Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
300 Sower Boulevard
Frankfort, Kentucky 40601
Phone: (502) 564-2150
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Rebecca Goodman
SECRETARY

Anthony R. Hatton
COMMISSIONER

KENTUCKY DIVISION OF WATER
WELLHEAD PROTECTION PLAN
5-YEAR UPDATE FORM

Update Requirements:

This form should be used for the 5-year update submittal requirements of the Kentucky Wellhead Protection Program (WHPP) in compliance with 401 KAR 4:220 and SDWA Section 1428. Once the form is complete, please sign and send to:

Kentucky Division of Water
Watershed Management Branch
Attention: Dale Booth
300 Sower Boulevard, 3rd Floor
Frankfort, Kentucky 40601 or dale.booth@ky.gov

For assistance, contact Dale Booth at (502) 782-6895 or dale.booth@ky.gov

System Information:

PWS Name: **Benton Water & Sewer**

PWS ID Number: **KY0790029** AI Number: **2922**

Contact Person/Title: **Chad Warren/WTP Operator & Manager**

Mailing Address: **1009 Main Street, Benton, KY 42025**

Telephone: **270·527·8677** Email: **warren.chad75@gmail.com**

System Type*: **Community**
*Community; Non-Transient/Non-Community; Transient/Non-Community

Source*: **Field of 3 wells***Well(s) or Spring(s) and total number of each

AKGWA #(s): **Active: Well #1/00020939 & Well #2/00055959; Inactive: Well #3/00019834**

County: **Marshall** ADD: **PADD**

WWD Permit #: **0483** Permitted Amount (mgd): **1.7**

Population Served: **Residential: 7981; Wholesale: 1606**

Overall Susceptibility Rating*: **Low** *High, Medium or Low

WHPP Changes Summary: **Benton Water & Sewer withdraws its source water from McNairy Formation composed of unconsolidated sand, gravel, silt, and clay deposits within the Jackson Purchase Region, or Mississippi Embayment region of Western Kentucky and surrounding areas. The active wellfield composed of three (3) wells drilled just over 200 feet deep. Over the last 5 years average monthly water withdrawals were 0.957 million gallons per day (MGD) (2021-2025) under Permit #0483. The WHPA delineation includes approximately 1,378 acres of mostly low to high intensity developed land use. The contaminant source inventory indicates eighteen potential types of contaminant sources including predominantly commercial and municipal sites and roadways. The overall susceptibility rating is low. Benton Water & Sewer management strategies include education and outreach via Consumer Confidence Reports (CCR) and the development of Groundwater Protection Plans (GPPs) and Agriculture Water Quality Plans for all activities that have the potential to pollute groundwater.**

Update Form Instructions:

Please complete each section that applies to any system or WHPP updates and submit the supporting documentation. Please indicate if a section is not applicable to this update. **Sections 4 and 6 through 11 are required for every 5-year update**.

Please sign certification on the last page upon completion.

Section Updates:

Section 1: Treatment Plant

If the treatment plant location has changed then provide a new location map below. This can be a county roadmap or a GIS-produced map. Please use the area below to provide relevant details, or to indicate that no change has occurred.

The 2.00 MGD Benton Water Treatment Plant is still located at 701 Poplar St, Benton, KY 42025.

Section 2: Water Withdrawal and Water Quality

If there have been changes in water withdrawal rates or water quality since the last submittal, provide a discussion of the relevant details in the space below (include new Water Withdrawal Permit Number if applicable). Include supporting documentation as an attachment.

Daily average water withdrawals over the last 5 years (2021-2025) are 0.957 MGD, with daily maximum withdrawals averaging 1.107. The 2001 Phase I WHPP reported average withdrawals fluctuating between 0.750 and 1.00 MGD. Benton Water & Sewer's first water withdrawal permit was issued in 1979 and subsequently revised in 1993 and in 2020 for the current rate of 1.70 MGD. The population of Marshall County which is projected to slightly

decline continue through 2050.

Benton Water & Sewer withdrawals from the Jackson Purchase Region, or Mississippi Embayment, which is located the westernmost part of Kentucky. It is bounded by the Tennessee River on the east, Ohio River on the north and Mississippi River on the west. The area is underlain by unconsolidated deposits of sand, gravel, silt, and clay. These deposits are on top of limestone that dips relatively steeply to the west. Groundwater occurs within the unconsolidated granular aquifers and is generally abundant and well records from Benton report yields of 450+ gallons per minute. The ambient condition of groundwater in the Jackson Purchase of Kentucky shows decreasing trends of fluorides and sulfates (Report on the Condition of Ambient Groundwater in Kentucky 2018).

