

# Census Tract 608 Groundwater Assessment Summary

## Background

The attached epidemiology report shows several census tracts with elevated cancer rates and elevated arsenic in groundwater samples taken previously by the Marion County Health Department. Both liver and pancreatic cancer rates are elevated in Census Tract 608. The boundary for Census Tract 608 is 21<sup>st</sup> St to the north, Shadeland Ave to the east, 10<sup>th</sup> St to the south, and Arlington Ave to the west. Due to limited sampling data for this neighborhood, a groundwater assessment was conducted. Based on the availability of municipal water lines and DNR well logs, 61 residences were suspected of having private wells and were included in the survey. Letters about the assessment were sent to the 61 properties, which were followed up with a door-to-door survey.

## Survey Results

A total of 61 properties were surveyed. Four of the properties were found to be vacant. Of the remaining 57 residences, 34 properties responded to the survey resulting in a 60% response rate. Of the 34 responses, 4 properties are connected to municipal water and the remaining 30 have private wells. Samples were taken and analyzed for 21 wells or 70% of the homes that responded. See **Map 1** for the properties surveyed and sampled.

## Sampling Results

### VOCs

No volatile organic compounds were found above detection limits in any of the samples taken.

### Anions

Well samples were tested for the following anions: Chloride, Fluoride, Nitrates, Nitrites, Phosphates, and Sulfates. All anions were below the Maximum Contaminant Levels (MCLs).

### Metals

Samples were analyzed for the following metals: Arsenic, Barium, Cadmium, Chromium, Mercury, and Lead. Arsenic was detected in 13 of the samples, ranging from 1.2 parts per billion (ppb) to 47.5 ppb. See **Map 2** for the summary of arsenic levels. All other metals were below the MCLs.

### Bacteria

*E.coli* bacteria were found in 2 wells, and coliform bacteria were present in 10 wells. Chlorination instructions were sent out with the lab reports and follow-up inspections were scheduled.








## Conclusions

In this neighborhood, the primary contaminant found in the groundwater is arsenic. Elevated arsenic is defined as levels above the MCL of 10 ppb. Sampling results show elevated arsenic in 57% of the samples taken, or in 12 wells. Information on both the health effects of arsenic in drinking water and water treatment options was disseminated to the properties with elevated levels. Elevated levels are found in several areas of Marion County where the bedrock is New Albany Shale, which is naturally high in arsenic.

# Map 1: CT 608 Survey Results



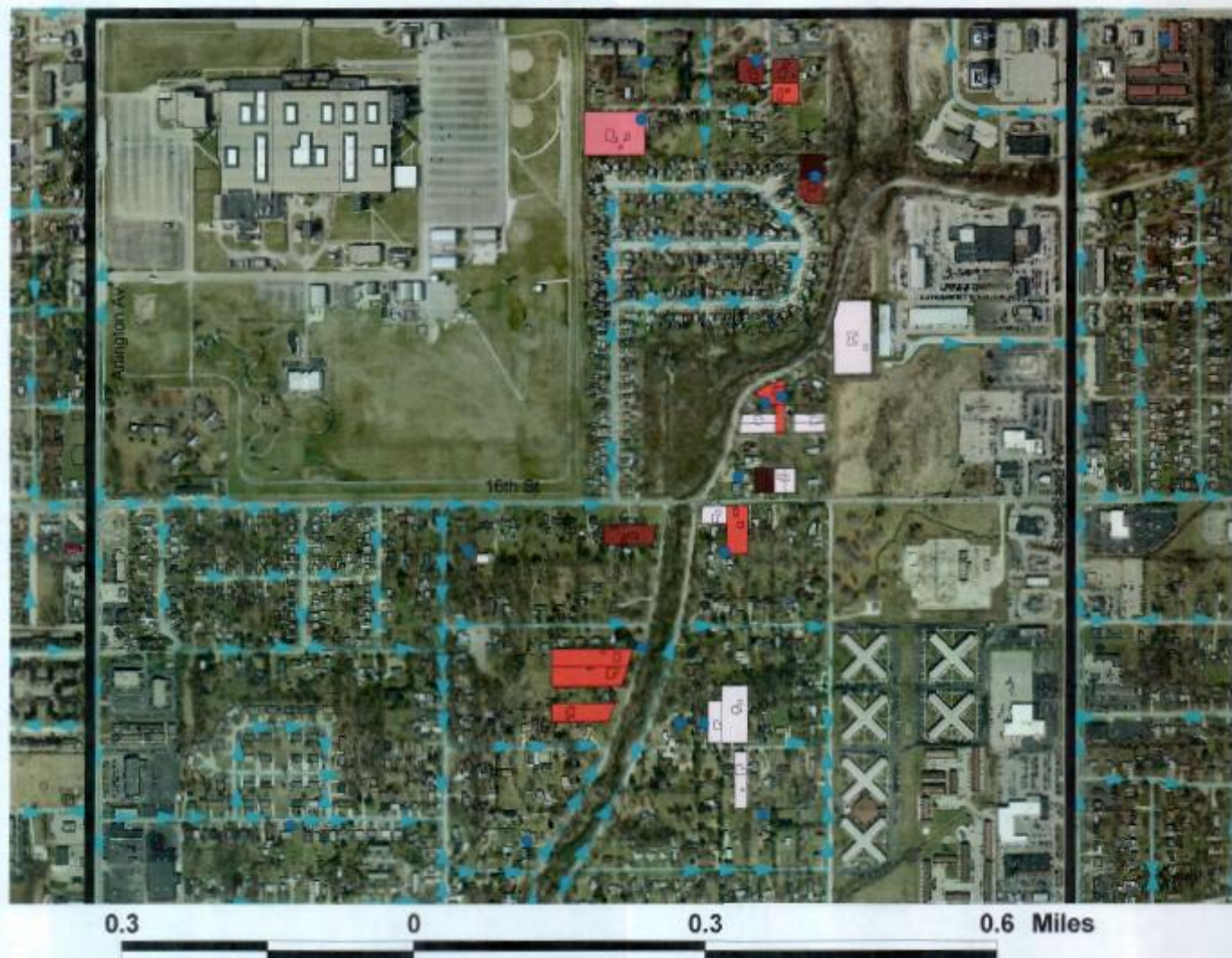
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





-  Water Mains
-  Allwells.shp
-  Buildings
-  City water
-  Vacant
-  Private well, not interested
-  Private well, sampled





## Map 2: CT 608 Arsenic Levels



-  Water Mains
-  Allwells.shp
-  Buildings
-  Parcels.shp
-  Arsenic: Below Detection Limit
-  Arsenic: 1-10 ppb
-  Arsenic: 10-20 ppb
-  Arsenic: 20-30 ppb
-  Arsenic: >30 ppb

