



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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Eric J. Holcomb
Governor

Bruno Pigott
Commissioner

September 30, 2020

Candice Bauer, Chief
Ground Water and Drinking Water Branch
U.S. Environmental Protection Agency
77 West Jackson Boulevard, WD-15J
Chicago, Illinois 60604-3590

Dear Candice:

Re: Capacity Development Program Report
2017-2020 Report to the Governor

Enclosed, please find a copy of Indiana's Capacity Development Program Report to the Governor. This report was submitted to Governor Holcomb's Office by September 30, 2020. The purpose of this document is to report to Governor Holcomb the effectiveness of the Indiana Department of Environmental Management's capacity development program for the 2017-2020 time period.

If you have any questions or concerns please contact me by email at mprater@idem.in.gov or by phone at 317-232-8741 or Liz Melvin of my staff at lmelvin@idem.in.gov or by phone at 317-234-7418.

Sincerely,

Matt Prater, Branch Chief
Drinking Water Branch
Office of Water Quality

Enclosure

cc: Sahba Rouhani
Valerie Bosscher



Program Report to the Governor

***“The Effectiveness of Indiana’s Capacity
Development Strategy for New/Existing
Public Water Systems”***

September 2020



Prepared by:

**Indiana Department of Environmental Management
Office of Water Quality
Drinking Water Branch**

Background

This Capacity Development Annual report was prepared by the Indiana Department of Environmental Management (IDEM), Drinking Water Branch (DWB) in fulfillment of the reporting requirements of the United States Environmental Protection Agency (US EPA) Guidance on Implementing the Capacity Development provisions of the 1996 Amendments to the Safe Drinking Water Act (SDWA). The 1996 amendments emphasized the prevention of contamination of water supplies and encouraged the proper management of public water systems to ensure the delivery of safe drinking water to all citizens. The Amendments required states to develop and implement a strategy that assists public water systems in acquiring and maintaining water system capacity. Water system capacity has three components: technical, managerial, and financial. Proficiency in all three areas is necessary for a system to have adequate "capacity." The process of assisting systems to acquire and maintain adequate technical, managerial, and financial capacity is called Capacity Development. The goal of Indiana Department of Environmental Management's (IDEM) Capacity Development efforts is ensuring that public water systems in Indiana will maintain high compliance rates and consistently provide safe and adequate drinking water to their customers. The purpose of this document is to report to Governor Holcomb the effectiveness of the Indiana Department of Environmental Management's capacity development program for the 2017-2020 time period. The State risks losing 20 percent of the annual Drinking water State Revolving Fund (DWSRF) allotment if it does not submit a report to its Governor by September 30 every third year or does not make the report available to the public under Section 1420(c)(3) of the SDWA.

Introduction

IDEM submitted the initial "Capacity Development Strategy for Existing Public Water Systems" to EPA on July 28, 2000. The goal of the strategy is to help all public water systems achieve and maintain "capacity," defined as the ability to meet the SDWA's requirements and consistently provide safe drinking water to the citizens of Indiana. IDEM utilized the experience and expertise of stakeholders both within and outside the agency to develop this strategy. The Indiana Department of Environmental Management's strategy involves a variety of activities and tools designed to enhance the technical, managerial, and financial capacity of our public water systems. The goal of the IDEM's Capacity Development Program is to assist owners and operators of public drinking water systems by improving their technical abilities, managerial skills, and financial viability to achieve and ensure safe drinking water now and in the future. As a result of IDEM's capacity development strategy, a majority of Indiana's water systems meet the health-based standards for drinking water quality.

IDEM, with input from stakeholders, developed rules found at (327 IAC 8-3.6) that govern the development of new Community and Nontransient Noncommunity public water supplies in Indiana. As of September 9, 1999, all new Community or new Nontransient Noncommunity Public Water Systems (PWSs) in Indiana must submit a water system management plan to IDEM that demonstrates the technical, managerial,

and financial capacity of the proposed public water system. IDEM must approve the Water System Management Plan prior to the submission of a construction permit application by the proposed PWS. No construction may begin until the water system management plan is approved. It is the intent that systems passing this hurdle are better equipped to remain viable for the long term.

Existing public water systems are evaluated regularly to ensure that they are maintaining their technical, managerial, and financial capacity. This approach is a multi-faceted effort. The sanitary survey performed by the Drinking Water Branch and Field Inspection Section is a primary tool for evaluating public water system capacity. The sanitary survey is a detailed, on-site inspection of the public water system. The sanitary survey encompasses eight separate elements found at public water systems. The sanitary surveys are conducted at regular intervals. IDEM uses a variety of programs aimed at capacity development. Our Compliance Section is responsible for ensuring the appropriate sampling is completed and results submitted. They also aid both new and existing systems helping those systems understand monitoring and reporting requirements. Our Operator Certification staff helps ensure that systems are operated by certified operators. Our Construction Permit staff reviews construction permit applications to ensure construction meets standards. The Groundwater Section looks at source protection. In short, the job of capacity development is a team effort designed to help ensure safe drinking water for the citizens of Indiana who obtain drinking water from public water systems.

IDEM has submitted reports to the Governor regarding the effectiveness of our Capacity Development Strategy for Existing Public Water Systems every three years starting in 2002, in accordance with federal requirements. Meeting this and related requirements under federal rules avoids a withholding of up to 20% of the Drinking Water State Revolving Fund (DWSRF) Capitalization Grant. The 2020 report is submitted in fulfillment of requirements and to avoid withholding of up to 20% of the Drinking Water State Revolving Fund (DWSRF) allotment for Federal Fiscal Year 2021. This document serves to fulfill the reporting requirement for Indiana's Capacity Development Report to the Governor on the effectiveness of our strategy for new and existing public water systems.

Objectives

Our objective, in implementing the strategy, is to ensure safe drinking water for the citizens of Indiana by improving the overall compliance rates for existing PWSs. Over the last three years, IDEM has successfully implemented many activities and developed several tools to assist public water supplies in attaining technical, managerial, and financial capacity.

Current Activities to Enhance Water System Capacity

Staff

The Drinking Water Compliance Assistance Program (DWCAP) has three staff members specifically designated as Capacity Development Program staff. However, the job of ensuring compliance and capacity development extends over every section of the Drinking Water Branch. These DWCAP staff are directly involved in assisting public water systems (systems) reach compliance and maintain technical, financial, and managerial capacity. The staff works as a team with all sections of the Branch to determine the best approach on how to assist public water systems to achieve and maintain high rates of compliance.

DWCAP staff have been instrumental in assisting systems with technical, financial, and managerial matters. The DWCAP staff developed and/or utilizes the following approaches to help systems:

- Fact sheets
- Financial evaluation assistance
- Town board training materials
- On-site evaluations of systems
- Maintain operator training materials as well as provide technical assistance to operators.
- Level 2 Assessment Training and Certification
- Operator Daily Duty Log
- Mentoring programs
- Maintaining a list of operators for systems in need of an operator
- Training assistance for certified operators
- Asset management and budgeting for short-term and long-term infrastructure replacement goals
- Contaminant treatment and removal assistance
- Lead and Copper control program assistance
- Assistance preparing annual Consumer Confidence Report
- Assistance identifying potential funding sources for utility capital improvement projects
- Assisting new systems with understanding and complying with Drinking Water Rules
- Training for Facility Specific Operators
- Providing Check-Up Program for Small Systems (CUPSS) training
- Maintain a List of Active Backflow Inspectors

Implementation of Strategy

As part of the implementation of Indiana’s “Capacity Development Strategy for Existing Public Water Systems,” and to focus our efforts on systems with the greatest need, IDEM has improved mechanisms to screen, categorize, and prioritize them. As we continue to aid public water supplies, we are continually exploring new tools to further enhance our abilities in identifying and assisting these systems. The activities and tools listed below were developed or enhanced to improve IDEM’s ability to provide technical, managerial, and financial assistance to systems in Indiana. A more detailed description of these items is included in the following section.

- Screening, Categorizing and Prioritizing Systems
- Compliance Assistance Tools
- On-site Technical, Financial, Managerial Assistance
- Self-Assessment Manual
- Small System Technical Assistance Workshops
- Facility Specific Operator Trainings
- Water & Wastewater Task Force
- Small System Lab Assistance Program
- Operator Certification Rule
- Updated Operator Certification Database
- Updated Capacity Development Database
- Check-Up Program for Small Systems (CUPSS)
- Drinking Water Watch Sampling Schedule
- Operator Daily Duty Log

Progress - Improving Existing System Capacity

Screening, Categorizing, and Prioritizing Systems

IDEM has fully integrated the US EPA Federal Enforcement Response Policy (ERP) and Enforcement Tracking Tool (ETT) along with several other tools at our disposal. To protect public health and track health violations, IDEM has implemented the use of the ERP/ETT tool to effectively identify and return systems to compliance. We utilize a combination of ERP/ETT, Safe Drinking Water Information System (SDWIS) data (the Federal reporting database), inspections, Capacity Development activities, and Operator Certification data to track the status of all active PWSs.

The DWCAP and Branch staff worked with numerous systems, over the last three years, to reduce the quantity of violations accumulated by effectively using the ERG/ETT tool and the Safe Drinking Water Information System (SDWIS) Data Violations, see Appendix A. Violations are divided into four categories and characterized as Maximum Contaminant Level (MCL), Treatment Technique, Monitoring and Reporting (M&R), and Consumer Confidence Report. The first category deals with all contaminant violations. The second category includes all non-health related violations

such as a treatment technique violations or the failure to provide adequate treatment. The third category deals with the system's failure to collect and/or report sample results for all contaminants. Finally, the fourth category applies to only community public water systems that fail to provide a Consumer Confidence Report to their patrons. Over the past three years, IDEM provided technical, managerial, and financial assistance to numerous systems effectively decreasing the total number of violations for Community Water Systems (CWS) and Nontransient Noncommunity (NTNC) Systems.

Revised Total Coliform Rule

IDEM saw a reduction in systems with noncompliance for MCL violations but an increase of treatment technique and M&R violations for Transient Noncommunity (TNC) systems with the inception of the Revised Total Coliform Rule (RTCR). The RTCR, which went into effect April 1, 2016, has had a large impact on compliance rates for all systems, but more so at Noncommunity Systems. The number of Total Coliform violations and the number of systems in violation both increased with the onset of the new rule. There has been a large increase in outreach and educational efforts to help systems comply with this rule. Systems frequently trigger increased monitoring under the rule. This creates a domino effect leading to more violations and confusion for the systems. Systems had to adjust their programs to comply with the RTCR adding more responsibilities due to the procedures introduced by the RTCR.

The RTCR has put a strain on the Branch as it has required us to provide more technical assistance for systems to comply with these new requirements. This rule requires various assessments of the distribution systems when multiple positive bacteria samples or monitoring and reporting violations occur. The type of RTCR assessments triggered are the Level 1 Assessments or Level 2 Assessments. Each of these assessments are reviewed by DWCAP staff for completeness and compliance understanding. Additionally, the DWCAP staff follows up on omissions and/or errors in the assessments. Level 2 Assessments are triggered when the system incurs multiple bacteria positive results, including *Escherichia coli* (*E. coli*) results, or multiple Level 1 triggers. Level 1 Assessments may be performed by a representative of the water system. However, Level 2 Assessments must be done by either IDEM staff or a certified operator who has been trained by IDEM to complete these assessments.

During this reporting period, there were a total of eight hundred and fifty-two (852) Level 1 Assessments and seven hundred and eighty-five (785) Level 2 Assessments that were triggered and completed. These assessments have proven to be laborious and time consuming, which puts additional strain on an already small staff. IDEM has developed in-class and online training modules on how to properly perform RTCR assessments. We provided in person training sessions around the state and developed an on-line training tool to be launched soon. To date, we have trained and certified three hundred and twenty-three (323) operators to perform Level 2 Assessments.

IDEM has conducted in-person and online trainings for qualified candidates to become certified Level 2 assessors. This training emphasizes the basics of what a Level 2

Assessment is and the purpose behind this training. In this training we conveyed data that we had collected since April 1, 2016 and lessons learned. We discussed the problems that were faced during the Level 2 Assessment and after the assessment was completed. Many of the issues systems faced correlated with performing corrective actions and showing proof the system had completed those actions. We also emphasized the importance of the assessor making sure that everything is completed prior to submission of the Level 2 Assessment form. Once the training is completed, the certified assessor can then renew their assessor's certificate.

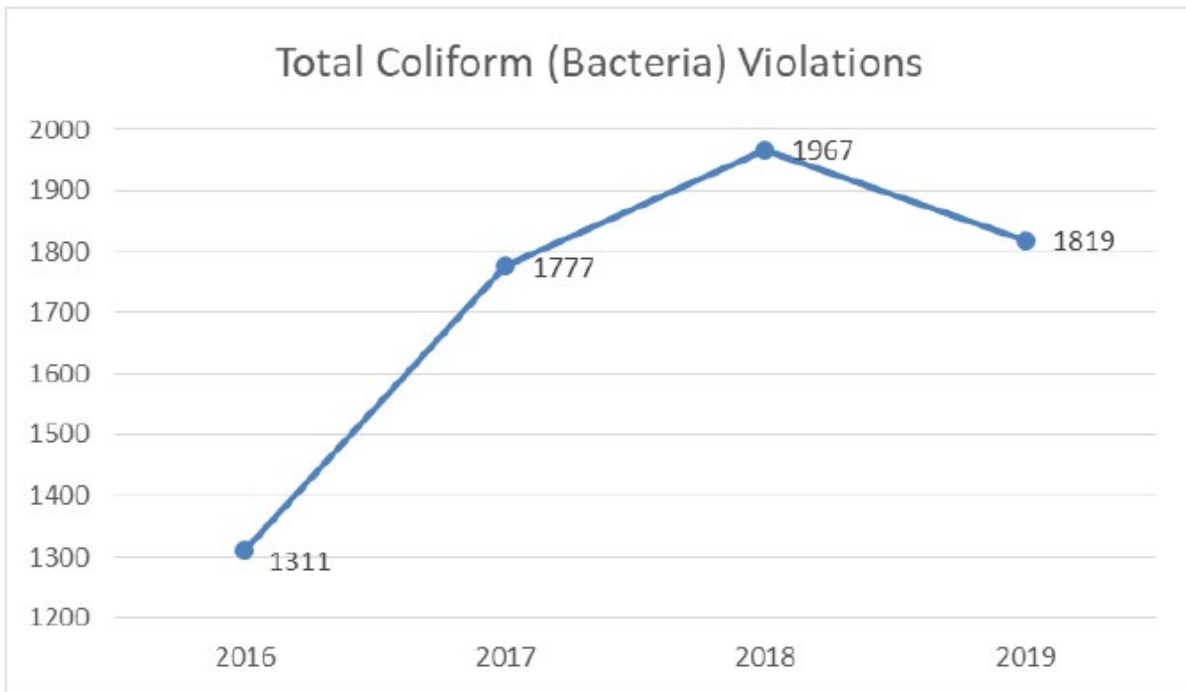
In response to the growing number of Level 2 Assessments being triggered throughout the northern part of the state, IDEM has reached out to many of their trained Level 2 assessors for assistance. IDEM manages a list of certified Level 2 assessors that are willing to assist public water systems with Level 2 Assessments. Currently, we have seventy-eight (78) assessors signed up to assist various systems throughout the state. This list is maintained by IDEM and provided to all systems that trigger a Level 2 Assessment.