Section 3: Change or Modification to Groundwater Source

If the system has changed or modified the wells or springs being used, provide the following: 1) a description of changes/modifications; 2) copies of the relevant form(s) (Kentucky Water Well Record, Well Maintenance & Plugging Record, Well Inspection Form or Spring Inventory Record); and 3) any other information relating to well construction (i.e., installation logs, driller's logs, lithological or geophysical logs), below.

The active delineated wellfield for Benton Water & Sewer Department has not been modified since the last update and is composed of three wells including Well #1/00020939, Well #2/00055959, and Well #3/00019834 which is inactive. Well #1/00020939 was constructed in 1990 to 205 feet deep and Well #2/00055959 which was constructed in 1959 to 208 feet deep. Well #3/00019834 is currently inactive and was constructed in 1993 to 202 feet deep. Well #3/00019834 is currently inactive because it was pulling in sand and Benton Water & Sewer Department would like to rehabilitate the well to get it back into production.

Section 4 (REQUIRED): Planning Team

Effective water supply protection requires community involvement and public awareness. Identify the planning team consisting of a leader and at least two team members, with their respective titles, below.

Leader:

Chad Warren/ Operator & Manager

Team Members:

Bethany Cooper/City Clerk & Treasurer
Rita Doson/Mayor

Section 5: WHPA Delineation

If the system is revising a Wellhead Protection Area (WHPA) delineation, or if a new groundwater source has been added since the last submittal, provide a site-specific description

of the local geology and aquifer. Include references for published literature. Provide a summary of any aquifer tests (i.e. pumping tests, slug tests, tracer tests), including data gathering and evaluation methods. Show calculations and supporting data for each WHPA delineated or revised. Include the detailed hydrogeologic report as an attachment.

The current WHPA for Benton Water & Sewer Department has not revised for this update and encompasses approximately 1,378 acres of mostly low to high intensity developed, cultivated crops, and wetlands land cover. Please refer to the table below for the WHPA delineation:

Zone	Time of Travel (TOT)	Acres
1	180-day	26.40
2	10-year	1,378.34
3	Hydrologic boundary	1,378.34

Section 6 (REQUIRED): WHPA Map

Provide a WHPA map that shows each groundwater source labeled with the appropriate AKGWA #, all protection zones identified and the Contaminant Source Inventory (CSI) point locations. If no changes have occurred since the last submittal, then a copy of the most recent WHPA/CSI map can be resubmitted. To view the most recent delineations for your system, please visit the Source Water Protection Viewer. Please contact program staff for assistance.

See attached WHPA Map. The wellfield is further delineated into two (2) zones based on time of travel (TOT) and the hydrological boundary for potential contaminants. WHPA-2 & WHPA-3 are delineated as identical areas and overlap due to the groundwater divide. The WHPA includes the following zones:

Zone 1: 180-day time of travel
Zone 3: Hydrologic boundary

Section 7 (REQUIRED): Contaminant Source Inventory

Provide an updated CSI in table format. This can be created using the spreadsheet template provided, and copied into the space below. If no changes occurred since the last update, the table can be pulled from previous WHPP documents. Each contaminant source listed should have a Contaminant Source ID # that corresponds to the WHPA map in Section 6. The CSI table must show the susceptibility determination ranking for each contaminant source. Include a brief narrative discussion of the overall system susceptibility. For more information on potential sources of contamination, please visit the DOW's Web Tools for SWP Planning website. Please contact program staff for assistance.

See attached CSI. Benton Water & Sewer Department currently withdraws from a wellfield that has a delineated protection area of approximately 1,378 acres of mostly low to high intensity developed, cultivated crops, and wetlands land cover. The contaminant source inventory indicates eighteen potential types of contaminant sources dominated by commercial and municipal sites and roadways. The overall susceptibility rating is low.

Section 8 (REQUIRED): Management Strategies

Provide a discussion of the previous and newly proposed management strategies to prevent source water contamination. This discussion must include the previous management strategies that were implemented as well as the goals that were met. Next, include any NEWLY proposed management strategies, associated goals, implementation plans and the party responsible for implementation. For information about wellhead protection strategies please visit the DOW's Source Water Protection Strategies website.

