



Freshwater Shoreline Cleanup and Assessment Techniques

May 2017

Long Beach, CA

Diesel Spill from Sunken Barge:
Monongahela River, 2008



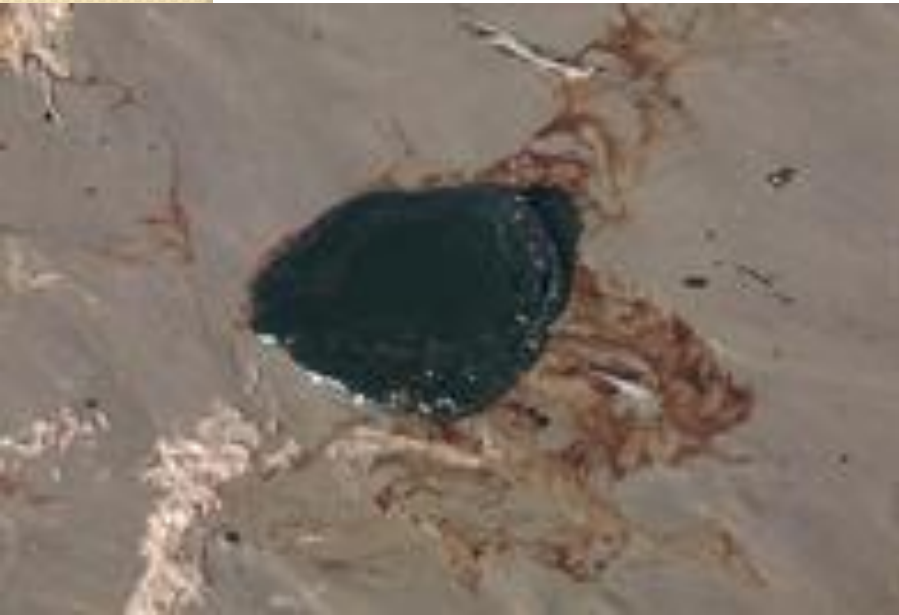
Diesel Spill Pooled on Shore along Mississippi River



Diesel Spill in a stream



Heavy Crude Oils and Refined Products Stranding on Shorelines



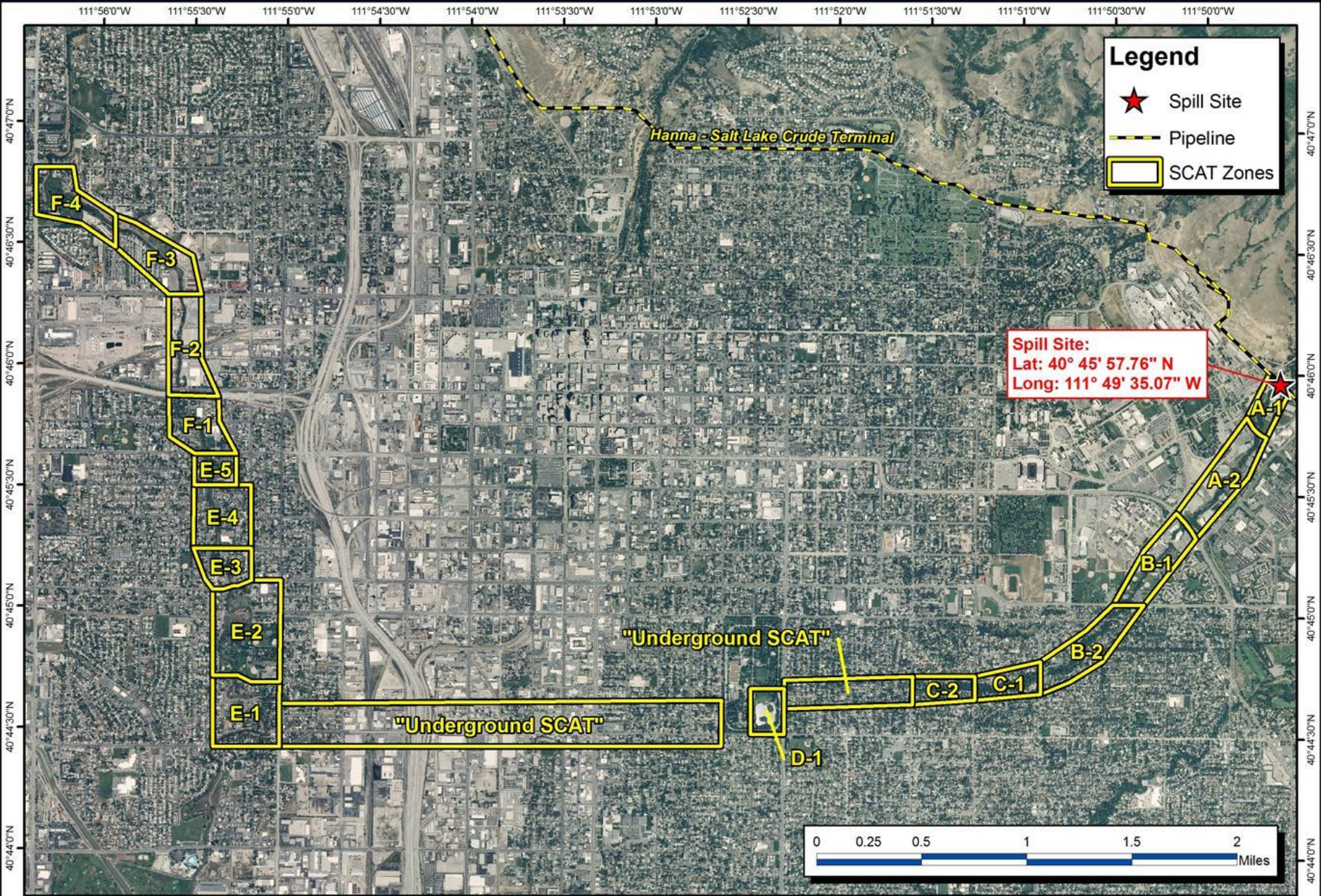
A source...







