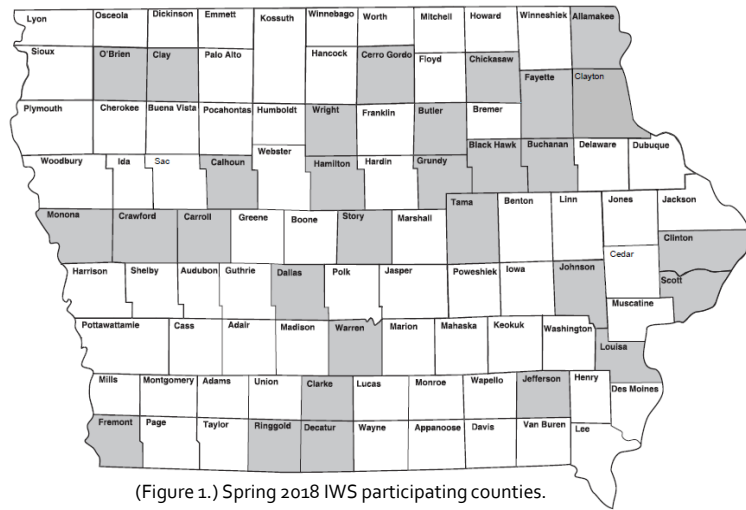


IOWA WELL SURVEY

SPRING 2018 SUMMARY REPORT

The Iowa Well Survey is an ongoing study by the State Hygienic Laboratory intended to characterize the water quality in private wells in Iowa. The survey expands the knowledge of the concentration and distribution of existing and emerging contaminants that affect the health of Iowans consuming water from private wells.

During the months of May and June 2018, thirty counties across the state (Figure 1) participated in the survey and cumulatively provided 504 untreated private well samples for analysis of total coliform bacteria, *E. coli*, nitrate + nitrite nitrogen as N, total arsenic, and neonicotinoid insecticides (Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, Sulfoxaflor, Thiacloprid, and Thiamethoxam). An additional 83 treated water samples were submitted for limited comparison of results between treated and untreated samples.



(Figure 1.) Spring 2018 IWS participating counties.

The table below provides a comprehensive summary of all compounds present with a quantifiable concentration.

	Nitrate as N MCL 10 mg/L	<i>E. Coli</i> Bacteria MCL zero	Total Coliform Bacteria MCL zero	Total Arsenic MCL 0.01 mg/L	Neonicotinoid Insecticides MCL†
RAW					
Total Detections	262	50	210	164	11
Total Detections <i>above MCL</i>	63	50	210	16	N/A
TREATED					
Total Detections	42	2	13	24	1
Total Detections <i>above MCL</i>	5	2	13	4	N/A

* MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are enforceable standards.

† Compound does not have an established Maximum Contaminant Level as set by the EPA. Additional guidance may be available in the EPA 2012 Edition of the Drinking Water Standards and Health Advisories.



IOWA WELL SURVEY

MONONA COUNTY

2018 SPRING SUMMARY REPORT

Monona County submitted 26 untreated and eight treated samples for analysis. In the summary of results below, quantifiable detections of a compound are indicated by yellow shading, while concentrations that exceed the EPA Maximum Contamination Level for drinking water are shaded red. The seven neonicotinoid insecticide compounds do not have an established Maximum Contaminant Level as set by the EPA. Due to unknown health effects, any quantifiable detection is noted in red. Wells that were sampled for both pre- and post- treatment are paired by a bracket for comparison.

Sample #	City	Treatment	Acetamiprid ug/L	Clothianidin ug/L	Dinotefuran ug/L	Imidacloprid ug/L	Sulfoxaflor ug/L	Thiacloprid ug/L	Thiamethoxam ug/L	Nitrate + Nitrite as N mg/L	E.coli [MPN]/100mL	Total Coliform [MPN]/100mL	Arsenic mg/L
651754	Mapleton	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10 †	no data	8 †	<0.001
651755	Mapleton	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	23 †	no data	>8 †	<0.001
652212	Onawa	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<1.0 †	no data	<1.1 †	0.007
652211	Onawa	Treated	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<1.0 †	no data	<1.1 †	<0.001
652213	Mapleton	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	4.1 †	no data	<1.1 †	<0.001
654662	Onawa	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<1.0 †	no data	<1.1 †	0.004
654710	Onawa	Treated	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<1.0 †	no data	<1.1 †	<0.001
654663	Little Sioux	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<1.0 †	no data	<1.1 †	<0.001
657668	Blencoe	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<1.0 †	no data	<1.1 †	0.009
654688	Blencoe	Treated	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<1.0 †	no data	<1.1 †	0.002
657724	Onawa	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	0.007
657714	Onawa	Treated	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	<0.001
657746	Onawa	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	0.01
657749	Onawa	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	0.01
660660	Onawa	Treated	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	0.003
657830	Onawa	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	0.007
657769	Onawa	Treated	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	0.003



Sample #	City	Treatment	Acetaminiprid ug/L	Clothianidin ug/L	Dinotefuran ug/L	Imidacloprid ug/L	Sulfoxaflor ug/L	Thiacloprid ug/L	Thiamethoxam ug/L	Nitrate + Nitrite as N mg/L	E.coli [MPN]/100mL	Total Coliform [MPN]/100mL	Arsenic mg/L
658324	Mapleton	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	28.8	<0.001
658320	Mapleton	Treated	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	<0.001
658321	Onawa	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	0.003
658322	Mapleton	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	<0.001
658323	Moorhead	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	2.7	<1	19.2	<0.001
658325	Soldier	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	6.8	<1	>200.5	<0.001
660645	Hornick	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	2	0.005
660646	Castana	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	3.7	<1	<1	<0.001
660659	Hornick	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	0.006
660662	Onawa	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	0.84	<1	<1	0.002
661196	Moorhead	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	<0.001
661197	Moorhead	Treated	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	<0.001
661201	Dunlap	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	<0.001
661202	Blencoe	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	2.8	<1	<1	<0.001
661203	Mapleton	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	45	6.4	>200.5	<0.001
663614	Whiting	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	1.2	<1	<1	0.009
664157	Whiting	Raw	<0.025	<0.025	<0.025	<0.025	<0.050	<0.050	<0.025	<0.10	<1	<1	0.01

† Data reported by an unaffiliated laboratory.