2014

WATER SAMPLING

RESULTS

FOR SELECTED

MS4 SITES

WRITTEN BY ELISE PFAFF, REHS, MS4 ENVIRONMENTALIST II
CHARTS PREPARED BY NATHANIEL TANN, GOSHEN COLLEGE INTERN

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IN-STREAM SAMPLING PROTOCOLS FOR MS4 SITES

Beginning the second week of April and ending the last full week of September, the Storm Water Section of the Environmental Health Division conducted surface water testing on a weekly basis throughout the county on ditches, creeks, lakes and the Elkhart River. The sampling provides data to help prioritize sites with a high illicit discharge potential, characterizes water quality problems, help determine critical areas for improvements, and documents the long term success of the illicit discharge and elimination program.

The sites are selected by Storm Water Representatives from the MS 4 Partnership which includes the cities of Elkhart and Goshen, the town of Bristol, and Elkhart County agencies which meet annually to determine if changes need to be made to the locations. The standard procedure is to obtain a minimum of three years of data in order to identify any trends. The following is a list of the sites from the 2014 season:

Shaffer Ditch; County Road 26
Hoke Ditch; County Road 11
Owl Creek; County Road 11
Yellow Creek; County Road 32, County Road 138, County Road 11 and County Road 18
Little Yellow Creek; County Road 13
Weaver Ditch; County Road 44
Turkey Creek; County Road 17 and County Road 50
Swoveland Ditch; County Road 21
Christiana Creek; County Road 4
Rock Run Creek; County Road 21 and County 34
Horn Ditch; County Road 31
Elkhart River; County Road 43, County Road 40, Indiana Avenue and Old County Road 17
Heaton Lake; Ideal Beach and 22892 Lake Shore
Simonton Lake; 51093 Beach Drive and 51330 State Road 19
Cobus Creek; County Road 10

The sampling form includes whether the sample was considered wet or dry and whether it was raining at the time of sample collection. A wet weather event is defined as a rain event with precipitation greater than .1 inches of rain within a twenty-four hour period prior to collection. A dry weather event is defined as a sampling event with no precipitation twenty-four hours prior to collection.

Data gathered for nitrates, dissolved oxygen, pH, temperature, and conductivity are obtained in the field by using a YSI Professional Plus Instrument Probe. Calibration of the instrument probe is done in accordance with the owner's manual. The instrument probe is lowered into the approximate center part of the waterway and placed below the surface of the water to obtain actual real time data. At the sites with piers (Simonton Lake and Heaton Lake) the instrument probe is lowered into the water at the end of the piers. According to the technical experts at YSI, this information is to be used for trending purposes only.

Tests for chlorides, phosphates, total suspended solids, and E. coli are grab samples in which a single volume of water is obtained at a given point in time, placed in a prepared sample bottle and then analyzed. Water samples were collected using one of two methods. For low flow sampling and sites

with piers, a dipper was used. The dipper is rinsed three times at each site prior to collection to prevent cross contamination between sample sites. For high flow streams, a Van Dorn sampler is used. The device is lowered into the approximate center of the waterway and placed below the water surface for a minimum of twenty seconds with the ends open to allow rinsing of the unit between sampling sites. A weight is then dropped on a line striking a triggering mechanism which tightly closes each end of the tube at the same time. This captures the free flowing water to be sampled. All samples are placed in pre-labeled and prepared sample bottles.

Chloride and phosphorus samples are collected for analysis in the Elkhart County Health Department Laboratory using a Hach portable spectrophotometer. Chain of custody procedures are required and implemented. These include labeling the bottles with the sample site number and all other information as recorded on the water sampling form. Items on the water sampling form include the sampling site identification, sampling date and time, sampling number, dry or wet event, raining at time of collection, and the name of the individuals who collected the sample.

Total suspended solids are collected every Tuesday at the ditches and creeks for analysis by the Elkhart Public Works and Utilities Laboratory. Every other Thursday, total suspended solids are collected at the Elkhart River sites, Rock Run Creek and Horn Ditch for analysis by the City of Goshen Waste Water Treatment Plant Laboratory. For all E. coli samples and the Tuesday total suspended solids samples, a label is filled out with the site number, location, collection date, who collected the sample, who transported and relinquished the sample. These documents are attached to the sample container. Upon arrival at the Elkhart Public Works and Utilities Laboratory, time is also added to the label. The label includes a space to acknowledge who received the sample. The Elkhart County Health Department's water sampling form is also signed by an Elkhart laboratory representative with the time of sample delivery and a copy is made and kept in their laboratory records. This procedure is implemented to verify chain of custody. For the Thursday total suspended solids, the samples are collected in pre-labeled containers with the site number, location, date, and who collected the sample. The time is added to the sampling form when the samples are delivered to the City of Goshen Waste Water Treatment Plant Laboratory. Upon delivery, Elkhart County Health Department representatives place the total suspended solids samples into a refrigerated unit to ensure proper temperature requirements before analysis.

All samples collected are immediately placed in a cooler with chill packs as they are obtained in order to maintain proper temperature requirements during transportation per standard methods protocol.

PARAMETER DEFINITIONS AND THEIR IMPORTANCE

CHLORIDES are found in groundwater, streams, and lakes and may be of natural mineral origin or from human or animal sewage, industrial process wastewaters, agricultural fields and roadway deicing salts. It is recommended if very high levels (500 mg/l or more) are found, further investigation should take place to locate the source.

CONDUCTIVITY (SpC) is a measure of how easily electricity flows through water. It is strongly correlated with total dissolved solids. It is useful as a general measure of water quality. Each water body has a fairly constant range of conductivity that can be used for baseline readings. Significant changes in conductivity may be an indicator that a discharge or some other source of pollution has entered the water way. If this occurs, it is recommended that further investigation should take place to locate the source.

DISSOLVED OXYGEN (DO) is considered to be one of the most important parameters of water quality in streams, rivers, and lakes. All aquatic organisms need dissolved oxygen in the water to survive. Stream systems produce and consume oxygen. If more oxygen is consumed than produced, dissolved oxygen levels decline and some organisms move away, weaken, or die. Higher concentrations of dissolved oxygen equate to better water quality. Aquatic life is stressed at levels below 5.0 mg/l and levels below 2 mg/l will not support fish. Dissolved oxygen is very sensitive to temperature. The solubility of oxygen in water decreases as temperature increases. A waste discharge can have a dramatic effect on the oxygen balance of a water body by raising water temperature or introducing pollutants which remove the dissolved oxygen. According to 327 IAC 2-1-6 and the US EPA, the recommended target value is > 6 mg/l and not > 9 mg/l.

E. COLI is a species of fecal coliform bacteria that is specific to fecal matter from humans and other warm-blooded animals. E. coli indicates the possible presence of pathogenic bacteria, viruses, and protozoa that also live in the digestive systems of humans and animals. Their presence in a water body suggest pathogens might be present and that swimming/full body contact recreation can be a health risk. As required by the United States Environmental Protection Agency, total maximum daily load (TMDL) calculations have been established by the Indiana Pollution Control Board (327 IAC 2-1-6 Section 6(d)) for E. coli using membrane filter count and are the following numeric Standards:

> "Concentrations shall not exceed 125 cfu/100 ml as a geoemetric mean based on not less than five samples equally spaced over a 30-day period nor exceed 235 cfu/100 ml in any one sample in a 30-day period."

NITRATES (N03) are one of the four forms of nitrogen in the nitrogen cycle. They are essential plant nutrients but in excess amounts they can cause significant water quality problems. Together with phosphorus they can cause increase in plant growth and changes in the types of plants and animals that live in surface water. In turn this affects dissolved oxygen and temperature. Excess nutrients can cause hypoxia which is a condition characterized by low levels of dissolved oxygen when the plants decay. The natural level of nitrates in surface water is typically low, less than 1 mg/l. Sources of nitrates include failing onsite septic systems, runoff from animal manure storage areas, fertilizer runoff from lawns and cropland, wastewater treatment plants and industrial discharges that contain corrosion inhibitors. The US EPA reference level is < 1.5 mg/l.

pH The pH scale measures the logarithmic concentration of hydrogen and hydroxide ions which make up water. Pure water, equal ion concentrations, is neutral with a pH of 7.0. Below 7.0 the water is acidic and above 7.0 the water is alkaline. pH affects many chemical and biological processes in water. The majority of the aquatic organisms survive and thrive at a range of 6.5-8.0. pH outside of this range reduces the diversity of the water way because it stresses the physiological systems of most organisms and can reduce reproduction. Low pH also allows toxic elements and compounds to become soluble and available for uptake by aquatic plants and animals. Some industrial discharges contain very high 12-14 pH or very low 1-3 pH. pH is a good monitoring parameter and significant fluctuations need to be investigated. According to 327 IAC 2-1-6, the target value is > 6 or < 9.

PHOSPHORUS Like nitrogen, phosphorus is an essential nutrient for plants and animals that make up the aquatic food chain. Phosphorus in waterways accelerates plant growth and algae blooms and with their decomposition result in low dissolved oxygen and death of some fish, invertebrates and other aquatic species. There are many natural and human sources of phosphorus. These include soil and rocks, wastewater treatment plants, runoff from fertilized lawns and cropland, failing onsite septic systems, runoff from animal manure storage areas, disturbed land areas and commercial cleaning preparations. Phosphorus is the limiting nutrient in many aquatic environments and very small inputs greatly affect photosynthetic productivity and can initiate a massive bloom of plants and algae in slow moving streams and ponds. These blooms are not desired and have a deleterious effect on the aquatic environments where phosphorus has been enriched. The IDEM 303(d) listing criteria is < 0.3 mg/l.

TEMPERATURE is a very important water quality parameter and influences all biological and chemical reactions. Temperature influences the dissolved oxygen content of the water, the metabolism of all aquatic organisms, the rate of photosynthesis, and the sensitivity of organisms to pollutants such as toxic wastes and parasites. All aquatic organisms have optimal temperatures for their survival. Many factors affect temperature including stream flow, sunlight, shade, water depth, turbidity, bottom color and composition, soil erosion, storm water runoff, and seasonal changes. Temperature is measured in degrees Celsius.

TOTAL SUSPENDED SOLIDS (TSS) are particulates in water and can include many organic and inorganic sources such as silt, decaying plant and animal matter, sewage and industrial wastes. They cause the water to be milky or muddy looking due to the light scattering from very small particles in the water. This is called turbidity. Suspended solids can destroy fish habitat because they can settle to the bottom and smother the eggs of fish and aquatic insects and suffocate newly hatched insect larvae. High levels of suspended solids can clog the gills of fish and reduce their growth rates and reduce dissolved oxygen. Also, pollutants and contaminants adhere to the suspended solids. Total suspended solids are measured in mg/l. There are no numeric standards for total suspended solids however they must meet narrative standards which state in part: "all waters at all times and places, including the mixing zone, shall meet the minimum conditions of being free from substances, materials, floating debris, oil, or scum attributable to municipal, industrial, agricultural, and other land use practices, or other discharges which are in amounts sufficient to injure, be acutely toxic to, or otherwise produce serious adverse physiological responses in humans, animals, aquatic life or plants."

NOTE: The above information was obtained from the United States Environmental Protection Agency (US EPA), the Indiana Department of Environmental Management (IDEM), The Center for Watershed Protection, and Purdue University Department of Agricultural and Biological Engineering.

SAMPLING RESULTS AND CHARTS

Charts were prepared for E. coli and total suspended solids. Appendix one contains the surface water sampling data. Appendix two contains the charts.

SUMMARY AND CONCLUSION

This year's sampling had a few setbacks. Three of the selected sites had fewer samples taken than in the previous year. Shaffer Ditch at County Road 26 developed a dense vine which was covering the steep cement slope leading to the corrugated metal pipe. Staff members tripped over the vine and one staff member fell. Therefore, the site was eliminated on July 15. On April 15 there was ice on the corrugated metal pipe. On June 24, July 1, and July 8 rains made the corrugated metal pipe slippery.

At the Owl Creek location on County Road 11 the site was also eliminated. The rip-rap on the south side of the creek became covered with moss making the surface of the rip-rap very slippery. The rip-rap also has a tendency to shift. On the north side of the creek the vegetation grew very tall. The bank of the creek had holes, was very uneven and had a steep slope. Access from the corrugated metal pipe was not possible.

The Weaver Ditch site also has rip-rap surrounding the corrugated metal pipe. The rip-rap is unstable and the vegetation grew very tall at this site also. These three sites will need to be re-evaluated in order to determine if they should be completely eliminated.

