

Figure 2
Wildlife Resources

Date: 9/25/2011 Time: 2:41:00 PM


CTEH
Center for Toxicology and Environmental Health, L.L.C.
Figure 3
Silvertip Pipeline Incident
Environmental Sampling
Locations as of 8/27/2011
N
B35-LB
B34-LB
B33-LB
B35-IS
SO-B33
B35-RB
BIMT_535_SO114
BIMT_535_SO113
B34-RB
B32-LB
B32-RB
Legend
Silvertip SCAT Segments
Sample Locations
XOM EPA MDEQ
Surface Water
Drinking Water
Irrigation
Soil
Sediment
Product
River Soil
Oiled Debris
Oiled River Soil
0 600 1,200 1,800 2,400
Feet
SCAT B34



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

325 0 325 650 Feet

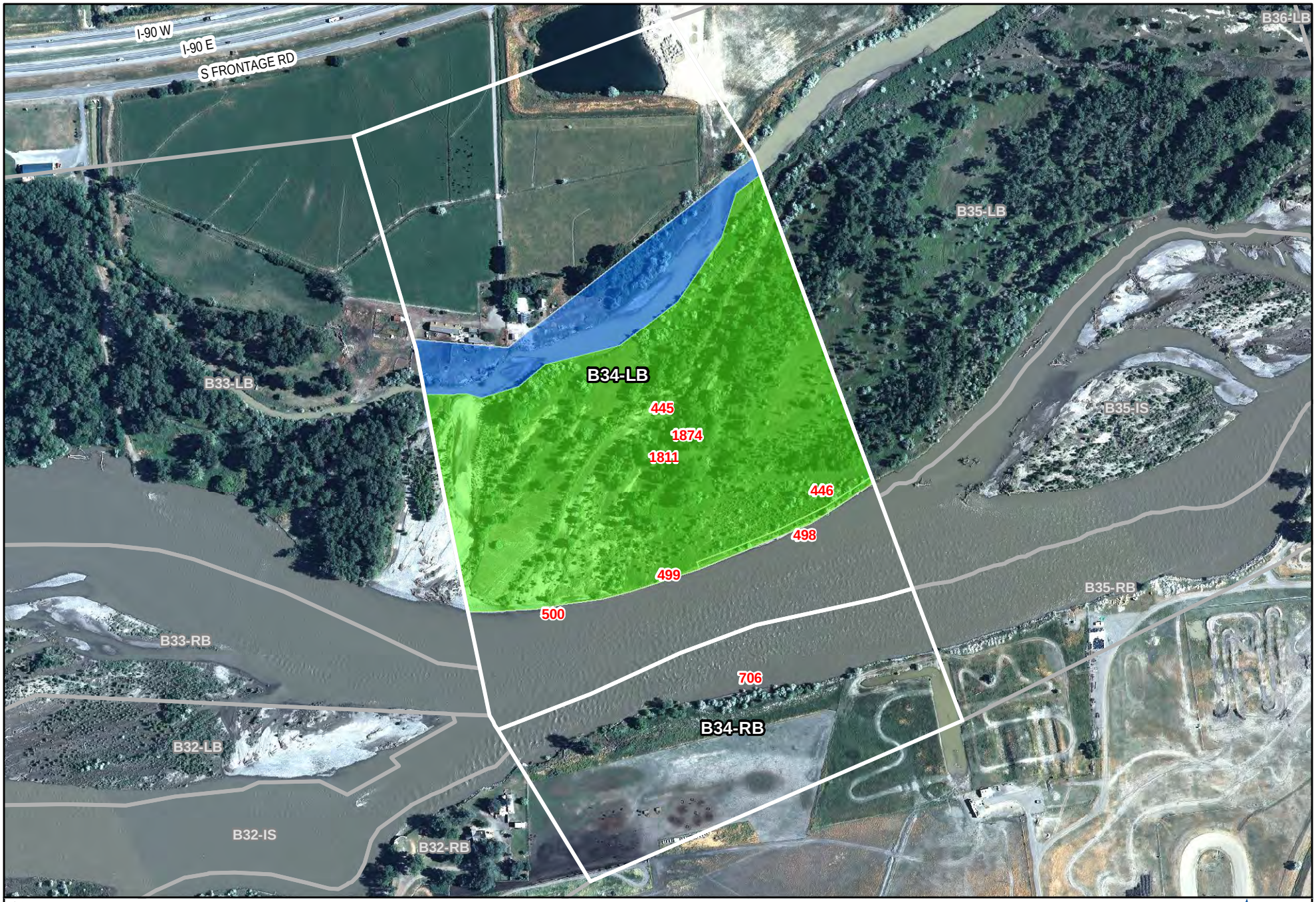
Figure 4 - Maximum SCAT Observations For SCAT Area: B34