SLC- Red Butte Incident Scat Zones Overview Map

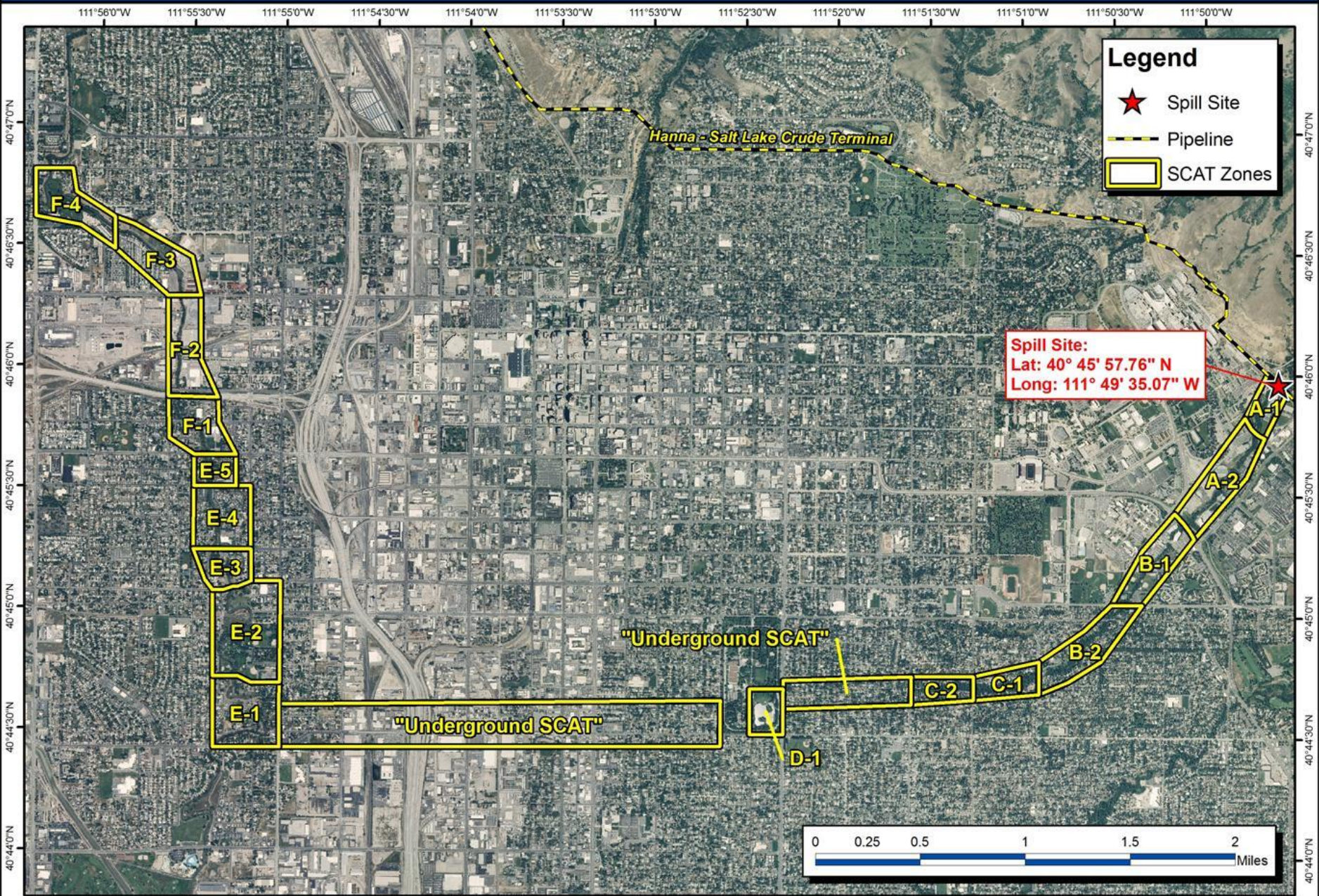








