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ExxonMobil Pipeline Company

SCAT Area Transition Report for B16

Silvertip Pipeline Incident
Laurel, Montana

October 19, 2011

SCAT Area Transition Report for B16

Silvertip Pipeline Incident
Laurel, Montana

Prepared for:
ExxonMobil Pipeline Company

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

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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 B16, 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 B16. 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 B16, 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 B16 is 34.7. There was conditional access for a portion of the left bank; otherwise there were no access issues for the left and right bank.

1.2 Cultural, Historic, and Natural Resource Constraints

No historic properties or cultural resources have been identified within this area that would affect oil removal activities.

Figure 2 summarizes the natural resources identified in this segment. International Bird Rescue and Resource Advisors from U.S. Fish and Wildlife Service conducted regular inspections of Area B16. No oiled wildlife was observed or recovered. No Wildlife Priority Cleanup Areas were identified. A portion of a bald eagle (*Haliaeetus leucocephalus*) nesting buffer zone extended into Area B16 and was provided to Operations.

1.3 Summary of Environmental Sampling

Table 1 (below) summarizes samples collected within Area B16. 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 B16 are provided on Figure 3.

Table 1 Environmental Sampling Summary

Agency	Sample Num	Date	Matrix	Location	Latitude	Longitude
CTEH	BIMT0816DE501	8/16/11	Debris_Oiled	SO-B16	45.724716	-108.577422
CTEH	BIMT0816SO507	8/16/11	Soil_River	SO-B16	45.724716	-108.577422
CTEH	BIMT0820SO203	8/20/11	Soil_Surface	BIMT_551_SO203	45.72401	-108.57754
CTEH	BIMT0820SO204	8/20/11	Soil_Surface	BIMT_551_SO204	45.72329	-108.57702
CTEH	BIMT0820SO205	8/20/11	Soil_Surface	BIMT_551_SO205	45.72527	-108.57685
CTEH	BIMT0820SO206	8/20/11	Soil_Surface	BIMT_551_SO206	45.72587	-108.57642
CTEH	BIMT0820SO207	8/20/11	Soil_Surface	BIMT_551_SO207	45.72712	-108.57711
CTEH	BIMT0820SO208	8/20/11	Soil_Surface	BIMT_551_SO208	45.72694	-108.57771
CTEH	BIMT0820SO209	8/20/11	Soil_Surface	BIMT_551_SO209	45.72718	-108.57771
MDEQ	B11070821-003	7/10/11	Water_Surface	ST-JN-01	45.72439	-108.57533
MDEQ	B11070821-004	7/10/11	Water_Surface	ST-JN-01	45.72439	-108.57533
MDEQ	B11070821-005	7/10/11	Soil_Surface	ST-HN-01	45.72639	-108.57536
MDEQ	B11070821-006	7/10/11	Soil_Surface	ST-HN-01	45.72639	-108.57536
MDEQ	B11070821-007	7/10/11	Soil_Surface	ST-HN-01	45.72639	-108.57536
MDEQ	B11070821-008	7/10/11	Soil_Surface	ST-HN-01	45.72639	-108.57536
MDEQ	B11070821-009	7/10/11	Soil_Surface	ST-HN-01	45.72639	-108.57536
MDEQ	B11070821-033	7/10/11	Water_Surface	ST-JN-01	45.72439	-108.57533
MDEQ	ST-071411-HN1	7/14/11	Soil_Surface	ST-HN-01	45.72639	-108.57536
MDEQ	ST-071411-HN2	7/14/11	Soil_Surface	ST-HN-02	45.7266	-108.57563
MDEQ	ST-071411-JN-SW	7/14/11	Water_Surface	ST-JN-01	45.72439	-108.57533
MDEQ	ST-080211-JN1	8/2/11	Soil_Surface	ST-JN-03	45.72431	-108.57476
MDEQ	ST-080211-JN2	8/2/11	Soil_Surface	ST-JN-04	45.72551	-108.57593
MDEQ	ST-080211-JN2D	8/2/11	Soil_Surface	ST-JN-04	45.72551	-108.57593
MDEQ	ST-080211-JN-SW	8/2/11	Water_Surface	ST-JN-02	45.72501	-108.57585
MDEQ	ST-080211-JN-SWD	8/2/11	Water_Surface	ST-JN-02	45.72501	-108.57585
EPA	SPSE115_071411	7/14/11	Sediment	SPSE115	45.7209962	-108.5742936
EPA	SPSO124D01_071411	7/14/11	Soil_Surface	SPSO124	45.7272429	-108.5768143

Appendix A contains a summary of sample results with detections for this sample set. Detections with a result above the screening level are highlighted; for this set, there were six exceedances: one for C9-C12 aliphatics, one for total purgeable hydrocarbons, one for vanadium, and three for total extractable hydrocarbons.

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 B16 are included in Appendix B. Figure 4 provides the maximum oiling zones observed by the SCAT team during the initial surveys of Area B16.

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. 8 and CTR No. 18).

1.6 Oil Removal Activities

Oil removal activities were conducted within Area B16 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 B16 and developed a Pre-Inspection Survey Transmittal (PIST) associated with the right bank within Area B16, 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 B16 following completion of oil removal activities. The SCAT team performed final surveys of the left and right banks within SCAT Area B16 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 and right banks within Area B16, no further treatment is recommended for these segments. SCAT Segment Sign-Off Forms are included as Appendix F.

2. Transition Sign-Off Form

SCAT Area Transition Report for B16

Prepared for:

Unified Command

_____

Date

_____

Unified Command – RP

SCAT Area Transition Report for B16

Prepared for:

Unified Command

10/11/2011

Date

S. MERRITT

Unified Command – FOSC

SCAT Area Transition Report for B16

Prepared for:

Unified Command

_____

Date

_____

Unified Command – MDEQ

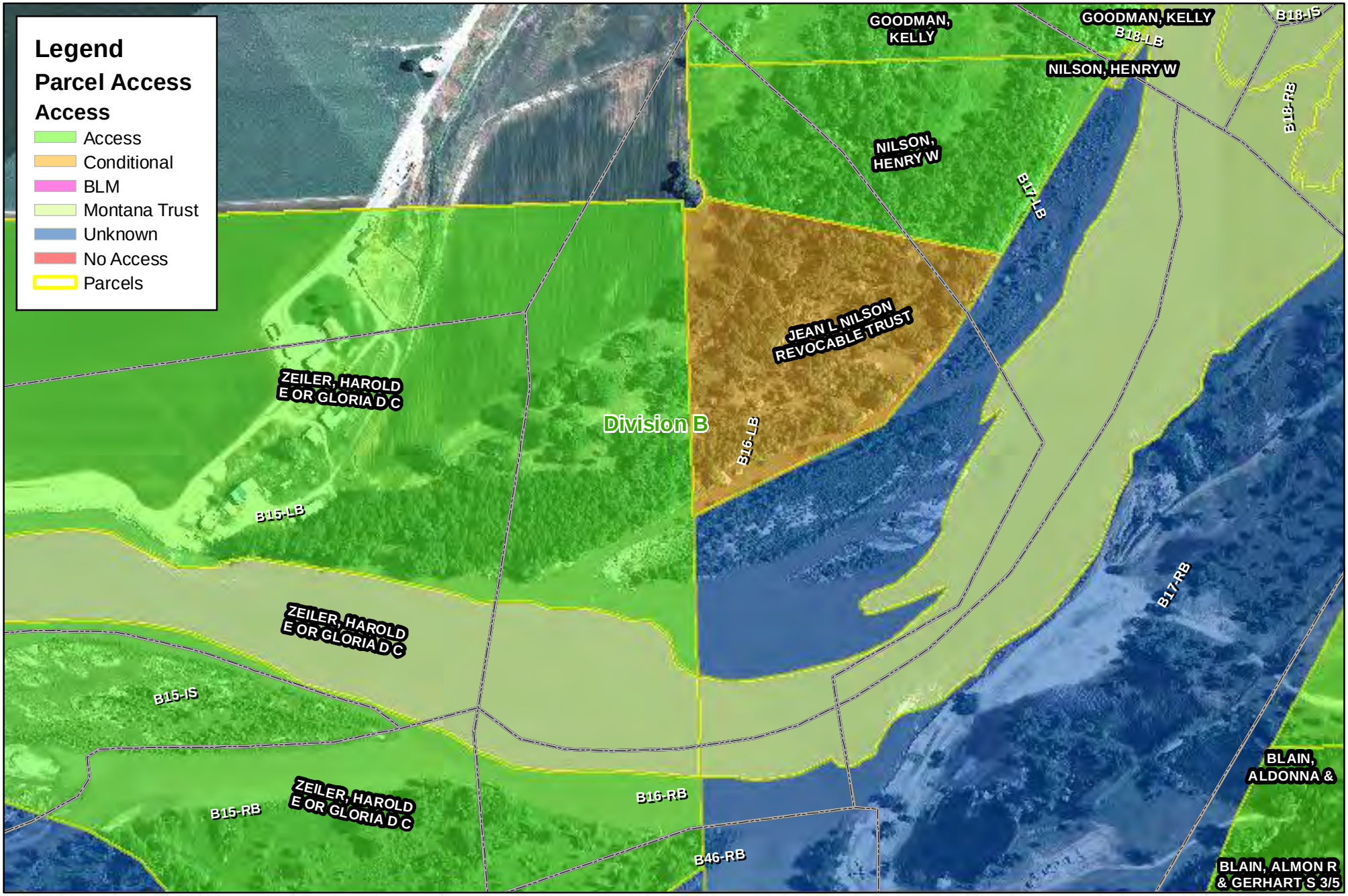
ExxonMobil Pipeline

Silvertip Pipeline Incident
Area Transition Report Map - Parcels
Segment - B16

9/27/2011

The Response Group

1:4,500



0 450 900 1,800 Feet

Figure 1

Date: 9/27/2011 Time: 12:23:36 PM

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Silvertip Pipeline Incident
SCAT Area Transition Report Map
Area - B16

