

Former Tronox/Kerr-McGee Facility

Community Update

Springfield, Missouri

August 23, 2023



Meeting Agenda

- ✓ Introductions
- ✓ Facility Background Information
- ✓ Overview of Past Remedial Actions
- ✓ Ongoing Environmental Actions
 - Public Well Sampling
 - Domestic Well Sampling
 - Golden Hill Detention Basin Revised Management Plan
 - Residential Soil Sampling
 - Plans for Replacing Residential Sewer Laterals
- ✓ Opportunities for Community Input
- ✓ Questions and Discussion



Introductions and Multistate Trust Overview

Tasha Lewis, Multistate Trust



Introductions

- ✓ Multistate Trust
- ✓ Missouri Department of Natural Resources (MoDNR)
- ✓ Missouri Department of Health and Senior Services (MDHSS)
- ✓ Environmental Works Inc. (EWI)



Thank you for your participation!

We want to hear what's important to you!

- ✓ February 2023 meeting
 - 60+ attendees, including local officials, residents, members of the media, and other community members
 - Received surveys, requests for email notices; held meetings with residents and stakeholders
 - Committed to 2nd meeting in 2023
- ✓ Please fill out a survey or sign up to receive email notifications



Tronox Tort Claims Trust

The Multistate Trust Cannot Pay Personal Injury or Property Damage Claims

The Multistate Trust was created to own and clean up contamination at many former Tronox/Kerr-McGee sites, including the Facility in Springfield.

Multistate Trust funds can be used **only** for cleanup, Facility management, and property reuse planning activities.

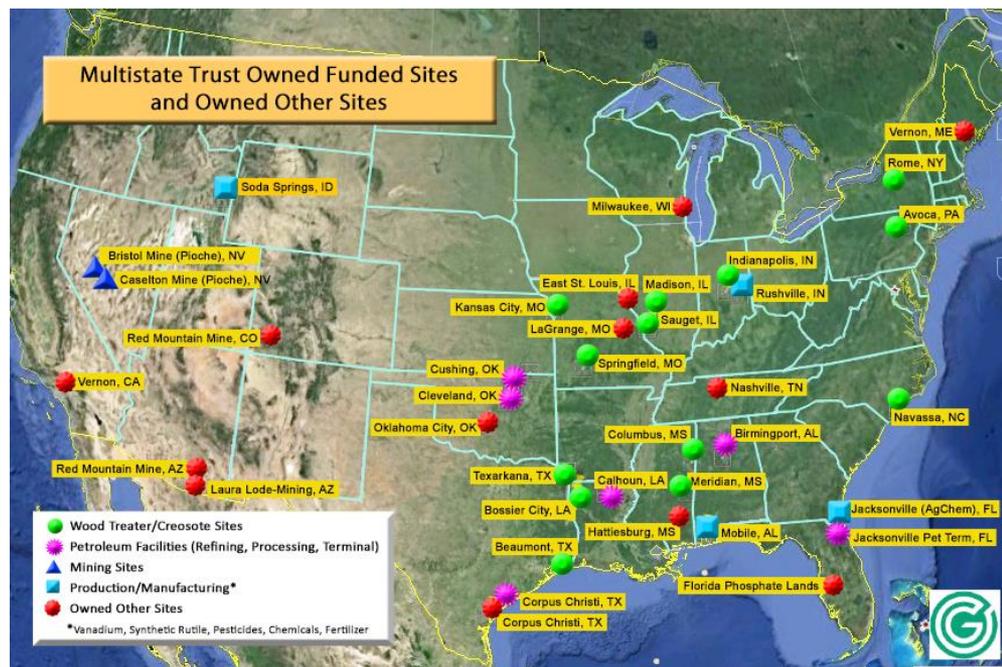
Multistate Trust funds cannot be used to pay personal injury claims, such as health and medical bills, or property damage claims.

If you have questions about personal injury or property damage claims, you should contact the Tronox Tort Claims Trust at (800) 753-2480 or tronoxtorttrust@epiglobal.com.
Visit www.tronoxtorttrust.com.



Introduction to the Multistate Trust

- ✓ Environmental response trust created through court-approved Tronox bankruptcy settlement to own, investigate, clean up, and facilitate safe reuse of hundreds of former Kerr-McGee Corporation and Tronox Incorporated (Tronox) sites in 31 states
- ✓ Tronox bankruptcy settlement involved the United States, 22 states, and other parties to address vast majority of Kerr-McGee and Tronox environmental liabilities
- ✓ Protection of human health and environment



Facility Background Information

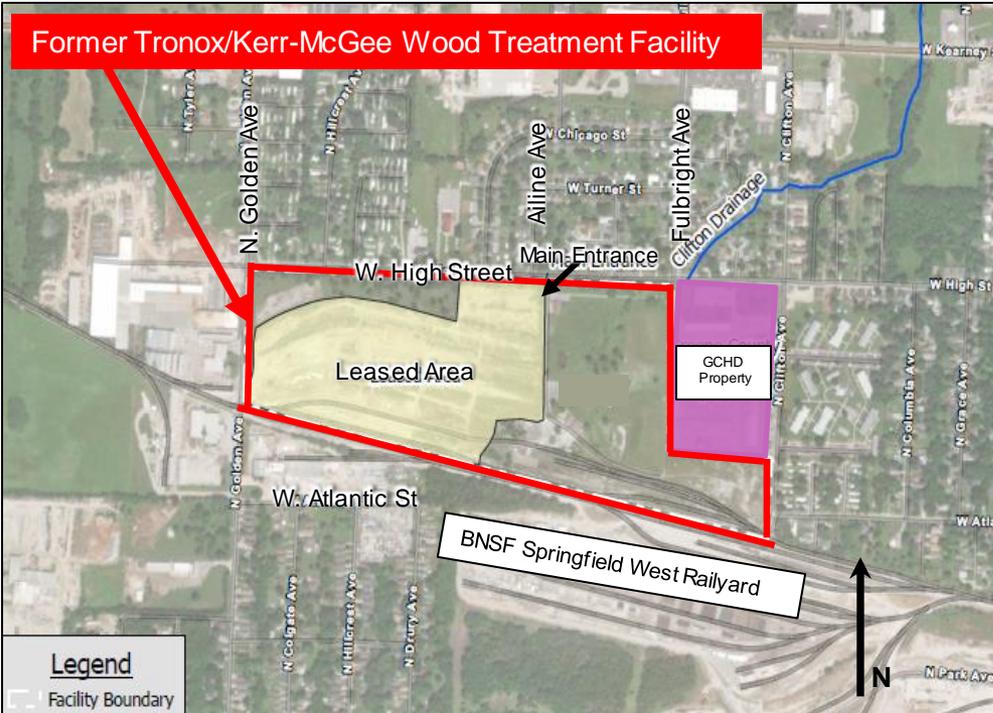
Tasha Lewis, Multistate Trust



Facility Overview

Basic Information

- ✓ 68 acres
- ✓ Contaminants:
 - Volatile Organic Compounds (VOCs) (Benzene, Toluene, Ethylene, Xylenes)
 - Semivolatile Organic Compounds (SVOCs, including Naphthalene)
- ✓ Program: Resource Conservation and Recovery Act (RCRA) Post Closure Care (PCC)
- ✓ Permits
 - Missouri Hazardous Waste Management Facility (MHWMF) Part I Permit (a/k/a RCRA Permit)
 - Missouri State Operating Permit (MSOP)
 - Wastewater Contribution Permit