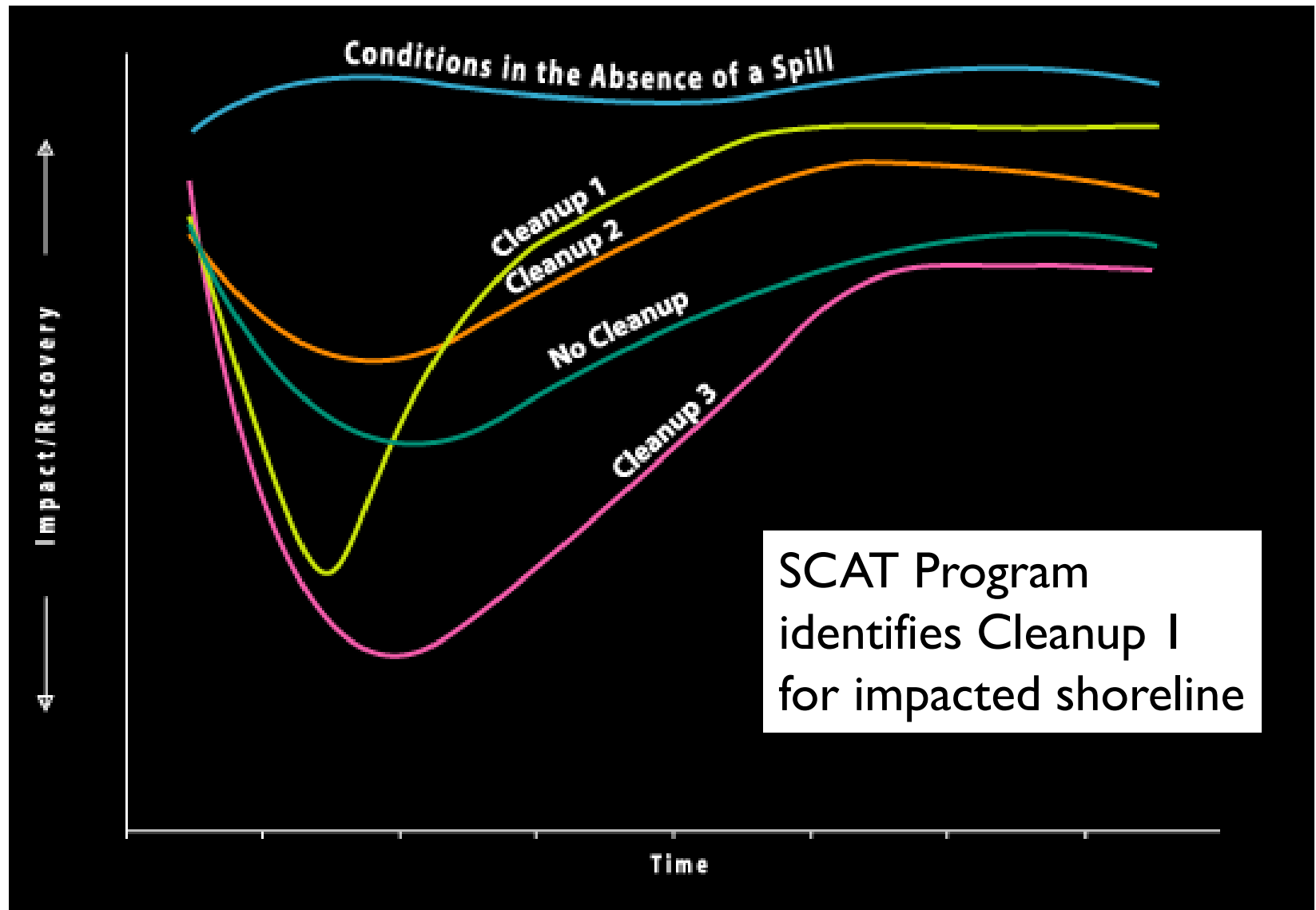
SLC- Red Butte Incident Scat Zones Overview Map