Hoke Ditch on County Road 11 occasionally does not have enough water to collect a reliable sample. The sampling tube sometimes is on the bottom of the ditch and collects higher than normal sediment. On the last two weeks of July, the ditch did not have enough water in it to even collect a sample.

According to the United States Environmental Protection Agency, "a water body is considered impaired when a water quality standard is violated, whether through exceedance of a numeric or narrative criterion, impairment of a designated use or violation of anti-degradation policy." The results of the 2014 sampling season continue to indicate E. coli levels in excess of the total maximum daily load of 235 cfu/100 ml. Christiana Creek is the exception to this exceedance which is the control site.

All water bodies are capable of assimilating a certain amount of pollution without adverse effects because of the dilution and self-purification capabilities of natural processes. The ability of a water body to mitigate for an organic pollutant, such as E. coli is dependent on many factors such as stream flow, depth, dissolved oxygen, temperature, available sunlight, and time. However the high levels of E.coli indicate these pathogens are being infused at a rate greater than can mitigated through natural processes resulting in these higher than acceptable numbers. Results such as these are indicators of illicit discharges entering the water bodies and will require further investigation to determine the source.

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Special recognition goes to the laboratory staff at the Elkhart City Public Works and Utilities and the City of Goshen Waste Water Treatment Plant. Their cooperation and expertise was instrumental to this effort and is very much appreciated. Last but not least, I would like to thank Nathaniel Tann, Goshen College Intern who prepared the charts in record time.

Elise Pfaff, REHS
MS4 Environmentalist II

APPENDIX 1:

SURFACE

WATER

DATA

SHAFFER DITCH CR 113 & CR 26

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	8:20	6.8	7.23	460.6	7.51	3.31	0.327	10.3	13	150	N	Y
4/15/2014	9:05		DID NOT SAMPLE - ICE ON CULVERT									
4/22/2014	8:45	9.4	6.99	623.4	7.65	3.28	0.331	11.2	5	2400	N	N
4/29/2014	9:00	10.4	8.07	626.9	7.45	3.16	0.412	12.8	4	600	N	N
5/6/2014	9:05	8.2	7.82	640.5	7.63	3.18	0.386	10.8	LAB CLOSED		N	N
5/13/2014	8:50	16.1	6.17	610.0	7.50	EXCEEDED HOLD TIME			6	1500	N	Y
5/20/2014	8:45	12.5	5.20	621.6	7.65	1.39	0.410	29.9	3	380	N	N
5/27/2014	8:35	15.3	4.89	615.0	7.63	1.62	0.188	23.6	5	480	N	Y
6/3/2014	8:20	16.1	5.17	665.0	7.60	4.12	1.430	26.8	6	2280	N	Y
6/10/2014	8:30		YSI INOPERABLE			1.46	0.412	32.4	8	1300	N	N
6/17/2014	8:20	16.7	6.05	658.0	7.76	0.804	0.359	28.5	13	800	N	N
6/24/2014			TOO SLIPPERY TO SAMPLE									
7/1/2014			TOO SLIPPERY TO SAMPLE									
7/8/2014			TOO SLIPPERY TO SAMPLE									
7/15/2014			SITE UNSAFE, VINE COVERING STEEP SLOPE AND CULVERT									
7/22/2014			SITE UNSAFE, VINE COVERING STEEP SLOPE AND CULVERT									
7/29/2014			SITE UNSAFE, VINE COVERING STEEP SLOPE AND CULVERT									
8/5/2014			SITE UNSAFE, VINE COVERING STEEP SLOPE AND CULVERT									
8/12/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
8/19/2014			SITE UNSAFE, VINE COVERING STEEP SLOPE AND CULVERT									
8/26/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
9/2/2014			SITE UNSAFE, VINE COVERING STEEP SLOPE AND CULVERT									
9/9/2014			SITE UNSAFE, VINE COVERING STEEP SLOPE AND CULVERT									
9/16/2014			SITE UNSAFE, VINE COVERING STEEP SLOPE AND CULVERT									
9/23/2014	9:00	10.2	8.71	665.4	8.06	3.46	0.572	36.2	4	285	N	N

HOKE DITCH CR 11

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	8:35	4.1	6.60	573.6	7.47	10.60	0.472	21.9	8	840	N	Y
4/15/2014	9:15	3.0	8.01	615.7	7.51	9.80	0.468	22.1	5	460	N	N
4/22/2014	9:00	10.2	4.92	645.6	7.46	9.96	0.468	22.1	6	360	N	N
4/29/2014	9:15	10.2	5.92	658.4	7.52	8.86	0.492	24.8	9	470	N	N
5/6/2014	9:15	9.2	6.03	662.1	7.61	8.98	0.464	26.2	LAB CLOSED		N	N
5/13/2014	9:10	17.6	3.91	664.0	7.37	EXCEEDED HOLD TIME			8	384	N	Y
5/20/2014	9:00	12.7	6.12	640.3	7.49	8.68	0.406	42.3	3	216	N	N
5/27/2014	8:50	16.1	2.66	540.3	7.30	7.98	1.710	48.4	22	>63200	N	Y
6/3/2014	8:35	18.6	3.21	650.0	7.49	7.14	1.690	52.6	6	1050	N	Y
6/10/2014	8:45		YSI INOPERABLE			8.54	0.410	40.8	7	330	N	N
6/17/2014	8:30	20.1	3.06	688.0	7.49	6.27	0.600	40.9	11	420	N	N
6/24/2014	8:40	19.7	4.04	503.1	7.13	11.9	1.160	26.2	46	5800	Y	Y
7/1/2014	8:40	19.6	3.19	577.0	7.17	6.89	1.670	49.2	22	3200	N	Y
7/8/2014	8:40	19.9	2.95	700.0	7.44	1.76	1.120	32.4	28	5600	Y	Y
7/15/2014	8:45	16.6	3.47	722.0	7.53	2.17	1.060	31.2	48	680	N	N
7/22/2014			LOW FLOW-NOT ENOUGH WATER TO SAMPLE									
7/29/2014			LOW FLOW-NOT ENOUGH WATER TO SAMPLE									
8/5/2014	8:40	18.3	3.11	682.0	7.50	1.57	1.010	19.2	8	480	N	Y
8/12/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
8/19/2014	8:55	17.6	3.22	450.9	7.66	7.42	1.080	36.2	14	320	N	N
8/26/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
9/2/2014	8:45	20.1	3.19	681.0	7.46	7.48	1.100	34.5	12	420	N	N
9/9/2014	8:45	16.9	4.59	705.0	7.67	7.62	0.690	30.2	11	172	N	N
9/16/2014	9:00	13.3	4.66	709.0	7.52	7.12	0.648	28.6	13	300	N	N
9/23/2014	9:10	11.7	4.28	746.0	7.58	6.98	0.598	31.6	55	280	N	N

OWL CREEK CR 11

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	8:45	4.6	7.12	764.1	7.52	7.97	0.348	21.4	17	4300	N	Y
4/15/2014	9:25	3.3	8.10	654.1	7.44	7.48	0.354	20.8	6	1600	N	N
4/22/2014	9:10	9.4	7.46	669.7	7.41	8.12	0.354	20.8	5	900	N	N
4/29/2014	9:20	10.2	7.19	673.1	7.60	8.54	0.386	22.8	4	200	N	N
5/6/2014	9:25	8.4	7.70	710.7	7.54	8.21	0.368	20.2	LAB CLOSED		N	N
5/13/2014	9:15	15.7	5.67	682.0	7.67	EXCEEDED HOLD TIME			8	1000	N	Y
5/20/2014	9:10	12.1	5.26	662.1	7.68	6.53	0.384	44.1	19	1900	N	N
5/27/2014	9:00	15.4	5.34	553.0	7.64	6.94	0.374	39.4	14	10700	N	Y
6/3/2014	8:45	16.8	3.94	681.0	7.65	7.48	0.472	42.8	238	314	N	Y
6/10/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
6/17/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
6/24/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
7/1/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
7/8/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
7/15/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
7/22/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
7/29/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
8/5/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
8/12/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
8/19/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
8/26/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
9/2/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
9/9/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
9/16/2014	SITE ELIMINATED - TALL VEGETATION - STEEP SLOPE - SAFETY ISSUE											
9/23/2014	9:25	11.6	7.92	787.0	7.80	6.98	0.454	44.2	191	360	N	N

YELLOW CREEK CR 32

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	8:55	5.1	7.57	663.8	7.44	10.50	0.742	33.2	17	2000	N	Y
4/15/2014	9:45	4.1	8.62	699.4	7.47	10.60	0.738	32.6	6	1150	N	N
4/22/2014	9:20	10.7	7.18	701.0	7.45	10.60	0.786	34.8	4	61	N	N
4/29/2014	9:30	10.7	7.48	715.0	7.57	10.40	0.812	38.2	4	307	N	N
5/6/2014	9:35	9.7	8.22	703.1	7.67	9.60	0.798	34.2	LAB CLOSED		N	N
5/13/2014	9:25	18.7	4.29	720.0	7.78	EXCEEDED HOLD TIME			6	500	N	Y
5/20/2014	9:20	13.7	6.02	712.0	7.68	8.13	0.698	48.7	4	300	N	N
5/27/2014	9:10	18.7	4.66	706.0	7.78	8.28	0.743	42.5	7	1660	N	Y
6/3/2014	9:00	19.4	4.00	738.0	7.56	9.12	0.768	56.2	5	460	N	Y
6/10/2014	8:55		YSI INOPERABLE			6.98	0.564	50.2	10	620	N	N
6/17/2014	8:45	20.4	4.49	755.0	7.74	6.01	0.843	51.2	27	730	N	N
6/24/2014	8:50	19.5	5.32	684.0	7.45	17.70	1.440	27.3	96	22400	Y	Y
7/1/2014	8:55	20.0	4.93	671.0	7.69	6.42	0.712	40.6	70	13400	N	Y
7/8/2014	8:50	20.6	4.65	739.0	7.82	2.41	5.980	34.2	9	2100	Y	Y
7/15/2014	9:00	17.6	4.99	765.0	7.63	2.97	0.822	37.6	11	1000	N	N
7/22/2014	8:50	18.3	6.82	744.0	7.63	6.21	0.878	52.4	11	1690	N	N
7/29/2014	8:50	14.4	5.99	691.0	7.68	6.42	0.796	54.1	14	6500	N	N
8/5/2014	8:45	18.6	4.48	717.0	7.92	4.64	1.080	30.0	6	860	N	Y
8/12/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
8/19/2014	9:10	18.5	5.19	786.0	7.51	5.76	1.720	40.2	18	600	N	N
8/26/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
9/2/2014	8:55	19.5	4.36	791.0	7.78	5.92	1.660	45.9	45	3000	N	N
9/9/2014	9:00	16.3	5.49	805.0	7.93	5.48	1.060	40.6	13	595	N	N
9/16/2014	9:15	12.9	6.32	816.0	7.97	6.12	0.978	41.2	9	620	N	N
9/23/2014	9:35	11.9	6.56	799.0	7.96	6.32	0.989	38.6	16	480	N	N

LITTLE YELLOW CREEK CR 13

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	9:05	4.7	7.17	754.2	7.32	7.95	0.809	22.8	27	1375	N	Y
4/15/2014	9:55	3.5	8.78	584.4	7.49	8.12	0.812	22.0	23	440	N	N
4/22/2014	9:30	9.3	7.57	628.6	7.38	7.96	0.811	20.8	6	1925	N	N
4/29/2014	9:40	10.6	6.34	634.0	7.43	8.12	0.816	22.8	12	9700	N	N
5/6/2014	9:40	8.9	8.41	622.7	7.89	8.02	0.802	21.6	LAB CLOSED		N	N
5/13/2014	9:35	16.8	5.86	660.0	7.54	EXCEEDED HOLD TIME			7	2700	N	Y
5/20/2014	9:30	13.1	5.60	657.0	7.49	6.35	0.812	39.7	5	2300	N	N
5/27/2014	9:20	17.5	4.63	621.0	7.54	7.36	0.790	26.1	22	9200	N	Y
6/3/2014	9:10	17.6	2.61	702.0	7.44	6.87	0.752	28.4	12	420	N	Y
6/10/2014	9:05		YSI INOPERABLE			7.86	0.796	35.8	27	1160	N	N
6/17/2014	8:55	18.3	2.66	750.0	7.68	5.17	0.848	24.2	69	2800	N	N
6/24/2014	9:00	19.7	3.45	573.0	7.09	11.10	1.110	29.6	41	7000	Y	Y
7/1/2014	9:05	19.8	0.69	682.0	7.28	7.62	0.711	24.2	30	63200	N	Y
7/8/2014	8:50	19.3	1.09	699.0	7.39	2.68	0.698	24.6	28	440	Y	Y
7/15/2014	9:10	16.8	2.14	662.0	7.54	2.98	1.260	17.9	34	420	N	N
7/22/2014	9:00	17.4	1.04	718.0	7.56	5.24	0.812	26.1	108	1300	N	N
7/29/2014	9:00	13.2	2.47	717.0	7.57	5.78	0.808	25.4	70	430	N	N
8/5/2014	8:55	17.8	1.39	730.0	7.53	5.30	2.040	50.6	45	2100	N	Y
8/12/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
8/19/2014	9:15	17.2	1.14	756.0	7.56	6.62	1.210	24.6	12	640	N	N
8/26/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
9/2/2014	9:05	19.1	1.34	800.0	7.27	6.87	1.160	23.3	13	300	N	N
9/9/2014	9:10	15.7	2.06	800.0	7.49	5.98	1.080	20.4	3	253	N	N
9/16/2014	9:20	13.6	3.11	772.0	7.60	5.67	1.010	22.6	3	140	N	N
9/23/2014	9:45	11.8	3.64	791.0	7.44	5.82	1.212	24.8	2	124	N	N