POLARIS APPLIED SCIENCES, INC.

Aerial Photography Dated July 20, 2011

O:\GIS\SCAT Mapping\Maps\Area Transition Reports MXD\ATR Fig 4 - Max_SCAT_Observations_DataPages.mxd

Printed: 9/28/2011 9:29:06 AM



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

325 0 325 650 Feet

Figure 5 - Final SCAT Observations For SCAT Area: B34

POLARIS APPLIED SCIENCES, INC.

Aerial Photography Dated July 20, 2011

O:\GIS\SCAT Mapping\Maps\Area Transition Reports MXD\ATR Fig 5 - Final_SCAT_Observations_DataPages.mxd

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Appendix A

Sample Detections Summary

Detections in Samples Collected in SCAT Area B34

Printed 9/13/2011

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0824SO113	24-Aug-11	Field	Soil_Surface	EPA 6010	Arsenic	Y	21.8	40		mg/kg	no
BIMT0824SO113	24-Aug-11	Field	Soil_Surface	EPA 6010	Barium	Y	112	820		mg/kg	no
BIMT0824SO113	24-Aug-11	Field	Soil_Surface	EPA 6010	Cadmium	Y	1.2	3.8		mg/kg	no
BIMT0824SO113	24-Aug-11	Field	Soil_Surface	EPA 6010	Chromium	Y	19.4	280		mg/kg	no
BIMT0824SO113	24-Aug-11	Field	Soil_Surface	EPA 6010	Lead	Y	10.1	400		mg/kg	no
BIMT0824SO113	24-Aug-11	Field	Soil_Surface	EPA 6010	Nickel	Y	18.5	150		mg/kg	no
BIMT0824SO113	24-Aug-11	Field	Soil_Surface	EPA 6010	Vanadium	Y	**42.1**	39		mg/kg	YES
BIMT0824SO113	24-Aug-11	Field	Soil_Surface	EPA 8260	Acetone	Y	61.8	61000000		ug/kg	no

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Appendix B

Initial SCAT Survey Forms and Sketches

DB/G

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

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: B34 **Left Bank** / Right Bank / Island	19-Jul-2011	1003 hrs to 1008 hrs	low - mean - **bankfull** - overbank
Operations Division: B			**falling** - steady – rising
Survey by: Foot / ATV / **Boat** / Helicopter / Overlook / _____	**Sun** / Clouds / Fog / Rain / Snow / **Windy**/ Calm		Air Temp + / - 31 deg C

2 SURVEY TEAM # 1	name	organization	contact phone number
Pete Lee PBL		Polaris	
Larry Alheim LA		MTDEQ	
Andy Johnson / Austin West		USCG	

3 SEGMENT *Total Segment/Reach Length* _____ *m* *Segment/Reach Length Surveyed* 437 *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 1–10 m 10–100 m **>100m 110m** | **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 10 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)
					Length	Width	Distrib.														
	MS	LB	UB	OB	m	m	%	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO	
498 A				X	216	1														X	Grass, trees
499 B				X	67	1	100			X	X		X								Grass, trees
500 C				X	154	1														X	Grass, trees

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)
	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*

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

Oil band heights: Zone B – 60cm

Treatment Recommendations:

Zone A: No oil observed; no treatment required.

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

Zone C: No oil observed; no treatment required.