How SCAT benefits IC/Ops Chief

- SCAT process determines which treatment option will result in most rapid recovery.
- SCAT answers “How Clean is Clean?”
- SCAT tracks oiling/cleanup progress

Objective of SCAT Program



How does the magic happen?

- SCAT Program brings the right people together ...
 - Oil behavior experts
 - Aquatic and land Resource Trustees
 - Local, Tribal, State and Federal Regulators
 - Operations staff
- ... within a clearly defined process

Components of SCAT Program

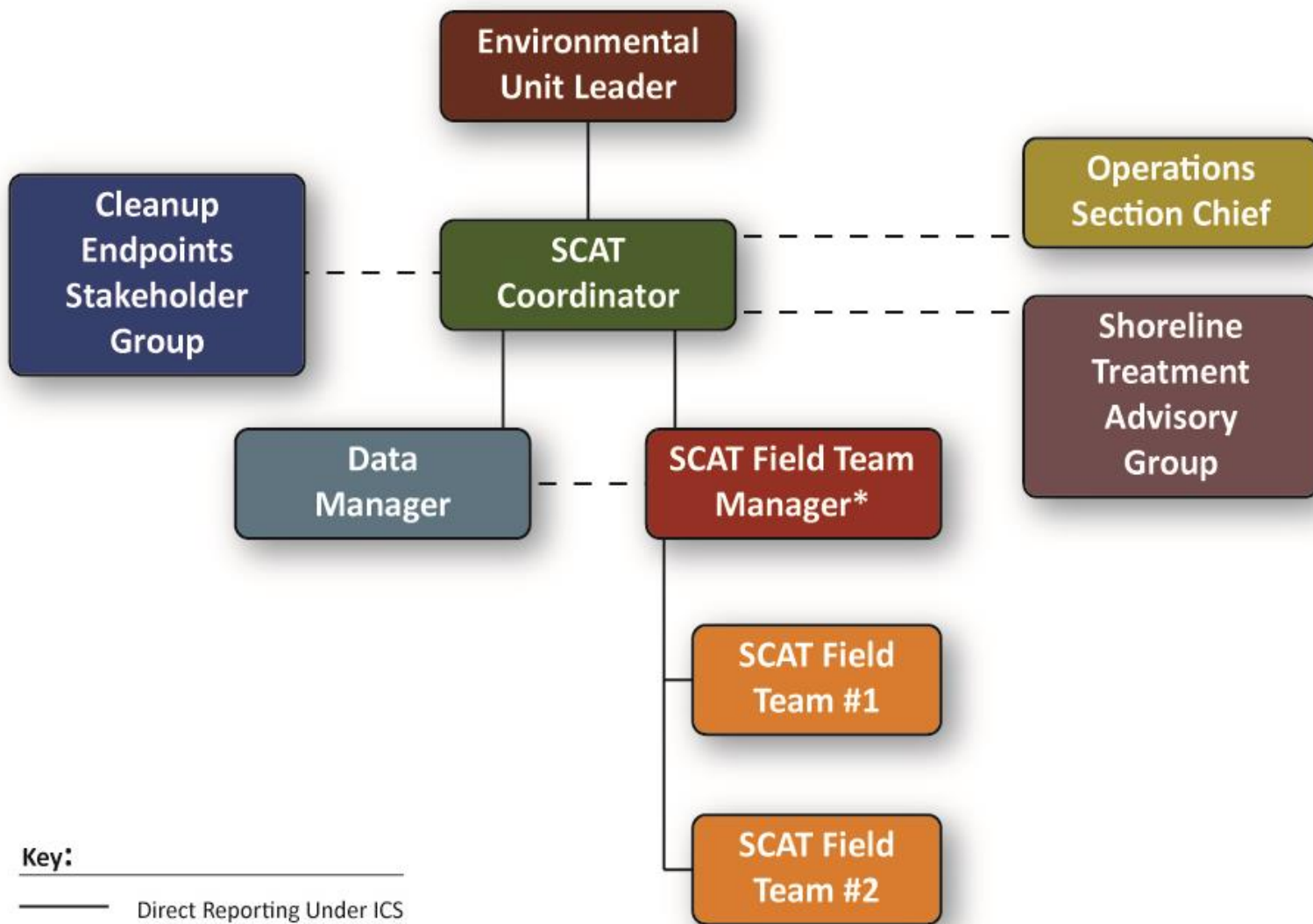
- Accurate assessment of shoreline oiling
- Recommended Treatment Methods and Endpoints
 - Generically by shoreline type
 - Specific to segments with unique challenges
 - ie, cultural resources, ESA, private landowner, difficult access
- Field checks of treatment effectiveness
- Sign Off

