

# Columbia

## General System Information

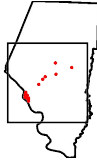
PWSS No. 3010181



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DEPARTMENT OF  
NATURAL RESOURCES

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<b>Name</b>	Columbia
<b>PWSSID</b>	M03010181
<b>Population Served</b>	100,733
<b>Primary County Served</b>	Boone
<b>Service Connections</b>	50,207
<b>Source(s) of Water</b>	Northeast Missouri , Missouri and Mississippi Rivers Alluvial
<b>USDA-NRCS Source Water Protection Priority Area?</b> <sup>2</sup>	Yes
<b>System Classification</b>	Community (C)
<b>Primary Source Type</b>	Groundwater (GW)
<b>System Type</b>	Municipality
<b>System Treatment</b>	4-log Treatment of Viruses, Cascade Aeration, Chloramines, Rapid Sand Filtration, Flocculation, Fluoridation, (post) Gaseous Chlorination, (pre) Gaseous Chlorination, Lime - Soda Ash Addition, Sedimentation
<b>DNR Region of Operations</b>	Northeast Regional Office (NERO)
<b>Source Water/Wellhead Protection Plan</b>	Yes
<b>Drinking Water Watch</b>	<a href="#">Drinking Water Watch</a>
<b>Reference Maps</b>	



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# Columbia

Overview Map (Aerial)  
PWSS No. 3010181 - 20 Wells, Boone County

Map Prepared: Nov 08, 2024  
Data Release: Feb 2, 2024

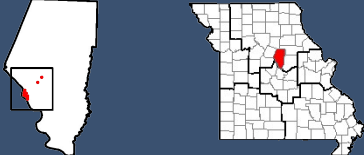


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- Groundwater System**
- System Well
- Source Water Protection Boundary**
- 20-Year Time of Travel
  - Half-Mile Buffer



SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

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# Columbia

## Overview Map (Topo)

PWSS No. 3010181 - 20 Wells, Boone County

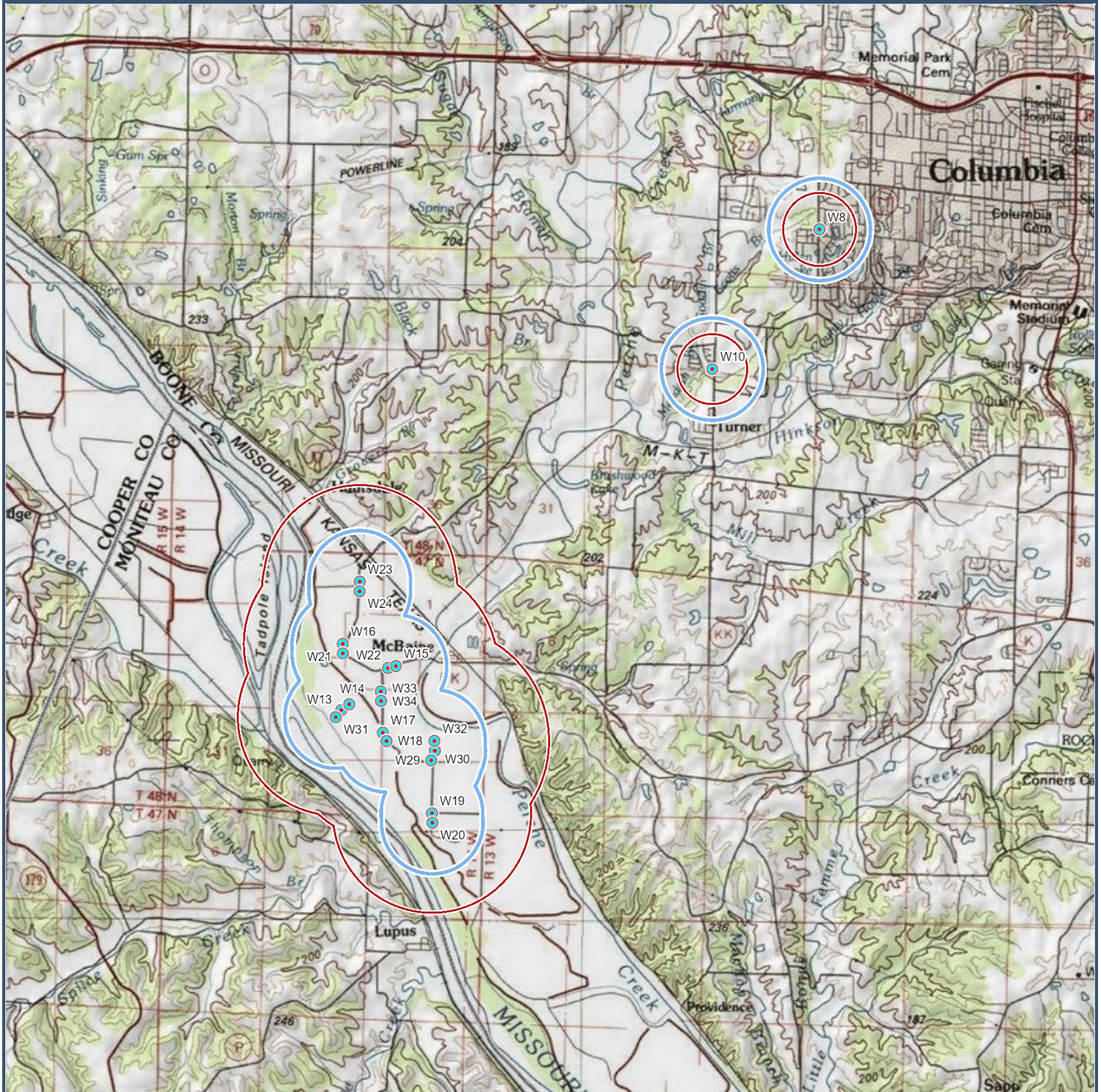
Map Prepared: Nov 08, 2024

Data Release: Feb 2, 2024



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### Groundwater System

- System Well

### Source Water Protection Boundary

- 20-Year Time of Travel

- Half-Mile Buffer



0 1.5 3

Miles

SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
For basemap symbols, see the U.S. Geological Survey (USGS)  
publication: [Topographic Map Symbols](#).