1907-2004: Owned and operated by Kerr-McGee Corp. and its affiliates

2004 Facility Decommissioned; Mid-2000s Tronox owned and operated

2009: Tronox filed bankruptcy

2011: Multistate Trust owns and operates



Wood Treating Operations

EPA / MoDNR required on- and off-Facility investigations, closure and ongoing PCC of HWMUs and Land Farm, and groundwater corrective actions

Continue performing PCC of HWMU and Land Farm, groundwater corrective actions and other Environmental Actions

Facility-related Contaminants of Concern (COCs)

✓ Volatile Organic Compounds (VOCs)

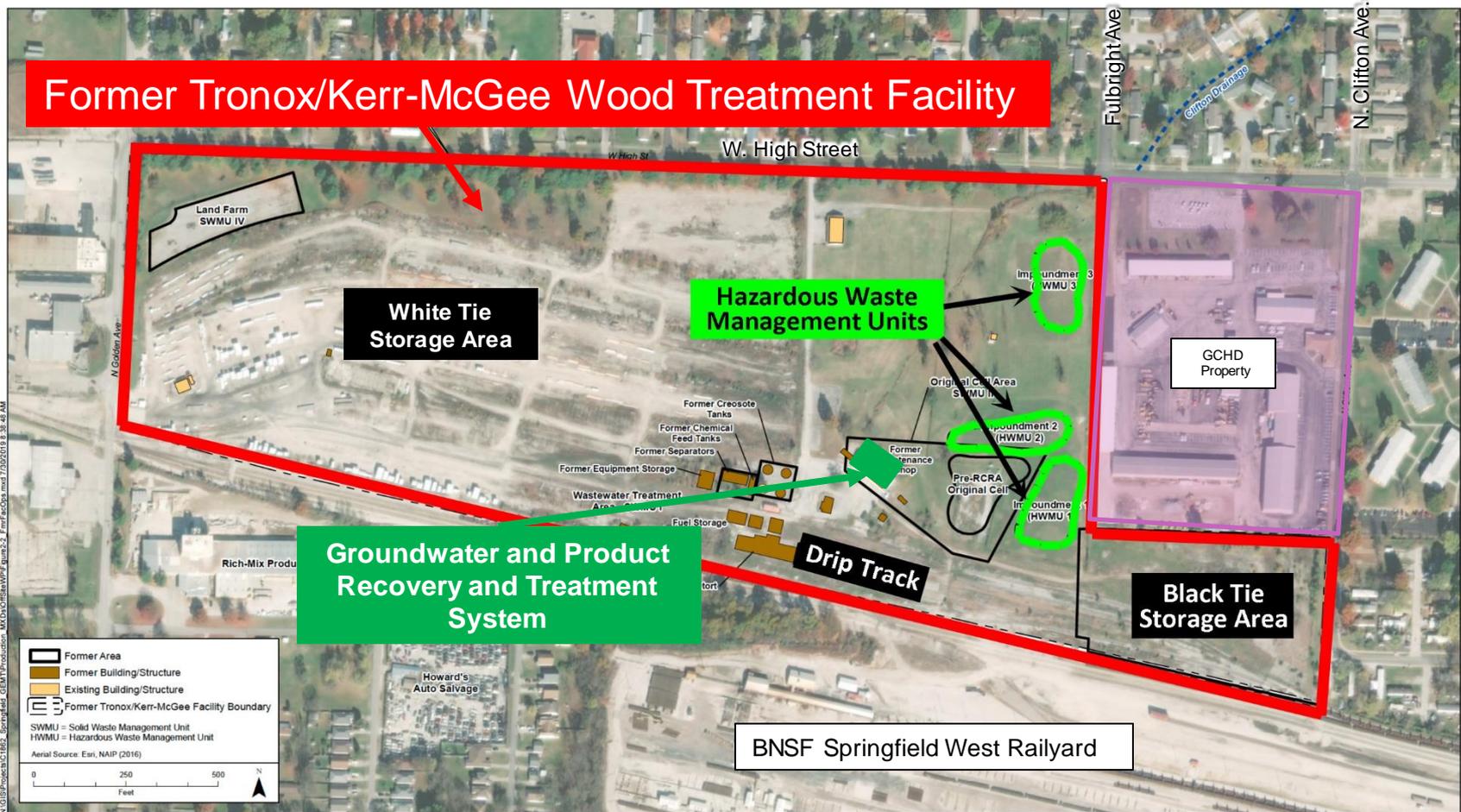
- Benzene
- Ethylbenzene
- Toluene
- Xylenes

✓ Semivolatile Organic Compounds (SVOCs)

- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Benzo(a)pyrene
- 2-Chlorophenol
- Carbazole
- Chrysene
- Dibenz(a,h)anthracene
- Dibenzofuran
- 2,4-Dimethylphenol
- 2,4-Dinitrophenol
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- 2-Methylnaphthalene
- Naphthalene
- Phenanthrene
- Phenol
- Pyrene



Historic Wood Treating Operations



Facility Stormwater and Surface Water

- ✓ Since 1993, Facility has been subject to stormwater regulations
- ✓ Facility is graded such that stormwater leaves the Facility at **only** two locations
 - Outfall 001 and Outfall 002
- ✓ Outfalls are permitted under Missouri State Operating Permit (MSOP) MO-0117331
- ✓ Quarterly sampling and reporting is required



MSOP Regulated Stormwater Parameters

✓ PHYSICAL

- Flow
- Precipitation

✓ CONVENTIONAL

- Chemical Oxygen Demand (COD)
- Oil & Grease
- pH⁺
- Total Suspended Solids (TSS)

