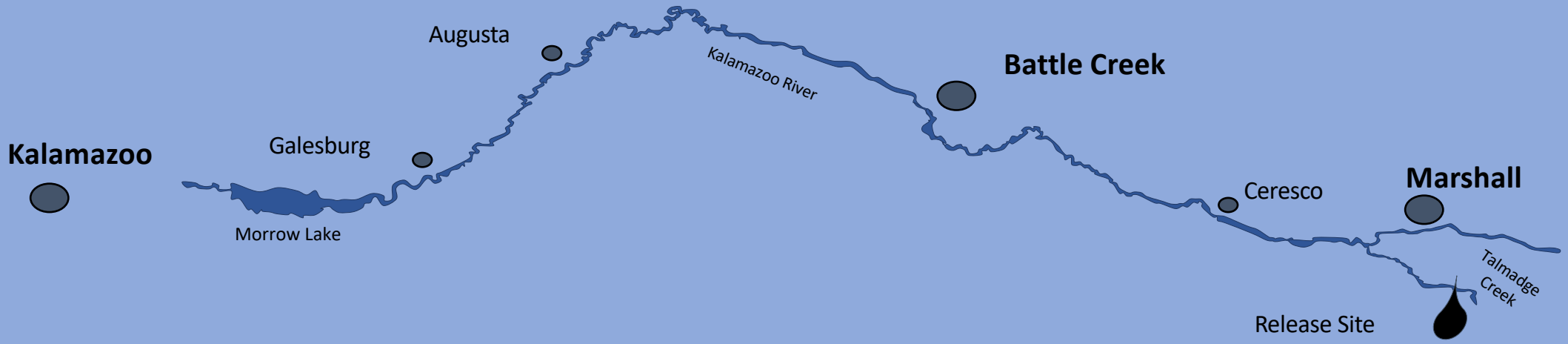
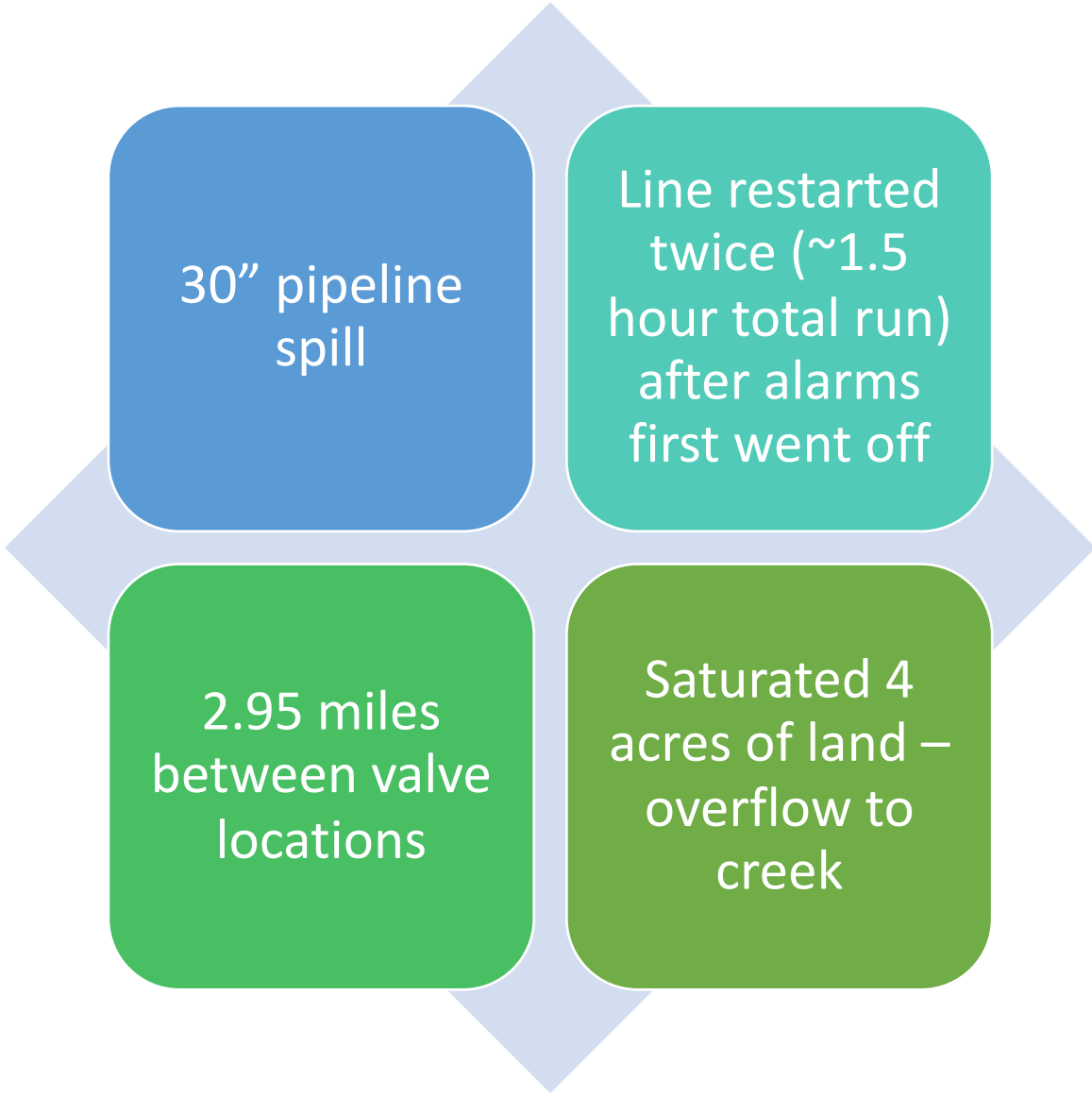
Enbridge Oil Spill



