

Former Tronox/Kerr-McGee Facility

Investigation Update: Areas Southwest and Northeast of the Facility

Springfield, MO

May 24, 2018

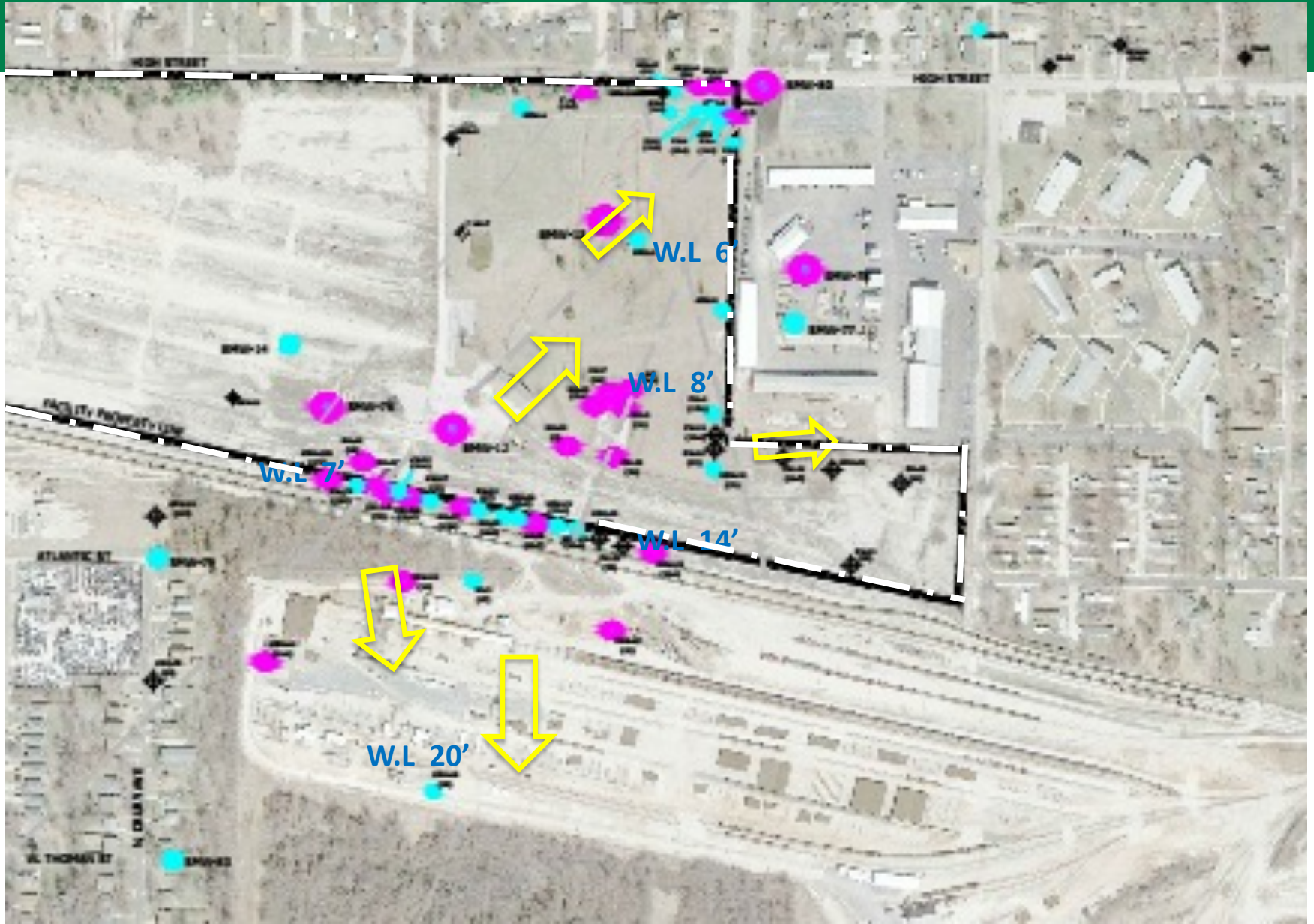


Tonight's Discussion

- Introductions
- Overview of Investigation
- Next Steps
- Preliminary Schedule
- Questions



Groundwater Wells Are Being Monitored to See If Contamination is Moving



During 2016 and 2017 we did field investigations on the Facility, to the southwest, to the east, and to the northeast