YELLOW CREEK CR 138

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	9:20	5.6	7.23	642.1	7.31	12.70	0.830	28.9	14	3800	N	Y
4/15/2014	10:10	4.4	9.12	695.0	7.51	12.60	0.836	26.8	8	5100	N	N
4/22/2014	9:40	9.8	7.47	726.0	7.40	12.20	0.886	28.2	5	940	N	N
4/29/2014	9:55	10.4	7.92	743.0	7.46	12.10	0.898	29.4	4	420	N	N
5/6/2014	DISCONTINUED WATER SAMPLING - VEHICLE ISSUES								LAB CLOSED			
5/13/2014	9:45	18.0	5.04	730.0	7.75	EXCEEDED HOLD TIME			10	800	N	Y
5/20/2014	9:45	13.2	6.94	720.0	7.68	10.10	0.868	56.8	8	1560	N	N
5/27/2014	9:35	17.6	4.29	773.0	7.56	11.20	0.306	84.1	20	>63200	N	Y
6/3/2014	9:20	19.0	2.69	755.0	7.65	12.10	2.870	86.2	7	1720	N	Y
6/10/2014	9:20	YSI INOPERABLE				7.12	0.812	62.6	9	1020	N	N
6/17/2014	9:05	20.1	4.36	795.0	7.78	8.90	0.946	60.8	8	560	N	N
6/24/2014	9:15	19.3	4.35	720.0	7.24	18.10	1.700	51.2	84	ERROR	Y	Y
7/1/2014	9:20	19.6	3.92	807.0	7.56	12.10	3.120	70.4	16	26400	N	Y
7/8/2014	9:15	20.3	4.43	829.0	7.71	4.12	2.460	58.2	50	7400	Y	Y
7/15/2014	9:25	17.8	4.29	844.0	7.70	4.18	1.520	52.1	14	369	N	N
7/22/2014	9:15	19.3	4.23	896.0	7.72	8.68	0.912	64.1	378	991	N	N
7/29/2014	9:15	14.7	6.19	784.0	7.59	8.12	0.942	60.8	40	2900	N	N
8/5/2014	9:10	19.3	3.67	847.0	7.68	4.43	0.809	31.2	58	560	N	Y
8/12/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
8/19/2014	9:35	19.4	2.71	972.0	7.68	7.12	2.140	58.2	36	23000	N	N
8/26/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
9/2/2014	9:25	20.3	3.68	897.0	7.87	7.06	2.230	64.0	30	1220	N	N
9/9/2014	9:30	16.7	3.91	966.0	7.91	6.96	1.940	50.8	16	580	N	N
9/16/2014	9:40	13.0	6.10	853.0	8.03	6.96	1.840	52.6	6	510	N	N
9/23/2014	10:00	11.3	6.26	958.0	8.00	8.12	1.780	54.9	7	1160	N	N

YELLOW CREEK CR 11

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	9:30	5.7	7.01	556.5	7.21	10.00	0.722	21.2	18	1000	N	Y
4/15/2014	10:20	6.3	7.60	604.1	7.49	10.20	0.689	20.2	12	480	N	N
4/22/2014	9:50	12.2	4.65	610.6	7.61	10.20	0.768	24.2	19	4500	N	N
4/29/2014	10:05	11.4	6.01	591.7	7.72	13.10	0.814	28.2	8	257	N	N
5/6/2014		DISCONTINUED WATER SAMPLING - VEHICLE ISSUES							LAB CLOSED			
5/13/2014	9:55	20.1	4.56	565.0	7.65		EXCEEDED HOLD TIME		11	980	N	Y
5/20/2014	9:55	14.5	4.19	570.6	7.35	7.77	0.812	45.9	7	173	N	N
5/27/2014	9:45	18.9	6.84	1031.0	7.27	8.12	4.370	117.8	42	>63200	N	Y
6/3/2014	9:30	20.3	1.61	642.0	7.44	9.12	4.410	132.8	35	1120	N	Y
6/10/2014	9:30		YSI INOPERABLE			12.40	0.788	48.7	17	440	N	N
6/17/2014	9:15	21.7	1.26	708.0	7.59	4.64	0.865	59.4	13	560	N	N
6/24/2014	9:30	19.9	3.12	659.0	7.08	12.00	0.876	34.3	55	1650	Y	Y
7/1/2014	9:30	20.8	1.40	695.0	7.29	8.01	4.160	57.6	4	1740	N	Y
7/8/2014	9:25	21.6	0.64	671.0	7.44	7.47	4.320	48.6	3	700	Y	Y
7/15/2014	9:35	18.0	0.71	675.0	7.44	1.40	1.370	35.3	8	62	N	N
7/22/2014	9:20	20.5	0.41	881.0	7.36	5.78	0.798	60.2	90	670	N	N
7/29/2014	9:25	15.0	0.84	684.0	7.60	5.61	0.764	58.2	5	380	N	N
8/5/2014	9:15	20.3	0.13	795.0	7.28	1.66	0.304	21.7	36	1280	Y	Y
8/12/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
8/19/2014	9:45	19.9	0.89	771.0	7.50	8.98	2.160	40.6	46	1867	N	N
8/26/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
9/2/2014	9:35	20.7	0.074	735.0	7.37	9.12	2.200	39.7	42	1220	N	N
9/9/2014	9:40	16.6	0.40	750.0	7.32	8.46	1.790	36.2	118	2400	N	N
9/16/2014	9:55	12.3	2.09	724.0	7.64	7.98	1.690	40.2	19	215	N	N
9/23/2014	10:15	10.7	2.45	742.0	7.38	6.86	1.540	42.6	27	730	N	N

WEAVER DITCH CR 44

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	9:45	4.7	3.50	753.0	7.44	13.5	2.040	35.5	4	2500	N	Y
4/15/2014	10:35	4.3	7.68	598.9	7.62	13.4	3.120	39.8	8	141	N	N
4/22/2014	10:05	7.7	2.57	1074.0	7.55	13.5	2.260	48.4	10	65000	N	N
4/29/2014	10:15	9.5	3.04	962.0	7.60	12.8	3.120	56.2	8	375	N	N
5/6/2014		DISCONTINUED WATER SAMPLING - VEHICLE ISSUES							LAB CLOSED			
5/13/2014	10:05	15.3	1.76	1022.0	7.53		EXCEEDED HOLD TIME		12	50000	N	Y
5/20/2014		DID NOT SAMPLE - COMMUNITY OPEN DUMP BURNING										
5/27/2014	10:00	14.6	2.79	834.0	7.33	10.4	4.620	78.5	34	>63200	N	Y
6/3/2014	9:40	16.3	2.67	937.0	7.61	12.6	4.890	80.4	27	5400	N	Y
6/10/2014	9:40		YSI INOPERABLE			8.6	0.948	71.2	32	760	N	N
6/17/2014	9:25	17.2	1.98	925.0	7.57	15.9	3.620	55.6	53	880	N	N
6/24/2014			SITE TOO SLIPPERY TO SAMPLE									
7/1/2014			SITE TOO SLIPPERY TO SAMPLE									
7/8/2014			SITE TOO SLIPPERY TO SAMPLE									
7/15/2014			SITE UNSAFE DUE TO TALL VEGETATION AND STEEP SLOPE TO CULVERT									
7/22/2014			SITE UNSAFE DUE TO TALL VEGETATION AND STEEP SLOPE TO CULVERT									
7/29/2014			SITE UNSAFE DUE TO TALL VEGETATION AND STEEP SLOPE TO CULVERT									
8/5/2014			SITE UNSAFE DUE TO TALL VEGETATION AND STEEP SLOPE TO CULVERT									
8/12/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
8/19/2014			SITE UNSAFE DUE TO TALL VEGETATION AND STEEP SLOPE TO CULVERT									
8/26/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
9/2/2014			SITE UNSAFE DUE TO TALL VEGETATION AND STEEP SLOPE TO CULVERT									
9/9/2014			SITE UNSAFE DUE TO TALL VEGETATION AND STEEP SLOPE TO CULVERT									
9/16/2014			SITE UNSAFE DUE TO TALL VEGETATION AND STEEP SLOPE TO CULVERT									
9/23/2014	10:25	11.9	1.04	1191.0	7.73	16.4	4.120	68.8	168	780	N	N

TURKEY CREEK CR 17

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E.COLI	RAINING	WET
4/8/2014	10:00	6.1	7.06	576.8	7.40	5.83						
4/15/2014	10:50	5.9	7.71	628.8	7.69	5.84	0.186	19.8	4	160	N	N
4/22/2014	10:20	11.9	6.45	592.8	7.42	5.68	0.189	18.8	6	172	N	N
4/29/2014	10:35	11.1	7.45	593.3	7.41	4.98	0.146	16.8	5	148	N	N
5/6/2014		DISCONTINUED WATER SAMPLING - VEHICLE ISSUES							LAB CLOSED			
5/13/2014	10:25	19.1	4.65	589.0	7.64	EXCEEDED HOLD TIME			8	152	N	Y
5/20/2014	10:20	15.0	5.56	599.4	7.65	2.60	0.142	33.0	8	152	N	N
5/27/2014	10:15	19.5	4.19	588.0	7.72	2.41	0.393	27.7	8	7700	N	Y
6/3/2014	10:00	20.5	6.31	585.0	7.67	2.01	0.297	26.6	7	5950	N	Y
6/10/2014	9:55		YSI INOPERABLE			3.02	0.146	30.8	4	164	N	N
6/17/2014	9:40	20.6	4.61	719.0	7.62	3.33	0.219	36.3	5	200	N	N
6/24/2014	9:50	19.7	3.57	638.0	7.37	5.48	0.447	37.2	16	17000	Y	Y
7/1/2014	9:50	20.1	5.12	688.0	7.70	2.12	0.378	24.2	6	58000	N	Y
7/8/2014	9:45	19.9	3.95	738.0	7.77	1.41	0.312	23.6	3	455	N	Y
7/15/2014	9:55	18.1	4.99	720.0	7.73	1.46	0.332	27.7	3	450	N	N
7/22/2014	9:45	18.7	5.23	746.0	7.71	3.12	0.401	34.2	2	490	N	N
7/29/2014	9:45	15.1	5.92	668.0	7.68	3.01	0.404	38.2	3	540	N	N
8/5/2014	9:35	19.0	4.99	749.0	7.80	1.95	0.284	12.6	4	400	Y	Y
8/12/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
8/19/2014	10:00	19.4	5.60	783.0	7.69	3.01	0.352	34.8	4	390	N	N
8/26/2014			NO SAMPLING - HEAVY THUNDERSTORMS									
9/2/2014	10:00	19.9	4.79	769.0	7.88	3.12	0.374	32.4	5	280	N	N
9/9/2014	10:05	16.3	5.44	760.0	7.94	2.98	0.331	31.6	4	212	N	N
9/16/2014	10:20	12.7	7.03	687.0	7.96	2.14	0.314	28.6	5	265	N	N
9/23/2014	10:45	12.5	7.75	693.0	7.92	2.32	0.298	24.8	4	295	N	N