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# Columbia

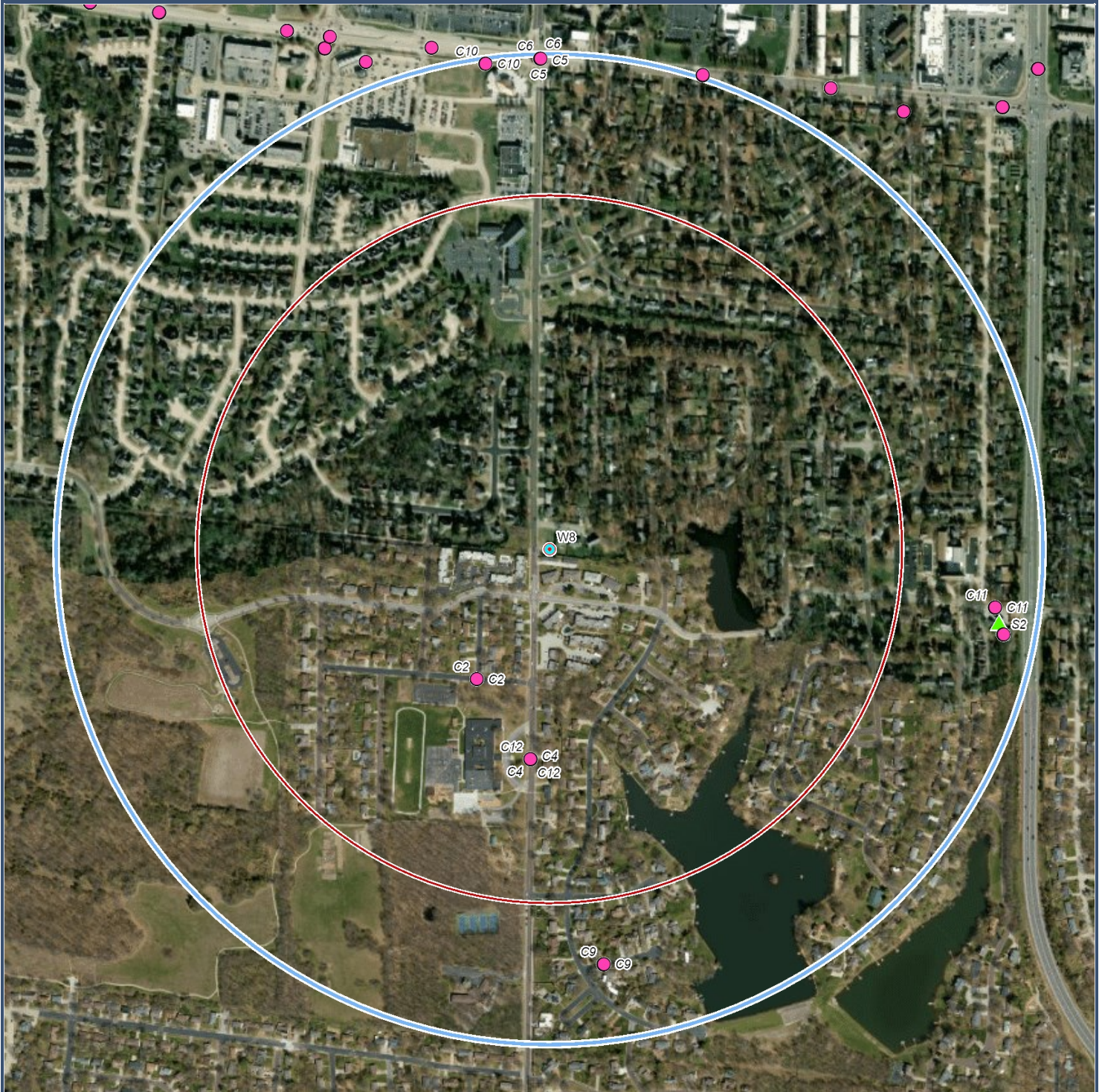
Well/Intake Map (Aerial) - Fairview Church (W8)  
PWSS No. 3010181, well 1 of 20

Map Prepared: Nov 08, 2024  
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## Groundwater System

System Well

## Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

## Potential Contaminant Source

State / Federal Data Source

SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.

SWAP - Source Water Assessment Plan -

<http://drinkingwater.missouri.edu/swap>

Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

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# Columbia

Well/Intake Map (Aerial) - Rt Tt (Katy Trail) (W10)  
PWSS No. 3010181, well 2 of 20

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## Groundwater System


 System Well

## Source Water Protection Boundary

 20-Year Time of Travel

 Half-Mile Buffer

## Potential Contaminant Source

 State / Federal Data Source

 SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft, Nov 08, 2024.

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# Columbia

Well/Intake Map (Aerial) - Well #13 (W13)  
PWSS No. 3010181, well 3 of 20

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## Groundwater System

- System Well

## Source Water Protection Boundary

- 20-Year Time of Travel
- Half-Mile Buffer

## Potential Contaminant Source

- State / Federal Data Source
- SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

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# Columbia

Well/Intake Map (Aerial) - Well #14 (W14)  
PWSS No. 3010181, well 4 of 20

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## Groundwater System

- System Well

## Source Water Protection Boundary

- 20-Year Time of Travel
- Half-Mile Buffer

## Potential Contaminant Source

- State / Federal Data Source
- SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

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# Columbia

Well/Intake Map (Aerial) - Well #1 (W15)  
PWSS No. 3010181, well 5 of 20

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## Groundwater System

- System Well

## Source Water Protection Boundary

- 20-Year Time of Travel
- Half-Mile Buffer

## Potential Contaminant Source

- State / Federal Data Source
- SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

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# Columbia

Well/Intake Map (Aerial) - Well #2 (W16)  
PWSS No. 3010181, well 6 of 20

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## Groundwater System

- System Well

## Source Water Protection Boundary

- 20-Year Time of Travel
- Half-Mile Buffer

## Potential Contaminant Source

- State / Federal Data Source
- SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.  
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Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

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# Columbia

Well/Intake Map (Aerial) - Well #3 (W17)  
PWSS No. 3010181, well 7 of 20

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Data Release: Feb 2, 2024



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## Groundwater System

System Well

## Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

## Potential Contaminant Source

State / Federal Data Source

SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
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Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

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# Columbia

Well/Intake Map (Aerial) - Well #4 (W18)  
PWSS No. 3010181, well 8 of 20

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## Groundwater System

System Well

## Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

## Potential Contaminant Source

State / Federal Data Source

SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

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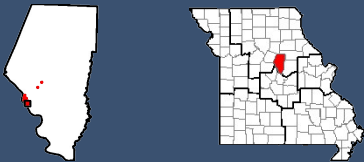
Well/Intake Map (Aerial) - Well #5 (W19)  
PWSS No. 3010181, well 9 of 20

Map Prepared: Nov 08, 2024  
Data Release: Feb 2, 2024



- Groundwater System**
- System Well
- Source Water Protection Boundary**
- 20-Year Time of Travel
  - Half-Mile Buffer

- Potential Contaminant Source**
- State / Federal Data Source
  - SWIP Confirmed Data (1999 - 2003)



Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.