Our focus included the neighborhood to the southwest of the Facility

Facility

Google earth

1990

Imagery Date: 3/14/2015 37°14'04.48" N 93°19'59.64" W elev 1300 ft eye alt 5037 ft



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We installed two new wells in the southwest neighborhood to test groundwater quality



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One well is dry (no groundwater). The other well 's groundwater is non-detect for any chemicals of concern





3/2015

Most of our focus has been in the neighborhood to the northeast

FACILITY

Google earth

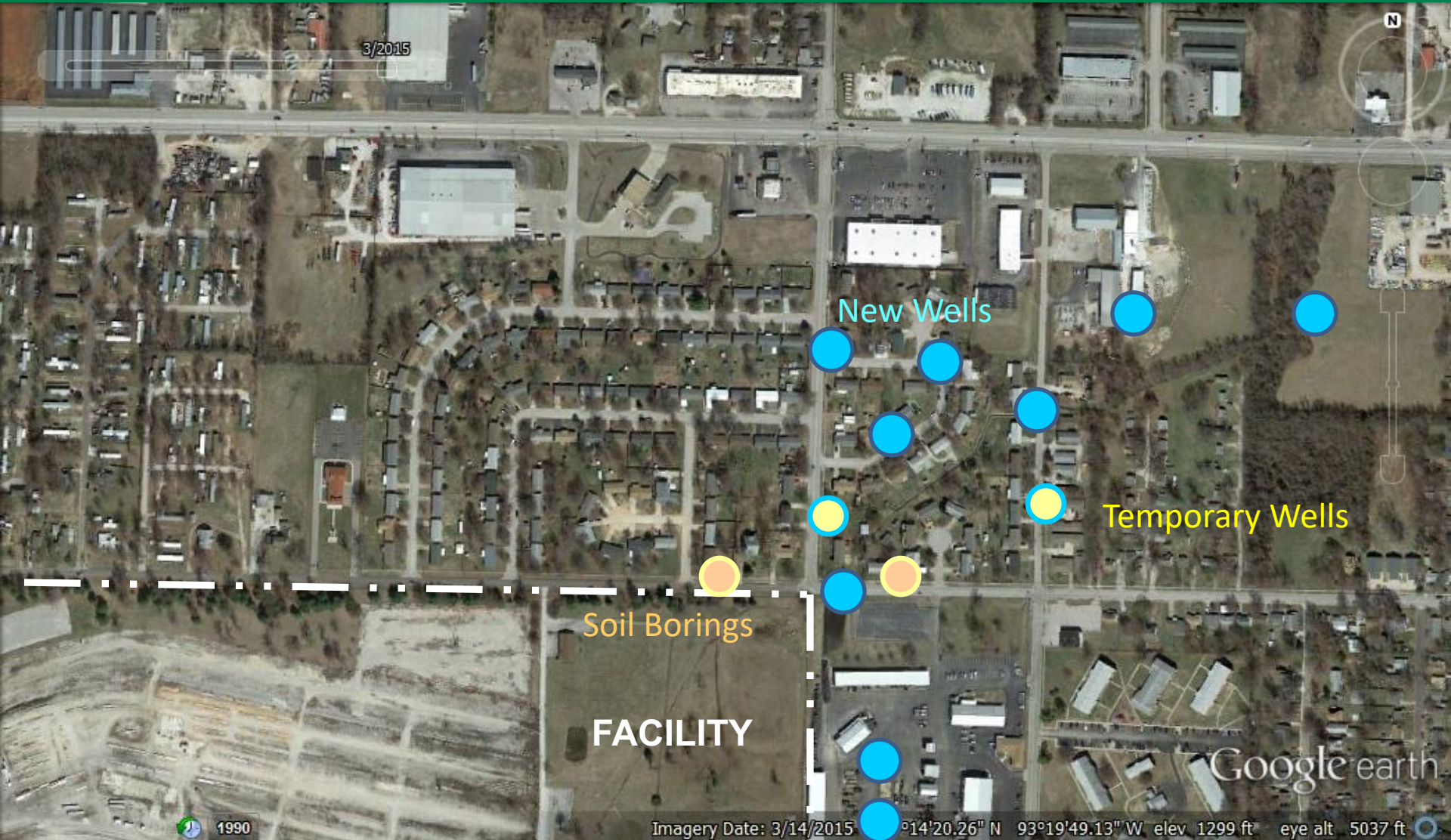
1990

Imagery Date: 3/14/2015 37°14'20.26" N 93°19'49.13" W elev 1299 ft eye alt 5037 ft