IDEM continued to conduct RTCR training workshops around the state independently and in conjunction with multiple professional associations such as; the American Water Works Association (AWWA), Indiana AWWA formerly Indiana Rural Water Association (IRWA), Alliance of Indiana Rural Water (AIRW), and the Rural Community Assistance Program (RCAP) to educate systems on RTCR requirements. We have sent numerous letters and reminders about RTCR requirements. For example, the RTCR required all systems submit a Site Sampling Plan (SSP) for approval by IDEM, have it on site and updated, as necessary. IDEM performed site visits explaining the SSP requirements to small community, NTNC, and TNC systems, provided technical assistance on developing plans by phone and on-line, and, in some cases, walked them through the process to make sure their plans met requirements and were available in case of any change in staff for continuity of operation.

Seasonal TNCs were expected to have some disadvantages when it came to the RTCR. IDEM provided various reference guides and performed various one-on-one trainings with these systems to help them gain an understanding of the RTCR requirements. The DWCAP and Inspection staff were the principal workers on these onsite trainings by going through the Seasonal Startup (SSUP) procedures step by step. It was very common for the DWCAP staff to complete SSPs while they were onsite performing the SSUPs. In 2016, at the onset of the rule, we made concerted efforts to assist them with learning the new requirements. In 2017 we added to our efforts. Since 2017 we have steadily reduced the number of seasonal systems in non-compliance. Our concerted efforts have paid off with better compliance rates in 2019. Of course, in 2020 things were volatile. Season openings did not follow normal patterns. Systems were unsure of opening dates. We did our best to provide guidance and technical assistance to those systems that did open for the season. We currently have four hundred and three (403) seasonal systems that we work with to continue to improve compliance rates. Seasonal compliance rates continue to improve, through the efforts of the dedicated DWCAP staff.

As time goes by, we get a better picture of how this new rule impacts systems over the long term. We will assist systems as best we can in the ongoing implementation of the RTCR. It will continue to be time and labor intensive for the Branch and burdensome for the systems.

Although RTCR violations still make up the bulk of the PWS violations issued, continuous educational outreach and concentrated compliance assistance efforts by IDEM staff resulted in a decrease in RTCR violations as illustrated here:



Compliance Assistance

IDEM Drinking Water Branch (DWB) has been effective in promoting compliance at PWSs by using various compliance assistance resources. A sample of these assets includes:

- Courtesy Reminder Letters for key compliance activities (sent prior to the end of a compliance period)
- Reminder Letters for missing information (sent immediately following the end of a compliance period)
- Violation Letters that allow a return to compliance with no penalty
- Courtesy phone calls to systems reminding them of applicable requirements
- On-site assistance by Field Inspection staff or DWCAP staff

- Monitoring Waiver Program – review of likelihood of contaminant occurrence this program allows a reduction in testing where appropriate, saving the system monitoring costs
- Educational materials and reminders of new rule requirements
- Seminars and workshops done in cooperation with various water associations such as American Water Works Association (AWWA), Alliance of Indiana Rural Water, and Rural Community Assistance Program (RCAP)

Individualized Assistance

IDEM has coordinated efforts, with various water associations, in providing technical assistance for public water systems. These efforts are critical to reduce current violations and minimize the possibility of systems accumulating new ones. We use various databases to track all public water systems' compliance records. These records assist IDEM in determining if a system has returned to compliance, needs additional assistance, or has various violations that need to be addressed through an Administrative Order. Over the last three years, **DWCAP staff and Field staff has provided over six thousand nine hundred and thirty-eight (6,938) accounts of technical assistance and have performed over six thousand one hundred and thirteen (6,113) on site visits for various systems.** DWCAP staff is involved in various types of assistance that can be any or all aspects of financial, managerial, and/or technical capacity.

Systems may require various types of assistance to solve a problem, which prevents the system from attaining capacity. For instance, a system that is without a certified operator is contacted to remind them of the requirement and may be given a list of operators located within the county and in the surrounding counties, making the search for an operator less complicated. In addition, the Operator Certification (OPCERT) staff maintain a list of operators who have made it known to us that they may be interested in full or part-time employment. Any interested operator is placed on the list and the list is then provided to systems upon request. If a system has trouble with required reports, the DWCAP staff may help them fill out the report, understand the report and the requirement and need for the report, ensure the report contains the required information. Certain problems are more complex and require working and coordinating the efforts of other IDEM program staff, consultants, the system operator, the public water system's management, and the system's owners. The DWCAP staff may draw upon expertise from other sections, outside professional associations, or other state agencies. A long-term project plan may be built requiring a coordinated effort from all involved parties to overcome complex obstacles.

Assistance Success Stories

Lead and Copper Rule Revision (LCRR) Training

IDEM put on four (4) one-day LCRR training sessions from late 2019 to early 2020 and plan to do more trainings in the future. We have received numerous follow-up requests from operators and partnerships for more in-depth discussions and information on various aspects of the new rule. They showed interest in subjects such as: lead service line inventory, sample site criteria, testing in schools and childcare facilities, etc. IDEM believes that public water system interest in this new rule will encourage more cooperation and interaction amongst the water systems, public, as well as state and local authorities in understanding the lead effects on public health. Additionally, IDEM has submitted a summary of the new LCRR requirements to all public water systems required to take lead and copper samples in Indiana.

Lead and Copper

We currently have one thousand three hundred and sixty (1,360) public water systems that are required to comply with the lead and copper rule. Out of the one thousand three hundred and sixty (1,360) systems, we had one hundred and seventy-seven (177) Monitoring & Reporting violations during this reporting period in addition to forty (40) lead exceedances and forty-four (44) copper exceedances. Our goal is to reduce the number of monitoring violations by sending multiple reminders via email and phone. We have made concerted efforts in providing clear instructions on how to properly collect the lead and copper samples. In 2018, we had nineteen (19) lead exceedances where we worked alongside the public water systems to help the system return to compliance. In 2019, we lowered this number to eleven (11) lead exceedances. We reduced lead exceedances by forty-two (42) percent. The highest number of copper exceedances we had was in 2017, which was at seventeen (17). By 2019, we had lowered the number of copper exceedances to twelve (12). This is a thirty (30) percent reduction in the copper exceedances recorded at the beginning of this monitoring period.

Most lead and copper violations stem from systems failing to submit their lead consumer notice and certification form. We require all systems to submit a copy of the lead consumer notice for all results exceeding the lead or copper Action Level (AL). We also recommend that systems deliver the lead consumer notice to their customer by the close of next business day if results exceed the action level. If a system exceeds the lead AL, the facilities are required to distribute the Public Education (PE) within sixty (60) days from the end of the monitoring period. We now require systems to distribute the PE to customers within thirty (30) days from the lead exceedance letter date. This shortens the time frame and allows information to get to the consumers quickly. In addition to the public notices, IDEM provides oversight and guidance for corrosion control and proper sampling procedures when sampling.

Brenneman Memorial Church

Brenneman Memorial Church (PWSID 2200505) exceeded the copper Action Level in 2019. IDEM provided onsite guidance to the facility as to what can affect copper concentrations in their distribution system. The facility installed new plumbing throughout the facility prior to taking their next lead and copper compliance sample. It was expected that through the operation and maintenance of the facility plumbing, copper particulates were knocked loose throughout the building and increased concentrations in the samples they had taken. The facility demonstrated understanding and attention to detail when they had to take confirmation samples, all of which were below the lead and copper Action Levels.

Disinfection By-products (DBPs)

Disinfection By-products MCL's are very sensitive to minor changes. In 2020, there are twelve (12) systems responsible for thirty-four MCL violations. MCL's are based off a Locational Running Annual Average (LRAA). Due to the sensitivity to change, a single high quarterly result can produce multiple consecutive violations. If a wholesale system runs into an issue of DBPs exceeding the MCL, then the purchase water system may also report DBPs above the MCL.

Currently, there are six hundred and ninety-two (692) systems that must take Disinfection By-Products samples. We are actively working with systems that have DBP MCL issues, especially wholesale and purchase/consecutive water systems. During this reporting period, we had a total of seventy (70) DBP MCL violations to report compared to one hundred and fourteen (114) DBP MCL violations previously reported on the 2017 Governor's Report, which is a thirty-nine (39) percent decrease. The majority of DBP MCL violations were coming from surface water systems and the systems that purchase water system from the wholesalers. We have emphasized the importance of wholesale water systems working with their customers to correct any DBP MCL issues.

For instance, a surface water system in southern Indiana, and its multiple consecutive water systems were all having DBP MCL issues. IDEM worked alongside these systems to determine what the wholesale surface water system could do to reduce chlorine contact time significantly. These systems had success reducing their DBP levels when the wholesaler installed six (6) tank mixers and performed routine flushing.

To further assist systems, IDEM is monitoring DBP levels more closely. If we see an upward trend in the DBP levels, we contact the systems, and request them to perform an operational evaluation of their levels before they exceed the MCL. The Operational Evaluation Levels (OELs) help us anticipate (and mitigate) future DBP MCL issues by monitoring the levels between compliance sampling events. The OELs, are calculated independently of the MCLs and are used for predictive purposes. This information

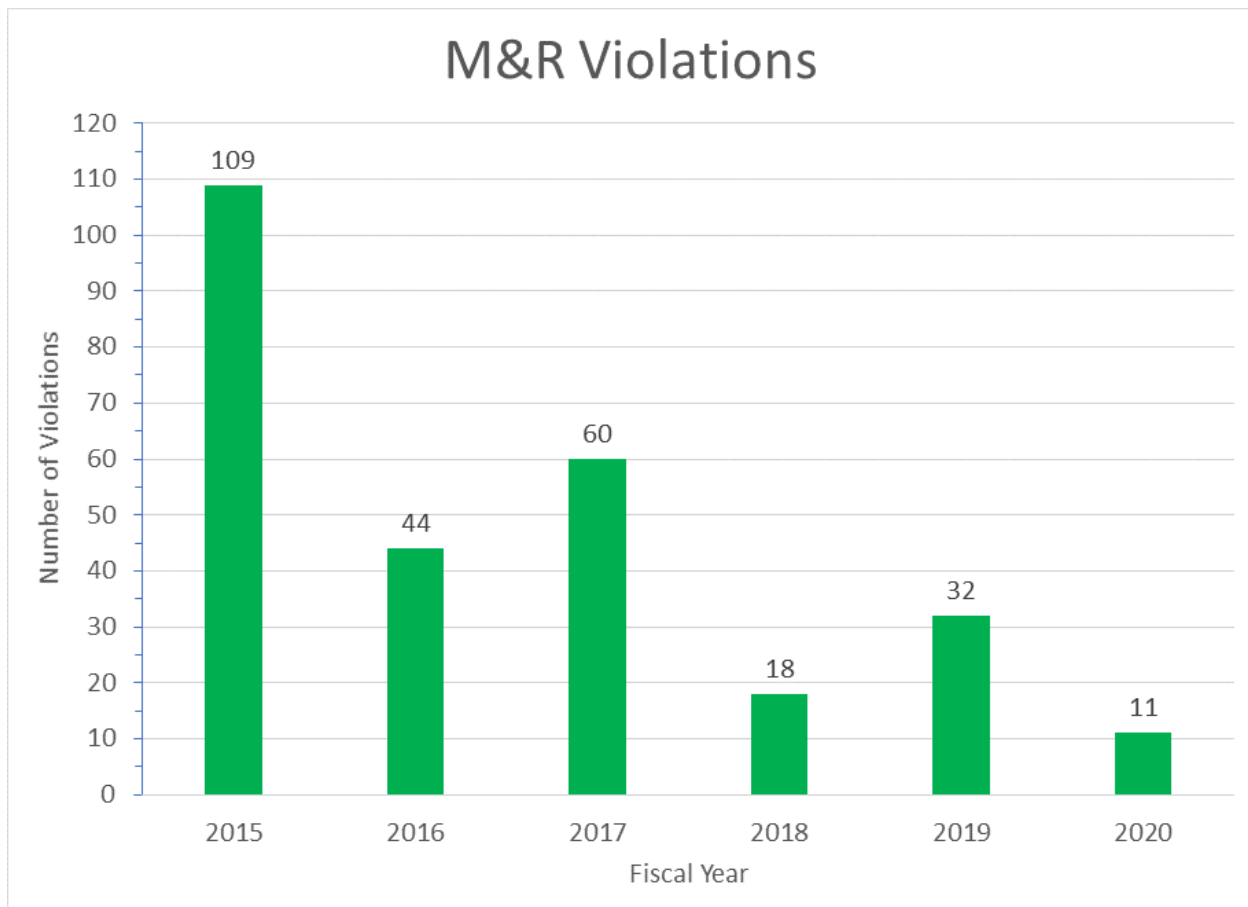
allows systems to observe trends and make treatment/distribution system changes before MCLs are exceeded.

IDEM meets with the wholesaler and consecutive water systems quarterly or biannually to discuss OEL's data and provide feedback on their efforts. We discuss various topics from asset management of the systems' equipment, and various procedures on flushing; maintenance; and chemical additive fluctuations due to seasonal changes. Currently, there are no DBP violations to report for the southern public water systems; emphasizing cooperation between IDEM and the public water system in improving the water quality being provided to their consumers.

Although the 2014 DBP Rule increased the total number of DBP violations and systems in violation, concentrated compliance assistance efforts by IDEM staff have resulted in a steady decrease in DBP MCLs as illustrated here:



IDEM has put forth great effort to reduce Monitoring and Reporting violations ongoing since 2015. We use a program called Everbridge – Interactive Voice Response, that generates a message via phone and email. This provides the recipient an automated reminder that a sample needs to be taken and submitted to IDEM by a particular date. The graph below illustrates the results of our efforts to remind Public Water Systems to collect their DBP samples to be analyzed and reported to IDEM. IDEM's efforts show a ninety (90) percent reduction in Monitoring and Reporting violations for DBPs.



Brown County State Park – Flooding, A Natural Disaster Success Story

Brown County State Park (PWS IN2070020) is a small surface water public water system managed by the Indiana Department of Natural Resources (DNR). Brown County State Park (BCSP) had an extreme flooding event the weekend of June 15, 2019. The flooding severely impacted the source water quality, which significantly increased sedimentation levels and, as a result, the water treatment plant was not able to properly treat the raw water. IDEM staff were notified that the operators measured turbidity levels at 63 NTU and 5 NTU for their filtered water. Per SDWA requirements, PWSs that use surface water are required to monitor for turbidity daily and levels are required to be below 1 NTU. Fortunately, the water with high turbidity levels did not enter the distribution system but out of an abundance of caution, DNR management decided to close the state park. The park closed and stopped providing drinking water to the public, affecting approximately two thousand eight hundred (2,800) guests. DNR wanted to safely reopen ASAP, because this state park is one of the most visited state parks in Indiana and DNR officials were worried about customer retention. IDEM immediately responded to assist the BCSP drinking water operators.

IDEM inspectors were onsite within 24 hours of being notified about this issue. IDEM field staff and capacity development staff worked closely with DNR officials on steps to resolve the turbidity issue and staff was at the facility daily for over a week – including weekends. IDEM field staff helped monitor chlorine levels and collect total coliform samples to help ensure the finished water met drinking water standards.

IDEM permit staff also played a key role on this project. DNR hired a contractor to install a temporary pre-sedimentation tank and a new coagulant for treatment. Permit staff and capacity development staff reviewed and approved this temporary treatment as quick as possible while being thorough and diligent in their review. The contractor first wanted to use a chemical coagulant that was not NSF approved, but IDEM field staff caught this issue and alerted BCSP. All parties then made sure all chemicals added were NSF approved.

IDEM staff also created an operational checklist/guidance for the drinking water operators at BCSP. This checklist was for the operators to make routine assessments to help improve operations in the treatment plant.