Previous Management Strategy Update:

Benton Water & Sewer Department pursues public education and outreach to manage the WHPA including using the Consumer Confidence Report (CCR) and the development of Groundwater Protection Plans (GPPs) and Kentucky Agriculture Water Quality Act Plans for all activities that have the potential to pollute groundwater.

Newly Proposed Management Strategies:

Benton Water & Sewer Department will continue to pursue public education and outreach activities to manage the WHPA, including using the CCR and the development of GPPs and Agriculture Water Quality Plans. In addition, Benton Water & Sewer Department has historically requested that Water Supply Protection be placed along the roadways along Zone 3 of the WHPA.

Section 9 (REQUIRED): Contingency and WHP Planning

Provide a description of Contingency and WHP Planning. Complete the Emergency Response Phone List, Procedures for Public Notification, identification of Potential Future Problems and the procedures to establish Alternative Water Supplies. This section must also address how often the WHPP will be reviewed and updated.

Emergency Response Phone List

Fill in all Blanks and Phone Numbers with appropriate information.

Local Emergency Response	Phone Number
Plant Operator	270-527-8677
Benton Fire Department	270-527-6779
Benton Police Department	270-527-3126
Marshall County Sheriff's Department	270-527-3112

Marshall County Rescue Squad	**270-205-8947**
Local Emergency Dispatch	**911**

State and Federal Assistance	Phone Number
Kentucky DOW (Frankfort)	**502-564-3410**
Kentucky DOW Associated Field Office (FO) Paducah Regional Office	**270-898-8468**
Kentucky Environmental Response Team 24-hour response line	**502-564-2380 800-928-2380**
Kentucky State Fire Marshall	**502-573-0382**

Any Other Pertinent Contacts	Any Other Pertinent Numbers
Marshall County Health Department	**270-527-1496**
Purchase Area Development District	**270-247-7171**
Kentucky Rural Water Association	**270-843-2291**

Procedures for Public Notification:

In the event of a water system emergency that would threaten the health or life of the public, use the following procedure. Prepare and broadcast an advisory, including directions for the public. Describe the public notification process and provide contacts for those media outlets. If the system uses methods other than traditional media please list them.

In the event of a water system emergency that could threaten public health, the district would notify its customers via local newspaper, television, and/or radio.

Newspaper, Television, and Radio Stations	Phone Numbers
WPSD TV Local 6	**270-415-1900**
Tribune Courier https://www.tribunecourier.com/	**270-527-3162**
WCBL AM-FM	**270-527-3102**

Potential Future Problems:

Describe the *most likely* scenarios that could threaten the water supply.

Due to land use within the WHPA, the impacts of commercial and municipal activities and incidents or accidents along roadways within the WHPA are the most likely threat to the

wellfield.

Alternative Water Supply (Short and Long Term):
Describe the short term and long-term water supply alternatives that address each of the potential future problems identified above. List all current interconnections with other water systems. Discuss the capacity of each potential alternative water supply to sustain normal operations.

Over the short-term, issuing boiled water advisories, blending source water from permitted wells, and/or water could be purchased from other systems through interconnections. Over the long-term different treatment technologies/processes could be employed, constructing new wells, and/or purchasing water from other systems.

Currently Benton Water & Sewer Department can sell water to Symsonia Water District and purchase water from Symsonia Water District, North Marshall Water District, and Hardin Water Department.

Schedule for Update and Review:

The Wellhead Protection Plan will be reviewed regularly and updated every five years as required by regulation.

Section 10 (REQUIRED): Copies of Public Notices and Education Materials
Provide copies of wellhead protection public notices and education materials distributed.

A copy of this plan will be posted on the Kentucky Rural Water Associations and a link to plan will be printed on customer bills for public notice. A copy will be provided in the attachments for documentation.

Section 11 (REQUIRED): Public Meeting Documentation***
Provide the record of WHPP public meeting attendance, minutes and comments.

A copy of this plan will be posted on the Kentucky Rural Water Associations and a link to plan will be printed on customer bills for public notice. A copy will be provided in the attachments for documentation.