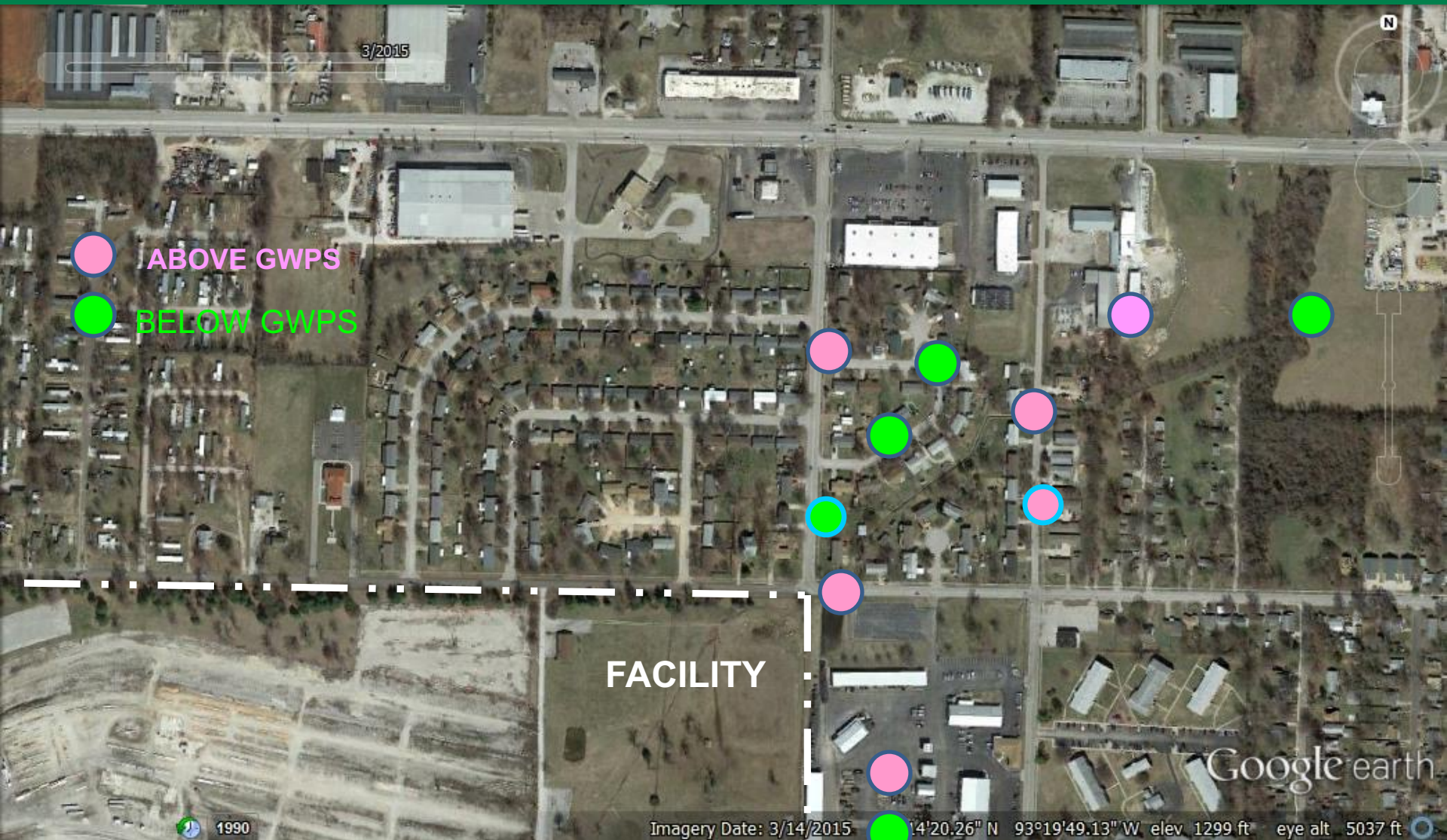


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Since 2016, we installed 7 permanent wells, 2 temporary wells, and sampled 2 soil borings northeast of the Facility and 2 wells to the east