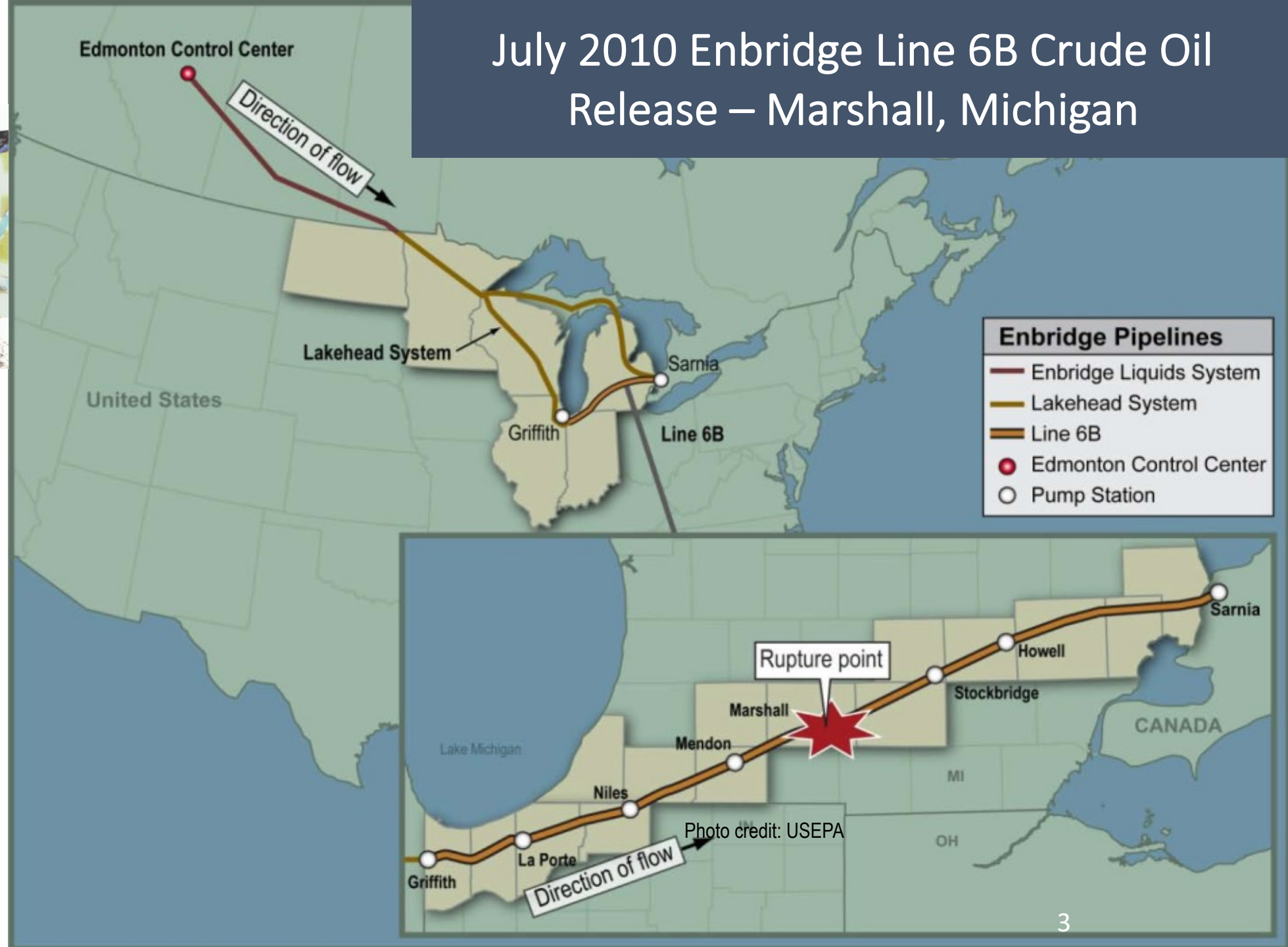
Background


30” pipeline spill
Line restarted twice (~1.5 hour total run) after alarms first went off
2.95 miles between valve locations
Saturated 4 acres of land – overflow to creek

July 2010 Enbridge Line 6B Crude Oil Release – Marshall, Michigan

Source NTSB (2012)

- July 25, 2010 pipeline rupture
- 843,000 gallons of diluted bitumen (dilbit) released over 17 hours
- Wetland to Talmadge Creek to 38 miles Kalamazoo River
- 80 miles upstream from Lake Michigan



EPA Response

- Inland zone spill
  - EPA is the lead Federal On Scene Coordinator for the Site
  - Directs Response activities
  - The main incident objective was to capture and remove oil from the environment as quickly as possible while keeping responders and the public safe
  - Strategies shifted as nature of response changed
  - EPA mobilized both labor and technical consultant contractors
  - Directed Responsible Party cleanup actions
    - Issued Order for cleanup
    - Stipulated timelines for each phase
  - Instituted Incident command structure and used ICS throughout response
  - Continued oversight and direction until additional cleanup verse net Environmental Benefit Analysis favored continued direction under state authority

Response Organization

Unified Command

U.S. EPA
MDNRE
Michigan State Police Emergency Management Division
City of Battle Creek