TURKEY CREEK CR 50

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	10:15	6.1	6.96	577.1	7.43	5.70	0.086	18.5	10	2300	N	Y
4/15/2014	11:05	6.1	8.15	629.9	7.45	5.81	0.098	18.8	4	560	N	N
4/22/2014	10:30	12.1	6.84	597.8	7.5	5.81	0.098	18.2	5	71	N	N
4/29/2014	10:45	10.9	7.49	594.2	7.47	5.76	0.141	17.8	4	4	N	N
5/6/2014	DISCONTINUED WATER SAMPLING - VEHICLE ISSUES								LAB CLOSED			
5/13/2014	10:35	19.2	4.69	594.0	7.65	EXCEEDED HOLD TIME			5	220	N	Y
5/20/2014	10:35	15.1	5.72	605.6	7.77	2.79	0.141	33.3	7	144	N	N
5/27/2014	10:25	19.2	4.60	594.0	7.65	2.68	0.287	31.3	13	5100	N	y
6/3/2014	10:15	20.0	5.65	594.0	7.65	2.22	0.312	28.4	11	6300	N	Y
6/10/2014	10:10	YSI INOPERABLE				2.98	0.138	28.6	7	132	N	N
6/17/2014	9:55	20.4	5.24	713.0	7.74	3.51	0.234	36.1	7	550	N	N
6/24/2014	10:00	19.7	4.13	598.0	7.47	7.11	0.579	30.5	31	11200	Y	Y
7/1/2014	10:05	20.0	4.61	706.0	7.77	2.42	0.261	18.2	10	1280	N	Y
7/8/2014	10:00	19.9	4.65	725.0	7.84	3.97	0.242	16.9	5	485	N	Y
7/15/2014	10:05	18.2	4.96	704.0	7.87	4.33	0.235	27.3	4	380	N	N
7/22/2014	10:00	19.6	4.96	737.0	7.76	3.41	0.243	35.4	2	290	N	N
7/29/2014	9:55	16.7	5.39	639.0	7.58	3.26	0.226	36.9	3	570	N	N
8/5/2014	9:50	19.2	4.99	719.0	7.69	9.15	1.420	21.5	3	275	Y	Y
8/12/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
8/19/2014	10:20	19.7	5.63	741.0	7.56	2.98	0.262	29.6	2	345	N	N
8/26/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
9/2/2014	10:10	20.2	4.98	742.0	7.95	2.78	0.257	28.9	3	340	N	N
9/9/2014	10:20	17.3	5.67	736.0	8.01	2.68	0.308	29.4	3	233	N	N
9/16/2014	10:35	12.7	6.54	689.0	8.00	2.46	0.312	27.8	5	228	N	N
9/23/2014	11:10	12.7	7.22	694.0	7.95	2.54	0.298	25.6	3	350	N	N

SWOVELAND DITCH CR 21

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	10:30	4.5	7.27	557.8	7.32	12.8	0.083	21.3	11	1100	N	Y
4/15/2014	11:15	3.9	8.55	605.4	7.43	12.6	0.086	23.8	4	215	N	N
4/22/2014	10:45	12.4	5.09	578.3	7.56	12.6	0.087	22.8	4	2400	N	N
4/29/2014	10:55	10.6	6.42	588.7	7.55	14.2	0.092	23.6	3	162	N	N
5/6/2014	DISCONTINUED WATER SAMPLING - VEHICLE ISSUES								LAB CLOSED			
5/13/2014	10:45	19.1	3.87	744.0	7.54	EXCEEDED HOLD TIME			7	1375	N	Y
5/20/2014	10:45	13.8	5.09	656.0	7.67	15.0	0.098	33.3	4	780	N	N
5/27/2014	10:40	18.6	3.22	610.0	7.59	13.1	0.552	26.5	5	1500	N	Y
6/3/2014	10:25	21.2	2.72	616.0	7.68	12.4	0.587	25.8	3	420	N	Y
6/10/2014	10:20	YSI INOPERABLE				13.6	0.098	40.8	5	640	N	N
6/17/2014	10:05	21.3	2.45	725.0	7.73	16.1	0.651	35.1	4	550	N	N
6/24/2014	10:20	18.5	5.19	698.0.	7.47	17.4	1.020	35.9	24	2475	Y	Y
7/1/2014	10:20	20.6	2.89	690.0	7.57	12.8	0.514	20.1	15	2400	N	Y
7/8/2014	10:10	22.1	2.54	658.0	7.65	1.42	0.467	18.2	8	400	N	Y
7/15/2014	10:20	20.3	4.42	605.0	7.83	1.65	0.694	26.1	28	275	N	N
7/22/2014	10:15	22.5	3.86	874.0	7.72	15.8	0.624	36.2	81	220	N	N
7/29/2014	10:15	17.0	2.75	695.0	7.69	14.8	0.638	35.8	18	3400	N	N
8/5/2014	10:00	22.6	1.01	2070.0	7.81	1.82	3.120	19.4	6	520	Y	Y
8/12/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
8/19/2014	10:30	21.8	3.12	569.0	7.92	5.32	2.310	28.4	10	23	N	N
8/26/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
9/2/2014	10:25	22.0	5.06	618.0	8.07	5.12	2.410	26.6	5	42	N	N
9/9/2014	10:35	18.7	5.13	607.0	7.94	4.98	1.730	24.2	4	35	N	N
9/16/2014	10:40	13.5	4.42	703.0	7.90	5.12	1.740	26.8	4	152	N	N
9/23/2014	11:25	13.4	3.92	635.1	7.81	5.03	1.810	25.6	2	54	N	N

YELLOW CREEK CR 18

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	10:55	6.3	7.62	638.8	7.23	7.72	0.082	30.1	18	1550	N	Y
4/15/2014	11:40	5.9	8.42	744.2	7.22	7.84	0.08	32.1	3	60	N	N
4/22/2014	11:15	12.0	9.02	764.0	7.55	8.86	0.098	34.6	3	158	N	N
4/29/2014	11:25	11.8	8.23	763.0	7.45	9.12	0.094	38.2	3	68	N	N
5/6/2014	DISCONTINUED SAMPLING - VEHICLE ISSUES								LAB CLOSED			
5/13/2014	11:15	18.7	6.19	705.0	7.68	EXCEEDED HOLD TIME			4	400	N	Y
5/20/2014	11:10	14.5	7.91	752.0	7.57	5.14	0.086	56.8	2	290	N	N
5/27/2014	11:05	18.1	5.63	664.0	7.69	4.89	0.587	42.1	14	2800	N	Y
6/3/2014	11:00	18.8	5.39	810.0	7.72	4.12	0.612	43.1	5	840	N	Y
6/10/2014	10:40	YSI INOPERABLE				4.42	0.062	48.6	8	276	N	N
6/17/2014	10:25	19.8	5.79	837.0	7.76	3.6	0.511	62.7	7	410	N	N
6/24/2014	10:45	20.2	6.03	508.7	7.47	12.5	1.510	32.4	108	8400	Y	Y
7/1/2014	10:50	19.6	5.73	722.0	7.8	4.61	0.578	38.6	21	4000	N	Y
7/8/2014	10:35	19.6	5.82	737.0	7.78	1.62	0.414	28.6	15	2100	N	Y
7/15/2014	10:45	17.4	6.27	868.0	7.78	1.68	0.443	61.2	4	1020	N	N
7/22/2014	10:50	19.1	6.57	905.0	7.81	4.6	0.601	56.8	8	175	N	N
7/29/2014	10:35	15.1	6.63	887.0	7.6	4.2	0.642	54.4	4	5000	N	N
8/5/2014	10:35	18.7	5.95	858.0	7.77	6.98	0.422	51.7	3	490	Y	Y
8/12/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
8/19/2014	10:55	18.8	6.04	910.0	7.43	4.96	0.598	36.2	3	1345	N	N
8/26/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
9/2/2014	10:50	19.7	6.25	778.0	7.95	4.86	0.664	34.6	10	580	N	N
9/9/2014	11:00	16.8	6.64	799.0	7.99	5.12	0.558	32.6	4	242	N	N
9/16/2014	11:15	13.3	7.79	830.0	8.03	4.96	0.562	36.1	6	300	N	N
9/23/2014	11:50	12.7	8.04	876.0	8.01	4.98	0.598	38.6	2	378	N	N

CHRISTIANA CREEK CR 4

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/8/2014	11:20	5.7	8.72	391.1	7.00	1.31	0.047	6.3	3	18	N	Y
4/15/2014	12:05	7.9	9.52	394.8	7.09	1.30	0.042	4.8	3	24	N	N
4/22/2014	11:40	12.1	9.45	398.5	7.14	1.24	0.248	6.2	4	59	N	N
4/29/2014	11:50	13.1	8.29	408.1	7.11	1.01	0.206	3.8	4	32	N	N
5/6/2014	DISCONTINUED SAMPLING - VEHICLE ISSUES								LAB CLOSED			
5/13/2014	11:40	19.3	6.93	421.8	7.42	EXCEEDED HOLD TIME			4	108	N	Y
5/20/2014	11:35	16.8	7.98	423.2	7.28	1.26	0.123	15.0	2	58	N	N
5/27/2014	11:30	22.1	6.91	452.1	7.38	1.11	0.174	1.4	3	950	N	Y
6/3/2014	11:25	22.7	674	376.9	7.48	1.01	0.141	2.1	2	144	N	Y
6/10/2014	11:05	YSI INOPERABLE				1.36	0.054	12.4	6	116	N	N
6/17/2014	10:45	23.4	6.99	426.2	7.44	1.09	0.130	13.2	5	186	N	N
6/24/2014	11:15	23.9	5.06	382.4	8.05	0.698	0.286	8.6	NS	650	Y	Y
7/1/2014	11:20	24.4	6.79	367.5	7.63	1.10	0.161	1.2	6	430	N	Y
7/8/2014	10:55	23.3	6.07	381.3	7.49	0.401	0.132	1.1	5	168	N	Y
7/15/2014	11:05	21.8	6.82	394.3	7.48	SAMPLING TUBE BROKE			5	168	N	N
7/22/2014	11:10	23.6	6.91	405.6	7.36	1.11	0.127	12.1	3	156	N	N
7/29/2014	10:55	18.7	6.73	412.3	7.20	1.09	0.121	10.8	3	120	N	N
8/5/2014	11:00	22.1	6.47	412.3	7.32	1.01	0.094	8.5	2	280	Y	Y
8/12/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
8/19/2014	11:20	22.2	6.91	420.5	7.36	1.03	0.042	7.8	3	135	N	N
8/26/2014	NO SAMPLING - HEAVY THUNDERSTORMS											
9/2/2014	11:15	22.9	6.17	409.9	8.17	1.10	0.055	8.4	4	188	N	N
9/9/2014	11:20	20.9	6.44	411.4	8.22	0.101	0.129	6.2	3	144	N	N
9/16/2014	11:45	17.2	7.62	414.7	8.23	0.102	0.121	5.8	4	84	N	N
9/23/2014	12:15	16.4	8.15	424.8	8.18	0.098	0.098	4.6	2	101	N	N

ROCK RUN CREEK - COUNTY ROAD 21

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	8:30	7.6	8.81	641.1	7.27	4.44	0.273	27.6	9.7	77	N	N
4/17/2014	8:50	6.5	8.47	665.7	7.45	4.40	0.276	25.6		156	N	N
4/24/2014	9:05	10.3	8.55	668.7	7.52	3.27	0.157	24.5	1.5	600	N	N
5/1/2014	8:55	9.2	8.65	680.8	7.49	3.62	0.146	26.2		56	N	N
5/8/2014	9:05	13.3	7.46	668.0	7.92	3.12	0.128	26.2	4.75	108	N	N
5/15/2014	9:21	11.4	6.67	454.2	7.62	4.27	0.132	24.6		113800	N	Y
5/22/2014	9:00	14.9	6.61	595.7	7.80	3.48	0.152	32.2	24	5400	N	N
5/29/2014	8:40	15.8	6.45	655.0	7.69	4.01	0.128	22.6		880	N	N
6/5/2014	8:35	13.7	7.01	637.6	7.49	3.98	0.764	34.2	18.8	19800	N	N
6/12/2014	8:35	17.3	5.70	562.4	7.74	5.12	0.148	26.8		31800	N	Y
6/19/2014	8:25	17.9	6.14	646.0	7.85	5.22	0.154	28.2	20.2	8400	N	Y
6/26/2014	8:40	18.0	6.49	642.0	7.77	4.66	1.320	37.7		1692	N	N
7/3/2014	8:50	15.5	6.95	703.0	7.96	3.29	0.312	22.8	8.7	LAB CLSD	N	N
7/10/2014	8:45	16.0	6.75	693.0	7.59	3.39	0.301	24.1		710	N	N
7/17/2014	8:50	14.1	7.50	695.0	8.02	3.26	0.312	26.2	4	580	N	N
7/24/2014	9:00	16.3	6.81	683.0	7.52	2.86	0.298	26.8		403	N	N
7/31/2014	8:50	15.6	6.49	690.0	7.59	2.26	0.321	28.6	2.8	330	N	N
8/7/2012	8:40	17.6	6.08	656.0	8.05	3.12	0.326	24.8		390	N	N
8/14/2014	8:50	16.5	6.39	665.0	7.62	2.20	0.375	26.2	9	880	N	N
8/21/2014	8:40	19.6	5.76	661.0	7.97	2.48	0.311	30.0		380	N	N
8/28/2014	9:00	18.0	6.38	670.0	8.03	3.12	0.243	26.1	11.7	520	N	N
9/4/2014	9:00	17.6	6.43	702.0	7.57	2.86	0.255	23.0		455	N	N
9/11/2014	8:30	16.9	6.51	633.0	7.67	3.04	0.312	28.2	36	56200	N	Y
9/18/2014	8:45	11.8	7.97	711.0	7.59	2.98	0.427	28.1		248	N	N
9/25/2014	8:30	13.6	8.04	841.0	7.56	2.98	0.322	32.6	4	318	N	N