For Each Segment, Always

- Determine level of oiling.
 - Identify constraints.
 - Determine cleanup methods and endpoints.
 - Ensure cleanup methods are effective and not doing unintended damage.
 - Verify endpoints have been met.
-
- *Need for SCAT Program determined by scale and complexity of incident.*

Spreading the workload

- Command Post
 - Ops and Planning staff create default cleanup treatment and endpoint guidance, obtain stakeholder input and UC approval.
 - SCAT Data Manager provides maps for Ops and metrics on shoreline cleanup progress.
 - SCAT via EU/PSC provide ops recommendations via Tactics Mtg and 204s.



Key:

- Direct Reporting Under ICS
- - - Communication Channel

* SCAT Field Team Activities are Managed by OPS in EPA Responses

SCAT Products you may see

- Shoreline Oiling Summary
- Approved Treatment Methods and Endpoints Matrix
- Segment Treatment Recommendation
- Color coded map of shoreline oiling
- Segment Sign Off

Shoreline Oiling Summary

RIVER SHORELINE OILING SUMMARY (SOS) FORM - for _____				Spill	Page	of
1 GENERAL INFORMATION		Date (dd/mmmm/yyyy) (use month name)	Time (24h) standard/daylight	LEFT / RIGHT BANK		
Segment/Reach ID:				facing downstream		
Operations Division:						
Survey by: Foot / Boat / Helicopter / Overlook / _____				Sun / Clouds / Fog / Rain / Snow / Windy / Calm		
2 SURVEY TEAM	<i>name</i>	<i>organization</i>	<i>phone number</i>			
3 SEGMENT	Total Segment/Reach Length _____ m		Segment/Reach Length Surveyed _____ m			
Start GPS:	WP: _____	LAT _____ deg. _____ min.	LONG _____ deg. _____ min.			
End GPS:	WP: _____	LAT _____ deg. _____ min.	LONG _____ deg. _____ min.			
4A RIVER BANK TYPE		select only one primary (P) oiled river bank type and any secondary (S)				
BEDROCK : _____ MAN-MADE SOLID : _____		UNCONSOLIDATED : Clay _____ Mud _____ Sand _____				
cliff/vertical _____ sloping _____ platform _____		Mixed Sand-Grave _____ Pebble-Cobble _____ Boulder _____ Rubble _____				
Winter Only: Ice Foot _____ Snow _____		Marsh/Swamp _____ Peat _____ Vegetated _____ Shell Hasi _____				
4B RIVER CHARACTER		select as appropriate				
CLIFF or BLUFF : _____ : est. height _____ m		canyon _____ flood plain valley _____ leveed channel _____				
slope: low _____ medium _____ vertical _____		straight _____ meander _____ braided _____ anabranch _____				
4C CHANNEL CHARACTER		select as appropriate				
est. width : < 1m _____ 1-10 m _____ 10-100 m _____ > 100 m _____ est. water depth : < 1 m _____ 1-3 m _____ 3-10 m _____ > 10 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 d: falling - same - rising						
5 OPERATIONAL FEATURES		debris Y / N oiled? Y / N debris amount: _____ bags OR _____ trucks				
direct backshore access		Y / N		river current strong		Y / N suitable backshore staging Y / N
alongshore access from next segment		Y / N		access restrictions _____		