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

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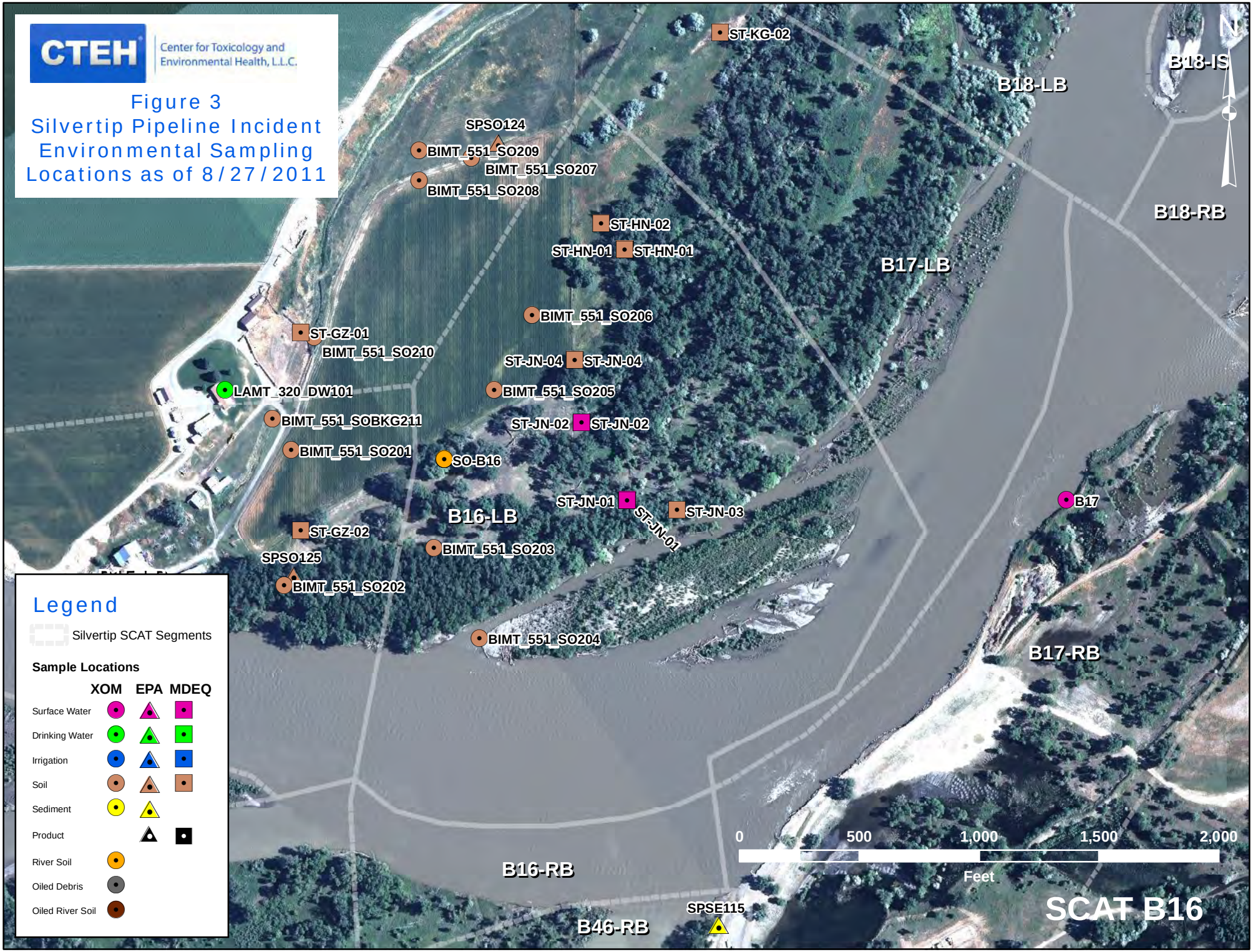
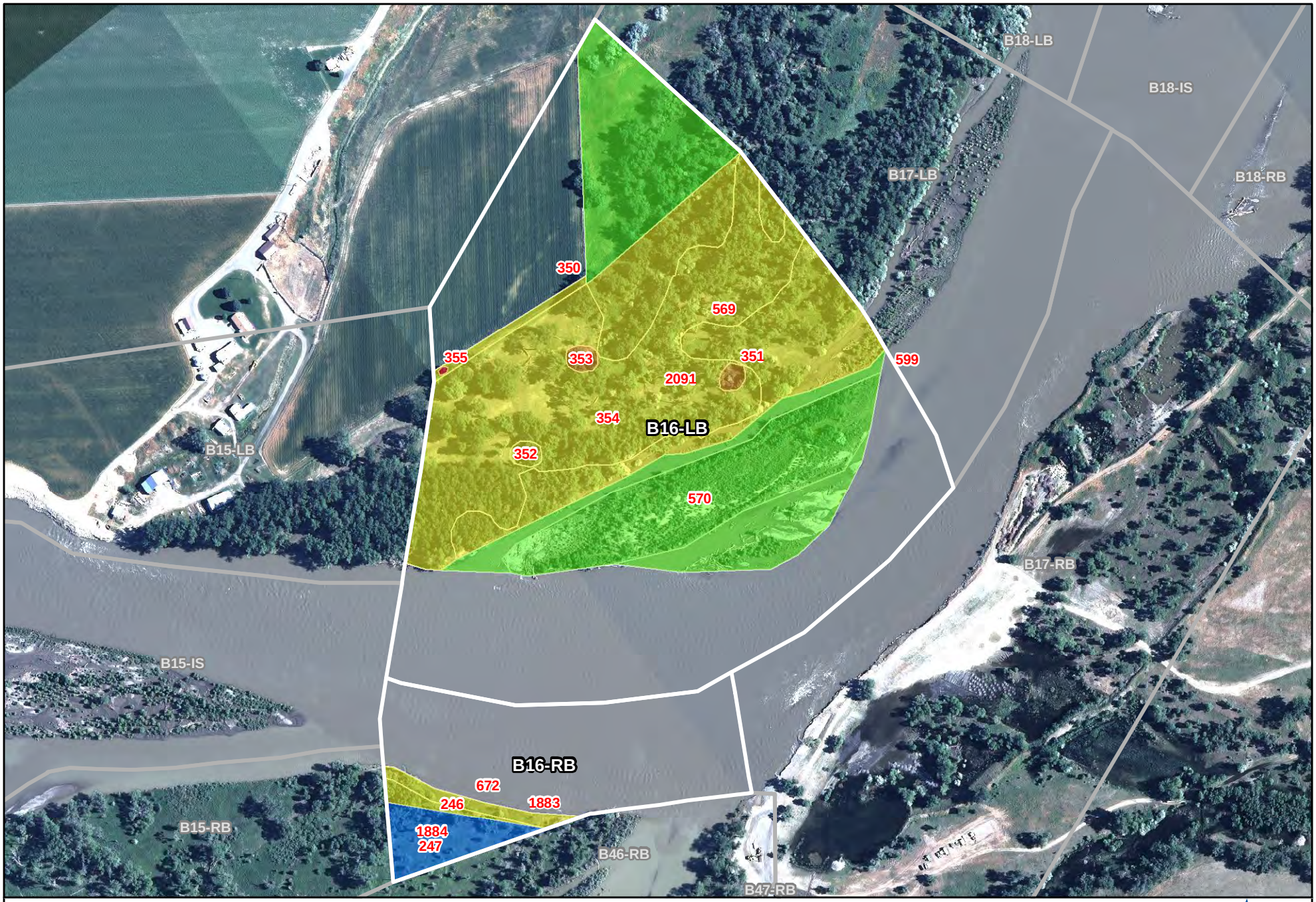

CTEH
Center for Toxicology and Environmental Health, L.L.C.
Figure 3
Silvertip Pipeline Incident
Environmental Sampling
Locations as of 8/27/2011
ST-KG-02
B18-IS
B18-LB
SPSO124
BIMT_551_SO209
BIMT_551_SO207
BIMT_551_SO208
B18-RB
ST-HN-02
ST-HN-01
ST-HN-01
B17-LB
BIMT_551_SO206
ST-GZ-01
BIMT_551_SO210
ST-JN-04
ST-JN-04
LAMT_320_DW101
BIMT_551_SO205
BIMT_551_SOBKG211
ST-JN-02
ST-JN-02
BIMT_551_SO201
SO-B16
ST-JN-01
ST-JN-03
B17
ST-JN-01
B16-LB
ST-GZ-02
BIMT_551_SO203
SPSO125
BIMT_551_SO202
BIMT_551_SO204
B17-RB
B16-RB
SPSE115
B46-RB
0
500
1,000
1,500
2,000
Feet
SCAT B16
Legend
Silvertip SCAT Segments
Sample Locations
XOM
EPA
MDEQ
Surface Water
Drinking Water
Irrigation
Soil
Sediment
Product
River Soil
Oiled Debris
Oiled River Soil