✓ METALS

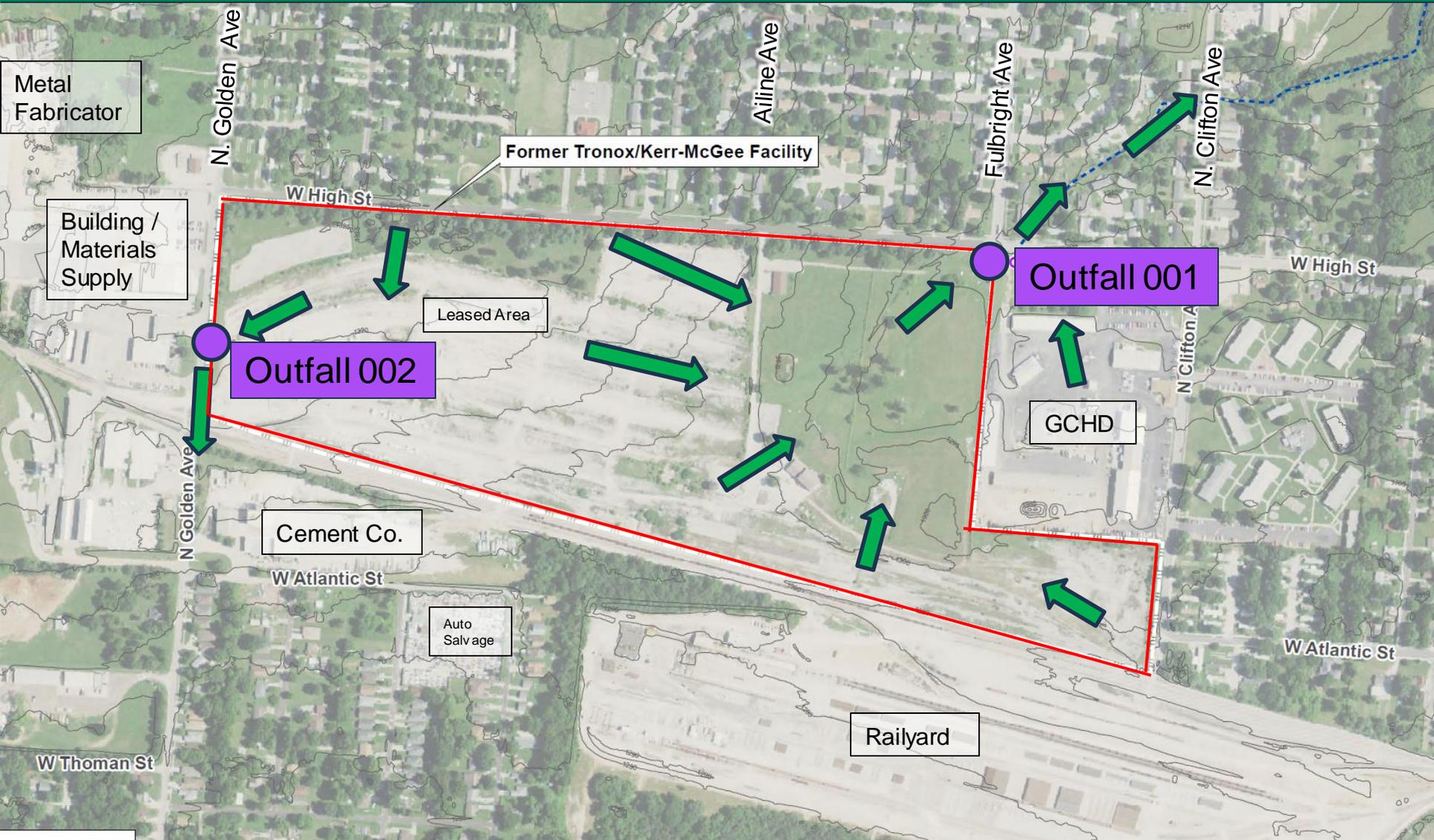
- Arsenic, Total Recoverable
- Chromium III, Total Recoverable
- Copper, Total Recoverable

✓ SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(a)fluoranthene
- 2-Chlorophenol
- Chrysene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene
- 2-Methyl phenol (o-Cresol)



Facility Stormwater and Surface Water



Overview of Past Remedial Actions Conducted by Kerr-McGee / Tronox

Tasha Lewis, Multistate Trust



EPA and MoDNR Required Kerr-McGee (and later Tronox) to Perform Investigations and Remedial Actions

Year	Description
1972	Dense black substance found at Vich Spring (near Woodlawn Spring)
1976	<p>Congress passed Resource Conservation and Recovery Act (RCRA)</p> <ul style="list-style-type: none"><li>▪ Federal law governs hazardous waste management<li>▪ Allowed U.S. Environmental Protection Agency (EPA) to require Kerr-McGee to investigate on- and Off-Facility, including Vich Spring and Woodlawn Spring
1979-1981	Land farming as experimental treatment
1981	Process wastewater lagoons were designated as hazardous waste management units (HWMU)
1985	Kerr-McGee installed subsurface DNAPL (as creosote) collection trenches, oil/water separator system and treated water was discharged under permit to City of Springfield publicly operated treatment works (POTW)
1987	<p>Kerr-McGee entered into a RCRA Consent Order with EPA</p> <ul style="list-style-type: none"><li>▪ Order required Kerr-McGee to define nature, migration rate, and extent of contamination<li>▪ Installed groundwater monitoring wells and product recovery wells
1988	Kerr-McGee entered into a Corrective Action Order on Consent that required Kerr-McGee to design, build and operate groundwater corrective actions

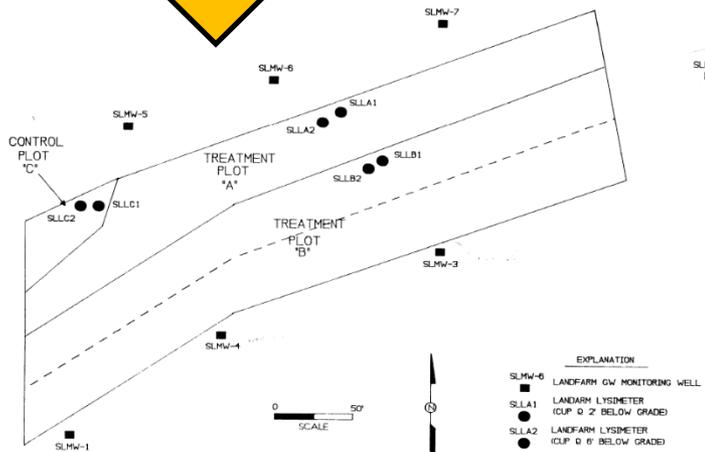
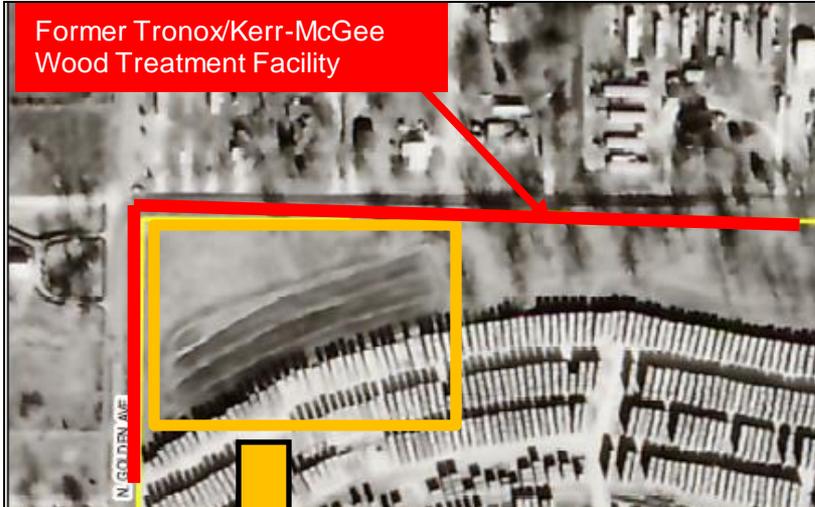
EPA and MoDNR Required Kerr-McGee (and later Tronox) to Perform Investigations and Remedial Actions