As a result of the technical assistance, treatment installation and sample results, DNR was able to reopen the state park. DNR was very thankful that IDEM was onsite and providing critical information quickly during this emergency. This is an excerpt from a press release from DNR, “A team of DNR and Indiana Department of Environmental Management staff worked “around the clock” to filter out the sediment and produce enough water to reopen the lodge and campground.” Being able to reopen the state park was also a high priority for the Governor’s office. This was a very critical project for state government and our staff response was key to turning this into a success story for all those involved.

Harmful Algal Blooms (HABs) Sampling Project

In 2014, Toledo Ohio issued a do not drink order putting 400,000 residents out of drinking water due to the cyanotoxin microcystin released from a Harmful Algal Bloom (HAB). Recreational advisories, on the Ohio River, in 2015 and again in 2019, affected Indiana, Kentucky, Ohio, and any drinking water plant in the path of the HAB and its Microcystin toxin plume. In December 2015, an Indiana PWS reported algae in its distribution system. The DWB found there were few resources available to assess the problem and the resources that were available were not able to respond in the time frame needed. Unlike the chemical laboratory market, the microbiological market was minimal and limited in ability to respond to this type of situation.

IDEM is currently working to obtain a better understanding of the occurrence and threat of cyanobacteria and cyanotoxins to Indiana's surface water PWSs. Over 47% of the State's population use a PWS that draws surface water as a primary water source. There is a sparsity of collective data to identify the magnitude of cyanobacteria, type of cyanobacteria, and cyanotoxin production in Indiana’s surface waters. Analytical procedures are currently evolving and face many limitations in the information they

provide with no one technique covering all the potential toxins nor providing potential threat information. In addition, there is little national correlation data available to ascertain the level of threat, complete a threat analysis, or determine appropriate threat management. Some Indiana data does exist, but it is of insufficient quantity and type to reasonably utilize to evaluate the impacts of algae and cyanobacteria on PWS's. The U.S. EPA has health advisories for only two of the lesser toxic toxins, Microcystin and Cylindrospermopsin. The more toxic Anatoxin-a and Saxitoxin do not have EPA health advisories. The State of Ohio enacted rules requiring year around monitoring and reporting of cyanotoxins and cyanobacteria ([OAC 3745-90-03](#)) that became effective in 2016.

In response to the limited HABs toxin drinking water data available in Indiana, IDEM initiated a project in 2016 to evaluate cyanobacteria, cyanotoxins, analytical methods and how these affect the treatment process at PWS's that utilize surface water as a source water. Six to ten surface water PWS's are sampled each year for several parameters. Both the intake to the PWS and the finished drinking water are sampled to determine the threat going into the treatment system and if the treatment system is removing the threat.

IDEM DWB has been able to leverage existing State capabilities to save over \$500,000 in contract laboratory costs per year by working with the State Department of Health (IDOH) Environmental Laboratories and the IDEM Water Assessment and Planning Branch (WAPB). A mix of existing funds, purchase of new equipment and expertise from DWB, IDOH and WAPB make this project feasible and bring capabilities in-State and online in case of emergencies. While the capabilities existed in theory, executing this project assembled the equipment and provided the practices needed to implement analytical testing.

To date, 24 PWS's have been sampled. Five new PWS's are being sampled for the 2020-2021 sampling season. This will leave six new sites for the 2021-2022 sampling season and the end of the project. The DWB has gained new insights into the potential impacts posed by cyanobacteria and cyanotoxins.

Project results show cyanobacteria are active even during the winter months and that there is a large degree of variability in toxin production from year to year. The highest toxin levels seen in the project are 29 ug/L Microcystin in February of 2018. The EPA Health Advisory Levels (HAL) for Microcystin are 0.3 ug/L for children under five (result was 100 times the HAL) and 1.6 ug/L for other age groups (18 times the HAL). Another interesting fact is that the Indiana Microcystin season starts in October and runs through March and not the warm months. Microcystin production has been below 0.3 ug/L during the 2018 and 2019 sampling seasons. Cyanobacteria has been observed in 91% of the project samples taken. On the average, over 50% of all algae and cyanobacteria cells counted were cyanobacteria. Counting included diatoms, dinoflagellates, algae and cyanobacteria. The project has shown that cyanobacteria and associated cyanotoxins are present within the PWS treatment system and are making it through to the finished distribution system. While treatment plants are maintaining cyanotoxin

levels below Action Levels, they are still at or above half of the EPA action levels throughout various time during the year. Cyanobacteria and cyanotoxins levels vary within a year and from year to year and are present even at temperatures approaching 0°C. The highest toxin levels in intakes when the temperature was around 5°C. This shows that issues associated with cyanobacteria are a concern year around.

IDEM staff will continue to work with the surface water PWSs on interpreting this data and implementing best management practices. IDEM is committed on working with PWSs to effectively treat for HABs and protect public health.

Source Water Assessments and Wellhead Protection Plans

The Groundwater Section provides Source Water Assessments to public water systems. These assessments are intended to provide basic information to public water suppliers regarding where their drinking water comes from; and the degree, called susceptibility, to which the drinking water source may be impacted by potential sources of contamination. During this reporting period, IDEM has performed approximately three hundred and ninety-three (393) assessments. During the 2019 monitoring period, we performed seventy-nine assessments. In 2020, we performed one hundred and fifty-one (151) assessments. IDEM continues its efforts to assist PWSs on completing source water assessments.

IDEM's Groundwater Section also administers the Wellhead Protection Program. Wellhead Protection Plans are a tool for communities to use in protecting their Community Public Water Systems. The Safe Drinking Water Act and the Indiana Wellhead Protection Rule (327 IAC 8-4.1) mandate a wellhead protection program for each well or wellfield providing groundwater to a Community Public Water System. During this review time, IDEM had worked with and approved one hundred and seventy-four (174) Plans. IDEM has shown consistent approval ratings over the past three-year cycle.

Cybersecurity Program

IDEM participates in bimonthly meetings of the Governor's Indiana Executive Committee on Cybersecurity (Water & Wastewater Committees). The Committee works on outreach/education information and templates for cybersecurity plans and risk assessments required of utilities by recent state and federal legislation. All community public water systems that have a population greater than three thousand must certify to having a vulnerability / risk assessment and cyber security plan per Emergency Response Plans. The deadline for these systems to comply is 2020 or 2021 (depends on population size). Currently, IDEM has already worked with eight hundred and thirty-five (835) systems in identifying a cybersecurity contact.

Total Coliform - Coliform Remediation Program (CRP)

IDEM started this program in 2018 to aid small Noncommunity Transient, Noncommunity Nontransient, and Community systems who saw recurring total coliform issues arise after multiple RTCR Level 1 and Level 2 Assessments were triggered along with increased sampling requirements. For many of these systems, it is believed that biofilm had been colonizing and harboring possible harmful bacteria in the distribution systems. In many scenarios, conventional chlorine treatment can become ineffective in eliminating bacteria from the distribution system. With that in mind, a plan was developed to lend assistance to these systems.

During this reporting period, IDEM reached out to several contractors who assisted with and offered products to treat biofilm at Community water systems. IDEM worked alongside these contractors to get ideas for trials and projects to evaluate chemical treatment for systems struggling with recurring compliance issues.

IDEM approached the Indiana Finance Authority (IFA) and received a grant to fund the waiver of the costs enrolled systems would face. IFA employed Water Solutions Unlimited to carry out the trials. Various procedures were tested out to see the effectiveness of treatments such as shock treatment, flushing, and long-term chemical injection. Two treatment courses were proven to be effective. For most of the systems enrolled in the CRP, a biofilm retardant was run through the entire system, followed by a sitting period of 24 to 48 hours before flushing the system with a sodium hypochlorite solution. For systems that have a more expansive distribution system, longer periods of injection times of both chemicals at low concentrations for an extended period has proven effective. After successful treatment and absent compliance sampling has occurred, the system can continue the treatment process at their own expense or return the equipment to the vendor.

IDEM has assisted more than twenty-seven (27) different public water systems since the start of the project in 2018. IDEM has implemented over forty-five (45) separate treatments at these sites. One example is a small PWS at a church that had over a year of recurring Total Coliform positive issues. The church started participating in the coliform remediation program, and now has a clean compliance testing record since participating in the treatment for 2 months in 2018. This approach is more cost effective than the long-term chemical injection approach. To date, over 90 percent of sites have had success in eliminating biofilm and have returned to compliance.

Backflow Cross Connection Program

IDEM's Backflow and Cross Connection Program is designed to protect the public and municipalities of possible intrusion of sources of nonpotable water into a potable water system via a cross connection. Municipalities are becoming more attentive to situations that can impact public health and water quality. These systems are cracking down on backflow inspectors who submit inspection reports ensuring inspections have been done by an inspector that holds an active license and shows up on the IDEM Active

Backflow Tester List which IDEM keeps updated. The systems require testers to contact IDEM to get their license renewed before accepting any future documentation from the inspector.

IDEM requires all individuals who initially want to become a backflow inspector and tester to go through a forty (40) hour course to become certified. Additionally, we require all active backflow inspectors and testers to renew their certification every two years and track the testers who have/have not renewed. The inspectors are required to submit a Backflow Renewal Form providing IDEM updated contact information along with any other pertinent information they would like to share on our Active Backflow Tester List. Currently, IDEM has a total of one thousand two hundred and forty-two (1,242) registered active backflow testers throughout the state on the active list.

Self-Assessment Manual

IDEM had developed a self-assessment manual designed to assist existing public water systems in identifying their technical, managerial, and financial needs. A copy of this manual is provided as Appendix B. These self-assessments are intended to benefit the public water system, DWCAP and Indiana Finance Authority State Revolving Fund staff determine what options can best be utilized to maintain and/or achieve water system capacity. System operators, that have completed the self-assessment, have indicated that this resource is useful. IDEM encourages all municipalities to use this tool to assess their system and develop an Asset Management Plan.

IDEM Small System Technical Assistance/Facility Specific Operator Training

The DWCAP staff have developed various technical assistance materials and workshops for small water systems. These workshops include topics on the Safe Drinking Water Act, Indiana's Public Water Supply Regulations, sampling methods, monitoring, and reporting requirements, operation and maintenance issues, and various other topics. These workshops are designed for Community and Nontransient Noncommunity PWS's providing continuing education for the operator. We always encourage Noncommunity Transient Systems to attend, but they are the least likely to attend these trainings. We have discovered that these workshops are a good way to educate new Facility Specific Operators (FSO) on what is required of them as a certified operator. When possible, we conduct the training at the new operator's system. This allows us to train the FSO on the specifics of their system and provides a one-on-one and hands-on sampling training environment for the new operator. New FSO's seem to be more comfortable and exert a willingness to ask questions that they normally would not feel comfortable asking in front of a crowd of people they never met before. These one-on-one workshops increase trust between the FSO and IDEM to the point where they are not afraid to reach out to us in time of need. IDEM was able to reach out and educate two hundred and eighty-six (286) individuals on Facility Specific Operator responsibilities during this reporting period.

Water and Wastewater Task Force

Representatives from IDEM, the Indiana Utility Regulatory Commission, and the Indiana Office of the Utility Consumer Counselor meet on a quarterly basis to discuss issues with public water systems that may overlap the agencies' jurisdictions. The meetings have proven helpful to bring attention to public water systems that may be having problems. The meetings also improve communication between the agencies to focus on solutions to address problems at water systems.

Small System Laboratory Assistance Program

Historically, IDEM's Compliance and Enforcement resources had been taken up to address various monitoring and reporting deficiencies at small systems. In the past, noncompliance rates for collecting required water samples and reporting the information to IDEM were approximately 40-45% for small systems. IDEM and the Indiana Department of Health (IDOH) lab partnered together to provide the required resources for bacteriological and nitrate samples free of charge for governmental and nonprofit public water systems serving a population of 100 or less. This is a voluntary program with approximately eight hundred (800) systems participating. The Small System Laboratory Assistance Program has been very successful. The noncompliance rates for sampling related violations for small systems have dropped significantly since the launch of this program in 2002. More importantly, information about the quality of the drinking water served by these systems is now available. The DWCAP staff is working closely with remaining noncompliant systems to reduce the noncompliance rates to even lower levels.

Operator Certification Rule

Indiana's Revised Operator Certification Rule became effective in December 2000. The new rule required all Community and Nontransient Noncommunity Public Water Systems to be under the direct supervision of a Certified Operator in Responsible Charge (CORC). Additionally, the rule newly required all Nontransient Noncommunity systems and all Community Systems serving less than a hundred (100) people to have a CORC. Federal rules required all states to develop peer reviewed operator certification exams or purchase these tests from an accredited source. IDEM did not have the resources to develop our own exams and chose to purchase the tests at the time of the effective date of the federal rules. Having been disappointed in the services of Association of Boards of Certification, IDEM decided to develop our own test.

IDEM concluded that Indiana systems and operators would benefit from examinations more specific to Indiana and the EPA Region 5 which has many more systems per state than most of the nation. We undertook the task of creating our own exams and formed a stakeholder workgroup. IDEM wanted to ensure that the exams the state offered adequately assessed the skills needed to successfully operate a PWS.

We then entered into a contract with Ivy Tech Community College (Ivy Tech) allowing water operator examinees to test at any of the twenty-five Ivy Tech Testing Centers statewide. Indiana launched their new exams and test procedures in April of 2016. Indiana Administrative Code requires IDEM to offer a written exam at least annually. We offer a pen and paper exam in November of each year. Since the Ivy Tech option, our annual written exam has had fewer than a dozen applicants each year because now, examinees can take the exam whenever they meet the hands-on training requirements and are approved by IDEM to test. The operators now have the opportunity to take the exams on demand.

Ivy Tech provides IDEM with a weekly and quarterly statistical report on exam scores as well as a report on questions missed. The quarterly reports are reviewed by IDEM and the Stakeholder Workgroup. Questions that have a high miss rate are reviewed to ensure the question is relevant and accurate. Changes are made if necessary. An advantage to owning our exams is that we now can make changes as needed without additional cost or lag time. The members of the Stakeholder Workgroup have agreed to continue working on the testing program and to provide guidance and review of the Operator Certification Program to ensure that we are covering needs and providing the resources to educate and assist operators.

IDEM met with the Stakeholder Workgroup in 2017 to discuss collective concerns regarding the State Exams, operator hands-on training, and the operator short school. It was decided that the exams question bank needed to have more specific sets of questions geared towards challenging the knowledge of the examinee. It was decided to review the exams to ensure the continued relevancy of questions and develop questions for new regulations. The entire question bank was reviewed, questions were either removed or modified and questions added to meet current regulations. Our question bank consists of over 2500 questions covering various topics. To ensure complete coverage of topics, more categories were developed to test for a wider coverage of topics. A demographic survey was created and added to allow us to get a better idea of who was taking the exams, the region of the state, and the training they received. A categorical breakdown was added that would appear at the end of any revised exam that was taken. This breakdown would give the examinee the categories that are on the exam and include the percentage of questions by category that were answered correctly. This information will help all test takers determine their own strengths and weaknesses when it comes to studying and hands-on procedures while operating the plant.

IDEM has revised the Distribution System Small (DSS), Medium (DSM), and Large (DSL) exams. Currently, we are working on revising the Water Treatment 3 (WT3) exam in part due to concerns of high failure rates but also from feedback given by the test takers. Examinee feedback is an important part of a good program. It gives us an idea of how appropriate the exam is on any subject and it provides us information of what kinds of trainings that are needed. We can then translate those needs to trainings provided either by us or the professional associations. These trainings take place at various conferences throughout the state and on webinars. Water operators and various

water utility companies have been pleased with the revision of the exams to date. IDEM has put on multiple presentations to provide information to the public on the changes that we are currently implementing and the trends we have seen in the past exams.