Calhoun County Public Health Department
Calhoun County Emergency Management
Kalamazoo County Sheriff
Enbridge (Responsible Party)

Cooperating and Assisting Agencies

ATSDR
Calhoun Conservation District
Calhoun County Commission
City of Kalamazoo
City of Marshall
Emmett Township
Fredonia Township
Kalamazoo County Office of Emergency Management
Marshall Area Firefighters Ambulance Authority
Match-E-Be-Nash-She-Wish Band of Potawatomi Indians
Nattawaseppi Band of Potawatomi Indians
Pokagon Band of Potawatomi Indians
Band of Potawatomi Indians
Marshall Police Department
Marshall Township Government and Fire Department
Michigan Department of Agriculture
MDCH
NOAA
Oakland County HAZMAT/RRTN
PHMSA
USCG
U.S. Department of the Interior/USGS
USFW

Enbridge line 6b – carrying DilBit

6 foot rupture

Where EPA first responded

- Tallmadge Creek Day 1
- No water observed
- Oil covered entire 2.5-mile section of creek
- Joined with Kalamazoo river
- Bank to bank oil another 3 miles to Ceresco Dam

Ceresco Dam

~5.5 miles from source

Air Monitoring

- Area RAEs are mobile air monitoring devices that will screen the air for pollutants – can be remotely monitored
- Handheld mobile air monitoring devices screen the air for benzene, LEL, CO, O2, and VOCs.
- Handheld mobile air monitoring devices and area RAEs were deployed the night of the spill and were used to make Personal Protective Equipment (PPR) decisions.

