

Highland County Water Company, Inc.

Lead Mapping

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Submitted to:

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Southwest District Office
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By:

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**Highland County
Water Company, Inc.**

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RELIABILITY OF REPORT - DISCLAIMER

Conclusions reached in this report are based upon the objective data available to the CONSULTANTS at the time of forming their opinions and as presented in the report. The accuracy of the report depends upon the accuracy of these data. Every effort is made to evaluate the information by the methods that generally are recognized to constitute the state of the art at the time of rendering the report and conclusions, and the conclusions reached herein represent our opinions.

The CONSULTANTS are not responsible for actual conditions proved to be materially at variance with the data that were available to them and upon which they relied, as presented in the report.

The opinions, conclusions and recommendations shown in the report are put forth for a specific and proposed purpose and for the specific site discussed. The CONSULTANTS are not responsible for any other application, whether of purpose or location, of our opinions, conclusions and recommendations other than as specifically indicated in the report.

INTRODUCTION

Substitute H.B. 512 of the 131st General Assembly that enacted Section 6109.121 of the Ohio Revised Code (ORC), effective September 9, 2016. Division (F) of ORC Section 6109.121 stipulates that not later than six months after the effective date of the law (i.e., March 9, 2017), the owner or operator of a community public water system shall identify and map areas of the distribution system that are known or likely to contain lead service lines and identify the characteristics of buildings serviced by the system that may contain lead piping, solder, or fixtures.

Subsequent to the passage of H.B. 512 and the enactment of ORC Section 6109.121, the Ohio EPA issued a January 6, 2017 guidance document, number PWS-04-001 titled, Guidelines for Lead Mapping in Distribution Systems. This document outlines the Agency's position on how to map a distribution system to identify areas that are known to contain or likely to contain lead service lines, and identify characteristics of buildings served by community water systems that may contain lead piping, solder, or fixtures. Further, the guidance document establishes mapping requirements and recommendations relative to format, scale, land base features (including parcels and buildings served by the system), color schemes and naming conventions for water service lines on both the public and private side of the meter, and the use of coloring or other mapping tools to highlight areas on the water distribution map that are known or likely to have lead services lines, lead piping, solder, or fixtures. Submittal requirements for the map, together with a narrative description of buildings served by the water system likely to contain lead solder, plumbing, or fixtures as well as the list of sampling locations that are Tier 1 sites used to collect samples, as required by rules adopted under ORC Section 6109.121, are also outlined in the guidance document. The attached map and this narrative report were produced in compliance with Ohio EPA guidance.

HIGHLAND COUNTY WATER COMPANY

Highland County Water Company, Inc. (Highland County Water) serves 11,000 customers in five counties: Highland, Adams, Brown, Clinton and Ross in southern Ohio. Highland County Water began providing water to 2,200 customers in Highland County in 1971. Highland County Water began collecting the data necessary to develop a GIS-based (Geographic Information System) information system in 2010. This data was used as the basis of the mapping required by H.B. 512.

ANALYSIS OF PIPING AT HIGHLAND COUNTY WATER COMPANY

During the development of the GIS system for Highland County, data was collected on the type of piping that had been installed in the system. In addition, each time a leak is repaired or a pipe is exposed for repair, Highland County personnel note the material of each pipe. This data is stored in the GIS system and used to verify the pipe material. This data is summarized in Table 1.

Table 1. Pipe classification in Highland County Water.

Pipe Material	Number of Pipes
Plastic	1941
Asbestos Concrete	227
Ductile/Cast Iron	35

Highland County Water is not responsible for installation of service lines from the meter into the house, or piping and fixtures within the house (this is typically owned by the property owner). However, for the purposes of this mapping (as required by H.B. 512), analysis has been performed to tentatively identify the probable private side service line material and piping within each house served by Highland County Water. The methodology for defining which buildings in the Highland County Water service area may have lead-containing service lines is described below.

PIPING WITHIN BUILDINGS SERVED BY HIGHLAND COUNTY WATER

Few water providers keep records on the piping used on the private side of the meter. Even fewer water utilities have any records or direct knowledge of the type of interior plumbing materials used in the buildings served by the system. Nevertheless, enactment of division (F) of ORC Section 6109.121 now requires water utilities to identify and map areas of their distribution system that are known or are likely to contain lead service lines and identify characteristics of buildings served by the system that may contain lead piping, solder, or fixtures.