***Non-Community Water Systems are not required to have public meetings for 5-year updates, but must post a public notice in a conspicuous place. A public notice template is provided as a separate document. However, public input and associated documentation are encouraged. Please contact program staff if you have any questions.

Certification Signature (TO BE COMPLETED BY PLANNING REPRESENTATIVE):

"I certify that this document and all attachments were prepared under my direction or supervision. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Signature: _____ **Date:** Click here to enter text.

Printed Name/Title: Chad Warren/WTP Operator & Manager

Assistance:

For any assistance, please contact Wellhead Protection Staff:

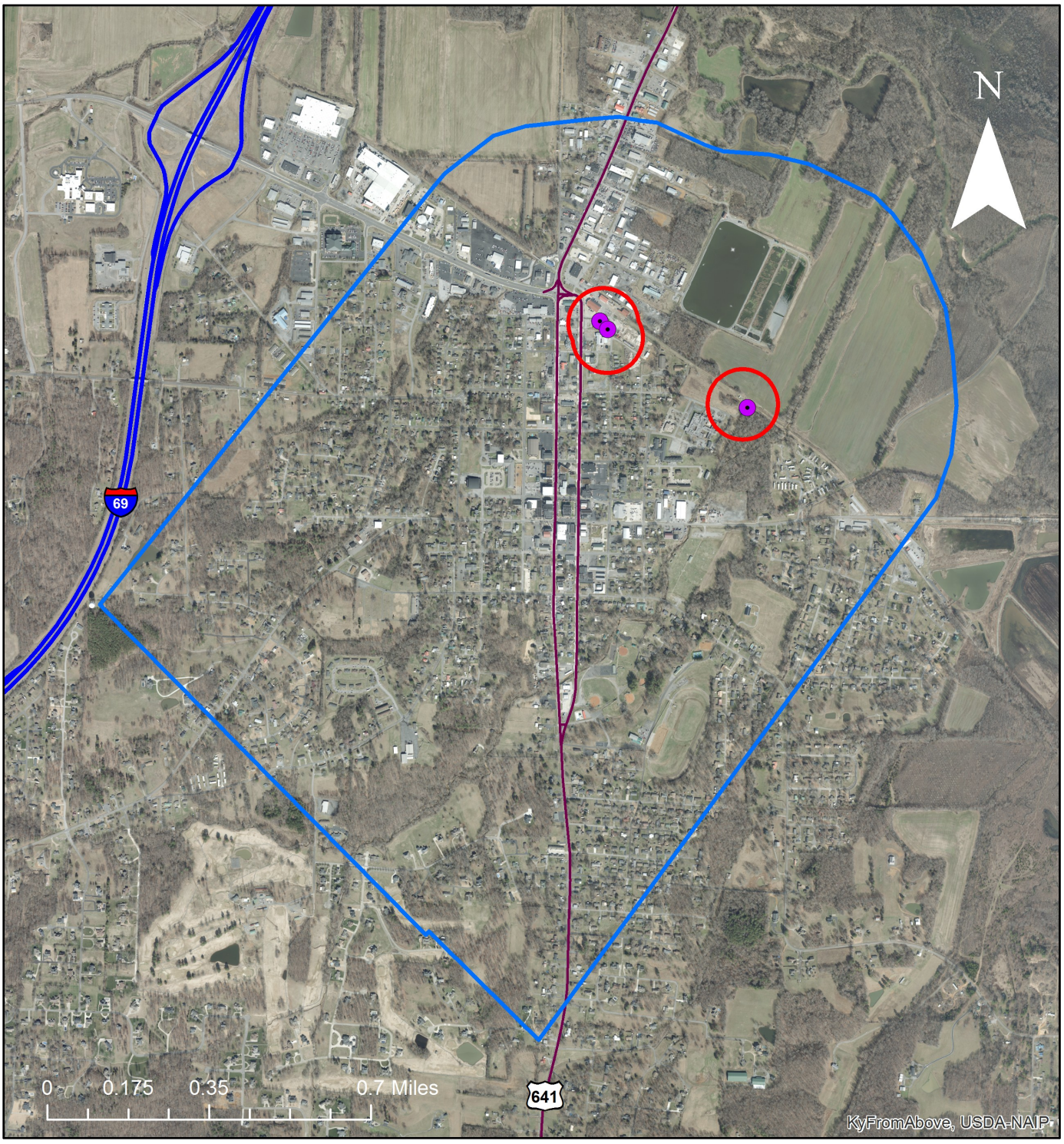
Dale Booth
(502) 782-6895
Dale.Booth@ky.gov