SCAT and Areas of Concern 8-7-08

- ✚ Areas of Special Concern
- River Miles
- Division Names
- Division Boundaries

CleanupPointsOfConcern_8-7-08

Cleanup_st

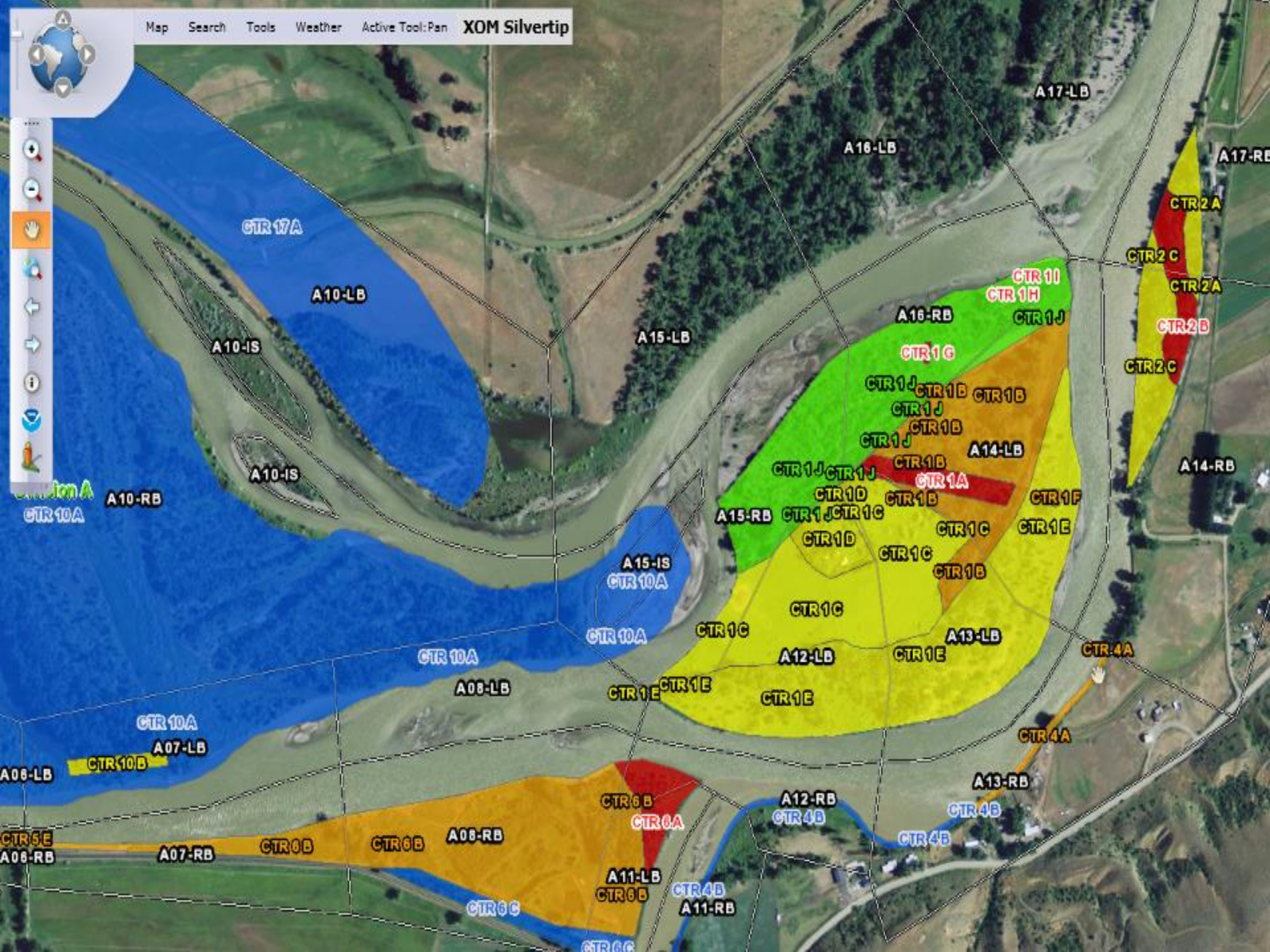
- Active
- Passive
- No Cleanup Needed
- Undetermined