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

Sketch Yes / No **Photos** Yes / No **Frames** 1111-1115 (Lee)

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: B3~~4~~ Left Bank / Right Bank / Island	19-Jul-2011	1003 08 ~~0950~~ hrs to 1010 hrs	low - mean - **bankfull** - overbank
Operations Division: B			**falling** - steady – rising
Survey by: Foot / ATV / **Boat** / Helicopter / Overlook / _____	**Sun** / Clouds / Fog / Rain / Snow / **Windy**/ Calm		Air Temp + / - 31 deg C

2 SURVEY TEAM # 1	name	organization	contact phone number
	Pete Lee	Polaris	
	Larry Alheim	MTDEQ	
	Andy Johnson	USCG	
			437

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed ~~576~~ 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 1–10 m 10–100 m **>100m** ~~130m~~ 110 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 5/10 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)
					Length	Width	Distrib.														
	MS	LB	UB	OB	m	m	%	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO	
A				X	~~65~~ 67	1														X	Grass, trees
B				X	~~45~~ 154	1	100			X	X		X								Grass, trees
C				X	~~496~~	1														X	Grass, trees

216

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)
	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*

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

Oil band heights: Zone B – 60cm

Treatment Recommendations:

Zone A: No oil observed; no treatment required.

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

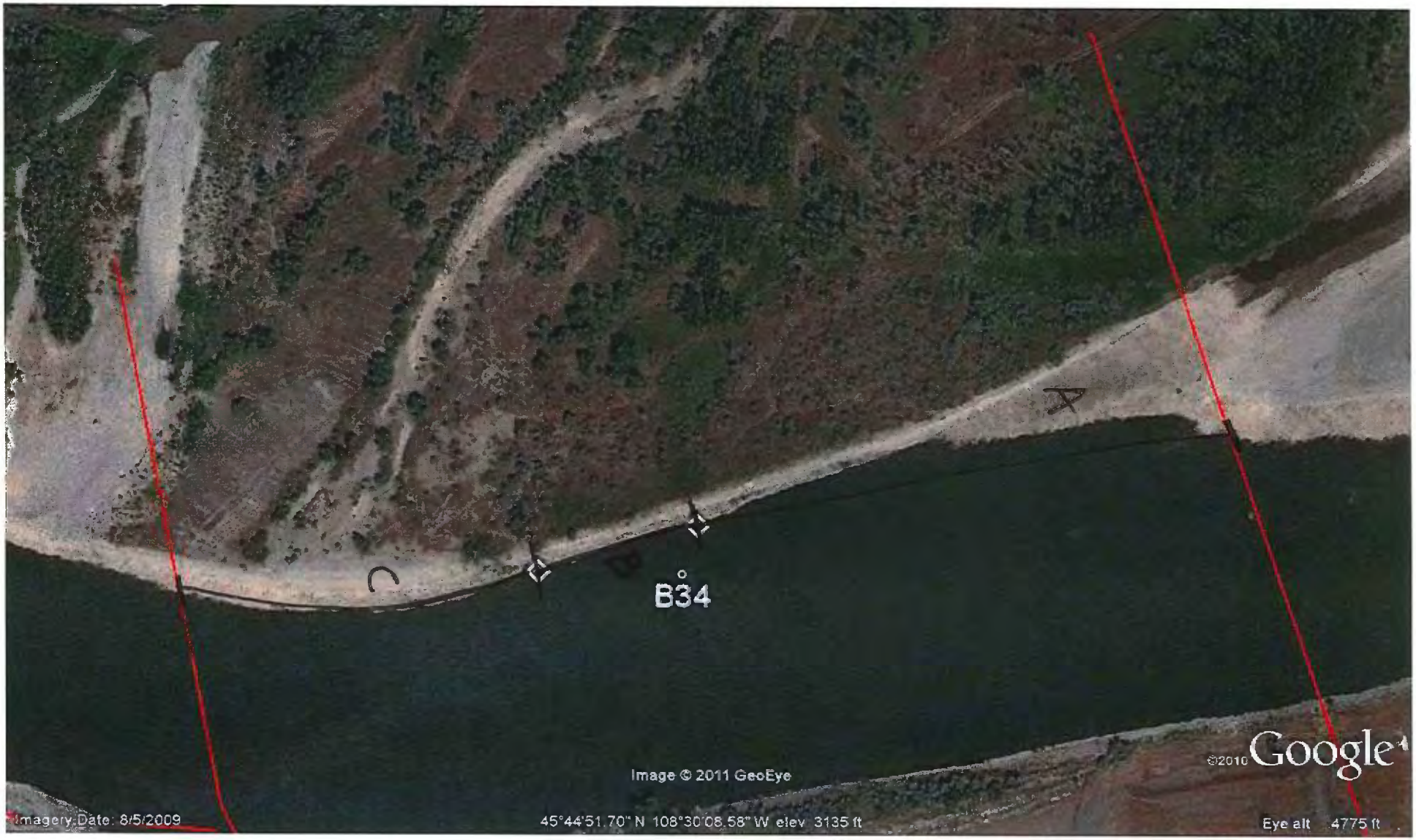
Zone C: No oil observed; no treatment required.