Year	Description
1989	Pursuant to MoDNR-approved closure plan, Kerr-McGee closed lagoons by excavating ±29,000 cubic yards of creosote sludge from lagoons, disposing offsite at a regulated hazardous waste landfill, backfilling lagoons with clean soil, and capping with topsoil
1989	Pursuant to MoDNR-approved closure plan, Kerr-McGee closed land farm treatment unit by grading and placing gravel cover (2 feet)
1989-1992	Kerr-McGee / Tronox performed RCRA Facility Investigation
1989-2011	EPA and MoDNR required Kerr-McGee to perform certain investigations and remediation work
2002	<p>EPA and MoDNR issued a MHWMF Part I Permit</p> <ul style="list-style-type: none"> ▪ Permit required PCC of HWMU and Land Farm and groundwater corrective actions ▪ Routine groundwater sampling
2005	MoDNR sampled residential yards in Golden Hills Subdivision; Tronox conducts Woodlawn Spring Study Area Investigation



Experimental Land Farm

Former Tronox/Kerr-McGee
Wood Treatment Facility



Background

- ✓ Land farm established to assess treatment of creosote sludges
- ✓ 1979 to 1981: ± 600-800 cubic yards creosote sludge mixed with fertilizer on 1-acre plot in northwest corner of Facility
- ✓ Soil sampled to determine effectiveness and contaminant degradation rate
- ✓ 1980 to 1985: Groundwater monitored quarterly

Outcomes

- ✓ Effective at reducing contaminant concentrations
- ✓ Groundwater data indicated no significant increase in indicator parameters; no adverse impact on groundwater quality
- ✓ Deemed not viable large-scale treatment of creosote sludge
- ✓ Land Farm PCC Plan approved in 1989 by MoDNR
- ✓ PCC Plan required gravel cover (2 feet), fencing, and monthly inspections



Ongoing Environmental Actions Performed by the Multistate Trust

Tasha Lewis, Multistate Trust



Environmental Actions Performed by Multistate Trust between 2011 and 2022

Year	Description
2011-2022	Continue ongoing operation of Treatment System to capture contaminated groundwater and recover DNAPL (as creosote) (groundwater corrective action); PCC of land farm and HWMUs; and routine groundwater sampling
2013	Recovery Well Evaluation and Site-Wide Groundwater Monitoring Report
2016-2022	On- and Off-Facility site investigations (over 30 groundwater monitoring wells installed; 3 wells remain to be installed)
2017-present	Residential property soil sampling (ongoing)
2017-present	Vapor intrusion investigations / Sewer water and sewer gas sampling (ongoing)
2019-Present	Woodlawn Spring/Outfall 003 surface water sampling (ongoing)
2020-2021	Sewer main line and Facility sewer line repairs
2020	Utility Caution Protocol and implementation
2021	Greene County Highway Department (GCHD) site investigation
2021	Domestic well sampling (results shared with individual residents)
2022	Public water supply sampling (ongoing)
2022	Residential Soil ISM Work Plan Approval (implementation is in progress)

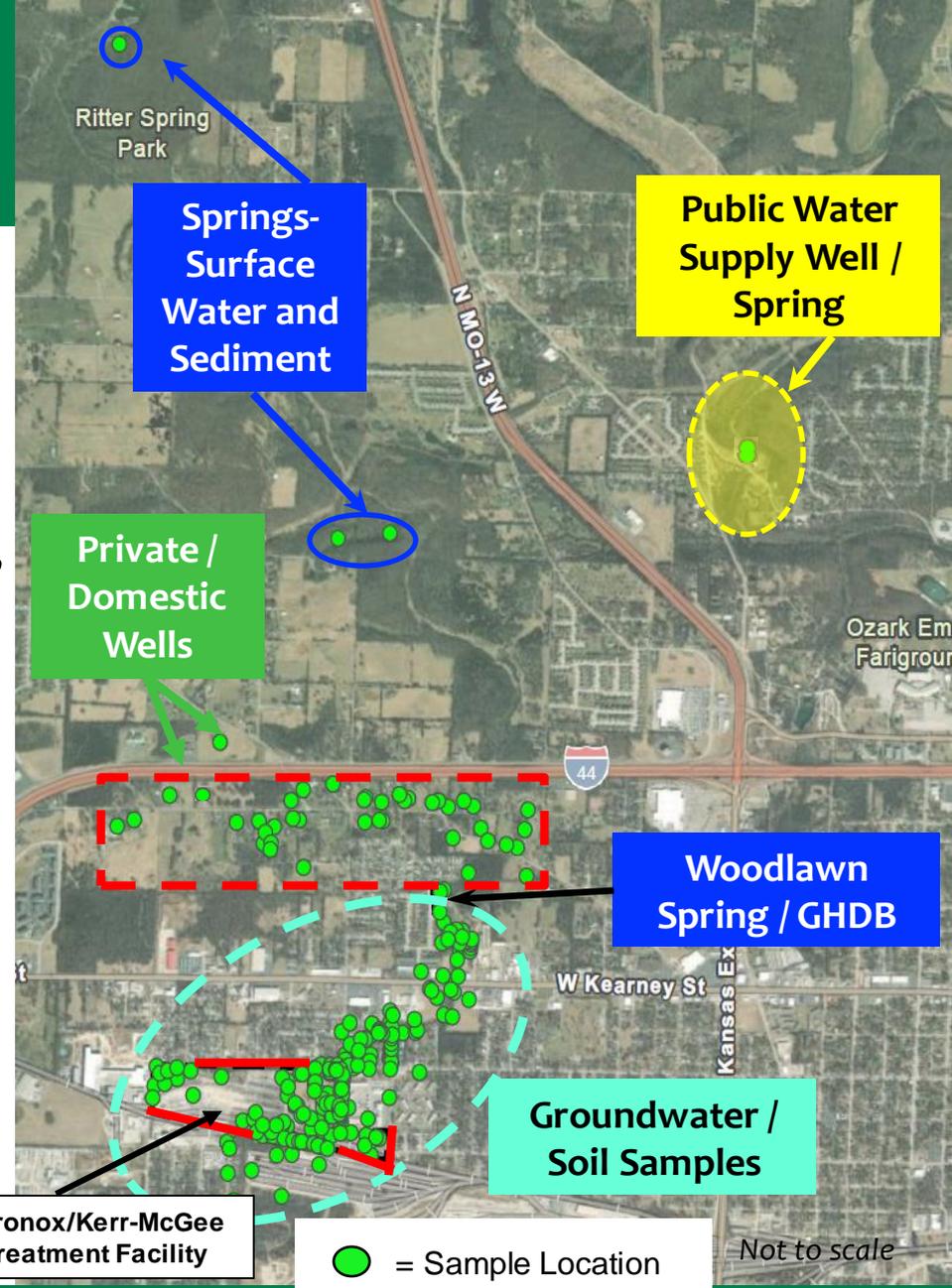
Ongoing Environmental Actions in 2023

Environmental Action	Current Status
Routine HWMU/Land Farm PCC and groundwater corrective action, including operation of Treatment System, routine groundwater sampling and associated permit-related sampling	Ongoing
Quarterly public water supply sampling	Ongoing
Domestic well sampling	Complete (2023)
Woodlawn Spring / Outfall 003 surface water sampling	Ongoing
Implementation of the revised management plan for GHDB	In progress
Residential soil sampling	In progress
Vapor intrusion sampling at 2 additional properties (new ownership has allowed access)	In progress
Replacement of residential sewer lateral pipes	In progress
Install 3 remaining wells	Access pending
Sewer gas and sewer water sampling	Complete (2033)
Surface water, springs and sediment sampling	Complete (2023)

