

RESULTS OF THE 2014 PRIVATE WELL TESTING PROGRAM.

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Hoping to get a couple hundred participants for our summer 2014 private well texting program, the response of over 400 interested parties was a pleasant surprise. Other than a bit of scheduling problems, the Linn Sanitary District, the Geneva Lake Environmental Agency, Walworth County Public Health and George Williams College working together completed the testing of 413 private wells. Wells were tested for total bacteria, nitrates and if the well was deeper than 175 ft. it was tested for arsenic. If a well tested positive for total coliform a follow up test for E- coli was conducted immediately.

Generally speaking the well test results were good, indicating no major groundwater quality issues. Twenty-three percent of the wells tested had some total coliform present. The public drinking water standard for total coliform is zero or none present. Of the 90 wells that had total coliform only eight were confirmed as having E-coli. On site review of the wells at the time of sampling indicate that many of these wells also had issues with well casing, well caps or location. If there was a groundwater issue, one would expect higher E-coli results accompanied with high nitrates. Only two wells had nitrate levels exceeding the drinking water standard of 10 ppm. None of the wells that tested positive for E-coli had nitrates levels above 2 ppm.

Only wells that had a high likelihood of having arsenic were tested. Past testing and studies on the deep consolidated aquifer has showed a high probability of arsenic being present in water drawn from this aquifer. This consolidated aquifer is buried under approximately 200 ft. of sand and gravel. The source of arsenic is from the deep rock and not surface contamination.

Table 1. Summer 2014 Private Well Testing Results, Geneva Lake, Walworth Co. WI.		
	Number	%
Wells Sampled for Total Coliform	400	
Wells Positive for Total Coliform	90	23.0
Wells Tested for E-coli	92	
Positive for E-coli	8	8.6
Wells tested for nitrate	404	
Wells that exceeded nitrate drinking water standard. (10 ppm)	2	0.5
Wells Tested for Arsenic	79	
Wells that exceeded arsenic drinking water standard. (10 ppb)	29	36.7
Source: Geneva Lake Environmental Agency Linn Sanitary District, George Williams College Walworth County Public Health		

The following map shows the District’s nine planning areas that were used in the Private On-Site Wastewater Treatment Systems (POWTS) inspection program. When the results of the well testing program are listed by the subarea with number of POWTS in each subarea that needed repair and the number of wells tested in that area with the test results (table 2), it appears that there is little if any impact of those POWTS on the wells tested. This may be due to the fact that many of the POWTS have been upgraded or replaced or that POWTS inspected were not near the wells tested.

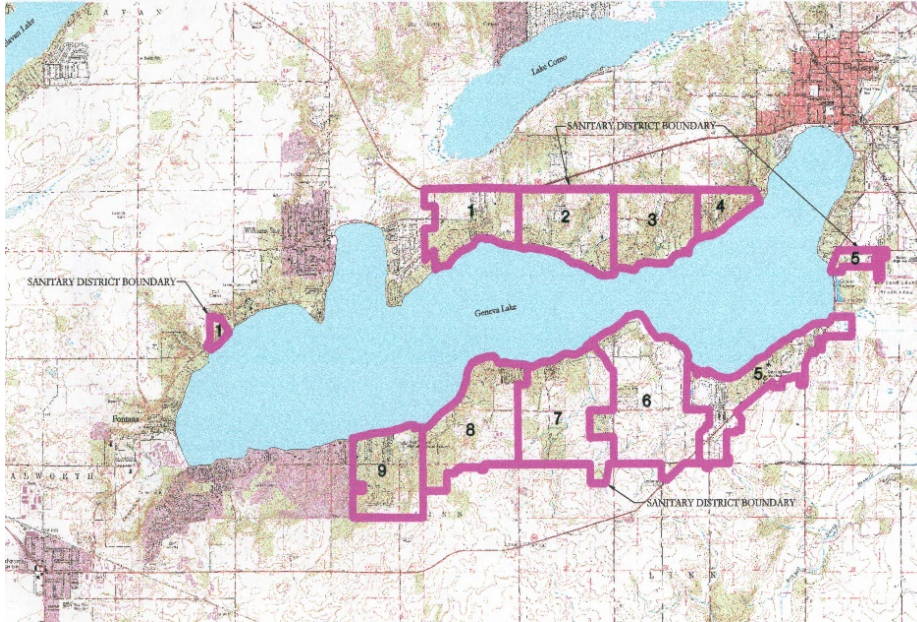


Table 2. Well Test Results by Planning Areas, Geneva Lake, Walworth Co, WI.					
POWTS Inspected		Well Testing 2014			
Subarea	Needed Repair	Wells Tested	Positive Total Coliform.	Positive E-coli	Avg. Nitrate (mg/l)
1	34	53	8	2	0.78
2	138	33	10	1	0.61
3	13	14	3	0	0.54
4	13	7	5	0	0.59
5	160	83	16	2	0.44
6	91	70	10	1	0.76
7	44	59	12	1	0.45
8	83	42	13	1	0.3
9	83	24	6	0	0.36
TOTAL	659	385	83	8	

Source: Linn Sanitary District, Geneva Lake Environmental Agency