Strategic Boom Points – next ~34 miles

DilBit oil issues

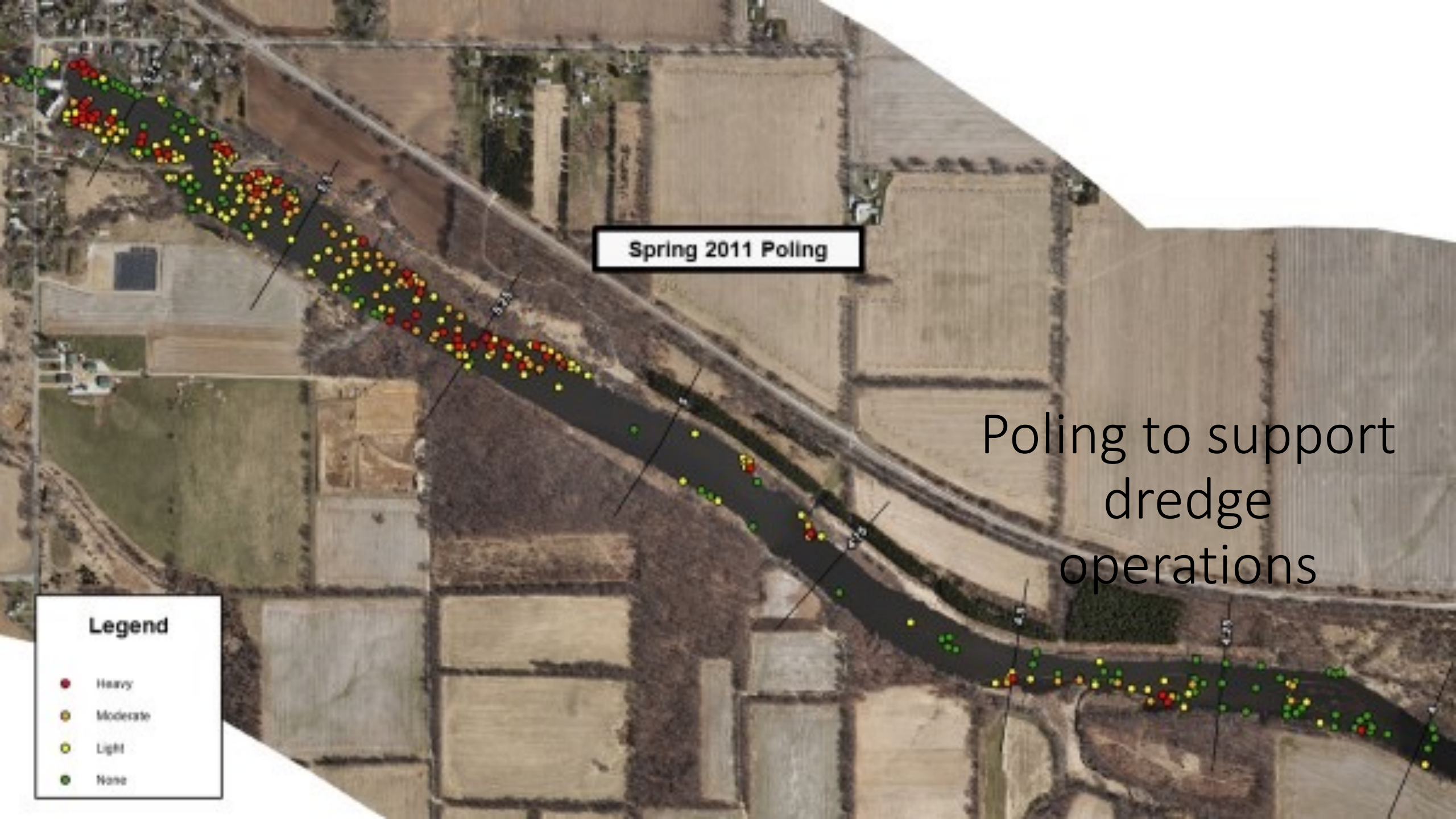
Initially volatile with benzene health hazard