Multistate Trust Sample Locations

✓ Since 2011, the Multistate Trust has collected more than 1,500 samples

- ± 900 total, including groundwater, treatment system, MSOP and Wastewater Discharge permit
- ± 215 soil gas (vapor) / indoor air / outdoor air samples
- ± 75 sewer gas and sewer water
- ± 140 surface water and sediment samples
- ± 10 public water supply samples
- ± 75 domestic well samples
- ± 115 soil samples



Ongoing PCC and Groundwater Corrective Actions

The Multistate Trust continues to:

- ✓ Perform post-closure care of HWMUs and Land Farm
- ✓ Operate the treatment system to capture contaminated groundwater and recover DNAPL (as creosote) (groundwater corrective action)
- ✓ Perform routine groundwater sampling

As of June 2023:

- Recovered more than 6,500^a gallons of creosote
- Treated/ discharged more than ±91,000,000^b gallons of contaminated groundwater

Notes:

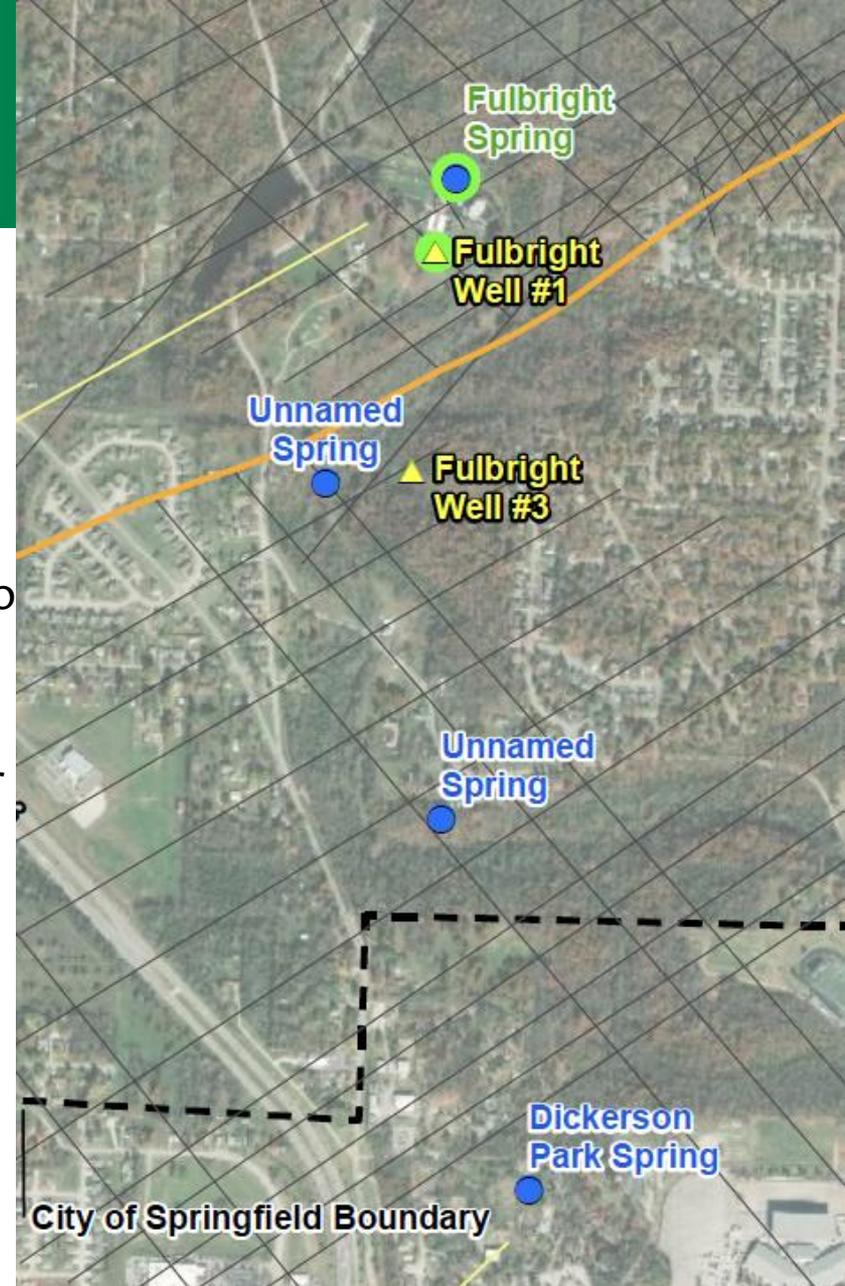
^a Data from 2011 to present

^b Data from 2004 to present



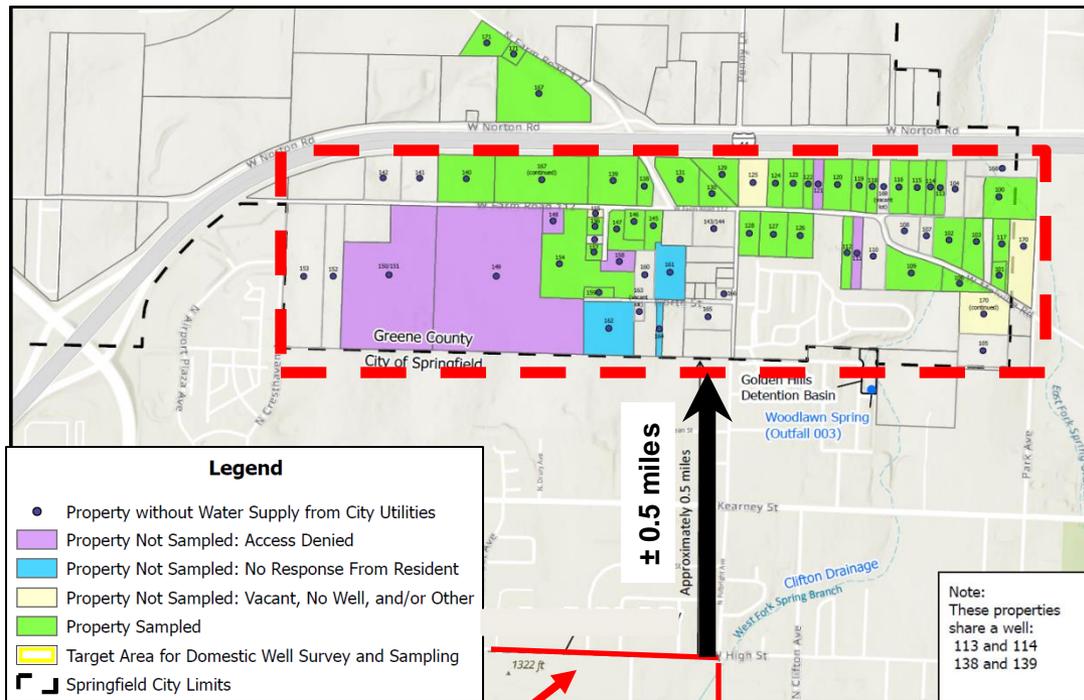
Public Water Supply Sampling (raw sources)