SCAT_shoreline_8-7-08

SO_CATEGOR, CLEANUP_CO

- Heavy - Cleanup areas identified
- Light - Cleanup areas identified
- Light - No cleanup areas identified
- Moderate - Cleanup areas identified
- Moderate - No cleanup areas identified
- Very Light - Cleanup areas identified
- Very Light - No cleanup areas identified
- No oil observed
- No data





Savannah River Spill Example

Habitat Type	Cleanup Endpoint	Allowable Cleanup Methods
Sand Beaches	Sand Beaches should be visibly free of all oil and oil residue. No oil odor should be evident and there should be no subsurface oil existing.	<ul style="list-style-type: none"> • Manual removal with shovels/rakes; minimize removal of clean sediments on/under oiled layers • Use of heavy equipment will require additional approval. • Passive recovery of sheen with sorbents.
Riprap Seawalls Bulkheads Pilings Docks Boat ramps	General: No potentially mobile oil as evidenced by sheen. Oil on exposed surfaces does not rub off on contact (no oil greater than stain)	<ul style="list-style-type: none"> • Flushing and high-pressure/ambient or hot-water washing (hotsie), as needed. Containment/recovery of released oil. • Passive recovery of sheen with sorbents on riprap.
Marshes Vegetated Spoil Banks Scarps Forested Wetlands	General: No potentially mobile oil as evidenced by sheen remaining on substrate. Residual oil does not rub off on contact (no oil greater than stain).	<ul style="list-style-type: none"> • Remove loose oiled debris (use best mgt guidelines). • Passive removal using snares on a rope or other sorbent material as appropriate. • Minimize foot traffic, and avoid disturbance and removal of peat mat or soil • Other options to be determined on a site-specific basis include flushing, manual pickup of pooled oil, and monitoring. • Aggressive cleanup methods should not be employed. • Natural recovery should be considered



A Hierarchy of Cleanup Endpoints

- No visible oil
- No more than background
- No longer releases sheens that will affect sensitive areas, wildlife, or human health
- No longer rubs off on contact
- Oil removal to allow recovery without causing more harm than natural removal

Incident Name: _____ STR #: _____
Shoreline Treatment Recommendation _____
Operational Permit to Work _____

Segment: (allow entry of local name) _____ Survey Date: _____
Start Lat: _____ End Lat: _____
Start Long: _____ End Long: _____ Length (m): _____
Shoreline Type: _____ Primary: _____ Secondary: _____

Oiled Areas for Treatment (EU):

Cleanup/Treatment Recommendations (EU):

Recommendations/Staging and/or Logistics Constraints/Waste Issues (OPS):

Ecological Concerns:

Cultural / Historical Concerns (SHPO):