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# Columbia

Well/Intake Map (Aerial) - Well #6 (W20)  
PWSS No. 3010181, well 10 of 20

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## Groundwater System

System Well

## Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

## Potential Contaminant Source

State / Federal Data Source

SWIP Confirmed Data (1999 - 2003)



Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

0 900 1800



Feet

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# Columbia

Well/Intake Map (Aerial) - Well #7 (W21)  
PWSS No. 3010181, well 11 of 20

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## Groundwater System

System Well

## Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

## Potential Contaminant Source

State / Federal Data Source

SWIP Confirmed Data (1999 - 2003)



Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

0 900 1800



Feet

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# Columbia

Well/Intake Map (Aerial) - Well #8 (W22)  
PWSS No. 3010181, well 12 of 20

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Data Release: Feb 2, 2024



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## Groundwater System

System Well

## Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

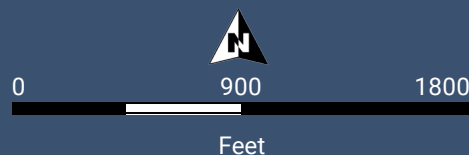
## Potential Contaminant Source

State / Federal Data Source

SWIP Confirmed Data (1999 - 2003)



Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.



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# Columbia

Well/Intake Map (Aerial) - Well #9 (W23)  
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## Groundwater System

- System Well

## Source Water Protection Boundary

- 20-Year Time of Travel
- Half-Mile Buffer

## Potential Contaminant Source

- State / Federal Data Source
- SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.

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# Columbia

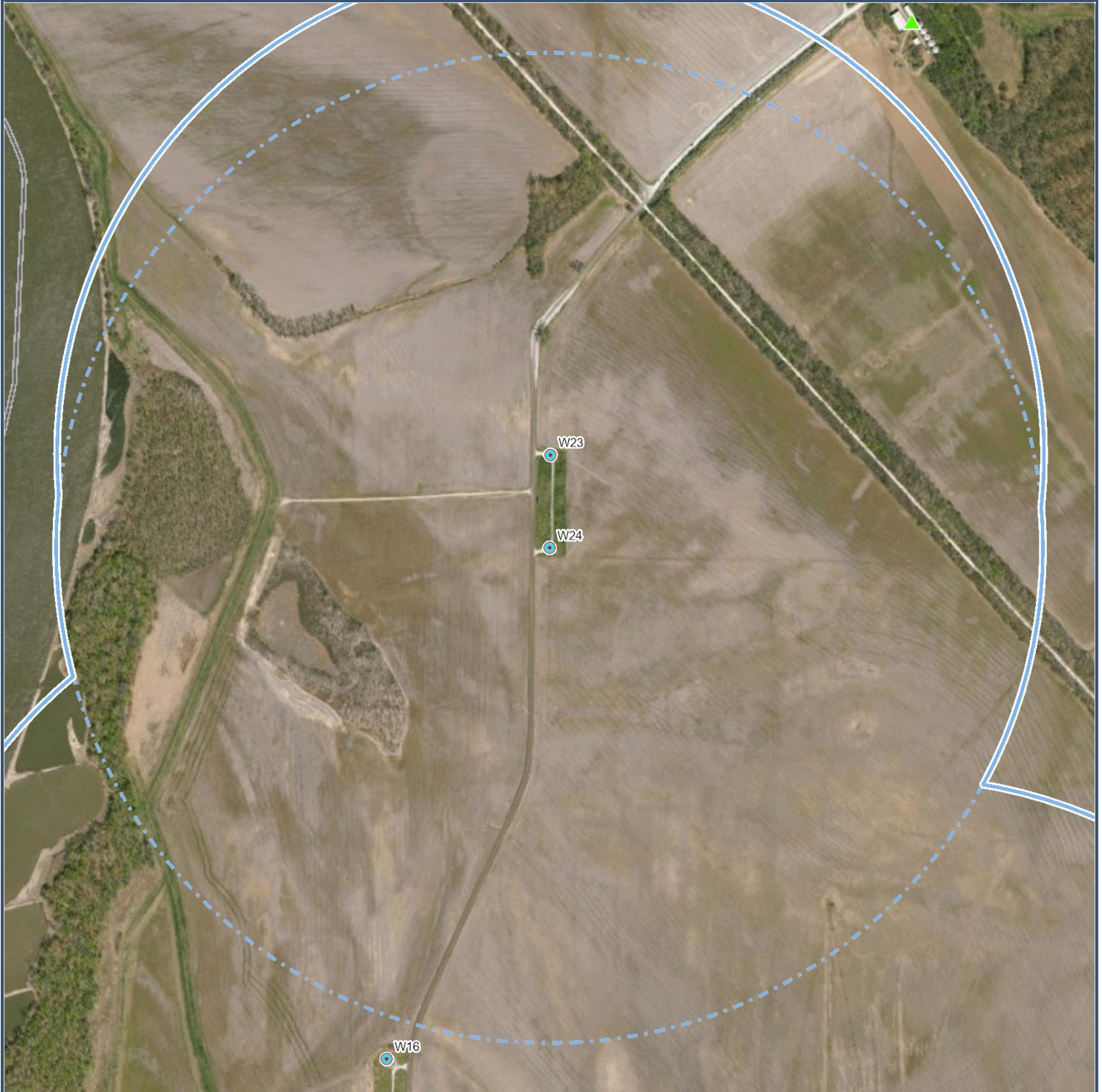
Well/Intake Map (Aerial) - Well #10 (W24)  
PWSS No. 3010181, well 14 of 20

Map Prepared: Nov 08, 2024  
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## Groundwater System

- System Well

## Source Water Protection Boundary

- 20-Year Time of Travel
- Half-Mile Buffer

## Potential Contaminant Source

- State / Federal Data Source
- SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

Boundaries for individual wells indicated by dashed line.  
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Aerial Photos: Bing Maps, Microsoft, Nov 08, 2024.