Later a sinking oil that formed Oil Particle aggregates

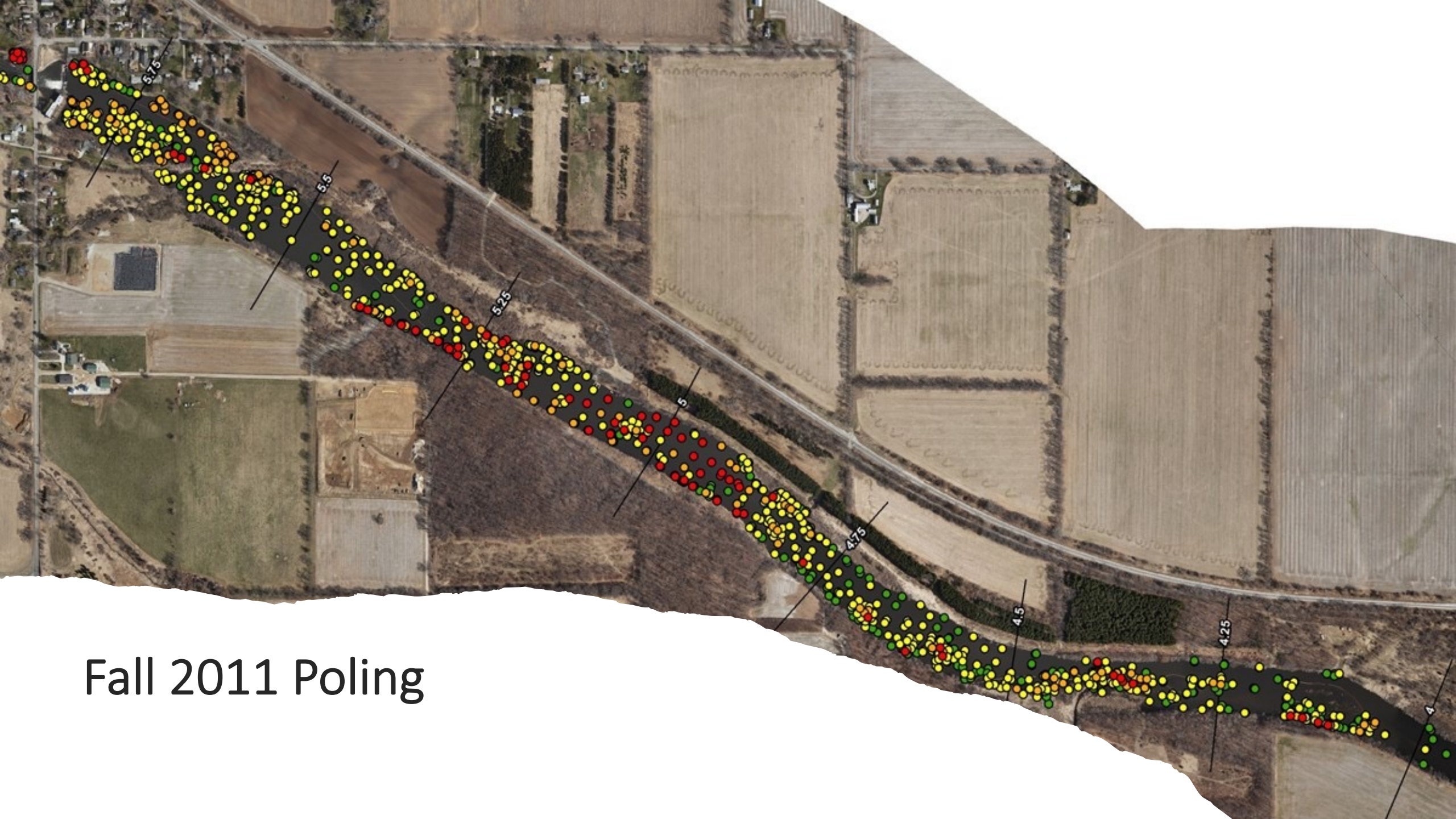
Lead to 4 year EPA directed cleanup involving

- Polling – multiple rounds
- Agitation and sheen recovery
- Dredging
- Saturated soil removals
- Winter work to access harder to reach areas