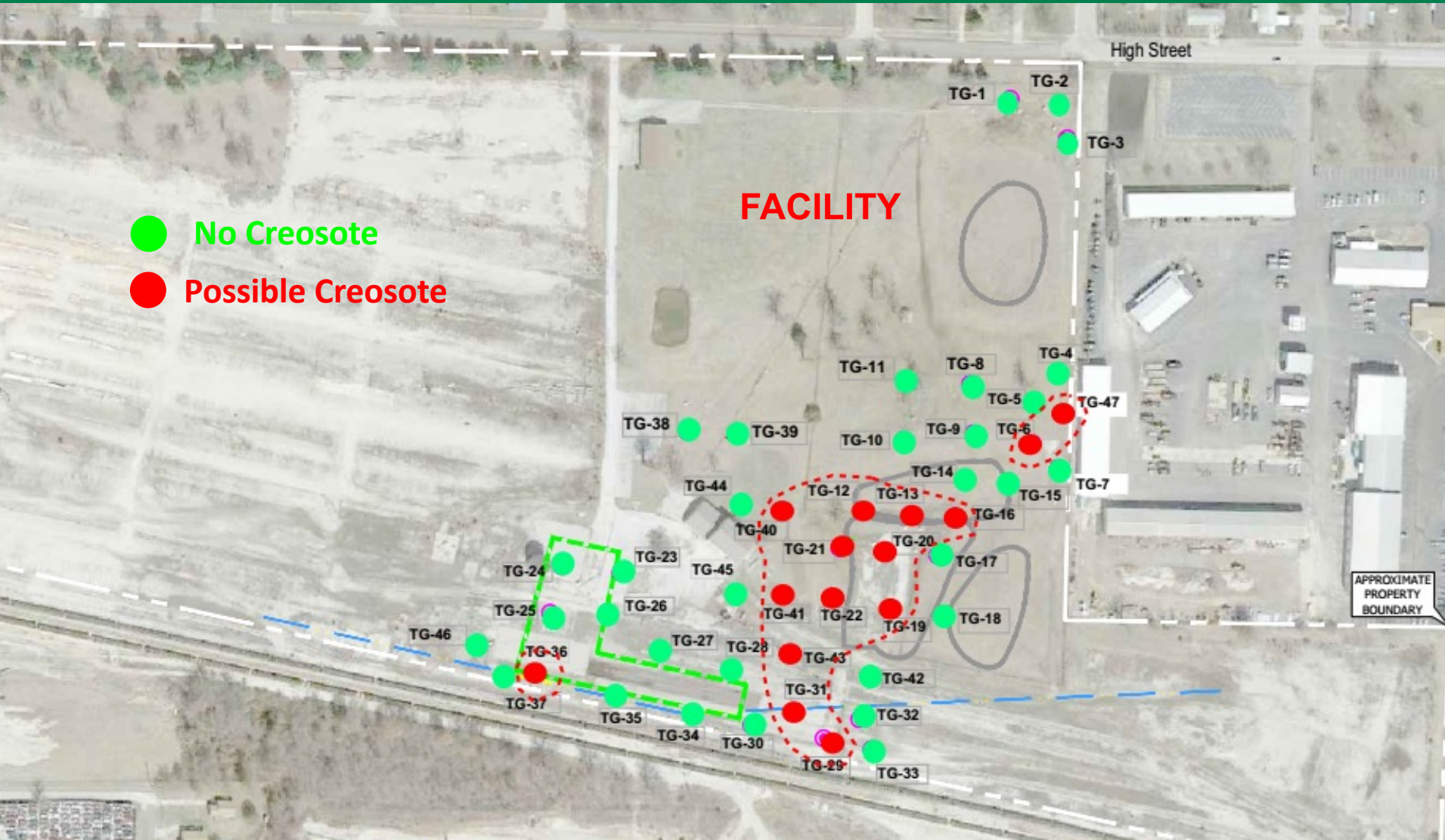


Some wells have no exceedances of groundwater standards.
Some wells consistency exceed the groundwater standards



We completed an evaluation for residual creosote in Facility former source areas and found indications of possible creosote