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# Columbia

**Well/Intake Map (Aerial) - Well #11 (W29)**  
PWSS No. 3010181, well 15 of 20

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## Groundwater System

System Well

## Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

## Potential Contaminant Source

State / Federal Data Source

SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

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SWAP - Source Water Assessment Plan -  
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# Columbia

Well/Intake Map (Aerial) - Well #12 (W30)  
PWSS No. 3010181, well 16 of 20

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## Groundwater System

System Well

## Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

## Potential Contaminant Source

State / Federal Data Source

SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

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# Columbia

**Well/Intake Map (Aerial) - Well #15, McBaine Bottoms (W31)**  
PWSS No. 3010181, well 17 of 20

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## Groundwater System

- System Well

## Source Water Protection Boundary

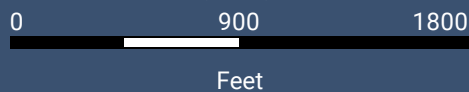
- 20-Year Time of Travel
- Half-Mile Buffer

## Potential Contaminant Source

- State / Federal Data Source
- SWIP Confirmed Data (1999 - 2003)



Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
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Aerial Photos: Bing Maps, Microsoft, Nov 08, 2024.



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# Columbia

Well/Intake Map (Aerial) - Well #16 (W32)  
PWSS No. 3010181, well 18 of 20

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## Groundwater System

System Well

## Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

## Potential Contaminant Source

State / Federal Data Source

SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

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# Columbia

Well/Intake Map (Aerial) - Well #17 (W33)  
PWSS No. 3010181, well 19 of 20

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## Groundwater System

- System Well

## Source Water Protection Boundary

- 20-Year Time of Travel
- Half-Mile Buffer

## Potential Contaminant Source

- State / Federal Data Source
- SWIP Confirmed Data (1999 - 2003)



0 900 1800

Feet

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# Columbia

Well/Intake Map (Aerial) - Well #18 (W34)  
PWSS No. 3010181, well 20 of 20




Map Prepared: Nov 08, 2024  
Data Release: Feb 2, 2024





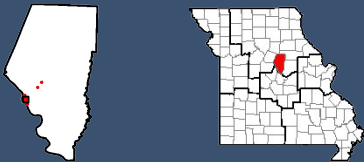
**MISSOURI**  
DEPARTMENT OF  
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- Groundwater System**  
 System Well
- Source Water Protection Boundary**  
 20-Year Time of Travel  
 Half-Mile Buffer

- Potential Contaminant Source**  
 State / Federal Data Source  
 SWIP Confirmed Data (1999 - 2003)



Boundaries for individual wells indicated by dashed line.  
SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.