- ✓ Fulbright Spring and Fulbright Well #1
 - Approximately 2.5 miles northeast of Facility
 - Public water supply source
- ✓ Quarterly sampling began in 2022
 - Laboratory analytical results are submitted to City Utilities, with copy to MoDNR, City of Springfield and Greene County
 - Facility-related COCs **are below** groundwater protection standards (GWPS)/maximum contaminant levels (MCLs)
- ✓ Drinking water **meets** all regulatory requirements
- ✓ Quarterly sampling continues



Domestic Well Sampling

- ✓ Previously sampled June/July 2021 (42 properties)
- ✓ Re-sampled in June/July 2023 (49 properties)
- ✓ Preliminary results indicate that Facility-related contaminants in private wells **do not exceed** groundwater protection standards (GWPS) and MCLs, both which are protective of human health
- ✓ Results will be mailed to residents once data validation is complete



Former Tronox / Kerr-McGee Wood Treatment Facility



Implementation of Revised Management Plan for Golden Hills Detention Basin (GHDB)



Existing stormwater basin conditions
(April 2018)



Constructed Treatment Wetlands
(Concept)

- ✓ Continuing to sample Woodlawn Spring/Outfall 003 and GHDB outlet
- ✓ Preparing site characterization/pre-design investigation work plan for review and approval by MoDNR



Revised Management Plan for GHDB

Proposed Schedule

2023

- ✓ Site characterization and pre-design work plan
- ✓ Seek input from City of Springfield
- ✓ Obtain MoDNR approval

2024

- ✓ Implement approved work plan
- ✓ Complete design and begin permitting process

2025

- ✓ Design approval
- ✓ Construction start

2026

- ✓ Construction completion
- ✓ Performance monitoring

Residential Soil Sampling

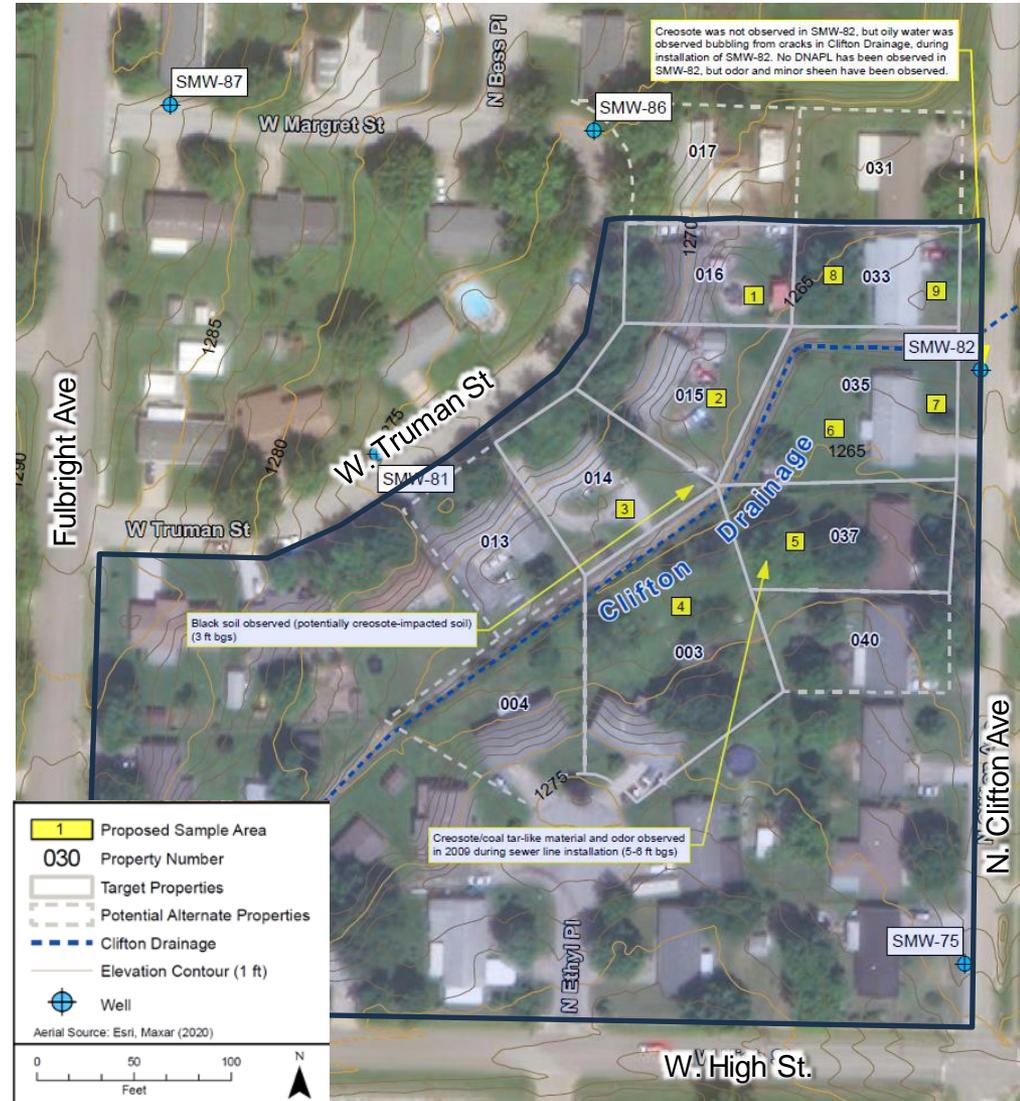
✓ 8 properties identified for surface (0-3 feet below ground surface [bgs]) and subsurface (3-10 feet bgs) soil sampling; 5 properties sampled