- No Creosote
- Possible Creosote



We sampled 7 soil borings to verify current status of possible
Remaining chemicals in on-facility soil



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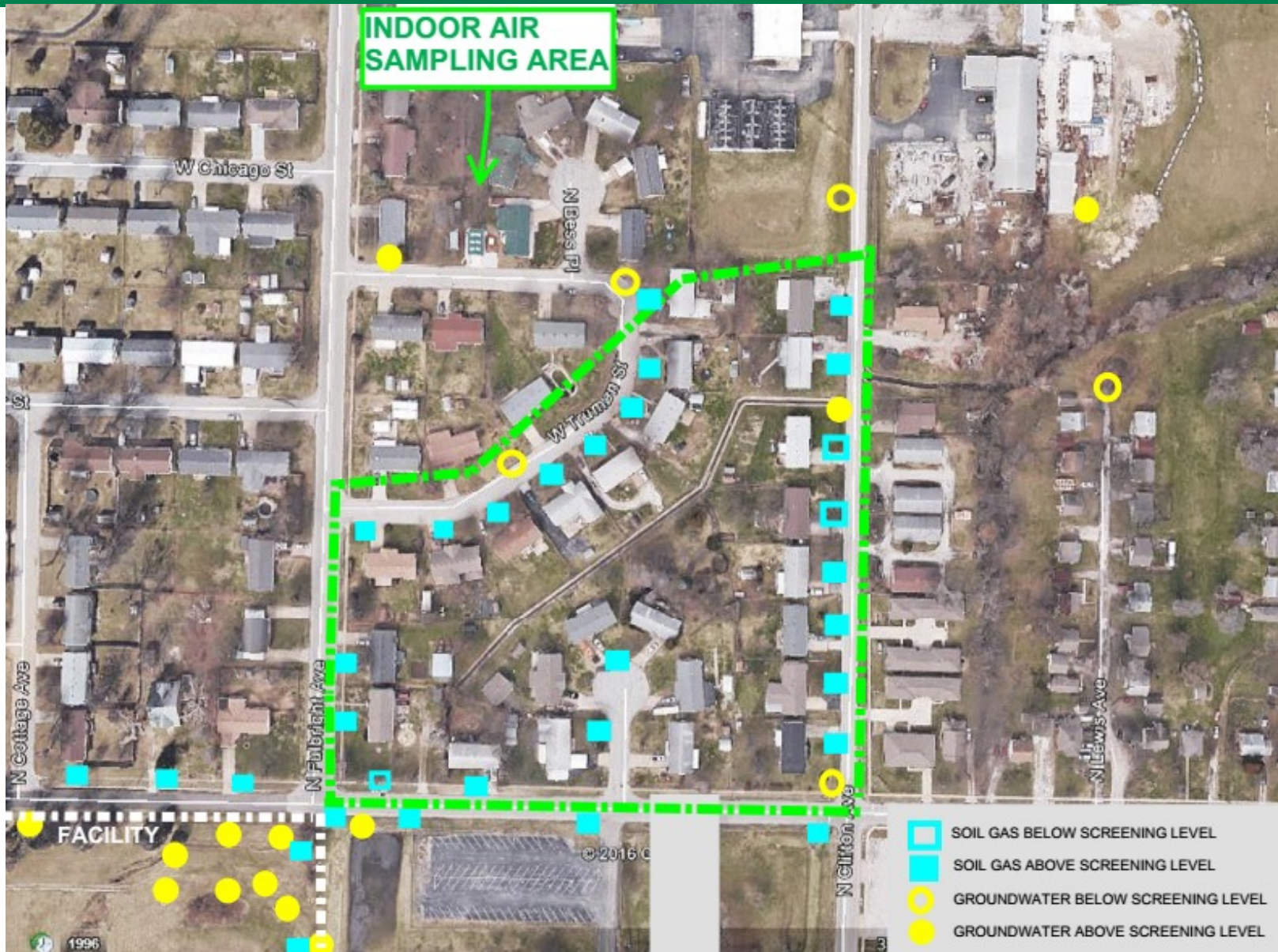
To evaluate the possibility of vapors from known remaining subsurface chemicals, we installed and sampled soil vapor points on-Facility & High St



We also collected soil vapor samples in the northeast neighborhood in Several Locations