Allan Shingleton
(502) 782-6907
Allan.Shingleton@ky.gov

Please sign and return completed form to:

Kentucky Division of Water
Watershed Management Branch
Attention: Chip Zimmer
300 Sower Boulevard, 3rd Floor
Frankfort, Kentucky 40601
or Dale.Booth@ky.gov

Section 6: WHPA Map



Legend

- Water Wells (PWS)

WHPA

- Zone 1: 180 Day time of travel for a potential contaminant
- Zone 3: Hydrologic boundary



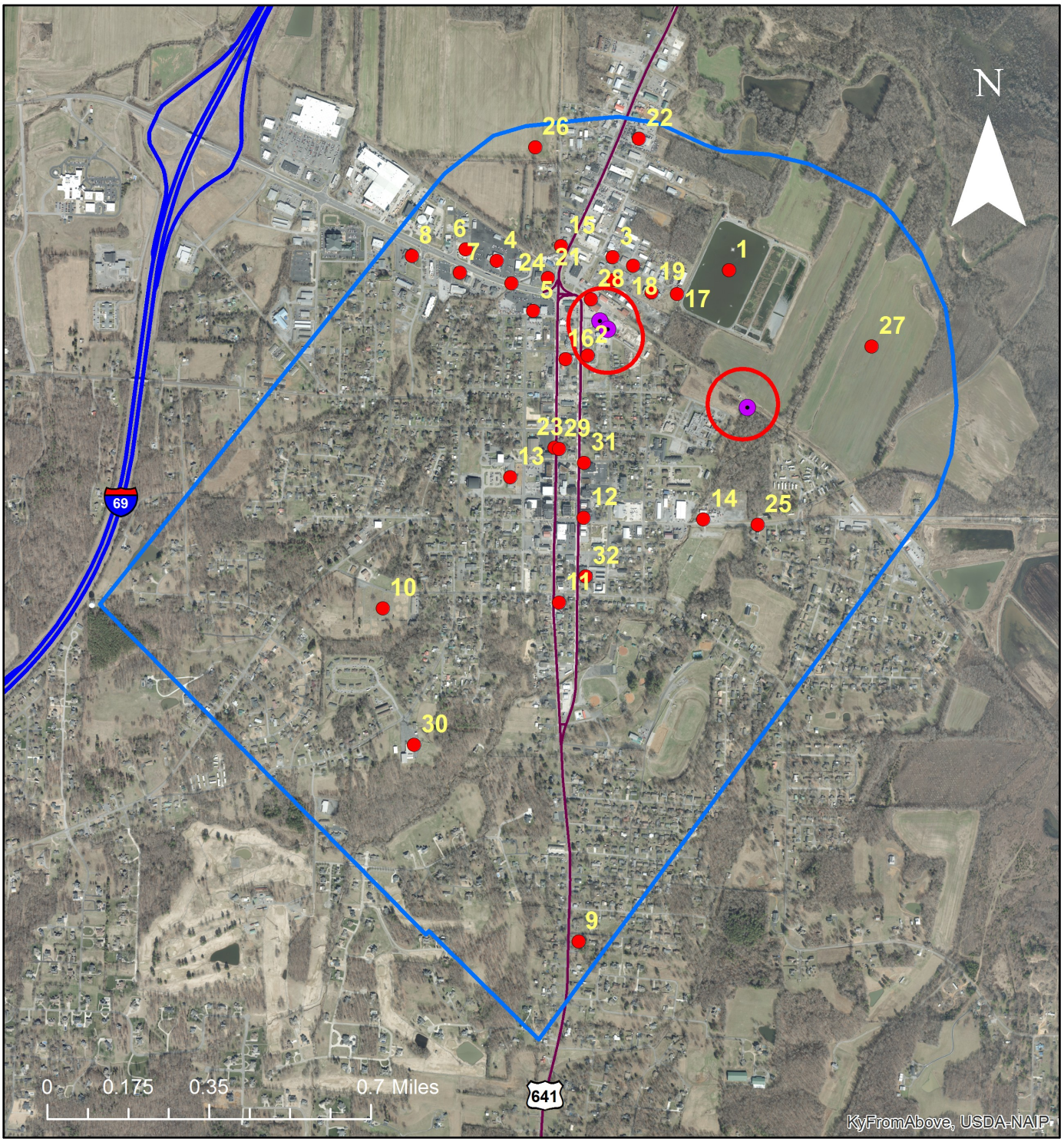
Legend

- Water Wells (PWS)