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

300 0 300 600 Feet

Figure 4 - Maximum SCAT Observations For SCAT Area: B16

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

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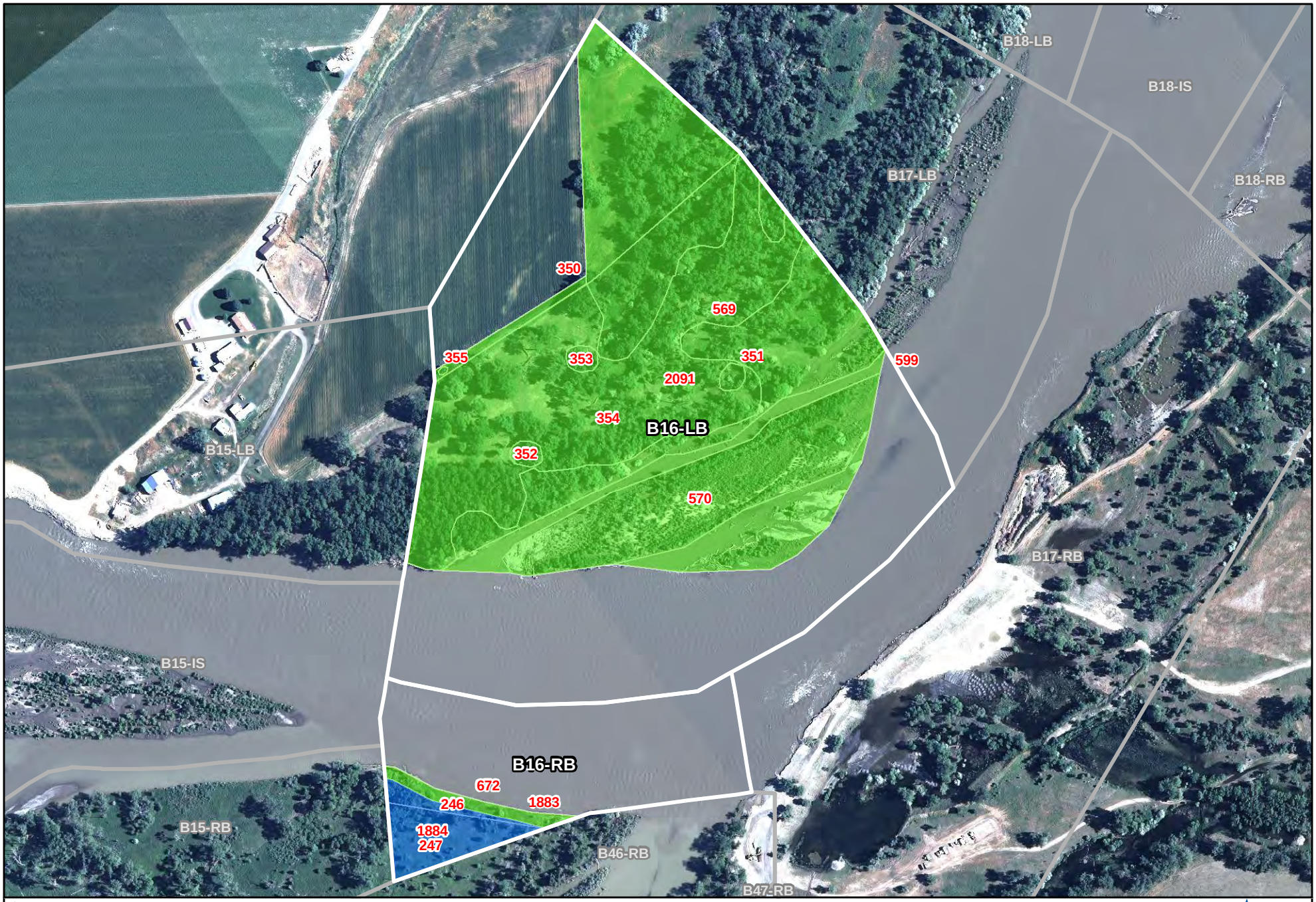

9999 Oiling Zone ID
Heavy Oiling
Moderate Oiling
Light Oiling
Very Light Oiling
No Oil Observed

300 0 300 600 Feet

Figure 5 - Final SCAT Observations For SCAT Area: B16

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 Detection Summary

Detections in Samples Collected in SCAT Area B16

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
B11070821-005		Field	Soil_Surface	MA-VPH-MDEQ-REM	C9-C10 Aromatics	Y	52	100		mg/kg	no
B11070821-005		Field	Soil_Surface	MA-VPH-MDEQ-REM	C9-C12 Aliphatics	Y	**104**	100		mg/kg	YES
B11070821-005		Field	Soil_Surface	MA-VPH-MDEQ-REM	Total Purgeable Hydrocarbons	Y	**714**	200		mg/kg	YES
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 6010	Arsenic	Y	9	40		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 6010	Barium	Y	164	820		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 6010	Cadmium	Y	0.22	3.8		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 6010	Chromium	Y	26	280		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 6010	Lead	Y	20.9	400		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 9060	Mean Total Organic Carbon	Y	9760	NA		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 7471	Mercury	Y	0.046	1		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 6010	Nickel	Y	19.4	150		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 9060	RSD%	Y	5.9	NA		%	no
BIMT0816SO507	08/16/2011	Field	Soil_River	MADEP EPH	Total Extractable Hydrocarbons	Y	32	200		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 9060	Total Organic Carbon	Y	10300	NA		mg/kg	no
BIMT0816SO507	08/16/2011	Field	Soil_River	EPA 6010	Vanadium	Y	**47.9**	39		mg/kg	YES
BIMT0820SO203	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	8.1	40		mg/kg	no
BIMT0820SO203	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	131	820		mg/kg	no
BIMT0820SO203	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.14	3.8		mg/kg	no
BIMT0820SO203	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	18.1	280		mg/kg	no
BIMT0820SO203	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	13.8	400	J-	mg/kg	no
BIMT0820SO203	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	13.8	150		mg/kg	no
BIMT0820SO203	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.4	2.6		mg/kg	no
BIMT0820SO203	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	33.5	39		mg/kg	no
BIMT0820SO204	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	7.7	40		mg/kg	no
BIMT0820SO204	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	139	820		mg/kg	no
BIMT0820SO204	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.3	3.8		mg/kg	no
BIMT0820SO204	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	21.8	280		mg/kg	no
BIMT0820SO204	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	16.1	400	J-	mg/kg	no
BIMT0820SO204	08/20/2011	Field	Soil_Surface	EPA 7471	Mercury	Y	0.021	1		mg/kg	no
BIMT0820SO204	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	16.9	150		mg/kg	no
BIMT0820SO204	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.7	2.6		mg/kg	no

Detections in Samples Collected in SCAT Area B16

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0820SO204	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	36.6	39		mg/kg	no
BIMT0820SO205	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	6.7	40		mg/kg	no
BIMT0820SO205	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	131	820		mg/kg	no
BIMT0820SO205	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.28	3.8		mg/kg	no
BIMT0820SO205	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	21.2	280		mg/kg	no
BIMT0820SO205	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	15.4	400	J-	mg/kg	no
BIMT0820SO205	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	16.1	150		mg/kg	no
BIMT0820SO205	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.8	2.6		mg/kg	no
BIMT0820SO205	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	34.9	39		mg/kg	no
BIMT0820SO206	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	7.8	40		mg/kg	no
BIMT0820SO206	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	139	820		mg/kg	no
BIMT0820SO206	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.26	3.8		mg/kg	no
BIMT0820SO206	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	22.6	280		mg/kg	no
BIMT0820SO206	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	16.5	400	J-	mg/kg	no
BIMT0820SO206	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	17.2	150		mg/kg	no
BIMT0820SO206	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.5	2.6		mg/kg	no
BIMT0820SO206	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	38	39		mg/kg	no
BIMT0820SO207	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	7.4	40		mg/kg	no
BIMT0820SO207	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	145	820		mg/kg	no
BIMT0820SO207	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.29	3.8		mg/kg	no
BIMT0820SO207	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	23.1	280		mg/kg	no
BIMT0820SO207	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	16.6	400	J-	mg/kg	no
BIMT0820SO207	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	17.4	150		mg/kg	no
BIMT0820SO207	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.6	2.6		mg/kg	no
BIMT0820SO207	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	38.6	39		mg/kg	no
BIMT0820SO208	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	7.5	40		mg/kg	no
BIMT0820SO208	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	138	820		mg/kg	no
BIMT0820SO208	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.28	3.8		mg/kg	no
BIMT0820SO208	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	22.4	280		mg/kg	no
BIMT0820SO208	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	16.4	400	J-	mg/kg	no
BIMT0820SO208	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	16.8	150		mg/kg	no

Detections in Samples Collected in SCAT Area B16

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
BIMT0820SO208	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.6	2.6		mg/kg	no
BIMT0820SO208	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	37.9	39		mg/kg	no
BIMT0820SO209	08/20/2011	Field	Soil_Surface	EPA 6010	Arsenic	Y	6.1	40		mg/kg	no
BIMT0820SO209	08/20/2011	Field	Soil_Surface	EPA 6010	Barium	Y	122	820		mg/kg	no
BIMT0820SO209	08/20/2011	Field	Soil_Surface	EPA 6010	Cadmium	Y	0.22	3.8		mg/kg	no
BIMT0820SO209	08/20/2011	Field	Soil_Surface	EPA 6010	Chromium	Y	19.8	280		mg/kg	no
BIMT0820SO209	08/20/2011	Field	Soil_Surface	EPA 6010	Lead	Y	14.2	400	J-	mg/kg	no
BIMT0820SO209	08/20/2011	Field	Soil_Surface	EPA 6010	Nickel	Y	15	150		mg/kg	no
BIMT0820SO209	08/20/2011	Field	Soil_Surface	EPA 6010	Selenium	Y	1.6	2.6		mg/kg	no
BIMT0820SO209	08/20/2011	Field	Soil_Surface	EPA 6010	Vanadium	Y	33.5	39		mg/kg	no
SPSO124D01_071411	07/14/2011	Field	Soil_Surface	MADEP EPH	Total Extractable Hydrocarbons	Y	**10000**	200		mg/kg	YES
ST-071411-HN1		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	67	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8270C	2,4,6-Tribromophenol	Y	72	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8270C	2-Fluorobiphenyl	Y	74	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	78	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8270C	Nitrobenzene-D5	Y	70	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8270C	o-Fluorophenol	Y	65	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	87	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	77	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8270C	Phenol-d5	Y	71	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8270C	Terphenyl-d14	Y	71	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8260B	Toluene-d8	Y	88	NA		%	no
ST-071411-HN1		Field	Soil_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	40	200		mg/kg	no
ST-071411-HN2		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	76	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8270C	2,4,6-Tribromophenol	Y	78	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8270C	2-Fluorobiphenyl	Y	75	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	88	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8270C	Nitrobenzene-D5	Y	68	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8270C	o-Fluorophenol	Y	65	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	79	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	88	NA		%	no