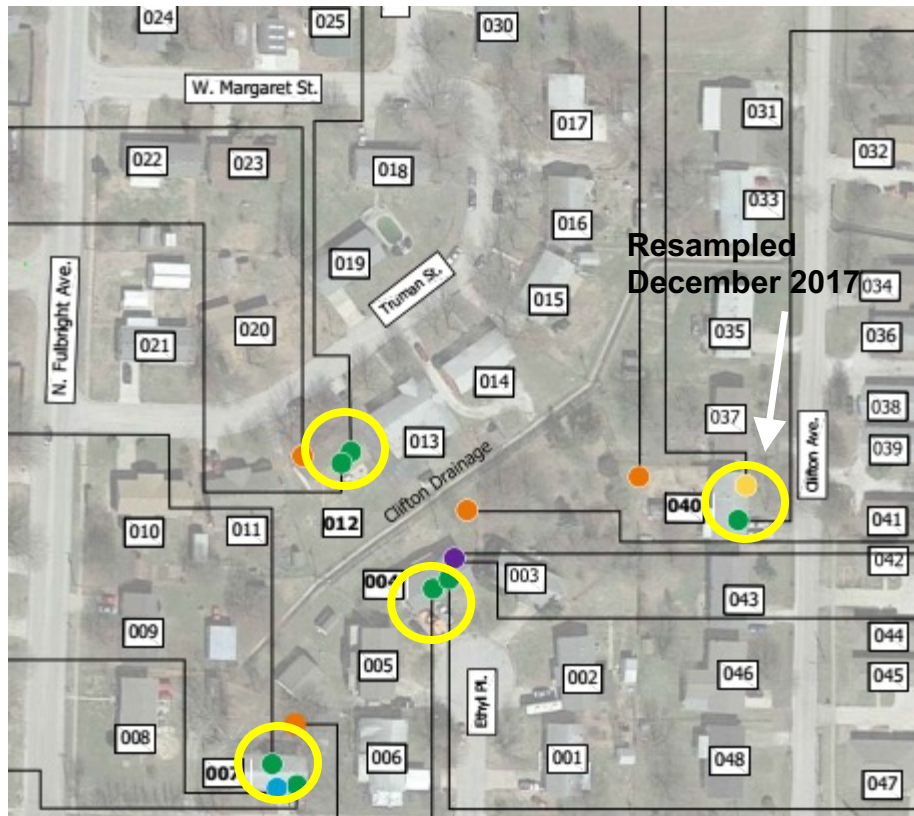


We followed up the Soil Gas Survey by performing indoor air sampling in homes in the primary area of interest



Lauri – FYI Only – here are the homes sampled during August 2017 and February 2018