✓ Purpose

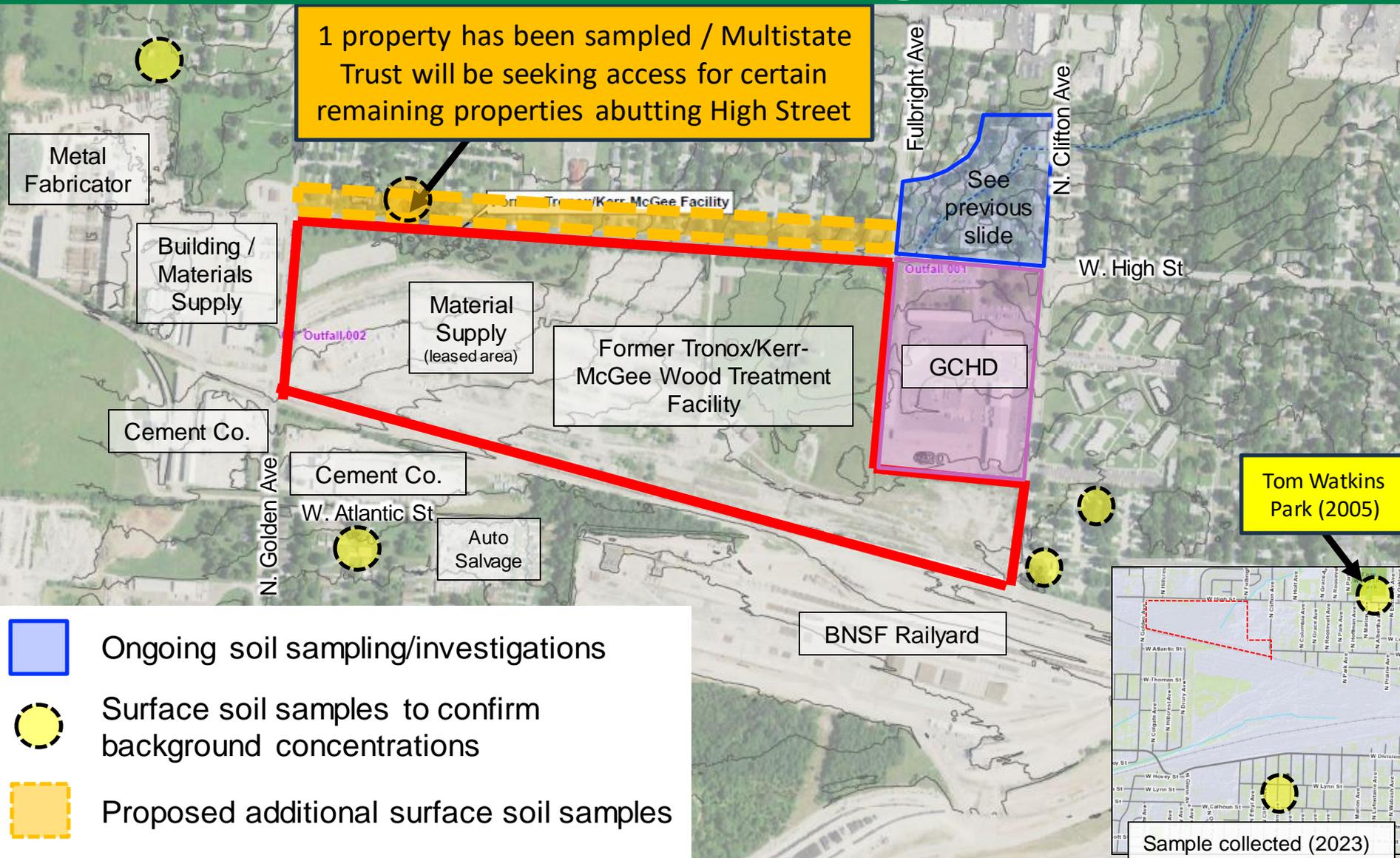
- Determine presence of Facility-related contamination in surface and subsurface soil
- If contamination present, whether the level of contamination is above or below established risk-based levels protective of human health

✓ Results

- Concentrations of Facility-related contaminants are within the EPA acceptable target risk range, thus no additional action is necessary



Proposed Additional Residential Soil Sampling



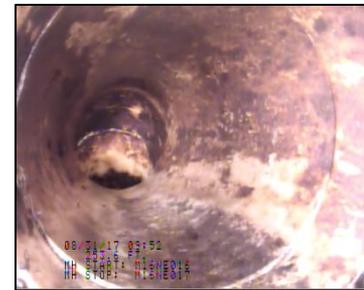
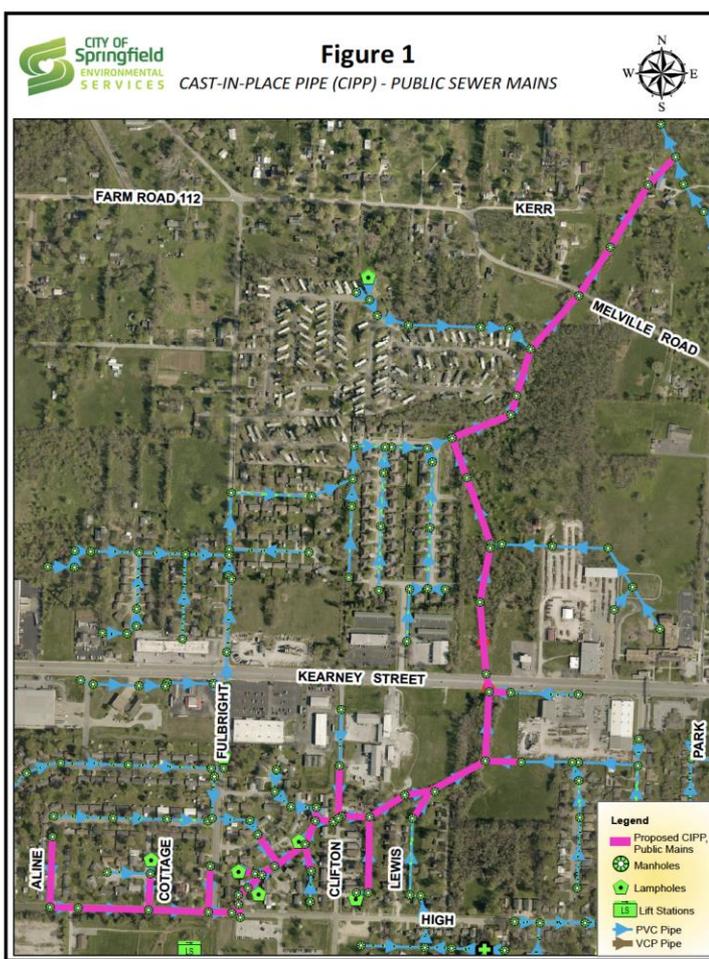
Plan for Replacing Residential Sewer Lateral Pipes