Detections in Samples Collected in SCAT Area B16

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
ST-071411-HN2		Field	Soil_Surface	8270C	Phenol-d5	Y	70	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8270C	Terphenyl-d14	Y	76	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8260B	Toluene-d8	Y	100	NA		%	no
ST-071411-HN2		Field	Soil_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	29	200		mg/kg	no
ST-071411-JN-SW		Field	Water_Surface	8260B	1,2-Dichloroethane-d4	Y	93	NA		%	no
ST-071411-JN-SW		Field	Water_Surface	8260B	Dibromofluoromethane	Y	101	NA		%	no
ST-071411-JN-SW		Field	Water_Surface	8260B	p-Bromofluorobenzene	Y	85	NA		%	no
ST-071411-JN-SW		Field	Water_Surface	8260B	Toluene-d8	Y	102	NA		%	no
ST-080211-JN1		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	69	NA		%	no
ST-080211-JN1		Field	Soil_Surface	8270C	2,4,6-Tribromophenol	Y	87	NA	D	%	no
ST-080211-JN1		Field	Soil_Surface	MA-EPH-MDEQ-REM	2-Bromonaphthalene	Y	91	NA		%	no
ST-080211-JN1		Field	Soil_Surface	8270C	2-Fluorobiphenyl	Y	88	NA	D	%	no
ST-080211-JN1		Field	Soil_Surface	MA-EPH-MDEQ-REM	2-Fluorobiphenyl	Y	86	NA		%	no
ST-080211-JN1		Field	Soil_Surface	MA-EPH-MDEQ-REM	C11-C22 Aromatics	Y	213	400		mg/kg	no
ST-080211-JN1		Field	Soil_Surface	MA-EPH-MDEQ-REM	C19-C36 Aliphatics	Y	213	20000		mg/kg	no
ST-080211-JN1		Field	Soil_Surface	MA-EPH-MDEQ-REM	C9-C18 Aliphatics	Y	78	200		mg/kg	no
ST-080211-JN1		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	77	NA		%	no
ST-080211-JN1		Field	Soil_Surface	8270C	Nitrobenzene-D5	Y	67	NA	D	%	no
ST-080211-JN1		Field	Soil_Surface	MA-EPH-MDEQ-REM	Octadecane, 1-chloro-	Y	90	NA		%	no
ST-080211-JN1		Field	Soil_Surface	8270C	o-Fluorophenol	Y	96	NA	D	%	no
ST-080211-JN1		Field	Soil_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	73	NA		%	no
ST-080211-JN1		Field	Soil_Surface	MA-EPH-MDEQ-REM	o-Terphenyl	Y	91	NA		%	no
ST-080211-JN1		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	90	NA		%	no
ST-080211-JN1		Field	Soil_Surface	8270C	Phenol-d5	Y	102	NA	D	%	no
ST-080211-JN1		Field	Soil_Surface	8270C	Terphenyl-d14	Y	108	NA	D	%	no
ST-080211-JN1		Field	Soil_Surface	8260B	Toluene-d8	Y	85	NA		%	no
ST-080211-JN1		Field	Soil_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	**622**	200		mg/kg	YES
ST-080211-JN1		Field	Soil_Surface	MA-EPH-MDEQ-REM	Total Extractable Hydrocarbons	Y	**598**	200		mg/kg	YES
ST-080211-JN1		Field	Soil_Surface	MA-VPH-MDEQ-REM	Total Purgeable Hydrocarbons	Y	3.8	200		mg/kg	no
ST-080211-JN2		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	75	NA		%	no
ST-080211-JN2		Field	Soil_Surface	8270C	2,4,6-Tribromophenol	Y	87	NA	D	%	no

Detections in Samples Collected in SCAT Area B16

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
ST-080211-JN2		Field	Soil_Surface	8270C	2-Fluorobiphenyl	Y	84	NA	D	%	no
ST-080211-JN2		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	81	NA		%	no
ST-080211-JN2		Field	Soil_Surface	8270C	Nitrobenzene-D5	Y	61	NA	D	%	no
ST-080211-JN2		Field	Soil_Surface	8270C	o-Fluorophenol	Y	73	NA	D	%	no
ST-080211-JN2		Field	Soil_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	78	NA		%	no
ST-080211-JN2		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	94	NA		%	no
ST-080211-JN2		Field	Soil_Surface	8270C	Phenol-d5	Y	84	NA	D	%	no
ST-080211-JN2		Field	Soil_Surface	8270C	Terphenyl-d14	Y	96	NA	D	%	no
ST-080211-JN2		Field	Soil_Surface	8260B	Toluene-d8	Y	88	NA		%	no
ST-080211-JN2		Field	Soil_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	183	200		mg/kg	no
ST-080211-JN2D		Field	Soil_Surface	8260B	1,2-Dichloroethane-d4	Y	84	NA		%	no
ST-080211-JN2D		Field	Soil_Surface	8270C	2,4,6-Tribromophenol	Y	87	NA	D	%	no
ST-080211-JN2D		Field	Soil_Surface	8270C	2-Fluorobiphenyl	Y	92	NA	D	%	no
ST-080211-JN2D		Field	Soil_Surface	8260B	Dibromofluoromethane	Y	90	NA		%	no
ST-080211-JN2D		Field	Soil_Surface	8270C	Nitrobenzene-D5	Y	70	NA	D	%	no
ST-080211-JN2D		Field	Soil_Surface	8270C	o-Fluorophenol	Y	95	NA	D	%	no
ST-080211-JN2D		Field	Soil_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	82	NA		%	no
ST-080211-JN2D		Field	Soil_Surface	8260B	p-Bromofluorobenzene	Y	109	NA		%	no
ST-080211-JN2D		Field	Soil_Surface	8270C	Phenol-d5	Y	100	NA	D	%	no
ST-080211-JN2D		Field	Soil_Surface	8270C	Terphenyl-d14	Y	106	NA	D	%	no
ST-080211-JN2D		Field	Soil_Surface	8260B	Toluene-d8	Y	97	NA		%	no
ST-080211-JN2D		Field	Soil_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	198	200		mg/kg	no
ST-080211-JN-SW		Field	Water_Surface	8260B	1,2-Dichloroethane-d4	Y	110	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8270C	2,4,6-Tribromophenol	Y	42	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8270C	2-Fluorobiphenyl	Y	40	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8260B	Dibromofluoromethane	Y	111	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8270C	Nitrobenzene-D5	Y	47	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8270C	o-Fluorophenol	Y	29	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	66	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8260B	p-Bromofluorobenzene	Y	115	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8270C	Phenol-d5	Y	23	NA		%	no

Detections in Samples Collected in SCAT Area B16

NA - Not Available

Detected Above Screening Level

Sample Num	Date	Sample Type	Matrix	Analytical Method	Analyte	Detected	Result	Screening Level	Result Qualifier	Units	Above?
ST-080211-JN-SW		Field	Water_Surface	8270C	Terphenyl-d14	Y	29	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8260B	Toluene	Y	0.25	1000	J	ug/l	no
ST-080211-JN-SW		Field	Water_Surface	8260B	Toluene-d8	Y	113	NA		%	no
ST-080211-JN-SW		Field	Water_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	383	1000		ug/l	no
ST-080211-JN-SWD		Field	Water_Surface	8260B	1,2-Dichloroethane-d4	Y	108	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8270C	2,4,6-Tribromophenol	Y	50	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8270C	2-Fluorobiphenyl	Y	48	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8260B	Dibromofluoromethane	Y	111	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8270C	Nitrobenzene-D5	Y	49	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8270C	o-Fluorophenol	Y	33	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8015M-MDEQ-REM	o-Terphenyl	Y	82	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8260B	p-Bromofluorobenzene	Y	116	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8270C	Phenol-d5	Y	25	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8270C	Terphenyl-d14	Y	29	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8260B	Toluene	Y	0.29	1000	J	ug/l	no
ST-080211-JN-SWD		Field	Water_Surface	MA-VPH-MDEQ-REM	Toluene	Y	0.39	1000	J	ug/l	no
ST-080211-JN-SWD		Field	Water_Surface	8260B	Toluene-d8	Y	114	NA		%	no
ST-080211-JN-SWD		Field	Water_Surface	8015M-MDEQ-REM	Total Extractable Hydrocarbons	Y	531	1000		ug/l	no

ARCADIS

Appendix B

Initial SCAT Survey Forms and Sketches

OB / 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: B16 **Left Bank** / Right Bank / Island	19-Jul-2011	1059 hrs to ~~1061~~ 1101 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* 545 *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 170m** **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)
					Length	*Width*	*Distrib.*														
	MS	LB	UB	OB	m	m	%	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO	
599 A				X	545	1														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	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: NO

Treatment Recommendations:

Zone A: No oil observed; no treatment required.

Sketch **Yes** / No Photos Yes / **No** Frames None

16

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: B~~20~~ ~~A~~ Left Bank / Right Bank / Island	19-Jul-2011	59 1061	low - mean - bankfull - overbank
Operations Division: B		1020 hrs to 1035 hrs	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	

545

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed ~~362~~ 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 ~~Bl~~ (type) ~~Riprap~~ | 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 ~~A0m~~ 170 | 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: ~~N~~ / (N) oiled Y / N, amount ~~70~~ bags or ____ trucks | access restrictions

Oiled trees/shrubs ~~X~~ (N) | River Current strong Y / N | Other Features:

6 SURFACE OILING CONDITIONS 545 *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	~~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	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 – 30cm~~ NO

1A

Treatment Recommendations:

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

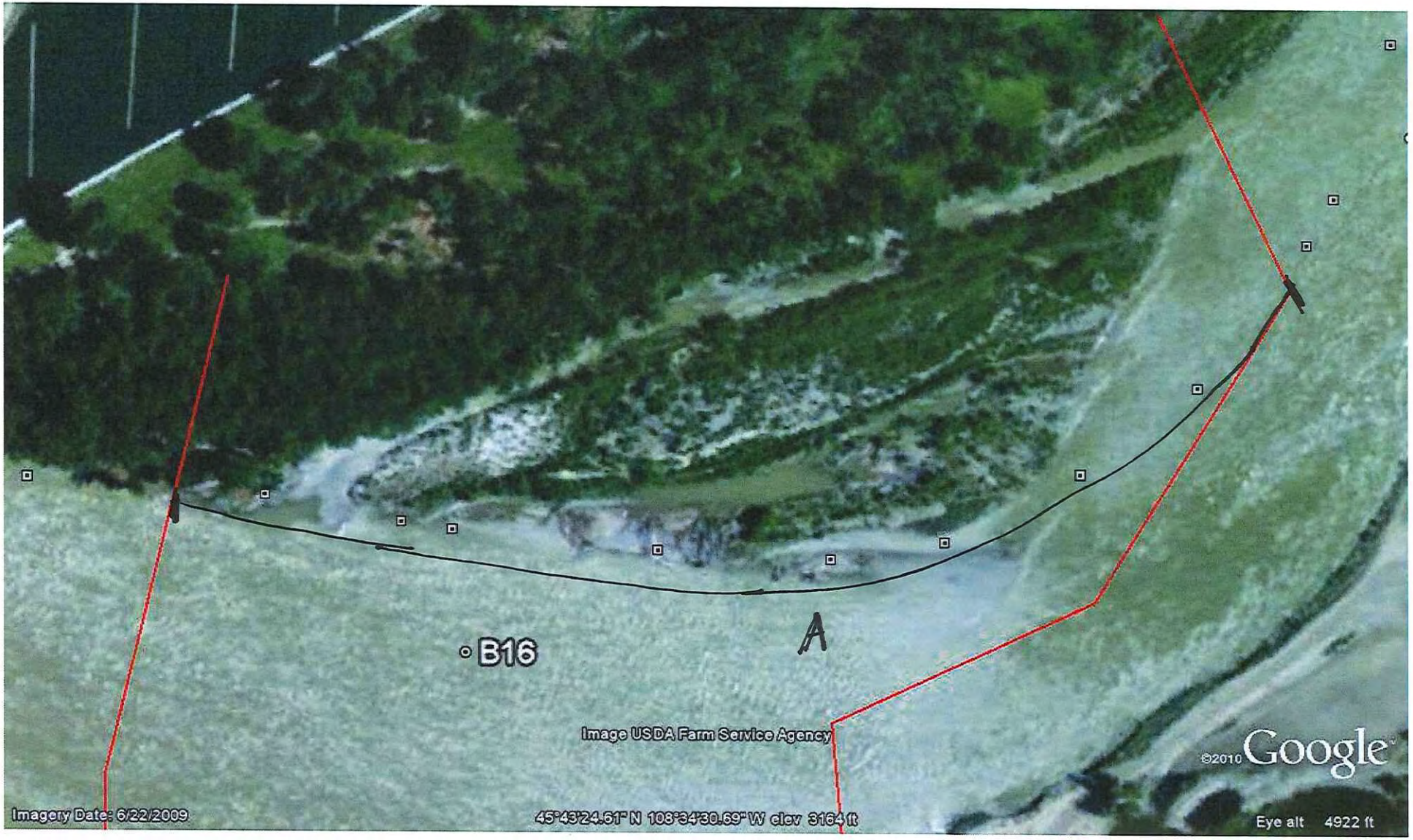
Zone A, C: Cut & remove oil coated vegetation smaller than 1" diameter. Wipe larger oil coated vegetation.