HOMES SAMPLED AUGUST 2017



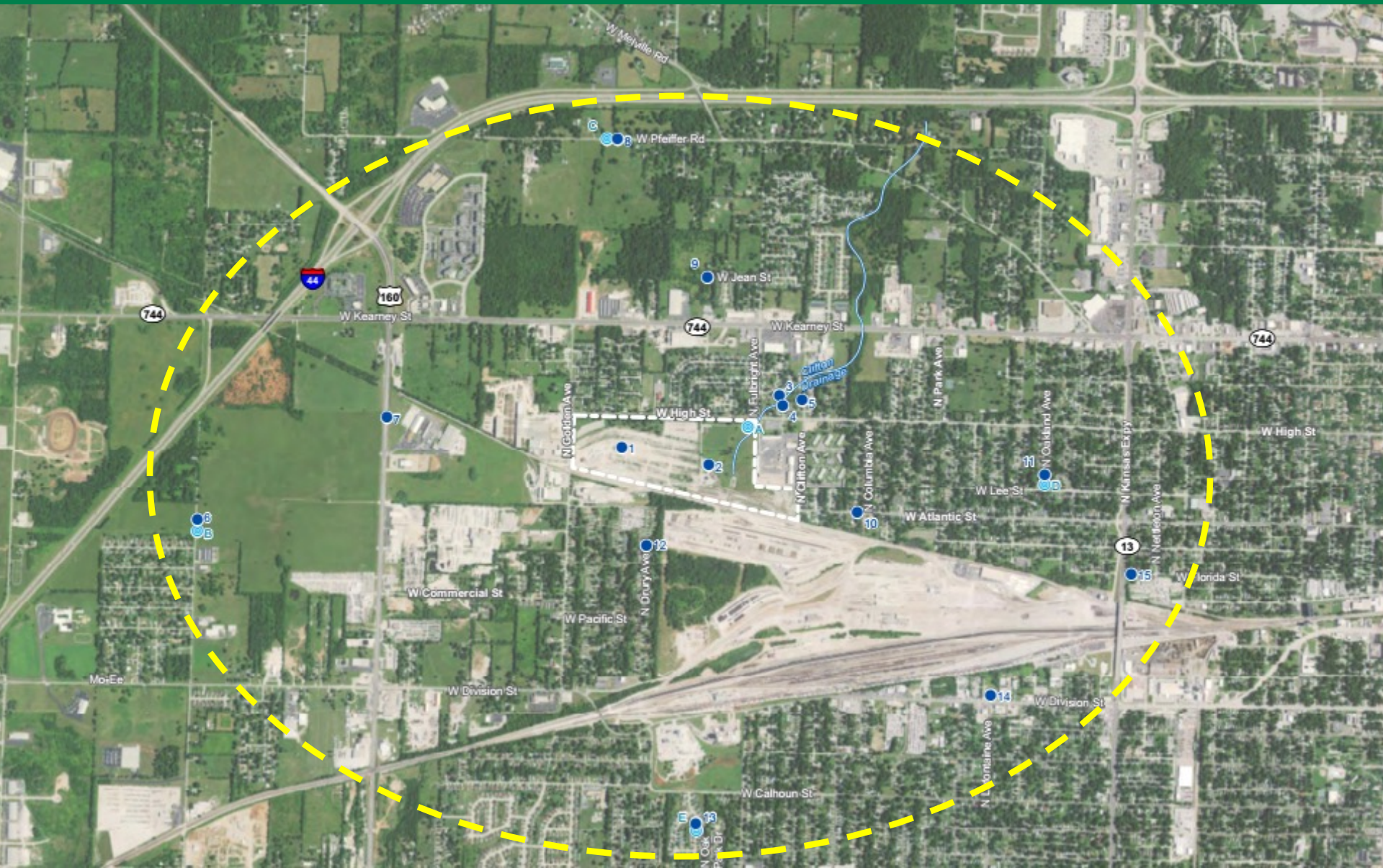
HOMES SAMPLED FEBRUARY 2018



Indoor Air, Subslab, and Crawlspace air samples were collected in August & December 2017, and February 2018