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# Columbia

## Overview Map (Land Use)

PWSS No. 3010181 - 20 Wells, Boone County

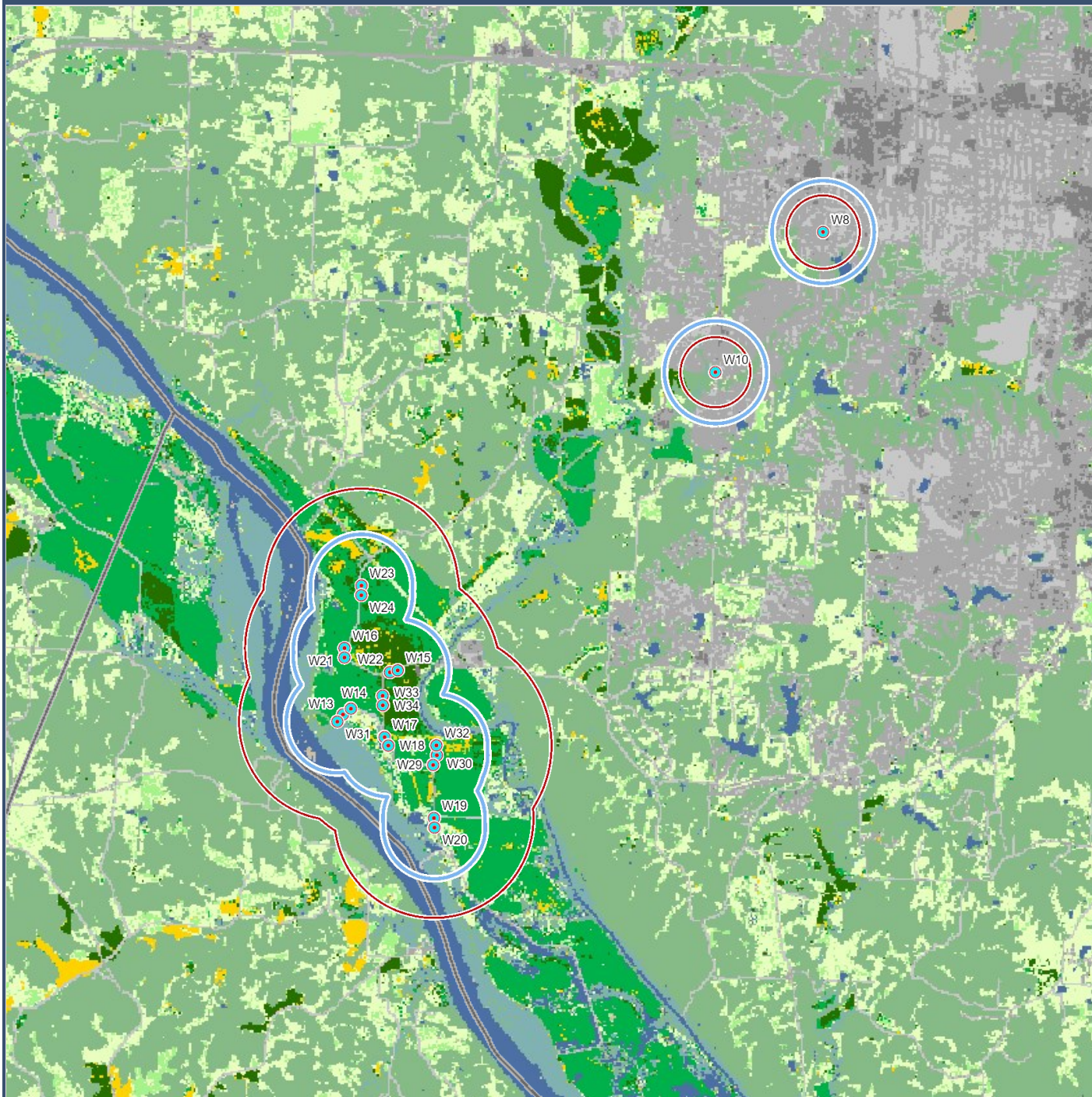
Map Prepared: Nov 08, 2024

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### Groundwater System

System Well

### Source Water Protection Boundary

20-Year Time of Travel

Half-Mile Buffer

### Land Use

Corn	Forest/Shrubland
Cotton	Developed/High Intensity
Rice	Developed/Low-Med Intensity
Soybeans	Developed/Open Space
Other Crop	Open Water
Other Hay/Non Alfalfa	Wetlands
Grassland/Pasture	Barren

SWAP - Source Water Assessment Plan -  
<http://drinkingwater.missouri.edu/swap>  
Aerial Photos: Bing Maps, Microsoft. Nov 08, 2024.



0 1.5 3

Miles



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# Columbia

Land Use Statistics  
PWSS No. 3010181

Map Prepared: Nov 08, 2024  
Data Release: Feb 2, 2024



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Land Use	% Land Area, 2020	% Land Area, 2021	% Land Area, 2022	Avg. % Land Area
Corn	6.65	7.44	10.43	8.17
Cotton	0	0	0	0
Rice	0	0	0	0
Soybeans	31.32	31.47	27.57	30.12
Other Crop	1.26	0.2	0.24	0.56
Other Hay/Non-Alfalfa	1.76	1.62	1.25	1.54
Grassland/Pasture	6.21	11.13	11.89	9.75
Forest/Shrubland	20.3	17.46	16.61	18.12
Developed/High Intensity	0.11	0.29	0.29	0.23
Developed/Low-Med Intensity	1.36	2.02	2.03	1.8
Developed/Open Space	2.01	1.26	1.31	1.52
Open Water	16.32	15.9	15.92	16.04
Wetlands	12.23	10.98	12.19	11.8
Barren	0.48	0.24	0.27	0.33

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# Columbia

Well/Intake Data - PWSS No. 3010181  
Boone County, Sheet 1 of 4

Sheet Prepared: Nov 08, 2024



MISSOURI  
DEPARTMENT OF  
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Prepared by CARES, University of Missouri Extension

Well Number	W8	W10	W13	W14	W15
Local Well Name	Fairview Church	Rt Tt (Katy Trail)	Well #13	Well #14	Well #1
Well ID #	12313	12697	13788	13789	13544
DGLS ID #	0021800	0024557			
Status	Active	Active	Active	Active	Active
Latitude	38.947510	38.927710	38.879358	38.880184	38.885600
Longitude	-92.380591	-92.400140	-92.467760	-92.466315	-92.457800
12-Digit Hydrologic Unit	103001020603	103001020603	103001020901	103001020901	103001020709
County	Boone	Boone	Boone	Boone	Boone
MoDNR Region	Northeast	Northeast	Northeast	Northeast	Northeast
Groundwater Province <sup>1</sup>	Northeast Missouri	Northeast Missouri	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River
Source Aquifer(s) <sup>2</sup>	Ozark	Ozark	Alluvial	Alluvial	Alluvial
Confined/Unconfined <sup>3</sup>	Unconfined	Unconfined	Unconfined	Unconfined	Unconfined
Regional Drilling Area <sup>4</sup>	Area 1	Area 1	Area 5	Area 5	Area 5
Date Drilled (year)	1963	1966	2000	2000	1970
Material (C/U)	Consolidated	Consolidated	Unconsolidated	Unconsolidated	Unconsolidated
Casing Base Formation	Roubidoux Fm.	Roubidoux Fm.	Alluvium	Alluvium	Alluvium
Total Depth Formation	Elvins Gp.	Elvins Gp.	Alluvium	Alluvium	Alluvium
Total Depth	1437	1500	98	93	100
Ground Elevation (ft)	750	590	580	580	575
Casing Depth (ft)	703	600	64	58	60
Casing Size (in)	19	19	26	26	18
Casing Type	Steel	Steel	Steel	Steel	Steel
Elev. of Casing Top (ft)			599	599	
Screen Length (ft)			35	35	35
Screen Size (in)			26	26	26
Static Water Level (ft)	283		19	19	25
Well Yield (gpm)	900		1400	1400	1200
Head (ft)	417		65	65	35
Draw Down (ft)					
Pump Depth (ft)	700	700	84	84	60
Pump Capacity (gpm)	1100	1200	1400	1400	1400
Surface Drainage					
State Approved (Y/N)					
Liquefaction Risk	Low	Low	High	High	High
Landslide Risk	Low	Low	Low	Low	Low
Collapse Risk	Low	High	Low	Low	Low
Flood Risk	Low	Low	High	High	High
Surface Contamination Risk	Moderate	Moderate	High	High	High
Conduit Flow Risk <sup>6</sup>	K1	K1	K6	K6	K6