*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)

None

Sketch Yes / No Photos Yes / (No) Frames ~~1201-1205 (Lee)~~

A = 178 + 367


B16
A
Image USDA Farm Service Agency
©2010 Google
Imagery Date: 6/22/2009
45°43'24.61" N 108°34'30.69" W elev 3164 ft
Eye alt 4922 ft

DB/G/S

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident Page 1 of 6

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: B16 **Left Bank** / Right Bank/Island	19/07/2011	11:55 hrs to 15:25 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 + / - 34 deg C

2 SURVEY TEAM # 3	Name:	Organization:	Signature:
	Jenni Nelson	Polaris	
	Jay Watson	Montana Fish Wildlife and Parks	
	Janice Witul	EPA	
	Rebecca Ridenour	MDEQ	

3 SEGMENT Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 475 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 1–10 m **10–100 m** >100m ____m | est. water depth : <1 m 1-3 m **3-10 m** >10 m ____ m

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

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

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

Debris: **Y** / N oiled **Y** / N amount 20 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; thick veg.

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)
350	A				X	15	15	1-5		X	(X)	X		X								veg
351	B				X	15	15	3	X	(X)	X	X		X								veg
352	C				X	6	10	2		X	(X)	X		X								veg
353	D				X	15	10	2	X	(X)	X	X		X								veg
354	E				X	375	150	<1		X	(X)	X		X								veg
355	F				X	10	0.5	60		(X)	X	X		X								veg

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

TRENCH or PIT NO.	RIVER BANK ZONE 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)
NONE																	

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

A - Intermittent sporadic oiling along south edge of wheat field & along fenceline. Bathtub ring in grasses & wood debris at base of fence. Recommend collect oiled sticks & cut areas of oiled grass - potential livestock grazing and farm access. (Some flagged areas with heavier oiling)

B - hot spot flagged for collection - wood debris & oiled veg. Sheen on standing water

C - hot spot flagged for collection - patchy distribution on ground, grass, sm. woody debris

D - hot spot flagged for collection - near tree stand; patchy distribution of oiled grass

E - flood plain area with intermittent trace oiling primarily associated with wood piles.

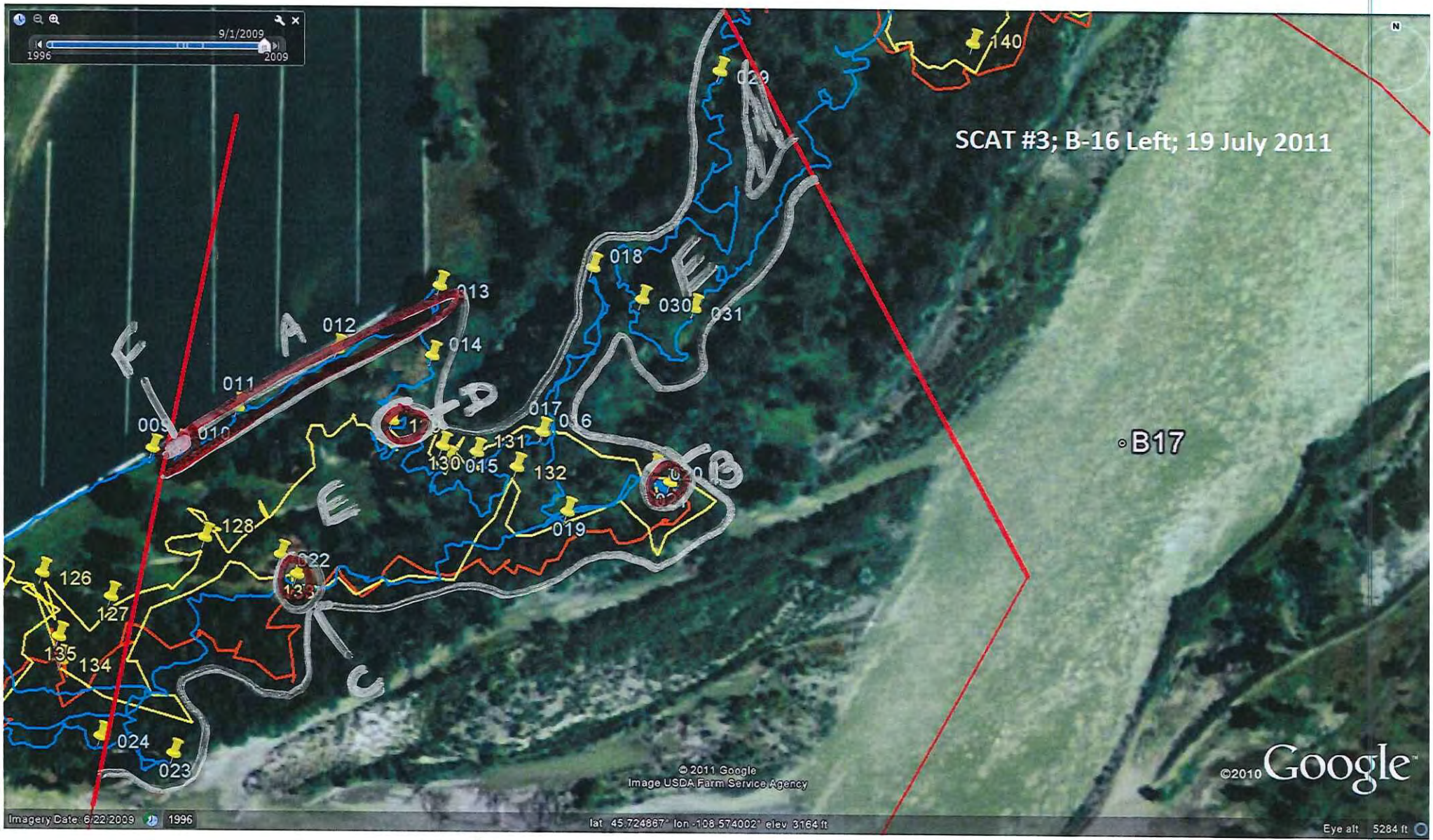
F - Heavy oiling in wood debris at base of fence (south side) - Collect.

Cleanup crew could walk through open areas & collect distinct patches.

(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# _____

* Contact Owner Gloria Zeller


SCAT #3; B-16 Left; 19 July 2011
9/1/2009
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016
131
130
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B
C
D
E
F
© 2011 Google
Image USDA Farm Service Agency
©2010 Google
Imagery Date: 6/22/2009
1996
lat 45.724867° lon -108.574002° elev 3164 ft
Eye alt 5284 ft

B-16

B-16L ZONE A

Oiled grassed debris JN

Oiled Debris flagged (not by SCAT team) JN

B16L ZONE B

oil covered wood debris & sheen on standing water. JN

oiled area flagged for collection upslope from photo above. JN

ZONE E

typical oiled debris pile - scattered through area -

overview of open lightly treed area. Crews could walk through & collect discreet piles & patches of oiled debris.

B-16L ZONE F

JN

Continuous heavily oiled debris near base of fence & grass. JN

DB / G / SC B

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

1 GENERAL INFORMATION

Segment/Reach ID: B16 Left Bank / Right Bank / Island
Operations Division: B
Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____

Date (dd/mm/yy): 16/07/11

Time (24h): std / daylight 1107 hrs to 1120 hrs

Sun / Clouds / Fog / Rain / Snow / Windy / Calm

Water Level: low - mean - bankful - overbank; falling - steady - rising

Air Temp + / - 27 deg C

2 SURVEY TEAM # 4

name	organization	contact phone number
John Williams / Connor Kokeski	Cardno ENTRIX	361-676-8138
Patrick Kiriski	USCG	415-596-6587
Ken Frazer	MT FWP	406-245-0590

3 SEGMENT Total Segment/Reach Length 320 m Segment/Reach Length Surveyed 140 m

Start GPS: LATITUDE N45° deg. 43.289' min. LONGITUDE W108° deg. 34.707' min. Datum: WGS 84
End GPS: LATITUDE N45° deg. 43.256' min. LONGITUDE W108° deg. 34.621' 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____ 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 1 m | canyon____ manmade____ meander ____ confined or leveed ____ | Substrate Type: Veg
Sloped: O (>5°)(15°)(30°) | straight____ braided / oxbow____ flood plain valley____ | Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

5 OPERATIONAL FEATURES

Suitable backshore staging Y/N
Access: Direct from backshore Y / N Alongshore from next segment Y / N
Debris: Y / N oiled Y / N amount ____ bags or ____ trucks
access restrictions
Oiled trees/shrubs Y / N River Current strong Y N
Other Features:

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

OIL ZONE ID	RIVER BANK ZONE 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)
246 A			S	P	200	30	1			P	S		P								Veg
247 B				P	115	80	0													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

Oil Zone A: Isolated patches of coated vegetation primarily within 3m of shoreline but up to 30m. Cut/removal by hand recommended for Lat: 45°43.272 Long: 108°34.639"W