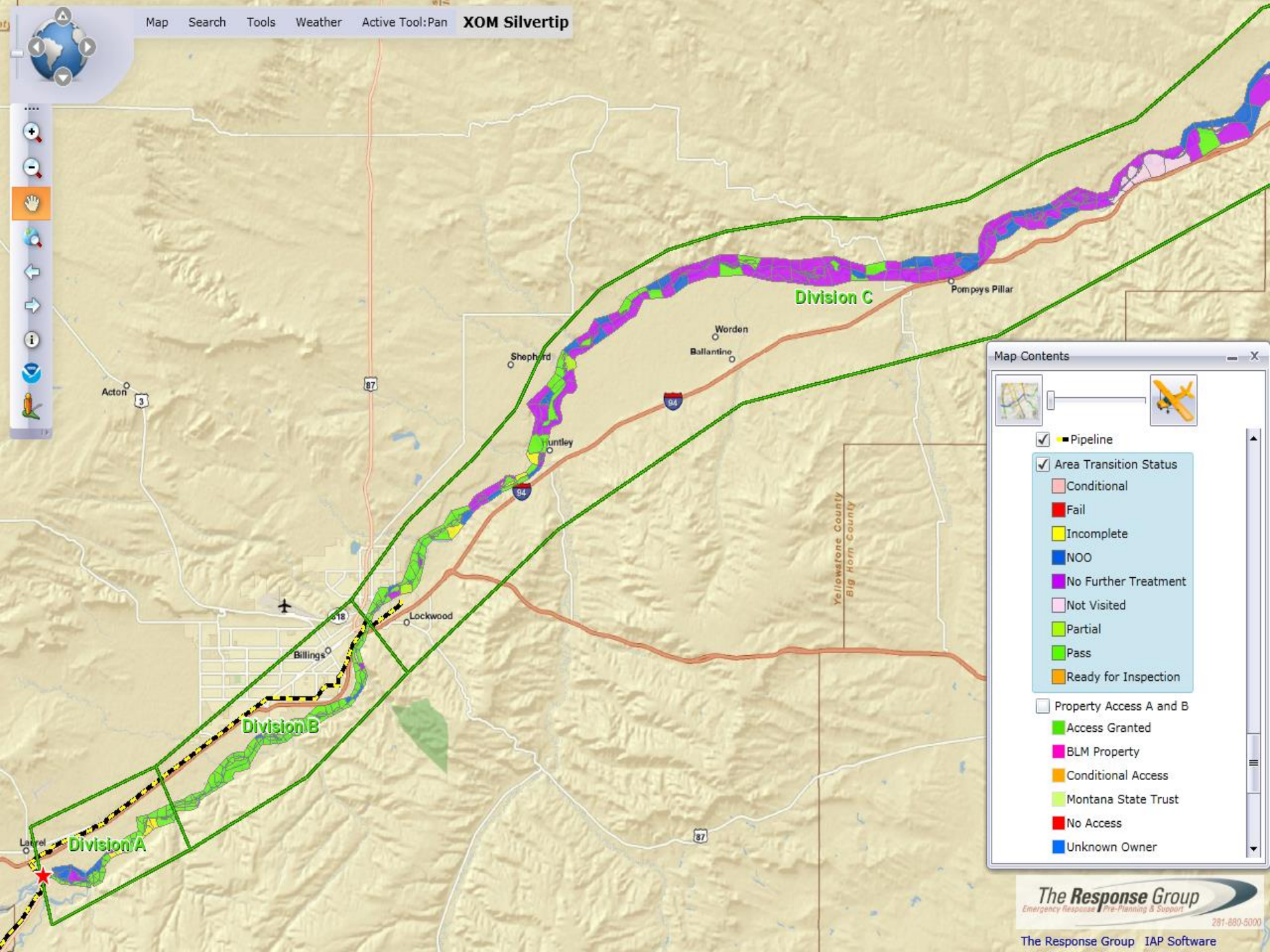
Safety Concerns (EU/OPS/SSO):

1294

Attachments: ☐ Segment Map ☐ Sketch ☐ SCAT Form ☐ Fact Sheet ☐ Other

1295

Prepared by: _____ Date Prepared: _____
Date _____ Time _____



Map Contents

☒ Pipeline

☒ Area Transition Status

- ☐ Conditional
- ☐ Fail
- ☐ Incomplete
- ☐ NOO
- ☐ No Further Treatment
- ☐ Not Visited
- ☐ Partial
- ☐ Pass
- ☐ Ready for Inspection

☐ Property Access A and B

- ☐ Access Granted
- ☐ BLM Property
- ☐ Conditional Access
- ☐ Montana State Trust
- ☐ No Access
- ☐ Unknown Owner



IC Role in SCAT Program

- Approve recommended methods and endpoints
- Allow shoreline decisions to be worked within EU
- Determine who is allowed to “sign off” segments
- Encourage key players to work through CESG group (TAG)



Ops Chief Role in SCAT Program

- Provide senior Ops staff to support cleanup method and endpoint development.
- Work with SCAT to ensure effectiveness of treatment methods is monitored, ensure constructive feedback process.
- Work with SCAT Coordinator to ensure that input and sign off process is effective.