WHPA

- Zone 1: 180 Day time of travel for a potential contaminant
- Zone 3: Hydrologic boundary

Section 7: Contaminant Source Inventory

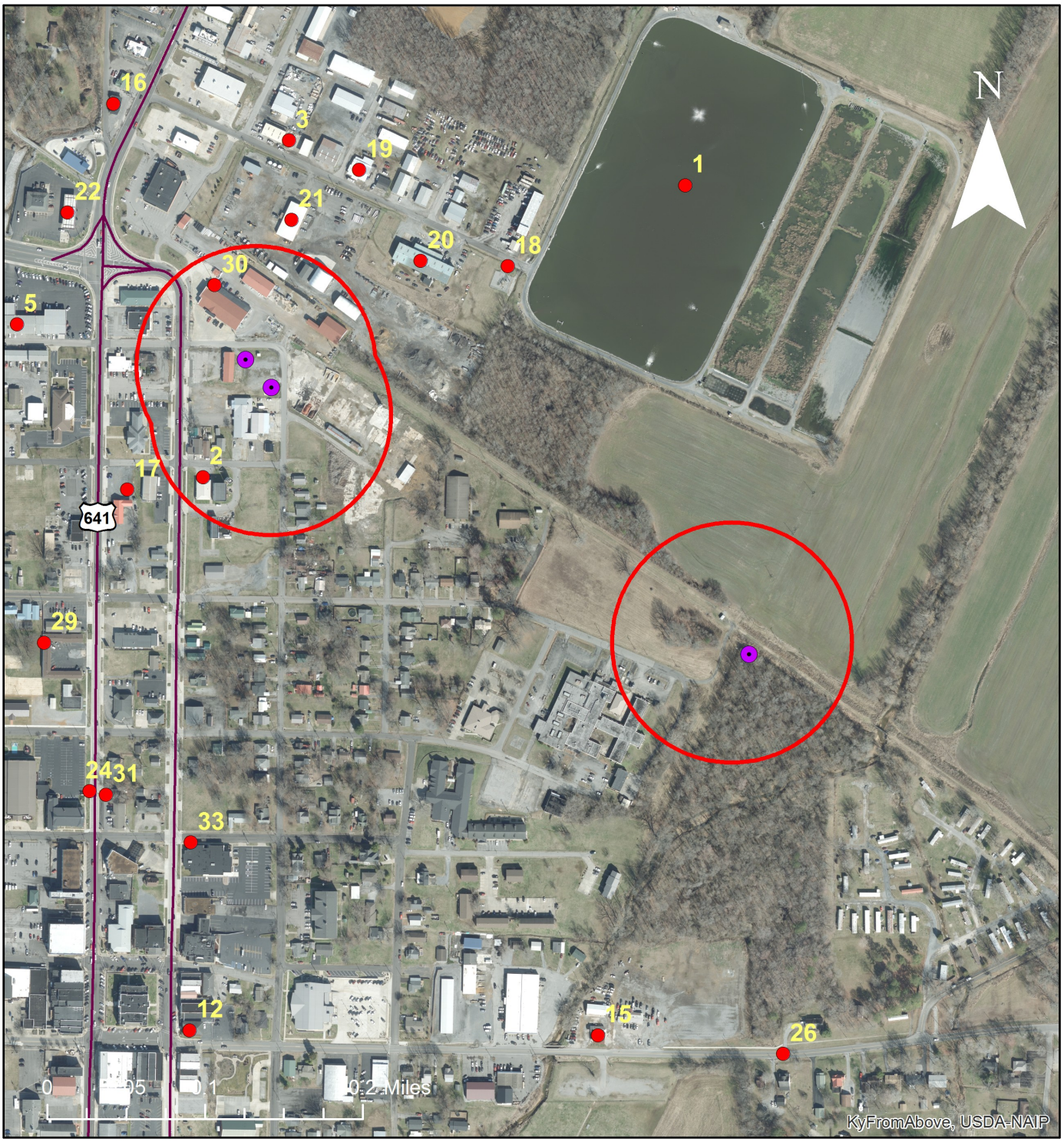


Legend

- Water Wells (PWS)
- Potential Contaminants

WHPA

- Zone 1: 180 Day time of travel for a potential contaminant
- Zone 3: Hydrologic boundary