ROCK RUN CREEK - COUNTY ROAD 34

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E.C OLI	RAINING	WET
4/10/2014	8:50	7.0	7.60	673.7	7.31	5.48	0.264	23.9	6.8	125	N	N
4/17/2014	9:15	5.4	8.35	767.8	7.72	6.12	0.258	24.2		148	N	N
4/24/2014	9:20	9.6	7.87	717.0	7.49	5.56	0.107	20.0	2.8	232	N	N
5/1/2014	9:10	8.3	8.63	720.9	7.52	5.87	0.112	19.6		140	N	N
5/8/2014	9:58	13.1	8.75	717.0	7.82	6.14	0.171	18.1	3.5	332	N	N
5/15/2014	9:43	11.1	6.76	488.5	7.52	6.18	0.168	20.2		65400	N	Y
5/22/2014	9:20	13.8	6.69	621.8	7.57	6.12	0.132	19.8	13.8	3900	N	N
5/29/2014	9:00	14.8	6.85	718.0	7.71	5.12	0.162	20.8		590	N	N
6/5/2014	8:50	12.7	6.10	687.0	7.67	5.10	0.670	20.6	6.33	39800	N	N
6/12/2014	8:55	16.1	5.08	639.0	7.47	6.24	0.172	22.1		15800	N	Y
6/19/2014	8:40	16.7	5.15	716.0	7.67	6.12	0.168	23.2	16.5	4500	N	Y
6/26/2014	9:05	16.9	5.36	708.0	7.58	6.36	0.760	28.5		720	N	N
7/3/2014	9:10	14.8	7.00	743.0	7.70	4.98	0.324	23.6	5.5	LAB CLSD	N	N
7/10/2014	9:00	15.0	5.96	734.0	7.69	5.05	0.336	24.5		560	N	N
7/17/2014	9:05	13.0	6.54	741.0	7.80	4.98	0.342	24.8	15	480	N	N
7/24/2014	9:15	16.0	6.00	732.0	7.61	3.68	0.312	25.4		500	N	N
7/31/2014	9:10	14.6	6.16	730.0	7.57	4.02	0.388	24.2	4.8	610	N	N
8/7/2014	9:00	15.6	5.98	730.0	7.82	4.02	0.346	25.2		550	N	N
8/14/2014	9:10	14.9	6.73	727.0	7.51	5.13	0.527	21.6	4.8	580	N	`N
8/21/2014	9:00	18.4	5.38	739.0	7.85	4.62	0.400	23.9		495	N	N
8/28/2014	9:20	16.6	6.39	743.0	7.89	5.02	0.359	19.8	5.5	560	N	N
9/4/2014	9:15	17.1	5.87	744.0	7.54	4.98	0.294	21.5		460	N	N
9/11/2014	8:50	15.7	6.15	695.0	7.61	3.12	0.308	24.6	17.8	27400	N	Y
9/18/2014	9:00	10.6	7.40	750.0	7.76	5.06	0.641	22.4		460	N	N
9/25/2014	8:45	12.5	6.89	743.0	7.64	3.02	0.312	28.4	6.3	450	N	N

HORN DITCH - COUNTY ROAD 31

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E.COLI	RAINING	WET
4/10/2014	9:05	6.1	8.14	578.7	7.33	7.27	0.437	24.5	12.5	240	N	N
4/17/2014	9:30	5.5	8.66	637.6	7.51	7.07	0.412	24.1		280	N	N
4/24/2014	9:30	8.9	8.41	670.1	7.51	6.93	0.175	20.8	2.9	335	N	N
5/1/2014	9:20	8.1	8.47	675.9	7.68	7.01	0.176	20.2		212	N	N
5/8/2014	10:11	13.5	10.62	675.0	8.01	7.12	0.168	24.2	5.5	220	N	N
5/15/2014	9:56	11.2	6.88	424.7	7.44	7.98	0.179	26.8		34100	N	Y
5/22/2014	9:30	13.1	7.17	601.5	7.67	8.48	0.187	20.2	8	2400	N	N
5/29/2014	9:10	14.6	6.53	592.2	7.63	6.98	0.189	25.6		270	N	N
6/5/2014	9:05	13.8	6.90	629.9	7.74	7.02	0.641	20.8	13.5	4100	N	N
6/12/2014	9:05	15.5	6.25	686.0	7.73	7.89	0.182	28.6		520	N	Y
6/19/2014	8:55	17.1	6.34	688.0	7.74	7.58	0.178	27.8	6.4	10800	N	Y
6/26/2014	9:20	18.4	6.24	577.0	7.478	8.93	0.369	28.2		720	N	N
7/3/2014	9:20	15.6	6.96	618.0	7.79	7.24	0.387	22.8	8.3	LAB CLSD	N	N
7/10/2014	9:25	16.1	6.95	726.0	7.72	7.41	0.393	23.0		619	N	N
7/17/2014	9:20	14.3	7.85	730.0	7.72	6.96	0.378	24.2	3	660	N	N
7/24/2014	9:25	16.5	6.71	729.0	7.63	5.98	0.368	25.6		508	N	N
7/31/2014	9:20	15.3	6.24	734.0	7.63	4.54	0.402	20.8	0.6	328	N	N
8/7/2014	9:10	16.1	7.16	727.0	7.67	5.86	0.368	20.6		329	N	N
8/14/2014	9:20	15.5	6.69	745.0	7.46	4.78	0.376	21.7	4	1200	N	N
8/21/2014	9:20	18.6	5.83	736.0	7.91	4.41	0.41	22.1		9200	N	N
8/28/2014	9:35	17.1	6.20	748.0	7.97	4.26	0.269	20.5	2	400	N	N
9/4/2014	9:30	17.9	6.62	732.0	7.59	4.96	0.332	19.1		162	N	N
9/11/2014	9:00	16.1	5.31	654.0	7.65	4.98	0.364	25.2	8.5	63200	N	Y
9/18/2014	9:10	11.0	7.41	752.0	7.77	4.98	0.472	22.8		670	N	N
9/25/2014	9:00	12.7	6.97	746.0	7.67	5.42	0.358	26.8	3	420	N	N

ELKHART RIVER - COUNTY ROAD 43

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	9:25	8.5	8.42	489.3	7.25	2.75	0.126	20.3	4.2	47	N	N
4/17/2014	9:45	8.0	8.72	504.0	7.91	3.01	0.124	20.1		119	N	N
4/24/2014	9:55	12.8	7.15	528.8	7.62	1.27	0.164	18.3	7.5	43	N	N
5/1/2014	9:35	11.9	6.93	551.4	7.55	1.42	0.186	18.8		77	N	N
5/8/2014	10:30	15.1	7.30	563.0	8.03	1.32	0.172	16.8	6.75	580	N	N
5/15/2014	10:17	14.1	5.87	519.5	7.69	1.96	0.186	16.2		2100	N	Y
5/22/2014	9:50	19.1	5.24	551.9	7.78	2.16	0.182	18.6	8	380	N	N
5/29/2014	9:30	20.5	5.67	542.7	7.77	1.89	0.176	15.8		112	N	N
6/5/2014	9:25	18.4	4.83	539.3	7.72	1.96	0.378	16.8	9.17	200	N	N
6/12/2014	9:35	20.2	5.00	541.1	7.76	2.12	0.181	14.8		164	N	Y
6/19/2014	9:15	22.5	4.38	558.0	7.82	2.24	0.182	12.4	5.8	178	N	Y
6/26/2014	9:40	21.8	4.78	562.0	7.69	1.38	0.325	25.0		370	N	N
7/3/2014	9:40	20.6	4.80	555.0	7.83	1.15	0.378	22.1	7.5	LAB CLSD	N	N
7/10/2014	9:45	20.9	4.69	561.0	7.78	1.2	0.375	21.3		124	N	N
7/17/2014	9:40	18.0	5.42	568.0	7.62	1.31	0.368	22.6	4	128	N	N
7/24/2014	9:45	20.7	5.42	585.0	7.69	1.42	0.402	20.8		108	N	N
7/31/2014	9:40	YSI INOPERABLE				1.44	0.216	22.6	2.2	141	N	N
8/7/2014	9:30	20.0	5.42	695.0	7.68	1.42	0.354	18.8		145	N	N
8/14/2014	9:40	18.9	5.90	560.2	7.70	1.39	0.262	20.0	3.2	188	N	N
8/21/2014	9:35	22.2	5.10	599.0	8.06	1.32	0.284	21.4		170	N	N
8/28/2014	9:55	20.8	5.54	584.0	8.05	1.12	0.258	23.0	3	155	N	N
9/4/2014	9:45	20.9	5.10	614.0	7.61	1.42	0.310	24.7		172	N	N
9/11/2014	9:20	18.4	5.61	478.6	7.74	1.44	0.401	19.8	12.5	2400	N	Y
9/18/2014	9:30	13.5	6.76	579.8	7.63	1.54	0.248	18.6		245	N	N
9/25/2014	9:20	14.9	6.85	593.6	7.73	1.36	0.398	16.8	3.8	242	N	N

ELKHART RIVER - COUNTY ROAD 40

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	9:45	8.4	8.19	529.9	7.32	3.11	0.111	16.2	6.7	33	N	N
4/17/2014	10:05	7.5	8.61	545.1	7.54	3.61	0.112	15.8		42	N	N
4/24/2014	10:20	12.6	6.96	571.6	7.53	1.72	0.151	19.1	8.2	54	N	N
5/1/2014	10:00	11.7	7.57	591.3	7.56	1.68	0.184	19.8		44	N	N
5/8/2014	10:55	15.6	6.70	600.0	8.00	1.47	0.148	22.1	6.75	40	N	N
5/15/2014	10:43	13.4	5.96	553.0	7.78	1.52	0.152	18.4		3400	N	Y
5/22/2014	10:15	18.5	4.86	554.6	7.76	1.98	0.186	19.2	16.5	3800	N	N
5/29/2014	9:55	19.7	5.02	572.0	7.85	1.48	0.162	16.8		320	N	N
6/5/2014	9:45	17.1	5.64	567.2	7.62	1.48	0.569	18.2	13.0	10600	N	N
6/12/2014	10:00	19.4	4.95	516.6	7.75	1.98	0.172	19.2		5900	N	Y
6/19/2014	9:45	21.5	4.78	610.0	7.89	2.01	0.176	13.8	8.6	341	N	Y
6/26/2014	10:00	20.8	5.42	578.0	7.75	4.93	1.050	34.3		670	N	N
7/3/2014	10:05	19.2	5.22	615.0	7.96	1.48	0.272	22.6	6.5	LAB CLSD	N	N
7/10/2014	10:10	19.9	4.62	622.0	7.67	1.52	0.268	22.5		148	N	N
7/17/2014	10:05	16.9	4.97	628.0	7.98	1.48	0.242	22.8	5.0	132	N	N
7/24/2014	10:05	19.6	5.35	645.0	7.67	1.36	0.284	22.2		208	N	N
7/31/2014	10:10		YSI INOPERABLE			1.52	0.254	21.6	3.2	44	N	N
8/7/2014	9:50	19.0	5.40	653.0	7.69	1.38	0.268	20.6		150	N	N
8/14/2014	10:05	17.8	3.80	629.0	7.69	1.75	0.286	22.8	147.5	320	N	N
8/21/2014	10:05	20.8	4.22	659.0	7.88	1.68	0.264	22.7		185	N	N
8/28/2014	10:15	19.6	4.88	635.0	7.91	1.36	0.175	22.4	4.8	432	N	N
9/4/2014	10:10	19.6	4.33	669.0	7.76	1.72	0.261	23.0		320	N	N
9/11/2014	9:40	17.6	4.35	568.1	7.69	1.63	0.298	24.6	12.8	15400	N	Y
9/18/2014	9:50	13.3	6.59	637.0	7.62	1.76	0.272	22.2		250	N	N
9/25/2014	9:40	14.4	6.45	645.0	7.63	1.45	0.264	20.4	7.2	225	N	N