To assist applicants, IDEM has put on various mock exams along with test taking suggestions. These mock exams take challenging, similar, questions to the actual exam and exposes the soon-to-be test taker to what they can expect from the actual exam. We have multiple mock exams for all state exams that we can provide to the examinee. IDEM has put on various mock exams throughout this three-year period. Mock exams were given at various conferences and upon request at municipalities. Lately, there has been a large demand from utilities to assist with on-site operator training and preparation for the actual exams. Further thought needs to be given to this considering our limited resources. The need is there but we will have to be creative in how to provide this training. Likely with the help of the professional associations and other technical assistance providers.

Systems are having trouble finding and retaining operators due to a high retirement rate and added pressures from new regulations. To alleviate stress on operators, IDEM sends out courtesy reminder letters to operators to renew their license(s) that are coming to the end of their three-year cycle. Indiana provides a list of continuing education providers and upcoming webinars on the IDEM website. IDEM has worked with various operators to renew approximately four thousand and seventy-one (4,071) certifications over the last three-year cycle.

Water System Management Plans

Over this reporting period, DWCAP staff reviewed and/or approved five water system management plans for new drinking water systems. Four of these plans were approved. The remaining system, Granger Utility, submitted a water system management plan in June 2020 that has not yet been approved. There is an additional small community system found to be utilizing a surface water source. The system is currently in enforcement to require a compliance plan to install treatment or connect with a nearby utility. These water system management plans demonstrate and help ensure that these new systems have adequate technical, manager and financial capacity to meet all the requirements of the Safe Drinking Water Act and serve water that is safe in quality and adequate in quantity.

Check-Up Program for Small Systems (CUPSS)

The DWCAP staff embarked on a cooperative effort with EPA, several states, the National Rural Water Association, the Rural Community Assistance Partnership, and Environmental Finance Centers to develop a new asset management tool for use by public water systems in January of 2007. Indiana was one of the first states to lead the efforts in designing the CUPSS Program. This program was designed for a small public water system serving less than 3,300 consumers. It is a simple, easy to use Asset Management Program that helps small systems manage and finance existing and future

drinking water infrastructure. This program integrates preventive maintenance, asset management, and full-cost pricing activities that systems may undergo. The CUPPS Software includes a user-friendly interface and tutorial provided to systems on CD.

This program was used during this reporting period, but due to diminished support of the program and new legislation, this tool will be phased out in favor of new tools.

Asset Management Plan

An Asset Management Plan takes into consideration a system's technical, financial, and managerial capacities and it helps to assist systems in identifying five key components: assets, service levels, criticality of the assets, life cycles of the asset, and utility funding. IDEM's plan will assist systems in keeping an inventory list on all assets available and in use; the service life of the assets in use; identifying which assets need to be tracked and where that particular asset is located; when it should be replaced; the cost of the replacement; and whether or not they have the required equipment and funds available for replacement. Once a system has collected all of this information, it is expected that they classify the importance of a system's assets, low risk to high risk of system failure.

Amendments to Indiana Code 13-18-26, which went into effect on July 1, 2019, require certain Community PWS permit applicants to certify that they have prepared and completed a life cycle cost-benefit analysis, a capital asset management plan, and a cybersecurity plan. The certification must be submitted to IDEM along with the PWS construction permit application under IC 13-18-16.

The requirements of IC 13-18-26 are applicable to the following PWS permitting actions:

1. A permit for a new PWS treatment plant, defined by IC 13-11-2-264, for a community water system.
2. A permit for the modification or expansion of a community PWS treatment plant that increases the system design capacity of the plant.

Due to the time and resources necessary to complete the plans and analyses, if an applicant cannot meet the certification requirements at the time of application submittal, IDEM will work with the applicant on a transitional basis up to October 1, 2020. After October 1, 2020 IDEM will not issue a permit to an applicant that is subject to IC 13-18-26 if the required certification is not included with the application packet, as required by IC 13-18-26-1(b).

IDEM has conducted outreach for these requirements by notifying external organizations that work directly with PWSs, consultants and engineering firms.

Standard Monitoring Framework

A common need expressed by systems is a compliance sampling schedule. In the past, IDEM mailed an individualized standard monitoring framework (SMF) to each Community and Nontransient Noncommunity Public Water System. Now, IDEM is paperless and uses a website called the Drinking Water Watch. This website provides a sampling schedule for the system and provides consumer information that is updated in real time at <https://myweb.in.gov/IDEM/DWW/>. This is a much better tool for the systems because it provides current sampling schedules based on real time sampling results. Even so, the public water systems are notified by mail of any changes to their sampling schedule. Under the old paper system, it was common for systems to forget to add sampling information to their schedule and they would fall behind on monitoring and reporting requirements. Now, systems have the capability to look at sampling schedules and a real time view of sample results received by IDEM. This tool has helped systems remain on schedule and has helped them remain in compliance.

Challenges to Capacity Development

There are several challenges in making the Capacity Development Strategy as effective as possible. There are approximately four thousand and thirty (4,030) Public Water Systems in the State; over 50% of these systems are serving a population of less than 100 individuals. The Safe Drinking Water Act continues to place additional regulations on public water systems, creating a greater challenge to small systems. Therefore, additional resources are needed to aid these systems. The sheer volume of systems that could benefit from state assistance far exceeds our ability to provide the needed assistance to all systems, this is our greatest struggle.

Field Inspection's Sanitary Surveys and Well Site Surveys

During this reporting period, the IDEM Field Inspection Section has helped various systems fulfill their Safe Drinking Water Act (SDWA) requirements. They performed over three thousand three hundred (3,300) Sanitary Surveys during this reporting period. Sanitary surveys are a comprehensive on-site review of the drinking water facility. The review includes some or all of the following information: source, treatment, distribution, storage, management and operation, monitoring and reporting, and operator compliance. The main purpose of the sanitary survey is to identify any possible defects at the water system that can or may have a direct impact on public health. In addition to the Sanitary Surveys performed, IDEM field inspectors also performed two hundred and twenty-six (226) Well Site Surveys and performed one thousand two hundred and sixty-four (1,264) technical assistance visits to aid systems with various compliance requirements.

IDEM has been actively utilizing a new Sanitary Survey (SS) tool since February 1st, 2019. IDEM has contracted with Global Environmental Consultants (GEC) to develop, train, and deploy the Safe Water Information Field Tool (SWIFT). This new program can communicate with SDWIS and has enhanced field operations with the Sanitary Survey

inspection process. It has also allowed the Field Inspection Section to track and present data more quickly and effectively. Indiana has been working toward a seven-day turnaround on inspection reports, where reports are to be issued to the facility within seven days of the site visit. SWIFT has helped us achieve this goal because it directly populates fields in the SS report that are already in SDWIS and has streamlined the technical review process of the report. As of June 2020, Sanitary Survey inspection reports have been issued at an average of 2.47 days. This is the running annual average of the last twelve months (July 2019-June 2020). The transition to SWIFT has helped streamline our overall process for Sanitary Surveys.

In 2020, The IDEM, DWB Field staff continue to complete sanitary surveys despite the COVID-19 Pandemic.

Response to the COVID-19 Pandemic

Community PWSs have had challenges taking monthly water samples at locations approved on their site sampling plans (SSPs) due to closures as a result of the COVID-19 Virus outbreak. IDEM has been working with these systems in approving temporary SSP's to protect public health and the employees of the utilities. The alternate sites submitted must still be representative of their PWS, however, we have been more relaxed on hydrant sampling ports, water sampling at or near water towers, and have encouraged systems to install sampling stations throughout the distribution system.

IDEM received multiple calls concerning possible stagnant water in the distribution lines from businesses that were closed during the pandemic. We developed a "Guidance for Flushing Public Water Systems" document that can be found at https://www.in.gov/idem/cleanwater/files/dw_guidance_flushing_systems.pdf. All public water systems received this via mail and by Everbridge – Interactive Voice Response. We received great feedback and appreciation from the public water systems.

Nontransient Noncommunity Public Water Systems had limited staff and/or closed. Many Seasonal Transient Public Water Systems were unable to open to the public during their usual opening timeframes due the COVID-19 Pandemic. This may have caused various systems to stay closed or opened later than usual, which in turn caused seasonal startup noncompliance issues. IDEM worked with these systems by providing public notices, seasonal startup checklists, and requiring clean water results prior to opening to the public this year.

In response to the COVID-19 Pandemic, IDEM followed the Governor's Executive Order and gave all operators a sixty (60) day extension to renew their certifications. During this time, the Operator Certification Section sent out three sets of reminder emails, totaling over one thousand six hundred and eight (1,608) emails, to the operators urging them to renew their certifications by August 30, 2020. During to the sixty-day extension, there were four hundred and six (406) certificates renewed.

IDEM recently started implementing a virtual RTRC assessment process for PWSs. IDEM reaches out to Transient and Nontransient Noncommunity water systems to

arrange for virtual inspection and to perform a RTCR voluntary Level 2 Assessment. The Capacity Development staff has the contact carry their laptop or phone camera through the facility and inspect various parts of the distribution system. A one-on-one conversation would take place similar to having an in-person meeting. They discussed the challenges and situations that might occur. IDEM staff also discuss what issues the sampler/representative faces and possible deficiencies that could have caused the noncompliance which needed to be fixed or replaced. Once the Level 2 Assessment is completed, the water facility submits the assessment to IDEM. This virtual assessment platform provides an extra measure of protection for IDEM staff and the system while completing critical tasks.

Efficacy of Capacity Development Strategy

IDEM believes that our Capacity Development efforts have been effective in improving the technical, managerial, and financial capacity of public water systems in Indiana. We have received positive feedback from water suppliers on our outreach, site visits, workshops, self-assessment manual, workbooks, etc. Public water system responses indicate that our agency is making a positive impact on providing technical assistance and improving compliance rates. IDEM continues to improve public water system capacity through our own efforts and the invaluable partnerships we have with our sister agencies including IDOH, IURC, OUCC and the FSSA Childcare Division and the professional organizations including AWWA, AIRW and RCAP.

Indiana's Capacity Development Plan, for existing public water supplies, will continue to improve the compliance status for public water supplies with the continued implementation of our plan. Our goal is to ensure that the highest quality of water is delivered to consumers across the State and to foster improved compliance rates.

IDEM's approach will minimize the use of dedicated enforcement staff resources in returning systems to compliance. Indiana is laying a strong foundation for supporting public water supplies by improving their ability to provide safe water with support from the State's program. IDEM will continue efforts to assist systems in preventing future noncompliance issues and aiding systems attempting to return to compliance. The cornerstone of the program is providing public water systems the assistance they need to ensure that they can deliver safe drinking water to their customers.

IDEM will make this report available through its website at <http://www.in.gov/idem> .

Appendix A

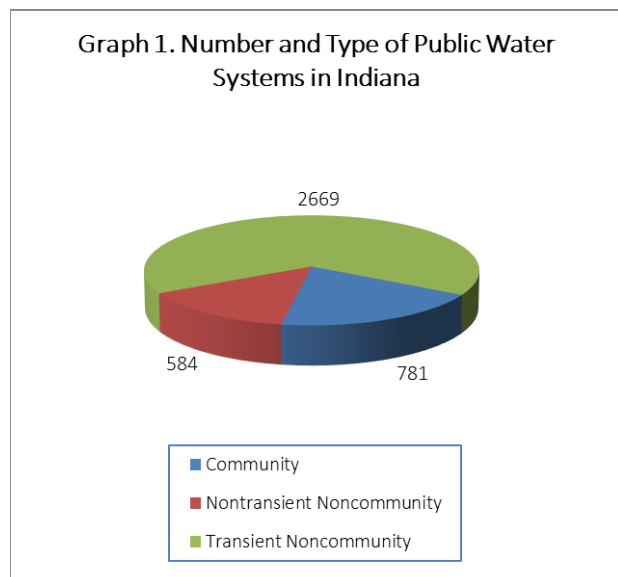


Indiana Department of Environmental Management 2017 Annual Compliance Report for Indiana Public Water Supply Systems

Introduction

The 1996 Amendments to the Safe Drinking Water Act require each state to prepare an annual report of violations of the national primary drinking water regulations for public water supplies. The annual reports are intended to provide a summary of violations of maximum contaminant levels (MCL's), treatment techniques, variances and exemptions¹, and monitoring and reporting violations (M&R). This report includes information for the time period January 1, 2017 through December 31, 2017.

Public Water Supply Information



There are approximately 4,034 active public water supplies in Indiana. Graph 1 shows the distribution of public water systems by the system type. Drinking water in Indiana comes from ground water sources via wells or surface water sources such as lakes and rivers. Some public water systems purchase water from other public water supplies and distribute the water to their customers. Ninety-seven percent (97%) of all public water systems are served by ground water systems. However, only fifty-six percent (56%) of the total population is served by systems utilizing ground water.

¹ IDEM did not issue any variances or exemptions in 2017; therefore there are no violations for variances and exemptions to address in this summary report.

Drinking Water Monitoring Requirements

The Safe Drinking Water Act and the Indiana Public Water Supply Supervision Program mandate the monitoring and reporting of various bacteriological and chemical contaminants that may be found in drinking water. The contaminants are categorized as total coliform, nitrate (NO₃), inorganic chemicals (IOCs), volatile organic compounds (VOCs), synthetic organic compounds (SOCs), radionuclides (Rads), lead and copper (Pb/Cu), and Stage 1 and Stage 2 disinfectants/disinfection byproducts (D/DBPs) Rules. The levels of these contaminants in drinking water are compared to maximum contaminant levels (MCLs) which are set by the Environmental Protection Agency (EPA) and adopted by the State, to ensure that water is safe for human consumption. In addition, compliance results may trigger additional actions, such as source water monitoring under the Ground Water Rule (GWR) or public education for lead. See Table 2 on page 4 for a list of MCLs and action levels for all of the regulated contaminants.

Surface water systems are also required to comply with additional provisions of the Safe Drinking Water Act which deal with surface water treatment. These regulations pertain to treatment techniques that require systems to properly treat their water. When a surface water PWS fails to properly treat its water or cannot control the levels of such contaminants as turbidity, bacteria, viruses, or parasitic microorganisms the system has violated the provisions of the Safe Drinking Water Act and is assigned a treatment technique (TT) violation. Surface water systems are also required to sample for *Cryptosporidium* and/or *E. coli* under the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) to determine if additional treatment is required to remove *Cryptosporidium*.

If a system has an MCL or TT violation, that system becomes a priority for follow-up by the Drinking Water Branch to ensure the violation is corrected.

Violation Summary

Table 1 provides a summary of the number of MCL, M&R, and TT violations for all of the regulated drinking water contaminants for the 2017 calendar year (January 1, 2017 - December 31, 2017). The table also provides a summary of the number of systems in violation for each contaminant group.