Legend

- Water Wells (PWS)
- Potential Contaminants

WHPA

- Zone 1: 180 Day time of travel for a potential contaminant
- Zone 3: Hydrologic boundary

Contaminant Source Inventory and Susceptibility Analysis for

Benton Water and Sewer/KY0790029

Instructions (section may be deleted on submission):

Use the following table to list and rank potential contaminants identified during the contaminant source inventory.

Include Lat/Lon or addresses when possible. Enter the WHPA in which the contaminant occurs.

Multiple, similar sources that are clustered can be listed once with the Quantity identified.

The Proximity Ranking is based on the WHPA in which the contaminant is located (WHPA 1=3; WHPA 2=2; WHPA 3=1).

Contaminant Value is on a 1-3 scale, based upon its potential threat; consult the Contaminant Source Types_Values guide.

Hydrologic Sensitivity: The physical, chemical, geological, hydrological, and biological characteristics of the area over which, or through which, the contaminants move to the aquifer have various capabilities to detain or attenuate contaminant releases. Consult the Hydrologic Sensitivity tab.

The spreadsheet will use the values entered to calculate the Numeric Rating for each contaminant source.

- Numeric Rating = (Proximity Value x 2)+(Contaminant Value x 3) + (Hydrologic Sensitivity Value)

This will determine the Susceptibility Ranking: Numeric Rating less than 10 = Low; 10-15 = Medium; greater than 15 = High.

Please contact SWP/WHPP staff if you have any questions.

Contact:

Dale Booth; Dale.booth@ky.gov; 502-782-6895
Ryan Parks; Ryan.parks@ky.gov; 502-7824039

CSI Map ID #	Site ID	Contaminant Source Type	CS CODE	Name	Address	Lat	Lon	Quantity	Zone	Proximity Value	Contaminant Value	Hydrologic Sensitivity	Numeric Rating	Susceptibility Ranking	Contaminant Notes
1+A30: A60		Wastewater Treatment Plant*	M-15	Benton WWTP	East 4th Street, Benton, KY 42025	36.865178	-88.344242	1	3	1	2	1	9	LOW	
2		Drinking Water Treatment Plants	M-3	Benton WTP	701 Poplar St, Benton, KY 42025	36.8623722	-88.349667	1	1	3	2	1	13	MED	
3		Car/ Boat/ Camper Dealerships	C-6	Benton Auto Sales LLC	305 East 4th Street, Benton, KY 42025	36.865489	-88.348791	1	3	1	2	1	9	LOW	
4		Car/ Boat/ Camper Dealerships	C-6	Country Chevy	104 West 5th Street, Benton, KY 42025	36.865263	-88.353312	1	3	1	2	1	9	LOW	
5		Car/ Boat/ Camper Dealerships	C-6	David Taylor Chrysler of Benton | DTC Benton	101 West 5th Street, Benton, KY 42025	36.86373	-88.351844	1	3	1	2	1	9	LOW	
6		Auto Repair Shops/ Body Shops	C-2	Auto Zone	120 West 5th Street, Benton, KY 42025	36.865598	-88.354545	1	3	1	2	1	9	LOW	
7		Car/ Boat/ Camper Dealerships	C-6	Select Auto Sales	210 West 5th Street, Benton, KY 42025	36.864856	-88.354744	1	3	1	2	1	9	LOW	
8		Funeral Services/ Crematories	C-14	Collier Funeral Home, Inc	211 West 5th Street, Benton, KY 42025	36.86535	-88.356633	1	3	1	2	1	9	LOW	