ELKHART RIVER - INDIANA AVENUE

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	10:00	8.9	8.26	537.4	7.22	3.49	2.150	21.7	7.5	22	N	N
4/17/2014	10:20	7.9	9.06	545.9	7.24	3.52	2.800	22.8		27	N	N
4/24/2014	10:35	13.0	7.92	574.6	7.32	1.51	0.134	19.7	6.5	27	N	N
5/1/2014	10:15	12.2	7.71	592.3	7.46	1.54	0.136	19.6		48	N	N
5/8/2014	11:13	16.0	8.10	603.2	8.13	1.58	0.147	21.2	4.75	15	N	N
5/15/2014	11:04	14.9	6.89	575.9	7.95	1.62	0.168	20.6		360	N	Y
5/22/2014	10:30	19.0	5.85	541.6	7.75	1.62	0.124	19.1	18.3	2400	N	N
5/29/2014	10:05	20.4	5.93	561.0	7.79	1.58	0.160	21.4		85	N	N
6/5/2014	10:10	18.0	6.12	581.0	7.89	1.62	0.277	16.2	8.75	369	N	N
6/12/2014	10:15	20.0	5.82	599.0	7.88	1.72	0.172	22.2		185	N	Y
6/19/2014	10:00	22.6	5.30	622.0	7.93	1.98	0.178	24.2	6.2	318	N	Y
6/26/2014	10:15	21.5	5.59	579.0	7.69	2.34	0.239	27.0		200	N	N
7/3/2014	10:20	20.7	5.98	621.0	7.98	1.32	0.268	24.1	4.7	LAB CLSD	N	N
7/10/2014	10:20	21.4	5.78	626.0	7.69	1.27	0.266	24.2		100	N	N
7/17/2014	10:20	18.7	6.43	632.0	7.78	1.32	0.258	26.2	2	88	N	N
7/24/2014	10:20	21.6	5.24	632.0	7.79	1.28	0.262	24.8		104	N	N
7/31/2014	10:25	YSI INOPERABLE				1.38	0.232	24.2	0.4	104	N	N
8/7/2014	10:05	20.9	6.01	639.0	7.73	1.26	0.258	18.8		31	N	N
8/14/2014	10:20	19.4	5.62	638.0	7.73	1.25	0.183	24.2	2.2	100	N	N
8/21/2014	10:25	22.3	4.73	649.0	7.87	1.40	0.226	23.3		43	N	N
8/28/2014	10:30	21.2	5.05	643.0	7.90	1.31	0.137	24.4	1.38	26	N	N
9/4/2014	10:30	21.6	5.12	673.0	7.75	1.22	0.283	26.3		40	N	N
9/11/2014	9:55	18.2	5.66	624.0	7.67	1.42	0.258	23.2	3.1	216	N	Y
9/18/2014	10:10	14.2	7.03	639.0	7.73	1.16	0.283	23.6		70	N	N
9/25/2014	10:00	15.6	7.12	641.0	7.67	1.38	0.278	24.8	2.5	64	N	N

ELKHART RIVER - OLD COUNTY ROAD 17

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	10:20	9.1	8.72	544.0	7.23	3.67	4.360	22.6	7	44	N	N
4/17/2014	10:35	8.1	9.21	557.1	7.68	3.72	4.120	24.1		27	N	N
4/24/2014	10:50	13.1	8.46	584.1	7.16	1.71	0.116	21.8	6.2	30	N	N
5/1/2014	10:25	12.1	7.80	603.6	7.42	1.61	0.122	22.8		40	N	N
5/8/2014	11:29	16.1	9.41	612.0	8.21	1.74	0.121	24.6	5.25	31	N	N
5/15/2014	11:27	14.4	6.68	553.5	7.85	1.78	0.147	22.4		24100	N	Y
5/22/2014	10:40	18.9	6.52	546.7	7.68	1.54	0.126	22.6	22.8	2000	N	N
5/29/2014	10:20	20.3	6.02	569.0	7.71	1.68	0.152	20.8		146	N	N
6/5/2014	10:20	18.0	6.56	584.2	7.69	1.54	0.315	20.4	11.8	3100	N	N
6/12/2014	10:30	19.9	5.37	502.0	7.87	1.82	0.152	24.2		3400	N	Y
6/19/2014	10:15	22.2	6.70	630.0	7.92	1.96	0.154	23.8	7.6	1015	N	Y
6/26/2014	10:30	21.6	6.03	682.0	7.78	2.62	0.467	26.4		540	N	N
7/3/2014	10:40	20.5	5.74	632.0	8.00	1.90	0.279	25.2	6	LAB CLSD	N	N
7/10/2014	10:30	21.1	6.20	640.0	7.63	1.94	0.285	26.5		116	N	N
7/17/2014	10:35	18.3	6.07	650.0	7.79	1.89	0.268	26.4	2	64	N	N
7/24/2014	10:30	20.9	6.04	657.0	7.63	1.69	0.272	26.2		88	N	N
7/31/2014	10:40	YSI INOPERABLE				1.82	0.248	28.1	0.8	93	N	N
8/7/2014	10:20	20.7	6.17	655.0	7.74	1.68	0.266	22.8		81	N	N
8/14/2014	10:45	19.2	5.43	659.0	7.63	1.81	0.258	28.0	2.6	160	N	N
8/21/2014	10:40	21.9	5.07	670.0	7.94	1.78	0.247	27.3		112	N	N
8/28/2014	10:50	21.0	5.86	660.0	7.98	1.68	0.189	28.6	2.5	112	N	N
9/4/2014	10:45	20.9	5.23	704.0	7.72	1.68	0.289	31.1		74	N	N
9/11/2014	10:10	18.2	5.46	607.0	7.69	1.54	0.262	24.2	7.7	285	N	Y
9/18/2014	10:20	13.6	7.36	659.0	7.67	1.78	0.272	32.2		64	N	N
9/25/2014	10:15	15.5	6.76	665.0	7.76	1.62	0.256	26.2	2.8	60	N	N

HEATON LAKE - IDEAL BEACH

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	10:35	8.0	9.04	372.4	7.05	0.539	2.850	9.4		1	N	N
4/17/2014	10:55	9.3	8.85	374.1	7.19	0.542	2.140	8.6		2	N	N
4/24/2014	11:10	14.1	8.65	377.5	7.27	0.282	0.066	9.2		31	N	N
5/1/2014	10:45	13.0	7.69	381.1	7.28	0.312	0.068	8.6		8	N	N
5/8/2014	11:52	15.4	7.15	394.5	8.20	0.201	0.042	8.4		168	N	N
5/15/2014	11:50	17.4	6.72	385.2	8.25	0.203	0.032	7.6		96	N	Y
5/22/2014	11:05	21.4	5.73	374.1	7.23	0.301	0.051	8.4		108	N	N
5/29/2014	10:40	24.1	5.79	376.7	7.52	0.212	0.031	7.6		80	N	N
6/5/2014	10:35	22.5	6.71	381.2	7.44	0.241	0.158	8.2		11	N	N
6/12/2014	10:50	23.3	5.34	374.3	8.12	0.201	0.046	6.8		6	N	Y
6/19/2014	10:30	25.6	6.30	358.4	8.14	0.212	0.048	6.9		110	N	Y
6/26/2014	10:45	26.3	6.76	357.5	7.67	0.275	0.103	12.8		3	N	N
7/3/2014	11:00	22.7	4.04	366.0	7.88	0.268	0.099	9.6		LAB CLSD	N	N
7/10/2014	10:50	25.3	6.37	372.8	7.53	0.271	0.094	9.3		3	N	N
7/17/2014	10:50	23.6	6.01	381.4	7.64	0.262	0.088	8.8		2600	N	N
7/24/2014	10:50	25.1	6.94	364.7	7.34	0.242	0.092	8.8		6	N	N
7/31/2014	11:00	YSI INOPERABLE				0.312	0.118	6.8		996	N	N
8/7/2014	10:45	24.0	5.42	345.1	7.2	0.222	0.084	8.2		80	N	N
8/14/2014	11:05	23.2	6.85	345.7	7.41	0.287	0.084	7.1		37	N	N
8/21/2014	11:00	25.3	3.84	340.8	8.00	0.301	0.122	7.5		80	N	N
8/28/2014	11:10	25.3	6.89	315.2	8.49	0.224	0.058	7.0		116	N	N
9/4/2014	11:05	24.4	6.11	312.2	7.30	0.247	0.119	7.2		61	N	N
9/11/2014	10:30	20.9	5.73	329.9	7.43	0.312	0.098	8.6		14	N	Y
9/18/2014	10:35	17.9	6.81	335.5	7.64	0.242	0.078	6.8		2	N	N
9/25/2014	10:30	17.9	7.76	339.2	7.45	0.286	0.078	8.2		17	N	N

HEATON LAKE - 22892 LAKE SHORE

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	10:45	8.9	8.56	371.3	7.10	0.447	0.101	10.2		14	N	N
4/17/2014	11:05	9.6	8.34	374.6	7.21	0.440	0.098	8.8		2	N	N
4/24/2014	11:20	13.7	7.81	386.1	7.35	0.259	0.068	9.5		176	N	N
5/1/2014	10:55	11.9	6.89	393.1	7.25	0.289	0.065	8.8		46	N	N
5/8/2014	12:03	17.00	6.75	393.1	8.25	0.212	0.062	8.6		106	N	N
5/15/2014	12:00	18.00	6.18	383.3	8.15	0.216	0.036	7.8		648	N	Y
5/22/2014	11:15	21.3	5.93	377.1	7.18	0.276	0.058	8.5		390	N	N
5/29/2014	10:50	24.5	5.86	377.5	7.42	0.203	0.035	7.8		2600	N	N
6/5/2014	10:45	22.6	6.67	381.1	7.43	0.236	0.105	8.3		70	N	N
6/12/2014	11:00	22.5	4.40	370.2	8.06	0.238	0.042	7.1		112	N	Y
6/19/2014	10:45	25.4	5.20	360.8	8.33	0.202	0.046	7.2		128	N	Y
6/26/2014	11:00	26.1	4.48	367.9	7.96	0.270	0.114	12.6		5	N	N
7/3/2014	11:15	22.9	3.77	388.1	7.93	0.248	0.119	9.4		LAB CLSD	N	N
7/10/2014	11:00	25.2	6.40	373.2	7.61	0.253	0.111	8.6		3	N	N
7/17/2014	11:05	22.9	5.98	376.8	7.68	0.266	0.098	8.6		39	N	N
7/24/2014	11:00	25.2	6.86	366.6	7.38	0.261	0.096	12.2		23	N	N
7/31/2014	11:10	YSI INOPERABLE				0.314	0.133	7.0		10	N	N
8/7/2014	10:55	24.7	6.01	351.6	7.43	0.254	0.088	8.8		10	N	N
8/14/2014	11:15	23.3	6.74	356.3	7.31	0.433	0.092	7.6		2	N	N
8/21/2014	11:10	24.9	5.97	343.3	8.43	0.311	0.136	7.7		13	N	N
8/28/2014	11:20	25.2	4.71	338.5	8.36	0.298	0.052	7.3		10	N	N
9/4/2014	11:15	24.4	5.98	326.2	7.39	0.254	0.114	7.8		5	N	N
9/11/2014	10:40	21.3	5.12	328.9	7.36	0.301	0.094	8.8		24	N	Y
9/18/2014	10:50	18.3	6.72	331.9	7.68	0.268	0.082	7.0		59	N	N
9/25/2014	10:40	18.2	7.65	340.5	7.31	0.295	0.082	8.4		2	N	N

