

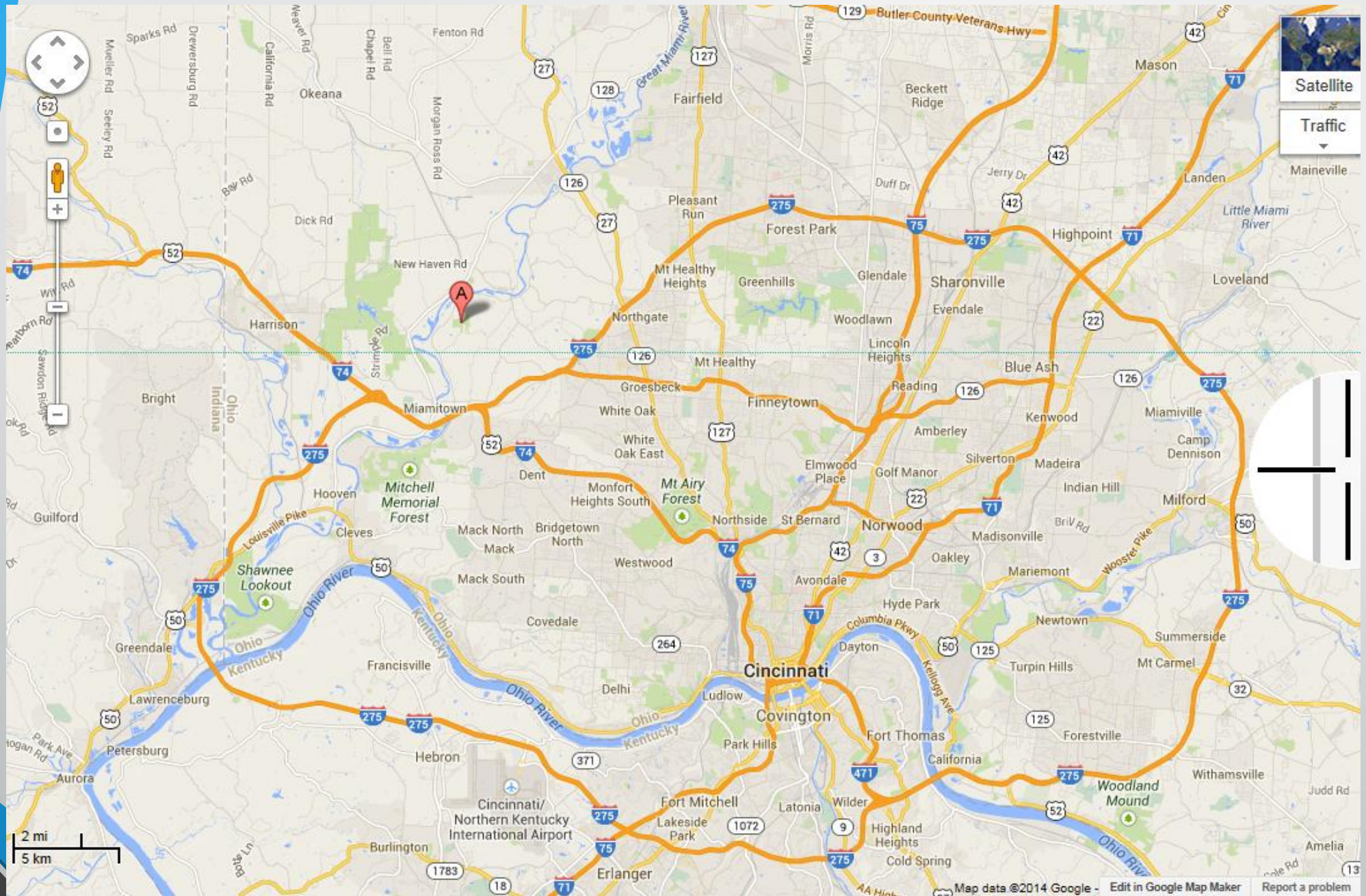


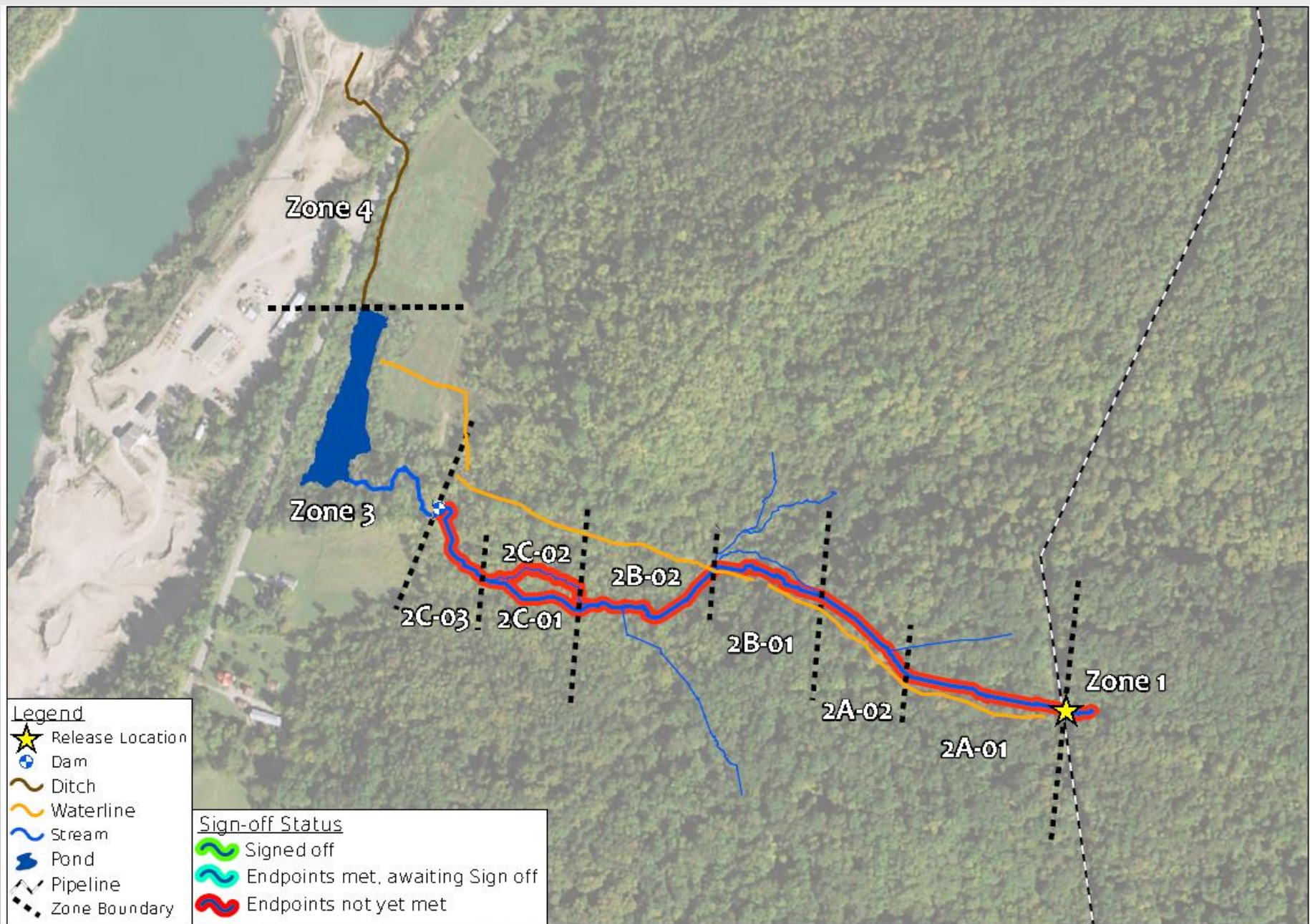
Mid-Valley Pipeline Crude Oil Release

AKA: Oak Glen Spill, Compliments of Sunoco

The Incident Summary:

- At 2200 on Monday, 3/17, notifications began that a crude oil pipeline had a release. The pipeline followed shut down protocols.
- An estimated 10,000 gallons (later revised to 20,000 gallons) of crude oil had released into Oak Glen Nature Preserve.
- The oil flowed from the top of a steep ravine down ~1 mile of an intermittent creek and was captured in a vernal pool. The oil did not leave the pool. The pool is connected in the subsurface to a quarry and to the Miami River.






Zone 2 Exit Plan Map
3/25/2014

Oak Glen Release
Sunoco Logistics



An aerial photograph of a pipeline break site in a wooded area. The ground is covered in brown leaves and dirt. Several yellow excavators are visible, along with workers in high-visibility clothing. A blue container and a green container are also present. The scene is surrounded by bare trees.

Zone 1: Break Site
Ops handled by
pipeline repair team

Zone 3: Recovery
Operations handled by
OSROs.





Zone 2: Oiled Creek
SCAT recommendation
for Operations



2C – Pooled area



2C - oiled leaf mats



2B – dam
holding back
flow



2B – dam
holding back
flow



2B –
subsurface
transport



2C - oiled leaf mats



2A – minimal water volume

Roles for SCAT Program

SCAT Objective

- Assure that a “net environmental benefit” (NEB) for an oiled shoreline is achieved by shoreline cleanup.

Initial SCAT Tasks

- Create Consensus for Shoreline Cleanup Methods and Endpoints
 - Zone 2 (creek)
 - Zone 3 (bathtub ring around pond and oiled mudflats)
- Monitor Cleanup Operations and make changes as necessary
 - Are cleanup methods being implemented appropriately?
 - Are cleanup methods effective enough to reach endpoints?

Who Made Up the SCAT Team?

Unified Command Representatives

- EPA: Ann Whelan, Josie Clark and Pat Hamblin
- OEPA: SOSCs*
- Great Parks: Park Manager/IC*
- Sunoco: Sunoco field EUL, Entrix, Hull