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

1111 - 1115

Sketch **Yes** / No Photos **Yes** / No Frames ~~1109-1110~~ (Lee)

C = 68 + 86


A
B
C
B34
Image © 2011 GeoEye
©2010 Google
Imagery Date: 8/5/2009
45°44'51.70" N 108°30'08.58" W elev 3135 ft
Eye alt 4775 ft

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 1

1 GENERAL INFORMATION

Segment/Reach ID: B34 Left Bank / Right Bank / Island

Operations Division:

Date (dd/mm/yy): 22/07/11

Time (24h): std / daylight 0851 hrs to 1255 hrs

Water Level: low - mean - bankfull - overbank; falling - steady – rising

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

Air Temp + / - 24 deg C

2 SURVEY TEAM # 6

Name	Organization	Signature
Joe Boyle	Cardno ENTRIX	[signature]
JAMES ROGERS [signature]	USCG PAC STRIKE TEAM	727/244-8292
Darnell Turner [signature]	MT DEQ	406-444-1504
Steve Kennedy [signature]	Cardno Entrix	281-723-1259

3 SEGMENT Total Segment/Reach Length 415 m Segment/Reach Length Surveyed 415 m

Start GPS: LATITUDE 45.74832 deg. ____ min. LONGITUDE 108.50556 deg. ____ min. Datum: WGS 84

End GPS: LATITUDE 45.74922 deg. ____ min. LONGITUDE 108.50039 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 S Sand____ Mixed____ Pebble/Cobble S 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 S confined or leveed ____ Substrate Type: mud

Sloped:___(>5°)(15°)(30°) <5° straight____ braided P oxbow____ flood plain valley____ Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

est. width : < 1m 1–10 m 10–100 m >100m 160m 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 1 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 MS	LB	UB	OB	OIL COVER Length m	Width m	Distrib. %	OIL THICKNESS TO	CV	CT	SS	FL	FR	MS	TB	PT	TC	SR	AP	NO	SUBST. TYPE(S)
445 A				P	415	250	0			~~S~~	~~P~~		~~P~~							P	mud
446 B				P	200	5	25			S	P		P								mud