Table 1. 2017 Violations Summary for Indiana Public Water Supplies

		MCL		Treatment Technique		Monitoring & Reporting		Consumer Confidence Report	
		Violations	Systems In Violation	Violations	Systems in Violation	Violations	Systems In Violation	Violations	Systems in violation
CCR	CWS							78	69
Pb/Cu	CWS			0	0	37	32	PN Violations	
	NTNC			1	1	38	37		
SWTR	CWS			0	0	0	0	0	0
	NTNC			0	0	0	0	0	0
	TNC			0	0	0	0	0	0
VOC	CWS	1	1			168	8		
	NTNC	0	0			252	9		
IOC	CWS	4	1			72	25		
	NTNC	5	5			34	12		
	TNC	19	19			164	153		
SOC	CWS	0	0			34	3	GWR Other Violations	
	NTNC	0	0			29	2		
GWR	CWS			0	0	21	13	0	0
	NTNC			0	0	9	9	0	0
	TNC			0	0	148	126	0	0
TCR/RTCR	CWS	2	2	4	4	63	36		
	NTNC	1	1	5	5	71	51		
	TNC	10	10	189	184	1432	734		
Rads	CWS	0	0			6	3		
DBP	CWS	21	1	1	1	43	21		
	NTNC	0	0	0	0	0	0		
	TNC	0	0	0	0	0	0		
Totals*	CWS	28	11	5	5	473	127	78	69
	NTNC	6	6	6	6	440	99	0	0
	TNC	29	29	189	184	1769	847	0	0

Total Number of Systems in Violation*	CWS	209
	NTNC	152
	TNC	1048
	Total	1409

Total Number Of Violations	CWS	754
	NTNC	551
	TNC	2392
	Total	3697

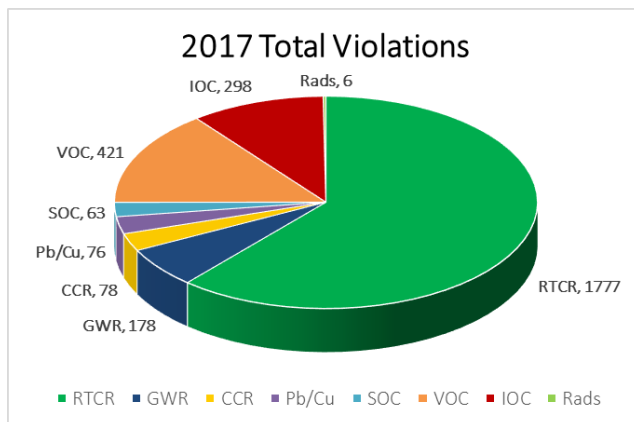
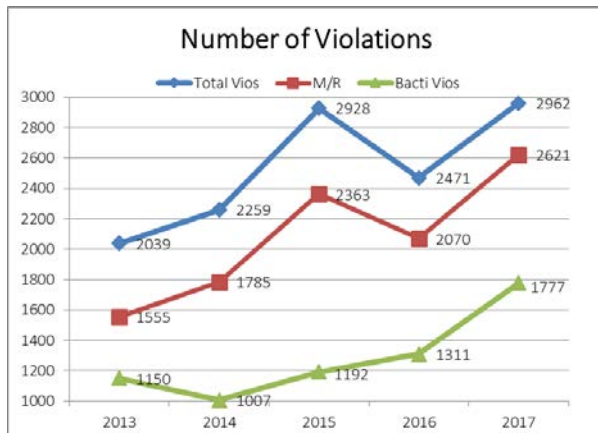
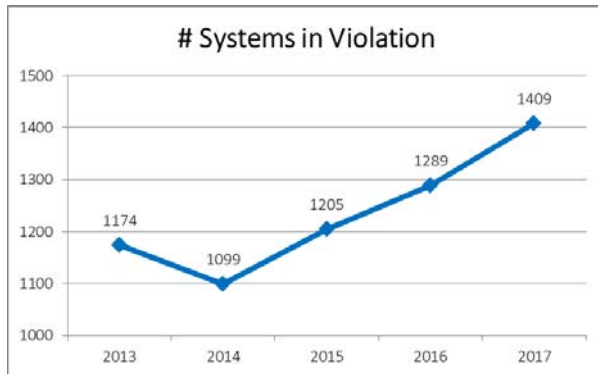
LEGEND

MCL =Maximum Contaminant Level Violation	IOC =Inorganic Chemicals (10-12 Chemicals)	VOC =Volatile Organic Compounds (21 Chemicals)	NO3 =Nitrate
Pb/Cu =Lead and Copper	SOC =Synthetic Organic Compounds (27-30 Chemicals)	TCR =Total Coliform Rule	Rads =Radionuclides
DBP =Disinfection By-Products	SWTR =Surface Water Treatment Rule	CCR =Consumer Confidence Report	
TNC =Transient Noncommunity	NTNC =Nontransient Noncommunity Water System	CWS =Community Water System	

* This number represents the total number of systems in violations for 2017. However, this number includes some systems with multiple violations across contaminant groups.

An evaluation of the data in 2017 Annual Compliance Report (ACR) shows the in-compliance rates at about seventy-three percent (73%) for monitoring and reporting (M/R) violations, ninety-nine percent (99%) for MCLs, and ninety-five percent (95%) for TT violations. The majority of violations are related to failing to collect and/or report samples. Approximately twenty-seven percent (27%) of the total number of active water systems have sampling (M/R) violations for at least one contaminant, but the majority of those systems (approximately 79%) are transient public water systems.

The number of systems with violations has been increasing with the new Disinfectant Byproducts Rule at the end of 2014 and the new revised Total Coliform Rule (RTCR) in early 2016. The numbers of total violations, particularly M/R violations and RTCR violations, are also on the rise with the new rules. RTCR violations make up the vast majority of all violations. The following charts illustrate these trends:



A key indicator of the quality of the drinking water is the Community Water Systems' (CWSs) populations meeting current health-based standards. IDEM and EPA Region 5 agreed on a strategic plan with shared goals including tracking the percentage of population served by CWSs that meets current health-based standards. During 2017, the percentage was measured quarterly and the average for the four (4) quarterly results was ninety-nine percent (99%) of the population served by CWSs in Indiana meets all health standards.

Consumer Confidence Reports

All community public water systems are required to develop and distribute to their customers a brief annual water quality report called a consumer confidence report (CCR). The community water system is required to deliver a copy of the CCR to its consumers by July 1st. The purpose of the report is to inform and educate customers on the status and quality of their public water supply. The report contains information on the sources of drinking water, the levels of any detected contaminants, and educational information regarding drinking water.

Compliance Assistance Efforts

The Drinking Water Branch currently assists public water supply owners and operators to promote compliance with the drinking water regulations. Assistance is provided through several activities, namely: site visits, correspondence, telephone contact (including the use of interactive voice response (IVR) and regular phone calls), e-mails, educational presentations and materials, and implementation of the small system laboratory assistance program (SSLAP) where IDEM provides free sampling for very small, nonprofit systems serving a population of one hundred (100) or less. Additionally with RTCR, field staff are handling all the Level 2 Assessments and Capacity Development staff are helping systems with the Level 1 Assessments. Another way IDEM reduces sampling violations is by reminding all public water systems of their required monthly, quarterly, semi-annual, or annual sampling by utilizing the IVR system, which leaves automated messages indicating when their sampling requirements are due. Further, IDEM also uses e-mails (when available) as another way to notify systems of when sampling is due.

The following is a summary of the number of site visits and assistance efforts that were conducted in 2017 by the Drinking Water Branch staff:

Sanitary Surveys	1124
Well Site Surveys	91
Technical Assistance Visits	638
Cap. Dev. Assistance Interactions	500
IVR Calls & E-mails	17,203

The Drinking Water Branch continues to provide assistance to all public water systems as a means to ensure drinking water is protective of human health.

For More Information

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Additional information regarding the quality of your drinking water may be obtained by contacting your local public water supplier. Please contact your local public water supply for a copy of their latest consumer confidence report (CCR).

For more information regarding all aspects of the environment in Indiana, visit IDEM's website at: <http://www.in.gov/idem/>. Also, for general information regarding drinking water, you may contact the EPA Safe Drinking Water Hotline by calling (800) 426-4791.

**TABLE 2
REGULATED CHEMICAL DRINKING WATER CONTAMINANTS
MAXIMUM CONTAMINANT LEVELS**

Contaminant	MCL	Contaminant	MCL	Contaminant	MCL
Inorganic Chemicals (IOCs)	mg/l	Volatile Organic Compounds (VOCs)	ug/l	Synthetic Organic Compounds (SOCs)	ug/l
Antimony	0.006	1,1-Dichloroethylene	7	2,4-D	70
Arsenic	0.01	1,1,1-Trichloroethane	200	2,4,5-TP (Silvex)	50
Barium	2	1,1,2-Trichloroethane	5	Alachlor	2
Beryllium	0.004	1,2-Dichloroethane	5	Atrazine	3
Cadmium	0.005	1,2-Dichloropropane	5	Benzo(a)pyrene	0.2
Chromium	0.1	1,2,4-Trichlorobenzene	70	Carbofuran	40
Cyanide (free)	0.2	Benzene	5	Chlordane	2
Fluoride (Adjusted) *	2	Carbon Tetrachloride	5	Dalapon	200
Fluoride (Natural) *	4	Cis-1,2-Dichloroethylene	70	Di(2-ethylhexyl)adipate	400
Mercury	0.002	Dichloromethane	5	Di(2-ethylhexyl)phthalate	6
Nickel	---	Ethylbenzene	700	Dibromochloropropane (DBCP)	0.2
Selenium	0.05	Monochlorobenzene	100	Dinoseb	7
Thallium	0.002	o-Dichlorobenzene	600	Dioxin (2,3,7,8-TCDD)	3X10-5
Nitrate	10	p-Dichlorobenzene	75	Diquat	20
Nitrite	1	Styrene	100	Endothall	100
Total Nitrate & Nitrite	10	Tetrachloroethylene	5	Endrin	2
		Toluene	1000	Ethylene Dibromide (EDB)	0.05
Sodium *	No MCL	Trans-1,2-Dichloroethylene	100	Glyphosate	700
		Trichloroethylene	5	Heptachlor	0.4
Asbestos		Vinyl Chloride	2	Heptachlor epoxide	0.2
Asbestos	7 MFL**	Xylenes (total)	10,000	Hexachlorobenzene	1
				Hexachlorocyclopentadiene	50
				Lindane	0.2
				Methoxychlor	40
Lead & Copper		Disinfection Byproducts		Oxamyl (Vydate)	200
Lead Action Level	0.015	Total Trihalomethanes ****	80	PCBs	0.5
Copper Action Level	1.3	Haloacetic Acids 5*****	60	Pentachlorophenol	1
				Picloram	500
Radionuclides *	PCi/l			Simazine	4
Gross Alpha	15			Toxaphene	3
Gross Alpha Action Level	5				
Radium-226 Action Level	3				
Radium-226 & Radium-228 (combined)	5				
Manmade	***				

* Community Water Systems Only
 ** MFL=million fibers/liter > 10 micron
 *** The average annual concentration of beta particle and photon radioactivity from manmade radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than four (4) millirem per year.
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2D	-	Startup Procedures Treatment Technique (RTCR)
21	-	MCL, Acute (TCR)
22	-	MCL, Monthly (TCR)
23	-	Monitoring, Routine Major (TCR)
24	-	Monitoring, Routine Minor (TCR)
25	-	Monitoring, Repeat Major (TCR)
26	-	Monitoring, Repeat Minor (TCR)
27	-	Monitoring, Major (DBP)
3A	-	Monitoring, Routine Major (RTCR)
3B	-	Monitoring, Additional Routine Major (RTCR)
34	-	Monitoring, GWR Triggered/Additional Major
38	-	Monitoring, Major (Surface Water)
41, 44	-	Treatment Techniques (Surface Water)
51	-	Initial Tap Sampling (Lead and Copper)
52	-	Follow Up or Routine Tap (Lead and Copper)
65	-	Public Education (LCR)
66	-	Lead Consumer Notice (LCR)
71	-	Consumer Confidence Report
C	-	Community Water System
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NC	-	Transient Water System
GW	-	Ground Water System
GWP	-	Ground Water Purchased System
SW	-	Surface Water System
SWP	-	Surface Water Purchased System

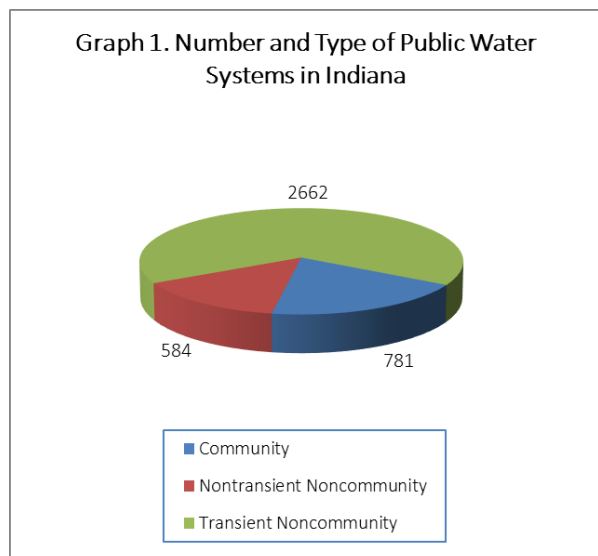


Indiana Department of Environmental Management 2018 Annual Compliance Report for Indiana Public Water Supply Systems

Introduction

The 1996 Amendments to the Safe Drinking Water Act require each state to prepare an annual report of violations of the national primary drinking water regulations for public water supplies. The annual reports are intended to provide a summary of violations of maximum contaminant levels (MCL's), treatment techniques, variances and exemptions¹, and monitoring and reporting violations (M&R). This report includes information for the time period January 1, 2018 through December 31, 2018.

Public Water Supply Information



There are approximately 4,027 active public water supplies in Indiana. Graph 1 shows the distribution of public water systems by the system type. Drinking water in Indiana comes from ground water sources via wells or surface water sources such as lakes and rivers. Some public water systems purchase water from other public water supplies and distribute the water to their customers. Ninety-seven percent (97%) of all public water systems are served by ground water systems. However, only fifty-six percent (56%) of the total population is served by systems utilizing ground water.

¹ IDEM did not issue any variances or exemptions in 2018; therefore there are no violations for variances and exemptions to address in this summary report.

Drinking Water Monitoring Requirements

The Safe Drinking Water Act and the Indiana Public Water Supply Supervision Program mandate the monitoring and reporting of various bacteriological and chemical contaminants that may be found in drinking water. The contaminants are categorized as total coliform, nitrate (NO₃), inorganic chemicals (IOCs), volatile organic compounds (VOCs), synthetic organic compounds (SOCs), radionuclides (Rads), lead and copper (Pb/Cu), and Stage 1 and Stage 2 disinfectants/disinfection byproducts (D/DBPs) Rules. The levels of these contaminants in drinking water are compared to maximum contaminant levels (MCLs) which are set by the Environmental Protection Agency (EPA) and adopted by the State, to ensure that water is safe for human consumption. In addition, compliance results may trigger additional actions, such as source water monitoring under the Ground Water Rule (GWR) or public education for lead. See Table 2 on page 4 for a list of MCLs and action levels for all of the regulated contaminants.

Surface water systems are also required to comply with additional provisions of the Safe Drinking Water Act which deal with surface water treatment. These regulations pertain to treatment techniques that require systems to properly treat their water. When a surface water PWS fails to properly treat its water or cannot control the levels of such contaminants as turbidity, bacteria, viruses, or parasitic microorganisms the system has violated the provisions of the Safe Drinking Water Act and is assigned a treatment technique (TT) violation. Surface water systems are also required to sample for *Cryptosporidium* and/or *E. coli* under the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) to determine if additional treatment is required to remove *Cryptosporidium*.

If a system has an MCL or TT violation, that system becomes a priority for follow-up by the Drinking Water Branch to ensure the violation is corrected.

Violation Summary

Table 1 provides a summary of the number of MCL, M&R, and TT violations for all of the regulated drinking water contaminants for the 2018 calendar year (January 1, 2018 - December 31, 2018). The table also provides a summary of the number of systems in violation for each contaminant group.