Oil Zone B: No recommendations

(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#_____

DB / G / Sc B

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

1 GENERAL INFORMATION

Segment/Reach ID: B46 Left Bank / Right Bank / Island	Date (dd/mm/yy) 16/07/11	Time (24h): std / daylight 1107 hrs to 1120 hrs	Water Level: low - mean - bankful - overbank; falling - steady - rising
Operations Division: B			
Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____		Sun / Clouds / Fog / Rain / Snow / Windy / Calm	Air Temp +/- 27 deg C

2 SURVEY TEAM # 4

name	organization	contact phone number
John Williams / Conner Kobelski	Cardno ENTRIX	361-676-8138
Patrick Kriski	USCG	415-596-6587
Ken Frazier Ken Frazier 8/29/11	MT FWP	406-245-0590

3 SEGMENT Total Segment/Reach Length 320 m Segment/Reach Length Surveyed 140 m

Start GPS: LATITUDE N45° deg. 43.289' min. LONGITUDE W108° deg. 34.707' min. Datum: WGS 84

End GPS: LATITUDE N45° deg. 43.256' min. LONGITUDE W108° deg. 34.621' 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____ 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 1 m | canyon____ manmade____ meander____ confined or leveed____ | Substrate Type: Veg

Sloped: O (>5°)(15°)(30°) | straight____ braided / oxbow____ flood plain valley____ | Forested / Vegetated / Bare

4C RIVER CHANNEL CHARACTER circle or select as appropriate

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

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

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

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

Debris: Y / N oiled Y / N amount____bags or____trucks | access restrictions

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

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

OIL ZONE ID	RIVER BANK ZONE 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)
246 A			S	P	200	30	1			P	S		P								Veg
247 B				P	115	80	0													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)

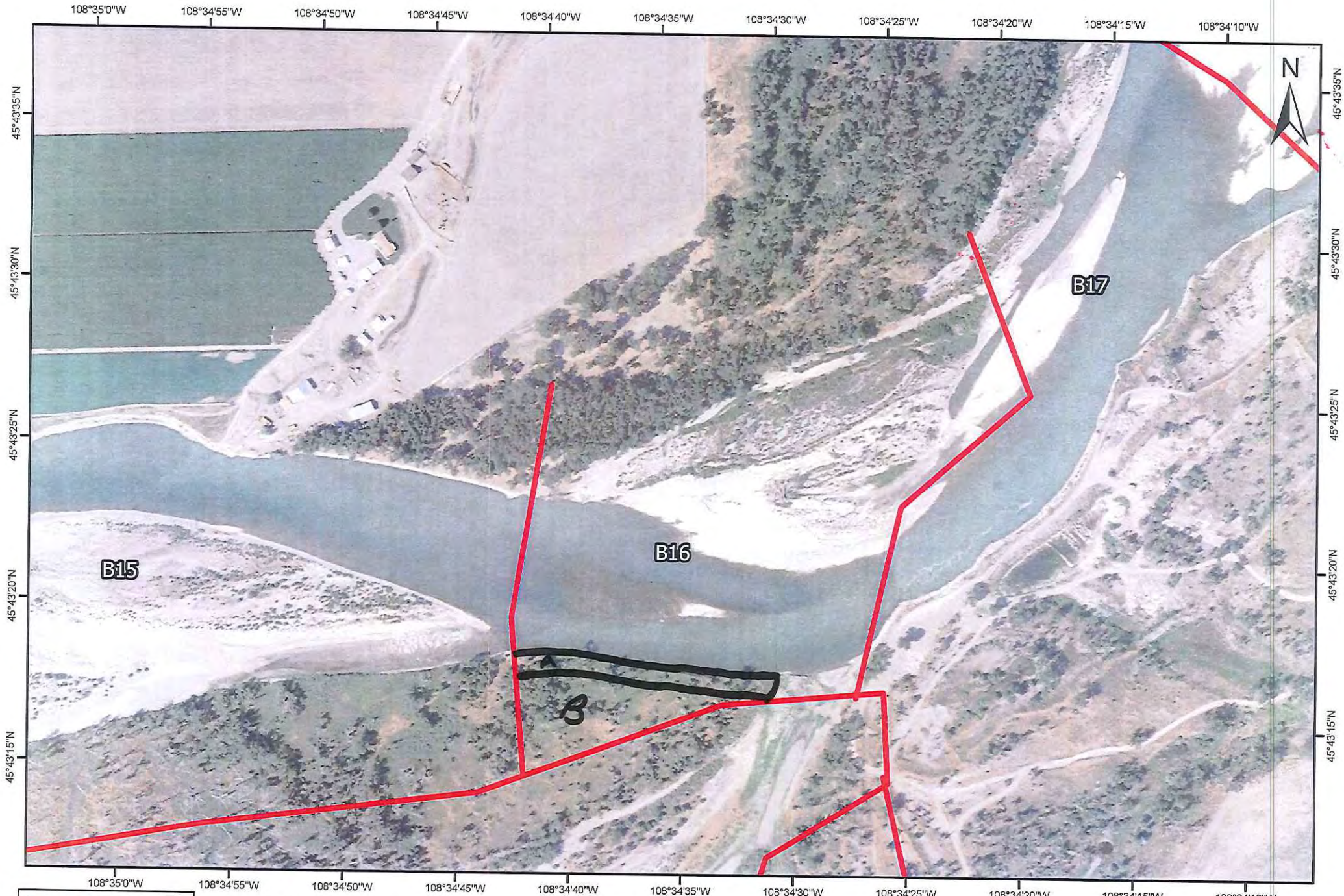
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

Oil Zone A: Isolated patches of coated vegetation primarily within 3m of shoreline but up to 30m. Cut/removal by hand recommended for Lat: 45°43.272 Long: 108°34.639"W

Oil Zone B: No recommendations

(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#_____



B16 - R
(L/R/I)??

DATE: 16 Jul 2011

TEAM: 4

COMMENTS:

DB/G/S

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: B16 Left Bank / (Right Bank) / Island	19 / 07 / 11	1201 hrs to 1202 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	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 323 m Segment/Reach Length Surveyed 323 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 S Sand P Mixed S 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 X confined or leveed ____ | Substrate Type: Mixed

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 250 bags or _____ trucks | access restrictions

Oiled trees/shrubs (Y) / N | River Current strong Y / N | Other Features: Access by river probably the easiest

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	
672 A				X	323	1	5			5	P		V								Veg bank
				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	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	

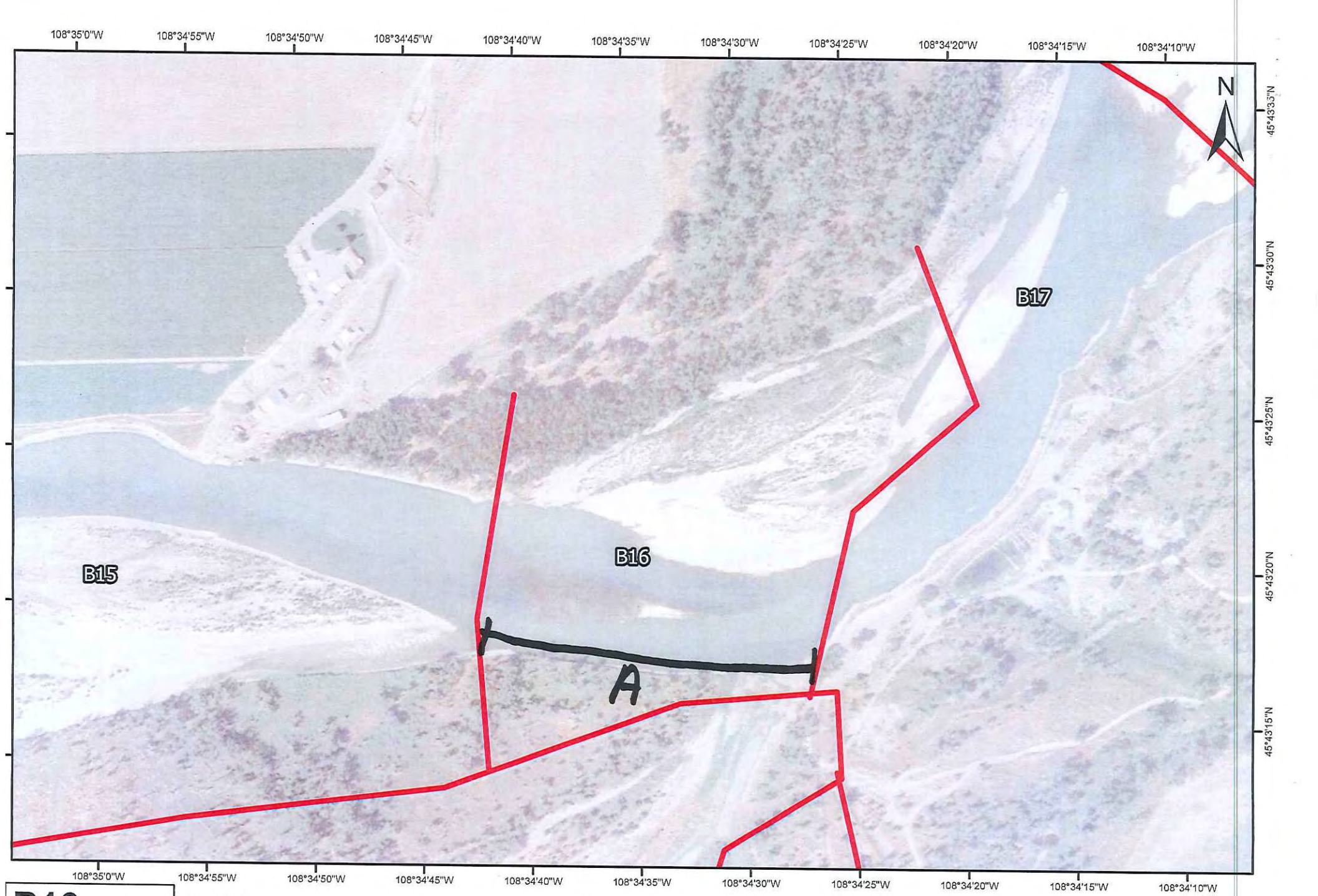
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

OSR OSC SSC

5289-5298

(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#



B16 - (L/R/I)??