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

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

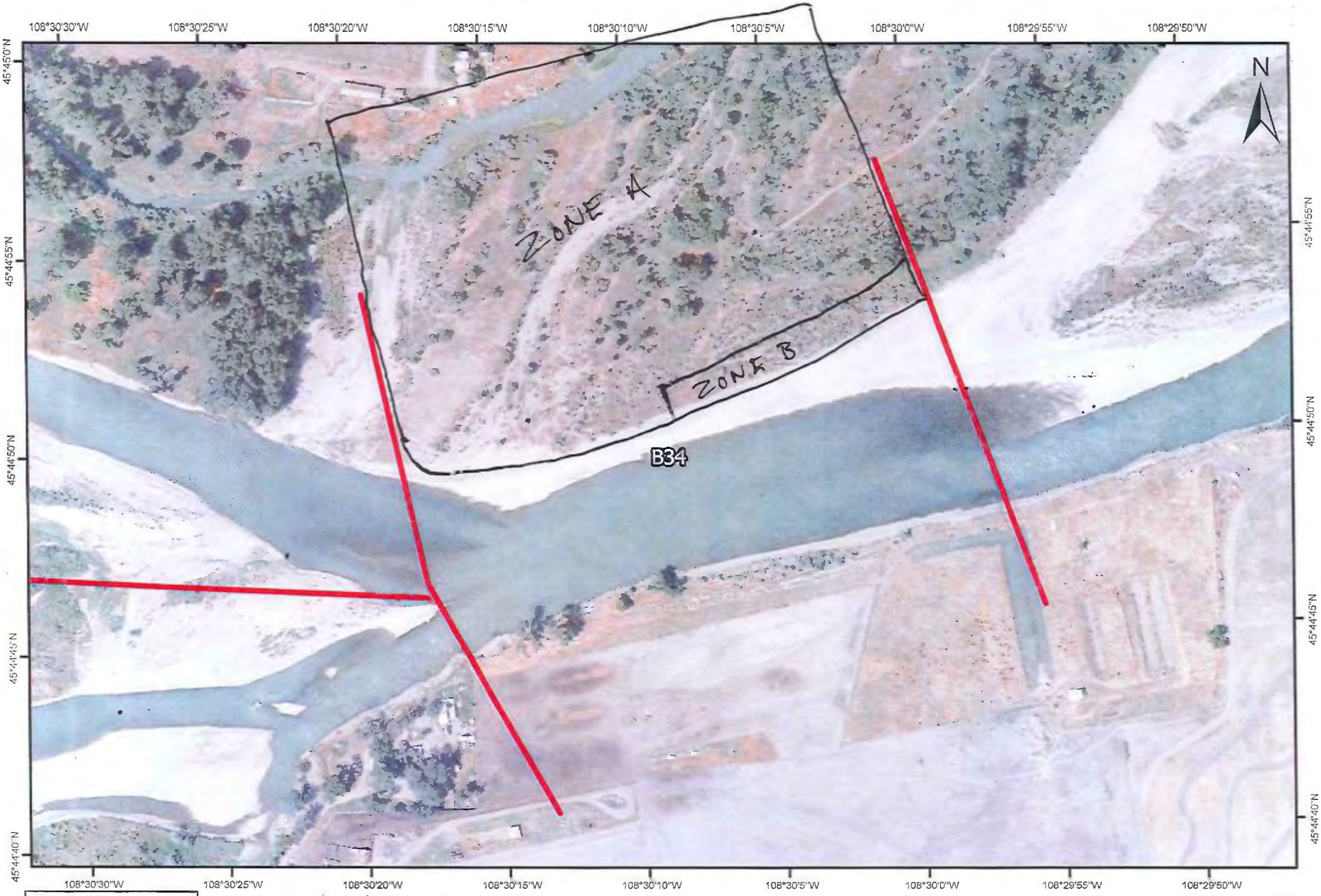
Overbank Survey Required Y / N Overbank Survey Completed Y / N Shoreline Survey Completed Y / N

B34 zone A - no oil observed. no further treatment

zone B - light - moderate oiling on veg and debris

recommendations: hand removal (weed whack) of oiled veg and debris by small crew

Sketch Yes / No Photos Yes / No Frames 131-133 Photographer JB



B34 - (L/R/I)??

DATE: 07/22/11

TEAM: 6

COMMENTS:

DB/G/15

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: B34 Left Bank / Right Bank / Island	19 / 07 / 11	1006 hrs to 1010 hrs	low - mean - bankfull - overbank
Operations Division: B			falling / steady - rising
Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____	Sun / Clouds / Fog / Rain / Snow / Windy / Calm		Air Temp + / - 35 deg C

2 SURVEY TEAM # 5	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 442 m Segment/Reach Length Surveyed 442 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) 5 Rip rap | Wetland: Swamp _____ Bog/Fen _____ Marsh _____