Table 1. 2018 Violations Summary for Indiana Public Water Supplies

		MCL		Treatment Technique		Monitoring & Reporting		Consumer Confidence Report	
		Violations	Systems In Violation	Violations	Systems in Violation	Violations	Systems In Violation	Violations	Systems in violation
CCR	CWS							47	36
Pb/Cu	CWS			3	3	84	77	PN Violations	
	NTNC			2	2	84	70		
SWTR	CWS			0	0	0	0	0	0
	NTNC			0	0	0	0	0	0
	TNC			0	0	0	0	1	1
VOC	CWS	0	0			231	11		
	NTNC	0	0			252	10		
IOC	CWS	5	4			77	16		
	NTNC	20	9			59	14		
	TNC	20	20			166	149		
SOC	CWS	0	0			91	4	GWR Other Violations	
	NTNC	0	0			194	12		
GWR	CWS			0	0	18	15	0	0
	NTNC			0	0	19	16	0	0
	TNC			7	7	276	215	8	8
TCR/RTCR	CWS	1	1	10	9	70	35		
	NTNC	0	0	9	9	90	60		
	TNC	23	22	246	205	1518	746		
Rads	CWS	0	0			25	22		
DBP	CWS	16	9	0	0	49	25		
	NTNC	0	0	0	0	4	2		
	TNC	0	0	0	0	0	0		
Totals*	CWS	22	14	13	11	645	146		
	NTNC	20	9	11	11	702	143		
	TNC	43	42	253	211	1960	887		

Total Number of Systems in Violation*	CWS	200
	NTNC	189
	TNC	1094
	Total	1483

Total Number Of Violations	CWS	727
	NTNC	733
	TNC	2265
	Total	3725

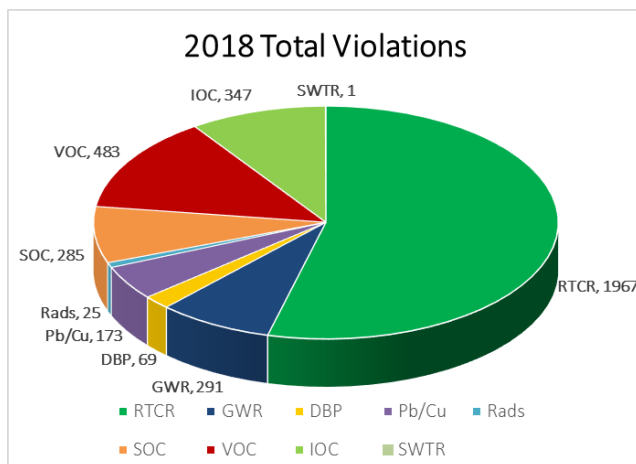
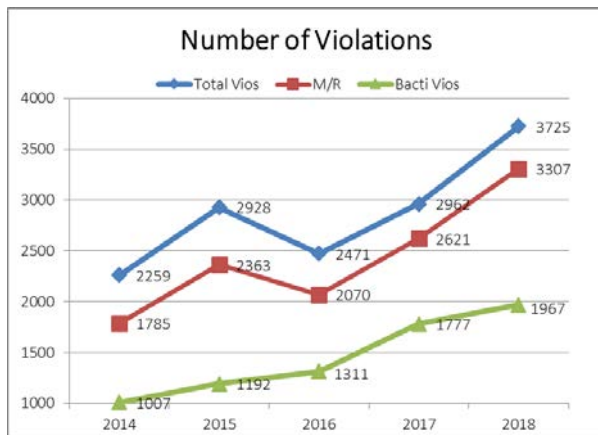
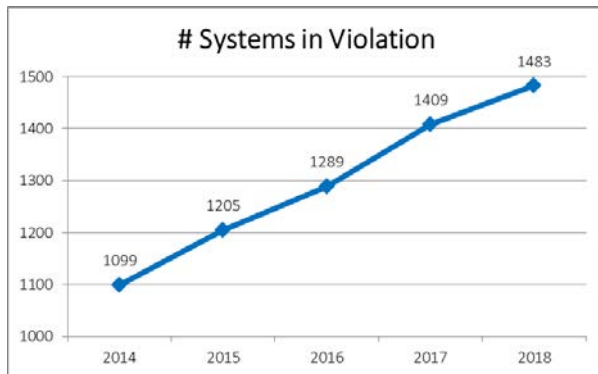
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MCL =Maximum Contaminant Level Violation	IOC =Inorganic Chemicals (10-12 Chemicals)	VOC =Volatile Organic Compounds (21 Chemicals)	NO3 =Nitrate
Pb/Cu =Lead and Copper	SOC =Synthetic Organic Compounds (27-30 Chemicals)	TCR =Total Coliform Rule	Rads =Radionuclides
DBP =Disinfection By-Products	SWTR =Surface Water Treatment Rule	CCR =Consumer Confidence Report	
TNC =Transient Noncommunity	NTNC =Nontransient Noncommunity Water System	CWS =Community Water System	

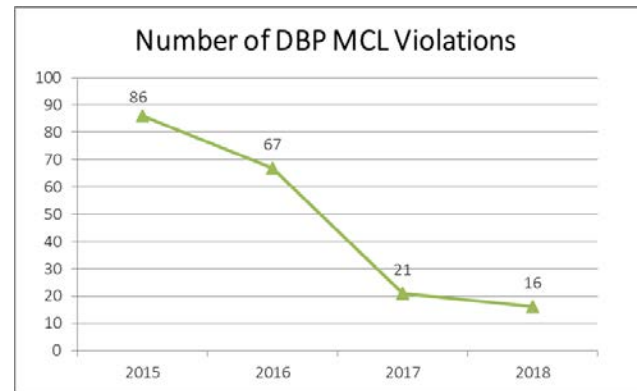
* This number represents the total number of systems in violations for 2018. However, this number includes some systems with multiple violations across contaminant groups.

An evaluation of the data in 2018 Annual Compliance Report (ACR) shows the in-compliance rates at about seventy-one percent (71%) for monitoring and reporting (M/R) violations, ninety-eight percent (98%) for MCLs, and ninety-four percent (94%) for TT violations. The majority of violations are related to failing to collect and/or report samples. Approximately twenty-nine percent (29%) of the total number of active water systems have sampling (M/R) violations for at least one contaminant, but the majority of those systems (approximately 75%) are transient public water systems.

The number of systems with violations has been increasing with the new Disinfectant Byproducts Rule (DBP Rule) at the end of 2014 and the new revised Total Coliform Rule (RTCR) in early 2016. The numbers of total violations, particularly M/R violations and RTCR violations, are also on the rise with the new rules. RTCR violations make up the vast majority of all violations. The following charts illustrate these trends:



Although the 2014 DBP Rule increased the total number of DBP violations and systems in violation, concentrated compliance assistance efforts by IDEM staff have resulted in a steady decrease in DBP MCLs as illustrated here:



A key indicator of the quality of the drinking water is the Community Water Systems' (CWSs) populations meeting current health-based standards. IDEM and EPA Region 5 agreed on a strategic plan with shared goals including tracking the percentage of population served by CWSs that meets current health-based standards. During 2018, the percentage was measured quarterly and the average for the four (4) quarterly results was ninety-nine percent (99%) of the population served by CWSs in Indiana meets all health standards.

Consumer Confidence Reports

All community public water systems are required to develop and distribute to their customers a brief annual water quality report called a consumer confidence report (CCR). The community water system is required to deliver a copy of the CCR to its consumers by July 1st. The purpose of the report is to inform and educate customers on the status and quality of their public water supply. The report contains information on the sources of drinking water, the levels of any detected contaminants, and educational information regarding drinking water.

Compliance Assistance Efforts

The Drinking Water Branch currently assists public water supply owners and operators to promote compliance with the drinking water regulations. Assistance is provided through several activities, namely: site visits, correspondence, telephone contact (including the use of interactive voice response (IVR) and regular phone calls), e-mails, educational presentations and materials, and implementation of the small system laboratory assistance program (SSLAP) where IDEM provides free sampling for very small, nonprofit systems serving a population of one hundred (100) or less. Additionally with RTCR, field staff are handling all the Level 2 Assessments and Capacity Development staff are helping systems with the Level 1 Assessments. Another way IDEM reduces sampling violations is by reminding all public water systems of their required monthly, quarterly, semi-annual, or annual sampling by utilizing the IVR system, which leaves automated messages indicating when their sampling

requirements are due. Further, IDEM also uses e-mails (when available) as another way to notify systems of when sampling is due.

The following is a summary of the number of site visits and assistance efforts that were conducted in 2018 by the Drinking Water Branch staff:

Sanitary Surveys	1157
Well Site Surveys	72
Technical Assistance Visits	320
Cap. Dev. Assistance Interactions	772
IVR Calls & E-mails	22,378

The Drinking Water Branch continues to provide assistance to all public water systems as a means to ensure drinking water is protective of human health.

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		Trichloroethylene	5	Heptachlor	0.4
Asbestos		Vinyl Chloride	2	Heptachlor epoxide	0.2
Asbestos	7 MFL**	Xylenes (total)	10,000	Hexachlorobenzene	1
				Hexachlorocyclopentadiene	50
				Lindane	0.2
				Methoxychlor	40
Lead & Copper		Disinfection Byproducts		Oxamyl (Vydate)	200
Lead Action Level	0.015	Total Trihalomethanes ****	80	PCBs	0.5
Copper Action Level	1.3	Haloacetic Acids 5*****	60	Pentachlorophenol	1
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Indiana Department of Environmental Management 2019 Annual Compliance Report for Indiana Public Water Supply Systems

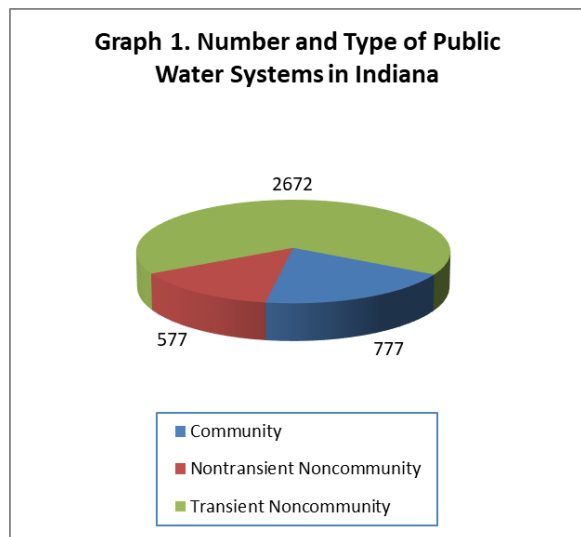
IDEM Drinking Water Branch

July 2020

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		MCL		Treatment Technique		Monitoring & Reporting		Consumer Confidence Report	
		Violations	Systems In Violation	Violations	Systems in Violation	Violations	Systems In Violation	Violations	Systems in violation
CCR	CWS							26	19
Pb/Cu	CWS			5	5	114	101	PN Violations	
	NTNC			0	0	90	72		
SWTR	CWS			0	0	0	0	0	0
	NTNC			0	0	0	0	0	0
	TNC			0	0	0	0	0	0
VOC	CWS	0	0			105	3		
	NTNC	0	0			126	6		
IOC	CWS	7	6			24	12		
	NTNC	7	5			51	16		
	TNC	18	16			188	174		
SOC	CWS	0	0			283	11	GWR Other Violations	
	NTNC	0	0			119	7		
GWR	CWS			5	3	13	13	4	4
	NTNC			0	0	14	11	0	0
	TNC			27	19	319	234	44	44
TCR/RTCR	CWS	0	0	11	11	59	34		
	NTNC	1	1	8	8	66	52		
	TNC	28	25	235	197	1411	710		
Rads	CWS	0	0			9	8		
DBP	CWS	22	11	0	0	31	14		
	NTNC	1	1	0	0	2	1		
	TNC	0	0	0	0	0	0		
Totals*	CWS	29	17	21	19	638	146		
	NTNC	9	7	8	8	468	120		
	TNC	46	41	262	212	1918	876		

Total Number of Systems in Violation*	CWS	201
	NTNC	187
	TNC	1137
	Total	1525

Total Number Of Violations	CWS	718
	NTNC	485
	TNC	2270
	Total	3473

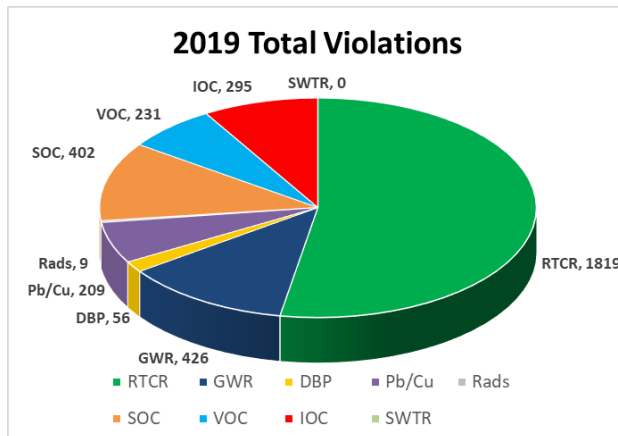
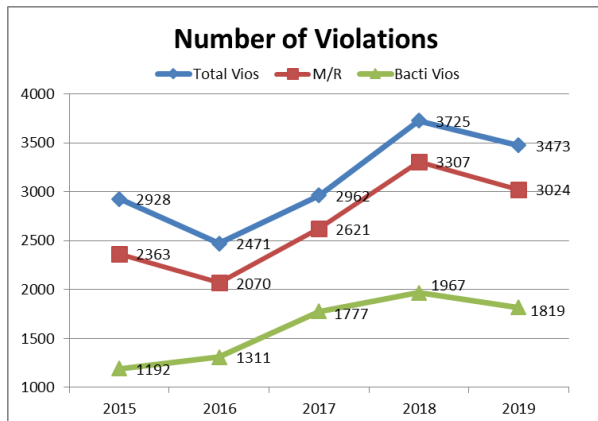
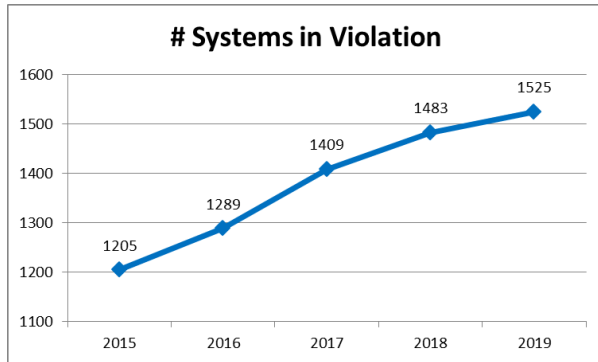
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MCL=Maximum Contaminant Level Violation	IOC=Inorganic Chemicals (10-12 Chemicals)	VOC=Volatile Organic Compounds (21 Chemicals)	NO3=Nitrate
Pb/Cu=Lead and Copper	SOC=Synthetic Organic Compounds (27-30 Chemicals)	TCR=Total Coliform Rule	Rads=Radionuclides
DBP=Disinfection By-Products	SWTR=Surface Water Treatment Rule	CCR=Consumer Confidence Report	
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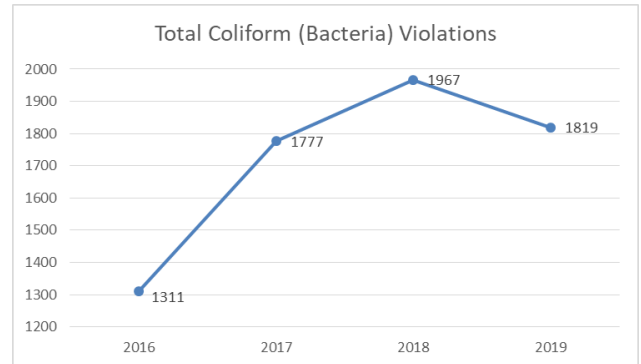
* This number represents the total number of systems in violations for 2019. However, this number includes some systems with multiple violations across contaminant groups.