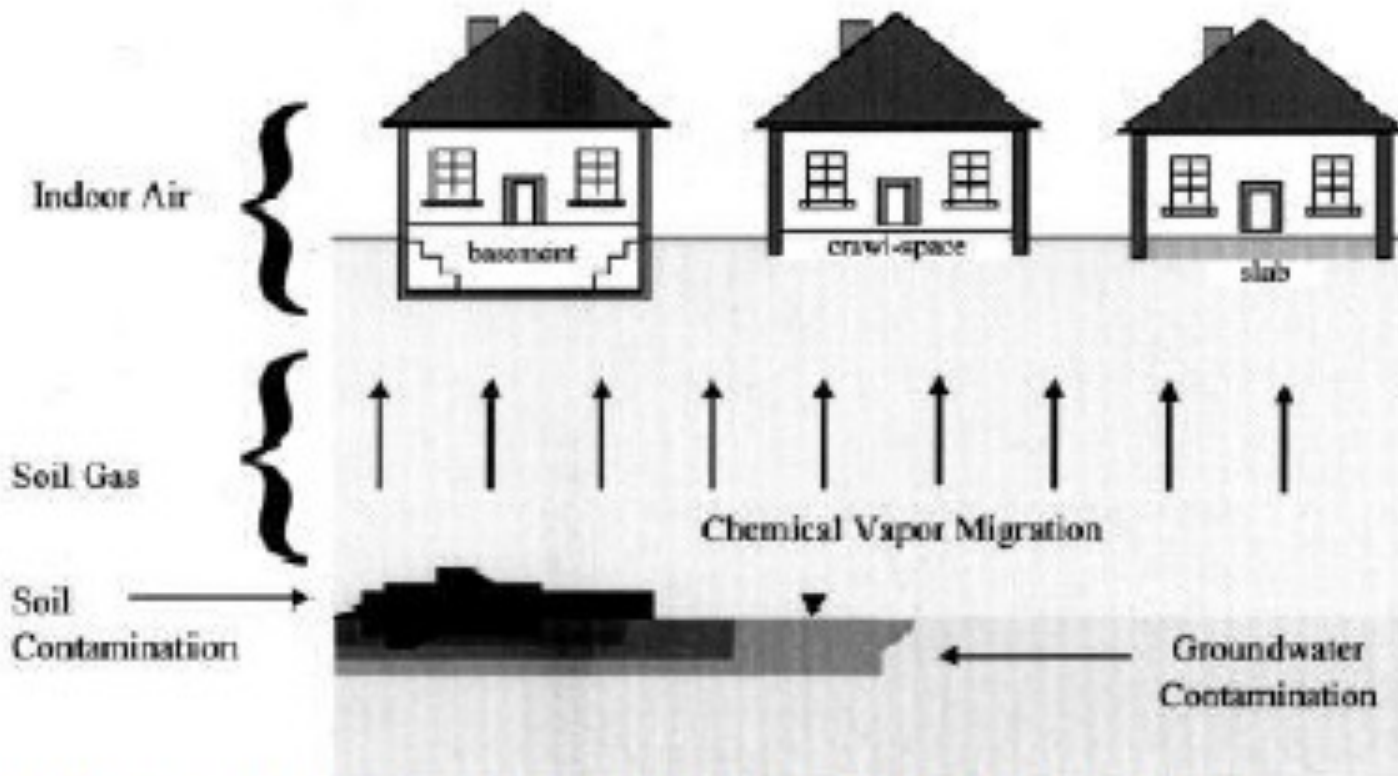
- August 2017: 4 of 9 planned homes were sampled (5 declined to be sampled).
 - All 4 detected BTEX but below indoor air action levels
 - Naphthalene was detected in all 4 at levels exceeding indoor air action levels, but with similar or higher concentrations in outside air samples. Subslab or crawlspace concentrations were less than indoor air results.
- December 2017: One home was repeat-sampled.
 - BTEXN was detected at levels similar to Aug 2017, with naphthalene exceeding indoor air action levels.
 - A sample inside the garage reported BTEXN much higher than indoor air results, but crawlspace results were lower than indoor air results.
- February 2018: 5 different homes were sampled.
 - Each Facility-related chemical was detected in all homes with some chemicals exceeding indoor air action levels in 3 homes
 - Subslab results were non-detect, but outside air results were greater than indoor air samples

To evaluate other possible sources of airborne chemicals, we collected ambient air samples over a large area



Vapor Intrusion

Vapor Intrusion into Indoor Air



This diagram shows how vapors can rise up through the soil and into your home.



We Are Evaluating Results to Protect Human Health

- Groundwater results show levels of some chemicals above Groundwater Protection Standards.
- Because we found volatile chemicals in groundwater, we sampled soil-gas to see if vapors are present.
- Soil-gas sample results are being evaluated and compared against Missouri Department of Natural Resources (MoDNR) determined screening levels to see if indoor-air sampling is needed.



Possible Next Steps Once Screening Levels Are Determined

- No need for urgent action; no immediate health concern
- Screening levels (for lifetime exposure) exceeded at some locations
- Most exceedances are due to a chemical not related to Facility
- Multistate Trust and MoDNR are evaluating results to see where indoor-air sampling may be needed



Possible Next Steps Once Screening Levels Are Determined

- If a home is selected for indoor-air sampling:
 - Homeowner asked for written permission to sample air in home (access agreement). Spring 2017.
 - Gather information:
 - Construction and condition
 - Contents of homes
 - Sample indoor air (several times over a year)
- Sample soil in yards, if flooding (sheen, odors)



Next Steps/Schedule

- Evaluate Sampling Results: Related to Facility? Exceed Applicable Screening Levels? – February
- If Required:
 - Indoor-Air Sampling Work Plan Preparation and MoDNR Approval – February/March
 - Obtain Access Agreements – Spring
 - Perform Home/Building Surveys – Spring
 - Indoor Air and Soil Sampling – Spring/Early Summer
 - Sample Results Available – Summer



**We Are Working Closely with MoDNR and the
Missouri Department of Health and Senior Services
and
We Will Continue to Update You As Additional
Information Becomes Available**

Questions?



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