9		Cemeteries*	C-8	Haltom Cemetery	Haltom Cemetery Rd, Benton, KY 42025	36.843987	-88.349382	1	3	1	2	1	9	LOW	
10		Cemeteries*	C-8	Benton Cemetery	412 West 14th Street, Benton, KY 42025	36.854265	-88.357389	1	3	1	2	1	9	LOW	
11		Auto Repair Shops/ Body Shops	C-2	Big H Auto	201 East 4th Street, Benton, KY 42025	36.854604	-88.350517	1	3	1	2	1	9	LOW	
12		Funeral Services/ Crematories	C-14	Filbeck - Cann and King Funeral Home	1117 Poplar Street, Benton, KY 42025	36.857283	-88.349644	1	3	1	2	1	9	LOW	
13		Schools	M-12	Benton Elementary School	208 West 11th Street, Benton, KY 42025	36.858487	-88.352547	1	3	1	3	1	12	MED	
14		Gas stations (existing & abandoned/ historic)	C-16	Lovetts Station	421 East 12th Street, Benton, KY 42025	36.857342	-88.344971	1	3	1	3	1	12	MED	
15		Car Washes	C-5	Tom's Car Wash	402 Main Street, Benton, KY 42025	36.86578	-88.350815	1	3	1	2	1	9	LOW	
16		Car Washes	C-5	Pro Wash of Benton North	705 Main St, Benton, KY 42025	36.86223663	-88.350531	1	3	1	2	1	9	LOW	
17		Car/ Boat/ Camper Dealerships	C-6	Steve's Body Shop Unique Auto Sales	317 East 4th Street, Benton, KY 42025	36.864387	-88.346248	1	3	1	3	1	12	MED	
18		Recycling Facilities*	W-3	Ultimate Recycling Inc.	317 Elm Street, Benton, KY 42025	36.865235	-88.34798	1	3	1	3	1	12	MED	

19		Car/ Boat/ Camper Dealerships	C-6	Richie Motors	304 East 4th Street, Benton, KY 42025	36.864414	-88.347245	1	3	1	3	1	12	MED	
20		Garages (Municipal)	M-4	Marshall County Garage	264 East 4th Street, Benton, KY 42025	36.86476	-88.348735	1	3	1	3	1	12	MED	
21		Gas stations (existing & abandoned/ historic)	C-16	FiveStar Convenience Store & BP Gas Station	406 Main Street, Benton, KY 42025	36.864769	-88.351305	1	3	1	2	1	9	LOW	
22		Car/ Boat/ Camper Dealerships	C-6	Leon Riley Ford	99 Main Street, Benton, KY 42025	36.869223	-88.347893	1	3	1	2	1	9	LOW	
23		Major Roadways	M-7	U.S. Highway 641	Benton, KY 42025	36.859456	-88.350864	1	3	1	3	1	12	MED	
24		Major Roadways	M-7	Highway 348	Benton, KY 42025	36.864572	-88.35272	1	3	1	3	1	12	MED	
25		Major Roadways	M-7	Highway 408	Benton, KY 42025	36.857219	-88.342846	1	3	1	3	1	12	MED	
26		Crops : Corn, Soybean, Wheat	A-5	Cultivated Crops	Benton, KY 42025	36.868855	-88.35194	1	3	1	3	1	12	MED	
27		Crops : Corn, Soybean, Wheat	A-5	Cultivated Crops	Benton, KY 42025	36.862906	-88.338586	1	3	1	3	1	12	MED	
28		Lawn/Farm Stores	C-24	Marshall County Co-Op	501 Poplar St, Benton, KY 42025	36.86413913	-88.349598	1	1	3	3	1	16	HIGH	
29		Churches	C-9	First Baptist	910 Main St, Benton, KY 42025	36.85942824	-88.350679	3	3	1	2	1	9	LOW	
30		Churches	C-9	Walnut Street Baptist	1605 Walnut St, Benton, KY 42025	36.85001815	-88.356016	3	3	1	2	1	9	LOW	
31		Churches	C-9	Riverwoods Church	1001 Main St, Benton, KY 42025	36.85901149	-88.349691	3	3	1	2	1	9	LOW	

32		Hardware/ Lumber/ Parts stores	C-19	Cole Lumber - Benton, KY	1313 Poplar St, Benton, KY 42025	36.85544423	-88.349503	1	3	1	2	1	9	LOW	
33		Medical/ Dental Offices/ Clinics*	C-26	Various Medical/ Dental Offices/ Clinics	Benton, KY 42025			19	3	1	2	1	9	LOW	
34		Barber and Beauty Shops	C-3	Barber and Beauty Shops	Benton, KY 42025			25	3	1	1	1	6	LOW	

CSI Totals	Low	20
	Med	13
	High	1

Overall Susceptibility Ranking	LOW

Section 10 & 11: Public Notice Documentation