An evaluation of the data in 2019 Annual Compliance Report (ACR) shows the in-compliance rates at about seventy-two percent (72%) for monitoring and reporting (M/R) violations, ninety-eight percent (98%) for MCLs, and ninety-four percent (94%) for TT violations. The majority of violations are related to failing to collect and/or report samples. Approximately twenty-eight percent (28%) of the total number of active water systems have sampling (M/R) violations for at least one contaminant, but the majority of those systems (approximately 77%) are transient public water systems.

The number of systems with violations has been increasing with the new Disinfectant Byproducts Rule (DBP Rule) at the end of 2014 and the new revised Total Coliform Rule (RTCR) in early 2016. The numbers of total violations, particularly M/R violations and RTCR violations, are also on the rise with the new rules. RTCR violations make up the vast majority of all violations. The following charts illustrate these trends:



Although RTCR violations still make up the bulk of the violations, continuous educational outreach and concentrated compliance assistance efforts by IDEM staff resulted in a decrease in RTCR violations as illustrated here:



A key indicator of the quality of the drinking water is the Community Water Systems' (CWSs) populations meeting current health-based standards. IDEM and EPA Region 5 agreed on a strategic plan with shared goals including tracking the percentage of population served by CWSs that meets current health-based standards. During 2019, the percentage was measured quarterly and the average for the four (4) quarterly results was ninety-nine percent (99.5%) of the population served by CWSs in Indiana meets all health standards.

Consumer Confidence Reports

All community public water systems are required to develop and distribute to their customers a brief annual water quality report called a consumer confidence report (CCR). The community water system is required to deliver a copy of the CCR to its consumers by July 1st. The purpose of the report is to inform and educate customers on the status and quality of their public water supply. The report contains information on the sources of drinking water, the levels of any detected contaminants, and educational information regarding drinking water.

Compliance Assistance Efforts

The Drinking Water Branch currently assists public water supply owners and operators to promote compliance with the drinking water regulations. Assistance is provided through several activities, namely: site visits, correspondence, telephone contact (including the use of interactive voice response (IVR) and regular phone calls), e-mails, educational presentations and materials, and implementation of the small system laboratory assistance program (SSLAP) where IDEM provides free sampling for very small, nonprofit systems serving a population of one hundred (100) or less. Additionally with RTCR, field staff are handling all the Level 2 Assessments and Capacity Development staff are helping systems with the Level 1 Assessments. Another way IDEM reduces sampling violations is by reminding all public water systems of their required monthly, quarterly, semi-annual, or annual sampling by utilizing the IVR system, which leaves automated messages indicating when their sampling

requirements are due. Further, IDEM also uses e-mails (when available) as another way to notify systems of when sampling is due.

The following is a summary of the number of site visits and assistance efforts that were conducted in 2019 by the Drinking Water Branch staff:

Sanitary Surveys	1023
Well Site Surveys	63
Technical Assistance Visits	306
Cap. Dev. Assistance Interactions	847
IVR Calls & E-mails	23,741

The Drinking Water Branch continues to provide assistance to all public water systems as a means to ensure drinking water is protective of human health.

For More Information

If you have any questions concerning this report or would like the lists of public water supplies that had violations in 2019, please contact the Drinking Water Branch at (317) 234-7430. Additional copies of this report are available on the Indiana Department of Environmental Management, Office of Water Quality, Drinking Water Branch web-site at: <http://www.in.gov/idem/cleanwater/2579.htm> or by calling the Drinking Water Branch at (317) 234-7430.

Additional information regarding the quality of your drinking water may be obtained by contacting your local public water supplier. Please contact your local public water supply for a copy of their latest consumer confidence report (CCR).

For more information regarding all aspects of the environment in Indiana, visit IDEM's website at: <http://www.in.gov/idem/>. Also, for general information regarding drinking water, you may contact the EPA Safe Drinking Water Hotline by calling (800) 426-4791.

**TABLE 2
REGULATED CHEMICAL DRINKING WATER CONTAMINANTS
MAXIMUM CONTAMINANT LEVELS**

Contaminant	MCL	Contaminant	MCL	Contaminant	MCL
Inorganic Chemicals (IOCs)	mg/l	Volatile Organic Compounds (VOCs)	ug/l	Synthetic Organic Compounds (SOCs)	ug/l
Antimony	0.006	1,1-Dichloroethylene	7	2,4-D	70
Arsenic	0.01	1,1,1-Trichloroethane	200	2,4,5-TP (Silvex)	50
Barium	2	1,1,2-Trichloroethane	5	Alachlor	2
Beryllium	0.004	1,2-Dichloroethane	5	Atrazine	3
Cadmium	0.005	1,2-Dichloropropane	5	Benzo(a)pyrene	0.2
Chromium	0.1	1,2,4-Trichlorobenzene	70	Carbofuran	40
Cyanide (free)	0.2	Benzene	5	Chlordane	2
Fluoride (Adjusted) *	2	Carbon Tetrachloride	5	Dalapon	200
Fluoride (Natural) *	4	Cis-1,2-Dichloroethylene	70	Di(2-ethylhexyl)adipate	400
Mercury	0.002	Dichloromethane	5	Di(2-ethylhexyl)phthalate	6
Nickel	---	Ethylbenzene	700	Dibromochloropropane (DBCP)	0.2
Selenium	0.05	Monochlorobenzene	100	Dinoseb	7
Thallium	0.002	o-Dichlorobenzene	600	Dioxin (2,3,7,8-TCDD)	3X10-5
Nitrate	10	p-Dichlorobenzene	75	Diquat	20
Nitrite	1	Styrene	100	Endothall	100
Total Nitrate & Nitrite	10	Tetrachloroethylene	5	Endrin	2
		Toluene	1000	Ethylene Dibromide (EDB)	0.05
Sodium *	No MCL	Trans-1,2-Dichloroethylene	100	Glyphosate	700
		Trichloroethylene	5	Heptachlor	0.4
Asbestos		Vinyl Chloride	2	Heptachlor epoxide	0.2
Asbestos	7 MFL**	Xylenes (total)	10,000	Hexachlorobenzene	1
				Hexachlorocyclopentadiene	50
				Lindane	0.2
				Methoxychlor	40
Lead & Copper		Disinfection Byproducts		Oxamyl (Vydate)	200
Lead Action Level	0.015	Total Trihalomethanes ****	80	PCBs	0.5
Copper Action Level	1.3	Haloacetic Acids 5*****	60	Pentachlorophenol	1
				Picloram	500
Radionuclides *	PCi/l			Simazine	4
Gross Alpha	15			Toxaphene	3
Gross Alpha Action Level	5				
Radium-226 Action Level	3				
Radium-226 & Radium-228 (combined)	5				
Manmade	***				

* Community Water Systems Only
 ** MFL=million fibers/liter > 10 micron
 *** The average annual concentration of beta particle and photon radioactivity from manmade radionuclides in drinking water shall not produce an annual dose equivalent to the total body or any internal organ greater than four (4) millirem per year.
 **** The sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform).
 *****The sum of the concentrations of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, bromoacetic acid, and dibromoacetic acid.

Code Type	-	Description
01	-	MCL, Single Sample
02	-	MCL, Average
03	-	Monitoring, Regular
1A	-	MCL, E.Coli, Pos E Coli (RTCR)
2A	-	Level 1 Assessment Treatment Technique (RTCR)
2B	-	Level 2 Assessment Treatment Technique (RTCR)
2D	-	Startup Procedures Treatment Technique (RTCR)
21	-	MCL, Acute (TCR)
22	-	MCL, Monthly (TCR)
23	-	Monitoring, Routine Major (TCR)
24	-	Monitoring, Routine Minor (TCR)
25	-	Monitoring, Repeat Major (TCR)
26	-	Monitoring, Repeat Minor (TCR)
27	-	Monitoring, Major (DBP)
3A	-	Monitoring, Routine Major (RTCR)
3B	-	Monitoring, Additional Routine Major (RTCR)
34	-	Monitoring, GWR Triggered/Additional Major
38	-	Monitoring, Major (Surface Water)
41, 44	-	Treatment Techniques (Surface Water)
51	-	Initial Tap Sampling (Lead and Copper)
52	-	Follow Up or Routine Tap (Lead and Copper)
65	-	Public Education (LCR)
66	-	Lead Consumer Notice (LCR)
71	-	Consumer Confidence Report
C	-	Community Water System
NTNC	-	Non-Transient Non-Community Water System
NC	-	Transient Water System
GW	-	Ground Water System
GWP	-	Ground Water Purchased System
SW	-	Surface Water System
SWP	-	Surface Water Purchased System

Appendix B

Indiana Department of Environmental Management

CAPACITY DEVELOPMENT

*Self-Assessment Form For Indiana's Public Water Systems
Applying for State Revolving Fund (SRF) Loans*



April 2015

INTRODUCTION

A water system should be “operated like a business.” This is a frequently repeated phrase. But what is meant by it? Here’s one useful way to think about what it means to operate as a business:

For a successful business, a manager must be aware of changes taking place in the environment in which the business operates. It is necessary to constantly look to the future to:

- 1) Cope with any **threats** to the survival of the business; and*
- 2) Take advantage of **opportunities** to improve the performance of the business.*

In the same way, owners and managers of a water system must look to the future. Situations such as the need for financing, the impact of new regulations, or the loss of key customers will present management demands that can only be met through sound business planning.

Many water systems were started at a time when the cost of providing water was low and regulatory demands were few. Without significant costs or other pressures, there was little incentive to focus on the business aspects of the operation. But times have changed! Little remains of the good old days when operating a water utility was a simple job. Today, customer expectations and new regulations have significantly increased the level of responsibility and preparedness required of public water systems. This form provides a process for water systems to assess their capacity to function in an effective, “business-like” manner.

Section 1420(c)(1)(C) of the Safe Drinking Water Act requires States to develop and implement a strategy to assist existing public water systems in acquiring and maintaining technical, managerial, and financial capacity. What exactly does technical, managerial, and financial capacity mean?

- **Technical capacity** - the physical infrastructure of the water system, including but not limited to the source water adequacy, infrastructure adequacy, and technical knowledge. In other words, does your treatment system work the way it is supposed to? Are you providing the safest and cleanest water possible required by law to your customers right now? Will you be able to in the future?
- **Managerial capacity** - the management structure of the water system, including but not limited to ownership accountability, staffing and organization, and effective linkages. In simpler terms, do you have capable and trained staff? Does your system have an effective management structure?
- **Financial capacity** - the financial resources of the water system, including but not limited to the revenue sufficiency, credit worthiness, and fiscal controls. Basically, does your system have a budget and enough revenue to cover costs, repairs, and replacements?

This self-assessment form presents a structured series of yes/no questions which follow the three major elements of Capacity Development: Technical Capacity, Managerial Capacity, and Financial Capacity. The questions are intended to help you identify major capital and operating costs that could arise in the future operation of your system.



Within each section of the form, the questions are grouped according to overall topic areas. Each topic represents an important area where there may be hidden costs in your future. The individual yes/no questions under each topic are intended to stimulate your thinking about the topic in general. In going through them you should keep the general topic in mind and ask yourself: "Is there anything to worry about here?" "Is there anything that could surprise us and cost a lot of money?"

There are questions covering every major category of capital and operating costs. **The questions are all structured such that a "yes" answer means that cost surprises are unlikely and a "no" answer means some potential for cost surprises exist.**

When answering the questions, be honest with yourself. If you don't know the answer, take the time to do the research. In order to answer some of the questions, you may need to look at some records or find someone to help you understand the topic. When you come upon such questions, leave them blank and get what you need to complete them later.

Some questions may not apply to your system. For example, surface water questions do not apply to ground water systems. When you encounter such questions, simply cross them out and mark "NA" in the margin next to them, so you will remember to ignore those sections.

How do you use the results of this self-assessment to tell if your water system is going to be a successful business in the future?

There is no standard scoring system that can be used to interpret your answers to the yes/no questions. If you have relatively few "no" answers, the potential for cost surprises in your future is probably less than if you have several "no" answers. However, it is important for you to think carefully about each "no." Consider what can be done to reduce your liability in each instance and make an estimate about what each "no" might cost you. Ask yourself "What do all the "no" answers add up to?" "What must be done to change a "no" answer to a "yes?" "Can my system afford it?"

System Name:	
Public Water Supply ID #:	
Prepared By:	
Phone #:	
Date:	



DRINKING WATER DEFINITIONS

Community water system: A public water system which serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents.

Contaminant: Any microorganisms, chemicals, waste, physical substance, radiological substance, or any wastewater introduced or found in the drinking water.

Disinfectant: Any oxidant, including but not limited to, chlorine, chlorine dioxide, chloramine, and ozone, that is added to water in any part of the treatment or distribution process and that is intended to kill or inactivate pathogenic microorganisms.

Disinfectant contact time: The time in minutes that it takes for water to move from the point of disinfectant application or the previous point of disinfectant residual measurement to a point before or at the point where residual disinfectant concentration is measured.

Filtration: A process for removing particulate matter from the water by passing the water through porous media.

Ground Water: The supply of fresh water found beneath the surface of the ground, usually in aquifers, which is often used for supplying wells and springs.

Ground Water Under the Direct Influence (GWUDI) of Surface Water: Any water beneath the surface of the ground with a significant occurrence of insects, macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia*; or any water with significant and relatively rapid shifts in water quality characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions.

Maximum Contaminant Level (MCLs): The maximum permissible level of a contaminant in water delivered to any user of a public water system. MCLs are enforceable standards.

mg/L: Milligrams per liter - equivalent to parts per million.

µg/L: Micrograms per liter - equivalent to parts per billion.

Nontransient Noncommunity water system: A public water system that is not a community system which regularly serves the same twenty-five (25) or more persons at least six (6) months per year

NTU: Nephelometric turbidity unit.

Operator: The person in direct or responsible charge and supervising the operation of a water treatment plant or a water distribution system.

pCi/L: picoCuries per liter – The quantity of radioactive material producing two and twenty-two hundredths (2.22) nuclear transformations per minute.

psi: Pounds per square inch.

Surface Water: All water occurring on the surface of the ground, including water in a stream, natural and artificial lakes, ponds, swales, marshes, and diffused surface water.

Turbidity: A cloudy condition in water due to suspended silt or organic matter.

Waiver: A process used by the Department of Environmental Management that allows a public water system to reduce or eliminate monitoring for a particular contaminant.



TECHNICAL CAPACITY

Please mark the appropriate box: *Yes, No, or Unknown* for each section. Please try to determine the answer to every question. If a section or question does not apply to your system, please write NA for not applicable.