DATE:

TEAM:

COMMENTS:

DB/6

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 2

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: B16 (Left Bank) / Right Bank / Island	23/07/11	0900 hrs to 1600 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 + / - 27 deg C

2 SURVEY TEAM # 2&3	Name	Organization	Signature
	Charles Pons	Cardno Entrix	[signature]
	[illegible]	MTPEP 406-841-5057	[signature]
	Anita Wet	USCG	[signature]
	Joe Boyle	Cardno ENTRIX	[signature]
	JANICE WITUL (+3)	USEPA	[signature]
	Nick Taylor	FWP	[signature]
	JOHN BAUER	POLARIS	[signature]

3 SEGMENT Total Segment/Reach Length 465 m Segment/Reach Length Surveyed 465 m

Start GPS: LATITUDE 45 ~~43.~~ deg. 43'24.8" min. LONGITUDE 108 deg. 34'41.0" min. Datum: WGS

End GPS: LATITUDE 45 deg. 43'29.90" min. LONGITUDE 108 deg. 34'21.07" min.

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

Bedrock: Cliff/Ramp____ Shelf____ Manmade: Solid___ Permeable___ (type)____ Wetland: Swamp____ Bog/Fen____ Marsh____

Sediment Bank: Clay/Mud (S) 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 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 1–10 m 10–100 m >100m 160m 190 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 1 trucks access restrictions farmland in backshore

Oiled trees/shrubs (Y) / N River Current strong (Y) / N Other Features: dense veg thick mud

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)
569 A			S	P	465	265	1			P	S		X								Sand/Silt
570 B			S	P	180	70	1			S	P		C								~~Sand/Silt~~ mud/Vg

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 ~~Sporadic~~ Isolated area of coated and stained vegetation and debris. Vegetation needs to cut and/or trimmed and removed. Debris needs to be bagged removed. Area are marked with flagging

Zone B – ~~Sporadic~~ Isolated Areas of oils stained veg. Veg needs to cut and/or trimmed and ~~removed~~ removed

Sketch (Yes) / No Photos (Yes) / No Frames____ Photographer____

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident Page 2 of 2

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: B16 (Left Bank) / Right Bank / Island	23/07/11	0900 hrs to 1600 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 + / - 27 deg C

2 SURVEY TEAM # 243	Name	Organization	Signature

3 SEGMENT Total Segment/Reach Length 465 m Segment/Reach Length Surveyed 465 m

Start GPS: LATITUDE 45 43.52 deg. 43' 24.8" min. LONGITUDE 108 deg. 34' 41.0" min. Datum: WGS

End GPS: LATITUDE 45 deg. 43' 29.90" min. LONGITUDE 108 deg. 34' 21.07" min.

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

Bedrock: Cliff/Ramp_____ Shelf_____ | Manmade: Solid___ Permeable___ (type)_____ | Wetland: Swamp_____ Bog/Fen_____ Marsh _____

Sediment Bank: Clay/Mud (S) 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 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 1–10 m 10–100 m >100m 160m 190m | 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 farmland in backshore

Oiled trees/shrubs (Y) / N | River Current strong (Y) / N | Other Features: dense veg thick mud

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)
A			S	P	465	340	1			P	S		P								mud/veg
						265															
B			S	P	180	70	1			S	P		P								mud/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)

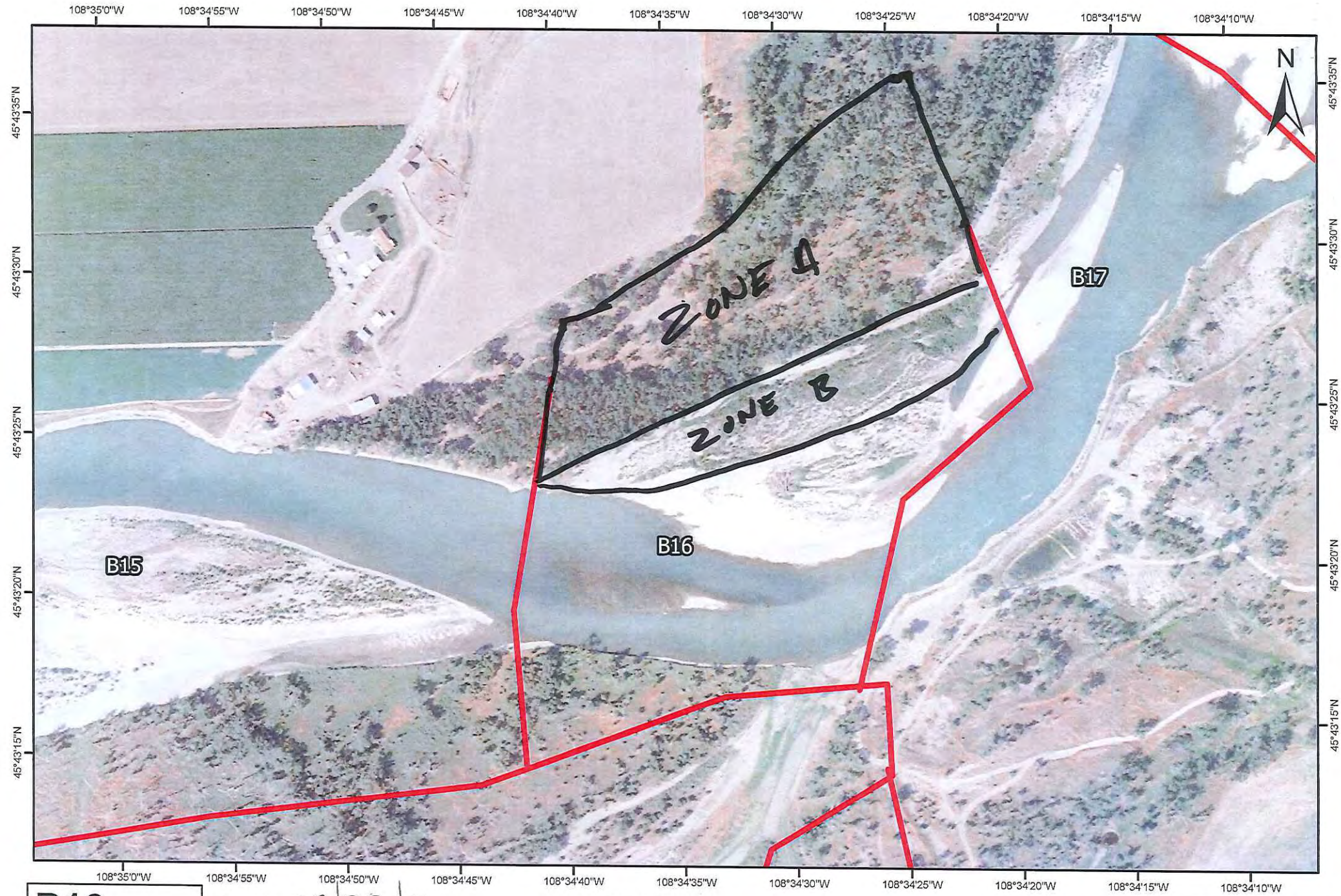
8 COMMENTS ecological/recreational/cultural/economic constraints - shorezone biota and wildlife observations - cleanup recommendations

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

Zone A: To isolated Sporadic areas of oil stained / coated vegetation and debris.
recommendations: cut / trim vegetation and hand remove debris

Zone B: To isolated Sporadic areas of oil stained vegetation
recommendations: cut / trim vegetation

Sketch (Yes) / No Photos (Yes) / No Frames_____ Photographer_____



B16 - (L/R/I)??

DATE: 07/23/14

TEAM: 2 & 3

COMMENTS:

0 50 100 150 200
Meters

ARCADIS

Appendix C

Pre-Inspection Survey Transmittal

SCAT – Pre Inspection Survey Transmittal (PIST) Memo

Survey Date: 23 AUG 2011

Segment: B-16 RB

Team: SCAT Liaison PETE PRITCHARD Signed: [signature]

Observer JUAN PAINO USCG Signed: [signature]

Observer _____ Signed: _____

Observer _____ Signed: _____

Segment meets criteria? YES X NO ____

RBOS attached? YES ____ NO X

If NO:
Location Sketch attached? YES ____ NO X

CTR continue? YES ____ NO X

Comments:

ARCADIS

Appendix D

Post-Inspection Survey Transmittal

ARCADIS

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 Page 1 of 3

1 GENERAL INFORMATION	Date (dd/mm/yy)	Time (24h): std / daylight	Water Level
Segment/Reach ID: B16 Left Bank / Right Bank / Island	03/09/11	1220 hrs to 1330 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 + / - 70 F deg

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

3 SEGMENT Total Segment/Reach Length 470 m Segment/Reach Length Surveyed 470 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 x___ confined or leveed _____ | Substrate Type: sand

Sloped:___(>5°)(15°)(30°) | straight_____ 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 m	Width m	Distrib. %	TO	CV	CT	ST	FL	FR	MS	TB	PT	TC	SR	AP	NO	
A				P	470	430	<1			S	P						P				Sand, shrubs, grass, trees, debris piles
~~B~~				~~P~~	~~155~~	~~170~~	~~0~~					✓						✓	-	X	Agricultural field

