

IMG_3599.JPC

Team 4

Shoreline Cleanup Assessment Technique (SCAT) and the Silvertip Incident

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N 45° 41' 36" W 108° 38' 28" 11:48:22 AM 7/11/2011





Particulars

- July 2011
- Estimated 1,500 Bbl
- Pipeline rupture at Yellowstone River at Laurel, Montana
- River discharge at extreme high flow
- Visible oil approximately 45 miles downriver
- 7 SCAT teams surveyed 75 miles downriver
- >11,000 acres surveyed
- Surveys terminated September 2011



SCAT Teams

- Teams may include representatives of:
 - State
 - Federal
 - Responsible Party
 - Local Government
 - First Nations / Indigenous Peoples
 - Historical Preservation Officers /Archaeology



Record water levels on the Yellowstone River provided unsafe conditions for ground surveys during the first two weeks of the response

DSC02796.JPG

N 45° 39' 13" W 108° 45' 32" 4:44:45 PM 7/4/2011



Initial surveys were limited to aerial platforms and backwater areas

Methods may be dictated by safety constraints

Ground Surveys

Swift Boat, Small Vessel, Foot

CLEAN HARDOR

3 SEGMENT Total Segment/Re	Total Segment/Reach Length m Segment/Reach Length S						/ed _			<i>m</i>		
Start GPS: LATITUDE	_degmin	LONG			_deg		min. Datum:		n:	_		
End GPS: LATITUDE	_degmin	LONG			deg		m	iin.				
4A RIVER BANK TYPE SELECT only one primary (P) shoreline type and any number of secondary (S) types. CIRCLE those OILED												
Bedrock: Cliff/RampShelf	Cliff/RampShelfManmade: Solid Per			neable(type) Wetland: Swamp				Bog/Fen Marsh				
Sediment Bank: Clay/MudSand	Mixed Pebble/Cobble Boulder Peat/Organic V				Veget	Vegetated Bank: Wooded Upland:						
Sediment Flat: Clay/Mud Sand Mixed/Coarse Other: If snow and ice use Winter River SOS										SOS		
4B RIVER VALLEY CHARACTER select as appropriate complete for prime								nary				
Cliff or Bluff:Est Heightm	canyon manma	nade meander confined or					leveed Substrate Type: _					
Sloped: (>5°)(15°)(30°)	straight braide	ed oxbow flood plain v					alley Forested / Vegetated / E				ed / Bare	
4C RIVER CHANNEL CHARACTER direle or select as appropriete												
est. width : < 1m 1–10 m 10–100 m >100m n est. water depth : < m 1-3 m 3-10 m >10 m m												
shoal(s) present Y/N point bar present Y/N bar-shoal substrate : Jilt / sand / gravel / cobble / boulder / bedrock / debris												
sessonal water level: low / mean / bank full / overbank flow est. change over pext 7 days : falling — same — rising												
5 OPERATIONAL FEATURES Satiable 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 RIVER BANK	OIL COVER OIL						OIL SUBST.					
ZONE ZONE Length	Width Distrib.	THICKNES	CHARACTER						TYPE(S)			
MS LB UB OB m	m % TO	CV CT	ST FL	FR	MS TB	PT	TC	SR	AP	NO		
7 SUBSURFACE OILING CONDITIONS use letter for ZONE location plus Number of pit or trench — e.g., "A1"												
TRENCH RIVER BANK MA	X. PIT OILED	SUBSURFACE OIL				WA	WATER SHEEN		CLEAN	SUBST.		
or PIT ZONE DE	PTH ZONE	CHARACTER				TA	TABLE COLOUR		BELOW	TYPE(S)		
NO. MS LB UB OB	cm cm-cm	SAP OP	OF	TR NO) c	cm B, F		, S, N	Yes / No			



Figure E-2. Example of a field sketch map with outline of surveyed area.











Due to massive relocation of sediments, large woody debris and land forms, preexisting maps were unreliable

 New high resolution aerial photos were flown in four color digital formats



Silvertip Pipeline Incident

DSC02797.JPG

Team 1

Archaeologists and Members of the Crow Indian Nation were embedded in the SCAT teams to address cleanup in culturally sensitive areas.

N 45° 39' 13" W 108° 45' 32" 4:44:53 PM 7/4/2011 Adjacent lands in flooded areas were oiled resulting in third party claims

 SCAT-Claims Liaison position created as an interface between private landowner and cleanup operations

7/5/2011 5:05:49 PM (-6.0 hrs) Lat=45.99103 Lon=-108.10006 WGS 1984









Silvertip Pipeline Incident

N 45° 40' 12" W 108° 41" 13"

Woody Debris

IMG_4339.JPG

12:35:27 PM 7/15/2011

Team 4



Oil trapped in large debris provided challenges for safe treatment and disposal

High powered jet boats continued to be used to move SCAT teams and operations personnel as water conditions allowed



In lightly oiled areas, an Operations Hot Shot crew was embedded with SCAT Teams to treat and sign-off in a single survey

> SCAT Team members given signatory authority by the Unified Command to determine when no further treatment was recommended.

This greatly expedited cleanup and restoration



Challenges



<u>Solutions</u>

Expertise Patience

Private Property

Cultural Sensitivity

SCAT Claims/liaison Embedded Representation

Mapping Atypical and changing Shorelines, Debris

Modified SCAT/GIS Tools

Access

Combined SCAT/OPs/decision-makers