Your Water Supply

Water Supply and Existing Demands	Yes	No	Unknown
Do you know how much water you pump on an average day? <i>Amount:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know how much water you pump on a peak day? <i>Amount:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know the maximum amount of water you can pump from your source? <i>Amount:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is your source capacity higher than your peak day demand? <i>Percentage higher or lower:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can you meet peak demand without pumping at peak capacity for extended periods? <i>Longest time pumping at peak demand:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you been able to provide adequate volumes of water during drought conditions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have an Emergency Response Plan that will allow your system to meet system demand during a drought, shortage, or natural disaster?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Demand	Yes	No	Unknown
Do you know whether your system demand will be growing, declining, or remain stable over the next ten years? <i>Please circle one: growing declining stable</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you have large commercial, industrial, or irrigation users, do you know their long-term plans and understand their needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Uses of Water	Yes	No	Unknown
Are you knowledgeable about other demands being placed on the same water source that you are using?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know who the other users are and do you understand their future plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you registered as a significant water withdraw facility with the Indiana Department of Natural Resources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Quality	Yes	No	Unknown
In the past year, have you remained in compliance with the maximum contaminant level for the bacteriological contaminants?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the past two years, have you remained in compliance with the Nitrate maximum contaminant level?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the past three years, have you remained in compliance with Inorganic Chemical (IOC) maximum contaminant levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the past three years, have you remained in compliance with Synthetic Organic Compound (SOC) maximum contaminant levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Water Quality (continued)	Yes	No	Unknown
In the past three years, have you remained in compliance with Volatile Organic Compound (VOC) maximum contaminant levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the levels of Arsenic in your finished water at or below 0.010 mg/L?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you ever monitored for Radon in your wells?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the level of Radon in your wells below 4,000 pCi/L?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the level of Radon in your wells below 300 pCi/L?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the level of Sulfate in your finished water below 250 mg/L?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you monitored for Methyl Tertiary-Butyl Ether (MtBE)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Treatment – General	Yes	No	Unknown
Does your treatment system(s) adequately treat the water to comply with the applicable primary or secondary drinking water standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is your treatment system properly operated and maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Purchased Water	Yes	No	Unknown
If you purchase water from another system or a wholesaler, do you know their long-term plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a contract to purchase water? <i>If yes, with who?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you currently complying with your contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know the terms affecting your supply during drought conditions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative Sources	Yes	No	Unknown
Are alternative water sources possibly available to you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you knowledgeable of the characteristics and costs of using alternative water sources?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Source	Yes	No	Unknown
Do you know the depth of your wells? <i>Depths:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know the “type” of aquifer system from which your water is drawn? <i>If yes please circle one: confined unconfined</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Source Water Protection	Yes	No	Unknown
Do you meter your water at each well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know if you qualify for the fixed radius delineation method?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have an approved “phase I” Wellhead Protection Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you on track with your Wellhead Protection Plan implementation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know all the types of land uses within your wellhead protection area or your source water area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know the areas within your wellhead protection area or source water area that are served by septic systems, wastewater treatment facilities or have an agricultural feedlot waste treatment facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Treatment - Microbiological Contamination

Is your system using surface water or ground water under the direct influence of surface water?	<input type="checkbox"/> yes <input type="checkbox"/> no	<i>(if you checked "no", skip to the next section - Ground Water Systems)</i>
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Surface Water Systems

Filtration Plant Condition	Yes	No	Unknown
Is your filter plant in good physical condition (free from spalling concrete, peeling paint)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are repair parts available?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have redundancy (back-ups/automatic switchovers) for all major mechanical units? <i>If no, list units you do NOT have redundancy for:</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can your plant achieve a filtered water turbidity of 0.3 NTU?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have on-line continuous turbidimeters on each filter?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you adopted a turbidity goal lower than the standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have the capability to add coagulant before the filter?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a procedure in place to determine your filter backwash frequency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you recycle your filter backwash water, do you return the recycled water to a location at or before the point of coagulant addition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has IDEM performed a "sanitary survey" of your system recently with satisfactory results? <i>Year of last sanitary survey:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Ground Water Systems

Ground Water Under the Direct Influence (GWUDI) of Surface Water	Yes	No	Unknown
Are your wells more than 50 feet deep?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is your water free from variations in turbidity and temperature after storm events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a determination been completed by the IDEM to evaluate whether your wells are classified as "ground water under the direct influence" (GWUDI) of surface water? <i>Please circle one: Wells GWUDI? yes no</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Well Construction and Protection	Yes	No	Unknown
Do you know when your wells were constructed? <i>List year(s):</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did IDEM approve your well sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are your wells constructed according to current Indiana regulations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are your wells protected from flooding?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has IDEM performed a "sanitary survey" of your system recently with satisfactory results? <i>Year of last sanitary survey:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Disinfection

Do you disinfect?	<input type="checkbox"/> yes <input type="checkbox"/> no	(if you checked "no", skip to the Infrastructure - Pumping section)
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Disinfection	Yes	No	Unknown
Do you regularly inspect and maintain your disinfection/chlorination equipment? <i>Type of equipment:</i> _____ <i>How often?</i> _____ <i>Disinfectant used:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have back-up equipment? <i>Type:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have adequate contact time following disinfection and before the first user in the distribution system? <i>Approximate Contact time:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you test for chlorine (free and total) daily in the distribution system and at plant taps? <i>Average free chlorine residual in distribution system:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Treatment for the Control of Disinfection By-Products	Yes	No	Unknown
Is the level of total trihalomethanes (TTHMs) in your distribution system below 80 µg/L.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you treat surface water, are you already practicing or could you adopt "enhanced coagulation" in your current plant?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you treat surface water, do you know how much disinfection contact time your plant is achieving?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Infrastructure - Pumping

Condition of Pumping Equipment	Yes	No	Unknown
Do you routinely inspect for signs of pump or pump motor problems? <i>How often?</i> _____ <i>How are the pumps monitored?</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Once diagnosed, are problems corrected in a timely enough manner to avoid crisis financing, costly repairs, and unscheduled downtime?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you hire a qualified pump contractor to perform an inspection of all pumping equipment, identify potential problems, and perform maintenance, on an annual basis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standby/Emergency Power Equipment	Yes	No	Unknown
Is there sufficient standby/emergency power capacity to supply 100% of the average daily demand (excluding fire demand)? <i>How long?</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are any existing standby/emergency power equipment, controls and switches tested or exercised routinely under load conditions, for at least 30 minutes at a time? <i>How often?</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the local electric utility been made aware of the standby/emergency power provisions made by the water system, so that they can reinforce and safeguard the electrical facilities serving the water operations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Infrastructure - Storage

Storage Capacity	Yes	No	Unknown
Does the system have sufficient gravity-flow (non-pumped) or emergency generator-supported pumping capability to ensure adequate distribution storage to provide safe and adequate service for up to 24 hours without power? <i>If no, how long?</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there reserve capacity in the tank for fire protection support? <i>Amount:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Security Measures	Yes	No	Unknown
Are any openings such as vent pipes, screened to protect against the entrance of birds, small animals, mosquitoes, flies and other small insects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there an entry hatch to allow access for cleaning and painting of the interior of the tank?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is your storage tank covered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the tank and the immediate surrounding area fenced and secured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Control Systems	Yes	No	Unknown
Is there a high and low water level signal system to control the pumps?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there an altitude valve, to preclude the tank from overflowing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there a drain valve or hydrant to allow for draining of the tank?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there an alarm system to notify the operator of problems in the system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tank Maintenance	Yes	No	Unknown
Is the tank inspected at least every three years by a qualified tank contractor for evidence of corrosion or pitting, leakage, structural weakness, integrity of safety devices, and accuracy of pressure gauges?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the tank contractor capable of analyzing the coating of paint on the interior and exterior surfaces of the tank to determine if it contains lead or other hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Infrastructure - Distribution

System Maintenance	Yes	No	Unknown
Does the operator routinely flush, test, and maintain the hydrants in the system? <i>How often:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the locations of valves in the mains and curb stops on the service lines precisely known?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the system keep a log of distribution system breaks to identify weak areas in the system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are histories, locations, size, and type of mains and service lines detailed on records in a secure area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all valves exercised and lubricated periodically? <i>How often:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the system free of severe "water hammer" problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



System Maintenance (continued)	Yes	No	Unknown
Are meter pits, pressure regulating valves, altitude valves, blow-offs, and other appurtenances maintained on a regular basis?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unaccounted-for Water	Yes	No	Unknown
Is unaccounted-for water in the water system monitored and analyzed each month?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the unaccounted-for water less than 15 percent of the total water delivered to the mains? <i>List percentage of unaccounted-for water: _____%</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the normal operating pressures in the distribution system between 35 psi and 80 psi? <i>Normal operating pressure: _____psi</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a routine leak detection and repair program?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all sources of supply and customers metered?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the meters calibrated and tested routinely to ensure their accuracy and reliability? <i>How often:</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Quality in Distribution System	Yes	No	Unknown
Is an annual inspection for cross-connections performed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there a program for installing and testing backflow prevention devices where potential contamination is present?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there a program to eliminate "dead-ends" in the mains, where feasible?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction Standards	Yes	No	Unknown
Are there a low percentage of mains less than 6 inches in diameter in the water system? <i>List percentage: _____%</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there a program to gradually replace sub-standard sized mains?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are their suitable rights-of-way and easements provided to the water system for expansion, maintenance, and replacement of mains and services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there sufficient earth cover to protect the mains from frost damage or heavy loads, if driven over? <i>Inches of cover: _____</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are materials of mains designed and selected to resist corrosion, electrolysis, and deterioration?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Distribution System Problems	Yes	No	Unknown
Do you receive <u>few</u> complaints regarding taste, odor, or staining? <i>List number of complaints in the past year: _____</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Can you maintain adequate pressure in the distribution system under all conditions of flow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



MANAGERIAL CAPACITY

Please mark the appropriate box: *Yes*, *No*, or *Unknown* for each section. Please try to determine the answer to every question. If a section or question does not apply to your system, please write NA for not applicable.

Operation & Maintenance

Operations Staff	Yes	No	Unknown
Does the person operating your system hold a current certified drinking water operator's license from IDEM? <i>If yes, list classification(s):</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your operator receive additional training on an ongoing basis to keep current on new developments in the field?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Future Operational Demands	Yes	No	Unknown
Does your water system obtain any regular or occasional technical assistance from outside sources such as IDEM, your engineer, other utilities, or organizations specifically dedicated to providing technical assistance? <i>If yes, who:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Management & Administration

Who's in Charge?	Yes	No	Unknown
Is there a clear plan of organization and control among the people responsible for management and operation of the system?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the limits of the operator's authority clearly known?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are all the specific functional areas of operations and management assigned?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does everyone involved in operations know who is responsible for each area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is someone responsible for scheduling work?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rules and Standards	Yes	No	Unknown
Do you have explicit rules and standards for system modifications?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have rules governing new hook-ups?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a water main extension policy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have standard construction specifications to be followed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have measures to assure cross-connection control and backflow prevention?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have policies or rules describing customer rights and responsibilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regulatory Compliance Program	Yes	No	Unknown
Do you fully understand all of your monitoring requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a scheduling mechanism to assure compliance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a mechanism to obtain the most recent information on regulatory requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know how to get clarifications or explanations of the requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Regulatory Compliance Program (continued)	Yes	No	Unknown
Do you maintain adequate records to document compliance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>If yes, for how long?</i>			
Do you fill out Monthly Reports of Operations (MROs) completely and submit them to IDEM?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is your track record free of repeated episodes of monitoring violations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know what to do in the event of a failure to monitor violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you know what to do in the event of an MCL violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you currently in compliance with all drinking water regulations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you delivering adequate and timely annual consumer confidence reports (CCRs) to your consumers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you aware of and do you understand provisions for obtaining waivers from monitoring requirements or the role of vulnerability assessments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you currently in compliance with all wastewater regulations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Emergencies	Yes	No	Unknown
Do you have an Emergency Response Plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is there a contingency for making emergency interconnections to neighboring systems, and do you know they will work if needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does everyone involved in operations know what they are to do in the event of contamination from a toxic hazardous waste spill in your source water or a main break or a tank failure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a clear chain-of-command protocol for emergency action?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is someone responsible for emergency operations, for communications with state regulators, for customer relations, for media relations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>If yes, who (title):</i> _____			
Safety	Yes	No	Unknown
Do you have a safety program defining measures to be taken if someone is injured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does everyone understand the risks and safety measures involved in handling water treatment chemicals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have written operating procedures for both routine and emergency system operations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you fully aware of Occupational Safety and Health Administration (OSHA) confined space (such as trenches/manholes) regulations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance	Yes	No	Unknown
Do you have a planned maintenance management system -- a system for scheduling routine preventive maintenance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a system for assuring adequate inventory of essential spare parts and back-up equipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have relationships with contractors and equipment vendors to assure prompt priority service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have records and data management systems for system operating and maintenance data, for regulatory compliance data, and for system management and administration?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Management Capability	Yes	No	Unknown
Are you aware of upcoming regulations in the water industry?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are you getting the outside services and technical assistance you need, such as legal counsel, insurance, engineering advice, technical/operations assistance? assistance, rate case preparation, and financial advice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



FINANCIAL CAPACITY

Please mark the appropriate box: *Yes*, *No*, or *Unknown* for each section. Please try to determine the answer to every question. If a section or question does not apply to your system, please write NA for not applicable.

Financial Planning Mechanisms	Yes	No	Unknown
Do you know your actual cost of service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have an annual budget?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have within the annual budget a separate reserve account for equipment replacement and/or capital improvement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a capital budget or capital improvement plan that projects future capital investment need some distance (at least five years) into the future?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a process for scheduling and committing to capital projects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a capital improvement plan that covers at least the next ten years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your planning process take account of all the potential capital needs suggested by your answers to the technical questions in these worksheets?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your long-term planning incorporate analysis of alternative strategies that might offer cost savings to customers, such as consolidation with other nearby systems or sharing of operations and management expenses with other nearby systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rates/Billing - Are they Adequate?	Yes	No	Unknown
Do you regularly review your rates? <i>How often?</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have a plan in place for periodic increases in rates?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the rate structure based on metered watered use? <i>List water rates per 1000 gallons:</i> _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do users pay the same or higher rate per 1000 gallons as they use more water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the rate structure assure proportionality among users?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have procedures for billing and collection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is your billing collection rate greater than 95%?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you have collection procedures specifically for delinquent accounts?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial Planning Mechanisms - Are they Adequate?	Yes	No	Unknown
Do you have audited financial statements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your water system presently operate on a break-even basis or better?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the water system keep all the water revenues (i.e., water revenue does not support other municipal departments or unrelated activities)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you employ standardized accounting and tracking systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you track budget performance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you keep records to substantiate depreciation of fixed assets and accounting for reserve funds?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are financial management recordkeeping systems organized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are controls exercised over expenditures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are controls exercised to keep from exceeding your budget?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there purchasing procedures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



PUTTING IT ALL TOGETHER:

Do you have Technical, Managerial, and Financial Capacity?

After processing through all of the questions in this self-assessment form, you should be in a position to summarize what you have learned about your status.

- First, you should have accumulated a list of items on which you need to do some more research or investigation in order to fully answer the question, or in order to reverse your answer from “no” to “yes.”
- Second, you should be able to make a qualitative summary of what you have learned by taking a clean sheet of paper and filling in the most important things that come to mind – reflecting on the issues raised in this form – under the following headings
 - Strengths
 - Weaknesses
 - Opportunities
 - Threats
- Third, perhaps with some additional research – or with the right assistance – you may be within range of being able to begin a more quantitative form of business planning utilizing budget and revenue planning.

Finally, customer awareness of the issues covered by the preceding questions in this form is the true foundation of viability. Getting customers to fully appreciate what it takes to operate and maintain a water system is important to assure support for new capital investment and higher water rates. The more customers know about the cost to run a proper water system in the future, the more open-minded they are likely to be in considering alternative strategies for providing water service, conceivably at lower cost. Nothing focuses the mind like cost estimates. Once you have performed an analysis of prospective future liabilities and costs following the questions in this form, you will have the information needed to get people to focus on the choices involved in determining your future.

The final question to ask yourself is: *How much of all this is known and understood by the customers, and how would this change their attitudes about the future?*

If you need more information or assistance in completing this form, please contact:

Indiana Department of Environmental Management: Drinking Water Branch
Attn: Juliana Savia, *Operator Certification and Capacity Development*
(317) 234-7459; jsavia@idem.in.gov

Indiana Finance Authority: State Revolving Fund Loan Program
Attn: Shelley L. Love, *Drinking Water and Wastewater Program Administrator*
(317) 232-4396; slove@ifa.in.gov