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# Columbia

Well/Intake Data - PWSS No. 3010181  
Boone County, Sheet 2 of 4

Sheet Prepared: Nov 08, 2024



MISSOURI  
DEPARTMENT OF  
NATURAL RESOURCES

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Well Number	W16	W17	W18	W19	W20
Local Well Name	Well #2	Well #3	Well #4	Well #5	Well #6
Well ID #	13253	13256	13257	13258	13259
DGLS ID #					
Status	Active	Active	Active	Active	Active
Latitude	38.888730	38.876160	38.874970	38.864700	38.863360
Longitude	-92.467460	-92.460220	-92.459530	-92.451230	-92.451170
12-Digit Hydrologic Unit	103001020901	103001020901	103001020901	103001020709	103001020709
County	Boone	Boone	Boone	Boone	Boone
MoDNR Region	Northeast	Northeast	Northeast	Northeast	Northeast
Groundwater Province <sup>1</sup>	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River
Source Aquifer(s) <sup>2</sup>	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
Confined/Unconfined <sup>3</sup>	Unconfined	Unconfined	Unconfined	Unconfined	Unconfined
Regional Drilling Area <sup>4</sup>	Area 5	Area 5	Area 5	Area 5	Area 5
Date Drilled (year)	1970	1970	1970	1970	1970
Material (C/U)	Unconsolidated	Unconsolidated	Unconsolidated	Unconsolidated	Unconsolidated
Casing Base Formation	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium
Total Depth Formation	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium
Total Depth	104	103	103	104	113
Ground Elevation (ft)	578	580	580	570	570
Casing Depth (ft)	69	68	68	69	70
Casing Size (in)	26	26	26	26	26
Casing Type	Steel	Steel	Steel	Steel	Steel
Elev. of Casing Top (ft)					
Screen Length (ft)	35	35	35	35	35
Screen Size (in)	26	26	26	26	26
Static Water Level (ft)	25	25	25	25	25
Well Yield (gpm)	1300	800	1100	1400	1320
Head (ft)	40	40	40	40	40
Draw Down (ft)					
Pump Depth (ft)	65	65	65	65	65
Pump Capacity (gpm)	1400	1400	1400	1400	750
Surface Drainage					
State Approved (Y/N)					
Liquefaction Risk	High	High	High	High	High
Landslide Risk	Low	Low	Low	Low	Low
Collapse Risk	Low	Low	Low	Low	Low
Flood Risk	High	High	High	High	High
Surface Contamination Risk	High	High	High	High	High
Conduit Flow Risk <sup>6</sup>	K6	K6	K6	K6	K6

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# Columbia

Well/Intake Data - PWSS No. 3010181  
Boone County, Sheet 3 of 4

Sheet Prepared: Nov 08, 2024



MISSOURI  
DEPARTMENT OF  
NATURAL RESOURCES

Prepared by CARES, University of Missouri Extension

Well Number	W21	W22	W23	W24	W29
Local Well Name	Well #7	Well #8	Well #9	Well #10	Well #11
Well ID #	13254	13543	13541	13542	13549
DGLS ID #					
Status	Active	Active	Active	Active	Active
Latitude	38.887390	38.885320	38.897570	38.896210	38.872221
Longitude	-92.467470	-92.459220	-92.464380	-92.464400	-92.451362
12-Digit Hydrologic Unit	103001020901	103001020709	103001020709	103001020709	103001020709
County	Boone	Boone	Boone	Boone	Boone
MoDNR Region	Northeast	Northeast	Northeast	Northeast	Northeast
Groundwater Province <sup>1</sup>	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River
Source Aquifer(s) <sup>2</sup>	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
Confined/Unconfined <sup>3</sup>	Unconfined	Unconfined	Unconfined	Unconfined	Unconfined
Regional Drilling Area <sup>4</sup>	Area 5	Area 5	Area 5	Area 5	Area 5
Date Drilled (year)	1977	1984	1990	1990	1997
Material (C/U)	Unconsolidated	Unconsolidated	Unconsolidated	Unconsolidated	Unconsolidated
Casing Base Formation	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium
Total Depth Formation	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium
Total Depth	104	98	95	95	104
Ground Elevation (ft)	578	575	574	575	571
Casing Depth (ft)	68	63	67	68	85
Casing Size (in)	26	26	26	26	26
Casing Type	Steel	Steel	Steel	Steel	Steel
Elev. of Casing Top (ft)					
Screen Length (ft)	35	35	35	35	80
Screen Size (in)	26	26	26	26	14
Static Water Level (ft)	25	25	11	14	13
Well Yield (gpm)	1400	1350	2204	1400	2204
Head (ft)	40	40	49		57
Draw Down (ft)					
Pump Depth (ft)	65	65	60		70
Pump Capacity (gpm)	800	1100	1400	1400	1400
Surface Drainage					
State Approved (Y/N)					
Liquefaction Risk	High	High	High	High	High
Landslide Risk	Low	Low	Low	Low	Low
Collapse Risk	Low	Low	Low	Low	Low
Flood Risk	High	High	High	High	High
Surface Contamination Risk	High	High	High	High	High
Conduit Flow Risk <sup>6</sup>	K6	K6	K6	K6	K6

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# Columbia

Well/Intake Data - PWSS No. 3010181  
Boone County, Sheet 4 of 4

Sheet Prepared: Nov 08, 2024



**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES

Prepared by CARES, University of Missouri Extension

Well Number	W30	W31	W32	W33	W34
Local Well Name	Well #12	Well #15, McBaine Bottoms	Well #16	Well #17	Well #18
Well ID #	13007	18158	19998	19999	20000
DGLS ID #					
Status	Active	Active	Active	Active	Active
Latitude	38.873599	38.878340	38.874975	38.881979	38.880655
Longitude	-92.450736	-92.468770	-92.450783	-92.460546	-92.460511
12-Digit Hydrologic Unit	103001020709	103001020901	103001020709	103001020709	103001020709
County	Boone	Boone	Boone	Boone	Boone
MoDNR Region	Northeast	Northeast	Northeast	Northeast	Northeast
Groundwater Province <sup>1</sup>	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River	Missouri and Mississippi River
Source Aquifer(s) <sup>2</sup>	Alluvial	Alluvial	Alluvial	Alluvial	Alluvial
Confined/Unconfined <sup>3</sup>	Unconfined	Unconfined	Unconfined	Unconfined	Unconfined
Regional Drilling Area <sup>4</sup>	Area 5	Area 5	Area 5	Area 5	Area 5
Date Drilled (year)	1997	2006	2018	2018	2018
Material (C/U)	Unconsolidated	Unconsolidated	Unconsolidated	Unconsolidated	Unconsolidated
Casing Base Formation	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium
Total Depth Formation	Alluvium	Alluvium	Alluvium	Alluvium	Alluvium
Total Depth	99	105	100	98	101
Ground Elevation (ft)	571	553	570	575	574
Casing Depth (ft)	79	70	80	77	76
Casing Size (in)	26	24	24	24	24
Casing Type	Steel	Steel	Steel	Steel	Steel
Elev. of Casing Top (ft)					604
Screen Length (ft)	60	35	35	35	
Screen Size (in)	14	24			
Static Water Level (ft)	16	24	32	34	35
Well Yield (gpm)	2224	2200	2400	2400	2400
Head (ft)	54	25	33	31	
Draw Down (ft)					
Pump Depth (ft)	70	49	65	65	35
Pump Capacity (gpm)	1400	1400	1600	1600	1600
Surface Drainage					
State Approved (Y/N)					
Liquefaction Risk	High	High	High	High	High
Landslide Risk	Low	Low	Low	Low	Low
Collapse Risk	Low	Low	Low	Low	Low
Flood Risk	High	High	High	High	High
Surface Contamination Risk	High	High	High	High	High
Conduit Flow Risk <sup>6</sup>	K6	K6	K6	K6	K6