✓ Background

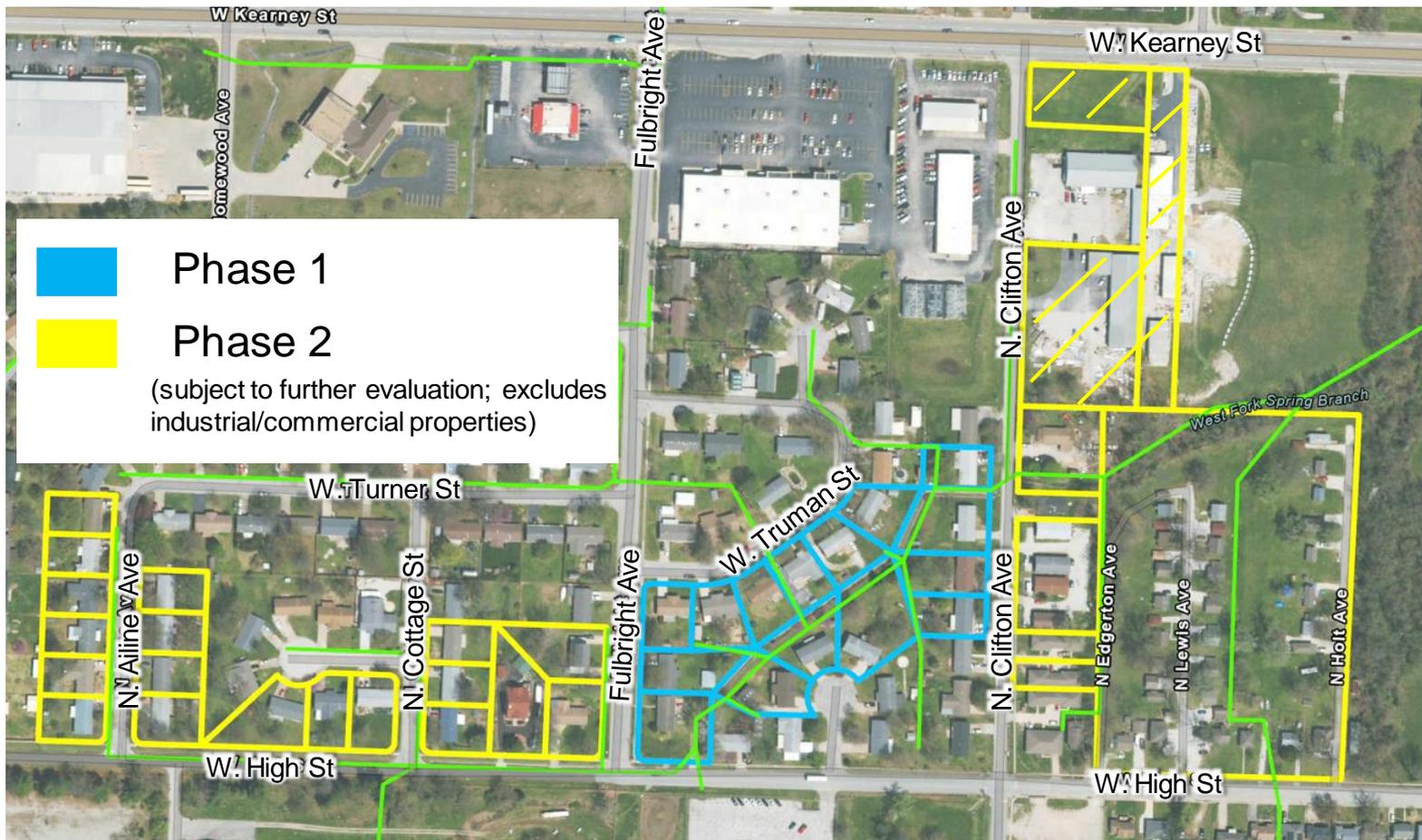
- Known discharges of creosote by Kerr-McGee in 2004
- Sewer pipe is \pm 4–5 feet below ground surface in Clifton Drainage
- Depth to groundwater in Clifton Drainage ranges from 0 to 5 feet below ground surface
- City of Springfield used a video camera to evaluate 9,572 feet of main sewer pipe
- City repaired and trust reimbursed
- Videoed residential residential lateral pipes

✓ Why certain residential sewer lateral pipes?

- Proximity to Facility and the previously damaged main sewer pipe
- Damage observed at certain residential sewer lateral pipe connections at main sewer pipe by City of Springfield
- Cracked lateral pipes act as potential conduits for vapor migration and transport of contamination



Plan for Replacing Residential Sewer Lateral Pipes



Note: Residential properties only; No industrial/commercial properties



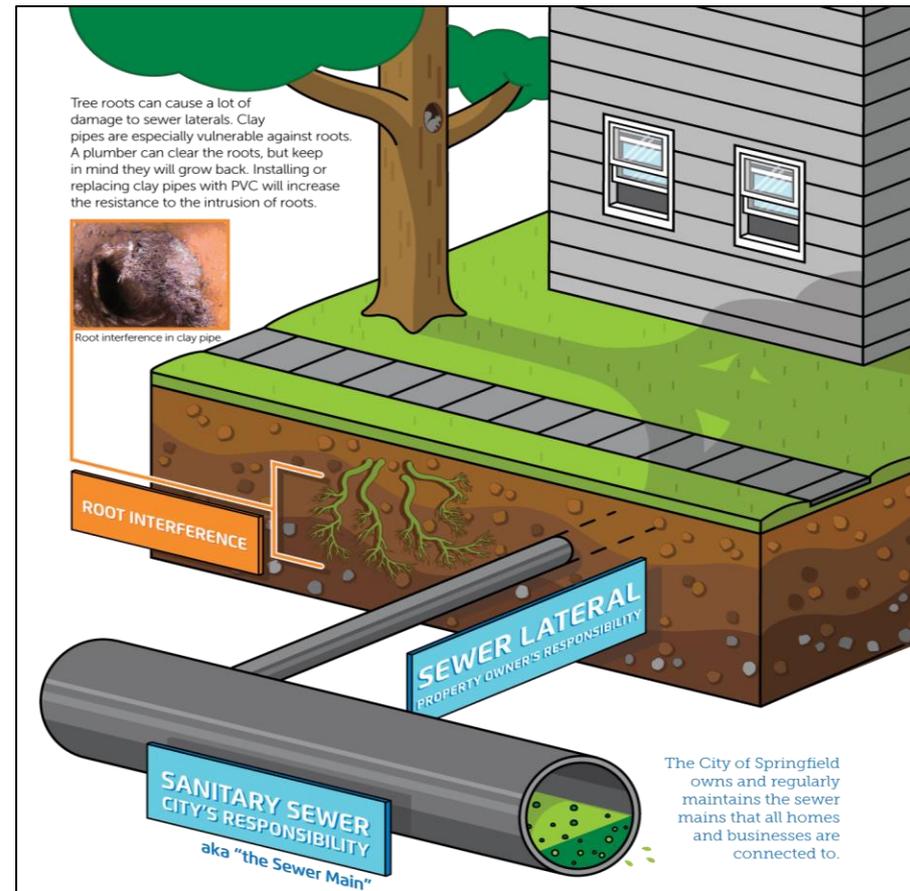
Residential Sewer Lateral Pipes and Next Steps

Background

- ✓ Work focused where lateral connections may have been damaged (based on CCTV)

Next Steps

- ✓ Community outreach
- ✓ Obtain access agreements from property owners
 - Work performed at **no cost to residents**
 - Landscape considerations
- ✓ Obtain final approval from MoDNR
- ✓ Obtain City of Springfield plumbing permit
- ✓ Finalize schedule and perform work
 - Open cut / replace private lateral pipes and lateral connection **at no cost to resident**
- ✓ Restore landscaping



Opportunities for Community Input

Tasha Lewis, Multistate Trust



Involving the Community in Remediation and Reuse Planning

- ✓ Multistate Trust – together with the MoDNR – is committed to working in partnership with community stakeholders on remediation and future use planning at the Facility
- ✓ With our beneficiaries, the Multistate Trust is dedicated to:
 - sharing information and seeking community input as the Multistate Trust investigates and remediates the Facility and facilitates its safe, beneficial reuse; and
 - working with the local community and governmental agencies to turn the Facility into a community asset



This illustration depicts how we work with our beneficiaries, neighbors, and other stakeholders.



Information Repository

The public can access Site documents
in two locations:

- ✓ Online at <https://springfield.greenfieldenvironmental.com/>. Select “Documents” and choose from over 70 key environmental documents, annual submittals, permits, fact sheets, notices and presentations.
- ✓ Permit-related documents can also be found at [the Library Station](#), 2535 N. Kansas Expressway, Springfield, MO 65803.

For additional information,
visit the Multistate Trust’s website:

<https://springfield.greenfieldenvironmental.com/>



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Questions and Discussion

