



February 22, 2021

Ms. Terry Kilian
Mr. Randy Radtke
Citizens for a Clean Wausau
133 E Thomas Street
Wausau, WI 54401

Dear Ms. Kilian and Mr. Radtke:

The Center for Health, Environment and Justice would like to thank Citizens for a Clean Wausau for asking for our evaluation of the Phase 2 Subsurface Assessment at the 1300 Cleveland Avenue site prepared by GEI Consultants, January 22, 2021 for the City of Wausau. Soil samples were collected from this site that found high concentrations of metals, and of particular concern are high concentrations of thallium. Thallium is a metal found naturally in the Earth's crust and is also created during coal combustion. Thallium can be released into the environment by combustion or improper disposal of combustion waste, and when it enters the air, water, or soil it remains there for a long time without breaking down. It can enter the food chain by building up in plants and fish. People can be exposed to thallium by eating these contaminated foods, living near waste sites, breathing contaminated dust, and by touching or swallowing contaminated soil. Exposure to thallium can have devastating effects on many parts of the body. Short-term exposure can cause dysfunction of the nervous system, heart, kidneys, lungs, and liver. It can even cause death. Studies in animals have found that ingesting thallium can cause reproductive and developmental defects. Scientific evidence makes it clear that thallium exposure can pose a danger to human health and life.

The Phase 2 Assessment collected subsurface soil samples from 22 locations at two different depths per location. Thallium was detected in 21 of 44 soil samples in concentrations ranging from 0.8 to 1.7 milligrams per kilogram (mg/kg). As shown on the attached map, many of the locations where thallium was detected are across the street from people's homes. According to the federal Agency for Toxic Substances and Disease Registry (ATSDR), thallium is naturally found in soil at levels from 0.3 to 0.7 mg/kg and is found at hazardous waste sites at an average concentration of 1.7 mg/kg. This means the thallium concentrations detected at the 1300 Cleveland Avenue site are more similar to those found in dangerous soil than those found in safe, undisturbed soil.

Chapter NR 720 of the Wisconsin Administrative Code establishes cleanup standards for soil in order to restore the environment and protect human health from direct contact with a contaminant. The non-industrial direct contact pathway is the cleanup standard at which concentration of a contaminant which, if present in soil, poses a potential risk to human health in exposure conditions typical of non-industrial land use which would include residential use. For thallium, this concentration is 0.78 mg/kg. Because the thallium concentrations measured in these soil samples are above this level, the Wisconsin Administrative Code would consider the thallium at the 1300 Cleveland Avenue site to pose a potential risk to human health.

Similarly, the U.S. Environmental Protection Agency (EPA) has established screening levels for chemicals in order to determine concentrations at which cleanup is warranted. It reports screening levels for seven different thallium-containing compounds, and for five of these compounds, the screening level is 0.78 mg/kg. Thus, by the EPA standard as well, soil contaminated with thallium at levels that exceed this guideline value should be cleaned up to keep people safe.

Although thallium can be detected in native soil as most heavy metals are, the levels of thallium found at the 1300 Cleveland Avenue site are above state and federal guideline values that warrant cleanup. This is particularly important given how dangerous thallium exposure can be and how close some of the thallium-contaminated soil samples are to people's homes. Thus, our recommendation is that in order to protect the health and life of Wausau residents, cleanup and remediation of thallium must be done before any development occurs at the site.

We hope this information is helpful. Please feel free to contact either Mihir or I if you have any questions or would like to discuss this letter report.