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Map No.	Site Name	Type	Database Code
---------	-----------	------	---------------

Database Codes

ACRES	Assessment, Cleanup And Redevelopment Exchange System	MN-TEMPO	Minnesota - Permitting, Compliance, & Enforcement
AIR	Integrated Compliance Information System-Air	MO-DNR	Missouri Department Of Natural Resources
AIRS/AFS	Air Facility System	NCDB	National Compliance Database
AIRS/AQS	Air Quality System	NPDES	National Pollutant Discharge Elimination System
BR	Biennial Reporters	OTAQREG	Office Of Transportation And Air Quality Fuels Registration
BRAC	Base Realignment And Closure	RADINFO	Radiation Information System
CAMDBS	Clean Air Markets Division Business Systems	RBLC	Ract/Bact/Laer Clearinghouse
CEDRI	Compliance And Emissions Data Reporting Interface	RCRAINFO	Resource Conservation And Recovery Act Information System
ECRM	Enforcement Criminal Records Management	RFS	Renewable Fuel Standard
E-GGRT	Electronic Greenhouse Gas Reporting Tool	RMP	Risk Management Plan
EGRID	Emissions & Generation Resource Integrated Database	SEMS	Superfund Enterprise Management System
EIA-860	Energy Information Administration-860 Database	SFDW	Safe Drinking Water Information System
EIS	Emission Inventory System	SSTS	Section Seven Tracking System
FFDOCKET	Federal Facility Hazardous Waste Compliance Docket	STATE	State Systems
ICIS	Integrated Compliance Information System	SWIP	Source Water Inventory Project Field Inventory
LMOP	Landfill Methane Outreach Program	TRIS	Toxics Release Inventory System
LUST-ARRA	Leaking Underground Storage Tank - American Recovery And Reinvestment Act	TSCA	Toxic Substances Control Act

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## 0 potential contaminant sources in the listed databases (multiple databases may list the same contaminant source):

## Database

ACRES (Assessment, Cleanup And Redevelopment Exchange System)  
AIR (Integrated Compliance Information System-Air)  
AIRS/AFS (Air Facility System)  
AIRS/AQS (Air Quality System)  
BR (Biennial Reporters)  
BRAC (Base Realignment And Closure)  
CAMDBS (Clean Air Markets Division Business Systems)  
CEDRI (Compliance And Emissions Data Reporting Interface)  
ECRM (Enforcement Criminal Records Management)  
E-GGRT (Electronic Greenhouse Gas Reporting Tool)  
EGRID (Emissions & Generation Resource Integrated Database)  
EIA-860 (Energy Information Administration-860 Database)  
EIS (Emission Inventory System)  
FFDOCKET (Federal Facility Hazardous Waste Compliance Docket)  
ICIS (Integrated Compliance Information System)  
LMOP (Landfill Methane Outreach Program)  
LUST-ARRA (Leaking Underground Storage Tank - American Recovery And Reinvestment Act)

## Database

MN-TEMPO (Minnesota - Permitting, Compliance, & Enforcement)  
MO-DNR (Missouri Department Of Natural Resources)  
NCDB (National Compliance Database)  
NPDES (National Pollutant Discharge Elimination System)  
OTAQREG (Office Of Transportation And Air Quality Fuels Registration)  
RADINFO (Radiation Information System)  
RBLC (Ract/Bact/Laer Clearinghouse)  
RCRAINFO (Resource Conservation And Recovery Act Information System)  
RFS (Renewable Fuel Standard)  
RMP (Risk Management Plan)  
SEMS (Superfund Enterprise Management System)  
SFDW (Safe Drinking Water Information System)  
SSTS (Section Seven Tracking System)  
STATE (State Systems)  
TRIS (Toxics Release Inventory System)  
TSCA (Toxic Substances Control Act)  
SWIP (Source Water Inventory Project Field Inventory - see below)

## 0 potential contaminant sources in the SWIP Field Inventory:

## Count Site Type

0 Airport or abandoned airfield  
0 Animal feedlot  
0 Apartments and condominiums  
0 Asphalt plant  
0 Auto repair shop  
0 Automotive dealership  
0 Barber and beauty shop  
0 Boat yard and marina  
0 CAFO  
0 Campground  
0 Car wash  
0 Cement Plant  
0 Cemetery  
0 Communication equipment mfg  
0 Country club  
0 Dry cleaner  
0 Dumping and/or burning site  
0 Electric equipment mfg or storage  
0 Electric substation  
0 Farm machinery storage  
0 Feed/Fertilizer/Co-op  
0 Fire station  
0 Funeral service and crematory  
0 Furniture manufacturer  
0 Furniture repair or finishing shop  
0 Garden and/or nursery  
0 Garden, nursery, and/or florist  
0 Gasoline service station  
0 Golf courses  
0 Government office  
0 Grain bin  
0 Hardware and lumber store  
0 Hazardous waste (Federal facility)  
0 Highway maintenance facility  
0 Jewelry or metal plating shop  
0 Junk yard or salvage yard  
0 Lagoon (commercial)  
0 Lagoon (industrial)  
0 Lagoon (municipal)  
0 Lagoon (residential)  
0 Landfill (municipal)

## Count Site Type

0 Laundromat  
0 Livestock auction  
0 Machine or metalworking shop  
0 Manufacturing (general)  
0 Material stockpile (industrial)  
0 Medical institution  
0 Metal production facility  
0 Mining operation  
0 Other  
0 Paint store  
0 Park land  
0 Parking lot  
0 Petroleum production or storage  
0 Pharmacies  
0 Photography shop or processing lab  
0 Pit toilet  
0 Plastic material and synthetic mfg  
0 Print shop  
0 Railroad yard  
0 Recycling/reduction facility  
0 Research lab  
0 Restaurant  
0 Sawdust pile  
0 School  
0 Sports and hobby shop  
0 Swimming pool  
0 Tailing pond  
0 Tank (above-ground fuel)  
0 Tank (other)  
0 Tank (pesticide)  
0 Tank (underground fuel)  
0 Trucking terminal  
0 Veterinary service  
0 Wastewater treatment facility  
0 Well (abandoned)  
0 Well (domestic)  
0 Well (irrigation)  
0 Well (livestock)  
0 Well (monitoring)  
0 Well (public water supply)  
0 Well (unknown)