** Decreasingly available but came on initial site walk, consulted on decisions*



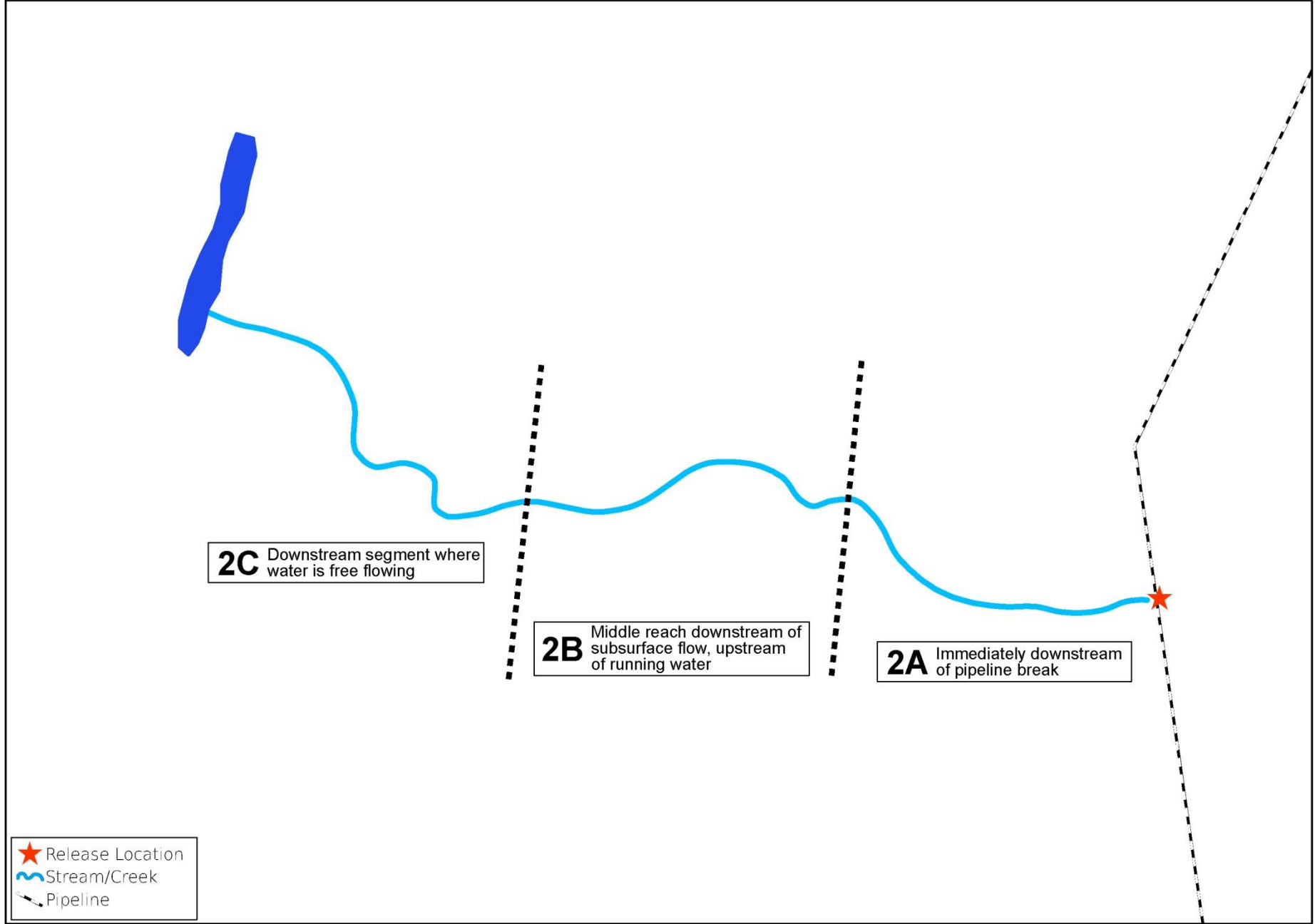
SCAT Task #1: Initial Cleanup and Endpoint Recommendations:

- Initial site walk with full SCAT team
 - Gut check – ok to leave oil in place rather than excavating creek
 - Identifying key drivers – salamanders, nearby drinking water wells
- Outcome: Initial Shoreline Treatment Recommendations
 - Verbal approval to ops to remove oiled debris from creek
 - Verbal go ahead on flushing creek
 - UC approved methods and SCAT provided written version for IAP next day