Sediment Bank: Clay/Mud _____ Sand _____ Mixed S Pebble/Cobble S 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 X meander _____ confined or leveed _____ | Substrate Type: _____

Sloped: ___ (>5°)(15°)(30°) | straight X 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 150 m | est. water depth: <1 m 1-3 m 3-10 m >10 m ____ m

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

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

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

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

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

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

OIL ZONE ID	RIVER BANK ZONE				OIL COVER			OIL THICKNESS					OIL CHARACTER								SUBST. TYPE(S)
	MS	LB	UB	OB	Length m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO	
706 A				X	442		5				P		X								Veg bank

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)
	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

OSR = Y OSC = unk SSC = unk

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

Sketch Yes/No Photos Yes/No (Roll # 5105 Frames 3114) Video Tape Yes/No (tape#

5105

B34 - (L/R/I)??

DATE:

TEAM:

COMMENTS:

ARCADIS

Appendix C

Pre-Inspection Survey Transmittal

ARCADIS

A Pre-Inspection Survey was not conducted for this area

ARCADIS

Appendix D

Post-Inspection Survey Transmittal

ARCADIS

A Post-Inspection Survey was not conducted for this area

ARCADIS

Appendix E

Final SCAT Survey Forms and Sketches

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

1 GENERAL INFORMATION

Segment/Reach ID: B34 (Left Bank / Right Bank / Island)

Operations Division: B

Date (dd/mm/yy): 23/08/11

Time (24h): std / daylight 1230 hrs to 1600 hrs

Water Level: low - (mean) - bankfull - overbank; (falling) - steady – rising

Survey by: (Foot) / ATV / Boat / Helicopter / Overlook / _____ (Sun) Clouds / Fog / Rain / Snow / Windy / Calm

Air Temp + / - 34 deg C

2 SURVEY TEAM # 1 & 2

Name	Organization	Signature
Joe Boyle	Cardno ENTRIX	[signature]
John Bizzon	NDEQ	[signature]
Nathan Hammond	Cardno Entrix	[signature]
[illegible]	Cardno ENTRIX	[signature]
Lance Richmon	US EPA	[signature]

3 SEGMENT Total Segment/Reach Length 410 m Segment/Reach Length Surveyed 410 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 ____ Pebble/Cobble S 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 S confined or leveed ____ Substrate Type: Sand

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 1–10 m 10–100 m >100m 160m 130 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 3 bags or ____ trucks access restrictions backshore channel – steep bank

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 MS	LB	UB	OB	OIL COVER Length m	Width m	Distrib. %	OIL THICKNESS TO	CV	CT	ST	FL	OIL CHARACTER FR	MS	TB	PT	TC	SR	AP	NO	SUBST. TYPE(S)
1811 A			S	P	410	250	<1		S	P	S						P				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 MS	LB	UB	OB	MAX. PIT DEPTH cm	OILED ZONE cm-cm	SUBSURFACE OIL CHARACTER SAP	OP	PP	OR	OF	TR	NO	WATER TABLE cm	SHEEN COLOUR B, R, S, N	CLEAN BELOW Yes / No	SUBST. TYPE(S)

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: trace distr oil coated / stained / covered veg & debris cleaned by hotshot crew – NFT

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

B35-LB
009
010
008
AUG-11 03:22:24 PM
ACTIVE LOG 002
008
B34-LB
046
002
003
004
005
007
ACTIVE LOG 003
002
003
017
004
005
006
019
018
B34 LB
SCAT 1-2
29 Aug 2011
Image © 2011 GeoEye
© 2011 Google
B34-RB
©2010

DB/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

R

1 GENERAL INFORMATION	Date (25/08/11)	Time (24h): std / daylight	Water Level
Segment/Reach ID:B34 (Left Bank) / Right Bank / Island			low / (mean) / bankfull - overbank
Operations Division:B		12:30 hrs to 14:30 hrs	(falling) - steady - rising
Survey by: (Foot) / ATV / Boat / Helicopter / Overlook / _____		Sun / (Clouds) / Fog / Rain / Snow / Windy / Calm	Air Temp + / - 30 deg C