Ohio EPA “Guidelines for Lead Mapping in Distribution Systems” outlined the Agency’s recommendations about identifying characteristics of buildings served by community water systems that are known to contain, or likely to contain, lead piping, solder or fixtures. According to Ohio EPA, *“Because it is practically impossible to determine the lead content of an installed fixture, fitting or pipe, it should be assumed that the manufacture or installation date is the primary indicator of the lead content. Therefore, the characteristics of buildings and piping solder or fixtures would be buildings in Ohio built prior to 1998 or that use plumbing material or solder manufactured before 1998 may have materials with greater than 8% lead and are at a higher risk of contributing lead to the drinking water than materials manufactured after 1998. In addition, buildings built and plumbing materials manufactured after 2014 were required to have less than 0.25% lead by weight and have the lowest risk for contributing lead to the drinking water. It should be noted however that, although prohibited, some use of leaded solder or leaded components may have occurred after the prohibitions became effective.”*

To comply with Ohio EPA guidelines, Highland County Water has identified (to the best of its ability given the data available) building served that were constructed before 1998. These buildings are assumed to contain plumbing materials containing higher percentages of lead than those constructed after 1998. Pipes in buildings constructed before 1998 are, therefore, assumed to have a higher risk of contributing lead to the drinking water than pipes in buildings constructed after 1998. Additionally, building constructed prior to 1998 have a higher probability of having a private service line that may contain lead.




To compile data on the year that each building served by Highland County Water was constructed, data was obtained from the Highland County Auditor, Adams County Auditor, Brown County Auditor, Clinton County Auditor and Ross County Auditor. The year that a building was constructed is not typically included in the data download available from a county auditor's website. It was, therefore, necessary to obtain the CAMA file (or equivalent) from each county auditor. Each auditor's office provided this data in slightly different database formats. This data was then standardized before it could be used in geospatial analysis.

Using ESRI ArcMap software, meters were linked to parcels on a county-by-county basis. The parcel ID number was then used to link meters to parcel information from the county auditor's office. When available, data on the year buildings were constructed was linked to the meter and used to develop the dataset on the attached map.

Note that this mapping is subject to limitation imposed by the datasets available from the county auditor's site. These limitations include the following:

1. The "year built" reported by the county auditor is accurate.
2. Not every building is identified with a "year built". In these cases, buildings were identified as "unknown" in the attached map.
3. Manufactured homes in some counties are not identified as having a "year built". In these counties, manufactured homes were identified as unknown.
4. When no "year built" was identified on the auditor's site, parcel IDs and/or addresses were searched individually to check whether the land was vacant (included in the "post-1998" classification), or whether a building was on the property (included in the "unknown" classification).
5. Some county auditor's sites contained information on the year a property was remodeled. It was assumed that this remodel did not include replacement of all indoor pipes, and the "year built" was retained for the purposes of this analysis.

Each dot on the attached map represents a Highland County Water customer. The color of the dot represents the most likely date range during which the private-side service line and indoor piping was installed:

-  Pre-1998
-  Post-1998
-  Unknown/No Information

LEAD AND COPPER SAMPLING LOCATIONS

As required, attached is a list of Tier I sites used to collect lead and copper samples. The attached table contains contact information for the owner/occupant of each sampling site.

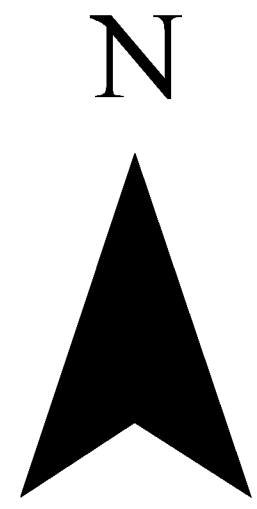
INTENDED USE OF THIS DATA

Data in the attached map has been compiled to facilitate notification in case of a system-wide exceedance in the lead action level. The required notifications are defined in ORC 6109.121(C). Specifically, within 5 business days of receipt of laboratory results showing the system has exceeded the lead action level, the community water system must notify *“all consumers known or likely to have lead service lines, lead pipes or lead solder as identified in the map required to be completed under division (F) of this section.”* In the event of a system-wide exceedance of the lead action level, there are also additional notifications that are required to be made to the entire system, regardless of classification on the attached map.

Respectfully submitted,
BENNETT & WILLIAMS
ENVIRONMENTAL CONSULTANTS, INC.



Kerry H. Zwierschke, P.E., Ph.D.
Principal Engineer



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Each dot on the attached map represents a Highland County Water Company customer. The color of the dot represents the most likely date range during which the private-side service line and indoor piping was installed:

Red: Pre-1998
Green: Post-1998
Grey: Unknown/No Information

Legend

Service Connections

- POST-1998
- PRE-1998
- UNKNOWN

- Pipes-no lead
- Adams County
- Brown County
- Clinton County
- Highland County
- Ross County