Show STR and Matrix as 204 options



2A – minimal water volume



Zone 2 Cleanup Guidance

Oak Glen Release
Sunoco Logistics



Subzone	Cleanup Guidance	Logistics/Staging/Waste	Ecological Concerns
2A- Immediately downstream of pipeline break	Manual removal of oiled organic debris in stream channel, including leaf piles and sticks. Leave all branches larger than 4" in diameter in place unless otherwise directed by SCAT team member. Do not remove oiled sediment. Use sorbent pads to soak up pooled oil.	The best access for delivering and collecting materials and waste is the pipeline access road, and it will have to be brought in by tracked vehicle.	Remove as much mobile oil as possible prior to rainstorm and/or flushing. Minimize access points to reduce amount of vegetation trampling. Work in small teams to reduce trampling.
2B-Middle reach downstream of subsurface flow, upstream of running water	Manual removal of significant deposits of oiled organic debris in stream channel, including leaf piles and sticks. Leave all branches larger than 4" in diameter in place unless otherwise directed by SCAT team member. Do not remove oiled sediment. Use sorbent pads to soak up pooled oil. At upstream end of subzone, conduct low pressure ambient temperature bank washing to drive oil downstream to a collection area on main stem (visibly oiled). At this same point conduct trial of ambient temperature flushing on stem of stream where oil has flowed underground.	There is very little access currently to this area. Until one is established, recommend leaving bagged oiled debris staged for later collection.	Efforts will be made to avoid destabilizing the streambanks, which could lead to further erosion. Workers will take care to avoid trampling non-oiled vegetation and walking on soft substrates in the creek, which has the potential to push oil further down into the sediments. Avoid walking in the creek. When walking in the creek is unavoidable, minimize disturbance to the streambed by stepping on rocks. Minimize access points to reduce amount of vegetation trampling. Work in small teams to reduce trampling.
2C-Downstream segment where water is free flowing	Manual removal of leaf and stick debris that is holding back pooled oil. Heavily oiled leaves and debris that are moved to mobilize oil should be bagged and removed. Unoiled debris and leaves can be moved to the bank if they are on top of oiled material. Limited movement of rocks to allow oil to flow is acceptable. Leave all branches larger than 4" in diameter in place unless otherwise directed by SCAT team member. Do not excavate oiled sediment or substrate. Conduct low pressure ambient temperature bank washing to drive oil downstream to a collection area at an underflow dam. Goal is to drive free product to collection areas.	There is an access road being constructed to install the lower underflow dam. This will be the best point for delivering and collecting materials.	Efforts will be made to avoid destabilizing the streambanks, which could lead to further erosion. Workers will take care to avoid trampling non-oiled vegetation and walking on soft substrates in the creek, which has the potential to push oil further down into the sediments. When walking in the creek is unavoidable, minimize disturbance to the streambed by stepping on rocks. Minimize access points to reduce amount of vegetation trampling. Work in small teams to reduce trampling.



Subzone	Cleanup Guidance	Logistics/Staging/ Waste	Ecological Concerns
<p>2A - Immediately downstream of pipeline break</p> <p>And</p> <p>2B-Middle reach downstream of subsurface flow, upstream of running water</p>	<p><u>Before Recirculation Water is running:</u> Manual removal of significant deposits of oiled organic debris in stream channel, including leaf piles and sticks. Leave all branches larger than 4" in diameter in place unless otherwise directed by SCAT team member. Do not remove oiled sediment. Use sorbent pads to soak up pooled oil.</p> <p><u>When Recirculation Water is Initiated:</u> Prior to flushing 2A with water from the pond in Zone 3, conduct the trial of flushing the underground oil in 2B. Once SCAT Team Member gives ok, flush 2A.</p> <p><u>After Recirculation Water is Running:</u> Conduct cleanup activities as noted in 2C.</p>	<p>The best access for delivering and collecting materials and waste is the pipeline access road, and it will have to be brought in by tracked vehicle</p>	<p>Minimize access points to reduce amount of vegetation trampling. Work in small teams to reduce trampling. Take care to avoid trampling non-oiled vegetation and walking on soft substrates in the creek, which has the potential to push oil further down into the sediments.</p>
<p>2C-Downstream segment where water is free flowing</p>	<p>Use sorbent pads to remove pooled oil downstream of the underflow dam. Do not remove oiled leaves and debris. Do not flush banks.</p> <p>Enhance effectiveness of stream to carry free product to underflow dam collection areas. Manual removal of leaf and stick debris that is holding back pooled oil. Heavily oiled leaves and debris that are moved to mobilize oil should be bagged and removed. Unoiled debris and leaves can be moved to the bank if they are on top of oiled material. Do not move rocks unless directed by SCAT team member. Leave all branches larger than 4" in diameter in place unless otherwise directed by SCAT team member. Do not excavate oiled sediment or substrate.</p> <p>Dig sump in location designated by Mike Carter, Josie Clark or Ann Whelan. Place trash pump in sump and use hoses to do low pressure ambient temperature washing of the oiled banks.</p>	<p>There is an access road being constructed to install the lower underflow dam. This will be the best point for delivering and collecting materials.</p>	<p>Efforts will be made to avoid destabilizing the streambanks, which could lead to further erosion. Workers will take care to avoid trampling non-oiled vegetation and walking on soft substrates in the creek, which has the potential to push oil further down into the sediments. When walking in the creek is unavoidable, minimize disturbance to the streambed by stepping on rocks. Minimize access points to reduce amount of vegetation trampling. Work in small teams to reduce trampling.</p>