2091

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

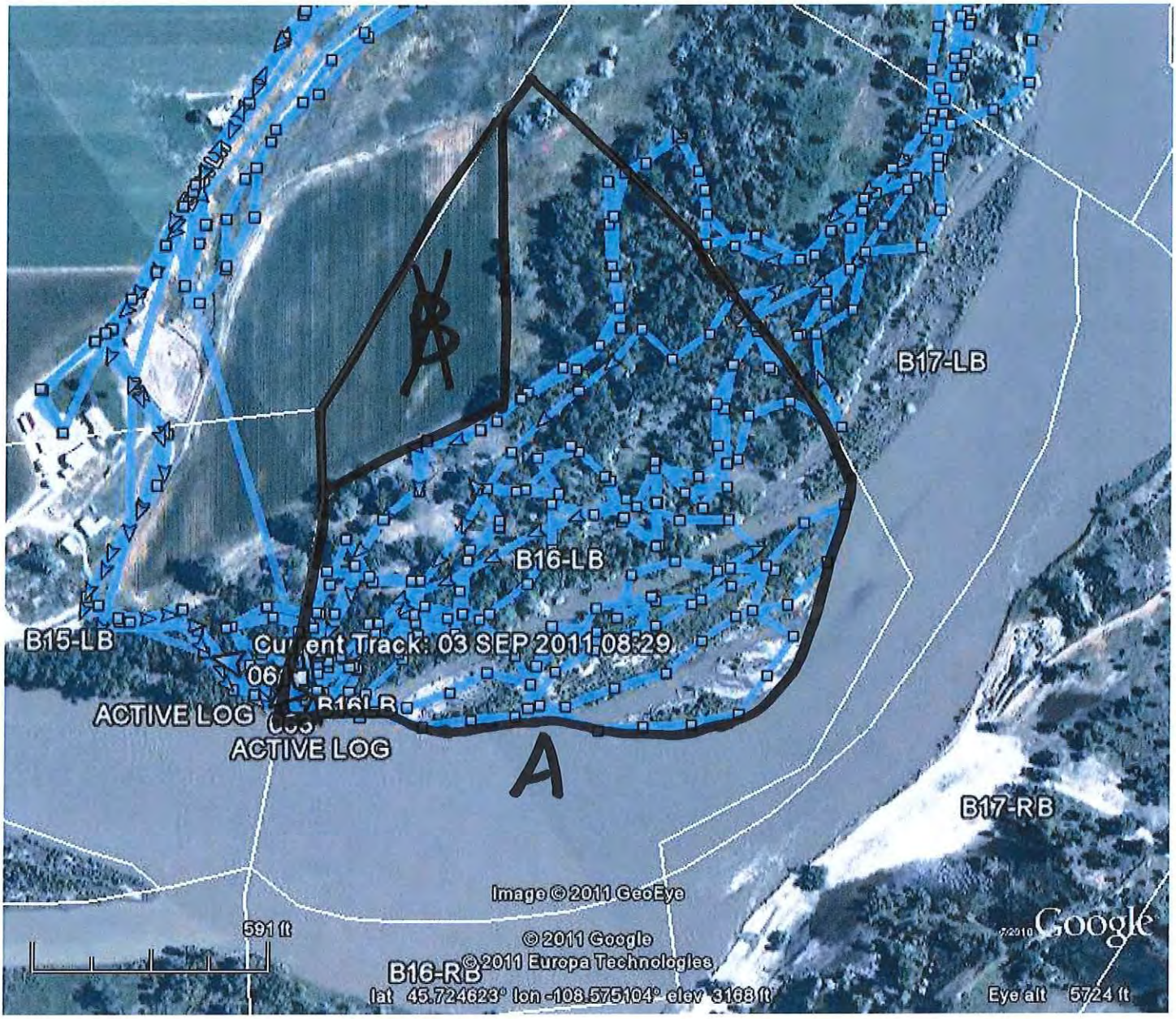
Overbank Survey Required Y / N Overbank Survey Completed Y / N Shoreline Survey Completed Y / N

RESCAT

Zone A: Did not appear to have been treated by Ops. Found scattered debris piles with small patches (.3mx.3m) of oiled debris with flags from previous SCAT survey. Willow thickets along river had scattered patches of oiled vegetation. All treated by hotshot team. NFT.

Zone B: Agricultural field. No oil observed from fence line, no indication that floodwater entered the field.

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



B16-LB

9/3/11

Team 4

DB/G

RIVER BANK OILING SUMMARY FORM for Silvertip Pipeline Incident

Page 1 of 2

1 GENERAL INFORMATION

Segment/Reach ID: B16 Left Bank / Right Bank / Island

Operations Division: B

Survey by: Foot / ATV / Boat / Helicopter / Overlook / _____

Date (dd/mm/yy): 26/08/11

Time (24h): std / daylight — 1105 hrs to 1120 hrs

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

Sun / Clouds / Fog / Rain / Snow / Windy / Calm

Air Temp + / - 30 deg C

2 SURVEY TEAM # 4

Name	Organization	Signature
Bob Nailon	Cardno ENTRIX	
Pete Lee	Polaris	
Josh Hofkes	Cardno ENTRIX	
Lance Richman	USEPA	
Betsy Hovda	MTDEQ	

3 SEGMENT

Total Segment/Reach Length _____ m Segment/Reach Length Surveyed 200 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

Cliff or Bluff:____Est Height ____m

Sloped:___(>5°)(15°)(30°)

canyon_____ manmade_____ meander ____ confined or leveed _____

straight_____ braided X___ oxbow_____ flood plain valley X___

complete for primary

Substrate Type: _____

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) 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: 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 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)
1883 A				X	200	10	<1			X	⊗						X				Grass, trees, debris
1884 B				X	180	50														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 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

Oil height: 0 - 30 cm

Treatment recommendations:

Zone A : No treatment required. (NFT)

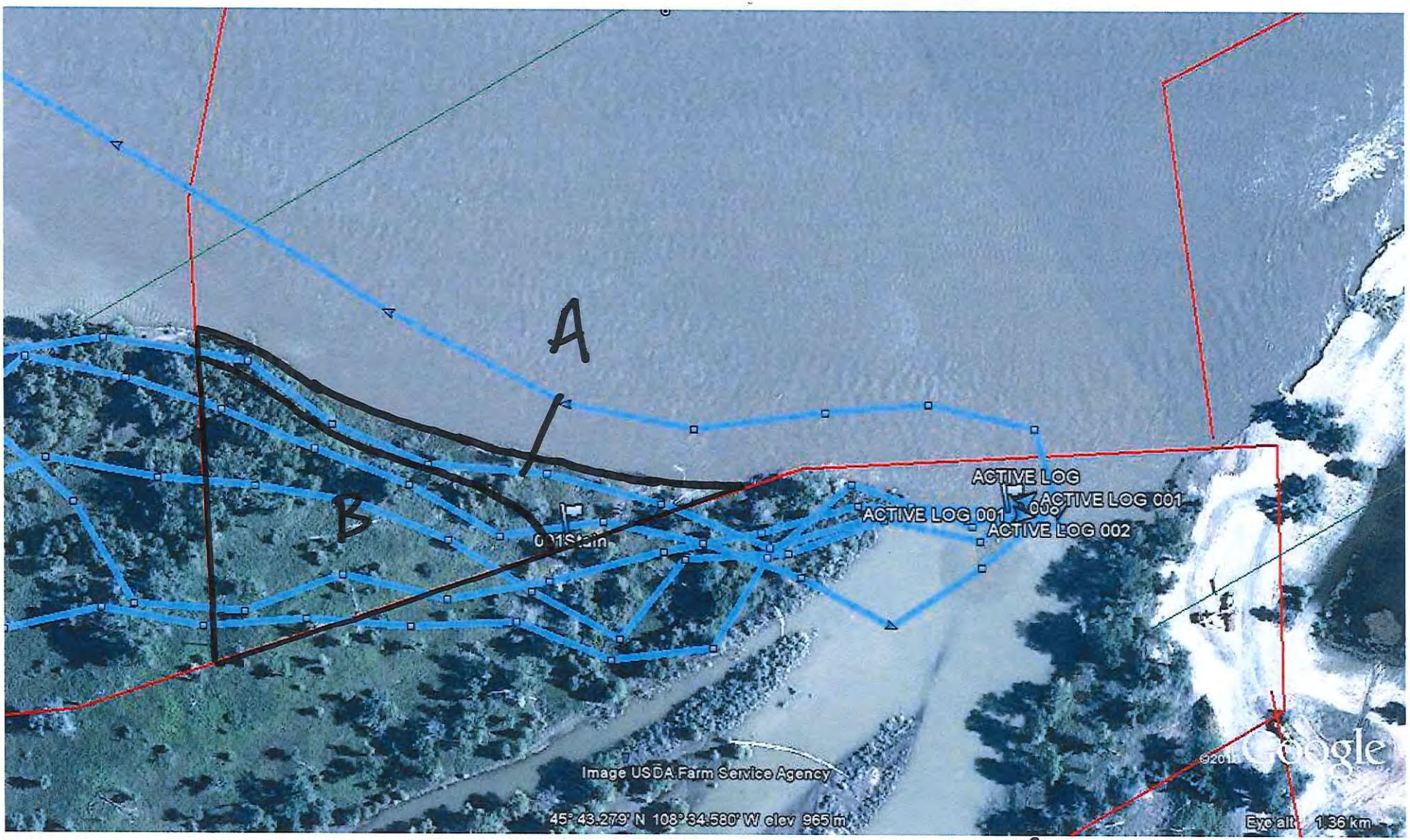
B : N.O.O. (NFT)

Ops Hot Shot Team (Alex Barboza)

CTR: 8

Removed 1 bag coated DB/VG

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



Segment 16 RB
August 26, 2011
TEAM 4

A: Less than 1% - NFT

B: NOO

ARCADIS

Appendix F

Completed SCAT Segment Sign-Off Forms

SCAT Segment Operations Completion Sign-Off Sheet

Silvertip Pipeline Release

Segment B16 LB Date of Survey 09/03/2011

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 Complete[1] ☒

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).

Sign Name	Print Name/ Affiliation	Date
Larisa Leonova	LARISA LEONOVA	9/3/11

Federal Representative (EPA/USCG)

Sign Name	Print Name/ Affiliation	Date
Earl Radenski - FWP	Earl Radenski	9/3/11

State Representative (DEQ/FWP)

Sign Name	Print Name/ Affiliation	Date
Michael A. Dirks	MICHAEL DIRKS / CardnoENTRIX	09/03/11

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.

Silvertip Pipeline Spill
SCAT Segment Sign-Off Sheet

COMPLETED

Operations Division:	A ___ B ✓ C ___
SCAT Area Number (i.e. A12):	B16
SCAT Segment Number (i.e. A12-LB/IS/RB):	B16-RB

	Check if Complete:
1. **Completion Date for Initial SCAT Assessment:** 16 JUL 11 (JL)	☐
2. **Combined Treatment Recommendations (CTRs) Developed/Issued:** Yes/No	Yes/No
List CTRs Applicable to SCAT Segment: 8	
3. **Clean-Up Operations Conducted:**	☑
4. **Meets Qualitative Approved Treatment Methods Target Endpoints:**	Yes/No

5. **SCAT Reassessment:**

Sign Name	Print Name	Date
Federal Representative (EPA/USCG)		
[signature]	Lance Richman	8/26/11
State Representative (DEQ/FWP)		
Betsy Hovda	Betsy HOVDA	8/26/2011
RP Representative (SCAT Contractor)		
[signature]	Robert W. Nelson	8/26/11
Pete Lee PBLee	PETE LEE	8/26/11
Josh Hofker	Josh Hofker	8/26/11

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.