2 SURVEY TEAM # 3	name	organization	contact phone number
Merlo Gauvreau		Polaris	
Tom Freeman		Polaris	
Donnie McCurry		DEQ	
Rachelle Thompson		EPA	

3 SEGMENT Total Segment/Reach Length 425 m Segment/Reach Length Surveyed 425 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 S___ Sand S___ Mixed P___ Pebble/Cobble S___ Boulder_____ Peat/Organic_____ | Vegetated Bank: (S) | Wooded Upland: (P)

Sediment Flat: Clay/Mud_____ Sand_____ Mixed/Coarse_____ | Other: _____ | If snow and ice use Winter River SOS

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

Cliff or Bluff:___Est Height ____m | canyon_____ manmade_____ meander S___ confined or leveed _____ | Substrate Type: mixed

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 1–10 m 10–100 m >100m 375 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 7 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)
					Length	Width	Distrib.														
	MS	LB	UB	OB	m	m	%	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO	
1879 A				X	425	255	<1				P							P			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	OILED ZONE	SUBSURFACE OIL CHARACTER							WATER TABLE	SHEEN COLOUR	CLEAN BELOW	SUBST. TYPE(S)
	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

A: ReSCAT Segment B34 LB; There remains some negligible trace oil staining on the trees, vegetation and large debris.

All areas meet the standards set forth as endpoints in the CTR. Recommendation: NFT

Note: Ops Hot Shot Team worked alongside SCAT Team 3 and was able to remove small amounts of product exceeding NFT standards\threshold.

(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#_____

2/2

8/2011
085
011
010
009
087
B34-LB
084
086
069
071
008
070
005
083
066
063
067
006
081
064
068
001
004
062
061
082
B34
B34-RB
Image © 2011 GeoEye
© 2011 Google
25 August
Team #3
Seg B34LB
Rescat

ARCADIS

Appendix F

Completed SCAT Segment Sign-Off Forms

Silvertip Pipeline Spill
SCAT Segment Sign-Off Sheet

COMPLETED

Operations Division:	A ___ B X C ___
SCAT Area Number (i.e. A12):	B34
SCAT Segment Number (i.e. A12-LB/IS/RB):	B34 LB

Complete

Check if Complete:

1. **Completion Date for Initial SCAT Assessment:** 8-23-11 ☑
2. **Combined Treatment Recommendations (CTRs) Developed/Issued:** Yes/No

   List CTRs Applicable to SCAT Segment: 42, 59
3. **Clean-Up Operations Conducted:** ☑
4. **Inspection (CTR Objectives and CTR Addendums Complete):** ☐

RP Representative (SCAT/Ops Liaison Contractor) — Date

5. **SCAT Reassessment:** Yes/No

Federal Representative (EPA/USCG)	Date: 8/23/11
State Representative (DEQ/FWP)	Date: 8/23/11
RP Representative (SCAT Contractor)	Date: 8-23-11

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

COMPLETED

Silvertip Pipeline Spill
SCAT Segment Sign-Off Sheet

Operations Division: A ___ (B) 34 C

SCAT Area Number (i.e. A12): B34

SCAT Segment Number (i.e. A12-LB/IS/RB): B 34/LB

Complete

	Check if Complete:
1. **Completion Date for Initial SCAT Assessment:** 22-Jul-2011	☒
2. **Combined Treatment Recommendations (CTRs) Developed/Issued:** (Yes/No)	(Yes)/No
List CTRs Applicable to SCAT Segment: 19	
3. **Clean-Up Operations Conducted:**	☒
4. **Meets Qualitative Approved Treatment Methods Target Endpoints:** (Yes/No)	(Yes)/No

5. **SCAT Reassessment:**

Sign Name	Print Name	Date
Rachelle Thompson	Rachelle Thompson	25/08/2011
Federal Representative (EPA/USCG)		
Donnie McCurry	Donnie McCurry	8/25/11
State Representative (DEQ/FWP)		
[signature]	Merlo Gauvreau	25/08/2011
RP Representative (SCAT Contractor)		

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