While flushing operation was initiated





SCAT Role Days 3-5 (after initial recommendations) :

- Established and managed consensus for shoreline cleanup with UC agencies
 - Strength is connecting Trustees with Operations, two-way education
- Provided clear, timely methods for operations to employ
- Provided feedback in the field to tweak cleanup Ops and expectations
- Tested response techniques such as burning, thermal treatment and flushing to provide site specific intel to UC/Ops

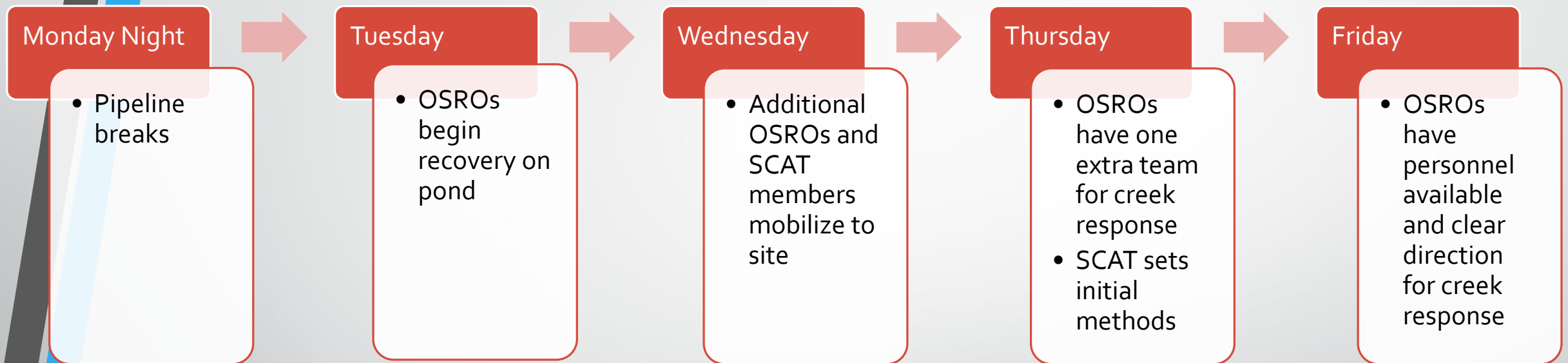




Inland SCAT Success

Due to many contributing factors

1) Early Activation of SCAT



- *Prevented need to pull OSROs back from ongoing operations*
- *Allowed trustees to prevent response actions from wrecking the creek, ie "we had something left to save"*

2) UC trusted SCAT Team



- Recommendations from SCAT team in field were readily approved by UC

3) Close Coordination with Ops



- Sunoco field EUL/SCAT rep was experienced spill responder, directed crews
- SCAT attended morning Ops Briefing with OSRO Team Leads, briefed 204
- SCAT attended tactics or pre-tactics meeting which included Ops Chief

4) SCAT Presence in Field



- SCAT Team worked directly in field with crews to calibrate methods and clarify questions.

Challenges

- Flushing, Washing and Underflow Dam meant different things to different people.
- Limited EPA presence in field left SCAT as default operations oversight for entire site
- As cleanup progressed and responders rotated, initial endpoint agreements were overwritten by more stringent endpoints. How to keep focus on cleanup drivers rather than removing oil?
- SCAT is a fluid process. If cleanup methods don't reach endpoints, must alter methods or endpoints. This is success, not failure.



Take Aways

- When dealing with shoreline oiling, activate a SCAT process **EARLY**
- Know that SCAT is a scalable, iterative and effective process to attain the best outcome for shoreline recovery