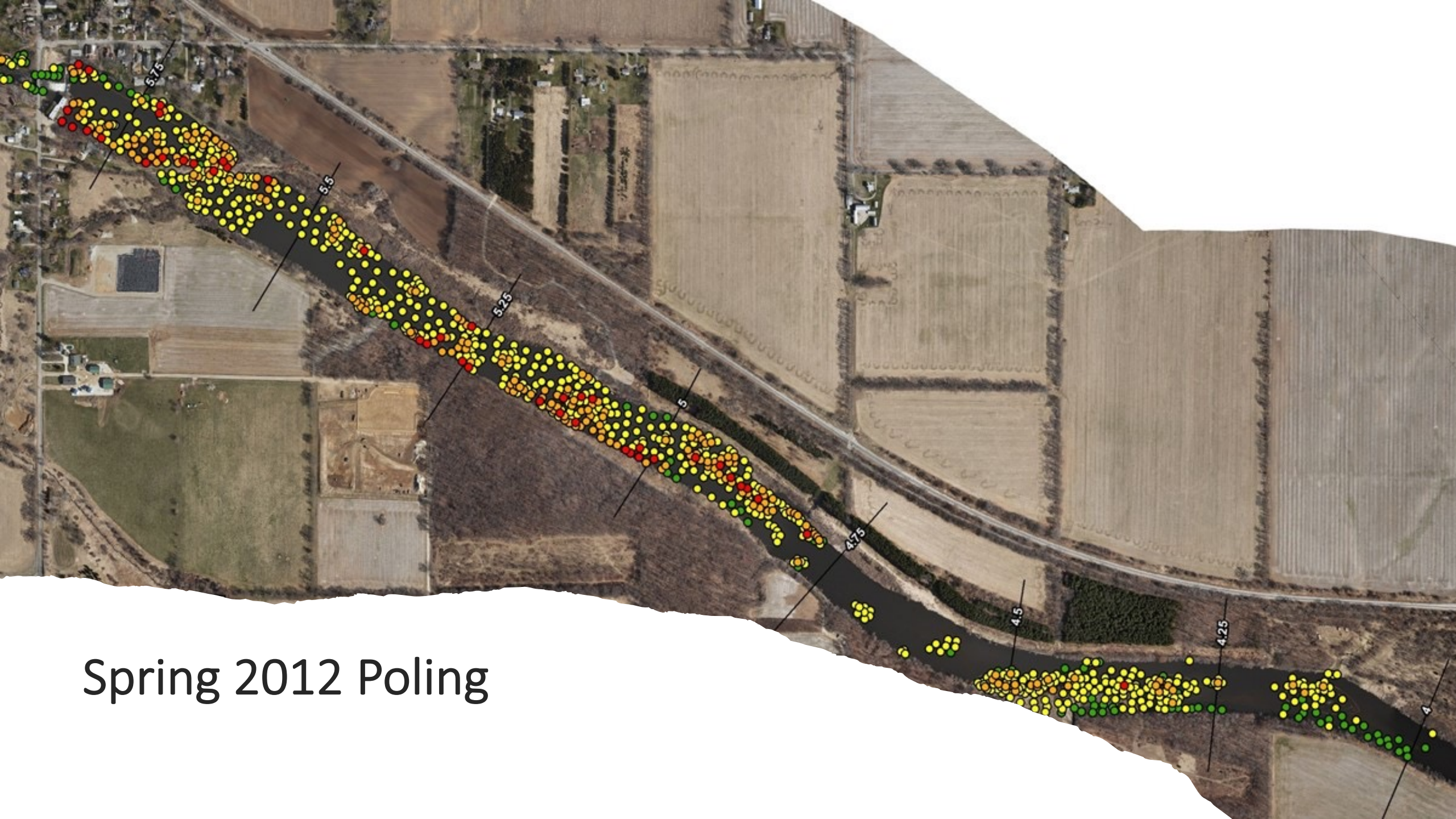
Oil saturated soil removal



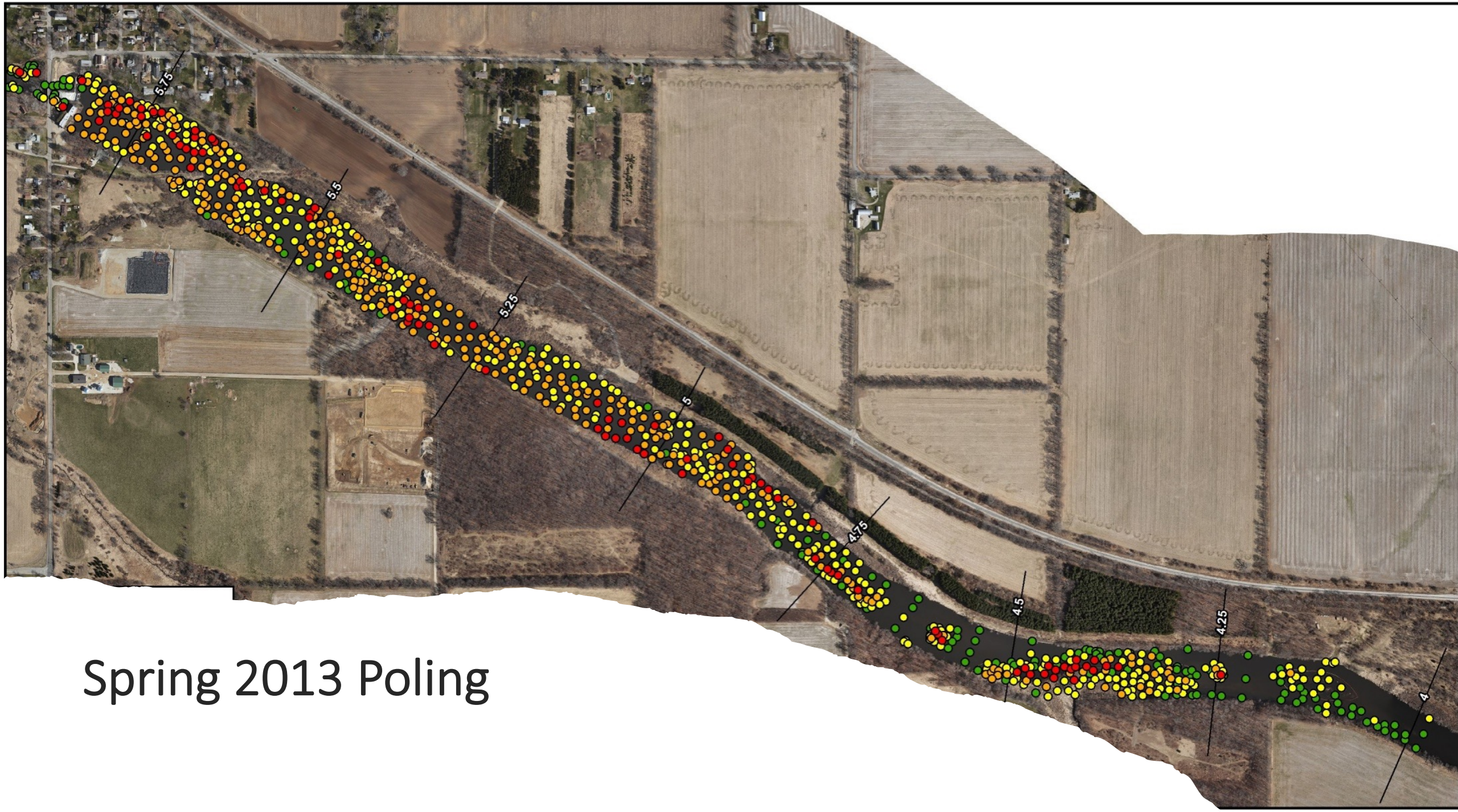
Poling to support dredge operations



Fall 2011 Poling



Spring 2012 Poling



Spring 2013 Poling

Dredging to remove submerged oil

EPA transition to State oversight

Progress Under EPA Orders (as of 10/06/2014)

- Waste shipped off site

- Haz Soil – 19,644 cubic yards
- Non-haz Soil – 327,669 cubic yards
- Non-Haz Soil and Debris – 64,815 cubic yards
- Haz Debris – 12,075 cubic yards
- Non-Haz Water – 11,934,503 gallons
- Haz Water - 3,594,579 gallons
- Oil (as recoverable crude) – 766,288 gallons
- Calculated oil total from all sources – 1,201,098 gallons

Questions or comments?
-Thank you

- EPA On-Scene Coordinators
  - Tricia Edwards edwards.tricia@epa.gov
  - Jeff Kimble kimble.jeffrey@epa.gov

- Sources
  - EPA FOSC Desk Report https://www.epa.gov/enbridge-spill-michigan/fosc-desk-report-enbridge-oil-spill
  - NTSB Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release https://www.ntsb.gov/investigations/AccidentReports/Reports/PAR1201.pdf