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# Columbia

Susceptibility Determination  
PWSS No. 3010181

Sheet Prepared: Nov 08, 2024



MISSOURI  
DEPARTMENT OF  
NATURAL RESOURCES

Prepared by CARES, University of Missouri Extension

The Missouri Department of Natural Resources (MoDNR) has assembled this information to assess the susceptibility of drinking water sources to contamination. There are many unforeseen and unpredictable factors that may cause a source to be contaminated. MoDNR routinely monitors all public supplies to ensure public health is protected. Public water systems and local communities are encouraged to take all measures possible to reduce the susceptibility of their drinking water source to chemical contamination. For more information, call 1-800-361-4827.

**Dots containing numeric values correspond to the number of individual wells or surface water intakes.**

Minimally  
Susceptible  
Moderately  
Susceptible  
Highly  
Susceptible  
Undetermined

## GROUND WATER

### Geological and Hydrogeological Assessment Criteria

Are any system wells deemed by the Public Drinking Water Branch to be under the direct influence of surface water?

● ● ● ●

Are any system wells potentially prone to karst conditions or solution flow?

● ● ● ●

Do any system wells draw water from a source with high total dissolved solids (TDS)?

● ● ● ●

Are any system wells located proximal to known subsurface or groundwater contamination?

● ● ● ●

Do any system wells draw water from an unconfined aquifer?

● ● ● ●

Based on known stratigraphic relationships for each well, the risk of contamination from surface sources is:

2 3 18 1

### Well Construction and Maintenance Assessment Criteria

Are all system wells state-approved?

● ● ● ●

Do any system wells exhibit structural defects, construction deficiencies, or other conditions that might allow contamination to enter the well at the wellhead?

● ● ● ●

Are security measures in place to prevent unauthorized tampering with all system wells?

● ● ● ●

Does the system have back-up, emergency power available?

● ● ● ●

### Monitoring Assessment Criteria

Have any system wells exhibited consistent detections for any of the following parameters in raw water?

Volatile Organic Chemicals (VOC):

● ● ● ●

Synthetic Organic Chemicals (SOC):

● ● ● ●

Inorganic Compounds (IOC):

● ● ● ●

Nitrates/Nitrites:

● ● ● ●

Radionuclides:

● ● ● ●

Bacteria/Viruses/Microbial Pathogens:

● ● ● ●

### Natural Hazard Assessment Criteria

The number of system wells located in a region prone to flooding.

6 ● 18 ●

The number of system wells located in a region that may experience the following conditions in the event of a large-scale earthquake.

Potential liquefaction risk:

2 ● 18 ●

Potential landslide risk:

20 ● ● ●

Potential subsurface collapse/instability risk:

19 ● 1 ● ●

Are any system wells prone to declining water levels during a prolonged drought?

● ● ● ●

Do all system wells have lightning surge protection?

● ● ● ●

### Potential Contaminant Inventory Assessment Criteria

Potential sources of contamination exist within the wellhead protection area:

● ● ● ●

A system well is located in an area with a high density of transportation corridors:

20 4 ● ●

A system well is located in an area that may have improperly maintained or faulty on-site septic systems:

● ● ● ●

### Additional Assessment Criteria

Does the system have a wellhead/source water protection plan endorsed by the Department of Natural Resources?

● ● ● ●

Does the system have an emergency interconnection with a neighboring public water system?

● ● ● ●

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# Columbia

## Notes

PWSS No. 3010181

Map Prepared: Nov 08, 2024

Data Release: Feb 2, 2024



MISSOURI  
DEPARTMENT OF  
NATURAL RESOURCES

Prepared by CARES, University of Missouri Extension

### Ground Water Notes:

- 1 For additional information about Missouri's regional groundwater provinces, please visit the [Missouri Department of Natural Resources' Water Resources Center Web page](#) or contact the [Missouri Geological Survey](#).
- 2 Source aquifers are determined from well log information, where available, and on general water quality characteristics for the regional groundwater province within which each well is located. Source aquifers for wells with little or no well log information are inferred based on best available information.

#### Additional Source Aquifer Notes:

- Water sources labeled "Cincinnatian, Pennsylvanian, or Devonian/Silurian" are not regionally extensive aquifer systems in Missouri. These represent isolated, localized water-bearing formations. Broad water quality descriptions are Not currently available for these sources. "Precambrian" water sources exhibit water quality characteristics similar to the St. Francois aquifer.
  - The Springfield Plateau aquifer is regionally extensive only in southwest and west-central Missouri. Aquifers labeled "Mississippian" or "Springfield Plateau (equivalent)" refer to wells that draw water from the same geological formations that comprise the Springfield Plateau aquifer, but are located in areas of the state not hydraulically connected to the regional aquifer system. Broad water quality generalizations are not available for these isolated, localized water-bearing units.
- 3 Unconfined aquifers are generally more vulnerable to surface or shallow subsurface contamination and warrant additional protections around the wellhead. Confined aquifers are not as vulnerable to surface or shallow subsurface contamination, but may exhibit naturally elevated levels of dissolved minerals, radionuclides, or variations in other water quality parameters such as dissolved oxygen and pH.
  - 4 Please refer to 10 CSR 23-3.090 and 10 CSR 23-3.100 for additional information about well construction standards for Missouri's regional well drilling areas.
  - 5
  - 6
  - 7 All or a portion of the source water protection area lies within an area designated by the USDAs Natural Resource Conservation Service as a priority source water protection watershed. Enhanced cost-share opportunities for eligible best management practices on agricultural or pasture land may be available to producers in these areas. Please contact your local Natural Resource Conservation Service office to learn more or visit <https://offices.sc.egov.usda.gov/locator/app>. You may also contact the Source Water Protection and Assessment Coordinator for additional questions at [sourcewaterprotection@dnr.mo.gov](mailto:sourcewaterprotection@dnr.mo.gov).

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