SIMONTON LAKE - 51093 BEACH DRIVE

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	11:00	10.7	8.14	376.7	7.14	0.487	0.084	9.4		1	N	N
4/17/2014	11:25	9.6	8.54	402.2	7.32	0.486	0.089	9.0		7	N	N
4/24/2014	11:40	14.4	7.89	391.7	7.45	0.686	0.033	15.5		296	N	N
5/1/2014	11:10	12.3	7.62	403.1	7.37	0.710	0.030	14.8		99	N	N
5/8/2014	12:19	18.0	7.85	407.4	8.28	0.586	0.032	14.6		104	N	N
5/15/2014	12:15	16.1	6.53	387.6	8.10	0.492	0.038	12.8		29	N	Y
5/22/2014	11:25	21.8	5.77	371.8	7.71	0.624	0.031	13.6		560	N	N
5/29/2014	11:00	24.7	5.84	380.3	7.25	0.512	0.036	10.9		4700	N	N
6/5/2014	10:55	21.5	6.65	377.9	7.51	0.312	0.099	12.6		168	N	N
6/12/2014	11:25	22.4	5.36	368.0	8.22	0.468	0.042	8.6		288	N	Y
6/19/2014	11:00	25.3	5.21	367.1	8.39	0.498	0.045	8.4		500	N	Y
6/26/2014	11:15	26.2	6.94	333.7	7.63	0.265	0.090	17.2		24	N	N
7/3/2014	11:25	22.9	5.70	342.9	8.47	0.154	0.118	14.2		LAB CLSD	N	N
7/10/2014	11:10	24.9	6.76	332.1	7.54	0.152	0.116	16.5		13	N	N
7/17/2014	11:15	22.6	6.31	321.6	7.72	0.215	0.111	14.2		2	N	N
7/24/2014	11:10	24.6	6.40	307.4	7.45	0.220	0.108	11.6		16	N	N
7/31/2014	11:30	YSI INOPERABLE				0.152	0.130	13.4		26	N	N
8/7/2014	11:05	24.7	7.12	307.2	7.43	0.206	0.146	12.2		6	N	N
8/14/2014	11:30	22.7	6.11	312.3	7.78	0.118	0.076	15.3		6	N	N
8/21/2014	11:20	25.2	6.26	313.5	8.95	0.146	0.127	16.1		188	N	N
8/28/2014	11:35	24.4	5.28	333.7	8.66	0.198	0.040	14.9		34	N	N
9/4/2014	11:30	24.4	5.94	337.5	7.41	0.238	0.322	16.9		56	N	N
9/11/2014	10:55	20.2	5.67	329.6	7.29	0.278	0.112	10.6		44	N	Y
9/18/2014	11:10	17.2	7.01	346.3	7.47	0.154	0.081	14.2		6	N	N
9/25/2014	10:55	18.3	6.81	359.1	7.53	0.242	0.121	9.8		6	N	N

SIMONTON LAKE - 51330 STATE ROAD 19

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	11:15	9.0	8.89	385.1	7.23	0.733	0.105	21.2		3	N	N
4/17/2014	11:40	9.5	8.66	388.1	7.36	0.512	0.101	10.4		10	N	N
4/24/2014	11:45	13.4	7.74	389.1	7.29	0.736	0.046	17.2		29	N	N
5/1/2014	11:20	12.7	7.01	389.3	7.36	0.696	0.041	16.2		13	N	N
5/8/2014	12:32	15.4	7.70	397.8	8.36	0.612	0.041	16.6		6	N	N
5/15/2014	12:30	17.2	58.8	383.6	8.25	0.601	0.041	10.2		156	N	Y
5/22/2014	11:40	20.7	6.18	382.2	7.41	0.701	0.026	16.8		92	N	N
5/29/2014	11:10	23.7	5.43	384.2	7.29	0.498	0.032	12.1		1500	N	N
6/5/2014	11:05	22.6	6.18	386.1	7.33	0.304	0.081	13.2		2900	N	N
6/12/2014	11:35	22.7	5.35	384.3	8.21	0.472	0.046	8.8		90	N	Y
6/19/2014	11:15	24.7	5.11	381.2	8.30	0.486	0.042	8.2		240	N	Y
6/26/2014	11:30	26.1	6.71	366.1	7.62	0.263	0.088	16.8		6	N	N
7/3/2014	11:35	24.1	4.92	363.9	8.29	0.164	0.089	15.1		LAB CLSD	N	N
7/10/2014	11:20	24.9	6.67	361.2	7.45	0.261	0.090	18.3		7	N	N
7/17/2014	11:25	23.2	6.14	362.0	7.68	0.218	0.101	13.8		3	N	N
7/24/2014	11:20	24.5	6.45	318.6	7.51	0.232	0.112	12.8		24	N	N
7/31/2014	11:40	YSI INOPERABLE				0.148	0.109	14.2		8	N	N
8/7/2014	11:30	25.2	6.81	342.9	7.56	0.212	0.112	13.4		90	N	N
8/14/2014	11:40	22.7	6.86	341.7	7.74	0.209	0.093	17.3		18	N	N
8/21/2014	11:35	24.3	5.86	342.8	8.55	0.154	0.104	17.8		2	N	N
8/28/2014	11:45	24.3	6.15	339.4	8.73	0.201	0.054	19.8		0	N	N
9/4/2014	11:40	24.0	6.12	341.3	7.62	0.198	0.096	17.5		12	N	N
9/11/2014	11:10	20.5	5.64	337.7	7.44	0.282	0.132	10.8		208	N	Y
9/18/2014	11:25	17.3	6.87	340.7	7.46	0.186	0.088	16.8		11	N	N
9/25/2014	11:15	18.5	6.12	342.7	7.52	0.268	0.136	9.6		116	N	N

COBUS CREEK - COUNTY ROAD 10

DATE	TIME	TEMP	DO	SPC	PH	NITRATES	PHOSPHORUS	CHLORIDES	TSS	E. COLI	RAINING	WET
4/10/2014	11:35	8.2	8.87	331.6	7.15	0.878	0.057	11.9	3	11	N	N
4/17/2014	11:55	8.0	8.02	337.8	7.14	0.675	0.062	12.2		39	N	N
4/24/2014	12:00	11.1	8.46	348.7	7.21	0.574	0.050	10.9	3.1	45	N	N
5/1/2014	11:35	9.3	9.25	346.0	7.16	0.584	0.048	8.8		414	N	N
5/8/2014	12:47	18.4	7.98	348.8	8.12	0.600	0.042	8.4	4	53	N	N
5/15/2014	12:45	13.4	7.05	299.3	7.70	0.628	0.041	9.1		836	N	Y
5/22/2014	11:55	19.1	5.86	268.4	7.62	0.582	0.046	8.2	5.25	465	N	N
5/29/2014	11:30	20.7	5.97	332.1	7.61	0.412	0.038	8.6		290	N	N
6/5/2014	11:20	19.4	7.01	422.6	7.56	0.498	0.153	7.9	6.33	120	N	N
6/12/2014	11:55	19.2	5.45	298.8	7.80	0.618	0.042	8.2		435	N	Y
6/19/2014	11:30	22.0	6.00	301.7	7.85	0.628	0.056	7.8	12.8	1140	N	Y
6/26/2014	11:45	22.7	5.96	303.4	7.64	0.647	0.152	13.9		112	N	N
7/3/2014	11:50	19.7	5.67	317.9	7.87	0.572	0.171	10.6	7.3	LAB CLSD	N	N
7/10/2014	11:35	18.9	6.47	352.8	7.63	0.584	0.175	10.8		196	N	N
7/17/2014	11:40	16.9	6.84	334.6	7.62	0.586	0.176	11.2	7	196	N	N
7/24/2014	11:35	19.6	6.69	334.9	7.47	0.498	0.182	14.2		207	N	N
7/31/2014	11:55		YSI INOPERABLE			0.598	0.150	11.6	9.8	84	N	N
8/7/2014	11:45	19.0	7.49	338.8	7.43	0.486	0.156	9.8		145	N	N
8/14/2014	11:55	17.5	6.98	342.7	7.35	0.545	0.079	10.3	7.2	205	N	N
8/21/2014	11:50	20.8	6.55	342.3	8.12	0.612	0.155	10.2		330	N	N
8/28/2014	12:10	19.4	7.10	342.6	8.20	0.612	0.074	11.1	5.5	320	N	N
9/4/2014	12:05	20.7	6.61	336.7	7.40	0.496	0.163	10.3		250	N	N
9/11/2014	11:20	17.6	6.72	318.4	7.68	0.512	0.178	12.8	12	440	N	Y
9/18/2014	11:40	13.9	7.07	338.5	7.54	0.482	0.072	9.6		120	N	N
9/25/2014	11:30	14.4	7.61	345.3	7.49	0.498	0.154	10.8	5.3	235	N	N

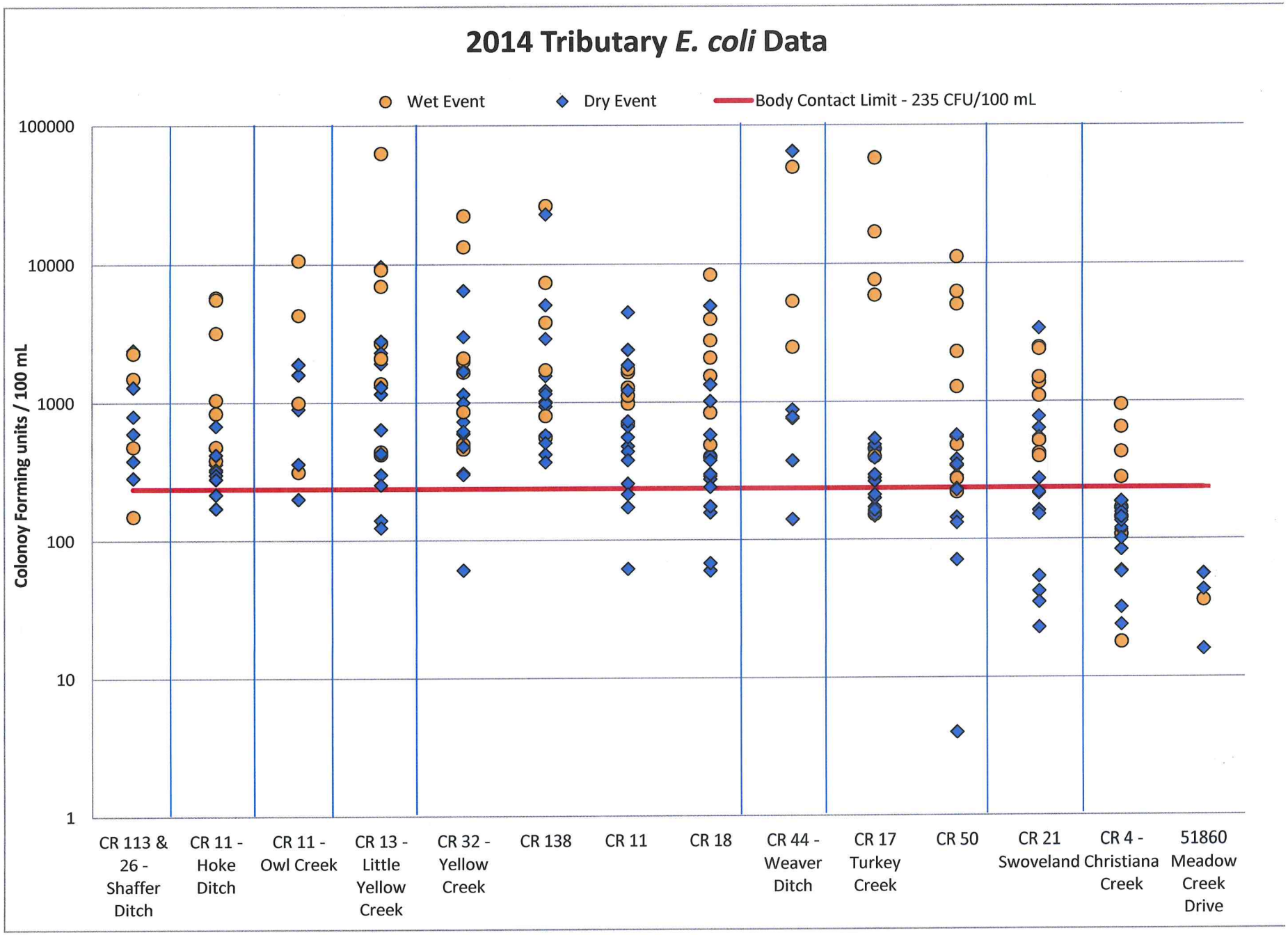
APPENDIX 2:

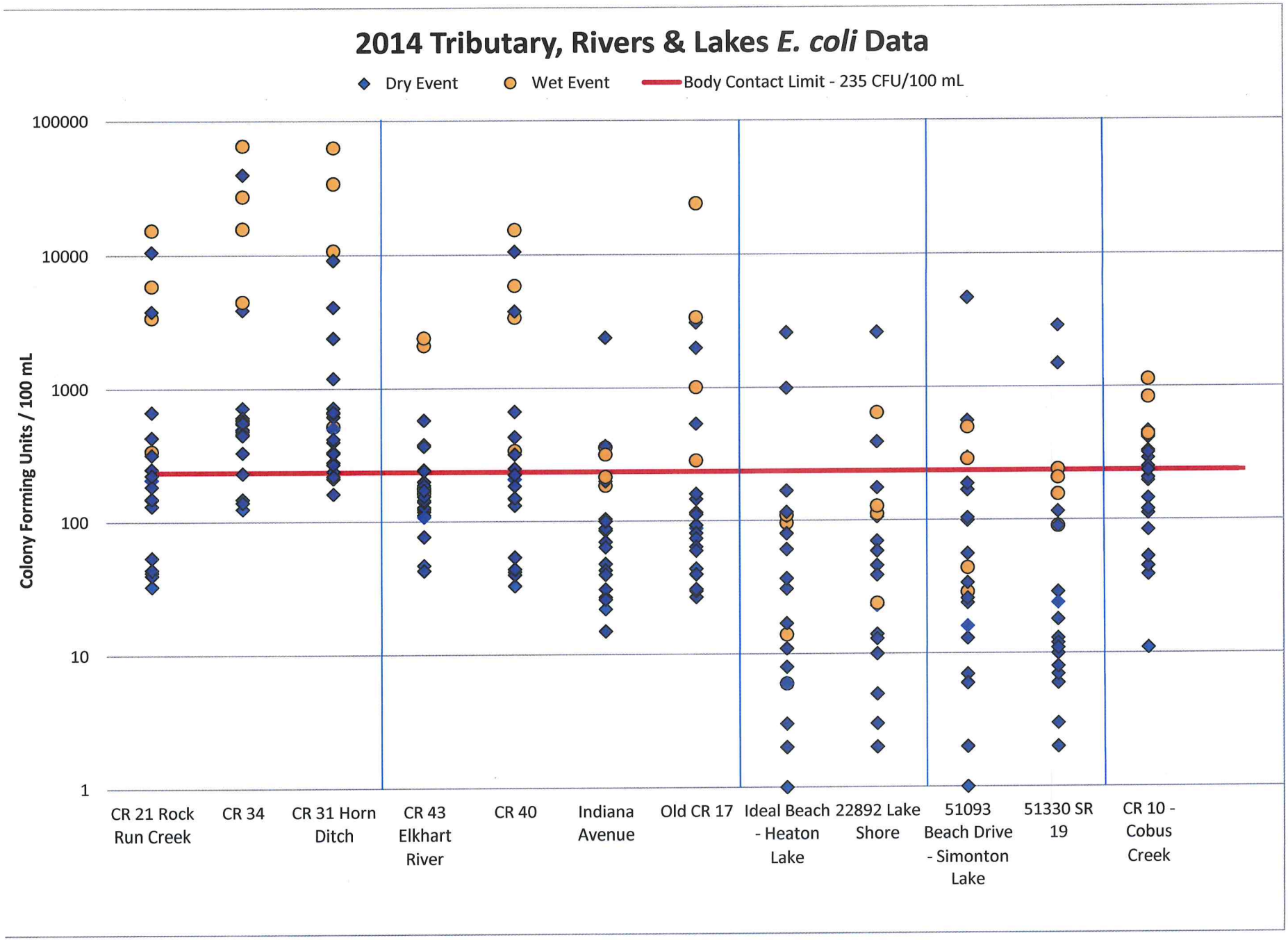
CHARTS

FOR

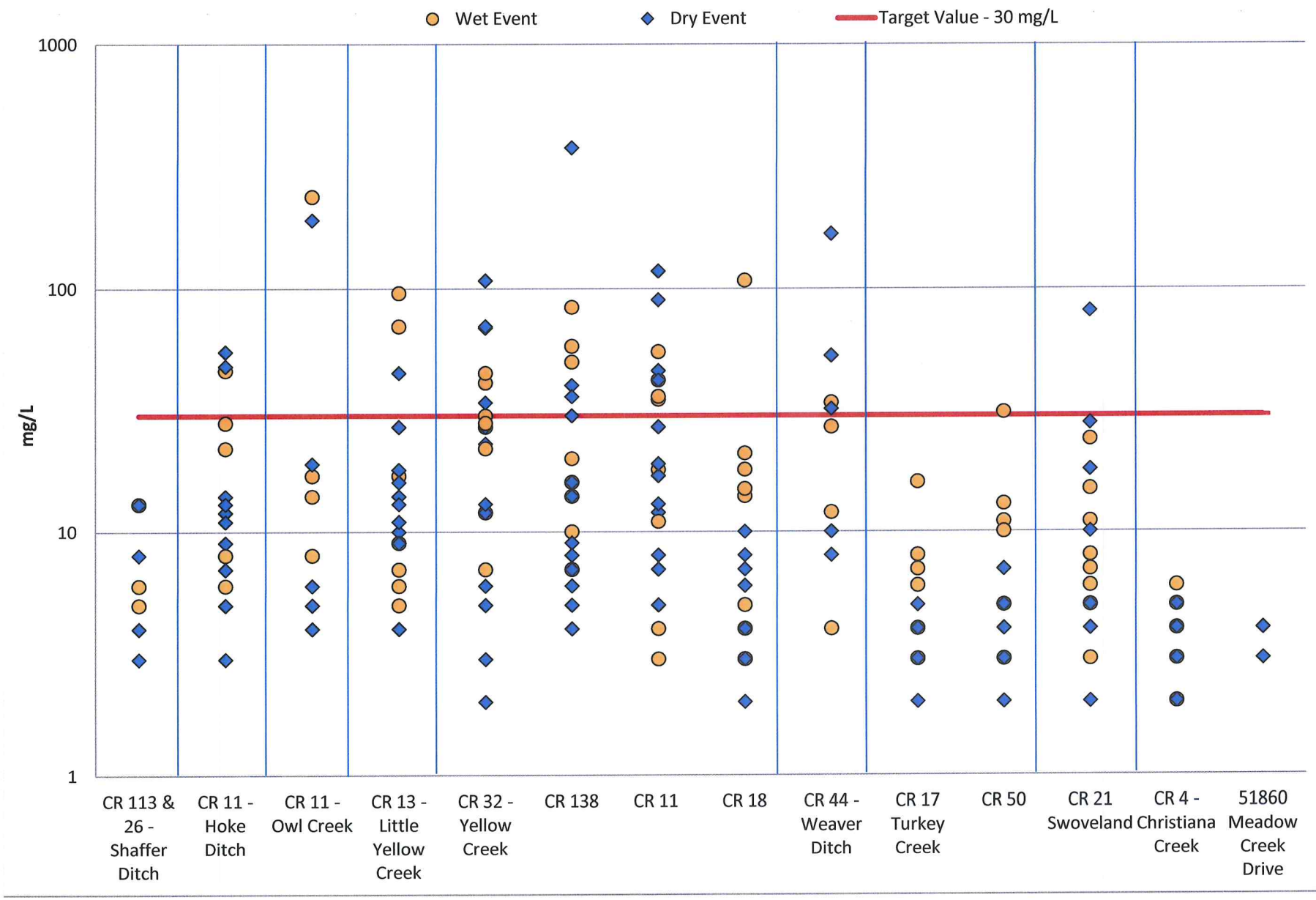
E. COLI &

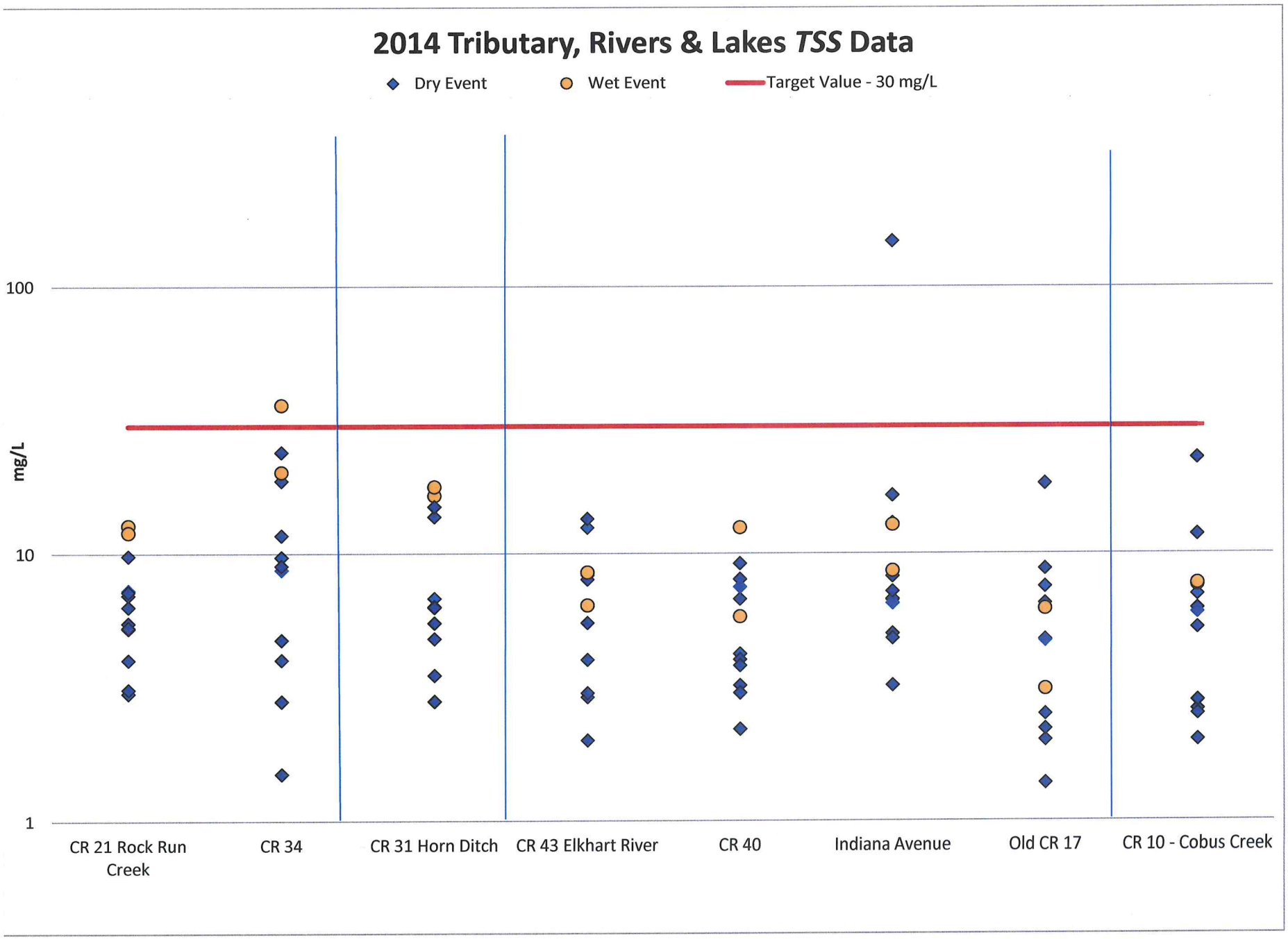
TOTAL SUSPENDED SOLIDS


2014 Tributary E. coli Data
Wet Event
Dry Event
Body Contact Limit - 235 CFU/100 mL
Colonoy Forming units / 100 mL
100000
10000
1000
100
10
1
CR 113 & 26 - Shaffer Ditch
CR 11 - Hoke Ditch
CR 11 - Owl Creek
CR 13 - Little Yellow Creek
CR 32 - Yellow Creek
CR 138
CR 11
CR 18
CR 44 - Weaver Ditch
CR 17 Turkey Creek
CR 50
CR 21 Swoveland
CR 4 - Christiana Creek
51860 Meadow Creek Drive


2014 Tributary, Rivers & Lakes E. coli Data
Dry Event
Wet Event
Body Contact Limit - 235 CFU/100 mL
Colony Forming Units / 100 mL
100000
10000
1000
100
10
1
CR 21 Rock Run Creek
CR 34
CR 31 Horn Ditch
CR 43 Elkhart River
CR 40
Indiana Avenue
Old CR 17
Ideal Beach - Heaton Lake
22892 Lake Shore
51093 Beach Drive - Simonton Lake
51330 SR 19
CR 10 - Cobus Creek

2014 Tributary *TSS* Data




2014 Tributary, Rivers & Lakes TSS Data
Dry Event
Wet Event
Target Value - 30 mg/L
100
10
1
mg/L
CR 21 Rock Run Creek
CR 34
CR 31 Horn Ditch
CR 43 Elkhart River
CR 40
Indiana Avenue
Old CR 17
CR 10 - Cobus Creek