Sincerely,

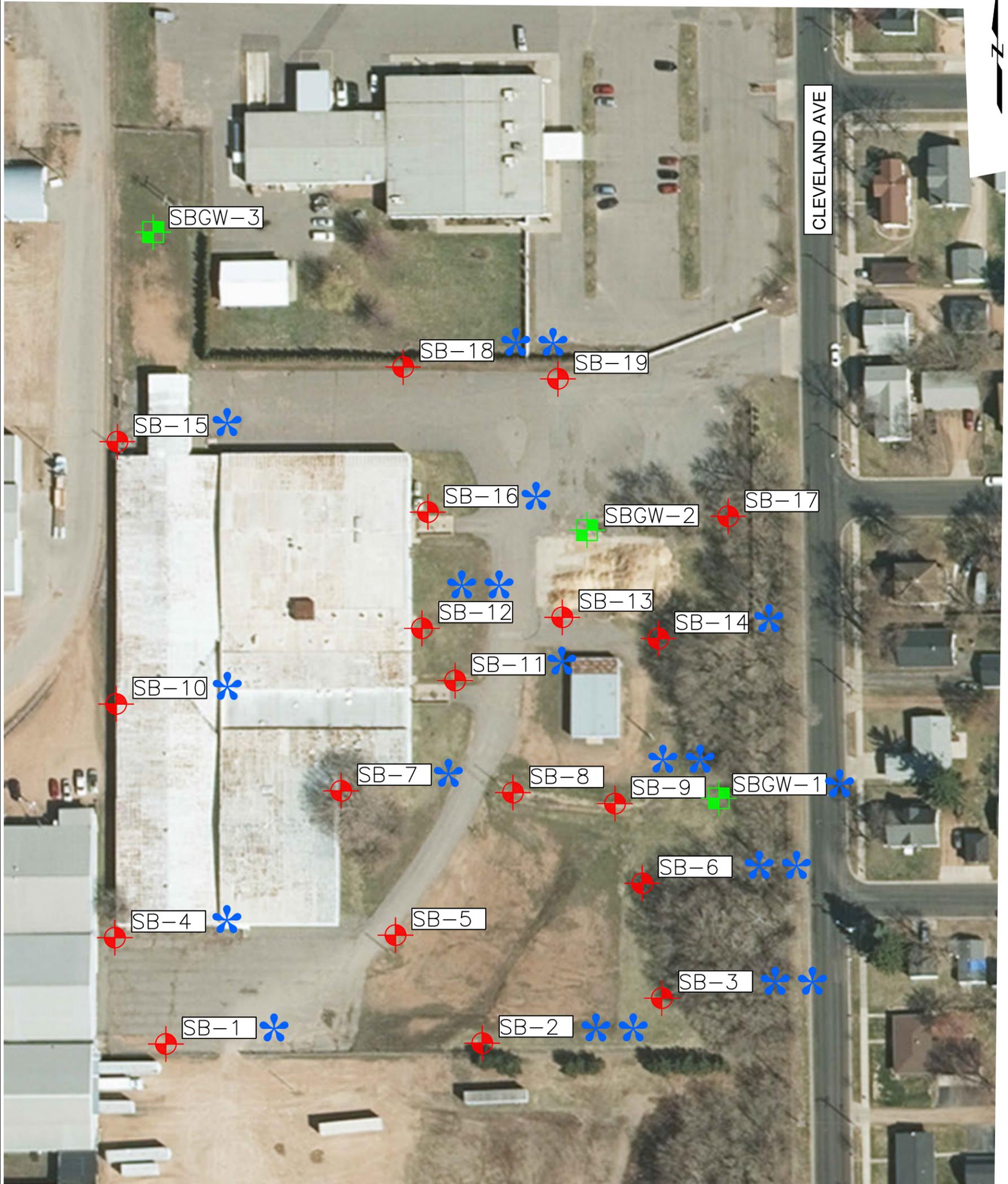


Stephen Lester
Science Director



Mihir Vohra
Research Associate

Attachment



LEGEND

- MONITORING WELL LOCATION  SBGW-2
- SOIL BORING LOCATION  SB-17

* = thallium concentration at this location was above WI cleanup standard at one sampling depth

** = thallium concentration at this location was above WI cleanup standard at both sampling depths

NOTES:

1. HORIZONTAL DATUM WISCONSIN MARATHON COUNTY COORDINATE SYSTEM.
2. VERTICAL DATUM NAVD 88.
3. BACKGROUND IMAGE FROM WDNR IMAGE BASEMAP SERVICE.



PHASE II SUBSURFACE ASSESSMENT 1300 CLEVELAND AVE WAUSAU, WI		SAMPLE LOCATION DIAGRAM	
CITY OF WAUSAU WAUSAU, WI		Project 2004400	January 2021

Fig. 3